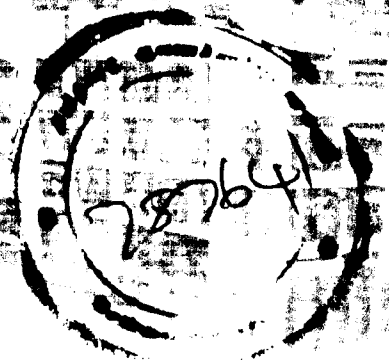
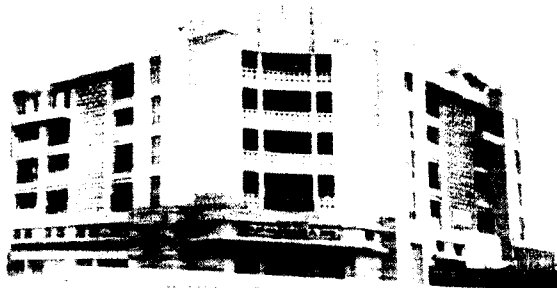


Documentation  
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# BOUQUETS TO RAJAJI

## THE PATRIARCH

PRESIDENT V. V. Giri said:

"It has been my privilege to have known him from 1916 and I had the privilege of working as his close associate and colleague in the Madras Cabinet.

"Till very recently, despite his very advanced age, he has been expressing his views on many national and international issues with clarity to the advantage of the nation.

"A great personage that he was, he played a crucial role in India's freedom movement and he was indeed a farsighted Statesman, the like of whom we will not be able to see for generations.

"A multi-dimensional personality, Rajaji contributed to various fields of human endeavour. The nation has, indeed, become poorer by his demise".

## THE SAGE

THE PRIME MINISTER'S tribute runs as follows:-

"He was a great son of our country who was in the front line of our political life for more than 50 years and became the first Indian Governor-General of Independent India.

"Mr. Rajagopalachari was one of the makers of new India, a sincere patriot, a man whose penetrating intellect and moral sense added depth to national affairs. His analysis, his anticipation, his administrative acumen and his courage to steer an unpopular course if he felt the need, marked him as a Statesman and made an impact on the national history at several crucial junctures. He had held the highest positions and lent distinction to every office.

Politics could not contain his diverse gifts. He was a major figure also in the world of philosophy and literature.

In his death we lose a sage, indeed a force."

## THE GREAT SOUL

THE CHIEF MINISTER of Tamil Nadu was moved to refer to him as follows:

"We have lost a great soul who showered his love transcending politics. He was one of the greatest leaders of the country. His death is like the fall of a tower of light."

## A TOWERING PERSONALITY

THE GOVERNOR of Tamil Nadu said:-

"Rajaji was a rare combination of scholarship and Statesmanship. His generosity, sympathetic understanding of men and matters and above all his loyalty and patriotism will provide an ideal lesson to generations.

"Very few could match Rajaji's keen and penetrating intellect, his deep insight into the working of human mind and his brilliant analysis. We have lost a towering personality".

## LEGEND FOR PHOTO ALBUM

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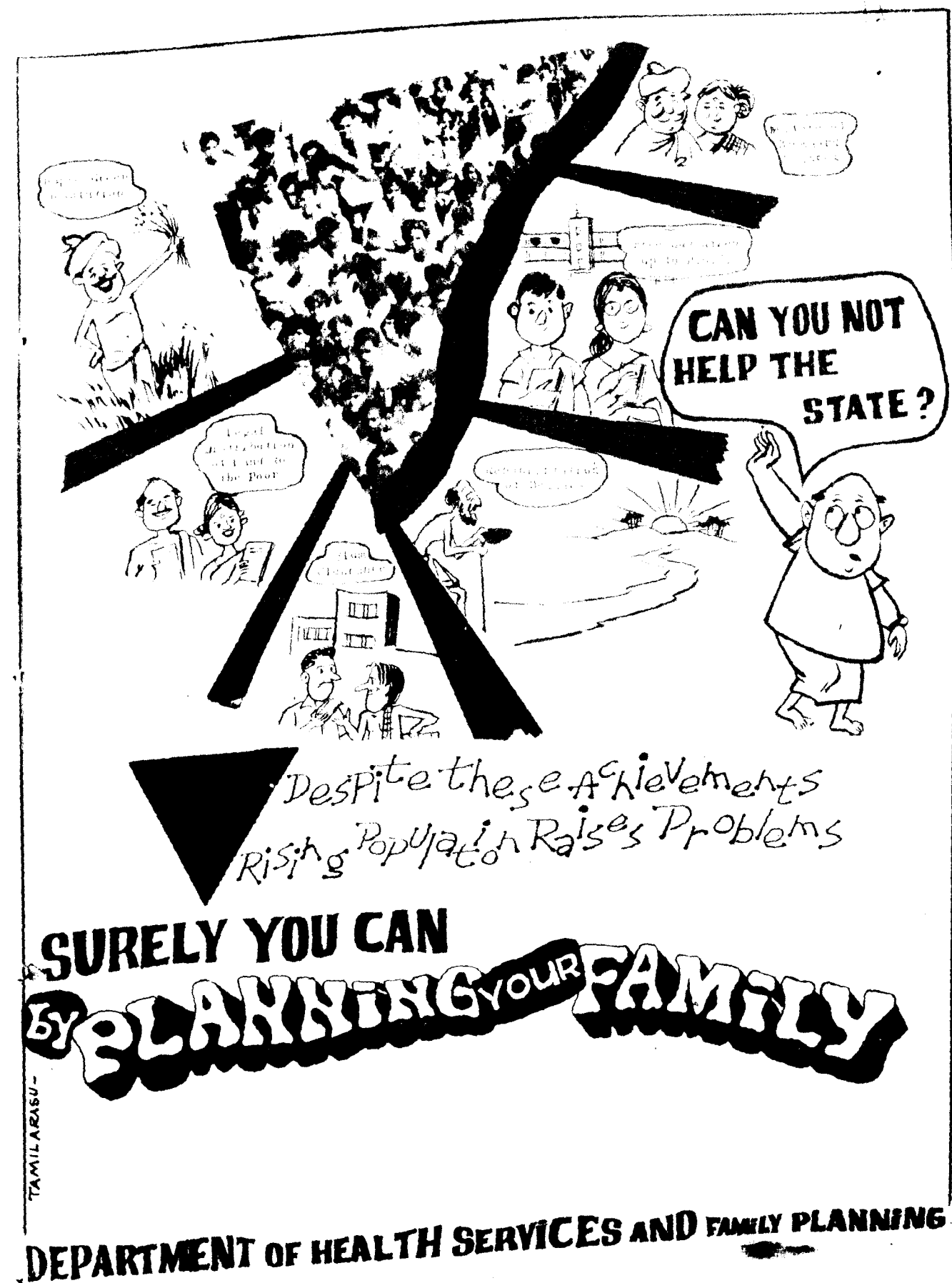
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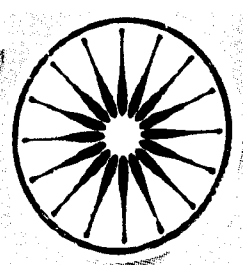
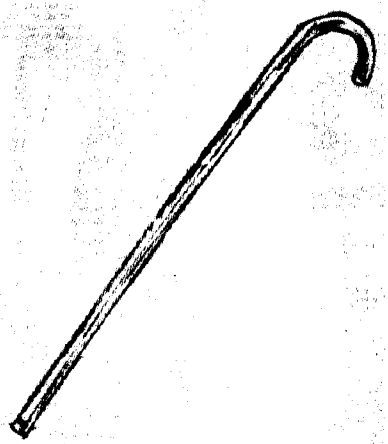
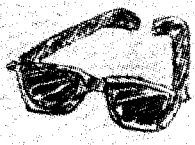
3. Receiving Tamra Patra

4. Casts his vote

5 } President, Governor and Chief Minister offer  
6 } their last respects.

6. The Last Journey





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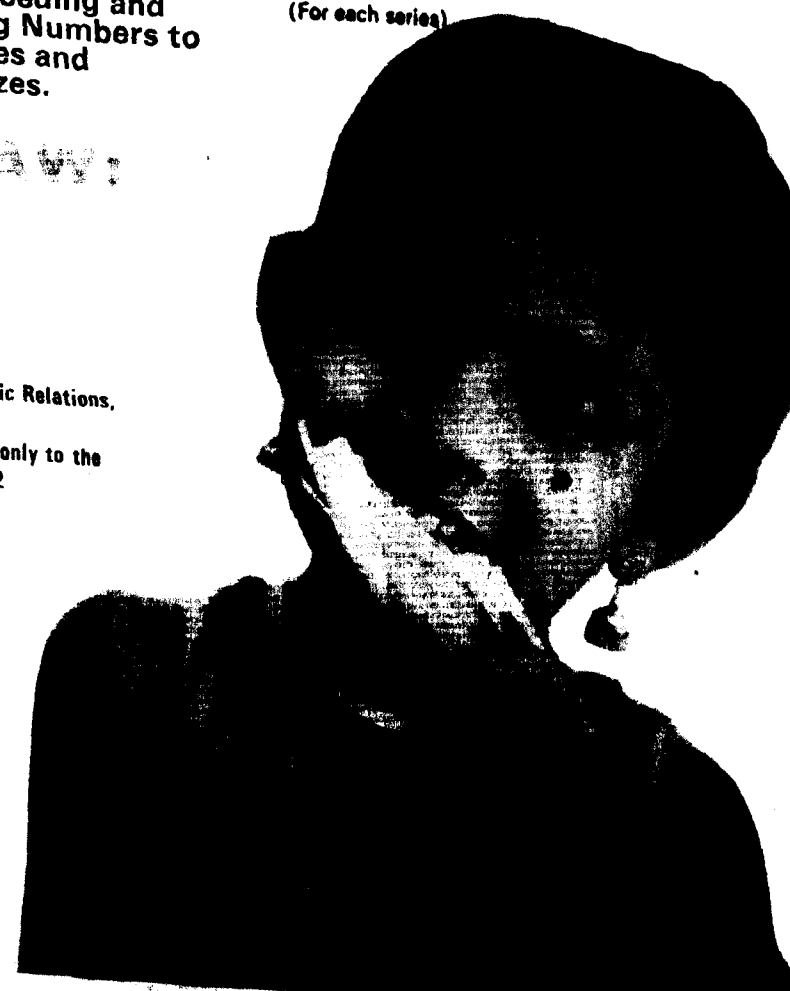
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Vol. III 1st January 1973 Issue 9

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## FORECASTING THE WEATHER

The recent spate of floods, droughts and cyclones in different parts of the country has once again drawn attention to the vulnerability of our agriculture and power resources to weather and the importance of weather forecasts for national development. The economic and social benefits of meteorology have attracted attention of economists and planners all over the world and weather forecasting has assumed greater importance than ever.

### Early History :

In our country, weather forecasting on scientific lines commenced 97 years ago at about the same time as it started in Europe and America. At first, meteorological observations were confined to the surface of the earth and the oceans and forecasts were required mainly for mariners at sea.

### Radio-sonde :

During the first half of this century, development of aviation led to the need for observations at higher levels in the atmosphere. The pilot-balloon, the radio-sonde and the radio-theodolite were developed for measuring winds and temperatures in the upper air up to as high as 20 to 30 kms. above sea level. In India, we have at present, 54 pilot balloon stations, 21 radio-wind; radio-sonde stations and the number will increase further during the next two years.

### Radar :

Radar invented before World War II was quickly brought into meteorological use soon after, for detecting storms and determining upper winds. With the help of a shore-based radar, the dreaded tropical cyclone can be apprehended 400 kms. away, tracked as it approaches coast and people warned to protect lives and property, well in advance. In our country, the first weather radar was set up at Calcutta Airport in 1954 to warn aviators against Nor-westers or Kal Baishakis of Bengal. Ten such radars, each with a scanning range of about 250 kms. now operate at different airports. The first cyclone warning radar was located on Dolphin's Nose Hill at Visakhapatnam Port in 1970. Three more are coming up this year at Madras, Calcutta and Paradeep and next year at Bombay. By the end of the Fourth Plan period, a network of 8 cyclone

warning radars will keep a round-the-clock vigil for oncoming cyclones along our east and west coasts.

### Satellites :

The radar was followed by the satellite and the first meteorological satellite was orbited by U.S.A. on April 1, 1960. This enabled the meteorologist to get an overview of the world's weather no matter where it was located—land or sea. Pictures instantly transmitted to ground stations by the satellite revealed cyclones, monsoons and other phenomena in great detail. In India, we have 6 satellite monitoring stations for reception of cloud pictures from U.S. satellites. Similar pictures transmitted by USSR meteor satellites are received at New Delhi by radio facsimile from Moscow.

**DR. P. KOTESWARAN,**  
Director-General of  
Observatories, New Delhi.

Geostationary satellites orbiting at a height of 36,000 kms. have provided continuous weather watch capability over large areas extending up to a quarter of the globe. Two such satellites have been functioning over the Pacific and Atlantic Ocean for nearly five years. A geostationary meteorological satellite planned to be located over the Indian Ocean area by Japan in 1976 in co-operation with India would enable us to watch the development and movement of cyclones in our neighbouring sea area.

Developments in satellite meteorology during recent years have provided a break-through in bridging the gaps in our observational networks. By the end of this decade, the existing large data gaps over the oceans and uninhabited areas will be a thing of the past.

### The Computer :

A third development that has revolutionised weather forecasting is the electronic computer. For decades, the meteorological forecaster had to content himself with qualitative deductions of future weather based upon manual analysis of pressure and wind patterns plotted

on charts. Although highly useful for many purposes, the technique has a large element of subjectivity dependent upon the skill, experience and intuition of the forecaster. During the last few years, however, the computer has been successfully used to analyse the vast amount of meteorological data collected over large areas of the globe and predict cyclones and anti-cyclones, rain and snow on a quantitative basis. The computer has removed the element of subjectivity in weather forecasting and holds great promise in future.

In our country we have been producing experimental computerized forecasts thrice a week at Delhi. After a high speed computer is installed, these forecasts will be issued as a routine from early next year.

### World Weather Watch :

These spectacular developments in meteorology have led to a World Weather Watch (WWW) project. It consists of a Global Observational System (GOS), Global Tele-communication System (GTS) and a Global Data Processing System (GDPS) operated by three World Meteorological Centres and a number of Regional Meteorological Centres over different parts of the world. New Delhi is a Regional Meteorological Centre (RMC) and a Regional Tele-communication Hub (RTH) for South Asia. The Centre will receive meteorological data round-the-clock from all over the globe with the aid of a computerized message switching system gifted by the Government of Netherlands, process the data with the aid of a scientific computer and disseminate forecasts by broadcasts at frequent intervals round-the-clock.

### Research and Development :

A Global Atmospheric Research Project (GARP) jointly organised by the World Meteorological Organisation (WMO) and the International Council of Scientific Union (ICSU) is to begin its first global experiment in 1976. With all these research efforts, it should be possible to develop necessary techniques in the near future to issue accurate forecasts of the onset of the monsoon and floods and droughts associated with it well in advance for planning agricultural and power operations and help in the general economic regeneration of the country.

## KNOW YOUR HEART

In the sophisticated society of the modern days, it is not a difficult task to know the status of one's Heart and its efficiency as a pumping organ, whose function is to supply blood to every nook and corner of the body. It is also essential to know the functional capacity of your heart so that you may live a life of moderation within the capabilities of your heart. A life of physical and mental strain will throw a burden on a diseased heart, which may be capable of serving an individual without any trouble and difficulty for a longer period. Even individuals with diseased hearts are capable of living a healthy existence, a normal life as an useful member of society provided he knows the condition of his heart. There are many individuals who are moving about in society, holding high positions in life, taking part in various activities, plying various trades, engaged in multifarious duties, little knowing the condition of their heart which probably may be diseased. If it was pointed out to them about the status of their heart, they would have taken more care in smoothening out their duties, in order to throw less strain on the heart or its muscle.

It is desirable for the purposes of living a longer span of life that the condition of the heart should be periodically checked up by simple tests which are available in all hospitals not exclusively for the rich but for the poor as well and to all categories of individuals. Such intermittent examination will be very useful as a preventive measure in safeguarding oneself from the complications which may later develop.

All heart diseases are not apparent to individuals, even though sometimes serious and threatening types of diseases are present, enigmatical and harmful to the life of the individual immediately or later. It is also a difficult task sometimes for a doctor, who is busy in his practice to detect heart disease off-hand. It may be so in certain types of heart diseases, where the

manifestations are gross but in the subtler types associated with minimal signs, even the most experienced consultant may have a doubt. This is the reason why sometimes there is a difference of opinion from doctor to doctor, not out of ignorance or incapacity, but because of the difficulties posed by the heart in the detection of its integrity and health.

### FALSE IMPRESSION.

It is a false impression in the minds of the public that heart disease is always associated with a grave situation, always threatening the life of the individual, like the sword of democles hanging over his head. This impression has been created by individuals who have an unsound knowledge and a smattering of wrong type of medicine. Moreover, the many deaths which occur suddenly, as reported in the daily news paper creates such a feeling in the minds of the public which should be erased by proper explanation and guidance by those who have a thorough knowledge about heart disease. It is also not correct to visualise that an individual with heart disease is one who is incapable of moving about in society, doing his normal work; that he should be confined to bed with gross symptoms like breathlessness, swelling of the feet, cough, etc., which are a few symptoms of the complications of heart disease but not of the heart disease itself.

It is only when heart disease advances to a serious stage that such complications are liable to occur, and even at that stage treatment is possible with rectification of the complications. It is no exaggeration to say that individuals who have passed through such complications have outlived their lives and are still healthy because they have come to know the condition of their heart and are living within its functional capacity.

### Unnecessary care.

There are several varieties of heart diseases occurring at different periods of life. Heart like any other organ in the body is subject to almost the same disease as those organs and therefore to create a panic in the minds of public about the seriousness of heart disease is incorrect and leads to many neurotic and psychotic disturbances. Individuals become afraid of their heart and are constantly worried as to what

**DR. K. RAMACHANDRA,**  
Prof. ssor of Medicine,  
Madras Medical College,  
Madras.

would happen to them. There will and capacity to work with efficiency becomes affected and they lead an unhappy and sedentary existence.

Heart diseases are sometimes complications of their bodily ailments and individuals may not succumb to the primary disease but from their heart complications. Heart diseases may be developmental having occurred even in the mother's womb due to many infective and atavistic factors which can easily be detected. There are other diseases which develop later in life. Amongst them a few, are the Rheumatic Heart disorders, Hypertensive Heart disorders, Diabetic Heart disorders, Arteriosclerotic Heart disorders have to be mentioned barring many more conditions which are uncommon. In such diseases which occur in childhood, adolescence and old age, it is necessary to know the condition of the heart.

### Preventably managed.

An individual with Hypertension, Diabetes, etc., by knowing his disease and the damage which has already occurred to the heart can by proper management at the hands of a competent person, maintain a healthy body and active mind with sound advise and little medication, though drugging has become a fashion of the present day, which is often not necessary.

All that is needed is that every individual whatever be his age, status and position in life should periodically have not only his body checked up but particularly his heart. It is not necessary in the present day that once a heart disease always a heart disease. To a great extent this dictum has been altered after the advent of Surgery and better understanding about diseases of the body in general and the Heart in particular. I would even say that individuals with heart disease of a particular type when detected early can live a vigorous healthy existence.

*Courtesy, A.I.R. from a broadcast on 18th December 1972 from Madras A.I.R. by the Author.*





A severe cyclonic storm struck our coast close to Cuddalore around 5 a.m. on the 6th December with savage fury, bringing in its wake torrential rains accompanied by tempestuous winds reaching a velocity of 150 kilometres per hour. The entire coastal region from Madras in the North to Vedaranyam (Thanjavur District) in the South received very heavy rains on the 5th, 6th and the 7th December ranging from 227 mm. in Adirampatnam in Thanjavur to 341 m.m. in Cuddalore and thinning out to 282 m.m. in Madras during the 3 days, 5th, 6th and 7th December 1972.

Forewarned of the impending cyclone, the authorities had taken necessary precautionary steps in the coastal districts, particularly in South Arcot, Chingleput, Thanjavur and Madras City. People living in low-lying areas had been evacuated to safer places ahead of the cyclone. A large number of trees and electrical and telegraphs post had fallen due to the cyclone, particularly in South Arcot District. The heavy local rains had resulted in the breach of a number of tanks, resulting in disruption of road and rail communications along the coast on the 6th December.

But the worst was yet to come. The cyclone weakened after crossing the coast, degenerated into a deep depression, started moving slowly across the peninsula and emerged into the Arabian Sea, still as a depression, only on the morning of the 8th December. For a full forty-eight hours, therefore, there lay across the peninsula a deep depression, with its central core slowly moving westwards along a trail touching the Kalrayan hills, Jawadi hills, Sheveroy hills and the Nilgiris bringing torrential rains to hundreds of square miles of land, unaccustomed to such downpour. Thus the western portion of the State which is the watershed of most of our rivers received copious rains during 7th, 8th and 9th ranging from over 350 m.m. in Nilgiris district areas to 400 m.m. and above in proverbially dry areas like Harur and Dharmapuri. Not able to cope with such flash floods the river and lake system over flood their banks, formed new courses breached bunds, cut roads, scoured bridges and inundated lakhs of acres of land till they emptied

## GOVERNOR USHERS SPEEDY AID

themselves either into the Bay of Bengal or into bigger rivers capable of dealing with the discharge. In the Process, they wrought devastation over a vast area in terms of loss of lives, both human and animal and loss of property, both public and private.

The Districts most affected were South Arcot, North Arcot, Salem, Chingleput, Coimbatore, Dharmapuri and the Nilgiris.

### South Arcot district.

The eye of the cyclone crossed the coast near Cuddalore on the morning of 6th December with a wind velocity reaching 150 km. per hour. Due to the cyclone, there was very heavy rainfall in the entire district, totalling 340 cms. on the three days namely the 5th, 6th and 7th December. A number of trees and also electric and telegraph posts were uprooted and communications were disrupted badly. On the 7th and 8th the cyclone further weakened into a deep depression, moved westwards and brought heavy rains to the western districts of North Arcot, Salem, Coimbatore and the Nilgiris, particularly in the areas comprising Kalrayan, Jawadi and Sheveroy hills. The rainfall of about 12 to 15 inches in the Jawadi hills resulted in an unprecedented inflow into Sathanur reservoir in North Arcot District, just west of South Arcot District. This reservoir had been closed for irrigation on 30th November 1972 with a level of 118 feet as against the full level of 119 feet. Thus, even before these heavy rains, the reservoir was almost full and was not in a position to receive any further inflow. The inflow due to the rains had therefore to be released into the Pennaiyar river and the discharge had to be progressively increased from 19,423 cusecs on the 6th to 43,095 cusecs on the 7th and 96,466 cusecs on the 8th. There was a sudden rise in the inflow at about 3 a.m. on 9th December 1972 and the water level in the reservoir was rising dangerously very much beyond the full reservoir level, endangering the reservoir itself. The Executive Engineer, Tivuvannamalai, who was camping at the Dam site, opened all its shutters in and the discharge increased to 2,36,747 cusecs as full

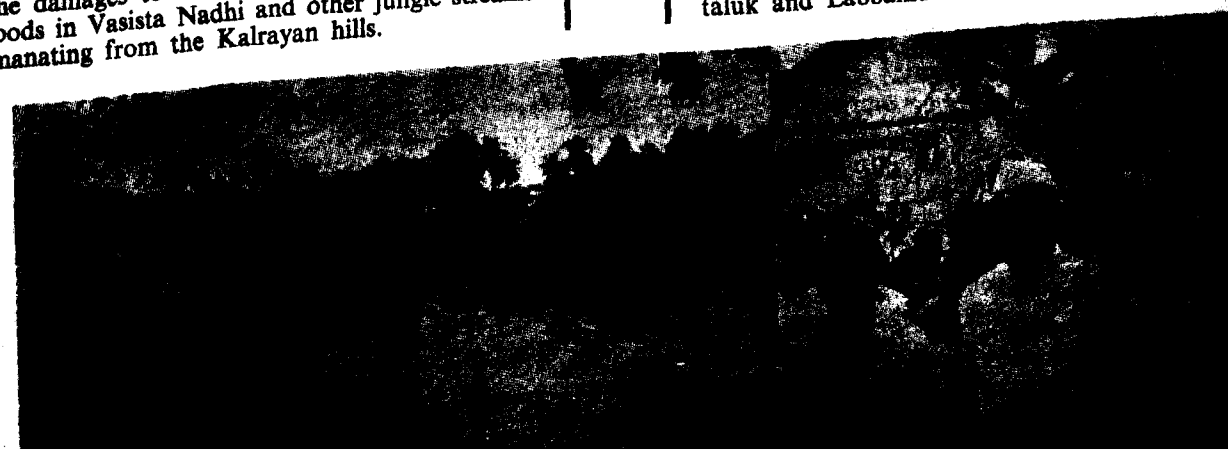
against the designed maximum discharge of 2,00,000 cusecs. The jungle streams below the reservoir which fall into Pennaiyar were also carrying heavy floods and these increased the total inflow into Pennaiyar to 2,75,000 cusecs, which was unprecedented. The water discharged from Sathanur Reservoir during a period of 24 hours on the 8th and 9th was equal to 3½ times the total capacity of the reservoir itself. The Tirukoilur anicut constructed across Pennaiyar 110 years ago was washed away completely. The other rivers in the district, namely, Manimuthar, Gomuki, Vellar, Paravanar, Malattar and Gadilam were also in spate during this period. Pennaiyar river, unable to contain the flood water along its own basin, cut across elevated ground and joined the Malattar river. In the process it eroded the embankments to the road bridge on the National Highway at Arasur and completely washed away the railway bridge at the same place on the Madras-Tiruchirappalli Chord Line. Nearly a third of the district was under 5 to 6 feet of water for a period of about 4 days. Out of the total number of 2,203 villages in the district, 1,057 villages had been affected by the floods.

### North Arcot District.

There were local heavy rains in the entire district on the 7th and 8th, of an order of 12 to 15 inches, which led to floods in the rivers Cheyyar and Pennaiyar and a number of breaches in the irrigation tanks. About 20 villages in this district along the banks of Pennaiyar, below the Sathanur Reservoir, had to receive the first impact of the heavy discharges from the reservoir and were very badly affected. All communication to these villages had completely been cut off for a period of about a week.

### Salem District.

The places worst affected in Salem district were Salem Town, Attur town and the surrounding villages. The damages to Salem town were due to unprecedented floods in Thirumanimuthar river which winds its way through Salem town, which in turn was due to very heavy downpour in Yer-in area in Sheveroy hills, where the rainfall was of the order of 12 to 15 inches on the 8th and 9th. The damages to Attur town were due to heavy floods in Vasista Nadhi and other jungle streams emanating from the Kalrayan hills.



### Chingleput District.

The rainfall in Chingleput district had been above normal during September to November and most of the irrigation tanks were nearly full. Further inflow from the heavy rainfall of the order of 12 inches on the 6th and 7th December could not therefore be harnessed in these tanks and a number of irrigation tanks had breached, which in turn breached a large number of roads. There was heavy discharge of water from Poondi Reservoir into Courtalayar river and this also resulted in breaches of tanks. Even Palar was in floods during this period as also Cheyyar.

### Coimbatore District.

There was an unprecedented flood in Bhavani river due to the very heavy rains in the Nilgiris. Even though the discharge from Bhavanisagar reservoir was only 30,000 cusecs, the peak flow in Bhavani river at Bhavani on the morning of 9th December was 1,30,000 cusecs. This additional 1,00,000 cusecs was contributed by breaches in tanks and local rainfall. The floods washed away both the embankments to the bridge across the river Bhavani cutting off access to Bhavani town and joined Cauvery, thereby submerging a large part of Bhavani Town.

### The Nilgiris District.

The damages in the Nilgiris district were due to local heavy rainfall resulting in a number of landslips and consequent damages to roads.

### Dharmapuri District.

The damages in this district were mainly due to local rainfall and floods in Pennaiyar which received discharges up to 25,000 cusecs from the Krishnarajasagar reservoir. The other minor streams such as Vennar, Kallar, Koilar and Varattar were also in floods resulting in breaches to a number of minor irrigation tanks and consequent breaches to roads.

### Tiruchirappalli District.

The damages in this district were concentrated in 2 places, namely, Gunasekaram in Musiri taluk and Labbaikudikadu in Perambalur taluk.

## HEROIC RELIEF MEASURES

The floods in Gunasekaram were due to the Ayyar river which was in flood because of heavy rains in the Kolli hills. The damages in Labbaikudikadu were because of floods in Vellar river which received freshes from the heavy rainfall in Kalrayan hills.

#### Thanjavur District.

The worst affected areas in Thanjavur district were Pattukkottai and Arantangi taluks and a portion of Mannargudi taluk. The rainfall in this region up to the end of November was 25 per cent above normal. In addition to this there was heavy local rain on the 6th and 7th of December and the position was further worsened by the discharge of 2,20,000 cusecs on the 9th and 10th and 1,00,000 cusecs on the 11th from the Upper Anicut near Tiruchirappalli into the Cauvery Delta. This resulted in breaches to a number of channels and irrigation tanks, resulting in consequent breaches to roads.

#### Madras City.

The damages were mainly due to heavy local rains on the 5th, 6th and 7th December. Low-lying areas were affected destroying 34,000 huts. A number of roads have been badly damaged.

The cyclone and the floods resulted in the death of 81 persons in the entire State due to drowning, collapse of houses, fall of trees and electrocution. Of the 81 persons, 39 were adults and bread-winners of the families. Thousands of cattle particularly in the districts where there were floods in rivers, were washed away.

The floods also resulted in full or partial damage to as many as 1,70,000 houses in the entire State. A few hamlets on the banks of Pennaiyar and Gadilam have been totally washed away. Since the flood level did not subside

#### FLOOD RELIEF OPERATIONS ON WAR FOOTING IN SOUTH ARCOT DISTRICT.

In the first lap of his tour of flood affected areas in Tamil Nadu, the Chief Minister inaugurated the reclamation works at Pidagam, a village near Villupuram. As South Arcot is the worst affected district in the flood havoc, the Chief Minister has ordered that these relief measures be undertaken on a "war footing".

Then the Chief Minister visited Thiruvamur near Panruti where Thiru T.V. Antony, I.A.S., the Director of Agriculture explained the reclamation process of sand cast lands by employing bulldozers.

During this function, blankets worth Rs. 7000 donated by the Pennadam Rotary Club were handed over to the Chief Minister. A sum of Rs. 7000 was given to the Chief Minister towards the flood relief fund on behalf of the local church on that occasion. The Chief Minister visited Kandarakottai, where people requested him to construct an anicut and also a bridge over Pon-nayar river near their village, as a safety measure against floods.



Cash grants to flood victims.

till the 12th of December, thousands of people in various districts living in low-lying areas were marooned for nearly a week.

Though the two major reservoirs in the region, namely, Sathanur and Bhavanisagar, were saved, the anicut across Pennaiyar at Tirukoilur was completely washed off and the anicut across Gadilam near Kallakurichi was considerably damaged. There have been breaches in as many 1,524 major irrigation tanks and 1,387 minor irrigation tanks in the entire State.

The breaches in irrigation tanks in turn led to breaches in communication lines such as roads and railways. For a period of 5 days, road and rail communication from Madras to the southern districts had been completely cut off.

Standing crops in 40,765 acre were totally destroyed. Considerable damage has been done to standing crops in 2,47,800 acres.

The floods in the rivers have also resulted in 4,000 acres of cultivable land being sandcast. Normal cultivation on these lands cannot be restored unless these sand deposits are desilted, which work was inaugurated by the Chief Minister on 23rd December 1972.

But for the immediate mobilisation of personnel of various departments, particularly from Madras City, the number of casualties would have been staggeringly higher. The Indian Navy also came to the rescue by making available a helicopter and this was pressed into service for rescue operations in South Arcot district. 4,319 persons were rescued to safety by these agencies. The persons who had lost their houses and their other belongings were housed in public buildings such as schools and offices, and arrangements were made to feed them till the water receded.

Private charity was also voluntarily and abundantly forthcoming to feed the marooned persons.

Under the rules in force all the families who had lost their houses were given immediate cash relief at the rate of Rs. 80 per family for re-building their houses and for purchase of clothing. This immediate cash relief was given to 1,70,000 families, of whom 88,000 were in South Arcot district alone.

The Public Works Department and the Panchayat Unions mobilised their staff within a very short period in order to close, wherever possible, the breaches in tanks temporarily by forming ring-bunds and by stacking sand bags.

The Highways Department was able to restore communications along all the important roads within a period of 3 to 4 days by making temporary improvisations. The Southern Railway did a magnificent job in restoring rail communication within a period of a week.

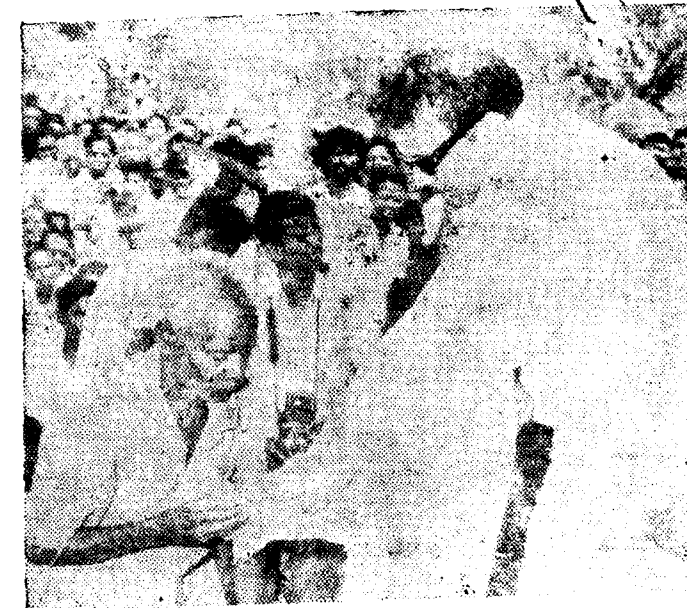
#### The Relief Programme.

After detailed discussions, the relief programme has been approved by the State Government. The salient features of the programme are as follows :—

A cash grant of Rs. 2,000 will be given by the State Government to the families which lost their sole bread-winner in the floods. In other cases of deaths due to floods, a cash grant ranging from Rs. 500 to Rs. 1,000 will be made available to the bereaved.

In addition to the immediate repairs to be effected to major and minor irrigation tanks by formation of ring-bunds, etc., so as to preserve the inflow of water due to further rains before the end of this month, immediate steps will be taken to restore the tanks to the conditions that existed before the floods so as to render them

#### Operation Flood Relief swings into action.



Clothings to the flood victims.

ready to receive water during the south-west monsoon of 1973.

#### Aids to affected farmers.

Agriculturists who lost their crops either partially or totally and those whose lands have been sandcast will need immediate finances for raising a fresh crop or to save the standing crops or to remove the silt on their lands so as to render them fit for cultivation. To the extent possible, the finances required by them will be made available through the Co-operative Banks. In respect of those who are not in a position to avail of co-operative finances for procedural reasons, the Government will provide necessary loan assistance directly. Twenty-five per cent of the cost of reclamation of the sandcast lands will be given as subsidy by the Government.

Most of the people who lost their houses are hut dwellers and will not be in a position to avail of co-operative finances for re-building their houses. The sum of Rs. 80 given to them as immediate cash grant in the wake of the floods will not be sufficient to enable them to re-build their houses and it will be necessary for the State Government to sanction loans not exceeding Rs. 250 to those who are in need of such assistance.

It will be necessary to make available fresh seeds to those who have lost their crops completely so as to enable them to raise a fresh short-term crop which will come to harvest before the middle of March 1973. Such seeds will have to be made available to them either free of cost or at subsidised rates.

Remission from land revenue and water cess, local cess and local cess surcharge has been ordered to be given in respect of the affected lands in all deserving cases.

The total amount required to implement relief measures and repairs is estimated at Rs. 200 crores.



"After all she is only on a visit to Mummudi Chalapuram now—shall I go and fetch her?" asked Rajendran, Challengingly.

Kundhavaiyar smiled as she arbitrated! "She would be here tomorrow and so you two could adjourn your argument!"

Rajendran protested, "Auntie, Father is accusing me of lack of ardour for Art, do you support that?"

"How could I?", said the aunt, "on many an occasion has it been brought to my attention that your wife Panchavan Madevi dances, as you sing the appropriate Lyrics."

The nephew flushed at Kundhavaiyar's good-humoured riposte.

#### DELINEATION OF DANCE SUPREME.

The Emperor brought the discussion back to the agenda. "Kandradhitta, let me not forget what I had wanted to say, on account of these digressions. All of you are aware of my fervent interest in the seven forms of Dance demonstrated by the Lord. We have to arrange for the dance-postures of the Lord to be carved on the inner lower tier of the ceiling of the temple we are constructing. The dance-delineating are 108 in number and so there must be as many distinct sculptures. Everyone of the sculptures should be an eloquent epitome of the life and energy of Art. Let us not bother about the expenditure on this account. A master-sculptor has to be selected straightaway. It is your primary and paramount duty,

10

Kandradhitta, to see to the fulfilment of this desire of mine", said Raja Rajan with intense feeling. Awed by his eagerness and concern to install the 108 sculptures, Kundhavaiyar and Rajendran could hardly contain their emotion.

After many such definite plans and ideas had been discussed, Kandradhittan assured them that he would get down to work straightaway and he took leave of them. The Emperor then summoned the Commander, one Krishnanan Raman alias Mummudi-Chola-Brahmarayan and allotted to him the work of constructing the outer precincts of the temple.

#### MONUMENT OF VICTORIOUS ART.

Both Kandradhittan and Brahmarayan set about their tasks with energy and enthusiasm since they were eager to conclude the work of constructing Raja Rajecharam within a period of four or five years. Competent sculptors from all over the country were brought in massive consignments so that the several construction-works may proceed steadily, the Emperor made out an edict donating 35 towns to the temple. Four hundred artists were settled in colonies to the north and south of the temple-site. These damsels were proficient in music and dancing. In addition were brought pipers, drummers and others who could play a variety of percussion instruments and stringed instruments, for service in the temple. Land to the extent of one

veli was settled on each of them. Recruitment was arranged for the posts of priests, clerks, garland-makers, lighters and watch and ward. Long before the construction of the temple was completed, the entire staff for the maintenance had been assembled and trained, and all the other requirements anticipated and provided for. Such was the solicitude of the Emperor.

In order to have a look at the monument of victorious art characteristic of the Chola Empire, innumerable tourists from all parts of the sub-continent gathered at Thanjavur day after day. The capital city of the Cholas sported a look of permanent festivity.

#### OLD LADY'S DEVOTION.

The visitors came and returned in waves and not a day passed without new-comers literally swarming Thanjavur to observe the grandeur of the construction in progress.

But there was one grey-haired and wizened old lady who used to turn up without fail at dusk every day. She would come herding a few sheep and stand at a particular spot to gaze with devotion at the Temple under construction. Only when darkness had fallen would she leave the place accompanied by her sheep.

Her tresses were grey but she had combed and tied them up neat. Her age would have been near about seventy but she needed no staff to lean on. It could be seen that she was used to hard work. As she gazed at Raja-Rajecharam slowly rising towards the sky, a radiance would come over her wrinkled

features. It could also be inferred that her eye-sight was keen, since even from quite a distance she could make out the details of the work of the sculptors and other artisans.

Having observed the regularity of her appearance and the zeal she evinced in the lofty task of Temple construction, some of the sculptors approached her one day and proceeded to make her acquaintance.

They gathered that she made a living by rearing sheep. Her name was Azhagi and she resided in a hamlet four miles from Thanjavur.

"Why so much enthusiasm at this age, grandma?", asked a youthful sculptor, somewhat provocatively.

The ripened fruit answered with a sign "This work of Emperor Raja Rajan would be pronouncing the name of Thanjavur for all generations to come. My only anxiety is, in what manner will I be able to contribute my share to this noble endeavour?"

Another sculptor asked rather slightly: "Thousands and crores in terms of gold and other articles are being poured in, to bring up this magnificent construction. How

could one like you who rears sheep, be of any help, grandma?"

This was more than the old lady could stand. But curbing her indignation she looked the irreverent sculptor straight in the eye. Oh, how penetrating was her vision! Unable to meet her gaze, the sculptor bowed and shuffled away, shame-faced.

For many days the struggle had been taking place in her mind. Her unquenched desire was to contribute her share to the historic work of Temple construction. But at this advanced age, what more arduous task she could engage herself in other than herding sheep? Could she transport rock to the masons raising the walls? Did she have adequate strength in her to fetch water in the pitcher, for the purpose of mixing earth? She was, however, determined that she should render whatever little help she could to the splendour and stature of Raja-Rajecharam that would scrape the very skies and announce for all time to come the valour and victories and the noble and sagacious deeds of Raja Rajan who had been described as the very Sun of the Chola Empire. What she could not immediately decide was the form of her possible assistance.

After a day or two of cogitation, she announced her decision to the sculptors engaged in the Temple-construction. That was, twenty of the sculptors should agree to

partake of the food that she would provide. Twenty sculptors would take turns being her guests since she was in no position to provide food for the entire lot. The sculptors who had by then understood her feelings as also her sincerity and the love and affection she had for the Chola Country acceded to her request. Very soon the sculptors started looking forward to the dinner at old Azhagi's residence. They did not fail to observe that the strength of her flock of sheep was being steadily attenuated. It was clear that only by selling the sheep was she able to find the means to provide food to the sculptors. Emperor's Gratitude.

The fact that her sheep-wealth was getting depleted did not seem to have caused her any concern whatsoever. When one day Rajendran had come to have a look at the Temple-construction, the sculptors told him about the old lady Azhagi and they spoke in very appreciative terms of her pure affection and duty-consciousness. The very next night a thousand sheep were left in front of her humble abode. Espying the flock at dawn, Azhagi almost danced in joy exclaiming "O, what a miracle the good Lord has performed for my sake!" That the "miracle" was material assistance extended by Rajendran was of course unknown to the simple woman. Rajendran sent for her and introduced her to his father.

(To be continued).





The Intensive Campaign in the District was held under the Chief Leadership of the District Collector. The District Family Planning, Maternity and Child Health Officer, with the help of the District Medical Officer, District Health Officer assisted the District Collector in conducting the campaign.

The Mass Education and Information Officers from other districts came on deputation, assisted him and made the publicity campaign a successful one. The District Public Relation Officers of the Government of Tamil Nadu and the Field Publicity Organisations of the Government of India extended their co-operation and assistance in this regard.

All traditional medias were fully utilised to educate the masses. To put it in a nutshell publicity was both extensive and intensive. Public Meetings, mike announcements, display of banners, and buttings, Radio and Press involvement, distribution of leaflets, booklets, etc., were fully planned and arranged.

#### Health Resorts :

In this campaign, most of the Health Resorts were put up in the Offices of the Panchayat Unions. The Panchayat Union Commissioners have shown great interest and done their best for the success of the campaign with the help of the Block Staff and the staff members of the Primary Health Centres.

#### No Religious Bar :

In almost all the districts it is found that the Muslims and Catholic Christians have undergone sterilization operations. Particularly some about 30 Muslim fathers from Thulukkappalayam village, Arkonam Panchayat Union, North Arcot District have undergone the operation, with the concurrence of their Haji Bhakshi Sahib. Further Haji Bhakshi Sahib himself has undergone the operation and accepted the "Small Family Norm".

| District.                   | Target. |
|-----------------------------|---------|
| Chingleput district ..      | 16,000  |
| Coimbatore district ..      | 18,000  |
| Tiruchirappalli district .. | 25,000  |
| Tirunelveli district ..     | 25,000  |
| Ramanathapuram district ..  | 15,000  |
| North Arcot district ..     | 21,000  |

Mr. Saminathar, a Roman Catholic, Vice-Chairman, Vayyampatti Panchayat Union in Tiruchirappalli District has shown great interest in motivating the eligible fathers for Vasectomy operation. On his motivation, 20 Roman Catholic Christians from Karungulam village underwent the operation. It shows that there is no religious bar for undergoing sterilization operation.

#### Great Achievement of the Coimbatore Municipality :

It has been the past experience that the performance of Corporation and Municipal areas was decidedly poor. But Coimbatore Municipality is an exception to that.

Thiru John Alexander, a Roman Catholic, Commissioner of the Coimbatore Municipality is a very devoted and dedicated worker in Family Planning and he bagged three or four prizes in places like Pudukottai, Thanjavur, etc., where he had been the Municipal Commissioner.

Following the Thanjavur pattern, he converted the Municipal Maternity Homes into Health Resorts where the operated persons were kept and almost all of them kept on beds and treated as V.I.Ps. With his work and the co-operation of the Coimbatore Municipal Chairman, Thiru A. A. Sukkoor and all others concerned, he has been able to do in this campaign period alone 3,125 sterilizations.

It is an unique example not only in our State, but also in India taken as a whole where a Municipal Commissioner has arranged for 3,125 Vasectomies in an urban area like Coimbatore.

#### Achievement :

The target for the six districts is 120,000 sterilization operations. During the intensive campaign period 127,367 operations were performed and thus exceeded the target. The break up for this is as detailed below:—

| Achievement. | Percentage. |
|--------------|-------------|
| 32,420       | 202.7       |
| 21,702       | 120.5       |
| 25,008       | 100.0       |
| 21,878       | 87.5        |
| 10,682       | 71.2        |
| 15,677       | 74.7        |
| 127,367      |             |

#### Visit of Assessment Teams.

One Maharashtra Team consisting of the Director of Health Services and Family Planning, Gujarat, Director (Planning), Family Planning Department, New Delhi, Deputy Secretary and some other statisticians headed by Thiru J. A. Ambasankar, Secretary to Government of Tamil Nadu visited the districts to assess the campaign and also the running of Primary Health Centres. The assessment team paid visits to Chingleput, Tiruchirappalli and Ramanathapuram districts.

Dr. M. D. Sharma, Assistant Commissioner (Family Planning), New Delhi, toured in Chingleput, Tiruchirappalli and Tirunelveli districts.

Both the teams have expressed complete satisfaction of the method, aseptic surgery, as well as the maintenance of the Health Resorts.

Now the Intensive Family Planning Campaign is being implemented in Thanjavur, South Arcot, Salem and Madurai districts. The total target for these four districts given by the Government of India is 83,000:—

|                         |        |
|-------------------------|--------|
| South Arcot district .. | 18,000 |
| Madurai district ..     | 20,000 |
| Salem district ..       | 15,000 |
| Thanjavur district ..   | 30,000 |
| Total ..                | 83,000 |

The service period is going on in South Arcot, Salem and Thanjavur districts preceded by a month's publicity in November 1972. Madurai district will be taking up the service period from the 1st February 1973 preceded by the publicity drive.

It is hoped that the target will be exceeded by the four districts and a minimum one lakh of operations is expected to be done by these four districts during the campaign period.

Give strength. Greater achievements will be expected in the years to come.

## COMPUTERISED EXAMINATION PROCESSING

1972—the Silver Jubilee year of our Independence marks an important milestone in the annals of Secondary School Education in Tamil Nadu. For the first time, an Indian made Computer I.B.M. 1401 was used to process the work relating to the S.S.L.C. examinations held in October 1972. This is of great significance to all concerned the authorities entrusted with the job of conducting the examinations, the students and their parents.

Why use a Computer for examination work? Because, with over 2 lakhs appearing for each examination, all steps have to be taken to publish results quickly avoiding all chances of human errors to crop in.

Very elaborate administrative preparations are required for each S.S.L.C. examination. These start several months before the actual examination dates. Careful attention has to be paid at every stage to ensure no one detail is missed. The work continues for weeks after the examination as well.

Of late, the work has assumed enormous proportions since the number of students appearing has been sharply going up year after year.

| Year.                | Number of students. | Number of centres. |
|----------------------|---------------------|--------------------|
| 1957 ..              | 59,267              | 412                |
| 1962 ..              | 73,320              | 480                |
| 1967 ..              | 1,87,699            | 982                |
| 1972 ..              | 2,08,463            | 1,130              |
| 1973 March (approx.) | 2,25,000            | — 1,200 (approx.)  |

This is the case in other States too. The number of students in one examination conducted by Patna Board was over 3 lakhs and by Allahabad Board 8 lakhs last year. However, the Examination Boards get the same time as in the years past to complete all the work.

The results should be announced as early as possible after the examinations to enable the students to apply for higher courses which have their own prefixed dates for applications. These serious limitations throw enormous strain on the administrative machinery.

#### THE BIG PROBLEM.

There are other problems too. The most disconcerting concern of the Examination Boards is to ensure complete secrecy till results are announced and to guard against malpractices. As the number of students goes up, so does the number of staff required to manage the increased workload. Ensuring secrecy and preventing malpractices become big problems.

S. V. CHITTIBABU,  
Director of School Education,  
and  
N. BALASUBRAMANIAN,  
Systems Engineer, I.B.M.

Further, as in banking, the examination work demands extreme accuracy. The results have a direct bearing on the students academic or professional career. Errors will, therefore, have serious consequences. The immense workload arising from the very large number of students and subject combinations and further aggravated by the short time available for completing the work, makes ensuring of accuracy a challenging job. A commission set up sometime back to study the examination work in a State said "accuracy (in manual processing) could be ensured only after fifth or sixth checking which is perhaps seldom done. Errors would cause incalculable harm to the candidates and bring the University into disrepute.....mechanisation alone is a solution to the problems. But if this is not to be

with all its attendant evils. This is where the computer comes in. Its inherent characteristics, viz. high speeds, accuracy and logical capabilities make it an ideal solution to the aforesaid problems.

Speed—Computers work at electronic speeds. the I.B.M. 1401 Computer used for processing the October 1972 S.S.L.C. examination work has an internal speed of 11.5 micro seconds (micro second million of a second). In other words, it can read approximately 87,000 characters in one second. The input-output devices attached to it are also very fast. It can write date on magnetic tapes and read back at the rate of 41,700 characters per second. Its printer can print 600 lines per minute. These high speeds help to tackle enormous work loads arising from the large number of students taking the S.S.L.C. examinations. They also absorb the ever increasing work load with very little extra effort. An increase from 2 to 3 lakhs of student population will break down the manual system but will result in only marginal increase in the processing time of the Computer.

The high speeds also solve peak load problems by finishing the work in record time and make it possible to meet the very tight schedules prescribed for the examination work. The students can have their mark lists and certificates soon after the results are declared to enable them to apply for higher course in time.

SECRECY: The computerised method ensures complete secrecy. The system design for processing is such that no one will be aware of the results until the final results of all the candidates are available and ready for despatch to the Press. The marks, soon after their receipt from examiners, are written by the Computer on to magnetic tapes. These tapes are used for all subsequent processing work. The information on tapes is accessible only to the Computer and invisible to the human eye. This automatically ensures secrecy.

The concept of "fictional roll numbers" adds a new dimension to ensuring secrecy. This process involves assigning fictional roll numbers to the candidates instead of their real roll numbers before the examination. This ensures that the

depressed classes in the past. Harijans have been at times given chances to become members of Trust Boards of Temples. But now, it has been ordered by the Government that one of the trustees must be a Harijan.

"Above all, our Government has hammered the very foundation of caste system by helping even Harijans to become priests. These revolutionary steps have been taken only by this Government and no one can forget this.

#### GOVERNMENT EMPLOYEES :

"The personal file-system was much disliked by the N.G.O's. and their desire to have it abolished was fulfilled by the Government. The personal file-system was abolished in keeping with Anna's promise to do so.

"The Government appointed the Second Pay Commission and duly implemented the recommendations of the Commission and raised pay at a cost of Rs. 21 crores. Again when it was brought to notice that there were some anomalies in pay scales, the Government came forward to incur Rs. 5 crores more to satisfy the employees.

#### FARMERS :

"The Government has allotted to Farmers as Short Term and Medium Term loans Rs. 57.34 crores during 1971-72 whereas the amount allotted was Rs. 31.45 in 1966-67. The Long term loan in 1971-72 has been raised to Rs. 25.42 crores from Rs. 2.93 crores in 1966-67. Such huge sums have been granted to farmers thanks to the sincere efforts of the Minister for Co-operation and we have won the support of the farmers. Though some politicians tried to misguide farmers and to rouse them against us, the farmers are aware of the assistance and other facilities extended by the Government. This is evident from the failure of some who attempted to instigate farmers against the Government.

#### EDUCATION :

"The allotment for education in 1966-67 was Rs. 44 crores whereas it has more than doubled itself to Rs. 99 crores in 1972-73. When the amount spent on Harijan Welfare Schools and Medical Colleges, is

also added the total allotment for education totals Rs. 133 crores.

"In 1966-67, there were 105 Private Colleges and in 1972-73 there are 176 Private Colleges. Government Colleges have increased to 49 in 1972-73 from 27 in 1966-67. Thus during the 5 years, 79 colleges have been opened providing college education to 2 lakhs students against barely 94,000 in 1966-67. The number of Elementary school pupils was 50 lakhs in 1966-67 and it has increased to 57 lakhs in 1971-72. The number of high schools rose to 15,400 in 1971-72 from around 13,400 in 1966-67.

"There were 3 evening Colleges in 1966-67 educating 520 students. In 1972-73 there are 32 evening Colleges and the number of evening college students has to-day increased to 9,000 from 520. Education has been made free upto P.U.C. These are all our achievements in the field of education.

#### SLUM CLEARANCE :

"The Slum Clearance Programme launched in Tamil Nadu is appreciated by other states and they want to follow us.

"The people who were once living in slums are now living in storeyed buildings. We feel elated when we see those slum-dwellers now living in mansions.

"Even if we were to see our Chola Kings in their royal robes we won't be so elated as we are while seeing the slum-dwellers live in mansions.

"Look at the elegant buildings constructed for the slum-dwellers at Ayodhyakuppam, Kotturpuram and Viyasarpadi. A seven-year plan has been evolved for implementing 63 schemes under the Chairmanship of Thiru Rama Arangannal and it has been proposed to construct 23,232 tenements. Of these, 4,590 have been completed. 7,897 are under construction and 10,745 are at initial stage. This scheme has been praised by Thiru Jeyaprakash Narayanan, many Chief Ministers and Ambassadors and many just-minded persons.

**Ponnappa Nadar :** Is it true that Prime Minister Indira Gandhi refused to participate in a Slum Clearance function.

**Chief Minister :** "She did not refuse to participate. There were many programmes for her and she could not find time to participate in this function. Only such minor things are made much of by some people when a noble scheme is implemented.

"To me all those who live in slums are Indiras. I regard the mothers who live in the slums as my mother. I regard the slum-dwellers as my brothers. I find solace in the fact that we are able to do at least this much for the poor. But, Thiru Ponnappa Nadar is worried about the persons who participate in the functions. Thiru Ponnappa Nadar must participate in such functions and see those poor people who are helped to live in the newly built mansions. The Slum Clearance work is in progress in the constituency of Dr. Hande and he must also participate in the inaugural function of the tenements there.

#### MASS-CONTACT PROGRAMME:

"The villagers had to go to Government Offices and wait at offices for meeting the officials. But we have changed the situation to-day. The mass-contact-programme was initiated at Ramnad district in 1967 and it has been launched throughout the State.

The officials go to villages on a particular day every month and they visit about 1,500 villages on a single day, receive petitions from people and seek to redress their grievances immediately. This Mass-Contact-Programme (Manuneethi Thittam) is effectively carried on throughout Tamil Nadu."

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## Intensive Family Planning Campaign in Tamil Nadu

The population of the State of Tamil Nadu according to 1971 Census is 41,103,125. This population accounts for 7.51 per cent of India's population. In 1951, the population amounted to 8.34 per cent of India's population, but in 1961 it amounted to only 7.67 per cent. Thus in the per centage of population to the total population of India, Tamil Nadu ranked 5th in 1951, 6th in 1961 and 7th in 1971.

Tamil Nadu did about 2 lakhs of sterilizations during the last Year's Intensive Family Planning Campaign period alone and in the rest of the normal period did about 45,000 operations. Totally, last year performance was 2 lakhs and 45 thousands.

During the last year campaign Thanjavur District put up health resorts and conducted the campaign in an organised manner. But all the districts were not adhering to the Thanjavur pattern, what we now call the "Welfare Package Model". It has been well appreciated every where in India that the Thanjavur pattern is the welfare model. According to this pattern, the vasectomised father was kept for six days in a Health Resort. The Health Resort was usually a School Building or a Kalyana Mandapam or in some places, even Government Hospitals where larger number of operations were taken. The people were operated aseptically and were kept in the Health Resorts for six days giving them nice and nutritious food and they were treated with drugs and injections so that complications of any sort were avoided. This was tried first in Thanjavur in May-June 1971. The performance was about 4,500, exceeding the target of 2,000. This was repeated in December 1971 and January 1972 with a target of 15,000 and the performance was 21,000. The people operated were all satisfied, and they themselves brought many cases during the same campaign period.

This year the Government of India have accepted the "Thanjavur Pattern" as a model in the field of Family Planning and they in appreciation of it, have given an award to Tamil Nadu. The award was given in Hyderabad Family Planning Council Meeting, recently held on 1st and 2nd of November, 1972. This year the campaign follows the Thanjavur pattern in every district where it has been

inaugurated. The expenditure per case under this pattern comes to nearly Rs. 110. The Government of India have come forward to give Rs. 100, for a case of vasectomy alone in the campaign period and the Government of Tamil Nadu gives Rs. 10 towards motivation fee. The break up for Rs. 110 is as follows :—

|                                                         | RS. |
|---------------------------------------------------------|-----|
| For Motivation                                          | 10  |
| For Vasectomised father.                                | 60  |
| For Drugs and Dressings.                                | 10  |
| For Diet, Publicity and arrangements of Health Resorts. | 30  |
|                                                         | 110 |

In the first instance this year, the campaign was started in six districts :—

- 1 Chingleput district.
- 2 North Arcot district.
- 3 Coimbatore district.
- 4 Tiruchirappalli district.
- 5 Ramanathapuram district.
- 6 Tirunelveli district.

The Government of India have fixed 1,20,000 operations as target for the above six districts. The actual service period was started in September 1972. At that time as it was raining everyday the campaign could not get momentum as expected. Subsequently it gained momentum. In five districts the campaign was conducted upto 15th November 1972. In North Arcot District alone the campaign was conducted upto 30th November 1972.

The targets for the districts and the dates on which the Service period of the campaign started are given against the districts concerned :—

| Districts.       | Target. | Date.           |
|------------------|---------|-----------------|
| Chingleput       | 16,000  | 16th Sep. 1972. |
| North Arcot.     | 25,000  | 1st Oct. 1972.  |
| Coimbatore       | 18,000  | 12th Sep. 1972. |
| Tiruchirappalli. | 25,000  | 15th Sep. 1972. |
| Ramanathapuram.  | 15,000  | 16th Sep. 1972. |
| Tirunelveli ..   | 25,000  | 16th Sep. 1972. |

"We are here only with the support of the people, and we are prepared to ever serve and work for the people who elected us with great confidence in us and we are for carrying out our duty to fulfil their desire".

Replying to the debate on the Confidence Motion, in the Tamil Nadu Legislative Assembly, Dr. Karunanidhi vowed to usher in a classless socialist society against all odds, tribulations and objections. The Chief Minister further said:

"This Confidence Motion has given adequate opportunity to the opposition to express its views on various problems and raise their objections and the Opposition Leaders Dr. Hande and Thiru Ponnappa Nadar have spoken for hours detailing their view points on many issues. The purpose of the Confidence Motion was nothing more than giving the opposition members enough time to vent their opinions and have open discussion on problems concerning the public. It is also an opportunity for the opposition parties to table their objections and accusations. I extend my gratitude and compliments to the 24 Members of the House who participated in the debate on the Confidence Motion. Though most of the expressions and opinions of the opposition parties were barbed attacks against this Ministry and were meant to hurt we have had the guts and forbearance to face and tolerate such expressions and accusations. Thiru Ponnappa Nadar said that this Motion was moved with some inner motive. I must tell him that there is no motive behind the motion and this Ministry is not at all afraid of any No-Confidence Motion against it. As a matter of fact this Confidence Motion was meant to give the opposition an occasion to voice what all they would have wished to express on a No-Confidence Motion.

"We must realise how the confidence in this Ministry can be tested and by what standard it can be tested.

# SOCIALISM AT ANY PRICE

—ASSERTS

The Chief Minister

The charges levelled here by the opposition have all along been raised on public platforms for the past two years. These charges were highlighted in journals also.

"The charges have already been refuted. But over and over again they are raised and nothing new is there in these charges. There is a convention as to what could be said and how it should be said in this House. When the charges are levelled before the House, we have never been so arrogant as to disregard those charges or the members who levelled them. Nor shall we ever be indifferent to any Member of this House. Whoever may be raising charges, we have been patiently listening to them. I assure the House again and again that we will continue to always respect the opposition as ever before.

## OUR ACHIEVEMENTS.

"The opposition must see what we have achieved in these five years. What is it that we have failed to do? Have we not fulfilled our election promises? Let us compare Tamil Nadu with all the other States in India. The difference in development before and after the present regime assumed office must be noted. Arignar Anna assumed office as Chief Minister and formed the Cabinet in 1967 and the present Ministry follows in his foot-steps. If we compare the development of Tamil Nadu with that of other States after the present regime assumed office, the progress under this regime can be distinctly noted.

"Let us see whether this Government has rendered benefits to the depressed people, the backward Classes, the poorer sections, the workers and peasants. What is the measure by which the merits and quality of a Government can be evaluated?

"Dr. Hande reminded us here that he would not think that the Government has the support of the people just because there is a strong majority in favour of the Government in the Assembly. He also said that Ninety out of a hundred or Nine out of every ten—of those outside the Assembly do not support the Ministry. Whether in Parliament or in the State Legislature, it is only by the number of the legislators that the strength of the Government is decided. But Dr. Hande does not approve of this standard and measure. He is himself a doctor and he knows that the intensity of fever is indicated only by a thermometer. The degree of support to this Government was indicated by the electoral thermometer in 1971.

Dr. Hande: "Your Thermometer is old now.

Chief Minister: "Whether our thermometer is old or new can be tested when Dr. Hande starts suffering from fever.

"Therefore, it can be decided whether this Government has support or not only by the support of the Legislature. Both in 1967 and 1971 people voted us to power and supported us. They made it clear that in 1971 they have greater confidence in us.

## FOR TAMIL AND BY THE TAMILS.

"We are here only with the support of the people, and we are prepared to ever serve and work for the people who elected us with great confidence in us and we are carrying on our duty to fulfil their desire.

In his reply to the debate on the Budget, Anna said that his Government would evolve and implement schemes based on the needs of the depressed the backward, the middle

and poorer classes of the society. He indicated that the Government, should be for Tamil and by the Tamils.

"Under Anna's regime Tamil Nadu came to have her own historical name and the 'Madras State' was christened 'Tamil Nadu'. The whole Legislature was elated with bliss on the day when Tamil Nadu was christened by Anna. And to-day Mysore State has followed Tamil Nadu and has assumed her own name 'Karnatakam'.

"The Anti-Hindi agitation has been going on since 1937 and it was under Anna's regime that a way was found to stop the agitation by passing the Two-language resolution to check the onslaught of Hindi. It must be remembered that these were done only under our regime. The self-respect marriages were accorded legal recognition under the present regime.

"Taxes on Dry Land and the Rain-fed Land were cancelled in our period and even the wet land upto five acres was exempted from taxation under this regime. Further, land upto one ground in the city was exempted from the Urban Land Taxation. We are proposing to grant more concessions regarding land in cities.

"It was this regime that reduced the land ceiling from 30 acres to 15 acres from 15th February 1970. The exemptions on sugarcane land, estates, grazing land and dairy farming were all cancelled by this Government. A ceiling on trust land also was fixed by us. The purchase of land for religious trusts have been legally forbidden since 1st March 1972.

"The crash programme for illumination of all villages is being zealously implemented with the co-operation of the Minister for Electricity and the Electricity Board. There are 61,393 villages all over Tamil Nadu. Of these only 20,250 villages had been electrified from 1933 to 1967 during a period of 34 years. But during a short period of 5 years 38,474 villages have been electrified. Only 3,847 villages remain to be electrified.

"The total number of Harijan colonies all over Tamil Nadu is 23,096. Till 1967 only 4,354 Harijan colonies were electrified. But

within a short term of 5 years 18,036 of these Harijan colonies have been electrified.

"The Beggar Rehabilitation scheme was undermined by many people. But when no other State has dreamt of such a noble scheme, it was Tamil Nadu that sought to implement the Beggar Rehabilitation. Beggary is an ignominy to society and it must be dealt with properly and should be done away with. This Government has not neglected even beggars. We have wholeheartedly devoted to this cause and Beggar Rehabilitation Centres have been opened at four places namely Peranur, Ulundurpet, Bargur and Pudukkottai. Similar Centres will be opened in Thanjavur, Salem, Dharmapuri, Madurai and Tirunelvely this year. About 5,000 leper-beggars will be rehabilitated in these centres. After arranging for the rehabilitating the leper-beggars, schemes will be launched for helping other beggars to earn and live decently.

"The Eye-Camp has been criticised much as a scheme launched for publicity. This programme must be more publicised because many needy people remain unaware of the facilities afforded under the eye-camp programme. According to the statistics collected by the Health Minister Prof. Anbazhagan, there are 10 lakhs of blind people most of whom are older. With the purpose of helping one lakh of these people this year, the eye-camp was launched and 26 camps have been conducted so far.

"I am glad that the opposition leader has at least recognised the necessity of these camps. In these camps 1,22,555 persons were treated as outpatients and 19,697 had the operations done and were given spectacles after the operation. Public contributions for this scheme have so far totalled Rs. 50 lakhs and Rs. 11 lakhs has been spent.

"Though this fund was collected from my birth-day the fund has not been deposited in my name. This fund is kept in the Government's account.

"In order to employ in useful service the frustrated unemployed young graduates, the Government formed the youth corps in Tamil Nadu. Under this programme

2,729 men-graduates and 258 women-graduates have been employed to render social services. They impart adult education and propagate scientific and hygienic knowledge among the villagers and render practical help to the peasants.

"Similarly the Prosperity Brigade initiated by Anna has been rendering commendable services.

## Uplift of Harijans and Backward Classes—

"We are much interested in uplifting the depressed Harijans. The allotment made for Harijan Welfare during 1966-67 was Rs. 3.5 crores whereas the amount allotted in 1972 is Rs. 8.5 crores. There are some who ask what we have done for Harijans and they also say that Harijans have been disappointed. They might have attempted to accuse me of helping the Backward Classes because of my belonging to the Backward Classes. But nobody can have such doubts and none can accuse me so now. As pointed out by Thiru Balasundaram here, my family has come to have matrimonial alliance with Harijans.

"For the Backward Classes, the Government allotted only Rs. one crore in 1967. In 1972 the allotment has been raised to Rs. 4.5 crores. A separate Department has been set up under an individual Minister for the Backward Classes. Recently, I and the Backward Class Minister Thiru Rajaram were welcomed and complimented by the Backward Class people in Salem. In accordance with the recommendations of the Backward Class Commission about 15 communities have been included in the list of Backward Classes. In 1967 there were 12 hostels for Backward Classes, but to-day there are 145 hostels for Backward Classes. Within a period of five years 134 hostels have been opened for Backward Classes by the present Government. Regarding the allotment in appointment the percentage for Harijans has been increased from 16 to 18 per cent and for the Backward classes it has been raised from 25 to 31 per cent.

"What great revolutionary change has been effected in the sphere can be realised only in reference to the previous state of



valuation. From this point onwards all processing is done using the fictitious roll numbers only till the very last stage. At this point, the fictitious roll numbers are translated back into real roll numbers and the results prepared. This is a good method to ensure secrecy and guard against malpractices.

#### Accuracy :

The Computer assures accuracy to an extent not possible by other methods. Its in-built electronic circuits eliminate errors in processing. Further, all along the processing, checks are incorporated to ensure maximum accuracy. Many innovations are added to the procedures to eliminate errors. For example roll numbers are generated by the Computer itself. The addition of a check-digit (which is mathematically derived from the positional values of the numbers which form the roll numbers) to the roll numbers helps to detect transcription errors. The input data can be subjected to exhaustive screening to verify the validity of roll numbers, detect duplicate roll numbers, check valid subject combinations, etc. Such kind of thorough checking is possible only by using the high speeds and logical ability of the Computer.

#### Prevention of Malpractices :

In as much as data are stored on magnetic tapes and these tapes can be processed only by the Computer there can be no room for malpractices. Also important statements like mark lists and certificates are printed on pre-printed forms with proof-printing in the background (as in cheques). The total marks obtained are printed both in figures and words. The Computer printing cannot be imitated easily. In all these ways the possibility of malpractices is eliminated.

#### Help to administration :

The Computer is used to screen application data for errors and discrepancies, assign roll numbers and prepare the nominal roll which is a statement by the school or centre as the case may be—giving the complete information in the application like the candidate's name, roll number, date of birth and subjects offered for examination. It prepares a statement giving the total number of candidates for each centre for each subject and for each medium. This is very useful for organising the distribution of the correct number of question papers to the examination centres.

All these relieve the administration from the dull monotonous chores that have been casting heavy strain on it and enable it to concentrate on more important areas like ensuring proper valuation of answer sheets, etc. Additionally, a variety of statistical reports are obtained by analysing the examination data. These reports are got along with the results, provide valuable information to the examination board and help to progressively improve the standards of examination work. Traditional methods cannot provide such analytical reports in so short a time. It is for these reasons a number of S.S.L.C. examination Boards and Universities have resorted to computerised examination processing. The S.S.L.C. Examination Board in Tamil Nadu has only made a beginning with the October 1972 examination for which 30,000 students appeared. About 2,50,000 candidates are expected to appear for the examination in March 1973. In the years to come it is proposed to extend the use of the Computer in this vital application area to derive the maximum advantage to the administration and enable it in turn to provide improved quality of service to the students.

The Madras Government Museum is the largest and oldest of the State Museums in India. Since the time of its inception in 1851, it had steadily developed and expanded under the able guidance and supervision of a succession of devoted directors. Beginning as a Museum of Practical Geology, its scope was soon extended to cover other fields such as Archaeology, Ethnology, Prehistory and Natural History. Its first officer-in-charge was Surgeon Edward Green Balfour who launched an intensive collection campaign in order to build up the collections in the various sections of the Museum.

With the merger of the Pudukkottai State into the Madras State, the Pudukkottai Museum also became administratively annexed to the Madras Government Museum, and this may well prove to be a starting point for the establishment of a network of regional museums all over the State.

In 1951, the Museum celebrated its centenary, having completed hundred years of fruitful service to the public as a pioneer educational institution in the State. The Centenary celebrations were inaugurated by the Prime Minister, Pandit Nehru, on November 27, 1951. The National Art Gallery was also organized and thrown open to the public on the occasion.

The Madras Museum is a large multi-purpose museum covering a wide range of subjects and is organized into the following sections: Art and Archaeology, Anthropology, Numismatics, Zoology, Botany and Geology. In addition to these there is a well-equipped Chemical Laboratory for the conservation of Museum objects and a Children's Section and an Educational Service Section. Each of these sections is in-charge of qualified Curator who is a specialist in his own field. These sections contain extensive collection illustrating mostly the past history, culture and natural history of South India. Some of these exhibits are displayed in the public galleries, but a large part of the collections is kept in reserve for study and reference purposes in accordance with modern museum practice.

## THE MADRAS GOVERNMENT MUSEUM

## AN INTRODUCTION TO THE TAMIL ARASU SUPPLEMENT

By  
S. T. SATYAMURTI,  
Director of Museums,  
Tamil Nadu.

#### Research and publications.

Research has always been a dominant feature of the activities of this Museum. The results of the researches carried on in the various sections have been published from time to time, notably in the Bulletins of the Madras Government Museum, which have raised the prestige of the institution considerably in the eyes of foreign scholars and have brought in several foreign periodicals by way of exchange. The Museum has to its credit a commendable series of Bulletins both on Natural History and Archaeology. Most of these publications are valuable monographs and serve as standard reference works on the respective subjects. Apart from these

scholarly monographs, several popular Guide books and Handbooks have also been brought out recently. The Museum also issues a Half-yearly Newsletter outlining its latest additions and programmes of educational activities.

#### Reorganization and Development of the Museum.

In recent years, with the increased tempo of the museum movement in India, vast schemes of modernization and expansion of the Madras Museum were taken up for execution, thanks to the generous financial assistance received from the Government of India during the past four years. Several galleries have been modernized by the installation of up-to-date built-in show cases and dioramas with concealed internal fluorescent lighting, and construction of three major extensions to the Museum buildings was completed, namely, the Bronze Gallery, the Natural History wing and an extension to the Chemical Conservation Laboratory. The opening of these new extensions by His Excellency Shri Bishnuram Medhi, Governor of Madras, in September 1963, is a memorable landmark in the history of this Museum. More recently, a new gallery of Buddhist antiquities and a Philatelic gallery containing a collection of more than 43,000 stamps from all countries of the world were organized and thrown open to the public.

#### General information on Facilities, etc.

The Museum and the National Art Gallery are open from 7 a.m. to 5 p.m. on every day of the week except Friday and any other day appointed by authority. Admission to all parts of the Museum and the Art Gallery is free.

Free guide service is available at the entrance to the Museum, the Bronze Gallery and the Art Gallery at certain specified hours (10 a.m., 12 noon, 2 p.m. and 4 p.m.) for those who are interested in availing themselves of such facility. Parties of students are specially invited to take advantage of this facility.

Scholars, research workers and parties of visitors are permitted to take photographs and sketches of objects inside the Museum on

| TAMIL NADU GOVERNMENT<br>S. S. L. C. PUBLIC EXAMINATION, OCTOBER 1972 |                       |             |     |               |                          |        |             |         |                       |                     |        |        |          |          |
|-----------------------------------------------------------------------|-----------------------|-------------|-----|---------------|--------------------------|--------|-------------|---------|-----------------------|---------------------|--------|--------|----------|----------|
| NOMINAL ROLL-ACADEMIC COURSE                                          |                       |             |     |               | TYPE OF CANDIDATES       |        |             |         |                       |                     |        |        |          |          |
| CENTRE No. AND NAME                                                   |                       |             |     |               | SCHOOL No. AND NAME      |        |             |         |                       |                     |        |        |          |          |
| KALAY                                                                 |                       |             |     |               | 0001 GOVT H.S. THUCKALAY |        |             |         |                       |                     |        |        |          |          |
| BOOK NUMBER                                                           | NAME OF CANDIDATE     | NATIONALITY | SEX | DATE OF BIRTH | PART A                   | PART B | MATHEMATICS | SCIENCE | HISTORY AND GEOGRAPHY | ELECTIVES SECTION I | SCHOOL | CENTRE | DISTRICT | PAGE NO. |
| (2)                                                                   | (3)                   | (4)         | (5) | (6)           | (7)                      | (8)    | (9)         | (10)    | (11)                  | (12)                | (13)   | (14)   | (15)     | (16)     |
| 090561U                                                               | SALEEM M              |             | I   | 01.12.53      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          | 12       |
| 044083U                                                               | REFSU RAMA            |             | I   | 06.02.53      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          |          |
| 090560U                                                               | ROY JOSE POOVATIL     |             | I   | 31.03.56      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          |          |
| 044091U                                                               | VENUGOPALAN S         |             | I   | 06.03.53      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          |          |
| 0021890                                                               | RAMACHANDRANAS P      |             | I   | 03.03.56      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          |          |
| 95868J                                                                | YAKOVE V              |             | I   | 20.04.41      | M                        | E      | M           | M       | M                     | 11 M                |        |        |          |          |
| 0039060                                                               | N.SREEKUMARAN NAIR    |             | SC  | 04.04.91      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 044291U                                                               | KARTHIAYINI AMMA.D.   |             | I   | 25.03.56      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083717W                                                               | S.SULOCHANA           |             | I   | 20.05.55      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083836W                                                               | N.PADMAJA AMMA        |             | I   | 22.05.55      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083711W                                                               | C.C.SARANMA           |             | I   | 10.08.54      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 040314V                                                               | NIRMALAKUMARI S       |             | RC  | 28.05.54      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083603W                                                               | K.BHASKARA PILLAI     |             | I   | 17.05.51      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083753W                                                               | P.NOHANAKUMAR         |             | I   | 21.05.53      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083754W                                                               | D. SUBANANDA DAS NANY |             | I   | 29.01.51      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 003755W                                                               | V.KRISHNANKUTTI       |             | SC  | 29.04.51      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |
| 083611W                                                               | SUDHARSANAN           |             | I   | 08.03.55      | M                        | E      | M           | M       | M                     | 12 M                |        |        |          |          |



Madras Museum caters to scholars and lay public in equal measure.

previous permission of the Director of Museums in the prescribed form under certain conditions. The form with the conditions is available at the Museum Office.

The publications, photographs and picture post cards of the Museum are available for sale at the sales counter at the entrance to the Museum.

The Museum is equipped with a microfilming unit and prepares and supplies microfilm copies of manuscripts, documents and publi-

cations to scholars, research workers and institutions at rates approved by the Government.

The Museum is also equipped with an auditorium, called the Museum Theatre, with a seating capacity of about 530 persons and a spacious stage suitable for concerts and dramatic performances. The Theatre is primarily intended for educational lectures and for cultural programmes organised under the auspices of the Government. When not thus required,

it may be used for educational purposes, including amateur theatrical performances at rates and on conditions approved by the Government.

The Centenary Exhibition Hall in the Museum is used frequently for temporary exhibitions and lectures and is let out to cultural institutions, art societies, etc., for their meetings, annual functions and for exhibitions on payment of a nominal fee subject to the rules and regulations approved by the Government.

The history of India, unlike the histories of several western countries, has got to be pieced together from the remains of her material culture. It is interesting to observe that such remains of material culture of the past, abound in India. The materials for this study are chiefly those displayed in the archaeological section of the Government Museum, Madras.

The antiquities which reveal the story of the life of the ancient people are broadly classified into (a) inscriptions (b) sculptures, (c) architecture (d) paintings and (e) coins. Of these, coins are dealt with in the chapter on Numismatics. Amongst these groups of antiquities the most important, from the point of view of chronology and other aspects of social life, is that of inscriptions.

The Madras Museum can claim, with justifiable pride, to be the only Museum in the whole of India to possess a unique collection of inscriptions on stone and copper plates. Other stone inscriptions are those that have come down from Amaravathi Bhattiprolu and other places and the metal inscriptions are in the form

## ARCHAEOLOGY SECTION DISPLAYS REMAINS OF MATERIAL CULTURE OF INDIA

By

P. R. SRINIVASAN, M.A.

of grants etc., written on copper-plates. These belong to various periods and localities. The inscriptions engraved on the sculptures from Amaravathi and the Bhattiprolu stones inscriptions are displayed in the Buddhist Sculpture gallery.

The stone inscriptions of later periods belonging to the Cholas, the Pandyas, the Kalingas, etc., are displayed in the archaeological shed behind the Chemical laboratory. A select group of these is displayed in the epigraphical bays in the right wing of the mezzanine floor of the New Extension. This gallery of epigraphs also contains plaster of Paris casts of a few representative specimens of writings on copper-plates. The originals of copper charters numbering over 400, are however, kept in safe custody.

Specimens representing culture, etc., are displayed in the various galleries of the archaeological section. They have to be seen in the following order.

To the right side of the turnstile is the flight of steps leading upstairs.



At the head of the stairs is the passage where plaster casts of coins are shown. The hall adjacent to this is devoted to the antiquities from Harappa and Mohenjodaro (see chapter on Anthropology for details regarding the culture of Harappa). At the end of the passage on the wall opposite the wall show cases containing records of the British East India Company is a showcase where a representative collection of terracotta figurines belong to period such as the pre-Mauryan, Mauryan, Sunga, Kushan and Gupta. Of these the specimens of terracottas belonging to pre-Mauryan times are of interest because, as has been mentioned above, very few antiquities belonging to periods earlier than the Mauryan

period have been met with and the figurines, though fragmentary in nature, show clearly the high watermark of development of the artistic activities of the people of those times. Noteworthy features of these figurines are the head-dress and the jewellery. Their modelling is also no doubt excellent. During the Gupta period the figurines came to be produced from moulds.

Beyond this passage, there are five bays on the left wing of the magazine floor. Here in each bay are displayed specimens of sculpture and architectural pieces belonging to important periods of the early history of North India.

Though the Museum is primarily a show room for antiquities belonging to South India in particular history of Indian Culture is one and indivisible and as the early periods of South Indian history are not represented by any tangible antiquities a few antiquities or a casts of very important antiquities of early periods of North Indian history are shown here so as to give the visitor a proper perspective of Indian culture. A study of these, coupled with the study of the protohistoric cultures of Mohenjodaro and Harappa will help a visitor to the Museum a more or less complete and panoramic vista of the cultural and social activities of the people of ancient India. In each bay, the actual specimens are supplemented by photographic enlargements of a few other very important landmarks of the respective periods.

The very first bay here is devoted to the Maurya and Sunga periods. The huge figure representing a chauri-bearer is a good specimen of Mauryan sculpture in the round.

The next bay is devoted to the specimens of sculpture belonging to the period from 0 to 300 A.D. They are of the indigenous school as was practised at Mathura. Here the figures of salabhanjikas and the heads of the Buddha are noteworthy.

In contrast to the above technique employed by the above school, is that of the school of Gandhara specimens of which are displayed next bay. Though the themes are entirely Buddhist, the manner of depiction has been western. This school was manned by artists and sculptors steeped in the traditions of the art of Greco-Roman schools.

In the next bay are shown specimens of sculptures of North India belonging the Gupta period. It lasted from the early 4th century A.D. to about 600 A.D. This period is acclaimed as the Golden age owing to the remarkable cultural efflorescence of the times.

In the opposite wing of the mezzanine floor, the first bay is devoted to sculptures of the Pala and Sena schools. Among them the dancing Ganesa and the Vishnu are noteworthy. The next four days are devoted to showing the evolution of the scripts of South India illustrated by a chart, a few original inscriptions on stone, plaster casts of a few copper-plate inscriptions and a cast

of the Asokan inscription from Jangada. The scripts, the evolution of which are traced here are Nagari, Grantha-Tamil, Canarese, Telugu and Brahmi.

Descending through the staircase at the end of this wing the visitor will find on the ground floor in the passage the turnstile a series of photographic enlargements of temples of South India arranged in chronological order so as to illustrate the evolution of the architecture of South Indian temples.

The visitor will now enter the main hall of the New Extension where monumental sculptures of South India are shown on either side arranged in a chronological order. On the left side are shown sculptures belonging to the various periods of the history of Tamil Nadu. On the right side are sculptures belonging to various periods of the history of the Andhra-Karnataka region.

In the first bay on left side are displayed sculptures belonging to the Pallava period, i.e., from 600 A.D. to 850 A.D. Here are a magnificent Vishnu, a Ganesa with four hands, a bas-relief composition and a beautiful horned Dvarapalaka. These are characterised by powerfully moulded bodies, naturalistic features and sparseness of ornamentation. The Vishnu figure exemplifies all these characteristics in a remarkable manner.

The Pallavas were succeeded by the Cholas about the middle of the 9th century A.D. and the latter were supremely powerful for over four centuries. The Chola period is therefore divided into two parts, early and later. During the early Chola period arts and literature reached the height of their development while in the later Chola period, the traditions of the earlier period were continued with but slight changes. Specimens of sculpture of the early Chola period are shown in the next bay. Among them the most noteworthy are the superb shanmukha (unfortunately badly mutilated), the Ardhanarisvara from Tiruchchinnampundi, the Dakshinamurti from Cholamaligai and the group of Tripurantaka and Tripurasundari from Kodumbalur which is dated to about the middle of the 10th century A.D. and Virabhadra from Tiruchchengattangudi. The sculptures of this period are noted for their idealisation of human form and refinement of the decorative details. Conse-



quently, the sculptures of this period are finer and the portrait sculptures are depicted in a variety of beautiful postures.

The sculptures of the later Chola period which ended about 1300 A.D. are shown in the next bay. As has been said above, these are distinguished by slight stylisation and elaboration of decorative details. The sculpture showing Ranganatha with Sridevi and Bhudevi is a typical example of this period. The refinement and classicism of the earlier period may be found to be continued in the sculpture of Bhikohatana.

After the Cholas, the whole of South India came under the rule of the emperors of Vijayanagar (Hampi). They were reputed for their devotion

and so were engaged in building new temples and in adding lofty gopuras to such sacred temples as the Nataraja temple of Chidambaram and the Arunachalesvara temple of Tiruvannamalai. The new temples built by them are to be found at Hampi itself. Though these kings lavished their wealth on building such magnificent edifices as mandapas and gopuras, the sculptors and artists of their period worked in their own way probably caring more for composition than for artistic excellence, with the result the sculptures of this period attained momental proportions and possessed vigour and excessive embellishments only. The sculptures shown in the Vijayanagar bay bear out these remarks clearly. It is evident in the Bhikohatana and the seated Vishnu figures-



An interesting piece of sculpture in this bay is the bas-relief showing the emblem of the Vijayanagar dynasty. The Vijayanagar period ended about 1600 A. D.

The next bay is devoted to sculptures of the modern period i.e. the period after 1600 A. D. These sculptures are perfect in so far as their iconography is concerned. But in other respects they are very poor specimens of the art.

There are a few interesting specimens of sculpture belonging to the early Chalukyan period (6th to 9th century A. D.) The huge two-handed Ganesa shown here is from Bezvada as also the two huge dvapalakas and two elephants shown on either side of the flight of steps at the other end of the New Extension. Though these are monumental in size, their exquisite workmanship is apparent in every one of their limbs. This is clearly seen not only in the dvapalakas but also in the Ganesa, all of which are intended to be seen from a distance. An interesting sculpture of eight handed Sarasvati in dancing posture finds a place here.

In the next bay sculptures belonging to the period from about 850 A. D. to 1100 A. D. when the Nolambas were powerful in and around Bellary and Anantapur districts are shown. Among these the Vinadhara Dakshinamurti, the Umasahitamurtis and the Natesa are splendid ones.

In next bay are exhibited beautiful specimens of sculpture belonging to the Hoysala-Kakatiya period. The intricately but beautifully worked gateway (about 11th century A. D.), the badly mutilated figure of a goddess within the gateway, the Kubera of the early Hoysala period and the Saptamatrika sculpture are noteworthy here.

In the next bay specimens of sculpture of the Vijayanagar period from the Hampi and other places in the Andhra-Karnataka region are displayed. Here the elephant, the sage and the reliefs occurring on the parts of temple basements are interesting for their realistic character.

Beyond this is the Hindu Sculpture Gallery where Hindu sculptures

of various periods and localities are shown. Besides, a series of architectural pieces are also shown here and these are arranged so as to illustrate the evolution of motifs such as corbel, kudu and base of a temple through the ages. The sculptures are displayed on either portion of the platform in which the architectural parts are kept. The portion immediately adjoining the Memorial Sculpture Gallery contains specimens of Hindu sculpture of the TAMILIAN schools while the corresponding portion on the opposite side contains sculptures of the Andhra-Karnataka schools.

**Buddhist Sculpture Gallery.**—Adjoining the Hindu Sculpture Gallery, is the Buddhist Sculpture Gallery. It houses some of the earliest specimens of the art of sculpture, architecture and writing. These include a part of the world famous sculptures from Amaravati, a few sculptures from Jaggayyapeta some of which are most probably the earliest existing sculptures of South India dating from about 200 B. C., and a few stray pieces from places like Ghantasala. Almost the whole collection of early sculptures comes from Andhradesa. Nevertheless, a few huge sculptures in stone belonging to late medieval periods of Tamilnad are also displayed here. Most remarkable amongst the exhibits of this gallery are the three-stone relic caskets from Bhattiprolu.

The next group of antiquities exhibited in this gallery are from Jaggayyapeta. It consists mostly of sculptures of Buddhism. They are next in importance only to the Bhattiprolu relics. The two world famous sculptures among them are the one which represents Chakravarti Mandhata and the other which represents an oblong shrine (Punyasala) with a wagon shaped roof. The remaining items in this gallery are the sculptures from Amaravati. They belonged to a Buddhist stupa of the place.

In view of the fact that monument was neither a work of a single period, nor of a single hand, the sculptures show naturally variations in their workmanship. On stylistic grounds, the sculptures are divided into four groups. The first group of sculptures belong to the period up to about 100 B. C. They are only few in number. Amongst them may be mentioned the Man and Boy, the Sri on lotus on a coping stone and

the bas-relief sculptures carved on a short pillar. The characteristics of these early sculptures are akin to those of the sculptures from Bharhut. This is evident especially in the head dresses, ornaments, clothing and in the modelling of the figures, which is archaic.

The second group of sculptures belong to the period from 100 B. C. to 100 A. D. They include large slabs having representations of stupa-worship, Buddha-worship and Bodhi tree worship. Several of them are also inscribed. The characters of these inscriptions give us an idea about the date of the sculptures.

The sculptures belonging to the third group are by far the largest in number. Most of them are parts of the huge railing put up during the middle of the 2nd century A. D. It is said that Nagarjuna Acharya, the great Madhyarnika teacher, was responsible for this. It is in these sculptures that one can see the perfection of the art of sculpture of ancient South India.

The fourth group of sculptures belong to the first half of the 3rd century A. D. They include casing slabs with miniature stupas carved on them, friezes showing Buddhas and stupas, a pair of standing Buddhas and friezes with sculptures in miniature size showing scenes from the life of the Buddha and jataka stories.

In a corner is seen a huge standing Buddha made of granite. It is larger than life-size and has very strong features. Its modelling is very powerful. It may be assigned to the 7th century A. D. It was found in the Sri Kamakshi Amman temple of Kanchipuram. Its provenance and date suggest that during those early periods Buddhism was very strong at Kanchipuram.

There are also a couple of big stone Buddhas in this gallery. One of them comes from Kuram and the other from a village in the Tanjore district. They are late figures and so comparatively of little artistic merit. The plaster cast of the famous Buddha from Mathura has recently been added to this gallery.

The cream of the museum's collections, viz., The South Indian bronzes are exhibited in the newly opened Bronze Gallery. The collection of bronzes of South India of

this Museum is justly famous all over the world. About 400 specimens of them are on show. Another 600 specimens of the art are kept in reserve collection. Rarely do we find such a large collection of metal figures under a single roof. They are important not only quantitatively but also qualitatively. They are divided into categories on the sectarian basis, namely Saivite and Vaishnavite. Each group of bronzes are displayed in separate rows and are arranged according to iconography. Amongst the bronzes of the Saivite group the most famous are the Natarajas. Similarly the most interesting amongst the Vaishnavite images representing Rama, Sita, Lakshmana and Hanuman and Vishnu with Sridevi and Bhudevi. Recently an excellent Ardhanarisvara bronze was received as a treasure trove find from Tiruvenkadu village. Shiyali taluk, Tanjore district (Fig. 23). This is an elegant bronze and its interest is all the more great, for it bears inscriptional reference in the temple. It is stated that the image was set up by Tipayana Uttama Chola, during the period of Rajadhiraja I (1047 A.D.). Another graceful figure of Chandeshvara (Fig. 24) was also unearthed at the same village and also exhibited in the same gallery.

Besides these Hindu bronzes, a very important collection of Buddhist and Jain bronzes is also on show in this gallery. The Buddhist bronzes come from two places, namely Amaravathi and Nagapattinam. The bronzes from Amaravathi are only four in number but their date is 5th-6th Century A.D. Hence until now these bronzes from Amaravathi are the earliest examples of the art of India. Coming as they do from a famous Buddhist site, they also represent Buddha. Of these the large standing Buddha is noteworthy.

The last but not the least important among the items of bronzes to be noticed here are the Jain bronzes. Four of them are on show. They represent Tirthankaras like Adinatha and Mahavira. They may be assigned to the 11th-12th Centuries A.D. They come from the Bellary District. Unlike the Venugopala bronzes from Chimakurti, these Jain Tirthankaras are classical in style.

Apart from those on show, as has been said above, a large collection of bronzes is kept in reserve. They include images of all the three religions. Among Hindu bronzes in the reserve collection mention may be made of the Ayudha-purushas representing Kaumodaki and Sudharsana, the gada and chakra respectively of Vishnu, and the group of Triupurantaka and Triupurasundari acquired recently. The Jain images of the reserve collection include an early Chola Tirthankara figure from Sivaganga in the Pandyan territory and a group of Mahavira, Ambika Yaskhi and another Mahavira all of later Chola date acquired from Sigani-kuppam village in the South Arcot District. The big Mahavira of this group is the largest one of its kind acquired so far. The bronze Ambika of this group is similar in all respects to a Parvati of later Chola period but with this difference, namely in the crown of this figure there is a seated Jina figure and the Yaskhi is attended by a maid holding a garland of flowers of exquisite finish and a male baby who resembles in every respect the Skanda of Somaskanda groups. The modelling of the ornaments and the bhanga of the Ambika are charmingly exquisite.

In the gallery of minor arts in the nearby front building a great majority of exhibits are articles of metalware. While the potter's products were popular with the masses, their imitations in metal began to be made by sthapatis for use in temples as well as in the houses of the well-to-do. No doubt the earthenware pots and pans had their own artistic embellishments. But the decorative designs with which the articles of metalware came to be beautified surpassed both in beauty and in variety those met with in pottery. Even the very shapes of the different items of an independent category of articles are artistic.

Thus among lamps there are a number of groups such as hand lamps, standing lamps, hanging lamps and Dipalakshmis or women lamp-bearers. In each one of these groups distinct and independent types are observed. The Dipalakshmis are specially made by wealthy people for donating to temples. In the temples of Tamil nad one will come across them frequently. Among the standing lamps the most popular are the

hamsa and the kinnari lamps. A special variety of standing lamp called in Tamil *kilai vilakku* (Dipavriksha in Sanskrit) with a number of branches from which hang down rows of lamps is an important item usually met with in temples. In large temples like the Madurai temple such lamps of huge dimensions may be found. In the collection of this Museum there are two such specimens, which are called wedding lamps.

The other categories of metalware articles are the trays including the Tanjore trays which have bas-reliefs in copper and silver on their inner side, utensils employed in the workshop of a temple of South India, the articles of daily use like the *chellapetti* combs, collyrium box, chunam box, nut cutters and so on; toys, bellmetal utensils in everyday use in a South Indian home and models of household utensils of the well-to-do people of Malabar.

A collection of Bidriware articles are also on show in this gallery, besides a representative collection of utensils used by Mohammedans of South India. The Bidriware articles are beautiful in their form and the designs on them.

At one end of the gallery are displayed a collection of Buddhist bronzes and utensils from Nepal and Tibet. The most interesting among them are the images of Lanka and Tara and the Simla. A noteworthy feature of these articles is that they are made by the hollow-cast method, and they are gilt. The sculptures of Nepal and Tibet are characterised by atibhanga, slenderness and excessive embellishments. These features are readily observed in the specimens in the Museum collection.

A small collection of specimens illustrating lacquer work is also on display in this gallery. They include a number of card-board discs with designs and figures done in lacquer, a few fans and a few containers. Besides, these, two sets of ivory playing cards with designs done on them in lacquer are also exhibited here. These arts may be said to have disappeared for want of patronage.

Among other groups of articles in the gallery the two sets of porcelainware and the collection of glazed pottery deserve mention.

mention. The specimens of glazed pottery have been obtained from Karigiri where this kind of ceramic industry is flourishing to this day.

In the passage between the metal-ware gallery and the flight of steps are displayed two or three groups of wood carvings of temple cars. They may all belong to the last century. As usual each carving represents a deity of the Hindu pantheon. Besides these groups of carvings, a few stray carvings also find a place here. Among these are the Ravana from Ramanathapuram District and the pillars bearing at their bases beautiful carvings of women. A very old wooden pillar from Mudibidri in South Kanara District is also exhibited. It is a very interesting specimen of a pillar because it shows the vase and foliage capital and has small panels containing bas-relief representing Seshasayain Vishnu, etc. These remind one of pillars occurring in the

caves of the Western Deccan, and it may therefore be said that this Mudibidri pillar is a distant echo of those cave pillars. Another set of four long friezes with several panels of carvings in them are displayed on the walls flanking the flight of steps. These were got from a temple at Quilon. The panels depict a continuous series of scenes from the Ramayana.

The most impressive of the collection of wood works are the two doorways displayed one on the first landing place of each of the two flights of steps. They are replicas of Mysore palace doorways and were purchased from the exhibition held in Delhi during the 1911 coronation. A large number of wood carvings are kept in reserve collection including an elegant Subramanya (Fig. 34).

Apart from these articles on show, a good number of interesting

items under each category are kept in reserve. Among them the richest are the wood carvings which include a rare collection of twenty large carvings dating from the end of the 18th century A.D. got from the sixth temple at Kalaiyarkovil in the Ramanathapuram District.

Thus the archaeological collections of this Museum are rich both in quantity and in quality and the nation in general and the Madras State in particular can take pride in being heir to such a remarkable legacy of art treasures and valuable antiquities. Owing to the richness and the variety of these unique collections, the world of Indologists make it a point to get their doubts regarding any aspect of South Indian art and culture cleared by referring the matter to the authorities of the Museum and it is the avowed policy of the latter to help the scholars as far as possible.

# GEOLOGY GALLERY OF MADRAS MUSEUM

The Geology galleries of Madras Museum consist of (a) General Geology, (b) Rocks, (c) Minerals (d) Economics Geology and (e) Fossils.

As soon as a visitor enters the Geology galleries, he has the unique privilege of facing the celestial bodies. These bodies instead of remaining celestial, have come down to the earth as a result of the latter's force of gravity, only to be collected as heaven stones or meteorites. A plaster cast model or replica (the original having been destroyed in analysis by the Geological Survey of India) of the meteorite that fell at Valudavur during a war year (1942) is an interesting object.

A couple of oil-paintings at the farthest end portray a comet as seen from the earth at dawn and a lunar landscape (with earth as seen from the moon). Through these means the lay visitor given in vivid colours some ideas of other worlds and (natural) satellites.

A little to the left, is the General Geology series. It includes also all illustrations pertaining to the structure of the earth, its architectural details, etc. Thus we have a photograph of the earth from 100 miles up and a plaster model to show the internal structure of the earth.

A small model, prepared to scale, of the contour levels of the Madras City and its immediate neighbourhood reveals the location, at higher levels, of the different lakes that supply drinking water to the City. The architects of the earth's surface, that are referred to in these galleries are water plants, animals, wind, weather, and underground disturbances. The influence of these architects is mainly measured by the changes that take place on the earth, and the exhibits accordingly illustrate only these changes as far as practicable. For instance, they consist of valley developments, faults and folds, earth-

quakes and volcanoes (illustrated by photographs and charts). Some of the interesting exhibits besides the photographs and charts are a water-cut tunnel, diatomaceous earth, exfoliating rock, Vesuvian lava, etc.

The rocks and minerals are arranged in two different ways, one with the object of showing their places in systematic studies and classification and the other with the object of bringing out their importance in practical and industrial applications.

The minerals are arranged according to their chemical composition which is the basis for their classification.

The practical and industrial applications of the rocks and minerals constitute Economic Geology, to which a large space

By  
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in the Geology galleries has been provided. This gallery is very popular with, and much appreciated by, many a visitor, since the other exhibits call for some academic interest to understand them better.

A good many building stones are on display. Among them the stones used in the construction of the Maharaja's Palace at Mysore, and the marble used in the sculpture of the Fort Church, Madras, deserve special mention.

## The Precious Stones.

The group of precious and semi-precious stones, cut and uncut, is one of the most attractive groups in the Geology galleries. Their special interest lies not only in their rarity but also in the fact that they display a remarkable combination of such rare qualities as

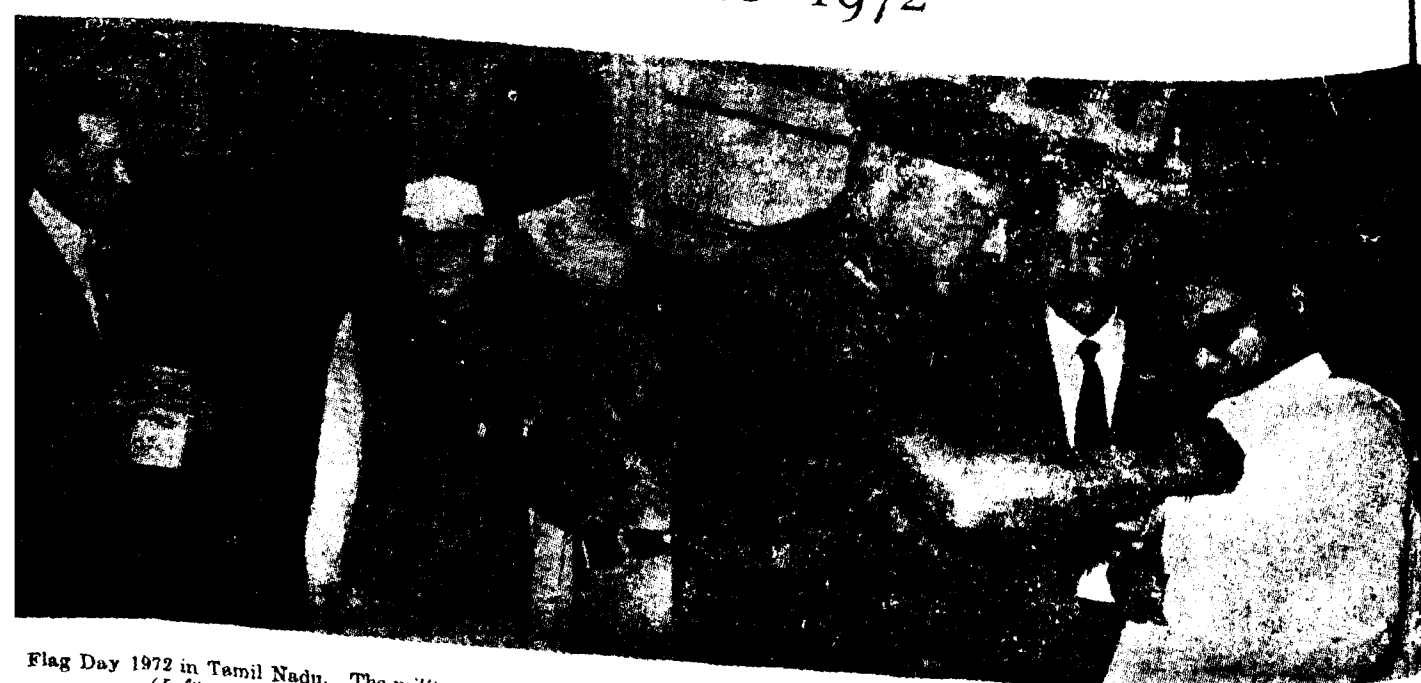
beautiful form and gorgeous colour, dependable harness and durable strength, attractive lustre and high refractive index.

The exhibits relating to the manufacture of glass-ware, are both attractive and interesting. They comprise of the materials and photographs that are connected with the making of (1) block glasses, (2) Glass beads, (3) Belan bangles, (4) Tarapore bangles and (5) bottles. Chimneys and scientific apparatuses. There are sixteen block glasses, each of a different colour. The making of glass beads is illustrated stage by stage, commencing with bead rods and brass wires, and ending up with necklaces. Of them all the special block glass beads which are less than half the size of mustard, and which are provided with holes for stringing, evoke eloquent admiration from Indians and foreign visitors alike. They go to show to what perfection and fineness human hands can work, and have remained even in these days, a challenge to the machines.

The making of Belan bangles from spirally-coiled glass rods, and of Tarapore bangles from twisted glass rods, is explained in detail. Actual samples and photographs depict the making of bottles. Chimneys, and scientific apparatuses, as well as the stages in the manufacture of lenses from pebbles of rock-crystal.

Raw-materials for making saltpetre and sulphuric acid, abrasives and pigments, building cement and refractories, forta small interesting units in the galleries. Among the refractories, is the vermiculite, a bomb-proof and heat-proof mineral substance that has been reported to be available in plenty in Tamil Nadu in recent years. Fire-clay and the refractory products derived from it are given adequate representation, since they are indispensable in all industries wherein heat-treatment, be it high or low, electrical or mechanical, is involved. To this may be added another small group

## FLAG DAY 1972



Flag Day 1972 in Tamil Nadu. The military official pinning the flag on the upper wearing of Thiru K. K. Shah, Governor of Tamil Nadu (Left) and Dr. M. Karunanidhi, Chief Minister (Right) Thiru Oza, Secretary, Home dept. is also in the picture.

of minerals that can be used directly or indirectly, as fertilizers. Included in this group but exhibited separately are two large crystals of rock-salt from the Salt Ranges. They are interesting for their size and crystal-line form. Each of them is a five inch cube, and while one is white, the other is flesh-coloured.

#### GOLD EXTRACTION.

The exhibits illustrating the extraction of gold also attract the masses. They consist of ore samples and materials used in the extraction of gold and a flow-sheet of the whole process. The principal element attracting the masses, is the presence of visible gold on some of the ores.

Minerals with radio active elements are of no small interest, because of the ever-so-many uses to which the radio-activity of the

elements concerned, is put. The exhibits under this head, include a chart of disintegration of Uranium (prepared in the Museum) Sarmarskite from Andhra State, Monazite from Kerala State, Thorianite from Ceylon, and Torbernite, Autunite, Euxenite and Carnotites from the United States of America.

The lignite industry of South Arcot district is comprehensively represented. The exhibits consist not only of lignite samples and briquets, but also of a few other materials relating to some of the subsidiary industries that could be started at the site (e.g.) spotteries refractories, etc.,

The Fluorescence Box in the Geology galleries, illustrates the phenomenon of fluorescence by minerals when they are exposed to

ultra-violet rays. The ultra-violet light which is invisible is obtained from a special bulb fitted into the Box. By the side of this bulb, is an ordinary incandescent bulb. The two bulbs can be connected to the mains by a common switch but not simultaneously, i.e., when one light is on the other light is switched off. A set of minerals, all of about the same colour, are so placed in the Box as to be seen only through a projecting window which shuts out the bulbs from view. The minerals used are Quartz, Argonite, Calcite and Fluorspar. They all appear to be white in colour under the ordinary incandescent light which they reflect. When the ultra-violet light is switched on (and the ordinary incandescent light is automatically switched Off) the mineral as absorb energy from the ultra-violet rays and re-emit the same in the form of visible colour from mineral to mineral depending upon the optical characteristics of the mineral concerned. This phenomenon known as fluorescence, is of extensive application in medical treatment and Criminology.

#### FOSSIL SECTION.

The fossil series open with an introduction to the different geological periods, and then lead on to the remains of past life (fossils) that existed in those periods. They include samples of beds of a few important geological strata (of which the flexible sandstone is of popular interest). The fossils are arranged in the order of their stratigraphical sequence and mostly belong to the animal kingdom, especially the invertebrates. Some plant fossils from the Gondwanas are also there. Among the animal fossils the model of an extinct reptile, Brontosaurus is rather a thought-provoking exhibit.

All duplicates, triplicates, etc., and those materials which for some reason or other, are not exhibited in the public galleries, are separately stored as reserve collections. They are accessible to scholars and research-workers and to those who are directly interested in the subject. A special mention may be made here of a vast collection of Cretaceous fossils hailing from Thiruchirappalli District, ores of radio-active elements, and double-refraction calcite.



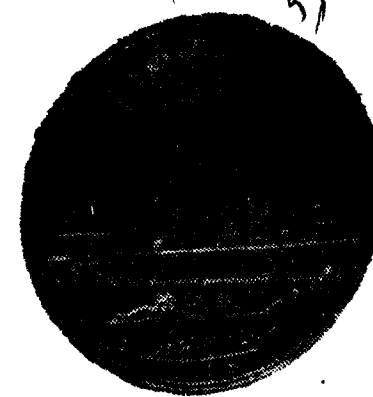
The coin cabinet of the Madras Government Museum has a rich collection of coins representing many important dynasties of India and also foreign coins such as Roman, Byzantine, Venetian, Chinese, Indo-Dutch, Indo-Danish, Caliphate, etc. The North India coins collection was enriched by generous donations received from the Royal Asiatic Society of Bengal and its Bombay branch. In the year 1892, the Museum received the collection of South Indian coins belonging to T. M. Scout of Madura. Others who were responsible in augmenting the collection were Dr. Hultzsch and Dr. Henderson.

Coins are one of the important sources for the study of History and Archaeology. The Puranas or punch marked coins are the earliest coins in India. The Madras Government Museum has in its collection over three thousand punch marked coins. The main source for building up the collection are the treasure trove coins. Treasure trove hoards of these silver punch marked coins came from all parts of South India. Notice of discovery of punch marked coins in the South dates back to 1803. It is only in the year 1894 that the Madras Museum received its first punch marked coins from Bhimlipatan in Vizagapatnam. The most interesting find, however, was a hoard of 1,138 silver coins found in Bodinaickanur in Madurai District.

The Indi-Batrican Greek coin series in our collection amount to about a hundred. A major portion of the series in our collection were found in excavation at Taxila and presented to us in 1940 by the Director-General of Archaeology.

"The Madras Museum has a rich collection of coins and it has in its collection over three thousand punch marked coins."

## THE NUMISMATIC SECTION OF MADRAS MUSEUM

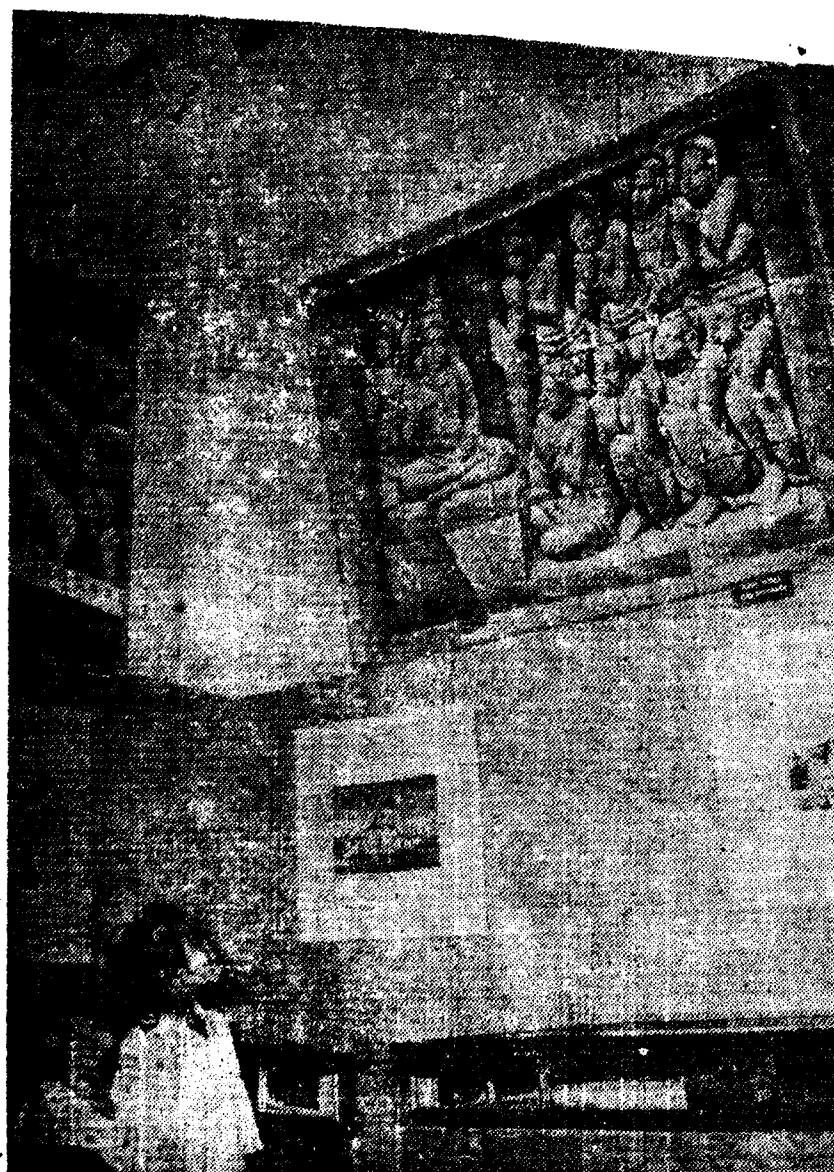


The Kushan coins in the collection number about one hundred and seventy. The collection has a few gold dinars of Vasudeva and Hurishka and copper coins of Kanishka, Kadphises I and Huvishka. The Kushana copper coins of our cabinet were received from the Government of Uttar Pradesh.

The Gupta coins in our collection are fifteen and they include the coins of Samudra Gupta, Chandragupta II and Kumaragupta. We have the coins issued by Rajput dynasties to be flourished between 8 and 12th centuries A. D. and these number is about fifty. The coinages of only the Rathor of Kanauj chautians of Ajaner and those of Narwar are represented in it. In our collections we have over 1,000 coins of the Khiljis, the Tughluqs, the Saygids and sodis and the surd representing the coinage of the period from 12th to 16th century A. D. We have with us the coins of Shershah, Sikandar Lodi, Firoz Jughlaq, etc.

The Mughal coins in our cabinet are the best in the whole series of medieval North Indian series. The three thousand Mughal coins in the Museum represent the coins issued by almost all the Mughal rulers from Humayun to Shah Alam II. The gold, silver and copper coins of Emperor Aurangazeb numbering 884 in all, amount to one-third of the entire Mughal coins collection and the number of the coins of other Mughal emperors are as follows: Mohammed Shah 539, Jahangir 129 and Shahjahan 300. The Mughal coin collection was received from various sources on the North on distribution of grants basis.

BY  
N. SANKARANARAYANA,  
Curator,  
Numismatic Section





### The Mughal Coins.

One unique feature of our coin collection is that it includes not only the Mughal rupees and motars but also the pagodas and the paramis issued in the name of some later Mughal emperors, Ahmed Shah, Mohammed Shah, Alangir II and Shah Alam II. We have also in our collection Din-in-illahi mohurs issued by Aulla to propagate his divine faith and also the famous zodiacal mohurs issued by Jahangir, we have only two zodiacal mohurs. We have also a few coins of the pales, vardhanams including Harshavardhans, Indosessanjan, Kakaharntas, Wister satraps and tribes like kunindas and yandhayas.

The Madras Government Museum has a remarkable collection of South Indian coins representing almost all the types. The collection includes the coins of Eastern and Western

Chalukyas, the Cholas, the Pandyas the Vijayanagar, the Satavahanas, etc. More than six thousand Andhra lead and potin coins are in the collection of the Museum and a large number of them are of a similar type with an elephant on one side and ujjain symbol on the other, without any legend on them and worn out. We have a fairly good collection of Chola gold coins which number about 300 and they represent the coins of Raja Raja, Kulottunga, Yuddhamalla and Chola narayan. We have also in our collection hundred and sixteen silver coins of the Cholas, which include the coins of Raja Raja, Rajendra and Uttama Chola. The Madras Government Museum coins cabinet has a good collection of the coins of the Pandyas. The Vijayanagar coins in our coin cabinet represent almost all the important Vijayanagar rulers. Among them there are about 300 gold coins representing Harihars Raja I, Bukkau, Hari Hara II,

Deveraya, Krishnadeva Raya, Achyuta Raya, Sadasive Raya, etc. Apart from these gold coins we have a good collection of copper coins of Vijayanagar dynasty.

The two Mysore sultans, Haidar Ali and Tipu Sultan, during their short reign of thirty-eight years, issued a large variety of coins. The Museum has the best collection of these two sultans, part of the copper collection acquired by purchases in 1904-1905 from Udipi in South Canara. The gold coins were found as treasure trove hoard. Haider Ali issued pagodas and panams with figures of Uma-mahesvara on one side following the pattern of the coinage of the conquered. We have also fortyfour copper coins of the Sethupatis. The most significant addition to our collection of South Indian coins was the acquisition of 143 lead coins from Andipatti village, Chengum taluk, North Arcot district. In the centre of the obverse

## Collection of Roman Coins Establishment Beyond doubt our hoary contacts with Europe

of all the coins is a symbol which in shape resembles an aukusa to the right of which are two lines. Small circles are found above the upper and below the lower lines. These symbol are surrounded by thirteen letters in Tamil Brahmi script.

These coins are dated to 2nd or 3rd century A.D. on the basis of the paleography of the script. These coins are of great important in the study of South Indian History.

There was active contact between South India and a few foreign countries. We have literary references to this in our ancient literature. This evidence is corroborated by the discovery of a large number of coins in South India. The collection of Roman coins with us is a remarkable one and one of the best in the whole of India built up entirely through treasure trove hoards in South India, found mainly in and around the

Coimbatore district, clearly indicating the commercial intercourse between Rome and Ancient India. We have in our collection of Roman coins, the coins of Cludian, Nero, Domitian, Augustus, etc. The coin cabinet of the Government Museum has in its collection coins of other countries such as Venetian, Chinese, Indo-Dutch, Indo-Danish, Indo-French, etc.

Apart from this rich collection of coins, the Numismatic section has also about 500 medals. Among them, some are commemorative medals and some one decoration medals. Madras Exhibition medals, Calcutta Agricultural show (1864), Inauguration of Indian Railway (1860), Inauguration of Benaras College, First Industrial Exhibition for the Central Provinces, Nagpur (1865), to mention a few commemorative medals. Crimean war (1855), Burma war (1889-92), Victoria cross

for valour, Napoleonic war, to mention a few, are decoration medals-

A few important historical documents are preserved in the section. Mention may be made of a few such historical documents—the charter granted to the United English company (1758 A.D.) Treaty between the company and the Nawab of Arcot (dated 31st July 1801), charter creating Bishopric of Madras (dated 30th June 1835), Treaty between Tipu Sultan and company (dated 11th March 1894) and the letter from Robert Clive to Hard Palk (dated 7th May 1766).

The Madras Government Museum has the unique distinction of having first Philately section in any Museum in India. There is a separate gallery where these stamps are on display. There are about 45,000 stamps in the collection of the Government Museum representing the stamps of many countries.

"The Madras Museum laboratory has got the world's biggest Electrolytic Plant for the electrolytic restoration of the largest bronzes in the world".



## THE CHEMICAL CONSER- VATION SECTION IN MADRAS MUSEUM

As the collections in the Museum, which was founded in 1851, grew to be rich, varied and valuable, the need for taking care of them properly was increasing by leaps and bounds. This was especially so in the case of the South India bronzes of which this Museum has the best collections. As Madras is on the sea coast, the problem of preserving the precious bronzes in the moist and saline atmosphere of the City has become an arduous task. In 1929, this was referred to the Archaeological Survey of India by the Museum authorities who wanted to employ a chemist. On the advice of the Archaeological Chemist in India, one of his assistants, Thiru Ram Singh Ahuja was appointed for a short period of six months to take up the preservation of Bronzes.

For the care and conservation of the vast collections in the Museum the necessity of having a conservation laboratory was soon felt. It was started in the year 1930 in a separate small building with three rooms. It owes its existence to the forethought and vision of Dr. F.S. Gravely, then Superintendent of the Museum. It is the first and foremost Museum in our country to have its own laboratory and that too installed in a separate building. Professor Erlam Smith of the Presidency College, who had made special

study on conservation in Europe and America was the advisor to this conservation laboratory. As the volume of the work, increased, a permanent laboratory building was put up with six rooms in 1937. An additional two storeyed block was constructed and opened in September 1963 by His Excellency Thiru Bishnuram Medhi, the then Governor of Madras as the work of the laboratory came to be extended in scope.

The laboratory has got the world's biggest Electrolytic Plant for the electrolytic restoration of the largest bronzes in the world. Work of this kind was formerly confined

BY  
S. THANGAVELU

to very small bronzes in America. Hence a new technique was developed and a suitable electrolytic plant planned in this laboratory and installed.

Sir Richard Gregory, F.R.S., Editor of 'Nature' visited the laboratory in 1932. He highly commended the work and the research done in the laboratory. Again the

Museums Commission, headed by Thiru S. T. Markham and Thiru H. Hargreaves that visited the Museum in 1935, eulogised the scientific work done in the laboratory.

The laboratory has extended its work to include pre-historic iron and pottery, Amaravathi and other stone sculptures, bones, paintings, various kinds of metals and alloys (Bronze images coins of various metals and alloys, copper plates, etc.), leather objects textiles, wood carvings, etc. There is no material which has not been tackled by this laboratory.

#### Scientific Equipments.

The laboratory has, besides, regular analytical equipment, an electrolytic restoration plant, a portable X-ray unit, Ultra violet and infra-red lamps, a vacuum impregnation tank, a fumigation chamber, a stereomicroscope, a research microscope, a Thermo-hygrograph, a muffle furnace, 'Sico' metal hot air oven with bimetallic thermoregulator, a single pan analytical balance, a special stand for the examination of paintings, a kilburns-Manesty electrically operated water still, a philips conductivity measuring bridge, a kilburns laboratory stirrer and a carl zeiss spectrophotometer. Thus the laboratory is equipped not only for conservation work but also for research.

#### Laboratory Space.

The working area of the old building is 102 sq. m. (1,100 sq. ft.) and the new building is 140 sq. m. (1,510 sq. ft.) each, ground floor and the first floor. The electrolytic restoration plant has been installed in the old building. There is a separate room for cleaning and washing purposes. One room in the old building is used as a park room where X-ray and photographic work are being done. In the new building analytical work, scientific examination, repair work and picture restoration are being done. In separate room between the two buildings houses is the Gas plant which supplies gas to all laboratory benches. An overhead tank which is constructed at the roof of the first floor, supplied water to the laboratory.

#### The Library.

Attached to laboratory is a library where up-to-date technical books, magazines and periodicals are kept for reference. The library is always being augmented with the latest publications on the subject.

#### Works in the Laboratory.

The objects in the Museum belong to four categories according to their nature (1) Organic materials, (2) Inorganic material, (3) Siliceous material, (4) Paintings. The common agents responsible for deterioration of museum materials are :

- (a) Atmospheric gases and impurities.
- (b) Humidity and temperature.
- (c) Bacteria, moulds and fungi.
- (d) Insects and birds.
- (e) Soluble salts.
- (f) Light.

In order to preserve an object, firstly the nature of the material of which it is made, the extent and nature of decay it has undergone and the processes it can safely be subjected to are to be studied through scientific examination with the aid of chemical knowledge, microscope, ultra violet, infra-red and X-ray equipments. Then the causes of deterioration of the material are to be investigated. It is only after such investigations proper methods of preservation are devised. Experience and manipulative skill are necessary for successful preservation. In the treatment of objects hasty methods should be avoided. Otherwise the antique character of the object will be lost. The choice of a method and the time taken for treatment depends upon the physical and chemical condition of the specimen.

The treatment that should be given differs from material to material and from object to object. For instance, what may be a suitable process for copper may be quite unsuited for iron; the methods use to restore leather will be inadequate for ivory; what is more, the methods also vary for the same material, say iron. What is safe for a piece of iron with a well preserved core of metal will be unsafe for another iron object which is heavily mineralized.

Other activities.

Popular lectures are delivered and special exhibitions are arranged by the Curator for the benefit of the public and students periodically. The Laboratory is imparting training on conservation for those who join the Museum Technique course and for persons who are deputed from other institutions. This Museum is one of the few institutions in our country where the half yearly inspection of the condition of the exhibits is being done by the Curator and the Curators of the sections concerned with the presence of Director of the Assistant Director and the Educational Officer. Every year the Curator is called up on to lecture to the students of Archaeology of the Madras University leading to the M.A. Degree.

The Government Museum became a registered member of the International Institute for conservation of historic and artistic work on 9th of February 1961.

#### Research and publication :

Research work has been a feature of the work in this Laboratory. Original findings made in this Laboratory have been published in "Proceedings of the Indian Academy of Sciences", "Nature", "The Journal of the Madras University", "Technical Studies", "Current Science", "Transaction of the Archaeological Society of South India", "Journal of the Indian Society of Oriental Art" and "Studies in Museology". Popular articles on conservation have been published in "Times of India", "Tamil Arasu", etc.

#### Conclusion.

Thus the laboratory of this Museum is engaged actively in conserving the rich cultural patrimony of our country.

## A TREASURE HOUSE OF ALL ARTS

The art of both secular and religious paintings is well known in Southern India long before the Christian era. Tolkappiam, the earliest Tamil literature, refers to the art of painting them in vogue. Sangam literatures which are assigned to the early centuries of the Christian era throw much light on the nature of art and its influence on the social life of the people. The ceilings of temples were decorated with paintings depicting scenes from mythology. The bed chambers, courtyards and other halls of the kings, and their retinue were beautifully decorated. Since perishable materials were utilised for construction of temple and halls nothing of this period has survived.

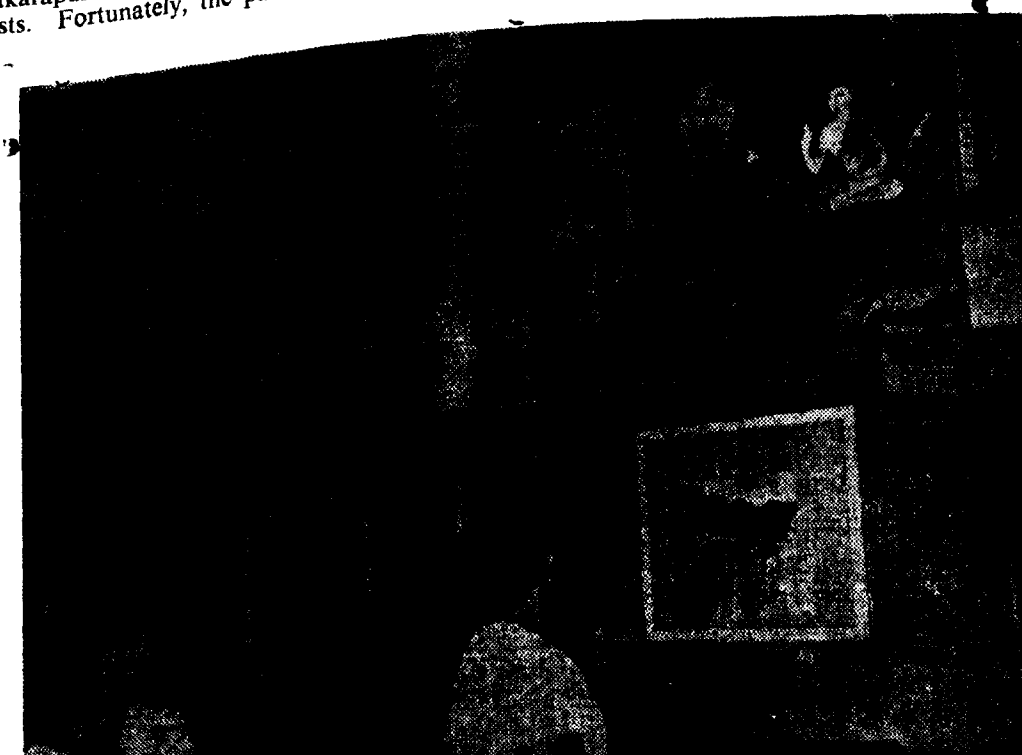
With the advent of the Pallava rule in South India paintings of comparatively permanent nature were executed on the ceilings of rock cut caves. Mahendravarman Pallava who ruled from Kanchi about 600 A.D. was a great connoisseur of art and was called "Chitrakarapuli" the tiger amongst the artists. Fortunately, the paintings at Sittannavasal executed at his command are left intact to speak to the future generation the gaiety and splendour of art during this period. His successors continued the patronage and fragmentary paintings are still available in some of the temples.

The great Cholas who ruled the South after Pallavas rivalled the Guptas of the North in patronizing

By  
R. NAGASWAMY, M.A.

art and literature. The rhythmic and graceful paintings of Tanjore Brahadeeswara Temple built by the great Raja Raja Chola is the best example of this period. The Vijayanagar kings who conquered the South in about 1350 A.D. and their successors, the Nayaks, followed the footsteps of their predecessors with the result that large scale wall paintings continued to be the fancy up to the beginning of the 18th Century. Paintings representing various periods, in the development of South Indian art, were copied from temples and are now exhibited in the picture gallery. We have no knowledge of the existence of miniature paintings as that of Rajasthani or Mughal, though it is not quite improbable that some kind of illustrations to manuscripts might have been in vogue. There undoubtedly existed a traditional school of painters who prepared the ground on wooden support with gesso and executed paintings by embedding gold stippings and colour pigments. It is not uncommon amongst this school to make use of pearls, precious stones, games, etc., for such purposes. This tradition has continued to exist up to the last quarter of 19th Century and has recorded a steady decline since then. The 18th Century paintings of this school are exhibited in the left side panels of the main hall, virtually marking the beginning of various schools exhibited in the gallery.

During the iconoclastic rule of Aurangazib, the painters of the Mohal school had to seek asylum in Deccan for their livelihood. Some of the artists migrated to Andhradesa, while some were appointed at the court of Tanjore. The Maratha Kings called Rajas held sway over Tanjore about 100



years from the middle of the 18th Century and due to the patronage of these rulers the Tanjore school of art was ushered in. But the Tanjore school had a different setting and the characteristic of the traditional and Rajput schools were met and debased by influences from outside India. The former impersonality of the figures was lost. Like the Mughal school, the Tanjore school became almost completely human with Rajas and Ranis dressed up as for a photograph and turned their eyes towards the spectators. Devotion and imagination were reduced to next to nothing. Yet in both the Andhradesa and Tamil schools the oriental love of elaboration in costume and environment remained. This school is represented after the traditional school of paintings on left side panels of the main hall.

**Rajput Paintings.**—The miniature paintings produced at the court of the Rajput kings from a distinct group and they were contemporary with the miniatures produced in the Mughal court at Delhi. From the middle of the 16th century to the end of the 18th, an extraordinary activity of the school produced an immense number of paintings whose complete total is still a matter of conjecture. Of these by far the largest majority are small of size. The chief quality of the Rajasthani paintings is their idealistic representation of the emotional aspects of the Indians. The figures of human beings and those of animals and birds are also idealistic. The themes are varied and sentiments of love and devotion are mingled with an exuberant joy in life, the common subject-matter being the Krishna legends. The most important class of the Rajasthani miniatures is the series of Ragamalas or paintings of the musical models. The best examples are those of the 17th century. The paintings, like the poems which they illustrate, represent situations of which the emotional colouring corresponds to the feeling or burden of the musical mode. These are exhibited in the sloping central cases, beginning from the 17th century Ragini paintings.

**Kangra School.**—Between the late 18th century and early 19th century, the whole Kangra valley and adjacent Punjab plains were filled with very sensitive and highly emotional band of artists who were

responsible for the ushering in of the Kangra school of paintings. The Krishna subject predominates in this school. Their chief feature is their expressive line in which they may be regarded as distant descendants of the Ajanta frescoes nine centuries earlier.

**Mughal school.**—The Mughal emperors were enlightened patrons of art and they encouraged the art of painting. Akbar and some of his successors are said to have learnt the art themselves and invited master artists to their courts for illustrating many a masterpiece of Sanskrit and Persian literature. Among these illustrated works are the Hamsa Nama, Ramayana, the Akbar Nama and other works. During its earlier phases, Persian influence was predominant while at later times it yielded steadily to indigenous influence. Religious and metaphysical ideas which were predominant in Rajput paintings did not enter into Mughal paintings which confined itself to visible and tangible things not thought of or imagined. Its chief subject contribution to art is its gallery of contemporary portraits, small and in water colour of the Mughal emperors and their eminent contemporaries. These were painted realistically without the atmosphere of symbolism though with a conventional departure from the normal in the halo round the head of royalty and the artificial arrangement of the feet. These find their place on the other side of the sloping cases.

**Deccani School.**—The deccani paintings are an off-shoot of the Mughal school, which flourished during the 17th and 18th centuries under the patronage of local rulers of the Deccan states of Golconda and Bijapur. Portraits, Ragamalas and book illustration formed the subject of this school as was also large scale paintings on canvas. Two specimens of paintings on canvas are included in the exhibits. Representative paintings of this school are exhibited at the right side corner panel of the main hall.

**Paintings of Ravi Varma and allied School.**—The extreme of foreign influence in the development of Indian paintings was reached with the advent of Raja Ravi Varma when he won the British Governor's prize in 1873. Though he copied the western technique, Ravi Varma choose for his subjects, themes

from Indian mythology. Because of his westernisation, he was not popular with the revivalists of Bengal. His competently drawn illustrations of legends reached wide public and fixed at least a minimal limit of technical adequacy for this type of production. His son, Rama Varma, and a host of others carry on the Ravi Varma traditions. Amongst his paintings exhibited here, Sakuntala and the Miser speak of his elegance.

**Modern paintings.**—A revivalist school of paintings was started in Calcutta by E. B. Havell and Abanindranath Tagore who wanted to bring back to life the lost traditions of ancient Indian paintings. The prominent artists of this school are Nandalal Bose, Roy Chowdhury, Haldar and others. The works of these artists are characterised by a striving after the perfection of draughtsmanship and suggestion of spiritual significance unlike the ultra realistic delineation of subjects in western paintings. Further great stress is laid on traditional technique and the choice of subjects from India life.

The revivalist school of Bengal is represented here by D. P. Roy Chowdhury, Sarada Charan Ukil, Abdul Rahman Chaghtai, Promode Kumar Chatterjee and others. These are exhibited in the right side panels of the main hall.

The Madras school of arts has been able to discover a number of promising artists whose works are considered to be of a very high quality. Amongst these artists are K. C. S. Paniker, K. Srinivasulu, P. L. N. Murthy, S. Dhanapal and others. The modern trend amongst some of these artists is towards impressionism, a judicious selection from nature and a sketch improvisation rather than imitation. The near view that emphasised form is replaced by the distant view of objects seen out of door under the influence of light and atmosphere. Outlines are replaced by opposing patches of light and darkness. At the rear hall of the gallery, are exhibited the paintings of this school.

Recently yet another group of artists sought to revive the art traditions of rural India. The most important artists of this school is Jamini Roy Calcutta. Two of his paintings find a place amongst the exhibits.

# THE NATIONAL ART GALLERY

V. N. SRINIVASA DESIKAN.

In the words of Dr. I. H. Consins the purpose of the National Art Gallery of Madras is to give the public the opportunity of enjoying works of art produced in and related to India, works of special distinction in subject and style. It was to fulfil this objective that the Art Gallery was established in 1951 in the Victoria Memorial Hall. The name of the 'National Art Gallery' was suggested by His Highness the Maharaja of Bhavanagar, the then Governor of Madras. The exhibits consist mainly of examples of Rajput, Moghul and South Indian paintings. The gallery was inaugurated on 27th November 1951 by Sri Pandit Jawaharlal Nehru, the then Prime Minister of India, as a part of the Centenary celebration of the Government Museum. To start with a small number of bronzes, paintings of different schools, metalware, wood carvings ivory and textiles were transferred from the Museum to this National Art Gallery at the time of inauguration. Since then, the collections have been considerably enriched by the purchase of paintings from time to time this the special committee of National Art Gallery appointed in 1951.

The exhibits that are available in National Art Gallery are not arranged chronologically, but they are displayed with reference to their importance, taking into consideration their interesting features.

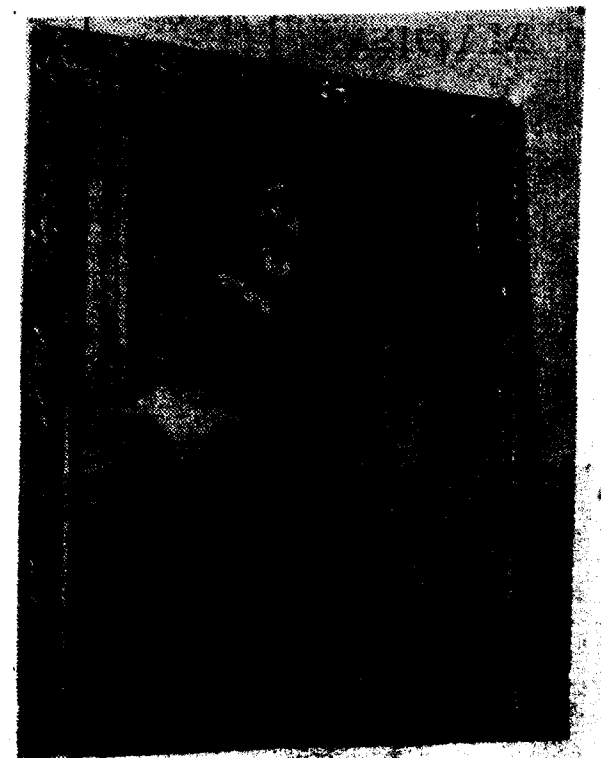
In Room I, the paintings of Ravi Verma and allied schools and Deccan schools are on display. Then two large paintings showing the army of a Muslim ruler in procession are interesting. These two paintings represent the old style of Muchis of Cuddapah. Sakunthala and the Miser both by Ravi Verma are representative of his great talent.

In Room II, there are displayed select specimens of wood carvings, belonging to temple cars, Bidriware, Sandlewood carvings metal ware, ivory carvings and textiles.

In the Main Hall, the exhibits mainly consist of paintings and bronzes. On the left side of the Hall paintings of traditional school of South

India and on the right side modern paintings are on show. Representative collections of N. I. School, are on view in the sloping cases and in the two modernised verities cases. A few master pieces of South India Bronzes—Natesa for Tiruvelangadu and Rama jump of Vadakkuppa-maiyur are in the centre of each of using and in the four corners.

Modern paintings and bronzes are displayed in Room III—Recently a gallery was opened on the first floor of the rear room to accommodate the



ever increasing collections. The purpose of this gallery is to display the latest addition from time to time once a year.

Modern paintings are represented by the works of D. P. Roy Chowdhury, Sarada Charan Ukil, Churgtai, K. C. S. Paniker, K. Srinivasulu, P. L. Narasimhamurthi, Kedar Ramaswami, S. Danapal, L. Munuswami, N. S. Sankar and a host of others.

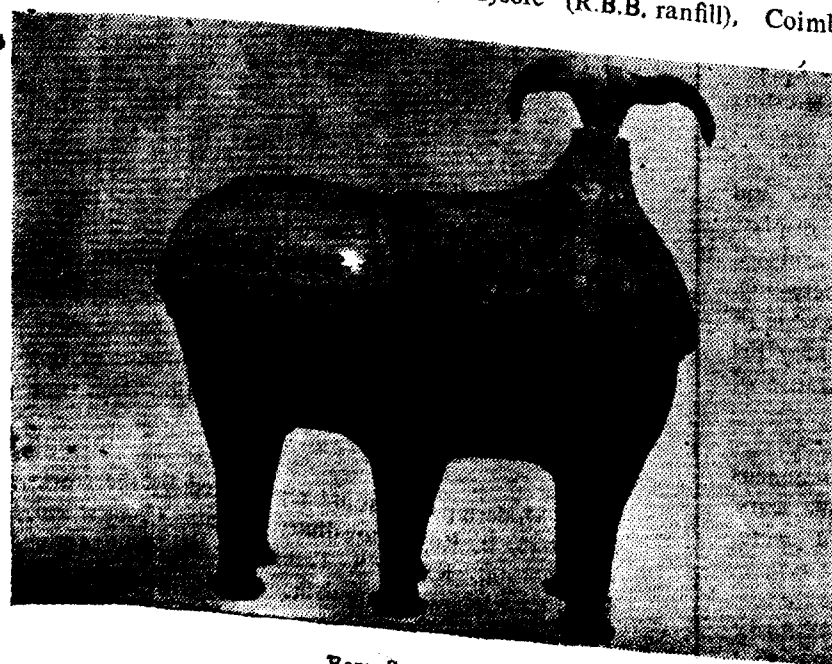


# ANTHRO- POLOGY SECTION IN MADRAS MUSEUM

The Prehistoric antiquities consist of the stone implements of the Palaeolithic, Microlithic and Neolithic people mostly from the Peninsular India collected by Bruce Foote, Manley, Krishnaswamy and Aiyappan. The valuable foreign stone artifacts were got on exchange and were obtained from England, Japan, the United States of America and Egypt, France, South Africa and Congo, Indonesia and China. The prehistoric collections made by Bruce Foote, over 4,000 pieces from all over India, are notable and were purchased by the Madras Government at a cost of Rs. 40,000 in 1904. The cleaver, the first stone artifact which was collected by Robert Bruce Foote at Attirambakkam in 1863 is on display in this gallery.

The proto-historic antiquities start with the chalcolithic culture from Mohenjodaro and Harappa such as the copper and stone, tools, ornaments, household articles, weights, seals and religious objects.

The Iron Age collection in South India is represented by the funerary objects and remains collected from Mysore (R.B.B. ranfill), Coimbatore



Ram Sarcophagus.

(Staney), Anantapur (C. Cardew), Malabar (F. Fawcett), North Arcot (H.R.P. Carter) and Chingleput and Tirunelveli (Alexander Rea). The female bronze figure discovered at Adichanallur is the earliest of the bronze figures known so far. Another interesting exhibit in this gallery is the Ram Sarcophagus from Sankavaram, Andhra Pradesh, which is just like a ram in size and structure but with six legs. The Ram is considered to be the carrier of the soul from this world to the other. In the centre of the gallery is a model of a megalithic cist burial, prepared in the Museum on the basis of excavations done at Brahmagiri in Mysore.

## ETHNOLOGY :

The Ethnology gallery, I, till 1959 was crowded with vertical show cases but subsequently in 1960 under the Third Five-Year Plan and with generous grants from the Government of India, reorganisation was started and resulted in modernised built-in wall cases with suitable interior colour schemes and concealed lighting. The material possessions of each tribe have been arranged in each modernised built-in case, depending on the level of cultural and economic set-up, such as the food gathering (Kanis, Mudugas, Gadabas and Kaders), the hunting (Khonda), the agricultural (Saoras, Gadabas and Koyas) and the pastoral life (Todas and Lambadis). The bust models of Kadar, Saora and Toda prepared recently in the plaster of Paris are also on display in their respective cases and life size plaster cast models of the Lambadi woman is another attraction in this gallery. The Gallery's ceiling was renovated recently and provided with decorated zinc sheets to add beauty to the gallery.

The Ethnology gallery II was modernised in 1963-64 under the programme of reorganisation and

development. The pattern of construction of the built-in wall cases is exactly the same as in the Ethnology gallery I but the cases are not the same sizes and out of twelve such cases three cases are smaller, due to space restrictions. In this gallery the material culture of the tribes such as the chenchus, kotas, Khasis, Nagas and Garos, tribal and rural jewellery, writing and fire making implements, fighting and hunting appliances, Bhuta shrine figures and the returning and non-returning type of Boomerang of Kallars and Maravars are well displayed.

## FOLK ARTS:

The folk arts or the Kathakali gallery is intended for exhibiting materials pertaining to folklore, mythology, dance and drama. The four life size wooden Kathakali figures were renovated and repainted in 1963 and they with actual costumes and colours, portray the four principal characters of the Kathakali dramatic art in Kerala. In 1963-64 twelve small modernised built-in walls with panelled front cases were added. The three sorcery figures of the Moplahs of Kerala show that the people still have belief in sorcery and magic. A selective display of Silver votive offerings of Muslims, Hindus and Christians in South India form an interesting attraction to the visitors. Two temple cars, a Seshavahanam and a temple procession, exhibited separately in the cases, correlate the social and religious observances of the people in times of festivals.

The Physical anthropology gallery is of recent origin and still to be augmented. The plaster cast reproductions of the Australopithecine (Africa), Pithecanthropus (Java and China) and Neanderthal (Europe) are exhibited here to derive the evolutionary line from where the

human being has originated. The study of Anthropometry and its importance are dealt with, in the form of charts and photographs bringing out the important diagnostic characters like stature, complexion, hair, lip, nose, eye, jaw, head and face on the basis of which races are classified and grouped. Two enlarged photographic colour charts depicting the scene of the 'Ice Age' and the 'Primate family tree' adorn the gallery in the centre.

## ARMS :

The collection of arms was started in 1865 with the arrival of Tanjore Armoury weapons. They include the historic period objects like the spears, shields, chain shots, mail armours, swords, daggers, choppers, elephant goads, mace heads, arrows, etc. While the fire arms of the East Indian Company such as the flint locks, match-locks, musketoons, etc., are now suitably redisplayed on the four renovated mosaic plastered walls of the gallery. The notable exhibits among them are the two guns inlaid with gold, once presented to the Serfoji Maharaja of Thanjavur by the East India Company in recognition of his loyalty and service to the company rulers. A few huge cannons captured at Manila, Mysore and Tranquebar are stationed around the Front Building, in an effort, at the infant stage, to establish an open air cannons corner or Museum. A brief catalogue on the benefit of the public and those who are interested in arms and armoury.

## MUSICAL INSTRUMENTS :

The collection of musical instruments in the gallery includes the usual types-autophones, aerophones, chordophones and membranophones. The most interesting exhibits are the Pancha Mukha Vadyam a huge bronze temple

drum with five faces striking surfaces from Tiruvavur temple and the Burmese harp or saun resembling the "Yazh" mentioned in Tamil classical literature. Recently added to the collection were a number of models of "Yazh" Veena and Sitar varieties of ancient times prepared accurately and skillfully. The nagaswaram, used and played by the Nagaswaram Vidwan, the late Thiru N. K. Elumalai Pillai of Madras, was lately added to the collection and this is the first instance wherein a musical instrument of a vidwan was gifted to the Museum.

The Anthropology Section was started in 1871 on the recommendation of the Trustees of the Indian Museum, Calcutta and communicated to the Madras Government Museum, to secure arms, tools, iron implements, potteries associated with the burials in South India.

In addition to the collection of the Ethnography and Prehistoric Archaeology received from district authorities, the valuable and significant finds and collections of Robert Bruce Foote were made available to this section of the Museum. Dr. Edgar Thurston (1885-1908) has the Superintendent of the Museum established an anthropometric laboratory and began an Ethnographic Survey of the tribes of Southern India which resulted in the publication of the seven monumental volumes of the "Cases and Tribes of Southern India". He started displaying the Ethnographic objects in the Front Buildings from 1916 onwards.

# BOTANY SECTION

## IN MADRAS MUSEUM

There are very few museums in India which have galleries exclusively devoted to Botany in their collection. The Government Museum at Madras is thus unique in having a good collection of botanical specimens, a major part of which is displayed in the galleries. The Botanical gallery consists of rooms, each devoted to Ecological Botany, Systematic Botany and Economic products. Besides these specimens on display, there is a reserve collection Botany section.

Specimens are acquired for the section either through the Curator, going on tour to the Locales where they are available or as gifts or purchases from other institutions and collecting them such as Agriculture Department, Forest Department and other museums. The specimens thus collected are preserved either wet or dry.

The importance of plants in our daily life can hardly be over-estimated as most of the things we need, have got their origin in some plant part or other. Our country is very rich in natural resources, and the need for a good number of imports can be overcome with the help of a knowledge of the various plants and parts of plants from which the raw materials can be tapped to the best advantage. In the Botany galleries, the actual specimens or their photographs, or models, or diagrams are placed before the public, with explanatory labels which are brief and to the point. The different groups of exhibits are explained by descriptive, group labels which serve as a good guide. The English and Latin labels are provided with translations in Tamil (the regional language) wherever possible.

The Botany galleries are divided into sub-galleries, the topics illustrated in these galleries being broadly divisible into (a) Systematic Botany, (b) Ecological Botany and (c) Economic Products.

### Systematic Botany

In the part of the gallery devoted to Systematic Botany the exhibits are arranged in their natural order, starting with the primitive Cryptogams. They are too many to be referred to in detail, the families of flowering plants alone numbering over one hundred and fifty. They

are of interest not only to the botanists but also to the general public. To mention a few, a couple of Hemp Plants (*Cannabis sativa* Linn.) which are exhibited with root and all, are rare objects, since their cultivation and possession are a closely-guarded monopoly of the Government. There is a toadstool of clumped growth and gigantic size. It is one foot tall, the stem (known as the Stipes) having a circumference of eight inches, and the top (known as the Pileus) having a diameter of seven inches. It is a giant of its kind, indeed! There are also huge bracket fungi which grow from the trunks of trees, appearing like protruding wooden shelves. They are generally confined to forest tracts and are not commonly seen by the public. The largest specimen

in the collection, measures more than a foot in diameter and at least three-and-a-half inches in thickness.

A group of mosses, the amphibians of the plant kingdom, form another source of attraction. The specimens hail mostly from the Nilgiris and the Bababudens. Two of them from Madras are given a special treatment and preserved with colour. A life-cycle of these plants, sketched in black and white, lead the visitor on to the academic fields. A specimen of moss, preserved dry and mounted on a card, is shown with its different parts labelled. The interest in these tiny plants is stirred by a set of eight, enlarged models that portray many of the important features. Bunches of inflorescence and fruits of Coconut palm and Arecanut palm, offer a close-up view. Herbarium sheets of the flora of the City of Madras are accommodated in drawers which are specially devised for them. Residents of the City derive help from these exhibits in identifying plants which they see in their neighbourhood.

### Ecology Section

In the section devoted to Ecology in the botanical galleries, the exhibits illustrate the changes in vegetation during the formation of swamps from stagnant water, the growth of grassland and scrub vegetation of rocky soil, the vegetation in dense evergreen forest areas, the vegetation on sands, the struggle among the mangroves for existence, weeds growing in the sea and the phenomenon of cross-pollination through the agency of insects. The vegetation on swamps include insectivorous plants which command popular interest. These plants have taken to an insectivorous habit for obtaining their share of Nitrogen as the nitrogenous salts in the swampy soils get frequently leached out by rain and run-off water. The Nitrogen contained in an insect is made into Ammonia after the insect is trapped and starved out to death. The inner-lining of the insect-traps (which are only suitably modified leaves) have the special ability to absorb Ammonia, both as vapour and as solution, *Drosera Burmanni* and *Nepenthes distillatoria* are th

insectivorous plants on display. Models and charts of the insect-trapping mechanism in *Sarracenia purpurea*, *Dionaea Muscipula* and *Nepenthes* render the subject easy to understand.

The exhibits illustrating the vegetation in the dense evergreen forest areas, include a tree-bark on which lichens, mosses, a clubmoss and even flowering plants (an orchid and a peperomia) are seen growing. The exhibit is only a typical instance of the competition for space in the dense evergreen forests.

### The Mangrove—

The way the mangroves solve their life-problems is an interesting

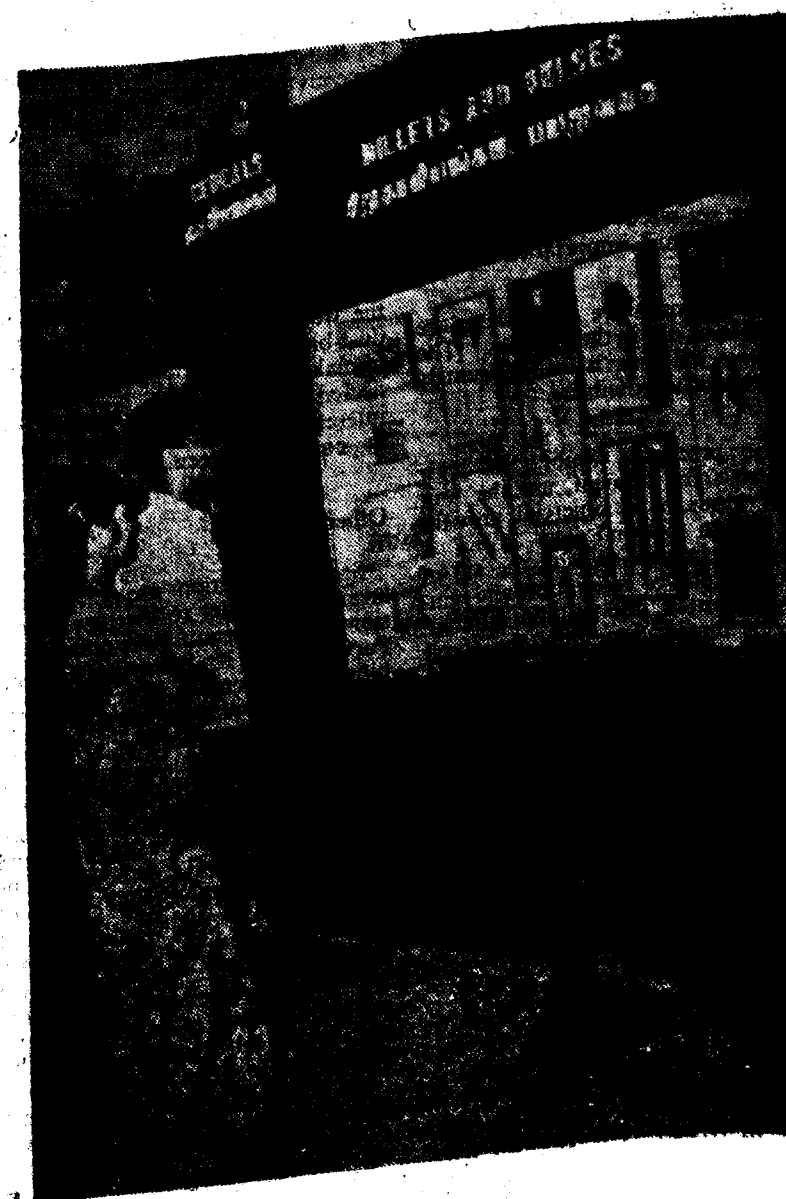
subject for study. The soil of the mangroves is loose and muddy without any air-space, and in the form of marshy islands in shallow, stagnant sheets of brackish water. The exhibits illustrate many of the special devices with which the mangroves keep their centre of gravity as low as possible, by not attaining any great stature. Their roots radiate generally for long distances; and in certain cases they spring from the sides of the stem, run horizontally, curve down and strike the soil at a distance.

An ecological exhibit of great interest to the lay men, is a model to demonstrate insect-pollination of flowers. This model is exhibited in a small separate show-case. It illus-

trates how the phenomenon of cross-pollination is generally effected in flowers by insects. It consists of a fixed model of a two-lipped, tubular flower (*Salvia*) which is cut up longitudinally. A stamen is movably fixed in the flower. There is also a model of a bee resting apparently on the expanded lower lip of the corolla. The manipulation of a small handle can take the bee into, or out of, the flower, when the (movable) stamen acts as in the real flower.

The economic Products gallery is by far the most popular, since both the preceding galleries call for at least some background of botanical knowledge to appreciate the exhibits, and since a vast majority of the specimens are displayed in special, built-in wall show-cases that are designed on the most modern lines. This gallery consists of vegetable raw materials of all kinds, including agricultural products, timbers, minor forest products, etc. The exhibits are divided into several groups according to their uses. The abundance of information furnished to botanists, industrialists and the general public, can be appreciated best only by a personal visit.

There are over 300 exhibits of the various South Indian timbers. The most impressive among them are transverse sections of large trunks of two timber trees. One is rose-wood (*Dalbergia latifolia*) and the other, teak-wood (*Tectona grandis*) the circumferences of the former being twenty-one feet, while that of the latter, twenty-three feet and nine inches. The rose-woods is claimed to be 200 years old at the time of felling, and the teak-wood a little over 500 years. The age is calculated by counting the number of annual rings on the specimen, each ring corresponding with a growing season of each year of the plant's life. Starting from the centre, every hundredth ring on the specimen of teak-wood, is painted in white so as to represent the circumference of the plant at the end of every 100 years of its growth. The size of the trunk in the year, 1400, when the tree began growing, is indicated by a dot. Mentioned on the specimen, are also a few historical events, with dates, that took place during the life-time of the tree. The marking route some special interest, even in the



lay visitors, in the study of the economics of timber.

A skeleton of the White Sandalwood tree (*Santalum album* Linn.) is the very first exhibit to greet the visitor at the head of the stair-case leading to the Botany galleries. The skeleton (or the heartwood, as it is more accurately called) is exhibited in two parts, the orion of the amin trunk alone forming one part, and the rest of the skeleton forming the other part. Since both these parts are exhibited one beside the other, it is easy to estimate the height of this particular tree (when in life) as about thirty feet. The sandalwood oil which is so highly valued for its fragrance all the world over, is extracted from the heartwood which is also highly valued for carving purposes. Some of the principal types of timber suited for making toys are exhibited in the show-cases devoted to toy-manufacture. The changes they undergo before taking up the shape of the completed toy, are also illustrated stage by stage.

A cluster of bamboo rhizomes with the bottom-most internodes exhibited in this gallery, illustrates the mode of vegetative propagation in bamboos. The yellow stems hidden by green leaves and their dark shadows give ample protection to the similarly coloured animals the most dreaded among them being the tigers. The stems of different species of bamboos are of different sizes and strength; and the stems of some of the Chief species are well preserved and displayed in the galleries.

The group of exhibits of articles of food contain about fifty different strains of paddy (and rice), wheat grains, different kinds of millets, etc. They are attractively displayed and have been rendered more instructive and interesting with the aid of photographs. Many of the spices and condiments on show are not new and include also such important articles as the pepper, cloves, cardamom, etc. It has been found in practice, that these common articles, while on display rouse fresh interest and enthusiasm among the visitors. Included in their midst is also a newly-imported material the Chinchweed (*Pectis Papposa*) it is an American Plant and its cultivability in Madras has recently been attempted with favourability in

Madras has recently been attempted with favourable result. It can be used in flavouring food and beverages.

The beverage group is well represented among the exhibits. Plants yielding the materials for the three popular drinks, cocoa, tea and coffee, have been given the place they deserve. There are two specimens of pods of the cocoa plant (*Theobroma cacao*, Linn.). Of them, one is entire and the other, cut open to show the inner besns which are cured, roasted and ground to form the cocoa of commerce. The exhibits illustrative of the tea industry include actual specimens and photographs relating to the cultivation and processing of tea. Interesting among them, will be found the adulterants too, some of which are rather shocking indeed. The coffee series includes a map showing the coffee cultivation areas in South India, and photographs and specimens of cultivation, harvesting, etc., of this useful crop.

In the Economic Products galleries, the sea-weeds are also exhibited, as of economic importance.

The narcotics are given the place that is their due in the galleries. The tobacco industry is as adequately represented as possible.

The principal exhibits of raw materials for raiment, are the four chief kinds of commercial growths of Indian cotton. The group is rendered interesting with the aid of photographs of cultivation and ginning of cotton, and with the different strains dissected to show the staple length. The most interesting exhibit for the lay visitor, however, is the miniature model of a handloom. A small piece of cloth is also shown half way in the process of being woven by this model. Plant materials that are used as dyestuffs for several purposes, including designs on cloth, are also exhibited. Many of the dyes which are obtained from the indigenous plants, are valued highly for their permanence.

Manufacture of leather goods is an important industry in the fore in India, today. Leather is mainly obtained by tanning the skin or hide of an animal with the help of certain raw materials. The raw materials

may be certain chemicals or minerals or plant materials. The plant materials required for the tanning industry form a small but important group in the galleries.

Medicinal plants and their products occupy a considerable amount of space in the galleries.

The exhibits of domestic articles go to show to what extent the dexterity of our artisans can shape seemingly trifling materials into beautiful handicrafts. We have the mats and baskets made of rattan, thatch grass, palmyrah leaf, etc.

A vast and choice collection of vegetable fibres are attractively displayed and grouped into (1) Jute and its substitutes, (2) Cordage, (3) Brushes (4) Coir and (5) Miscellaneous fibres. All these five groups consists of both raw materials and their finished products.

Raw materials required for making paper and rubber are also exhibited. The exhibits relating to the manufacture of paper show how most of the waste that are thrown into the dust-bin, can be profitably utilised in making paper. The exhibits connected with rubber-manufacture are interesting as many of them cannot be commonly seen.

#### Other Activities:

Special exhibitions are periodically arranged in order to the new accessions and important older collections. Participation in educational exhibitions is becoming more and more frequent. Guidance on matters of collection, identification, preservation, storage, etc., is freely given (in the form of advice or references, to educational institutions, museum-keepers, industrialists and others. Periodical demonstrations are held to organised parties of teachers, on how best they could enable their pupils to make a profitable visit to the galleries. Short condensed courses on organisation and maintenance of school herbaria and botanical museums, are also conducted for batches of teachers from different parts of the State. Personal help round the galleries is freely given to illiterate visitors if they turn up in organised batches. ●

The 12-year Perspective Plan in Education, Science and Technology, which is based on an appraisal of the system in retrospect will conform to the following objectives, principles, stages, structures and programmes.

The present objectives of Tamil Nadu Education, Science and Technology—the development of the personality of the child; the understanding of the culture and history of the State, the country and the world; the instruction in the moral and spiritual values of the country; the acquisition of scientific, technical and professional skills; the promotion of research to push back the frontiers of knowledge and solve the technical and developmental problems faced by the State; the democratisation of education through meeting the growing demand for education and providing social compensation for the condition of the poor majority of the State's population—all these will be continued. In addition, a fresh and major objective of the system during the next twelve years will be to relate directly the right to education with the right to employment in the State and the country and to relate the various stages of the education and training system to the graded skill demands of society.

#### PRINCIPLES.

The principles on which the educational model for the future is based are those of continuity and renovation, of sanctity of contracts, (so that no one now employed will be discharged from service because of any proposed restructurisation

## GOALS OF EDUCATION, SCIENCE AND TECHNOLOGY IN THE PERSPECTIVE PLAN

or reform) and of gradualism so that the necessary transitional period is allowed for in the innovations proposed. To this end, the system will provide.

Complete education, free to all in the age-group, 5-14;

Make the minimum skills imparted through the equivalent of four years of schooling available to all the people of Tamil Nadu; increase the enrolment of girls and reduce wastage among them;

Raise the quality of education and science at all levels;

Disaggregate the education and science system so that it corresponds to the skill demands of society and allows students multiple entry, exit and re-entry points to come into, leave the school system for employment purposes or re-enter it without being described as drop-outs;

Co-ordinate with a view ultimately to merging in a single system of in-school and out-of-school education and training;

Provide compensatory educational facilities for the disadvantaged sections of society;

Make education and science functional and relevant to Tamil Nadu and the India of to-day and to-morrow;

Redeploy the educational expenditure in the State form all sources—State and Central Governments, the University Grants Commission, parents and private sector—so that





they are not wastefully consumed in linear expansion but become productive of educational excellence and of a purposive and efficient employment orientation.

### STAGES, STRUCTURES AND PROGRAMMES.

The problem with the present structure is that it is too long and not long enough. It requires 11 years of schooling and six years of college education with each year consisting of 220 working days for primary, 200 working days for secondary and 180 working days for college education and each day consisting of five working hours for all of them. A second problem is that the present aggregation of the structure into three stages, 1 to 5, 6 to 8 and 9 to 11 at the school level and 1+2+2 at the college level does not conform to the needs of students or to the skills demanded by society and leads to what has been termed as massive dropouts.

It is therefore proposed :

That the school course be made of ten years' duration as in the other States of the Union ensuring uniformity in curriculum and quality of education even while aiming at higher standards ; that the instruction time—the number of hours and days—be extended for this purpose as appropriate. The 10-year schooling provided free to all in the State will be disaggregated into four or five stages to enable students smoothly and naturally to leave school at various points for employment or work at home and re-enter school ;

The Minister for Education of Tamil Nadu is seen addressing a distinguished and large audience at Rajaji Hall on 25-11-72, on the occasion of late Nehru's birth day.



That out-of-school education be provided to all who leave school before standard IV and to the 143 lakh adult illiterates in the State as the equivalent of five years' primary schooling ;

That the enrolment of girls be increased to equal that of boys, that the rate of wastage in their school performance be reduced through (i) functionalisation of their school curricula ; (ii) a programme aimed at changing social traditions acting as a constraint on women's education ; (iii) the provision of additional quarters for women teachers in rural areas ; and (iv) the free distribution of cloths to girl students ;

That a gradual merging of school and out-of-school education be encompassed through the use of common curricula, teachers and instructors, buildings, equipment libraries, laboratories and farms and other agencies which will also provide continuing education—both general instruction and vocational education—to those who need it and wish for it, through correspondence courses, evening classes, the radio and television. These programmes in both general and vocational education and training will be certified by educational diplomas ;

That curricula, teaching methods and learning techniques be reformed so that they become functional to varying learning abilities, teaching technologies and to urban and rural contexts and to the economic, societal and cultural realities of Tamil Nadu. Science education at all stages will be up-graded and modernised ;

### FUNCTIONAL BIAS IN SECONDARY EDUCATION.

That secondary education be vocationalised and be made employment oriented through a rapidly increased network of technical high schools, comprehensive schools and through the introduction of "streaming" from standard VIII into various educational and vocational specialisations and through the continual entry and exit of students into and from the school, the farm, factory and office ;

That standard X become the terminating point of school education for a majority of students (as at present) who will then be able to improve and continue their skills through out-of-school and out-of-college education and training programmes ;

That internal assessments be used through the school years including standard X, at which stage either a public examination of the students' general learning capacity be organised or schools be given responsibility for such an examination, under criteria and guidance to be established by the Board of Secondary Education ;

### Fitness Test for Higher Education.

That admission to higher education be on the basis of fitness and aptitude tests conducted by each institution under the guidance of a central authority.

That higher education be organised on a 2+2 or 3 structure with two years for the intermediate course, two years for the degree.

two years for post-graduate studies or three years' degree with honours. Each stage will correspond to an ascending order of skills, for which the preparatory language learning will be completed in the intermediate course, the degree and post-graduate courses being subject-centred or professional. The professional degree in medicine, agriculture, engineering, etc., will continue their present time-period.

That all undergraduate education in the State be entrusted to a statutorily constituted autonomous State Council of Academic Awards with two or three affiliating regional academic bodies or two or three new affiliating Universities. This Council or these Universities for Undergraduate Education will put into effect a system of autonomous colleges the semester system and internal assessment procedures.

That the Universities of Madras, Annamalai and Madurai be developed into centres of excellence in post-graduate teaching and research.

That a technological University for diploma, graduate and post-graduate engineering education be started and the Tamil Nadu Agricultural University be developed as a multi-faculty institution covering the animal sciences, agricultural engineering, home science, forestry, fisheries, basic sciences and humanities in addition to its existing departments in the agricultural sciences.

That scientific and developmental research be promoted through the starting of a

(1) Tamil Nadu Science Foundation ;

Dr. V. R. Nedunchezhiyan, Minister for Education and others seeing the Children's Parade conducted in connection with the birth day anniversary of late Pandit Nehru.



- (2) Tamil Nadu Academy of Basic and Applied Sciences ;
- (3) Hall of Science and Industry ;
- (4) Information Storage and Retrieval Centre ;
- (5) Computer Centres ;
- (6) Centre for Ocean Engineering and Marine Sciences ;
- (7) Institute of Management Training and Development ;
- (8) Material Testing Bureau ;
- (9) Centre for Automotive Engineering and Development ;
- (10) Centre for Urban Engineering.

That an educational planning machinery by established, the State management modernised, administration decentralised with appropriate training programmes, selection and promotion procedures and a smoothly functioning grants-in-aid administration.

### Finance.

Educational finance in the State presents two problems which must be resolved in the Perspective Plan. First, its rate of growth has been continuously increasing for both the State and the parents, fast reaching the ceiling level. Secondly, its present distribution and use or misuse between various levels and forms of education have involved an element of dysfunctional disinvestment.

It is proposed that State finances for education be redeployed to provide :

Free education up to the terminal school standard X ;

Free out-of-school education, so that the 51.2 per cent of wasters from primary school and the 60

per cent illiterate adults obtain the minimum schooling ;

Improved science and craft education at school ; and

Scientific and developmental research programmes and post-graduate educational and research at the Universities.

It is further proposed that higher education be gradually returned to a system based on fees alongside of an extensive scholarship scheme based on merit and/or poverty as decided by a means test.

There is a wastage of 51.2 per cent of students in the first five years of school and the dropping out of 53 per cent of students between P.U.C. and the first year of all degree courses including professional ones, which are traceable primarily to economic causes with academic ones playing a secondary role, call for an educational programme which can be carried to the places where the drop-outs live or are at work. In this context it may be noted that the term "drop-out" is pejorative, when, as often happens, it is either the school or the system which has failed to engage and hold their attention. "Push-outs" would be a more appropriate term.

In financial and skilled manpower terms, the waste in professional education is even more serious. The wastage in engineering education works out to an average of 18 per cent over a period of 10 years and that of polytechnic education, to 20 per cent. The need to reform and restructure professional education in order to avoid this sizable wastage is thus clearly urgent.\*

# THE SEMESTER SYSTEM<sup>169</sup> IN ENGINEERING EDUCATION



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During the last six years, efforts have been made to introduce progressive evaluation and the semester pattern in the engineering colleges affiliated to the Universities of Madras and Madurai. The introduction has been effected in stages and a combination of internal evaluation and external examination systems has been employed. Attempts have been made to build provisos into the regulations so that marks obtained in internal evaluation effectively influence the final result. At the same time, a minimum in the external examination is also prescribed for a pass to avoid any apprehension of undue favour being shown by any institution to its students. These procedures are being gradually worked out since it takes time for the teachers to take over a new system and work it and for the public to develop full confidence in its intrinsic fairness and that of the individuals involved.

It may be difficult to suggest common regulations for all the courses. Each course must be studied in detail and a suitable method of internal assessment introduced. It is inevitable that, in the initial stages at any rate, both external examination and internal evaluation must co-exist, and their relative importance has to be decided. The long-term objective should be the complete elimination of external examination and the introduction of an accreditation system to ensure the maintenance of standards.

An important step in this direction will be the introduction of a system of autonomous colleges. It is an important recommendation of the Kothari Commission, and offers vast scope for effective examination reform as well as systematic experimentation at least in a few chosen institutions. Uniformity in standards among affiliated colleges is an important requisite of internal evaluation. The principals of engineering colleges have arrived at the following guidelines in an effort to ensure some measure of uniformity.

## METHODS OF ASSESSMENT.

A combination of the following methods of assessment will be used, depending upon which of them are suitable for individual subjects :

- A.
  - (i) Periodical tests ;
  - (ii) Assignments ; and
  - (iii) Tutorial problems.
- B.
  - (i) Oral test ;
  - (ii) Project work ; and
  - (iii) Laboratory records.
- C.
  - (i) Participation in seminars ;
  - (ii) Regularity, punctuality and presentation ; and
  - (iii) General proficiency.

## ALLOCATION OF MARKS.

In internal evaluation, marks should be used to adjudge performance uniformly according to the following academic and other germane criteria :—

- (i) Attendance, regularity, punctuality—10 per cent.
- (ii) General proficiency, aptitude, presentation, participation in seminars and discussions—10 per cent.
- (iii) Periodical tests—50 per cent.
- (iv) Assignments, tutorials, laboratory records, reports and projects—30 per cent.

Attendance above the minimum prescribed by the University, punctuality in attending classes, regularity and promptness in the fulfilment of various academic tasks will form the basis for the award of 10 per cent of the marks.

Participation in seminars, discussions, general proficiency, aptitude, oral and written presentation and the overall assessment of the candidate by the instructor on the basis of the latter's contact with the student in and outside the class will form the basis for the award of another 10 per cent of the marks.

There must be at least three periodical tests in a semester. The number can be more. If there are 3 tests, the best of the tests may be taken into consideration, two tests out of three being the minimum. The allocation of 50 per cent of the marks for periodical tests will be common for subjects in which instruction consists predominantly of lectures, design, drawing or laboratory/workshop classes. The nature of the tests must be such that they can be conducted within the duration fixed for regular class lecture/laboratory/design and drawing. The staff member concerned must keep a record of the tests given and marks obtained for scrutiny by a competent authority.

The balance of 30 per cent of the marks are reserved for tutorials, assignments, design and drawing, reports, projects, laboratory work as well as oral examinations. The methods used will depend upon the subject. Assignments involving mere problem-solving will mainly be done in the class under staff supervision. Even in the case of design and drawing, report-writing, etc., only those categories of work which do not lend themselves to simple copying should be permitted to be done at home. Within practicable limits, care must be exercised to see that copying is not practised even through consultation and the guidance either from the staff or from colleagues need not be ruled out.

The minimum number of assignments for a semester should be three in the case of under-graduate classes and six in the case of post-graduate classes. Each assignment can have sub-divisions. The number of assignments should preferably exceed the minimum prescribed. The assignment can take the form of a set of problems, designs and drawings, the preparation of laboratory and other reports.

## GENERAL GUIDELINES.

The faculty members must be informed about the need of keeping the evaluation objectives taking care

to see that the students are convinced that the evaluation is objective and systematic. In general the following points may be stressed :

- (i) records of tests, assignments and any other form of evaluation must be kept and should be made available for scrutiny by a competent authority ;
- (ii) the marks obtained in tests and assignments must be made known to the students at the end of each month in tabulated form. This is in addition to the marks given at the time of returning test-paper or assignments sheets ;
- (iii) the number of assignments and tests prescribed in the foregoing are the minimum ; effort must be made to base the final grading on as many valid methods of evaluation as possible.

Similar guidelines suited to the requirements of arts colleges may be worked out and implemented.

#### WORKING OF THE SYSTEM IN INDIAN INSTITUTE OF TECHNOLOGY.

The Indian Institute of Technology in Madras has from the outset nurtured the internal assessment system for the evaluation of the performance of its students. Its post-graduate courses (M.Sc., M.Tech.) were from the beginning operated on the semester pattern. The first degree course in the Institute, (B.Tech.) was run on an yearly basis during the first few years, and the switch-over to the semester pattern came about in 1969. All the instructional courses are now on the semester pattern.

Each academic year is made up of two semesters with 15 weeks of instruction. There are three weeks set apart at the end of each semester for the scheduling of the semester examinations (theory and practice). There is a winter recess of five weeks between the first and second semesters and a summer vacation of 11 weeks following the second semester.

The prescribed theory courses are conceived of as units of cogent material that can be presented over a 15 week period, typically at the rate of three hours per week. The laboratory courses also last 15 weeks and are usually held at the rate of

three hours per week or six hours per week, depending on the discipline and its requirements. The curriculum includes several practical courses, e.g., drawing and design, workshop, etc., with appropriate weekly loads of work.

The semester system has here been remarkably successful in its operation. Its potentiality for eliciting concentrated effort both from the staff and the student has been noted.

The only sufferers are those, students who fail to make the grade and cannot proceed from one semester to the next. They lose a year and there is an interregnum of idle time lasting six months. The Institute tries to turn this to good account by requiring those students to undergo training in an industrial establishment. The edge is sought to be taken off the demoralising effect that failure imposes. During the intervening period, the student has had the opportunity to go through a new experience instead of wasting his time at home or merely repeating his studies.

#### THE INTERNAL EVALUATION SYSTEM.

The Evaluation System at the Institute operates as follows. In each prescribed course, three class tests are held on dates which are spaced out evenly and announced at the commencement of the semester. If a student studies five subjects, he is scheduled to take a total of 15 tests during the semester. Leaving a couple of weeks free at commencement, each of the remaining weeks contain two tests or at least one. Of the three tests in a subject, the best two performances are taken into account for credit. This is to provide for possible absence, failure or poor performance by a student in one out of three trials and to avoid penalizing him for it. The tests are administered by the subject-instructor and are meant to test if the student is keeping proper track of the course as it progresses. It will moreover serve as a feed-back for the teacher who will then know if he is taking the class with him.

A given subject may carry tutorial exercises at the rate of one assignment per week. Every week's work counts towards the sessional assessment.

Where laboratory work is prescribed as a part of the course, the

actual work done in the laboratory, together with the reports of practicals and the oral examinations in the laboratory, contribute to the credit given for laboratory work.

The periodical tests, tutorial exercises and laboratory work are all taken together in a prescribed mix or proportion (such as 2 : 1 : 2) to determine the overall credit assigned for class-work. This accounts for 50 per cent of the maximum credit that a student can earn in course-time. The remaining 50 per cent comes from the semester examination on the subject. The latter may take the form of a theory paper ; it often includes a laboratory examination as well.

The sessional performance is adjudged solely by the instructor. In the semester examination, the instructor shares his work both in question paper setting and valuation of the answer-script-laboratory examination with an external examiner. The latter may be a faculty member from the same Institute, from the same Department or a cognate Department or from outside the Institute. He is expected to serve as a referee and adjudge whether the instructor has done his job fairly.

In practical subjects like drawing, and design or workshop, the student earns 50 per cent of the credit for his sessional work done over the semester, as judged by one instructor or a group of instructors, and 50 per cent for his performance in a practical examination-viva voce held at the end of each semester.

In the post-graduate courses (M.Sc., M.Tech.), the instructor has the advantage of greater flexibility with class-work assignment. He may conduct one or more tests ; he may prescribe home assignments ; or he may pose a design problem. All this can make up 50 per cent of the credit. The semester examination, in which the instructor shares the work in question paper-setting and valuation of the answer books with an external examiner, accounts for the remaining 50 per cent.

In an overall assessment, both aspects, viz., the semester pattern and the internal evaluation, have been pre-eminently successful at the Indian Institute of Technology.

The success achieved is attributable to the following considerations :

(a) The Institute is wholly residential. All the students, without exception, live in the hostels. Most of the Faculty live on the campus. Amongst the students, there is a great measure of uniformity in living conditions and pattern of work. There are ample opportunities for student interaction with the Faculty outside of the classroom ;

(b) All the students in a given discipline are handled and evaluated by a group of teachers belonging to a single institution ;

(c) The autonomy of the Institute and the character of its Senate, which is in a position to take quick and positive action on any academic issue that is placed before it, create confidence and are a guarantee of fast remedial measures.

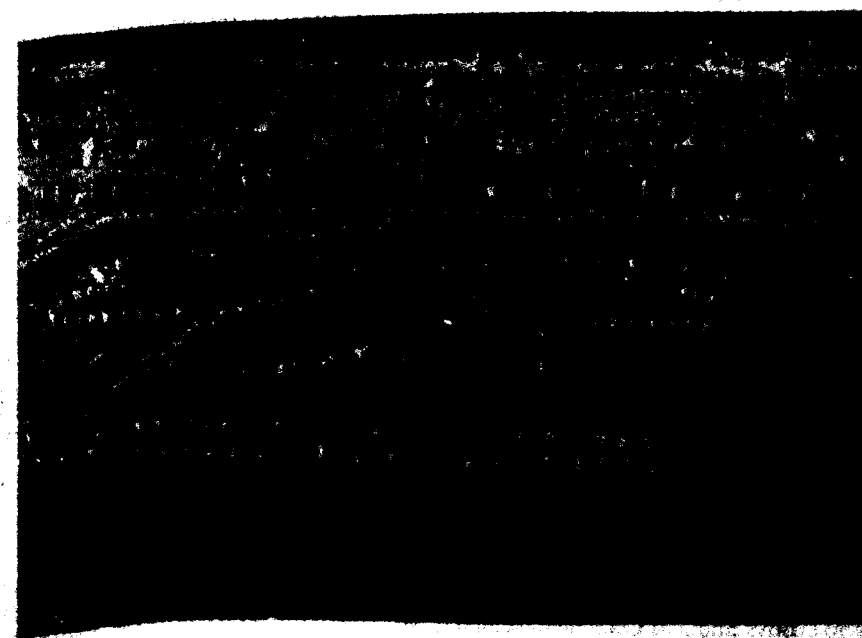
The assessment of students' performance, when they belong to a number of institutions/colleges that are physically separated from one another though affiliated to a single University, is beset with greater complexities and difficulties in actual implementation. Several safeguards and special steps to introduce uniformity in standards of work-allocation and the apportioning of credit will be essential. The acceptance by the Faculty of the intrinsic merit of the system and the willingness, following this, to maintain standards in an impartial and objective manner, constitute the foundation of the system. The student community will always adapt itself to a system that allows credit to be accumulated over the whole duration of the study period on the basis of steady, sustained work at an even pace for it quiets the fear and the associated perils and uncertainties of a single annual examination as the sole determining factor.

The difficulties in implementing the system in the case of an University affiliating a number of institutions or in extending it to arts colleges or courses (both post-graduate and undergraduate) may be considerable, but can be overcome in a phased manner through determined effort. The task must be seen as a challenge, but there is no doubt that, if it is faced up to, our educational process will gain new momentum and a sense of purpose. ●

#### CHILDREN'S PARADE ON 25-11-1972



This year the Children's Day Celebration in Tamil Nadu was conducted in a grand manner on 25-11-72. Panoramic views of the Children's Parade conducted at Nehru Stadium are pictured in the Photos above and below.





# PERSPECTIVE PLAN FOR FAMILY PLANNING IN TAMIL NADU

(Family Planning Fortnight was celebrated all over Tamil Nadu in the middle of last month, i.e. 11th to 25th December 1972 when public functions were conducted and addressed by the Ministers and individuals of note elucidating and emphasising the importance of the limited family in the present context of the economic growth of our State as well as our country. In this connection the Tamil Arasu feels glad to publish the report of the Task Force of the State Planning Commission on Family Planning as it puts in proper perspective the future policy and programme of the Tamil Nadu Government with regard to the Family Planning aims and aspirations—ED).

Family Planning is a socio-economic necessity. All our efforts and endeavours towards economic growth would be of no avail unless and until the country achieves substantial and significant results in the sphere of family planning. Tamil Nadu has already to its credit the noteworthy achievement of setting the pace and methods to be adopted for achieving these significant achievements.

On the basis of experience gained to date, the Family Planning Programme for the Perspective Plan period 1972—1984 will be developed in terms of the immediate objective, the intermediate objective and the long-term objective. The immediate objectives will include the efforts and performance necessary in terms of resources and activities; the intermediate objectives will comprise the spreading of the knowledge required for the development of favourable attitudes, increasing the number of adopters and providing social and economic support to them and the long-term objectives will comprise the correlation of these measures to bring about the reduction of the birth rate to 25 per 1,000 by 1978—79 and to 22 by 1983—84. The plan proposes a balanced and equal emphasis on clinical methods as well as social and psychological education for the promotion of Family Planning.

## The Targets.

Out of 135 effective couples for every 1,000 of the population in the State, 22.4 couples are

currently protected by sterilisation or I.U.C.Ds. or conventional contraceptives. In order to achieve a birth-rate of 25 per thousand by 1979, it is proposed gradually to increase sterilizations from 4.0 to 9.0 per thousand of population; the use of I.U.C.Ds. from 1.4 to 3 per thousand of population; and the use of conventional contraceptives from 1.7 to 15.0 per thousand of population. These targets are to be continuously reviewed in light of actual birth-rates, fertility rates and of the actual performance measured against targets. The overall State targets will also be varied in each district in accordance with the age-groups and preferences of the population of acceptor couples in the district.

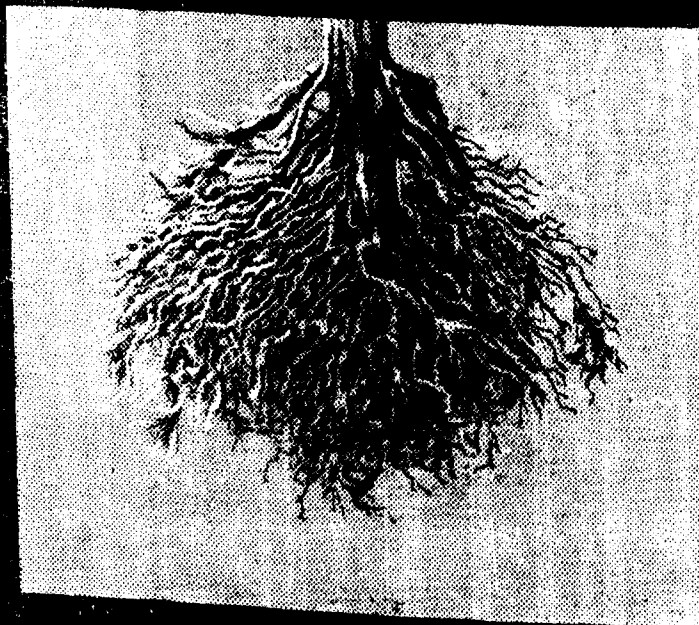
## Extension Education.

The family planning programme differs from many other action-oriented programmes for social change in that it has to create the demand for the services before they are met. People have not only to be informed and helped to link family planning to their family goals and aspirations but some of the social and cultural factors that inhibit the adoption of the programme have to be overcome simultaneously. The magnitude of the task can be judged from the fact that, while about 12 lakhs sterilizations have been performed upto 1972, about 24 lakhs must be sterilized by 1979, if the goals set are to be realised. Similarly the acceptance of I.U.C.Ds. has to be

stepped up from the present level of 1.4 per thousand to 3 per thousand and the use of condoms from 1.7 to 15 per thousand. To this end family planning is to be made a way of life for most of the people by swaying their minds through the means of education. The operational objectives of education for family planning during the perspective Planning will be in the following lines such as providing detailed information to those who are aware of family planning, about specific contraceptive methods; removing the misconceptions and fears in peoples' minds; helping people further to comprehend the health and other values of family planning and the ways in which it helps to satisfy their needs and wants as a family; developing further within the community a social environments and attitudes in which family planning practices become accepted and are actively advocated; providing for psychological support to adopters in relation to the rest of society, building up the level of knowledge of the programme in the community so that it becomes immune to rumour and misinformation.

The publicity programme will be such as to include the more intensive use of the radio, films, newspapers, magazines, posters, printed materials generally, hoardings, display signs and exhibitions and gramophone records. A consciousness of contemporary social modes and their correctives must permeate the purposive arts which are receptive to and have use for such influences.

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# N.C.C. IN TAMIL NADU

Today the N.C.C. Directorate at Madras has six Group Headquarters, two of them located at Madras and remainder at Madurai, Tiruchirappalli, Coimbatore and Pondicherry. Under each Group there are 8 to 10 Senior Division units. The strength of these units varies from 200 (Company) to 1,600 (Battalion of 8 Companies) and to these Senior Division units are affiliated a number of Junior Division troops with a cadet strength of 100 each. There are four wings in the N.C.C., the Army, the Navy, the Air and the Girls. The Army Wing comprises mostly of Infantry units and some technical units. The technical ones are Armoured, Engineer, Signal, E.M.E. Medical, Remount and Veterinary units. In Tamil Nadu we have all these Technical units except Remount and Veterinary units. The strength of N.C.C. in Tamil Nadu and Pondicherry on the eve of the 24th Anniversary of the N.C.C. is as follows :—

|                                 | Boys.  | Girls. |
|---------------------------------|--------|--------|
| (a) Senior Division (Colleges). | 31,400 | 3,000  |
| (b) Junior Division (Schools).  | 67,000 | 5,800  |

The following new unit has been sanctioned and will be raised shortly :—

6 (T.N.) Medical Company at Coimbatore.

## Annual Training Camps, Courses and Attachments.

Attendance at Annual Training Camps is an essential and important feature of N.C.C. training and every N.C.C. cadet is required to attend them during his/her service in the N.C.C. Several camps were organised by the various groups in Tamil Nadu and Pondicherry States. In all 22,821 Boys and 2,045 Girls cadets attended Annual Training camps during the training year 1971-72.

In addition to the Annual Training Camps, selected Officers and cadets are sent on various All India Courses and Camps. 111 cadets attended the various Advanced Leadership Rock Climbing and Mountaineering Courses held in the different States. 405 Boys and 210 Girls also attended All India Summer Training Camps held

at Ootacamund, Marve, Bangalore, Yasmarg, Pondicherry, Bhowali, Kompally and Pahalgam. All India camps and Courses are generally held at places of historical and tourist interest and cadets are very keen to attend these camps.

Attachment with the Regular Army, Air and Naval bases is another great attraction to the boys. Army boys go on attachment to Regular Army Units in field and peace areas, Naval cadets to I.N. Ships and Air cadets to I.A.F. units for training. The attachment is for a duration of 21 days. 248 Army wing, 7 Air wing and 6 Naval wing Cadets were attached to the various regular service units during May-June 1972.

## Shooting competitions.

An Inter-Group Shooting Competition was held at Madukarai, Coimbatore from 23 to 29th October 1972. Three boys and 2 girls teams represented this Directorate in the Inter-University Shooting Competitions held at Allahabad from 9th to 11th January, 1972.

## Introduction of Para Trooping.

This year a unique feature was introduced in N.C.C. training. Selected Boys from all over the country were sent to the Para Troopers Training School at Agra for training in Para jumps.

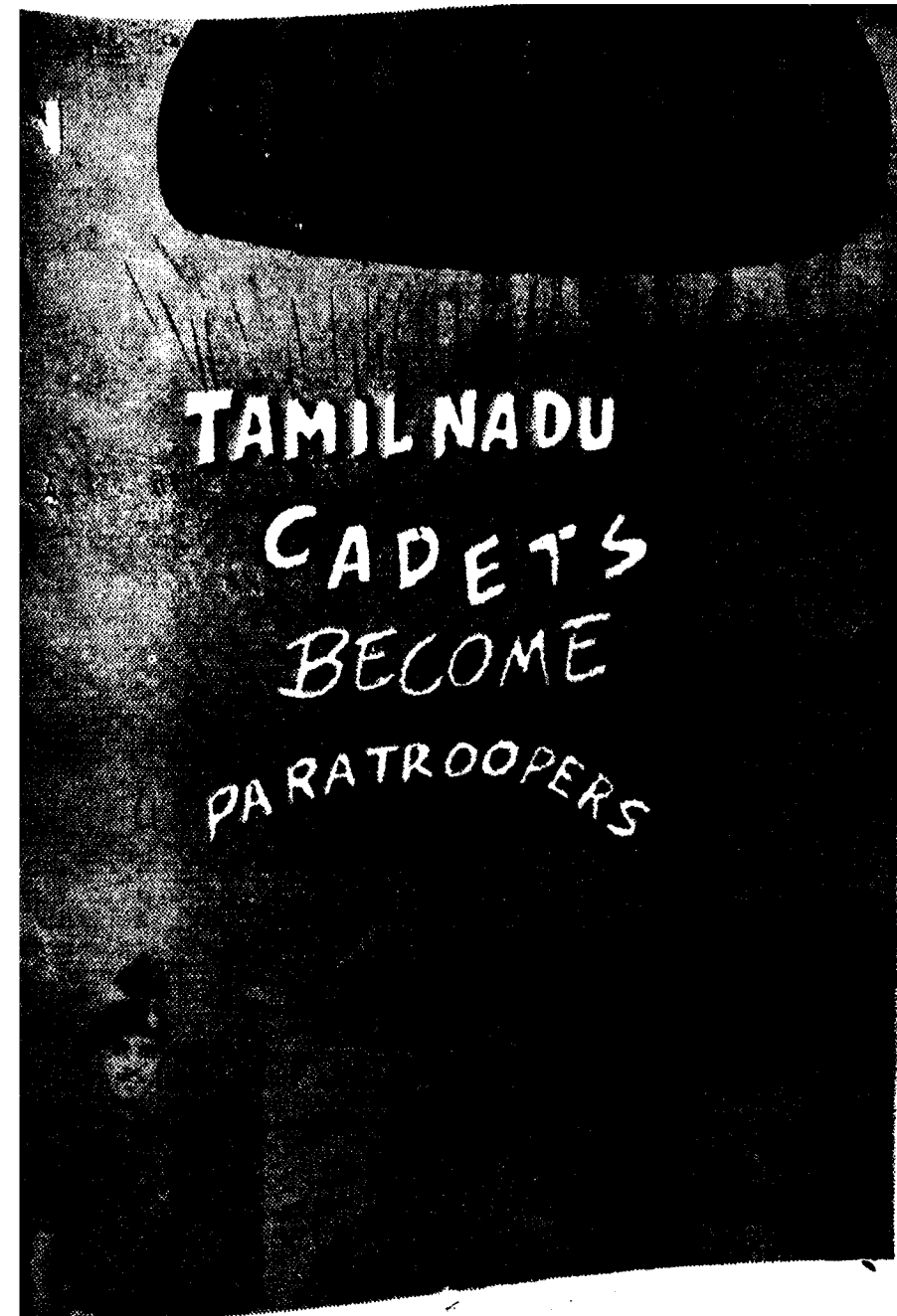
The contingent from this Directorate which went to the Vayu Sena Camp held at Poona from 28th May 1972 to 10th June 1972 won the Vayu Sena Trophy for the Best Air Contingent. In addition, the contingent from (T.N.) Air Sqn. N.C.C. won third place in the competition for the Subrato Art Trophy for Flying, Gliding and Flight security performance.

The National Cadet Corps had played a very useful role in Civil Defence and allied measures during the emergency in 1965 and with the experience gained during that period and knowledge acquired in Civil Defence training, the Cadet Corps once again rose to the occasion and did a splendid job in rendering all possible assistance in the 1971 war effort in co-operation with other Civil Defence authorities.

Nearly one lakh of boys and girls of the N.C.C. voluntarily offered their services and excellent work was done by them specially in those States which bore the brunt of the war. Moving and working in a disciplined manner as a team, the cadets did voluntary work in hospitals assisting the overburdened staff in nursing duties. They manned the telephone exchanges thus relieving the permanent staff for other essential duties. They also carried out look-out, patrol, messenger, black-out and traffic control duties and assisted at the Civil Defence posts set up in various centres. All the duties that the cadets undertook were performed in a disciplined and sincere manner and was appreciated by one and all.

In the task of rehabilitation, the N.C.C. once again made its modest contribution. Regular Service personnel with the N.C.C. cadets were given the task of contacting the families of the Service personnel killed, wounded or missing during the war. Their main task was to make these families aware of the entitlements, benefits and concessions given to them by Central and State Governments, help in filling various forms and despatching them to the correct authorities and bringing to the notice of authorities the problems faced by these families.

Rehabilitation is not an easy task. It requires a sympathetic and understanding approach and it is to the credit of the N.C.C. for undertaking these assignments in a spirit of sincerity, good cheer and devotion to duty.



## Captions of Pictures in opposite page.

*Inset Left* is the first Paratrooper of Tamil Nadu N.C.C. Sgt. A. Mohan Singh.

*Inset Right* is C.W.O. B. Vijayanalendran, who represented Tamil Nadu N.C.C. at Annual Air Camp at Singapore.

*Top Right* show Tamil Nadu N.C.C. cadets getting their trophies from the Prime Minister.

*Bottom Left* N.C.C. cadets practicing gun drill.

*Bottom Right* girl cadets operating Field Telephone Exchange.

Besides these, face-to-face communication will also be followed and it will include the individual approach, the small group approach, and the community organization approach. That will entail communication through seminars; strategic groups in the community; informal channels, such as satisfied adopters, the small talk and the informal doctor's briefs at dispensaries, nutrition clinics, immunization centres, etc.

### THE STAFFING PATTERN.

The staffing pattern of the family planning programme authority will be revised as follows: One auxiliary nurse-midwife for five thousand of population, a more specific redesignation of the Block Extension Educator as Block Extension Educator (Health, Nutrition and Family Planning); the conversion of the post of Mass Education and Information Officer into that of Chief District Officer for Education and Publicity, the appointment of Assistant District Officers (Education and Publicity) posted at the rate of one for 8 to 10 P.H.Cs., the conversion, at the State level, of the post of Deputy Director (Family Planning and Mass Education) into that of Deputy Director of Education and Publicity assisted by three Assistant Directors, one each for mass media, extension education and the audio-visual wing respectively; the addition of three travelling reporters in the editorial section and eight additional members of staff in the audio-visual wing. Provision is also made for audio-visual equipment and vehicles for the P.H.Cs., district and State Headquarters.

### POPULATION EDUCATION AND TRAINING.

The formal school system provides an ideal medium for population education. A very important aspect of this work is the preparation of a curriculum and of teachers to administer that curriculum. This is to be achieved by incorporation of population education as an integral part of all teacher-training programmes at graduate and secondary levels, the training of teachers on population education in batches, the preparation and supply of teaching materials like flash cards, charts, literature, etc., to teacher training institutions and to the schools themselves, a detailed programme to

reach the 'out-of-school youth' through youth clubs, young farmers club, dramatic societies and arts clubs, Mathar Sangams, special youth camps, etc.

The responsibility for planning, implementing and evaluating the programme at the school level will be vested in a Population Education Unit to be established under the State Council of Educational Training and Research.

Teachers under training from the 25 graduates and 150 secondary teacher training institutions will receive a 40 day period of integrated training in family planning population education in addition to public health, nutrition, school health, environmental hygiene and sanitation. This programme will be organised by the State Health Education Bureau which, for this purpose, will be strengthened by the addition of three professional staff. In one of the Universities, a Post-graduate Centre of Population Studies is recommended to be established.

### FAMILY PLANNING IN MEDICAL EDUCATION.

A month's internment in a primary health centre will henceforth be compulsory for paramedical health workers' graduation and the award of certification will be conditional upon such apprenticeship or orientation. This rule will apply alike to health visitors, auxiliary nurses, midwives and health inspectors. The primary health centres chosen for internship will offer separate residential accommodation for male and female trainees.

### INCENTIVES FOR FAMILY PLANNING.

The incentives programme for the Perspective Plan period will, in addition to those already in force, include the following:

Facilities like allotment of houses by autonomous town planning bodies secured through the good offices of the State, educational concessions at higher levels of education and loans for various purposes, so that those who limit family size in effect get preferential treatment.

Free medical and health care for sterilized persons and their families

through a system of health cards for a period of two years after "adoption".

Preferential treatment under old-age pension schemes for elderly parents with two or three children who belong to economically handicapped groups and who voluntarily limit their families under the Programme.

Institutional care for the eligible fathers following the sterilization operation for six days in health resorts or secondary health care institutions.

The present system of payment of Rs. 10 to all promoters to be continued for Government workers.

The performance in family planning be made a criterion for confirmation in Government service, promotion and selection for higher training; outstanding workers be given advance increments, merit certificates, prizes, etc.

Institutions like primary health centres/blocks be given prizes for outstanding performance in team work.

Any village that reports sterilization up to a fixed percentage of eligible couples should be given a community incentive in the form of a cash payment.

Tax concessions for persons with small families and for unmarried adults.

### INVOLVEMENT OF OTHER DEPARTMENTS.

To spread the idea of family planning among the people and to give the programme as wide publicity as possible not only among those who are remote from such concerns of the State but others easily accessible to motivation education under the programme, it is thus necessary to enlist the support of the district staff of other State Government departments such as women's welfare, agriculture, labour etc. Group Leaders, arbiters of social and religious opinion, and members of Parliament and State Assemblies should also be involved. Their concurrence and active support will promote wider acceptance of the programme.

### ACTION BY SPECIAL ORGANISED GROUPS.

The implementation of the family planning programme will involve and include the following organised sectors:

To bring about the harmonious and co-ordinated participation in the programme, each industry, plantation, business house, public and private undertaking will constitute a Health, Welfare and Family Planning Committee, which will plan and implement the family planning programmes as worked out for each establishment with available resources and under the guidance of the State Family Planning Bureau.

The Committee will consist of the representatives of (1) top management, (2) the unions and (3) the workers and co-opt the personnel and medical officers of the establishment.

Each industry will be encouraged to develop an unit-wise strategy of work. The employers can, in consultation with the employees, develop various types of incentives suited to their special conditions. The examples of several industries, which have participated successfully in the fulfilment of the programme may be followed for guidance.

In the workers' education programme which comes under the purview of the Labour Department, Health and Family Planning should be introduced as a subject of popular instruction so that the workers get a comprehensive knowledge of the population problems of the country, the contribution of the family planning programme to the solution of these problems and their role in it.

### EVALUATION TASKS.

The evaluation task will focus on the purposive assessment of the impact of the programme, the identification of areas of success and failure, or the reasons thereof and the feeding back of this information for the modification and improvement of the programme and its implementation.

Setting up annual and district and block targets and determining the method-mix for reaching the goal of the required reduction of births;

Developing systems and procedures for collecting service statistics;

Analysis of data received from the field and the transmission of the results to senior programme staff for evolving follow-up action.

Improvement of the quality and reliability of data through periodical field visits and spot-checking.

Review of progress reports and multiple organizational depth studies based on "returns" filed by adopters for determining factors making for differences in performance between areas and population groups.

Determination of the effectiveness of extension work and the staff engaged in the work.

Co-ordination of and participation in developing action-oriented research projects e.g., study of the cost effectiveness of different schemes; predictions in terms of births prevented; liaison with primary research organisation and dissemination of important findings of research studies and experience gained.

### DEMONSTRATION PROJECTS.

The following demonstration projects are designed to expand the capacity of the existing family planning units to provide medical or motivational services both quantitatively and qualitatively:—

- (i) Abortion-counselling service.
- (ii) Upgrading the training skills of the trainers.
- (iii) The greater involvement of panchayats.
- (iv) The greater involvement of Government employees.
- (v) The appointment of non-medical administrators for primary health centres.
- (vi) Intensive work in high-diffusion potential villages.
- (vii) Project to improve integration of the health and family planning services and their combined performance.
- (viii) Experiments in variation of work-patterns for health inspectors (family planning) block extension educators, etc.

### INTEGRATION AND CO-ORDINATION.

An integrated administrative service for Health, Family Planning and Nutrition, which includes maternal and child care as well, will have the following aims:—

To provide a complete, continuous and comprehensive service for the mother and child in the first instance and later, for the entire family as part of a larger community health service.

Responsibility for this should not be divided as between several agencies, so that the need to refer cases from one agency to another is minimized and the mother and child get quick attention for their ailments and needs under a single roof.

To provide for groups of workers at all levels so as to achieve the objective as stated above. (Family Planning advice has been found to be more acceptable when it comes from maternal and child health workers).

To provide common financial resources thereby exercising a measure of economy.

About 40 per cent of total deaths occur among children below five years. A vicious cycle-large family size malnutrition-poor maternal care-high child-mortality motivation for larger families resulting in the aggravation of malnutrition is established. Family planning and Nutrition programmes should, therefore, go hand in hand for the success of other health schemes. Family planning schemes will be readily accepted if they are provided as part of the general health services, especially along with maternal and child health services. Since mothers of poor nutritional status can also be the cause of nutritional deficiency in their children, nutrition should also be integrated with the general health services.

The Small  
Family makes  
A Strong Nation.





Housing Colony at ANNA NAGAR, Gummidipoondi.



Nethaji Saw Mills and Industries at PADIYA-  
NALLUR run by Burma repatriates with the  
financial assistance of the Government.

## A SACRED TASK OF TAMIL NADU GOVERNMENT

Owing to the nationalisation of various sectors of the Burmese economy and the agreement concluded between the Government of India and the Government of Ceylon, a large number of Indian Nationals who had been residing for a long period in these countries have been repatriated to India.

From Burma alone 1,20,612 persons have already returned and it is estimated that the total number of repatriates may go upto two lakhs. From Ceylon, about 5,25,000 persons of Indian origin would be returning to India over a period of 15 years about which a lakh of repatriates would come within a period of two years beginning from the year 1971. So far 65,859 repatriates have arrived. Evidently the problem of rehabilitation of repatriates from Burma and Ceylon is big in magnitude and call for a speedy and determined effort.

For tackling the problem of rehabilitation of repatriates from Burma and Ceylon for the entire States of Tamil Nadu and Andhra Pradesh Employment Liaison Offices were set up at Madras and Visagapatnam. In Tamil Nadu Employment Liaison Office under the charge of an Assistant Director and under the administrative control of Director of Employment and Training started functioning with effect from 22nd August 1966. Main functions of the 'Employment Liaison Office' unit are to tackle the problem of rehabilitation of repatriates for the

entire State of Tamil Nadu, to maintain close liaison with important employers of the State for canvassing vacancies and to organise and co-ordinate the activities of Employment Exchanges to ensure early placement of repatriates in suitable jobs.

### Employment opportunity.

Total number of 18,490 Burma Repatriates and 5,604 Ceylon repatriates have approached for employment and out of them 1,823 Burma repatriates and 496 Ceylon repatriates have actually been provided with employment from the year 1966 till February 1972. A total number of 1,826 repatriates from Burma and 3,192 repatriates from Ceylon remained on the Live Register of Employment Exchanges at the end of February 1972. Priority has been accorded to them for appointment under Central/State Government through Employment Exchange. In order to provide necessary reception arrangements to repatriates arriving from Ceylon, Government have accorded sanction to set up a Sub-Employment Office each at Mandapam and Tuticorin under the charge of a Junior Employment Officer.

Sub-Employment Office at Mandapam started functioning with effect from 5th January 1971 exclusively for Ceylon repatriates arriving at Rameswaram port. So far 1,607 repatriates have sought for the help of this office.

## TRAINING REPATRIATES TO FIT THEM FOR NEW JOBS

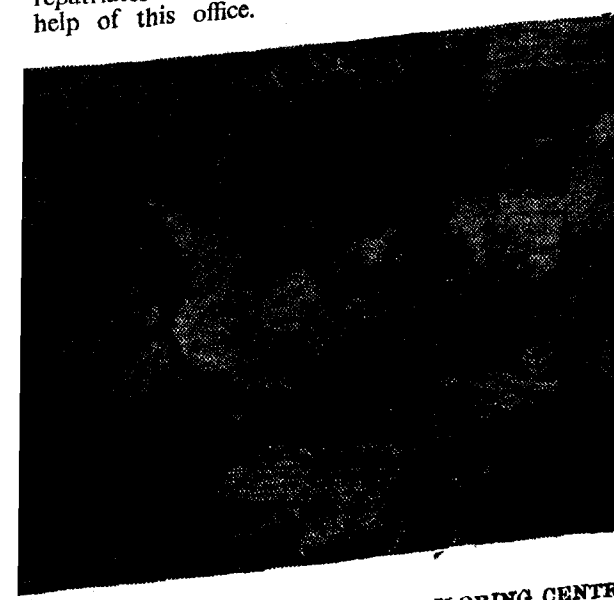
### Training facilities.

In order to provide speedy rehabilitation of repatriates, various training facilities have been extended to them. Government of Tamil Nadu have reserved 5 per cent of seats in Industrial Training Institutes in Tamil Nadu. While on training, they are entitled for a stipend of Rs. 55 per mensem in the case of those residing in the hostel and Rs. 15 per mensem in the case of repatriates residing with their parents. From the year 1966 to 1972, 308 repatriates from Burma and Ceylon have undergone training in the Industrial Training Institutes, Tamil Nadu.

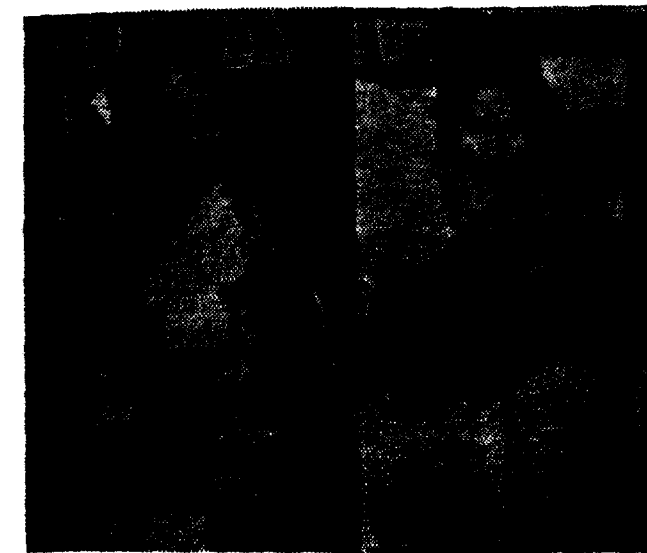
Government of India is running a Technical Training Centre at Mana (MP) exclusively for training repatriates from Burma/Ceylon and East Pakistan Migrants on various trades and by that make them to have more avenues of employment opportunities and provide them facilities for self-employment.

Deputing repatriates from this State to this Institute started with effect from April 1969 and as on date 359 repatriates have been trained successfully through this institute. At present 180 repatriates are undergoing training in this Institute.

Central Water and Power Commission, Government of India, New Delhi is running Technical Training Centres at Kota (Rajasthan), Nungal (Punjab) to train repatriates in Heavy Earth Moving



Repatriate women under training at TAILORING CENTRE, Mondiamman Nagar near Gummidipoondi, Chingleput district.  
Here repatriate women are given training in Tailoring, Embroidery and Needle work.



Equipment. So far 12 repatriates at Technical Training Centre, Nangal and 17 repatriates at Technical Training Centre, Kota were trained in these training centres. Before they were sent for one year training, they were given preliminary training for three months at Neyveli Lignite Corporation. At present 10 repatriates have been undergoing training at Technical Training Centre, Kota and the course was started on 15th September 1971.

The Tractor Training and Testing Station, Budni (MP) and Hissar are conducting a training course in Farm Machinery utilisation and Tractor Mechanism for three months. Five seats in each institute for each course are reserved for this Department in Tamil Nadu. So far 10 repatriates were trained in the year 1970-71 and at present four more candidates are undergoing training in this Institute.

#### Training-cum-employment schemes.

Madan Industries Spinning Mills, Hastinapur came forward to offer various job opportunities for repatriates from Burma and Ceylon. So far 166 repatriates have been sent for Madan Industries, Hastinapur.

Co-operative Spinning Mills at Karim Nagar, Nazareth, Srivilliputhur and Nellore have come forward to employ repatriates provided they have the job experience in spinning and weaving.

The Director of Employment is often meeting employers of repatriates.



Repatriate trainees at work in the Tiruchendur Co-operative Spinning Mills.

## GENEROUS SUPPORT FROM EMPLOYERS FOR REPATRIATES

During the year 1970, 60 repatriates were despatched to Anthergaon Spinning Mills, Ramagundam after three months preliminary training in Tamil Nadu spinning Mills. As per recent agreement reached between the Managing Director, Tiruchendur Co-operative Spinning Mills, Nasareth and Government of India, it was decided to employ 50 repatriates in the Co-operative Spinning Mills. Action is being taken to despatch the repatriates to this Spinning Mills.

Recently Government of India and Government of Tamil Nadu have accorded sanction of various schemes such as training 50 repatriates in Boiler Attendant trade, training in Cookery, food canning and preservation, waiters under the Institute of Catering Technology, training in short-term course in Concrete Technology at Cement Service Bureau, Madras-18, etc.

The main idea of providing such kind of training facilities to repatriates from Burma and Ceylon is to shape the repatriates who are only fit for unskilled jobs as technically qualified craftsmen so that they could be well settled in the industries as technical persons though not all could engage themselves in self employment. In order to provide speedy rehabilitation of repatriates, the problems, which are increasing day by day, should be approached by all concerned with a humanitarian touch.



Burma Ice Factory at Gummudipoondi run by Burma repatriates with the assistance of the Government.

# A BIG TREASURE HUNT!

## The Fisheries of Tamil Nadu

Tamil Nadu has a coastline of 1,000 kms. and a continental shelf of 35,000 sq. kms. She has an inland water-spread of 3.51 lakh hectares of culturable water. Tamil Nadu is thus endowed with rich natural potential in both the marine and the inland area for development.

Tamil Nadu has not been lagging behind in efforts to tap these rich resources.

### Fish Production

The fish production of Tamil Nadu increased from 1.2 lakh tons in 1950 to 2.79 lakh tons in 1970. Marine fish production increased from 0.86 lakh tons to 1.5 lakh tons and the inland fish production from 0.34 lakh tons to 1.20 lakh tons during the same period. Tamil Nadu is second only to Kerala in marine fish production and is also second only to West Bengal in inland fish production. She contributes about 16 per cent to India's total fish production. This contribution is valued at Rs. 25.18 crores at current prices.

The Fisheries Department of Tamil Nadu, one of the oldest in the country, is the main administrative organisation responsible for developing the marine and inland fish potential of Tamil Nadu.

### Marine Fisheries

In Tamil Nadu, there are about 300,000 fishermen of whom about 100,000 are actively engaged in marine fisheries. Living in more than 300 fishing hamlets all along the coastline, they use traditional fishing crafts, like the catamarans (about 25,000 in number) and canoes (about 5,000 in number) and various types of fishing nets. About 50 per cent of the marine catches are disposed off locally in fresh condition; 35 per cent either sun dried or salted; and the balance frozen, canned or converted into fish-meal which is a recent development.

At the village level primary co-operatives exist, marketing unions for a group of societies and District Federations also help in disbursing short, medium and long-term loans to fishermen for various purposes.

### Fishery Development

The major objective of marine fisheries development consisted of mechanising the fishing operations, by the provision of mechanised vessels, use of modern gear and gear materials, creation of infra-structure facilities for landing and berthing, transport, processing and freezing. The Fisheries Department began to take energetic steps to develop marine fisheries in the above-mentioned areas starting from the Second Five-Year



Plan. To organise marine fishing on sound, modern and industrial lines was not an easy task, since there was reluctance on the part of the private entrepreneurs to take to fisheries and there was reluctance on the part of the traditional fishermen to improve their economic prospects owing to various reasons. The Fisheries Department had to surmount these initial obstacles.

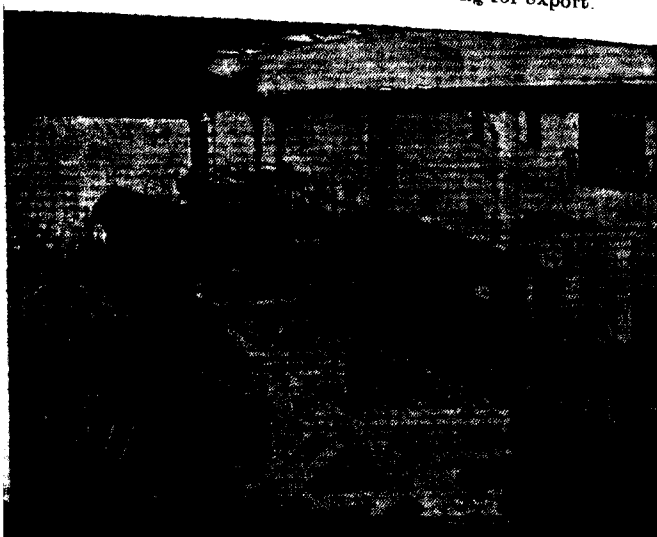
Besides, our knowledge of the availability of various fishery resources in the inshore, offshore and deep sea was meagre. Hence systematic survey and exploration had to be conducted. An assessment of the landing and berthing facilities at various points along the coast had to be made. Modern fishing having become an organised industry, the State needed well-trained technicians for various jobs in the fields of processing, freezing, gear technology, servicing and maintaining of mechanised vessels, plying of mechanised vessels with sophisticated equipment, etc. These requirements were met one after another.

The Department established four Inshore Fishery Survey Stations at Madras, Cuddalore, Rameswaram and Cape Comorin. These stations did valuable work in locating the fishing grounds for shrimp, lobster, silver bellies and cat-fish. The survey stations did good work in introducing improved fishing gear for commercial use. Two steel trawlers, 17.5 Mts. long were required for intensifying offshore survey work, in order to supplement the efforts of the offshore stations of the Government of India set up at Tuticorin and Madras.

The Department set up 4 boat-building yards, two at Madras, one at Nagapattinam and one at Mandapam. A new boat-building yard for constructing ferro-cement boats has also been sanctioned. These boat-building yards built boats of varying lengths ranging from 30' boats to 50' boats. A 38' ferro-cement boat has been constructed for the first time in one of the yards. The Department has constructed and distributed so far 841 number of mechanised vessels till the beginning of the Fourth Plan.

#### CO-OPERATIVES FOR BOAT BUILDINGS

An interesting development in this connection is the growth of co-operatives and private enterprises for boat building. A few well organised private boat-building yards have been set up recently. Assisted by



A Boat building yard (Right) prawns shelling for export.

the Agricultural Refinance Corporation two of our Co-operative Federations have also taken to boat-building for distribution to their members. More co-operative and private involvement in boat-building is expected in the near future.

Another significant trend is the interest increasingly evinced by private entrepreneurs in modern fishing industry. To aid and stimulate them, the Government have recently sanctioned a loan scheme for private entrepreneurs under which 20 per cent of cost will be given as interest-free advance by the State Government to private entrepreneurs, the balance being met by the Commercial Banks and from their own resources.

#### MODERNISING TRADITIONAL CRAFTS

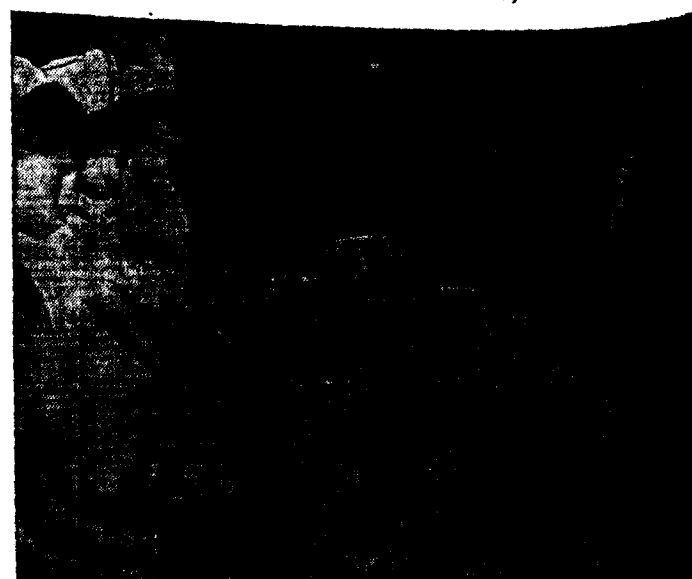
This Department has distributed nylon yarn for improved gear on a large scale to the traditional fishermen and to the mechanised vessels during the last 10 years.

This Department has been striving to encourage an intermediate technology for the traditional craft like the catamarans and canoes. An experiment for fitting the catamarans with out-board motors is in progress in Kanyakumari district, with help from Belgium under the Freedom from Hunger Campaign. This Department has been fitting up canoes with in-board motors in selected areas of the coast. Supply of insulated boxes and brine tubs have been contemplated.

During the Fourth Five-Year Plan, the Department has targetted for distribution of 1,275 mechanised vessels. In the Fifth Plan about 1,100 mechanised vessels will be built and distributed. Modern technological improvements in boat building will be adopted and followed. Larger sized vessels will be built for exploitation of the offshore and deep sea.

#### CREATION OF FACILITIES

Simultaneously the creation of such infra-structure facilities like landing and berthing places, provision of ice-plants, cold storage facilities, plate freezers and frozen storage is in progress. Good landing facilities now exist at Cuddalore, Nagapattinam, Tuticorin and Colachel. Landing centres like Ennore, Pulicat,



Mallipattinam, Muttom, Kulasekarapattinam, and Point Calimere will be improved. A number of ice plants, cold storages exist all along the coast-line. Private entrepreneurs have evinced keen interest for the development of similar facilities and a number of plants are being set up in recent time in the private sector.

Though most of the valuable prawn catches are now going to the West Coast for processing and export in recent times, increasing quantities are being processed and exported from Tamil Nadu itself. The Department will promote all such activities to maintain this trend.

As a result of the above activities, marine fish production is expected to reach 5 lakh tons by the end of the Fifth Five-Year Plan and 9.5 lakh tons by the end of Sixth Five-Year Plan.

#### INLAND FISHERIES

The main objective in this field relates to the intensification of fish seed production and stocking of all major inland water spreads, as well as restocking because of the seasonal character of many water sources.

The current annual level of fish seed production in Tamil Nadu is 56 millions; 42.5 millions have been collected from natural sources and 13.5 millions have been bred in the Departmental induced carp spawning centres.

There are 9 Induced Carp Spawning Centres in the State which have done valuable work.

Our annual requirements of fish seed amount to about 100 millions. To meet this need, the Department has proposed to expand the existing Induced Carp Spawning Centres and open new centres.

As a result, the inland fish production is expected to reach 3 lakh tons by 1984.

Tamil Nadu has been pioneer in the development and maintenance of reservoir fisheries. The current production from 28 reservoirs is more than 700 tons per year which will reach 2,500 tons by 1984. This is to intensify stocking and adoption of improved gear for fishing.

The development of trout will engage the Department's attention in the Nilgiris and Palani hills.

#### RESEARCH

Tamil Nadu has pioneered Fisheries Research. Well-organised Fisheries research stations exist to study problems relating to Marine Fisheries Biology, Fresh Water Biology, Hydro Biology and Fisheries Technology. Currently, an ICAR Research Project on the utilisation of trash fish is underway. Two inland fisheries research projects on Ecology in reservoir fisheries and composite fish culture have also been sponsored by the ICAR at Bhavanisagar. A proposal for pearl culture, sponsored by ICAR is under consideration.

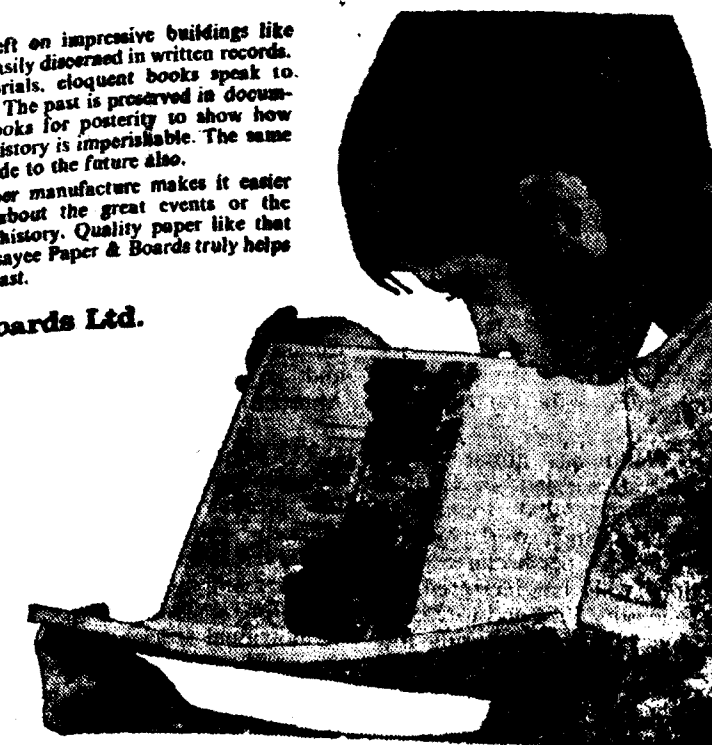
A State Level Fisheries Research Council reviews and supervises the research work of the Department. The Madras Journal of Fisheries is published by the Department. A News letter of the Department periodically carries valuable information on Fisheries Research and Development to all the staff and officers of the Department. An ICAR sponsored project for "Mariculture" is under contemplation.\*

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# MARICULTURE OFFERS PROMISES FOR INCREASED FISH PRODUCTION

Address delivered by Thirumathi, M. Sathyananiamuthu, Minister for Harijan Welfare and Fisheries on the inauguration of the Seminar on Mariculture and Mechanised Fishing on the 28th November 1972 at Madras.

Both Mariculture and Mechanised Fishing are techniques to increase fish production. No one will deny the need to rapidly increase the fish output to feed the growing population of our country. In the context of a very low consumption of proteins by the majority of the Indian population, so vital to healthy living, every increase in fish output is not only desirable, but is necessary. Maricultural techniques and Mechanised fishing methods assume tremendous significance in the context of providing nutritious food to the rapidly growing population of our nation.

## Growing interest in Mariculture

Interest in Maricultural techniques grow following experience of Japan in obtaining significant yields in fish production. Right from early times, the Fisheries Department of Tamil Nadu did good work in this direction. Pioneering work with regard to the migratory Hilsa fish, during the first decade of this century acclimatization, culture and popularisation of the pearl spot, Chanos, mullets and other estuarine species were successfully attempted in Tamil Nadu in the early thirties.

Tamil Nadu has about 46,750 hectares of estuaries and backwaters yielding about 3,200 tonnes of fish annually, which works out to a yield of 68 kgs. per hectare. This production will be increased to 15,000 tonnes by 1974 and to 25,000 tonnes by 1984 by culturing fish crustaceans, molluscs and seaweeds. We have a series of backwaters and estuaries like the Pulicat lake,

Ennore backwaters, Adyar backwaters, Vellar estuary, Palar, Marikanam, Kovalam, Killai and Coleeroon estuaries, where Mariculture can be practiced. Studies by the State Fisheries Department and Central Inland Fisheries Research Institute have indicated possibilities for culturing Prawn species.

## Fifth Plan aim

During the V Plan we have proposed an expenditure of Rs. 50 lakhs on Mariculture. During the VI Plan this expenditure will be stepped up to Rs. 200 lakhs. Thus Tamil Nadu will soon be launching on a major programme of Maricultural operations.

Ambition apart, there is no doubt that a programme on this order can be put through only after careful study of all the implications of Maricultural farming. Though many other countries have successfully adopted Maricultural techniques and have bred fishes of various species, Indian experience in this regard is somewhat limited, calling for more intensive research and experiments of all aspects of Mariculture.

The principal requisites for sound Mariculture are the location of the ground for seed collection. Induced seed production, rearing of larvae stocking and manuring, stock manipulation, etc. It also calls for analysis of the ecology of individual species and communities and more intensive studies on food changes. According to experts there is a large surplus of

basic food in the estuary and we have to convert this into edible protein. In the Tamil Nadu coast there is a dense Fauna of species in estuaries and backwaters. These have to be studied, so that manipulative measures can be designed. Culture of prawns, Mulletts and chanos can be adopted to increase the yields as in Israel. The common carp can also be tried for culture in brackish waters. Mussel yield of 4,000 kgs. per hectare is now being obtained on the West Coast of India. Similar yield can be aimed at on the East Coast also. Israel has achieved notable success in the induced breeding of mullets. Similarly induced breeding techniques can be attempted in the case of other salt tolerant fishes. More research is called for on the rearing of larvae which is the Achilles heel of estuarine fish farming. The nature and the extent of control of environmental factors should be carefully studied so as to obtain the best possible food chain.

At the same time, there is no doubt that Mariculture offers promise as one of the best techniques for increasing the fish production of our country. However, there are serious dangers to estuarine development in the construction of dams and barrages and the pollution of estuarine areas. The Seminar may devote attention to these two dangers and suggest remedial measures.

I now come to the second major subject of the Seminar, viz., Mechanisation of fishing. The world production of marine fish has been increasing by about 7 per cent per

annum. The Indian rate of growth is about 6.2 per cent. The rate of growth so far as Tamil Nadu is concerned is about 5 per cent. Though India occupies the 7th place among the nations in the world. In Marine and Inland fish production, our share in the total world production is very low. With a vast coast line, the country offer almost unlimited opportunity for exploitation of marine fishes. The traditional fish craft and gear are now being replaced by mechanised vessels and improved gears. But the pace is not enough and needs to be quickened. Mechanised vessels all along the coast line operate mostly in the inshore belt, there is very little exploitation of the offshore belt. The deep sea is practically unexploited. The existence of the vast fishery potential in both Arabian coast and the Bay of Bengal is well known. Measures have, therefore to be adopted rapidly for increasing the exploitation of the marine fish. Our own knowledge of the existence of the various types and resources in the offshore and deep sea is quite limited. Intensive survey and exploratory work has to be carried on to gain better knowledge of the fishery resources and fishing conditions of the offshore and deep sea.

Efforts towards the mechanisation of fishing have been undertaken in Tamil Nadu for some time. During the Second Plan period, 82 mechanised boats were introduced. During the Third Plan period 374 mechanised vessels were newly introduced. In the Fourth Plan period over 1,000 mechanised vessels would have been introduced but most of these vessels are small vessels of the range of 30' and 32'. Large sized vessels have to be put into operation so that the deep

seas can be exploited. Out of 4-12 lakhs of square kms. of continental shelf only 1.81 lakhs of square kms. now being exploited and rational utilisation of the pelagic and demersal fishery over the inner coast of our country is called for.

Introduction of larger vessels would mean strengthening the infrastructure along the coast line including the provision of harbour and berthing facilities. Processing and freezing facilities have to be increased. Training requirements have to be met so that technicians of various kinds can be brought out in a large number to man the vessels plants and to engage in modern techniques of fishing operations. Servicing facilities for mechanised vessels have to be provided all along the coastal line. The provision of all these infrastructure facilities mean the investment of a large order. There is no doubt that the investment of this order can only be undertaken by both State and Centre jointly.

Marketing of marine fish is perhaps the weakest link in the whole chain. Problems of marketing have to be studied in great detail and improvements suggested so that, the actual fishermen can get good price for their catches and marine fish can be rapidly moved into the inland for catering to a large fish eating population in the inland.

Mechanisation also involves improving the boat building technology, use of materials other than wood and steel will have to be studied. Prospects of ferro cement boat building are bright and the extent to which ferro cement could be utilised has to be examined. The Tamil Nadu Fisheries Department has launched

the first 38' ferro cement boat and has plans to build more number of such vessels. Since copper is becoming scarce and costly a suitable sheathing material has to be tried.

No amount of mechanisation of fishing will completely replace the traditional fishing vessels and fishing gear. Steps have to be undertaken to improve the fishing of the traditional fishermen. The need for some kind of intermediate technology like fitting up of outboard and inboard motors to the traditional vessels have to be analysed.

Fishing gear is an important item in mechanised fishing. It should be our major objective to improve fishing gear even in respect of traditional fishing.

There is, thus a vast area to be studied in respect of mechanisation of fishing. Rapid mechanisation of fishing brings about social consequences. Quite often, the traditional fishermen are loath to change the habits and resent the introduction of larger sized and more powered mechanised vessels. Apart from sentimental objections there is genuine fear about over exploitation by the mechanised vessels. Conflicts arise between traditional fishermen and mechanised fishermen. Conflicts arise also between mechanised vessels owners who are traditional fishermen and those who belong to the non-fishermen entrepreneurs class. Such conflicts indicate the existence of social tension owing to the introduction of new methods and new technology. While such tensions may be common, their impact must be minimised. The process of mechanisation should be carefully regulated. The area of social tension in respect of such is also well worth a study.

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## INDIAN OIL RECORDS PHENOMENAL PROFITS

The turnover and profitability of the Corporation touched a new high during the year 1971-72. This was disclosed by Thiru M. Rama Brahman, Chairman of the Indian Oil Corporation at the annual general meeting of the Company.

Indian Oil had a sales turnover of Rs. 862 crores during the year as against Rs. 720 crores during the previous year. The total profits during the year before providing for depreciation and interest, were Rs. 53.42 crores, as against Rs. 31.32 crores in the previous year. After providing for depreciation and interest, the profits amount to Rs. 36.94 crores during the year, as against Rs. 15.77 crores in the previous year. A provision of Rs. 5 crores has been made for tax payment.

Thiru Rama Brahman said that the increase in profits during the year has been phenomenal. He observed that last year the profitability had shown some decrease due to some extraneous factors. The Union Government has now allowed the oil industry to reimburse to itself (through the medium of surcharge on the price) the under recoveries on sales-tax.

During the year, Indian Oil's three refineries at Gauhati, Barauni and Jawaharnagar (Gujarat) processed a total quantity of 6.72 million tonnes of Crude Oil as against 6.34 million tonnes in the previous year and the Gujarat Refinery is now gearing itself to increase the through output to 5.5 million tonnes.

The Barauni Refinery in Bihar is scheduled to be expanded from the present capacity of 2.28 million tonnes to 3.4 million tonnes per year by 1975. The additional crude oil, over and above what is available from Assam, will be imported into India and transported through the Haldia-Barauni Pipeline.

The Chairman disclosed that Rs. 67.5 crore Haldia Refinery now under construction, is being financed substantially out of the Corporation's own internal resources.

Further, it is said that it has been decided to build a new six-million tonnes refinery near Mathura in Uttar Pradesh. A 1,200 kilometre pipeline from the West Coast to Mathura is to be laid for

transporting imported Crude Oil. The project is estimated to cost more than Rs. 160 crores besides the cost of town ship and other facilities.

The Gauhati-Siliguri, Barauni-Kanpur, Barauni-Haldia and Koyali-Ahmedabad pipelines transported 3.23 million tonnes of products during 1971-72 as against 2.62 million tonnes in the previous year.

The sale of products during 1971-72, rose to 13.68 million kilolitres from 11.61 million kilolitres in the previous year increasing the market participation from 51.6 per cent to 54.2 per cent.

At the end of the year, the Marketing Division of the Corporation had 16 Port Installations, eight Pipeline Installations and one inland Installation besides 117 bulk storage depots.

The number of Indian Oil retail outlets at the end of the year stood at 3,134. During 1972-73, the Corporation has planned to commission another 200 to 250 retail outlets.

The sale of "INDANE" (Cooking Gas) has increased by 56 per cent over the previous year. Indane was made available in 38 additional towns.

During the year, Indian Oil successfully met the challenge of maintaining supplies under difficult conditions during the recent war.

Indian Oil rushed petroleum products to Bangala Desh after its emergence as a free nation. The Corporation also had the opportunity of arranging import of Crude Oil for the Chittagong Refinery in Bangala Desh.

Indian Oil was the first in the country to introduce a comprehensive scheme of dealerships for rehabilitating war-widows and disabled jawans after the Indo-Pakistan conflict.

A new field of activity which the Corporation entered during the year was in extending technical collaboration to the neighbouring countries. At the request of Ceylon Petroleum Corporation, Indian Oil Engineers had been deputed to help in the operation of their refinery and training of their personnel.

## NEWS IN BRIEF.

### Petroleum Industry

.....There were nearly 60,000 persons directly engaged in various sectors of the petroleum industry in the country on April 1, 1972. The total direct employment in different sectors of the petroleum industry increased from 57,998 as on April 1, 1968 to the present level, registering an increase of 3 per cent. But as compared to the number of persons engaged on April 1, 1971, the 1972 figure showed only a marginal increase of 0.3 per cent.

.....In the past 100 years the oil industry produced 30,000 million tonnes of crude oil and in the next 10 years alone, as much quantity will be required to meet world demand. There are enormous crude reserves waiting to be exploited and new fields are constantly being discovered. Viewed in the context of world petroleum production or consumption, India has a long way to go. However, from a meagre 2 million tonnes of consumption in 1947, the figure rose to 8 million tonnes in 1961, 13 million tonnes in 1966, 20 million tonnes currently and will rise to 46 million tonnes in 1980. Production within the country rose from 0.2 million tonnes in 1947 to 7 million tonnes currently and will rise to not less than 13 million tonnes in 1980.

### A New Metal Powder

.....A process for the production of extra-fine non-ferrous metal powders has been developed by the National Metallurgical Laboratory, Jamshedpur. The metals include aluminium, copper, lead, tin and zinc; and fineness can be obtained up to 325 (44 micron) mesh sizes and beyond.

### Tamil Nadu First in Abortion

.....Since April 1 to July 31, 1972, a total of 4,068 abortions have been performed in the 357 licensed clinics throughout the country. State-wise, Tamil Nadu and Maharashtra take the lead with 1,103 and 1,102 terminations respectively. Delhi is next with 565, followed by West Bengal with 417 and Andhra Pradesh and Madhya Pradesh with 228 each. The figure of abortions performed in the country has shown a steady increase. As against 710 terminations in April, 1,268 were performed in July 1972.

## CINCHONA DEPARTMENT



## CREATES A HISTORY

## FOREIGN MARKETS ASK FOR TAMIL NADU QUININE

BY  
K. DORASWAMY

Quinine is obtained from the bark of the tree known as the Cinchona tree. It is native of the Andes Mountains of South America and was introduced into India for the first time on the Nilgiris in 1859-60. From the Nilgiris, the plantations extended to the Anamallais in Pollachi taluk.

Quinidine is another alkaloid found in the Cinchona bark and is used in the treatment of certain heart ailments and is also used extensively in India and in many foreign countries.

The Tamil Nadu Government has at present 2301 ha. (5,686 acres) of Cinchona Plantations on the Ana-

mallais and on the Nilgiris, and also a modern fully equipped factory on the Anamallais for the extraction of Quinine and Quinidine from the bark. The bye-product in the manufacture of Quinine from the bark is what is known as Cinchona Febrifuge. It contains about 10 per cent of Quinine and about 5 per cent of Quinidine. Cinchona Febrifuge had been used for over a century as a prophylactic against malaria, but because of the fall in incidence of malaria, this drug does not find any considerable use at present. Hitherto the Tamil Nadu Cinchona Department used to export Febrifuge to foreign countries at a low price for further processing, but recently, the Chemists of the Department have been able to extract therefrom the residual Quinine and Quinidine, resulting thereby in higher realisation by sale. At present Quinine Sulphate is sold at Rs. 250 per kg. and Hydrochloride at Rs. 263 per kilogram for consumers within India, while the export prices at present are Rs. 468 for Sulphate and Rs. 485 per kilogram for Hydrochloride. Quinidine Sulphate fetches about Rs. 775 per kilogram in foreign markets.\*

## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

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

### Rate of Interest

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

### Initial repayment holiday

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

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## NINE PROJECTS AND SEVEN SCHEMES SELECTED FOR DETAILED MONITORING

Nine projects and seven schemes have been selected for detailed monitoring and analysis and for developing improved and rationalised monitoring systems by the Monitoring and Information Division of the Planning Commission. The schemes selected are Feeding Programmes (Nutrition); Agro-service centres and Rural Engineering Surveys (Special Employment Schemes); Primary Health Centres and Rural Water-Supply (Health); Post Partum and Intensive District Schemes (Family Planning).

The Monitoring and Information Division was set up by the Planning Commission in April 1972 with the object of monitoring the progress and performance of selected projects in pre-construction and construction stages and of important programmes/schemes, locating areas of shortfalls and delays, identifying the factors responsible therefor and suggesting corrective action to the appropriate authorities for ensuring execution of projects and programmes within the Plan estimates of time and cost. The Division has also selected 135 projects in Industry, Mining, Irrigation, Power and Transport sectors and programmes/schemes in nine sectors and sub-sectors for collection of progress information on a continuing basis. The selected sectors and sub-sectors are: Nutrition, Education, Social Welfare, Agricultural Production, Land Reforms, Rural Electrification, Special Employment, Health and Family Planning. To cover the various projects and schemes, 25 Monitoring Groups have been formed with representatives of concerned Ministries, project authorities and Planning Commission. The reports of seven Monitoring Groups have been completed. In the case of other groups, their first phase of work is expected to be completed by the end of October 1972. The Division has also been assigned responsibility of providing technical assistance to Ministries and States and Union Territories in setting up their monitoring systems.

### INDUSTRIAL PRODUCTION LOOKS UP.

The level of industrial production in the country in May 1972 rose by 10.6 per cent and 9.3 per cent compared to the corresponding months in 1970 and 1971 respectively according to figures issued by the Central Statistical Organisation, Government of India. The index of industrial production in April 1972 stood at 191.3 points.

### BHARAT ELECTRONICS LIMITED.

The Bharat Electronics Limited is setting up a second unit at Ghaziabad, which will take up the production of sophisticated microwave and radar equipment for the requirements of air defence. Production in the new factory is expected to commence about the middle of 1973-74. This Defence undertaking has also taken up a number of new projects including the manufacture of integrated circuits, Television Studio and transmitting equipment and mini-computers and desk calculators. The proposal for TV picture of glass shell for TV picture tubes is also under consideration. B.E.L. stepped up its production has to about Rs. 32 crores during 1971-72. BEL has plans to further expand its production to meet the growing requirements of Defence Services, Civil Departments and electronics industry, and achieve a production target of Rs. 50 crores per annum in the Bangalore factory alone by 1974-75. The exports by BEL comprising mainly of valves and transistors during 1970-71 were of the order of Rs. 52.84 lakhs.

### EMERGENCE OF NEW DAIRY UNITS.

### SFDA HELPS SMALL FARMERS.

The Dairy Farming Scheme sponsored by the Small Farmers Development Agency (SFDA) is giving every hope to the farmers who own land less than 7½ acres. A good instance of the kind is

being provided by the SFDA project in the village Udho Nangul in the district of Amritsar. Fifteen small farmers of Udho Nangul had been provided in two buffaloes each by advancing a loan of Rs. 4,000 per farmer by the nearby branch of the Central Bank of India, Chowk Mehta. Of this, 25 per cent had already been adjusted by the Bank as a subsidy granted to the respective farmers by the SFDA Agency. The choice of the animal was left to the farmer who was of course assisted in the selection by the local representatives of the SFDA, Dairy Development Department and the Department of Animal Husbandry. To ensure a regular flow of milk throughout the year, the SFDA would further add a buffalo to every member's dairy unit after about six months. Under the scheme the farmers are no longer left to the mercies of private delivery milkmen or middlemen. The Milk Chilling Centre at Chowk Mehta, run by the Dairy Extension Wing of the Punjab Government purchases all the quantity of milk and is also responsible for its collection from the village centre. The higher the fat content, the better the price. It was noted at Udho Nangul that no producer received less than Re. 1 a litre. The farmers are paid half the amount due to them for the milk offered. The rest of it goes to the Bank and adjusted is towards loans. With this system in operation, the SFDA has overcome one of the major difficulties faced by the small farmers, that of easy credit. Earlier, the private milkmen would advance small sums to the needy farmers and then would go on purchasing milk at rates usually lower than the market price. The small land holdings in Udho Nangul which appeared to be uneconomical so far, are proving viable now. They produce "char" a for the buffaloes and the farmers can go on expanding their dairy units steadily. They wanted to contribute to the Green Revolution; but they are happily equipped today to subscribe to the White Revolution which is the offing in the country.



# HOW DEEP IS ENGLISH

The number of books published in India is disproportionately high. Is it possible to scrap overnight a system that has taken such firm and wide-spread roots? No, say, the supporters of English, and they feel that any attempt to hasten the banishment of English from Indian administration and education will have an irremediably adverse effect on both.

## IN INDIA?

Four basic layers have made up the pattern of the Indian "Palimpsest"—Dravidian, Aryan, Middle Eastern and European. The last three brought invading settlers, and they brought three religions (Hinduism, Islam and Christianity), three political systems, and three official languages (Sanskrit, Persian and English). And the latest addition, English, is very much a "Natural" part of the linguistic spectrum.

How closely a part? That question leads us to the question of a "directing class", which can give expression to Indian cultural values by interpreting the enduring truth of the layers, can transmit them to contemporary generations, and can thereby ensure the continuity of the tradition.

Without vision, the people perish; they perish too, or at least decay slowly, when there is no revision of ancient verities.

To argue, therefore, that English as used in India, is not one of the Indian languages is to raise another, and very important, question. What makes a thing India?

It is not religion, for people of different and even opposed faiths call themselves Indian. It is not food, dress or customs; all these differ enormously in different places. And it is not language. The fact that Hindi derives from Sanskrit does not make it necessarily more Indian than Urdu, which derives from Persian, or more than English, which derives from Anglo-Saxon or Latin.

To be Indian is surely to go beyond such trivia; the experience of being Indian should not be confused with religious nationalism nourished by a chauvinistic passion for a majority language. Few activities are shodder than the hawking of languages by money-changers in the temple of Demos.

"Snob" Language.

What I have written so far is partly a serious and partly a sentimental presentation of the case for English.

## AND WHY?

*If Democracy cannot give equal advantages to all, it should at least provide everybody with an equal disadvantage, says the Author.*

Excerpts from an article  
by P. LAL, Editor The  
Miscellany. Published by  
Writers Workshop,  
Calcutta.

True, English, as a "snob" language of white and brown sahibs, has played a divisive role in education and society. When Lord Macaulay suggested making English the medium for higher education in India, it was not without a certain sneer at indigenous traditions. He was afraid that without English "sound philosophy" and "true history" would not get taught in Indian schools and colleges. It remains sadly true that English snootily gives the best jobs in Indian society to those who know it, and such people are invariable the sons and daughters of the affluent.

The situation is complicated by promises made and assurances given regarding the status and use of English. It is further complicated by the co-existence of fourteen official languages and by the fact that in 1967 English was named the official language of one Indian State, Nagaland. Another complication is the problem of finding a medium for instruction at college and university levels that will satisfy all the linguistic regions. Nor will the language tangle be simplified if the language of the courts—still, for most purposes, English—is changed.

Answers? Solutions? Perhaps no final ones. In doubts the best course is to be realistic, to keep the course is to be realistic, to keep status quo with only the barest minimum of changes. Or follow the principle that if democracy cannot give equal advantages to all, it should at least provide everybody with an equal disadvantage.\*



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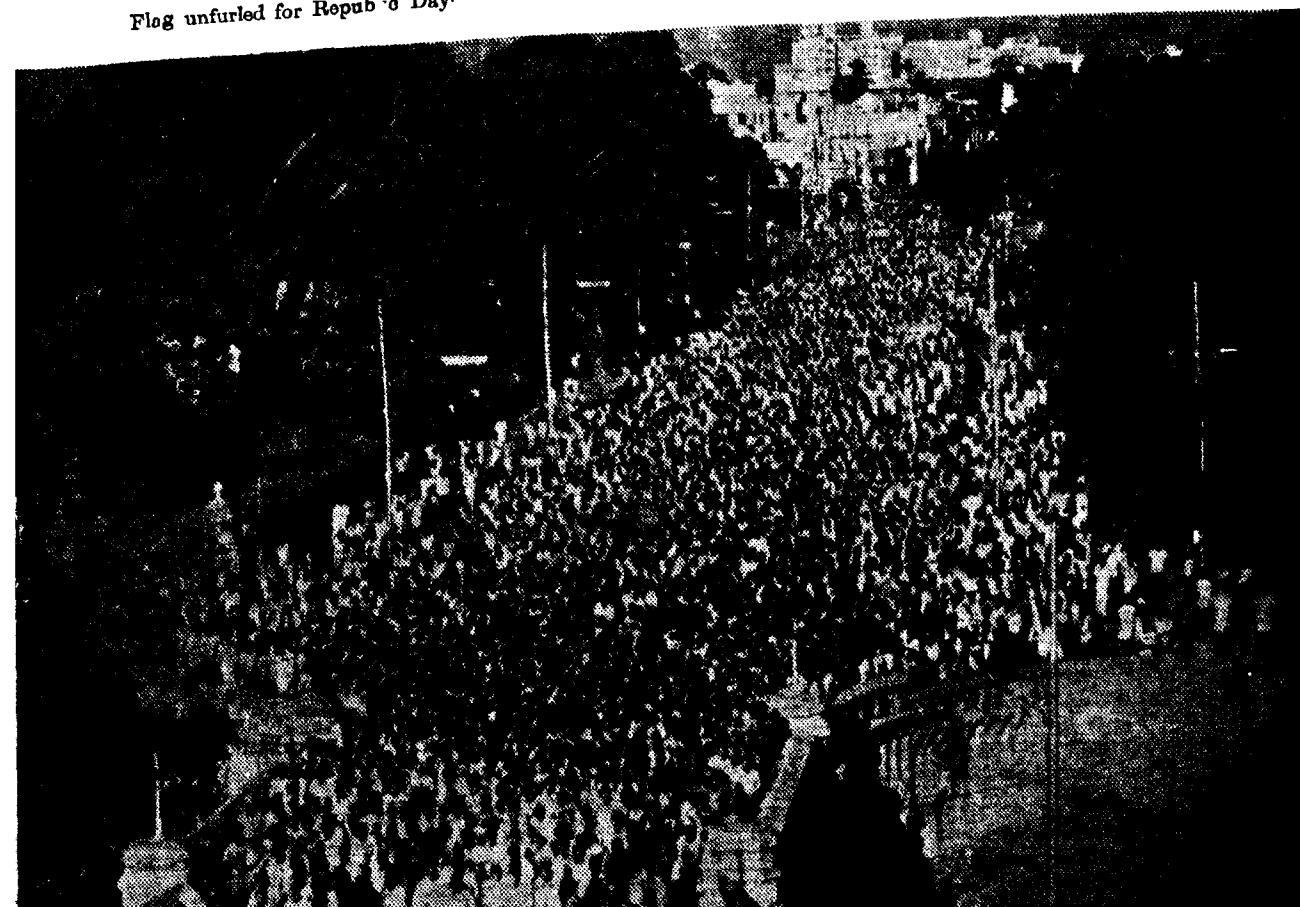
Vol. III 1st FEBRUARY, 1973  
 (Issued late on 5-2-73)

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# LET REMOVAL OF POVERTY BE OUR GOAL

At a Joint Session of the Tamil Nadu Legislature held in the Chambers of the Legislative Assembly on 2nd February 1973, Governor Thiru K. K. Shah said

I consider it my duty to refer, at the outset, to the grievous loss suffered by the State in particular and India as a whole, in the demise of Thiru C. Rajagopalachari, affectionately known as Rajaji.

During the year gone by, the State had more than its share of natural calamities. An unseasonal South-West monsoon threatened us with drought. The delayed rainfall in many areas led to loss of a major part of the groundnut crop and resulted in many districts facing a shortage of drinking-water. Promptly Government sanctioned relief measures at a cost of Rs. 1.25 crores. Fortunately, with the onset of the North-East monsoon, the effects of drought were got over and the situation ameliorated. No sooner had we recovered from this, than there was a severe cyclonic storm, causing extensive damage to roads, houses, buildings, irrigation dams and fields, in the districts of South Arcot, Coimbatore, Tiruchirappalli, Thanjavur, the Nilgiris, Chingleput, North Arcot, Dharmapuri, Salem and Madras. Nearly 1,80,000 families lost their houses and the paddy crop was damaged totally in 28,000 acres and partly in 1,70,000 acres. Our estimate of losses, as a result of this cyclonic outburst, runs to Rs. 40 crores. We have made a detailed assessment of the damage and requested Government of India to assist us with loans and grants to the extent of about 25 crores of rupees to repair roads, irrigation works, to help our farmers to reclaim their sand-cast lands and to rebuild their houses. The Government of Tamil Nadu, in anticipation of assistance from the Government of India sanctioned immediately Rs. 5 crores for relief works. The entire administration was geared to help those affected by the floods and should be congratulated for their dedicated work. I am confident that generous assistance will be coming forth from the Central Government whose team of officials has already inspected the damages and submitted its report.

The Tamil Nadu Civil Supplies Corporation has made arrangements for procuring pulses from major producing States and has also established a number of retail shops in Madras City and other urban centres of the State. This net-work for direct retail distribution of essential commodities will be extended. At present, the shops are distributing sugar, dhalls, wheat and wheat products, apart from rice in Madras and Coimbatore. The Consumer Co-operative movement is also being revitalised and the managements of the Super markets are being reorganised. This type of controlled distribution is intended to safeguard against the malpractices of trade and curb the tendency to push up prices. The phenomenon of price-rise can be controlled by the State only with the help of Central monetary and fiscal policies.

Fertilisers have been very much in short supply. Whereas our requirement is 2.74 lakhs tonnes of nitrogen, we have received only 1.30 lakhs tonnes of

nitrogen, from the Government of India during 1972-73 as against a supply of 2.14 lakhs tonnes of nitrogen during 1971-72. We have requested the Government of India to take immediate measures to increase indigenous production of fertilisers and to import additional quantities of fertilisers on a fairly long-term basis.

## Regional water and power Plan.

Planning for utilisation of water resources as well as other natural resources has to be on a regional basis and cannot be confined within a State's boundaries. The States of Mysore, Tamil Nadu, Kerala and Andhra Pradesh have to plan for utilisation of the water resources of the region on an integrated basis. I would suggest for the consideration of all these four States, the formation of a Western Ghat Development Corporation to exploit the untapped water and power resources in this region.

During the last year both the Industrial and Agricultural sectors in the State were affected on account of shortage of power. A sharp fall in power generation at Neyveli, due to a variety of reasons, multiplied our difficulties. The cumulative impact of all these difficulties has compelled us to impose a power cut, the adverse effect of which on the economy, as a whole, is yet to be fully assessed. One thing, however, is clear. Bhabha's famous dictum "No power is as costly as no power" has been brought home to us. The shortage of power is a world-wide phenomenon. But we have to plan ahead benefiting from the lessons of recent history. As a short-term measure, steps should be taken immediately to improve the production of power at Neyveli. I am happy to report that the management at Neyveli has taken steps to improve the production of lignite and the generation of power. In addition, the conversion to fuel oil of some of the thermal units at Neyveli, which are lying idle at present for want of sufficient lignite, will improve the position. Clearance has been given by the Government of India for this conversion, which is estimated to take eighteen months.

As a long-term measure, we have pressed for a second mine-cut at Neyveli with a view to setting up another thermal complex of 1,000 M.W. capacity. The second mine-cut will take nearly eight years to be completed and the sooner a decision is taken, the better for the future of the State and the country. I would, therefore, request the Government of India to give early clearance for this project. Equally important are the expansion of the capacity of the Kalpakkam Atomic Power Plant and the establishment of two new thermal stations at Mettur and Tuticorin respectively. We are looking forward to early clearance of these proposals.

## The Industrial scene.

Turning to the industrial sector, the year gone by has been one of consolidation. In spite of this, many of them have made progress. One important development during the year was the incorporation of Salem Steel Plant Limited as a separate company

to undertake the construction of the Steel Plant at Salem. The Managing Director has also been appointed.

The problems of unemployment and under employment and related poverty continue to cause concern. This is an All-India problem. Whatever is possible is being done by the State. We have initiated programmes costing nearly Rs. 10 crores, including the crash scheme for rural employment at a cost of Rs. 3 crores, the rural roads programme at a cost of Rs. 3 crores, the youth service scheme at a cost of Rs. 61 lakhs and the drought corps scheme at a cost of Rs. 1.31 crores. Mention may also be made of the special apprenticeship programme for engineers and loan assistance scheme for craftsmen. These programmes are in addition to the substantial labour intensive schemes included in our normal plan and non-plan investment.

For the year 1972-73, the annual plan was fixed at about Rs. 115 crores. The schemes are being implemented and it is expected that the plan for 1972-73 will be fulfilled. During the discussion held between Chief Minister and the Planning Commission, the Plan for 1973-74 has been fixed at Rs. 120 crores. The total five-year outlay will now come to Rs. 534 crores as against Rs. 519 crores earlier approved by the Central Planning Commission.

## Our Plea to Finance Commission

In this context, considerable importance should be attached to the visit of the Sixth Finance Commission to the State in January 1973. We have pleaded for restoring the primacy of the Finance Commission as a channel for routing resources to States. Our view is that all the needs of the States, both plan and non-plan including the minimum need programmes approved by the National Development Council, should be gone into by the Finance Commission, in consultation with the Planning Commission. The Finance Commission should recommend grants-in-aid and devolution of taxes taking into account the overall picture. So far as the plan grants are concerned, the Finance Commission should recommend the principles on which grants-in-aid should be given. The Planning Commission should work on the basis of these principles from year to year.

We have urged that the criteria for central assistance for Plan Schemes should be reconsidered in the light of the adoption of a national minimum needs programme. The National Development Council has accepted a minimum needs programme to bring up all areas of the country to specified norms. This means that the plans of various States will include adequate provision for this programme. Once this is done, and the needs of backward tracts of various States have been taken care of through such a programme, there is no justification to adopt other criteria of backwardness such as per capita income either for extending central assistance or for devolving central taxes.

We have requested the Finance Commission to consider the need to give adequate debt relief to all States. Considerable outlays obtained as loan from the Centre have to be utilised for provision of infrastructural facilities and no tangible revenue can be expected from expenditure. Such loan assistance should be treated as grants so that the debt burden on the States can be reduced.

Another important point we have raised concerns the need to remove disparity of emoluments between the Central Government employees and the employees of the State Government. The resources of the State are relatively inelastic. We have, therefore, pleaded with the Finance Commission to give a pay equalisation grant to all States to ensure parity between the State and Central emoluments. I do hope that these aspects will be duly taken into account by the Finance Commission. This becomes particularly urgent in view of the forthcoming report of the Central Pay Commission.

## Removal of Poverty and Unemployment

We are committed to the goals of removal of poverty and unemployment, and elimination of social and economic backwardness. We have set up a State Planning Commission to draw up a perspective plan for the State for the ten years covering the Fifth and Sixth Plans. A draft Plan frame drawn up by the State Planning Commission has been placed before the Legislature and the public. Active work is going on in regard to the finalisation of the Fifth Five-Year Plan and the perspective plan covering the Fifth and Sixth Plan periods. In this context, I would like to refer to the emphasis laid by the Chief Minister in his speech before the National Development Council on the assurance of adequate supplies of raw material and power as necessary inputs for implementation of the Plan. Equally important is the suggestion made by him to set up a National Taxation Enquiry Commission to look into the incidence of taxes and provide for incentives to save and invest. I attach particular importance to the idea that people should not look up to Government all the time for jobs. There should be middle class entrepreneurs ready to save and invest. It is with a view to retoring the incentives to them to save and invest that Chief Minister has made the suggestion that the income-tax structure be reorganised. This will also enable Government to reduce the evils of unaccounted money.

Before I conclude, I would like to refer to the vital question of prices and wages. Price policy has to be settled on the basis of national decision in regard to monetary and fiscal matters. A comprehensive wage-price income policy should be evolved and implemented. In evolving this policy, care has to be taken to ensure that the problems of those who have no jobs are continually kept in mind. The large masses of our people below the poverty line should be kept always in the picture.

One of the important bills that are to be considered in this session relates to nationalisation of bus transport. As you are aware, Government of Tamil Nadu have taken a decision to nationalise all bus transport in the State on the basis of a phased programme. This represents yet another step forward in the progress of the State towards socialism.

We have yet to travel a long way. In these troubled days, if we can be the torchbearers of determined dedication to strengthening of forces of understanding, co-operation and sustained hard work in the service of teeming masses, posterity will bless us. May your efforts and wise counsels be the harbinger of an era of peace and prosperity.



# LET US DEDICATE OURSELVES TO

The following is the text of broadcast of the Governor, Mr. K. K. Shah on the Republic Day.

"On this auspicious and historic national day, I convey to you all my warmest greetings.

Last year we celebrated the day with a sense of pride and purpose and expressed our unbounded joy to witness the birth of Bangla Desh, which had faced horrible trials and tribulations with determination, courage and unity of purpose. To-day we heave a sigh of relief that those who tried to throttle democracy and the voice of reason stand exposed before the conscience of humanity. Under the dynamic leadership of Shrimati Indira Gandhi, we stand for certain basic ideals. We love all, hate none and extend our hand of friendship to all without any mental reservations, although some of them still persist in their nefarious game of balance of power and animosity to India. Even though destiny has been cruel enough to silence the voice of Rajaji, his opposition to piling of nuclear weapons will continue to reverberate till a positive response is forced by circumstances. It may be that when the chips are drawn, the voice of India, following in the footsteps of Mahatma Gandhi, may provide saner counsels and be listened to for preservation of mankind. Let us unflinchingly dedicate ourselves to fighting poverty so that the toiling millions may find their legitimate place and become the bulwark of peace.

It is no exaggeration to say that in spite of trying and sometimes agonizing situations claiming heavy toll of our scant resources, we were about to reach the takeoff stage and could look to future with confidence in spite of the huge defence expenditure which went up from Rs. 350 crores to nearly 1,400 crores necessitating an additional outlay of about 8,000 crores after Chinese invasion in 1962 and an equally formid-

## FIGHTING POVERTY

able destruction caused by flood, huge outlay on food to feed the evergrowing population and heavy burden of three wars, we have maintained our progress although at a lower pace. The fact that the huge burden of Rs. 25,000 crores in the last 10 years could be absorbed without violent upheavals is a demonstrative proof of sound health of our economy.

The praiseworthy feature of our economy is that it has developed a resilience which is unparalleled. There are ups and downs but on the whole there is no set back. There is unprecedented severe drought in certain parts of the country. Tamil Nadu and some other States were subjected to the savage onslaught of cyclone and floods. Yet we can say with confidence that we shall face these difficulties without substantial interference with our planned growth. What we need is a period of intensive and extensive application of all our resources and manpower. To create a congenial climate is the duty of everyone of us. We have to remember every minute that vast masses are still waiting for equality of opportunity. Even the barest means of livelihood are yet to reach them. The only consolation that we can draw is the fact that social objectives have become compatible with sustained growth and that difficulties have not shaken our determination to follow the directive principles of our Constitution.

The emergence of Bangla Desh and the decisive victory against unprovoked aggression by Pakistan create wider opportunities for accelerating pace of progress and for overcoming compulsions taking heavier toll of our resources. Even now we can safely say that the per capita consumption of basic items has not declined despite the explosion of population. Longevity of life has increased from 32 to 52. Literacy rate is gradually improving. The masses are habituated to wider

use of media of mass communication like the radio, press and the film. Transport and communication systems have registered rapid development. Health services have expanded, consistently with our resources. Even then we are just on the fringe of the problem.

## MAJOR PROBLEMS

Our major problems are to raise the standard of living of the vast masses of our people; to give employment opportunities to millions of educated youth and rural landless labour; and to invest more in social security measures and rural development. Such a stupendous task cannot be achieved in the shortest possible time unless all resources—human and material—are pulled together by spontaneous and total co-operation from all sections. We will have constantly to remember that democracy provides more than enough opportunity for weaknesses being exploited. There is a perpetual fight between weaknesses and virtues of democracy. Short term solutions based on agitational approach create precedents which will shake democracy and make our prosperity shortlived.

In a developing economy, where birth-rate is still worrying us, it will be ruinous to indulge in luxuries of recriminations and exploitations of weaknesses inherent in democracy. A period of waknesses' truce is a must. In fact, at least for five years we will have to forget party politics two decades we will have to forget party politics after the elections are over and utilise our collective wisdom, ability and energy for building world adds to restlessness and calls for sober counsels, extra effort will have to be made to maintain balanced altitude, multiply production, provide better opportunities to the neglected and avoid violence. We will have to begin from the top. We will have to make our legislative forum ideal institutions where dispassionate discussions become possible, where anxiety to help replaces anxiety to score and where healthy traditions provide inspiration and guidance to the rest of the country.

The celebration of this national day gives us an opportunity to review our achievements in the State and to plan for our future.

## WORST FLOODS

The year 1972 witnessed one of the worst floods, causing unprecedented havoc specially in South Arcot, Thanjavur, Salem and Coimbatore Districts. The State Government has estimated that Rs. 25 crores would be required for undertaking relief works in areas hit by floods and cyclone in the State during December and has sanctioned Rs. 4 crores for taking up

immediate relief works. The Centre has also been approached for liberal financial assistance for flood relief work. Various relief measures like remission of land revenue and financial assistance to the people in the affected areas to help them rebuild their damaged huts and to reclaim the lands that had become sandcast are being undertaken. During the year under review, the agricultural operations were satisfactory. Food production has been stepped up and our State is now in a happy position.

The power cut is widespread in the whole country and it has affected Tamil Nadu also. The Government has taken steps to meet the situation by restricting power supply in the domestic, industrial and agricultural spheres. Government have succeeded in borrowing power from Kerala, but we are not out of the woods. Every effort is being made to meet the situation.

The Administrative Reforms Commission and the State Planning Commission have commenced work. The Administrative Reforms Commission has set up a number of groups to examine the procedures of the Government. The Planning Commission has set up a number of task forces to look into various aspects of the State's economy. These two bodies are expected to play a vital role in modernising the administration of the State and meet the requirement for faster growth.

## SLUM CLEARANCE WORK

Among the measures taken to help the poor, I may mention the Free Eye Camps that are becoming quite popular and useful, covering more than 6 lakhs of people during the year; the vigorous efforts of slum clearance work, as a result of which out of the targets of 23,232 tenements, 4,900 have been completed and 7,897 are under construction; the role played by the Youth Service Corps in doing constructive work in the villages; and the other legislative measures intended to assist the poorer sections in a number of ways.

## GENERATION GAP

The gap between the younger generation and the leaders in public life has to be closed as swiftly as possible. It is time a new approach to divert their unbounded energies to productive purposes is adopted. We are facing numerous trying problems. Let us, on our Republic Day, vow that neither frustration nor impatience, nor personal rivalry will succeed in disturbing our equanimity and that we will do everything in our power to strengthen the forces of integration and develop an urge for collective strength and wisdom. Let us pray that there may be more cheer, satisfaction, happiness and prosperity during the current year and that every household may enjoy the warmth of better days.



## HYDRO GENERATION

(Excluding Mettur)

|           | 1969               | 1970 | 1971 | 1972 |
|-----------|--------------------|------|------|------|
|           | (in Million Units) |      |      |      |
| June      | 194                | 182  | 164  | 322  |
| July      | 213                | 218  | 244  | 353  |
| August    | 185                | 247  | 268  | 340  |
| September | 177                | 259  | 266  | 372  |

III. Hitherto the shortfall in thermal generation has been met by purchase of power from neighbouring States. But, there has been an appreciable reduction in outside relief during 1971-72 and 1972-73 as may be seen from the statistics furnished below :—

| Relief from. | 1969 | 1970 | 1971 | 1972 |
|--------------|------|------|------|------|
|              | to   | to   | to   | to   |
|              | 1970 | 1971 | 1972 | 1973 |
| Kerala       | 303  | 335  | 336  | 252  |
| Mysore       | 206  | 724  | 3    | Nil  |
| Total ..     | 509  | 1059 | 339  | 252  |

During 1971-72 though there was an appreciable reduction in relief the situation was managed on account of better inflows in Tamil Nadu Electricity Board reservoirs and by depleting the storage at the end of the year to the minimum. This season, started with a minimum storage of 168.5 MU on 27th June 1972 and this coupled with low inflows has resulted in low storage as on date.

IV. Compared to the previous years the month wise consumption has been high as may be seen from the statement below :—

|           | 1970                  | 1971 |
|-----------|-----------------------|------|
|           | MU increase per cent. |      |
| June      | 511                   | 11   |
| July      | 515                   | 10.8 |
| August    | 491                   | 11.2 |
| September | 509                   | 9.9  |

|           | 1971                  | 1972 |
|-----------|-----------------------|------|
|           | MU increase per cent. |      |
| June      | 557                   | 7.8  |
| July      | 563                   | 9.3  |
| August    | 542                   | 10.4 |
| September | 552                   | 8.5  |

|           | 1971                  | 1972 |
|-----------|-----------------------|------|
|           | MU increase per cent. |      |
| June      | 595                   | 8    |
| July      | 627                   | 11.4 |
| August    | 629                   | 16   |
| September | 607                   | 10   |

To sum up, whereas there has been an increase in the rate of growth, there has been reduction in the inflows, reduction in relief from Neyveli and neighbouring States and non realisation of full benefits from plants put up to meet the additional demand. The cumulative effect of this has resulted in a shortage of about 1750 MU for the 8 month period from October 1972.

The failure of South West Monsoon, the low generation at Neyveli and stoppage of relief from Kerala and Mysore has cumulatively caused serious power shortage in the State. The present storage in our hydel reservoirs is only about 35 per cent of the storage that was available last year.

At this critical period when the whole nation is faced with power crisis, it is essential that total austerity is observed in the use of electricity, avoiding lavish illumination, display lights, etc. and by restricting the use of air conditioning, domestic appliances, etc. Every unit thus saved would go to meet the needs of agriculture and industry.

As the power deficit is likely to continue for sometime, the industrialists are advised to go in for diesel generating sets to supplement power supply to their industries. Industrialists desirous of owning diesel sets may contact Electricity Board for assistance.

All users of electricity are requested to cooperate with the Electricity Board to tide over the present crisis.

## 15 per cent Surcharge on supply of Electricity

One of the principal sources of power for the Tamil Nadu Electricity Board has been the Neyveli Lignite Corporation which has been supplying power at 5.9 paise per unit from 1968. It has been agreed recently that this rate would be enhanced to 8.1 paise with effect from power supplies for 1972-73. It is calculated that the annual extra cost of power on account of the increase of price of Neyveli power will itself be Rs. 4 to 5 crores.

Besides Tamil Nadu is not able to get even its normal requirements of coal for power houses, because of the shortfall in coal production in Singareni and transport bottlenecks. Hence, the Tamil Nadu Electricity Board has (a) to use furnace oil and (b) to purchase coal from Bihar, Bengal collieries, which coal could be transported only by sea. This factor alone costs the Board annually Rs. 7 crores.

Accordingly, it has been decided to levy a surcharge at a rate of 15 per cent on the monthly charges in respect of the following classes of consumers in the areas served by Tamil Nadu Electricity Board and by the Electric licencees.

- All High tension consumers (other than bulk supply to licencees).
- All Low Tension supplies other than Domestic, Domestic Bulk Supply, Agricultural purposes and public lighting.
- High Tension special loads including railway traction.

The levy of this surcharge will take effect from 1st February, 1973. This surcharge will bring in annually only Rs. 6 crores as against the enhanced costs which come to about Rs. 12 crores a year.

## THE LIGHT HAS GONE OUT

The Sarvodaya Day in memory of the Father of the Nation was observed in Tamil Nadu with reverence and solemnity. In the City, the imposing Gandhi Statue in the Marina, opposite the spot where his ashes were immersed in the Sea, was the scene of first prayers and mass spinning, offered on the day. This started at 6 A.M. with a dedicated band of Sarvodaya Workers. At Gandhi Mandapam, Guindy, Bhajans and spinning started at 8 A.M. and continued till late in the evening with the Governor and his wife Thirumathi Shah taking keen interest.

The following is the text of the broadcast made by Shri Jawaharlal Nehru to the nation on the evening of January 30, 1948 :—

"Friends and comrades, the light has gone out of our lives and there is darkness everywhere. I do not know what to tell you and how to say it. Our beloved leader, Bapu as we called him, the Father of the Nation, is no more. Perhaps I am wrong to say that. Nevertheless, we will not see him again as we have seen him for these many years. We will not run to him for advice and seek solace from him, and that is a terrible blow, not to me only, but to millions and millions in this country. And it is a little difficult to soften the blow by any other advice that I or anyone else can give you.

The light has gone out, I said, and yet I was wrong. For the light that shone in this country was no ordinary light. The light that has illumined this country for these many many years will illumine this country for many more years, and a thousand years later, that light will still be seen in this country and the world will see it and it will give solace to innumerable hearts. For that light represented something more than the immediate present, it represented the living, the eternal truths, reminding us of the right path, drawing us from error, taking this ancient country to freedom.

All this has happened when there was so much more for him to do. We could never think that he was unnecessary or that he had done his task. But now, particularly, when we are faced with so many difficulties, his not being with us is a blow most terrible to bear.

A madman has put an end to his life, for I can only call him mad who did it, and yet there has been

In Government Estate on Mount Road stands the Gandhi Illam which is a permanent museum depicting the life and times of Mahatma Gandhi in sculptures, Murals, art pieces and photographs. The inmates of Government institutions run by Women's Welfare Department and the Department of Approved Schools conducted mass spinning and prayers through out the day at Gandhi Illam. Several City Schools also joined these prayers and made the occasion truly a fitting memorial to the Father of the Nation.

enough of poison spread in this country during the past years and months, and this poison has had an effect on people's minds. We must face this poison and we must root out this poison and we must face all the perils that encompass us, and face them not madly or badly, but rather in the way that our beloved teacher taught us to face them.

The first thing to remember now is that none of us dare misbehave because he is angry. We have to behave like strong and determined people, determined to face all the perils that surround us, determined to carry out the mandate that our great teacher and our great leader has given us, remembering always that if, as I believe, his spirit looks upon us and sees us, nothing would displease his soul so much as to see that we have indulged in any small behaviour or any violence.

So we must not do that. But that does not mean that we should be weak, but rather that we should, in strength and in unity, face all the troubles that are in front of us. We must hold together, and all our petty troubles and difficulties and conflicts must be ended in the face of this great disaster. A great disaster is this great disaster. A great disaster is a symbol to us to remember all the big things of life and forget the small things of which we have thought too much. In his death he has reminded us of the big things of life, the living truth, and if we remember that, then it will be well with India.....

It was proposed by some friends that Mahatma's body should be embalmed for a few days to enable millions of people to pay their millions of people to him. But it was his wish, repeatedly expressed, that no such things should happen, that this should not be done, that this should be entirely opposed to any embalming of his body, and so we

decided that we must follow his wishes in this matter, however much others might have wished otherwise.

And so the cremation will take place on Saturday in Delhi city by the side of the Jumna river. On Saturday forenoon, about 11-30, the bier will be taken out at Birla House and it will follow a prescribed route and go to the Jumna river. The cremation will take place there at about 4-00 p.m. The place and route will be announced by radio and the Press.

People in Delhi who wish to pay their last homage should gather along this route. I will not advise too many of them to come to Birla House, but rather to gather on both sides of this long route from Birla House to the Jumna river. And I trust that they will remain there in silence without any demonstrations. That is the best way and the most fitting way to pay homage to this great soul. Also, Saturday should be a day of fasting and prayer for all of us.

Those who live elsewhere, out of Delhi and in other parts of India, will no doubt also take such part as they can in this last homage. For them also, let this be a day of fasting and prayer. And at the appointed time for cremation, that is 4-00 p.m. on Saturday afternoon, people should go to the river or to the sea and offer prayers there. And while we pray, the greatest prayer that we can offer is to take a pledge to dedicate ourselves to the truth, and to the cause for which this great countryman of ours lived and for which he has died. That is the best prayer that we can offer him and his memory. That is the best prayer that we can offer to India and ourselves.

"JAI HIND"

# THE REPUBLIC MUST BE A

In a Broadcast to the people on Republic Day the Chief Minister of Tamil Nadu, Dr. M. Karunanidhi said :

"To-day is the Republic Day ! the Impressive march-past by the contingents of the Defence forces and other departments was witnessed by lakhs of people this morning. There was an avalanche of people right from Gandhi Statue to Anna Square ! There was a march-past by the contingents of the Army, the Navy, the Air Force, the Police, N.C.C., Students and others. The cultural pagentry representing the traditional folk arts and dances like Karagam, Kummi, Kolattam, Puliyattam, Nadaswaram, Dummy horse dances, etc., impressed and enthused the people ! Year by year we are celebrating this day like this ! Every individual has the responsibility of preserving the decorum of democracy. Enjoyment of freedom does not mean encroachment upon another man's rights.

"Rights granted must be subject to reasonable restrictions and to the principles of equality and socialism. Liberty should not be so boundless as to destroy the very foundations of democracy. It is the majority that decides in a democratic set up. The democratic decision is arrived at not only in the case of forming a government but even in associations of different types the democratic procedure is followed and the decision of the majority has its way. That is democracy. No individual who wants to thrust his opinion on the majority and disregards the opinion of the majority be a democrat. Similarly, it won't be democratic if the opinion and welfare of the minority are disregarded and neglected by the majority.

(There's a time for.....)

"Even if decisions are taken democratically by various organisations in accordance with their constitution, there is a stage in democracy to arrive at a final decision and here is also a time for the final decision. If we are prepared to wait for the time appointed under the democratic set up, we can be proud of safeguarding democracy and democratic institutions.

"In democratic set up agitations are inevitable. But it must be impartially pondered over whether an agitation is resorted to, to solve issue or issues are created for starting agitations. Even if the cause of an agitation is just, if the agitation is carried on peacefully the foundation of democracy would be unaffected.

"We are endeavouring to unfurl the victory flag of socialism from the top of the Democratic tower. It may take time for us to hoist the flag to the top because our country is not sufficiently awakened in the social, economic and political spheres. Other countries are on the march towards socialism but our country is still slumbering and it needs awakening, and we have to prepare ourselves for the race.

"It is because of this that we are not able to achieve socialism as other nations have done.

## P R E L U D E T O S O C I A L I S M

How many schemes ! What an enormous investment ! In spite of all these poverty rules supreme !

"The poor and the ignorant and suffering ! The wicked people also are there to add to the misery of the poor, and to add to their troubles !

"A number of welfare schemes have been implemented to do away with poverty. Yet we have not provided a content life for the great society of India.

With the belief that the plans will be evolved in the future, keeping in view this purpose of satisfying the whole society, we are carrying on our duty.

Tamil Nadu has the distinction of being one of the leading States that have played a notable part in preserving the unity and integrity of the nation and in maintaining the best democratic principles. We don't simply stop with celebrating the Republic Day but we are contemplating the ways and means of preserving our democratic set up. When there is ample opportunity to express opinions peacefully, there are some who indulge in instigating violence. Violence is checked by the Government. Yet the people should be cautious about violence-mongers.

"What is it that provides opportunity for violence-mongers ? We must be aware of that also. Where the majority suffers and the minority enjoys, where the worker suffers and the rich are becoming richer, where poverty reigns—there lies the opportunity for the violence-mongers.

"To eliminate such opportunities of violence and to eradicate poverty the Tamil Nadu Government is doing its best.

"We have launched the Free Eye-Camp Programme to provide free eye-treatment to one lakh persons this year.

"Six Beggar-Rehabilitation Centres have been constructed with accommodation for 5,000 leprosy beggars. Four more will be started shortly. Then there are the crash programme for providings :

Electricity to all villages !  
Drinking water and drainage in all villages !  
Road connection to all villages !  
Mansion for the slum-dwellers !  
Radical steps and legal measures to abolish untouchability !

"These are only a few of our schemes to raise the people of the lowest strata. Land Reforms and Nationalisation of Transport are speedily effected to establish a socialist society.

"Independence of India was the first stage ! Declaration of India Republic was the Second Stage !

"The establishment of a socialist society is the third stage !

"These three stages are not final. There may be other stages of progress. Let us pledge that we will keep up the integrity and unity of the nation and in each stage we will co-operate to succeed !"

# HOW BEST TO TIDE OVER POWER CRISIS

The Tamil Nadu Government has imposed a 25 per cent power cut. The salient features are 25 per cent power cut on all HT and LT supply except to continuous process industries for which a cut of 15 per cent cut will be applicable and newspapers with a cut of 10 per cent Agricultural services essential services and domestic and commercial services with an average consumption of 100 units a month are exempted from the cut. New services and additional load except for agricultural, domestic and commercial purposes are banned.

This cut will bring forth a reduction of about 90 million units a month as detailed below :—

|                                                    | Monthly<br>Million<br>Units. | Monthly<br>reduction.<br>Million<br>Units. |
|----------------------------------------------------|------------------------------|--------------------------------------------|
| Cement ..                                          | 34                           | 5.1                                        |
| Chemicals ..                                       | 48                           | 7.2                                        |
|                                                    | 27                           | 4.5                                        |
| Other HT<br>Supplies.                              | 206                          | 31.0                                       |
| Domestic,<br>Commercial,<br>street lights,<br>etc. | 48                           | 7.5                                        |
|                                                    | —                            | 75.3                                       |

|                                   |     |
|-----------------------------------|-----|
| Reduction in line losses          | 15  |
| Total reduction per month         | 90  |
| Total reduction for eight months. | 720 |

As it may be difficult to achieve 100 per cent reduction in practice, at the most a reduction of 500 Million units may only be expected. This leaves a deficit of 316 Million units that too if the increase in generation at Ennore, Neyveli and availability of relief from Kerala are achieved. The deficit will be increased further if any proposals contemplated do not materialise. In case the generation at Ennore and Neyveli are not increased the quantum of power cut may have to be increased beyond 50 per cent.

## REASONS FOR SHORTAGE

The reasons which resulted in this shortage would need an analysis.

The various factors which led to this situation are enumerated below :—

## I. Under utilisation of thermal Plants

Neyveli.—The installed capacity in the station is 600 MW. This station is designed for a generation of about 3500 MU a year. Leaving 500 MU for internal (i.e. in Neyveli) consumption the relief available to Tamil Nadu is to be about 3000 MU-a year. As against this the relief given to Tamil Nadu in the past three years has been as below :—

|         |    |    |         |
|---------|----|----|---------|
| 1969-70 | .. | .. | 1952 MU |
| 1970-71 | .. | .. | 1521 MU |
| 1971-72 | .. | .. | 1922 MU |
| 1972-73 | .. | .. | 1620 MU |

(proposed)

Thus there is shortfall of 1000 to 1500 MU a year. The power development programme was conceived based on full utilisation of Neyveli. The shortfall in generation at Neyveli has created a power shortage of big magnitude.

## II. Failure of Monsoon.

The storage in hydro reservoirs in the State is only 536 MU as on 1st October 1972 as against 1695 MU last year and 876 MU year before last. It may be evident from the statement below that this low storage is on account of low inflows at hydro stations this season and higher utilisation:—

## INFLOWS

|                   | 1967 | 1968 | 1969 |
|-------------------|------|------|------|
| In Million Units. |      |      |      |
| June ..           | 325  | 207  | 105  |
| July ..           | 874  | 1067 | 822  |
| August ..         | 329  | 556  | 310  |
| September ..      | 139  | 251  | 234  |
|                   | 1867 | 2081 | 1471 |
| 1970 1971 1972    |      |      |      |
| In Million Units. |      |      |      |
| June ..           | 261  | 701  | 167  |
| July ..           | 435  | 502  | 761  |
| August ..         | 597  | 439  | 274  |
| September ..      | 202  | 323  | 164  |
|                   | 1495 | 1965 | 1366 |



## TAMIL NADU NEWS

### OUTER HARBOUR AND OIL JETTY COMPLETE

The Rs. 26 crore Madras Outer Harbour basin, along with the oil jetty, a major facility, is now complete. This is to be named after Poet Bharathi and declared open on 4th February 1973.

The Port Trust and the Indian Oil Corporation are planning to use the new oil jetty to receive the Shipping Corporation of India's giant tankers, Jawaharlal Nehru and Lal Bahadur Shastri from January, after the monsoon is over. Even with the present depth of the outer harbour basin, these tankers, with 77,000 tons of oil, can come into the oil berth, the port authorities are dredging the oil jetty basin as also the channel to a depth of 46 feet during November-December. A heavy dredger, now at Vizag, is being obtained. The Refinery is now able to take 3,000 tons per hour of oil instead of the 900 tons it did last year and in 1969. The two giant ships, chartered till about the beginning of January, will be available for the refinery from the middle of January, giving high freight advantage.

The jetty started earning revenues for the Port Trust from 1969 onwards. But dispatch monies could not be earned for quick turn over of ships in the last two years. The jetty has now capacity to empty the Shastri or the Nehru in less than twenty hours. With the refinery consumption at 25 lakh tonnes of crude now, the Jetty yields an average of Rs. 2.12 crores rupees to the anticipated 12 per cent. When the refinery's consumption increases to 30 lakh tonnes in the next year or so, the revenue should cover the interest and other charges of the investment and earn a 6 per cent.

### PLANTATION WORKERS GET WAGE INCREASE

An agreement for the upward revision of wages for 80,000 plantation workers in Tamil Nadu was signed in the presence of the Honourable Labour Minister, Thiru N. V. Natarajan. Thiru M. M. Rajendran, Secretary to Government, Labour and Employment Department and Thiru G. Kamalaratnam, Commissioner of Labour participated in the discussions held at Coimbatore.

Salient points of the agreement are :—

From January 1, men workers in tea plantations will get a daily wage of Rs. 3.50 (against Rs. 3.15 at present) and workers in coffee estates Rs. 3.45 (against Rs. 3.10 at present). They will get an increase of 10 paise a day from July 1, 1973, a further increase of five paise from January 1, 1974 and another five paise from July 1, 1974.

Corresponding increases will also be given to women, adolescents and children working in plantations as also to Supervisors, Assistant Supervisors, non-staff and skilled workers.

Workers in factories will, besides similar increases, be entitled to an additional five paise increase in the daily wages.

The managements will pay a lump-sum of Rs. 20 to all workers who worked 60 days and more in the last three months. Others will get the amount on a pro rate basis.

The Unions have agreed not to raise any issues involving financial commitment (like Dearness Allowance, Sunday wages, etc), other than bonus and incentives during the currency of the agreement i.e. till December 31, 1974.

### COMMITTEE FOR SIDDHA SYSTEM FORMED

It is learnt that there are manuscripts and cudgeon leaves containing valuable information about the methods the medicinal practitioners observed in ancient times in Tamil Nadu and that, there are innumerable printed books that are not easily available in the market as they are preserved as heirlooms by the Siddha Physicians. Therefore it has become necessary to collect such manuscripts, cudgeon leaves, and other books from various sources in Tamil Nadu to give a fillip to the Siddha System of Medicine and for its development.

The Government have constituted a Committee with the following members to collect such rare manuscripts printed books, etc.

1. Dr. C. S. Uthamaroyan, H.P.I.M., No. 175, Big Street, Madras-5—**Chairman**
2. Dr. P. M. Venugopal, H.P.I.M. Special Officer, Siddha Text Book Committee, No. 9, Gajapathy Naidu Street, Shenoy Nagar, Madras-30—**Member-Secretary**.

3. Dr. A. Anandakumar, G.C.I.M., No. 10, Ragaviah Road, Madras-17—**Member**.
4. Dr. M. Shanmugavelu, H.P.I.M., Coimbatore—**Member**.

The Committee will visit various places in Tamil Nadu and contact reputed Siddha Physicians to collect the above mentioned materials.

All the Siddha Physicians in Tamil Nadu are requested to extend their co-operation to the Committee by helping it to achieve its objects.

After scrutiny and screening of the various manuscripts, a few of them found to be of a high literary standard will be printed and published by the Government.

## PENSION RULES FOR TEACHING STAFF IN

### NON-GOVERNMENT SERVICE

In G.O. Ms. No. 2801, Education, dated 20th November 1962, Family Pension was extended to teaching staff in non-Government educational institutions under the following terms :—

(i) For purpose of Family Pension, the term 'family' shall be as defined in the Madras Liberalised Pension Rule, 1960.

(ii) The rate of Family Pension in respect of teachers in non-Government service shall be one half of what is normally admissible to a teacher in Government service with the same length of qualifying service (i.e., completed years of qualifying service vide letter No. 26359/E6/63-20, Education, dated 8th April 1963).

(iii) The families of teachers, who retired on or after the 1st April 1962 or were in service on re-employment terms on that date and who die thereafter as well as teachers who die while in service on or after 1st April 1962 shall be eligible for family pension provided that such teachers had completed not less than 20 years of qualifying service. The pension shall be granted to such families for a period of ten years provided that the period of payment of family pension shall in no case extend beyond a period of five years from the date on which the deceased teacher retired or on which he would have retired on superannuation pension in the normal course according as the death takes place after retirement or while the teacher is in service.

2. In G. O. Ms. No. 380, Education, dated 9th April 1969, the terms of Family Pension mentioned in paragraph 1 above were liberalised as follows :—

(i) Families of teaching staff, who retired on or after 1st April 1969 or were in service on re-employment terms on that date and who die thereafter as well as teaching staff, who die while in service on or after 1st April 1969,

shall be eligible for Family Pension if they had completed not less than 5 (five) years of qualifying service.

(ii) Such family pension will be granted—

(a) Upto the death of remarriage of the widow/widower whichever is earlier ; or

(b) till the date of attaining majority in the case of minor children or till marriage in the case of minor daughter, if such daughter is married before attaining majority.

Note.—For the purpose of this rule the age of attaining majority in the case of minor sons is 18 years and in the case of minor daughters 21 years.

(c) in the case of unmarried teachers to the father, failing which to the mother, subject to the condition that such person was dependent on the deceased Government servant for support (this takes effect from 23rd September 1970).

3. The orders in G.O. Ms. No. 380, Education, dated 9th April 1969 came into force on 1st April 1969. The following clarifications are issued :—

(i) The orders are applicable to teaching staff of aided colleges (Arts, Training, Physical Education and Oriental) also.

(ii) The intention was that families of teaching staff, which were getting family pension on 31st March 1969 or had ceased to draw

Family Pension before 1st April 1969 consequent on the completion of the 10 years or 5 years period, shall also be eligible to get the additional concession (regarding extension of term of family pension) mentioned in sub-paragraph (ii) of paragraph 2 above, with effect from 1st April 1969 (without any claim for arrears prior to that date). This concession may be given to one beneficiary only on the analogy of G. O. Ms. No. 845, Finance, dated 2nd February 1965 applicable to Government servants. The following illustration will make the position more clear :—

"A teacher of an Aided or Local Body School retired on super annuation on 1st April 1962. He died on 10th April 1962 (after the Family Pension scheme sanctioned with effect from 1st April 1962 in G.O. Ms. No. 2801, Education, dated 20th November 1962 came into force). His widow received family pension from 10th April 1962 to 31st March 1967 (reckoning five years from 1st April 1962) and ceased to receive family pension from 1st April 1967. The effect of paragraph 3(ii) of the present G.O. is that she will again receive Family Pension from 1st April 1969 onwards, till she dies or remarries. She will not get arrears for the period 1st April 1967 to 31st March 1969 ;

(iii) When Family Pension was introduced for non-Government Teacher Pensioners in G. O. Ms. No. 2801, Education, dated 20th November 1962, Government servants were eligible for Family Pension only if they had put in 20 years and accordingly 20 years qualifying service was laid down in the said G. O. for non-Government Teacher-Pensioners also. Later, in the case of Government Servants, the qualifying service was reduced with effect from 1st July 1960, in exceptional cases, from 20 years to 10 years (in G. O. Ms. No. 1090, Finance, dated 12th September 1961). later with effect

from 1st April 1964 in all cases to 5 years) in G. O. Ms. No. 950, Finance, dated 29th July 1964, later with effect from 1st April 1966 in all cases to 1 year (in G. O. Ms. No. 441, Finance, dated 13th April 1966). But, in the case of teaching staff in non-Government educational institutions the minimum qualifying service for Family Pension was 20 years as per G. O. Ms. No. 2801, Education, dated 20th November 1962 and 5 years as per G. O. Ms. No. 380, Education, dated 9th April 1969; and

(iv) In respect of teaching staff of non-Government educational institutions benefiting under G. O. Ms. No. 380, Education, dated 9th April 1969, the following formula will be adopted, namely:—

Half the percentage rates laid down in rule 3 (3) of the Madras Government Servants Family Pension Rules, 1964.

The definition of 'pay' as given in the Family Pension Rules, 1964 will be adopted for non-Government teachers also. The rates will be as follows:—

1. Below Rs. 200—15 per cent of pay \* Minimum of Rs. 10.

2. Rs. 200 and above but below Rs. 800—7½ per cent of pay Maximum of Rs. 48 and \*Minimum of Rs. 30.

3. Rs. 800 and above—6 per cent of pay—Maximum of Rs. 75.

Note.—Where however the actual pay drawn is in excess of the maximum of the Government scale of pay, the maximum of the Government scale of pay should be taken into account.

\*The rates of minimum Family Pension have since been raised in G. O. Ms. No. 1988, Education, dated 17th November 1971.

4. As regards the recovery of 2 months' pay from beneficiaries it is clarified that the beneficiaries under paragraph 2 above shall be required to agree to a deduction of 2 months' pay from the balance in the Teachers'

Provident Fund, provided that such deduction shall not be insisted on in the cases covered by paragraph 3 (ii) above. In the case of teachers retiring as bachelors/spinsters or without a wife/husband or minor children including adopted children or dependant parents in the case of unmarried teachers (from 23rd September 1970) the deduction of 2 months' pay shall not be made.

5. Arrears of pension, if any, due with reference to the above orders with effect from 1st April 1969, shall be paid in full, immediately.

6. The deduction of 2 months' pay mentioned in paragraph 4 above shall be on the basis of the pay (such as the maximum of the Government scale of pay, etc.) adopted for fixing the amount of pension. It shall be made by the local bodies and aided managements from the local body contribution or Government contribution to the Provident Fund, as the case may be. In the case of amounts recovered from local body contribution, the amounts shall be credited to the State Government Account in the Treasury immediately, after recovery. In cases, where non-contribution is condoned by the Chief Educational Officers concerned as well as in the case of the exempted categories referred to in Note (i) below Rule 3 of the non-Government Teachers' Pension Rules, the recoveries may be made in cash and credited to the State Government Account. In cases where the recovery could not be effected from Provident Fund in cash, the same may be effected from the arrears of Family Pension. The amounts to be credited to the State Government shall be credited to the head of account "XLVIII, contributions and recoveries towards Pension and others Retirement benefits (a) Contributions from Pension and Gratuities—Other contributions". A certificate of compliance with the above requirements shall be recorded in the service books of the teachers concerned.

7. The expenditure will be debited to the following detailed heads of account under "65—Pension and other retirement benefits, (b) Family

Pension L. Family Pension to Teachers of aided schools and schools of Local bodies.

(i) Family Pension under New Family Pension Rules (Voted).

(ii) Family pension under the Madras Liberalised Pension Rules, 1960—Voted.

The expenditure on the payment of Family Pension to college teachers shall be debited to "65—Pension and other retirement benefits—(b) Family Pension—Family Pension to teachers of aided Colleges" (already opened in G. O. Ms. No. 1671, Education, dated 15th July 1963).

#### PUNJAB NATIONAL BANK'S LOAN TO GOVERNMENT OF TAMIL NADU.

The Punjab National Bank has provided a loan of Rs. 3 crores against the stocks of pesticides held by the Government of Tamil Nadu for distribution to the farmers throughout the State for protecting the crops.

Thiru K. R. Subramaniam, Assistant Regional Manager, Punjab National Bank, Madras Circle, called on the Chief Minister, Dr. M. Karunanidhi at Secretariat today (23rd January 1973) forenoon and handed over him a cheque for Rs. 1.75 crores, as part of the loan amount of Rs. 3 crores.

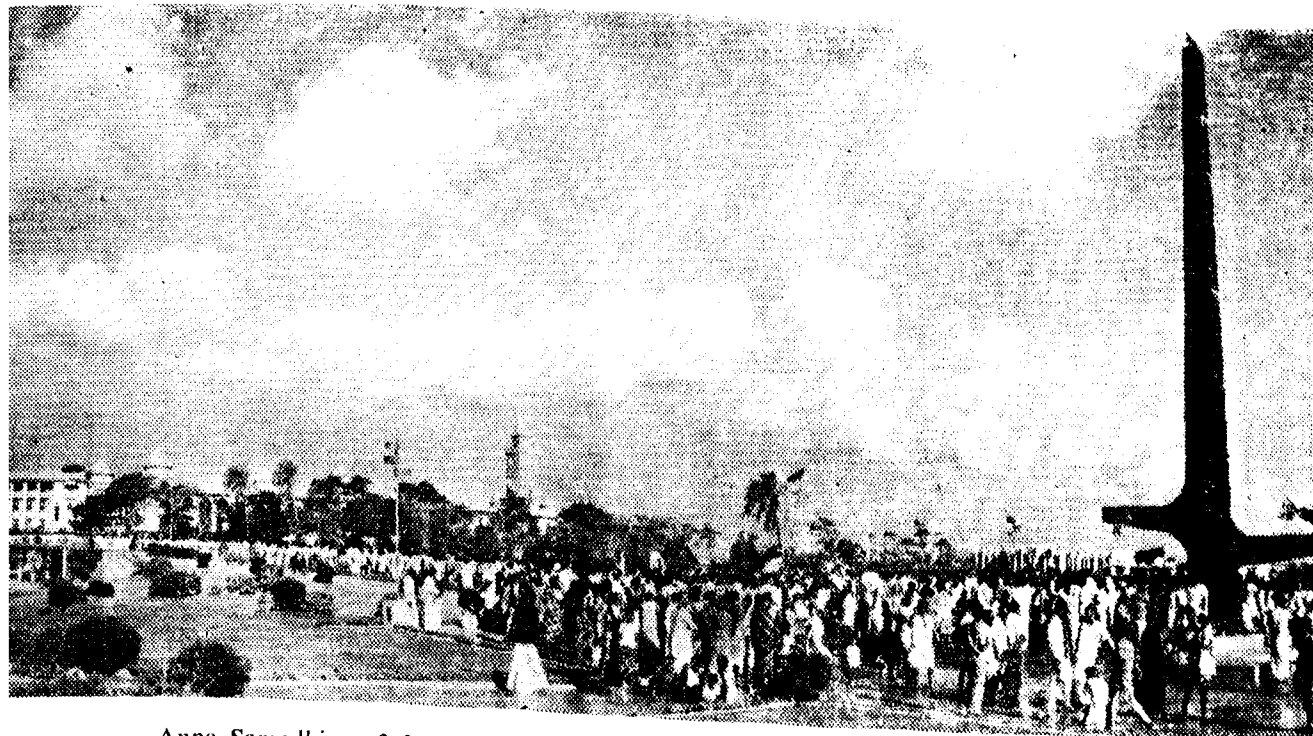
#### Pongal Becomes a Tourist Festival

The Pongal Tourist Festival this year was celebrated with the gusto that is the chief element of the festival, in Madras, Madurai and Tiruchi while Ootacamund celebrated it for the benefit of giving its Toda and Kota folk dance troupes some winter practice. Madurai's Race Course maidan reverberated with the pounding hoofs of rekla bulls and the furious stamping of jallikattu bulls. By all accounts Madurai bids fair to draw organised foreign tourists from next year onwards for the sight of our native sport of 'Jallikattu' (taming the run-away bull).

In Madras, the festival was in a more sedate manner. Rajaji Hall was the venue of the inauguration: an open space adjoining the hall was turned into a typical rural scene of hut and hay stack, well and the cart wheel. The threshing floor of this simulated village was the venue of delightful folk dance. Kummi attam and boiling of new rice. The dances were performed with virtuosity by students of Queen Mary's College led by Kumari Parvathi, Georahpy

Professor in that College. The virtuosity of the scene drew the admiration of the Chief Minister, who in his inaugural address recalled a similar festival which he had witnessed in the United States, and wished that such a scene could be created in a place like the Nehru Stadium for the benefit of a larger audience. The pictures on this page are of Pongal dances performed by the students of Queen Mary's College.

# HOMAGE TO ANNA



Anna Samadhi on 3-2-73 was the scene of reverential homage by lakhs of people.

At the Governor's Reception on Republic Day this year Selvi Meenakshi Sabanayagam, daughter of Chief Secretary, gave a recital of Bharatanatyam.



131

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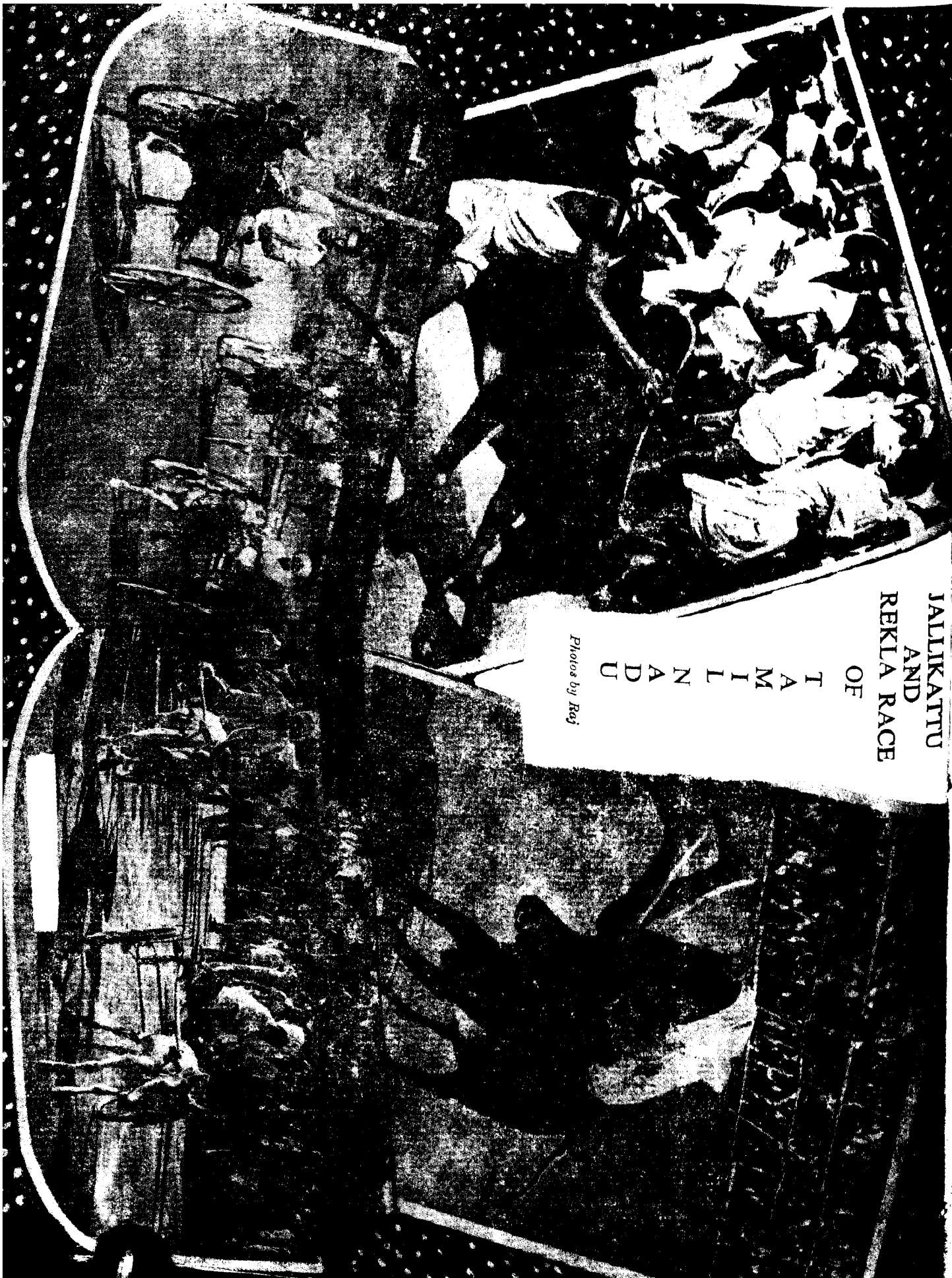
Mahabalipuram is an important tourist centre. The ancient monuments such as Stone carvings, Tiger Cave, etc., are things of tourist attraction. It is visited every day by a large number of tourists from other States and foreign countries alike.



## JALIKATTU AND REKLA RACE

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## TAMIL NADU

# CHIEF MINISTER ON APPROACH TO THE FIFTH PLAN

Speech of Dr. M. Karunanidhi,  
Chief Minister of Tamil Nadu, at  
the National Development Council  
Meeting on 19th and 20th January,  
1973, at New Delhi.

I deem it a privilege to present the views of the State of Tamil Nadu on the document "Approach to the Fifth Plan" placed before the National Development Council. Earlier in May, 1972, we had broadly endorsed the policies put forward in the papers "Towards the Approach to the Fifth Plan". We see that the present document spells out in somewhat greater detail the outlines of the approach. I am aware that a good deal of technical work has gone into the preparation of this document. Our task here is not to go into these technical aspects but to consider whether the policy framework needed for implementing the Fifth Plan is in position.

Drawing up a plan for Rs. 51,000 crores is only a first step. Unless we improve implementation, we will come up again with failures. One aspect of our experience in regard to implementation has been the shortages of basic materials such as steel, cement and fertilisers besides, power. These shortages have distorted our plans. While for instance, it is agreed that the removal of unemployment is a national goal, it is not often recognised that even existing small-scale industries can provide more jobs if there are more raw materials and more power. Inadequate supply of raw materials has closed many units in the country. We have heard of the steel bank, but it is still to become a reality. Unless these shortages are removed, our projects for the Fifth Plan will remain as mere paper plans. In respect of steel, we find that large quantities are available for the private sector but not for essential public sector projects. Fertilisers are scarce but are available in the free market and sell at high prices. We must correct these trends. Before we set ourselves the goals of an ambitious Fifth Plan, we should take steps to remedy these shortages. If necessary

we should contract to buy our net requirements on the basis of long-term arrangements from abroad.

Power Projects in particular have been delayed badly. This has led to disruption of industry and agriculture. I would therefore place the highest priority on enabling completion of power projects already initiated, if necessary, by allowing import of equipment, where it cannot be manufactured in India. Electricity Boards should also be allowed to raise necessary resources from banks and from the money market through flotation of additional debentures.

We welcome the emphasis in the paper before us on removal of poverty and unemployment. In some respects, these go together. In this context, we should recognise that many of our plan schemes go to the benefit not the really poor but the relatively better off and privileged sections. As the approach paper points out even at the end of the Fifth Plan and even with a rate of growth of 5.5 per cent, the average per capita monthly income of the people will be lower 30 per cent of our people below the poverty line deserves all our attention. We should arrive at a national consensus to ensure that more jobs and opportunities are given to them even if it means that sections who are at present better off do not receive more benefits. This has implications for wage and price policy. Today, the more affluent sections of our people including certain sections of labour are continuing to get additional benefits while the mass of our people are steeped in poverty and getting less and less. This increase in the relative disparity has to be gone into. The approach paper has emphasised the need to relate increase in wages to gains in productivity. So long as we do not do this, inflation will continue. All these issues deserve to be discussed with the representatives of the working class and with the various parties in the country. We cannot, as a nation, afford to run away

from the implications of continuing the present policy of distributing gains of the national product only to a few sections of the people.

The approach paper does not bring out fully the administrative arrangements envisaged for the minimum needs programme for rural areas. We agree with the emphasis placed on bringing all backward pockets of the country up to certain agreed national norms. We are however of the view that once this goal is accepted, the moneys needed should be devolved to the State through the Finance Commission and not through Central sector programmes. In our view, there can be no question of having separate organisations at the Central level for implementing what are essentially State subjects.

The Finance Commission has been set up under the Constitution to look into the needs of States. The distinction between plan and non-plan outlays on current outlays is confusing and should be given up. All needs of States both under plan and non-plan including the minimum needs programme should be gone into by the Finance Commission in consultation with the Planning Commission. On this basis, the Finance Commission should recommend devolution of grants and taxes for both plan and non-plan outlays on revenue account will restore to State Governments the freedom and initiative for planning development they so sorely need. Only such a reform will give meaning to the concept of decentralisation and multilevel planning.

During the Fourth Plan, while central assistance to States was frozen at Rs. 3,500 crores, a number of new schemes costing an equally large amount were introduced on an ad hoc basis by various Ministries either as Central sector or centrally-sponsored. As a result, in many spheres, the policies of State Government were, in effect, sought to be controlled and manipulated by Central departments. This runs counter to the whole scheme of financial arrangements contemplated

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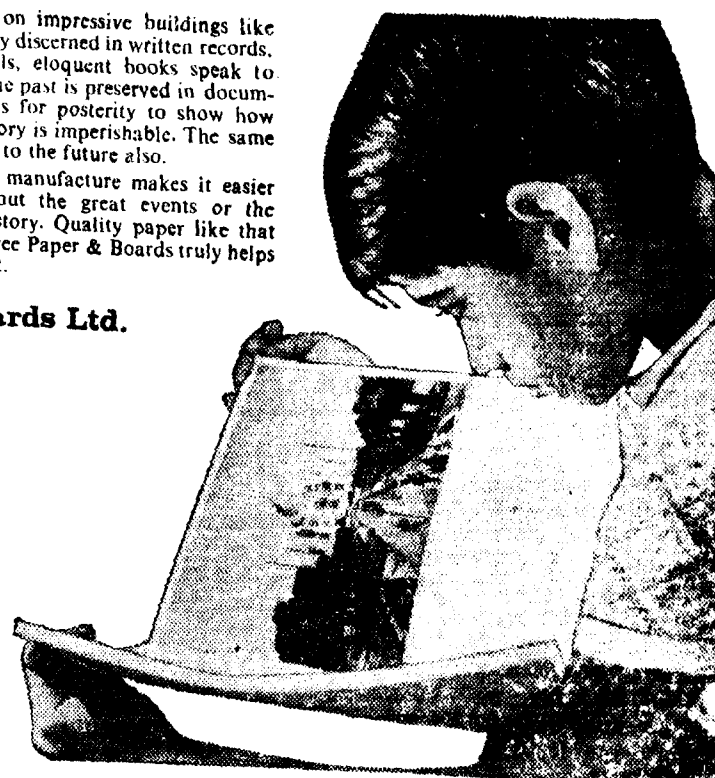
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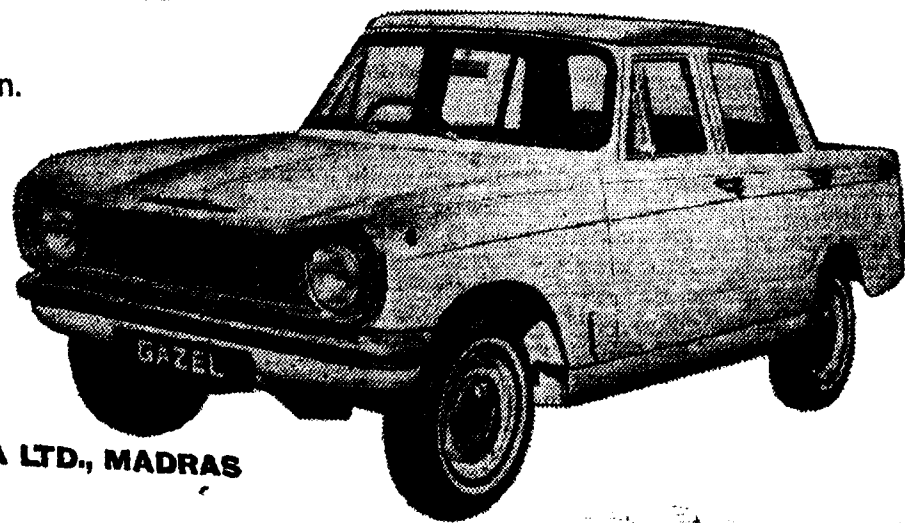
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by the framers of our Constitution. Our view is that this growth of Central and Central sector schemes in areas such as Education, Health and Agriculture, should be put a stop to. The amounts available for these schemes should be placed at the disposal of the Planning Commission and the Finance Commission for disbursement as Central aid or devolution to the States.

We believe that the criteria adopted for Central assistance need to be reconsidered now that a minimum needs programme has been put forward. Once the backwardness of states has been taken care of through such a programme, there is no need to give it weightage in Central assistance or devolution of taxes.

In regard to the assistance for capital projects, we would like to submit that an Inter-State Development Bank is necessary. It should finance schemes for water-supply, power and industries on a continuing project basis of commitment of resources instead of allowing them to be delayed and long-drawn out because of States' temporary financial difficulties. This Bank should work under the supervision and advice of the Planning Commission but should have representation for State Governments also at least on a system of rotation.

A developing country needs to emphasise the problem of unbalanced growth of urban areas. Metropolitan problems have a national character. Troubles starting in metropolitan areas have a tendency to affect the whole country. I would therefore suggest a separate national emphasis in order to solve these problems. Slum clearance, urban water supply, urban roads and transport should get special attention in the Fifth Plan.

The Approach Paper has emphasised the need to curb the growth of population. However, there are political and economic problems involved in this. As population rises are curbed in some States, they lose to that extent representation in the Parliament. Central assistance also goes down. Similarly, inter-religious differences tend to crop up. A new policy must be evolved which sets at rest these fears.

The approach document emphasises the rate of growth in industry which it expects to be quite

high. During the last few years, fresh investment has been relatively slow. A clear outline of policy towards the larger houses and the joint sector is long overdue. While on this subject, I would also suggest that State agencies like Industrial Development Corporations should be looked on as important nuclei for future growth. Their applications for approval of collaboration and capital goods take time to be cleared. Now that there is not much enthusiasm on the part of larger houses, Industrial Development Corporations are the best source of entrepreneurship and the best agency for catalysing new enterprise at the middle level. They should be encouraged. Financially also, the Central financial institutions should help them with share capital and access to the debenture-market instead of confining them to State ceilings for plans and open market loans.

In May 1972, I had pleaded for a pragmatic policy towards foreign knowhow. I am happy to see that in the vital field of fertilisers and petroleum, there are signs of a change in this direction. I hope this will be extended to other sophisticated industries also.

The approach paper makes a number of calculations on how to get at the resources needed for the plan. Much reliance has been placed in the paper on additional mobilisation of resources. While as a Chief Minister in charge of Finance, I have initiated a number of taxation proposals, as a layman, I am often perplexed at the self-defeating nature of much of our taxation. Taxation of commodities like fertilisers adds to the cost of agricultural production and finally to increase in prices. Similarly, a considerable part of goods such as cement and steel is used in Government outlays. We may be paying part of these excises from out of Government's own resources. Besides, the increase in prices of these commodities raises costs of production of goods in general and this has impact on prices which in turn impinges on our wage-levels and State and Central resources. We would therefore urge that Government of India should set up a Comprehensive Taxation Enquiry Commission to look into this whole question and suggest solutions?

I would like to stress yet another point of vital concern of the economy and the country as a

whole. This is the question of unaccounted money. As a result of the present structure of taxation, large volumes of money are getting outside the accounting system. The prohibitive rates of income-tax at the higher levels, while they are justified from the point of view of the egalitarianism, are also leading to the drying up of enterprise. While as a matter of national policy, we are committed to eliminate the dominance of bigger houses and monopoly groups, we should not in a mixed economy, drive out the middle classes who not only save but also create jobs for others. Government and public sector cannot provide jobs for all. Unless we can create a large number of enterprising savers and investors, we will not be able to solve the problem of unemployment. From this point of view, I feel that we should make a bold new approach to the problem of inducing our professionals and our middle income groups to earn more and invest more. Today, these people do not have any incentive to earn and invest in a legitimate manner. Tax evasion carries with it not only a loss to the exchequer but also an incentive to ostentatious expenditure and reduces the savings available for the country. In talking this problem, we should not be prisoners of dogma. I have a suggestion to make. If professionals and persons belonging to middle income groups earn beyond specified limits, we should allow them to invest these incomes in various Government securities or in approved industries in backward areas and treat the entire investment as liable to much lower taxation, say, 15 to 20 per cent. If this is done, people will have less incentive to evade tax. This issue also can be referred to the Taxation Enquiry Commission I have suggested earlier.

Unemployment and poverty are our main problems. We must concert all steps in order to remove them. Indecision and vacant radicalism will not help us to solve them. May I assure the Prime Minister on behalf of the Government of Tamil Nadu that our strong support will be with her Government in all the socialist policy-decisions and measures taken with a view to eliminating poverty and unemployment from the country. We should all view this as a national task that transcends all barriers of party and region.



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Vice-Chairman.

Expenditure on education is a substantial item by the parents of to-day. Free education has been found to be more costly than paid education. Books are costly. Special fees is collected in an inflated form which almost equals the former paid education. Apart from this, money has to be spent on dress and other items. Besides schools demand periodical donations. Education at the college level is 10 times costlier than what it was ten years ago. It is necessary to provide for the direction of expenditure on education for arriving at a taxable income. Tax structure in many countries takes into account all these facts by providing for higher or additional allowance in respect of education of children. The tax system in Australia, Canada, Finland, Malaysia, Nigeria, U.K. and even Pakistan are instances on the point. In India the allowance for education is restricted to only foreigners providing education to their children abroad. Therefore, it is suggested that an allowance of at least Rs. 1,000 may be allowed as educational expenditure for an annual income up to Rs. 15,000.

Such other allowances are made in computing the taxable personal income in various countries. Allowance for medical expenditure is a very important item. Medical expenses though in the nature of personal expenses, are allowed limited deduction in the computation of taxable income in such

countries as Canada, Japan, Mexico and Netherlands. In Canada medical expenditure in excess of percentage of total income is allowed deduction. A lump-sum deduction of Rs. 700 is allowed on this account without proof. In Japan, expenses on self, spouse or relatives in excess of 5 per cent of total income up to a maximum of Rs. 6,250 is allowed. In Mexico, a standard deduction, equal to 10 per cent of income, is allowed for medical and such other expenses. In Netherlands, 24 per cent of total income or amount in excess of Rs. 1,050 whichever is less is allowed for sickness or child birth. In this respect, the law in India is not very liberal as only expenditure upto Rs. 600 on medical treatment of one handicapped dependent is allowed as deduction and even this is subject to specified condition.

Old age allowance is another item which requires consideration by the exchequer. Some countries give preferential treatment if the tax payers are old. In U.S.A. for people over 65 years, 15 per cent of retirement income up to a maximum of Rs. 11,450 is allowed credit against the tax and the allowance is extended to spouse. In Denmark preferential treatment is extended to persons over 67 years with income less than Rs. 13,000. In Japan, preferential treatment given to people of 65 years and above provided their income does not exceed one lakh of rupees.

Thus, we find that in most countries such allowances as expenditure on education, medical aid and preferential treatment for older people exist in the tax structure.

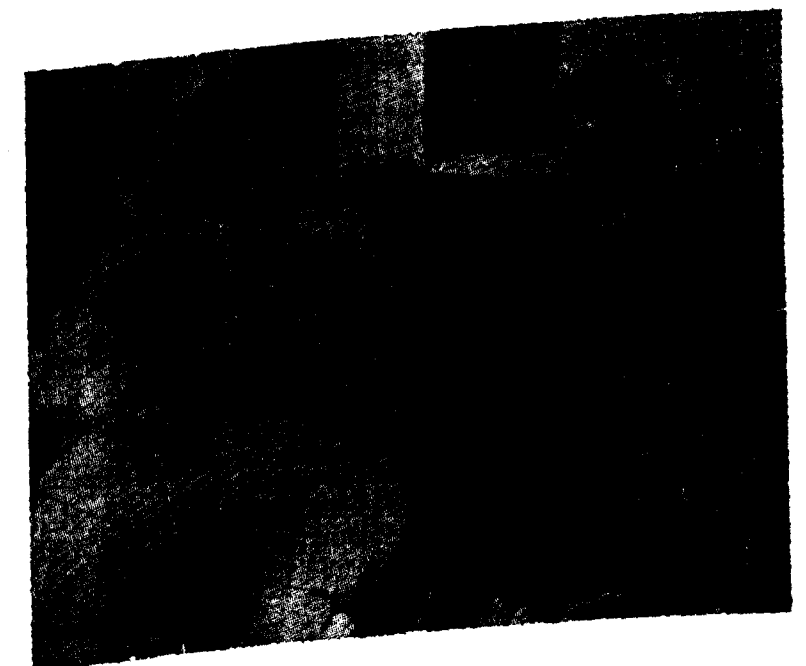
### The Tax Burden

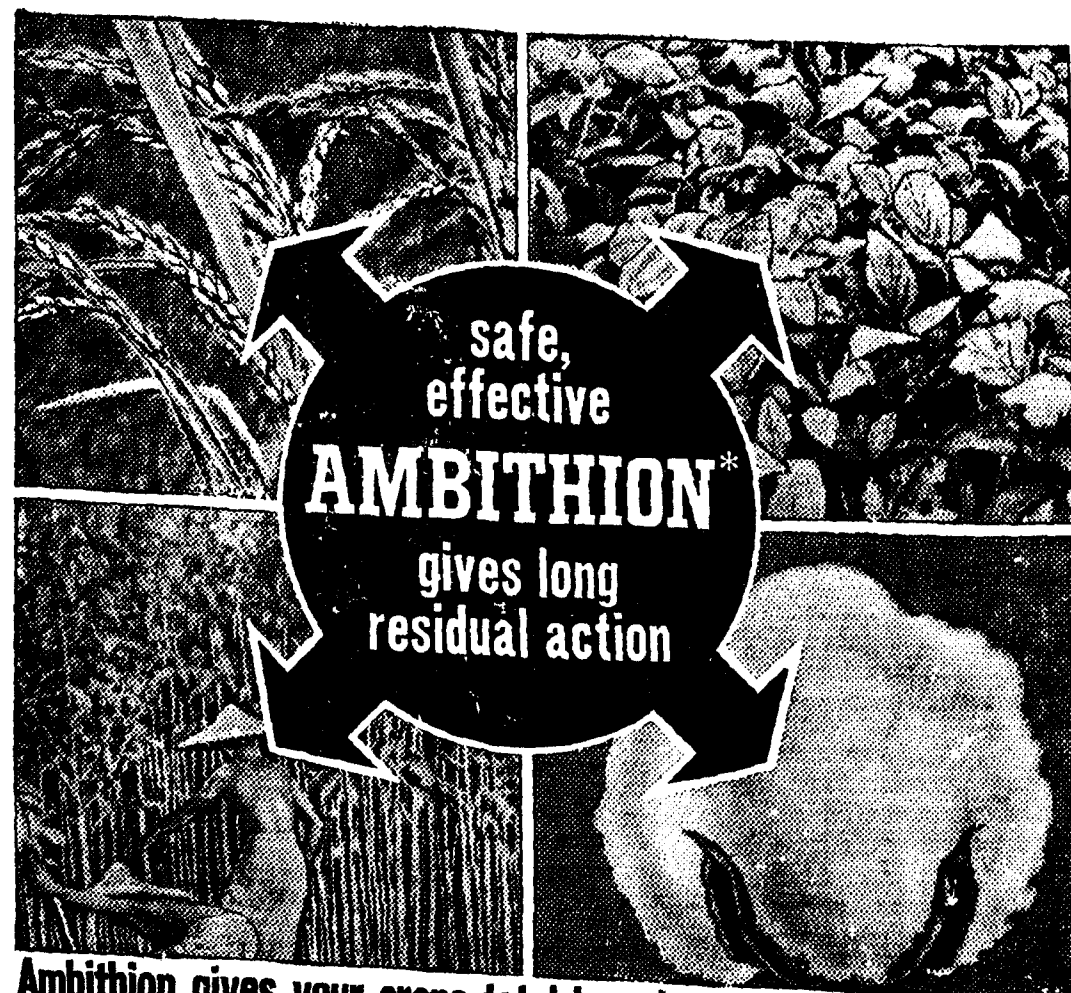
The rate of tax burden on the middle income group will provide an incentive for saving. People having an income up to Rs. 15,000 have a very high propensity to save and the only method of exploiting this propensity would be to provide them with the necessary tax incentives. The granting of allowance for education and medical expenditure will go a long way to enable them to save a very sizeable chunk of their income. This, in its turn, will provide sufficient savings to be tapped by the entrepreneurs to enter a capital market. In India, most industries are financed by loan assistance rather than equity participation. What is really required is great participation of equity capital rather than loan capital.

### Taxes for Equity Participation

The taxation is a very powerful instrument which can be utilised to provide adequate equity participation. The debt-equity-ratio must be such as to cause feverish industrialisation and it is expected that the suggestion of Dr. M. Karunanidhi will be accepted by the Union Government.

The Chief Minister  
always finds time  
to discuss ways  
of  
Improving State's  
Economic Pattern  
with visitors.

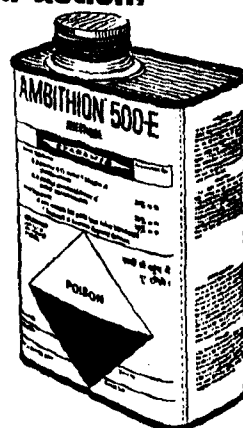




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## DR. M. KARUNANIDHI ON TAXATION POLICY

While addressing the National Development Council on the approach to the Fifth Plan Document, Dr. M. Karunanidhi, the Tamil Nadu Chief Minister, rightly pointed out that there is a need for the setting up of a Comprehensive Taxation Enquiry Commission for examining the scope for the rationalisation of the tax structure with a view to provide the necessary incentives for industrial development. He felt that it is necessary for such a Commission to go into two very important aspects of taxation, one of them being the scope for giving substantial tax incentives to professional persons and the middle income groups to enable them to invest their earnings in Government securities or in approved industries in backward areas. Dr. M. Karunanidhi with a very pragmatic approach added that their entire investment should be subject to a much lower taxation not exceeding 15 or 20 per cent. He added, that if, this is done, people will have less incentive to evade tax.

The Tamil Nadu Chief Minister deserves approbation for his most pragmatic view on the subject. The Income Tax Law in this country deserves to be rationalised in such a way as to provide the necessary incentives for the creation of savings. Persons coming within the income group of Rs. 10,000 and Rs. 20,000 per annum are subject to a heavy burden of taxation. Allowances which are admissible in other countries are not available to them. Purchasing power of an annual income of Rs. 12,000 to-day is only 10 per cent of what it was ten years ago. That being the case, an I.A.S. Officer getting a salary of Rs. 1,000, may find it very difficult to keep a status which he is called upon to maintain by his vocation. If this is the case

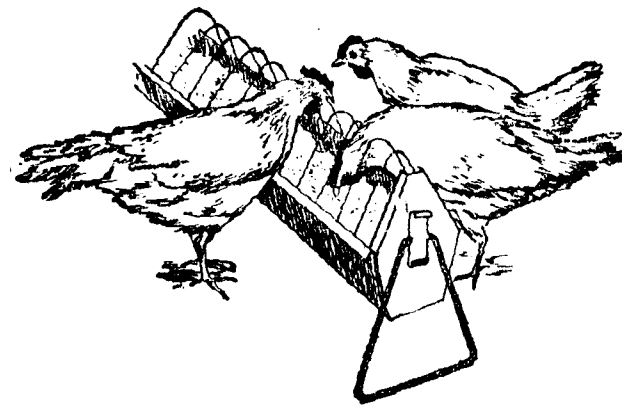
by  
**Professor C. S. MAHADEVAN.**

with the I.A.S. Officers the position of officers getting an annual income between Rs. 8,000 and Rs. 12,000 is worse.

Income Tax system in most of the countries appreciate that though a person's ability to pay tax depends on the quantum of his income, it is also limited by his obligations in respect of supporting children and other dependents. However, apart from considerations of ability to pay, the provisions for allowance in respect of children are framed keeping in view whether through the tax system it is intended to encourage or discourage population growth. In Argentina and Australia, the quantum of children allowance is reduced after a certain number of children. In Malaysia, the rate of allowance is reduced for each additional child. On the other hand, in Belgium, Denmark

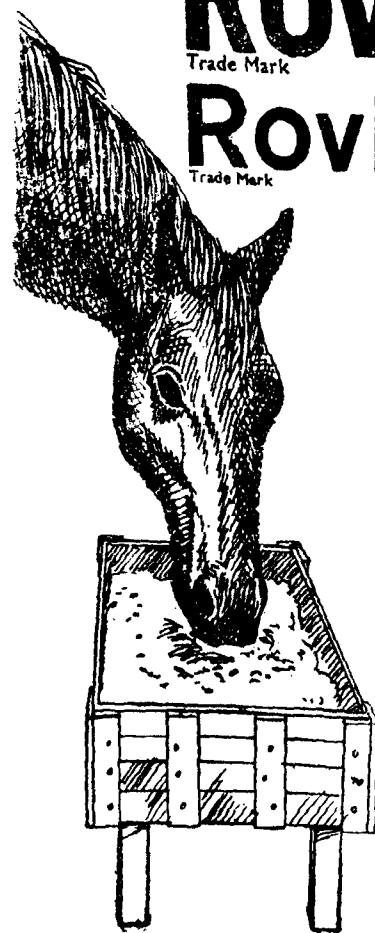
and West Germany, the quantum increases with each additional child. In Spain, no tax is payable at all by a family with 11 or more children. In Belgium, a family with 8 children escapes tax on income up to Rs. 60,750 while in Luxembourg a family with 6 children and income up to Rs. 30,200 does not have to pay any tax. In Brazil, Canada, Costa Rica, Finland, France, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Nigeria, Philippines, Puerto Rico, Spain, Switzerland, Thailand, U.K. and Venezuela, the children allowance is uniform for each child without any limit on the number of children for whom the allowance is admissible. In Norway, the allowance is limited up to 6 children, in Ceylon and Kenya up to 4 and in India up to 2 children only. In France, Finland, India, Norway and Venezuela, children allowance is in the form of a specified deduction from tax.

In France and Luxembourg income splitting benefit is extended in respect of children also. Aggregate income of individual, spouse and dependent children, is divided in two or more parts. For instance, in the case of a married person without dependents it is divided in two parts. If the married person is with two dependents, it is divided in three parts (1/2 part for each dependent). Tax, payable on one part, is multiplied by the number of parts, irrespective of whether there is any income to wife or children or not. In U.A.R. the children allowance is admissible only if the income of the parent does not exceed specified limit, while in Austria the allowance is gradually withdrawn beyond a certain income of the parent. In Ireland, U.K. and U.S.A. the allowance is reduced in proportion to child's income. In Sweden, instead of an allowance under the Income Tax Act, tax-free subsidy of Rs. 1,300 is paid by the State annually for each child.



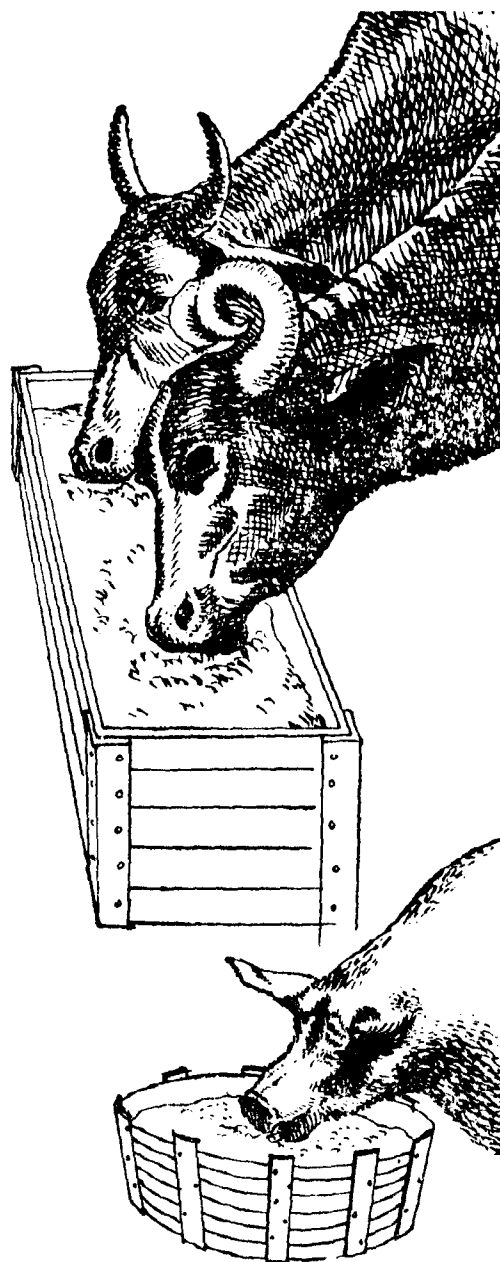
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India has been consistently stepping up Handloom cloth exports, despite the loss of her traditional outlets, by finding new customers in affluent countries. The figures of exports of handloom items during the last three years were as follows :

1969-70 Rs. 30.12 crores, 1970-71 Rs. 26.12 crores and 1971-72 Rs. 30.00 crores. It is expected that in 1972-73 the export figure will exceed Rs. 33 crores.

Ten years ago, the total volume of handloom exports stood at Rs. 10.1 crores. It increased to Rs. 30 crores in 1971-72, out of which the exports of cotton handloom goods alone accounted for about Rs. 22.66 crores.

Previously, handloom goods were mainly exported to the traditional markets like Burma, Ceylon, Malaya Singapore Middle East and African countries. Most of these countries developed their own textile industry with the result the demand for handloom goods started gradually coming down. The industry started looking towards markets in the Western countries and began catering to the highly discriminating countries. While the exports to the traditional markets remained constant around Rs. 10 crores during the last three years, the exports to non-traditional markets have increased to about Rs. 20 crores.

Cotton handloom goods have recorded a phenomenal increase

# HANDLOOM EXPORTS INCREASE

during the last three years. Export of cotton handloom materials which was only Rs. 4.08 crores in 1969-70 touched Rs. 14.05 crores in 1971-72. Even here, the exports of cotton handloom garments have been steadily increasing as could be seen from the figures of exports, viz., from Rs. 1.20 crores in 1969-70 to Rs. 5.94 crores in 1971-72.

Exports of silks, however, have not been encouraging. From an export of Rs. 17.49 crores in 1969-70, it came down to Rs. 7.14 crores in 1971-72. The steep fall in the exports of silks have however, been made good by the increase in the exports of cotton handloom items.

The Handloom Export Promotion Council has been directing all its energies for the last seven years towards the generation of a favourable climate for the intake of handloom goods in foreign coun-

tries. The Council participates in exclusive textile exhibitions abroad where a wide variety of handloom items available for export are displayed.

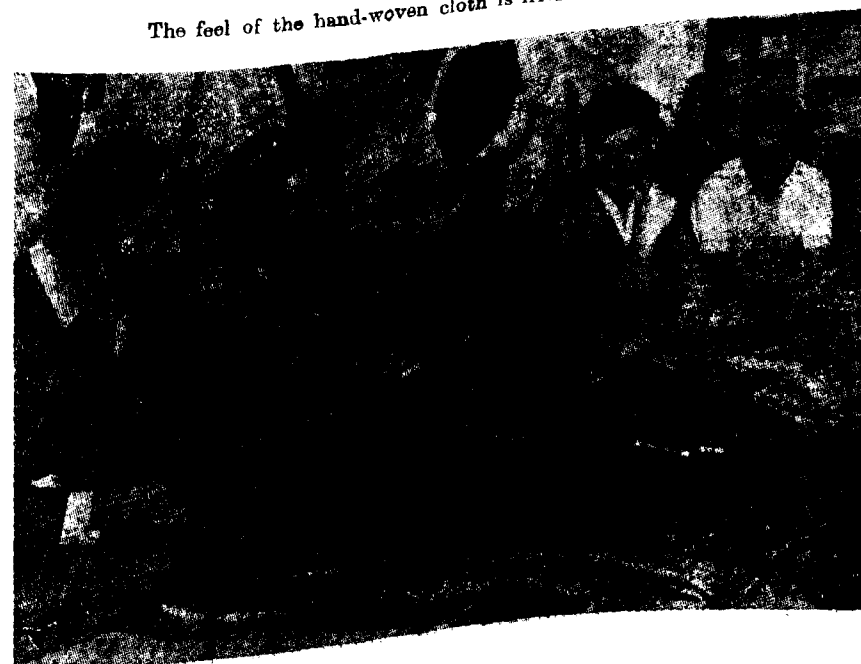
## Prize Awards

The Council has instituted a Prize Award Scheme for outstanding export performance. In the first year of its introduction, three trophies, one each for best exports in the field of cotton handlooms, Silk handlooms and cotton handlooms garments, were given, in the next year, besides the three trophies special silver medals to eleven other exporters were given for their "valuable contribution. The prize awards scheme has been revised this year to provide for a trophy, four silver medals and five certificates of merit in each of the categories, viz., cotton handlooms, silk handlooms and cotton handloom garments. In all recognition would be given to 30 exporters a year.

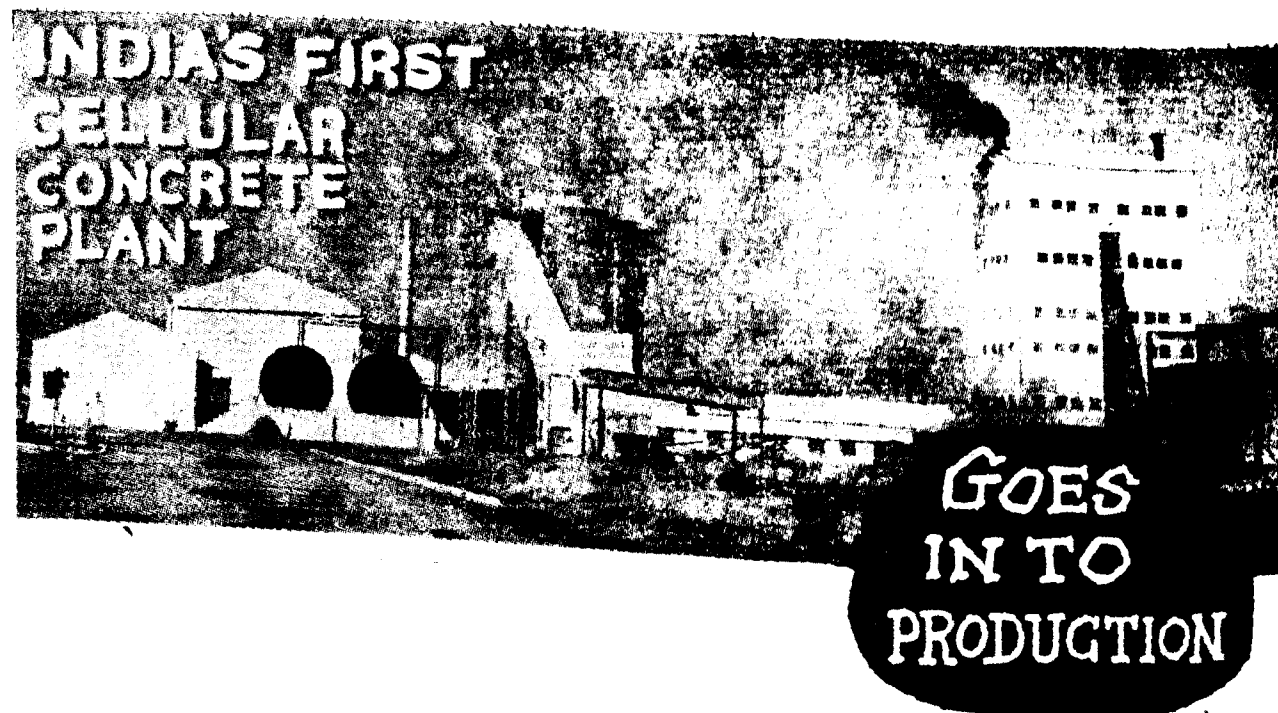
## The Scope

The scope for increasing exports of fashion items to the Western countries is immense. By sending out delegations, study teams and participating in international fairs, the Council is trying its best to disseminate accurate market information about forthcoming fashion trends, etc., in foreign markets. There is, however, imperative need for is, however, imperative need for introducing a certain amount of discipline in our trade with the sophisticated countries. There should really be no need to resort to any kind of unhealthy competition, reduce prices or water down the quality to secure export orders. The exporters would have to ensure that certain basic minimum standards are maintained and that export prices do not come down below certain levels.

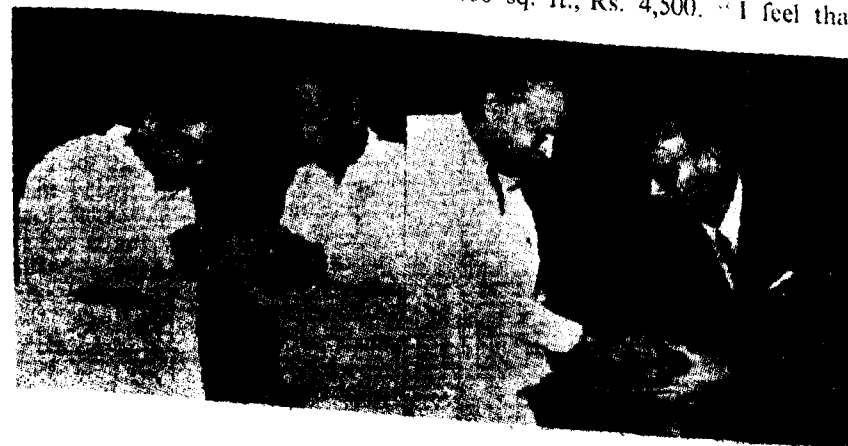
The feel of the hand-woven cloth is irresistible to the sophisticated.







## CELCRETE OF TAMIL NADU PROVIDES PROPER ANSWER TO THE HOUSING PROBLEM IN THE COUNTRY



The Celcrete of Tamil Nadu will find country-wide use, because, the Housing and Urban Development Corporation, a unit of the Government of India, is so impressed with the low-cost prefabricated housing designs of the Tamil Nadu Housing Board and is planning to propagate their use by all housing units in the country.

Disclosing this Mr. L. G. Selvam, Director (Technical) of the Corporation, said the present cost of construction of the conventional houses for the economically weaker sections (those earning up to Rs. 350 a month) varied between Rs. 7,500 and Rs. 10,000. However, the cost of a single room prefab unit having a plinth area of 200 sq. ft. constructed by the Tamil Nadu Housing Board with celcrete, was only Rs. 2,500, and that of a two-room unit with a plinth area of 400 sq. ft., Rs. 4,500. "I feel that

this is the answer to our problem today," he added.

Mr. Selvam stated that the general notion was that the prefab units consumed more cement and steel. But the Housing Board had proved that its designs used less cement but the same quantity of steel. The Structural Engineering Research Council and its Scientific Committee had given an encouraging preliminary report about the prefabs. The Council was satisfied with the soundness of construction of these houses and it reported that 30 per cent less cement was being used than in the conventional houses.

The Director said the technique would be perfected before the final draft project report was prepared for circulation to various housing units in the country. The Structural Engineering Research Council, in collaboration with the Central Building Research Institute, Roorkee, would conduct further research on various aspects like thermal conductivity, fire hazards and improvement of techniques to ensure comfort and cheaper construction, with lesser use of cement and steel. "This will be a continuing process and the Tamil Nadu Housing Board has agreed to provide the facilities", he added.

### USE OF FLY-ASH.

"We have also been propagating the use of fly-ash and industrial

waste, as it can easily replace cement to the extent of 20 per cent in concrete works and plaster", Mr. Selvam said. The Tamil Nadu Housing Board, which was using fly-ash in its buildings in the Korattur neighbourhood scheme had effected a saving of about four per cent in the overall cost.

The HUDCO would be willing to give loans if the municipal corporations in Tamil Nadu came up with housing schemes for their employees, he said. It would finance any project which added to the "urban housing Stock" in the country and conformed to its pattern of financing.

Mr. Selvam and Mr. K. K. Sachdev, Financial Controller of HUDCO, held discussions with Mr. J. Walter, Chief Engineer of the Tamil Nadu Housing Board and Executive Engineers on the progress of the neighbourhood schemes financed by the HUDCO in Madras.

Mr. Walter, Chief Engineer, Tamil Nadu Housing Board, says that the celcrete project has cost Rs. 365 lakhs. The Government of India has so far released through the State Government a sum of Rs. 262 lakhs. The cost of imported machineries, technical documentation and raw material testing charges of collaborators at Poland works out to Rs. 104.42 lakhs, the foreign exchange for which the Government of India had already been released to the foreign collaborators which needs to be reimbursed to the Government of India. The up-to-date booked expenditure inclusive of the above adjustment is Rs. 322 lakhs. The collaborators are also supplying spare parts for the machineries to the extent of Rs. 10 lakhs. The working capital required to run the plant in 3 shifts is estimated at Rs. 116 lakhs.

The present problems devolve on production, utilisation and catching up of a steady market for these celcrete products.

About 13,000 wall blocks and 700 roof panels will be produced in the factory per day when it goes into full production. This will be sufficient to construct about 11,000 flats per annum of 30 Sq. M. area of each flat. The total production value per annum will be Rs. 1.40 crores. The factory will give employment potential for about 300 workers for the three shifts.

On the whole, the collaborative functions were all really useful, constructive and educative. The Polish team throughout maintained a spirit of cordiality and wholeheartedly coordinated and fully cooperated with the Indian counterparts.

At a time when we were stranded to produce quality lime as per specifications Thiru Dobkowski readily agreed to the suggestion for trying production with shell lime instead of keeping the pact idle. This helpful attitude was extended to production by cement technology as well by his expert advice.

There is also a proposal to switch over to fly ash technology. Fly ash is available next door at the Ennore Thermal Plant and the management had held preliminary successful discussions with the concerned officials regarding the preliminaries for procuring of handling equipment for collecting dry fly ash from Thermal Plant, convey the same and store and use at our site.

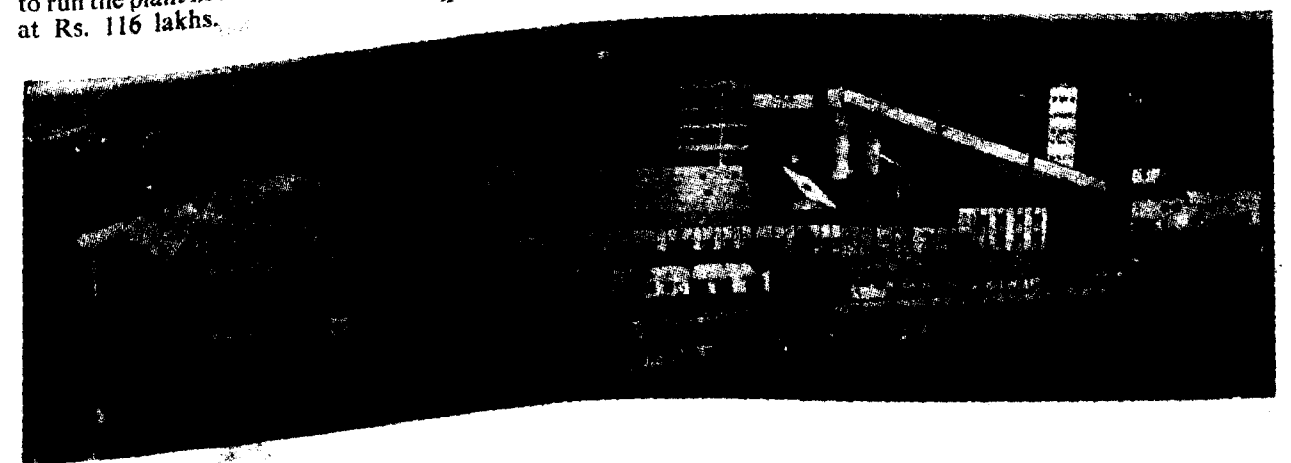
Fly ash is usable for the following purposes: Pozzalona, part replacement of cement in mortar, pozzalona Cement, Insulating

Cement, Oil well cement, Fine Aggregate, Foundry sand, Sand blasting grit, Filler material, drainage filter, Filter material, Light weight aggregate, Sintered aggregate, Prepacked concrete, Refractory mix, Abrasive, Metallurgical cement, Precast and hollow blocks, tree guards, wheel guards, kerbs, pavements, etc., Concrete dams Masonary dams, Filler in Rubber, Filler in bitumen carpet, Asphalt roads, Concrete roads, Lime Flyash aggregate mixtures, Stabilised aggregate base course, Sewage treatment plants, Lining of mines, Marine works, Break waters, Wharfs, coastal engineering works, Subsidence control, Flyash cement bricks, Sand lime flyash bricks, Lime flyash cinder bricks, Dry pressed silicate bonded fly ash bricks, Thermal insulation bricks, Mine fire control, cellular Concrete Reclamation, Soil Stabilisation, Earth dams, Mastics, Plastics Railway embankments, Tank bunds, Glass, Paints, Distempers, Colour washes, Grouting, Fertilisers and manures, Pipe Coatings and Guniting.

Characteristics of Fly ash are as follows: Pozzalona, Abrasive, High silica content, Stabiliser, permeability reduction, Light weight, Refractory, A good filter and carrier, Improved workability, Resisting aggressive action, Lower heat of hydration, Low conductivity counteraction of alkali-aggregate expansion and Low cost.

### Advantages of celcrete :

The special feature of this new material in the building industry is that while they are light in weight they withstand high stress and strain and reduces dead load in the buildings and it is also easily workable by sawing, driving nails, drilling, etc., resulting in economy and saving in time.





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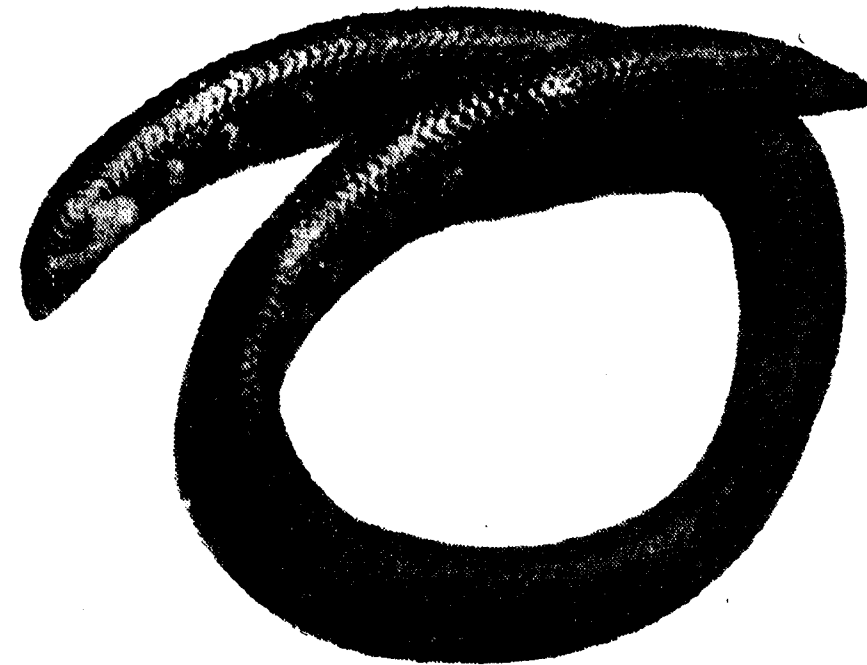
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## THE PRETTY SNAKES OF TAMIL NADU FORESTS

By  
**T. S. N. MURTHY.**

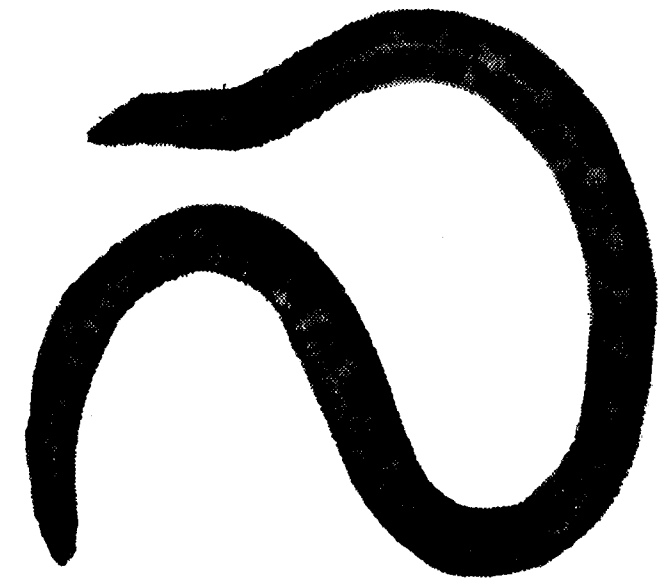
Commonly called Rough-Tail because of their peculiar tail which ends in a spiny shield, these worm like snakes are always small. Shying away from light, they lead concealed lives digging their way into the soil with their wedge shaped snout. They are so abundant in the foothills and forests of Western Ghats and one has only to 'turn' a stone in a damp locality for a glimpse of these innocent creatures. They are quiet and inoffensive in disposition. They never make an attempt to bite if handled or even irritated. When picked up, they try to enwine themselves round our fingers and love to be carried to long distances in that position.

### Colour.

These burrowing snakes are brilliantly coloured which is an unusual and perhaps unnecessary feature for their concealed life. They are generally coloured red, orange or yellow and some of the black forms are remarkable for their iridescence. They feed on insects, worms and grubs. They produce living young ones—three to eight at a time.

These snakes are considered rare because of their hidden existence under logs or stones at high altitudes. During heavy rains they come out into the gardens and may be seen on ghat roads.

We should consider these pretty snakes as our prized possessions considering the fact they are to be found in South India and Ceylon only.



## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

Minimum: Rs. 1,00,000 (for small-scale industries: Rs. 25,000).  
For Technocrats and Rural Medical Practitioners: Rs. 10,000.

Maximum: Rs. 25,00,000 (Rs. 2 lakhs and Rs. 1 lakh in the case of Technocrats and Rural Medical Practitioners respectively).

### Rate of Interest

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

8½ per cent in the case of other small-scale industries.

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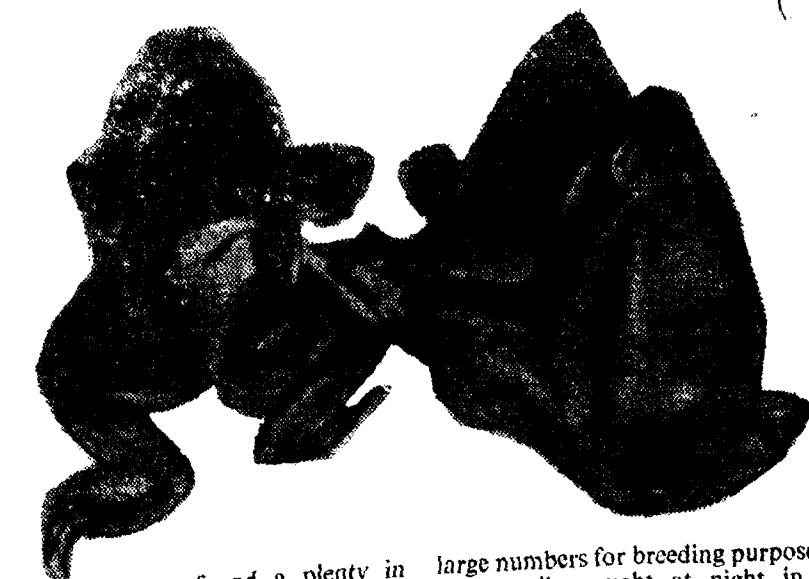
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## FROGS EARN US FOREIGN EXCHANGE

Time was when we despised and detested the humblest and harmless frogs as muddy creatures disturbing the stillness in rainy nights by their musical notes—Croaking loudly. Of late, two Indian frogs came into lime light and earned quick fame because of the huge exports of their "Legs". The two Indian edible frogs are: 'The Green Frog' (*Rana hexatactyla*) and 'the Indian Bull Frog' (*Rana tigrina*). A moderately sized export trade has developed in these two frogs and Mangalore, Cochin and Goa are the main Centres of business for this exportable commodity in India.

It was, however, left to Romans to first taste the delicacy of the hind legs of the European edible frog (*Rana esculenta*). But now, the fancy of consuming frog-legs started first in France slowly spread to the United Kingdom and United States of America. Frog meat, which could serve as an easily obtained animal source of protein, is said to taste not unlike that of a chicken. Only the bulky hind legs are eatable and fifteen to twenty frogs are required to make a decent meal for one.

The Indian Bull Frog so called because of its size and strength of its voice occurs throughout India whereas its ally, the green Frog is



less bulky but found a plenty in dense aquatic vegetation of our tanks and marshy places which abound in South India and Bengal. The Green Frog is easily recognised by its leaf-green colour in life with which it conceals admirably amid ponds choked with weeds. It is caught by hook and line with a bait or scooped out in large

By  
T. S. N. MURTHY.

numbers by a water net. However, it is not an easy affair with the Bull Frog as it is uncommon in large stream and canals and in pools with rocky or sandy bottom. It is solitary in its habit and largely a shy frog spending hours in the day quietly under bushes or in a Concavity near water's edge. It becomes active in the nights and more so during monsoon when it congregates in

large numbers for breeding purposes. It is easily caught at night in a surprise by means of flash lights as it is dazzled by light and stop moving in a frightened mood when it is picked up and put in tins or sacks. Both the edible frogs are greedy creatures and take almost anything that is alive or get into their habitat. Their main diet appears to be the insects of various kinds chiefly beetles and large worms, miscellaneous crustaceans, fishes and above all small frogs.

At present, the edible species are captured, 'treated', and exported. For the purposes of freezing and canning later, the method employed early was to chop off the hind legs of these frogs leaving them to die a slow and painful death. It was revolting to see the jerking out their legs when alive and the consequent bleeding and squeezing of their mutilated bodies. Thanks to fair-play and justice, a more humane technique has been evolved whereby the frogs are subjected first to narcotization on scientific lines by immersing them in 10 per cent brine solution. Frogs cannot survive in saline water and hence die slowly without any severe pain.

Though the Frog meat is yet to be placed on our bill of fare, it is gratifying to note the foreign exchange earning by export of Frog legs has been steadily increasing.

Threatened with phenomenal rise in population along with deficit for food supplies, the time is not far off when Indians include frog legs on their menus on an extensive scale.





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Director of Stationery and Printing, Madras-1.

To develop the hotel industry on a scientific basis, sufficient number of technically qualified personnel is required to man the industry in its various departments. With a view to meet this demand, the Government of India sponsored four regional institutes of Catering Technology at Madras, Bombay, Delhi and Calcutta with the co-ordination of the respective State Governments.

The Institute of Catering Technology and Applied Nutrition, Madras, is one of those four institutions which started functioning from 1963. The institute is designed to train promising men and women in catering technology. The practical presentation and emphasis on nutritional ideas will be a significant aspect of the technical training given to the students in this institute.

The main aim of these institutes is to train up candidates of the diploma standard to fill the supervisory cadre of the hotel industry. These candidates are taught as many as 13 subjects during their three-year course after S.S.L.C. laying emphasis on practical aspects of the industry. The subjects they study cover Cookery, Bakery, Hygiene, Book-keeping, Restaurant and Counter Service, House-keeping, Nutrition, Basic Sciences including Physics, Chemistry and Physiology, Catering Management, Hotel Reception and First-aid apart from English and French as languages. In addition to this, the Institute offers short-term courses in the various trades of the hotel industry, such as Bakery and Confectionary, Cookery, Waiting, Reception, Food preservation and so on.

The candidates passing out of these Craft Courses will be fully competent to take up a job of responsibility in their respective trades. The basic qualification for admission to the Diploma course as well as for many of these Craft courses is a pass in S.S.L.C. with sufficient knowledge of English. At the end of each year of the diploma examination conducted by the State Board of Examinations, Government of Tamil Nadu.

During the vacation period between the second and third years and after the completion of the third year the students are allotted

## THREE YEARS IN THE CATERING INSTITUTE MAKES ONE A QUALIFIED CATERER.

PRACTICAL TRAINING FOR HOUSEWIVES ALSO TAUGHT.

to various hotels to undergo practical training under actual working conditions to equip themselves with more practical knowledge and get confidence in their skills. In addition to this, the institute undertakes outside lunch and dinner parties with the help of the students to enable them to get more confidence. Thus it will be seen that a candidate after undergoing the three years course will be fit to take up any position of responsibility with the required knowledge and confidence.

The majority of the candidates who have passed out so far have got into jobs and it is expected that the demand for persons trained in this line will increase in the years to come with the hoteliers realising more and more the necessity and advantage of employing more and more trained personnel. The institute is indeed very fortunate in getting the co-operation of the South Indian Hotel and Restaurants Association in placing its students for practical training in their member hotels and also getting them absorbed in more and more numbers from year to year. The South Indian Hotel and Restaurants Association has also been encouraging the Institutes in more than one way by instituting a scholarship and offering prizes for meritorious candidates. There is absolutely no doubt that the candidates trained up in this technology will have a very bright future.

### Increasing opportunities.

The training to be imparted at the institute fully equips the trainees to take up a position of responsibility in the various branches of the industry. There are in this country, a number of luxury hotels and many medium catering establishments, snack bars, restaurants, ice cream bars, coffee bars, and other forms of institutional catering and feeding. With urbanisation and industrialisation catering establishments are increasing in large numbers. The development of adequate services for feeding the large and increasing number of workers engaged in industrial production poses a special challenge of considerable importance. Apart from these, there is urgent need to provide better and nutritive meals on a larger scale in hospitals, catering establishments attached to railways, shipping lines, government offices, undertaking rest houses, dak bungalows,

etc. Further there are new projects such as the Mid-day Meals Programme, that are being launched. Large numbers of trained men and women are necessary to meet the high standards to be maintained in all such feeding programmes and in the hotel industry.

#### Name of the Courses and Duration.

(i) *Three-Year Diploma Course in Hotel Management and Catering Technology.*

#### Qualification :

Minimum qualification for admission is a pass in the S.S.L.C. Examination of the Government of Tamil Nadu or an examination recognised as equivalent thereto by the State Board of Technical Education and Training, Government of Tamil Nadu.

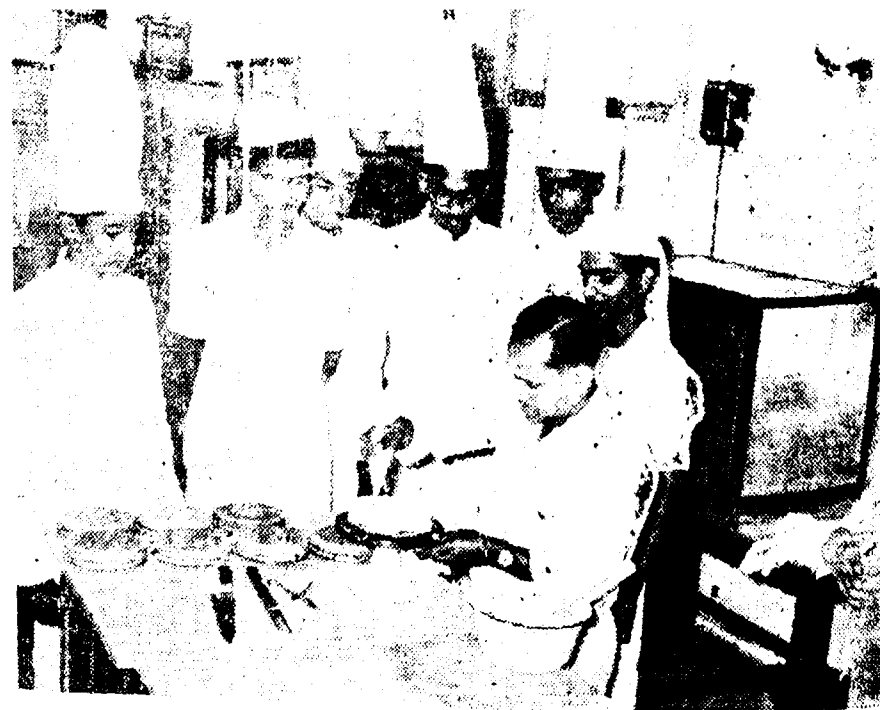
In respect of S.S.L.C. passed candidates from Kerala, Mysore States, etc., after ten years schooling, a pass in the final Pre-Degree University Examination in one sitting or Pre-University Examination is necessary.

#### (ii) Craft Courses.

##### One-year duration.

(a) *Canning and Food Preservation—*

A pass in S.S.L.C. or examination recognised as equivalent thereto.



(b) *Bakery and Confectionery—*

A pass in S.S.L.C. or equivalent examination or by selection from among those with experience in the Bakery Trade having working knowledge of English.

##### Six-month duration.

(a) *Hotel Reception and Book-keeping—*

A pass in S.S.L.C. or equivalent examination.

(b) *Restaurant Service— and Counter*

A pass in VII standard or equivalent examination with working knowledge of English.

(c) *Cookery—*

A pass in S.S.L.C. or equivalent Examination or by selection from among those with experience in the trade having working knowledge of English.

All the above courses are open to men as well as women.

#### III. Short Course (House wives) Part-Time Courses.

(For Women Only.)

13. *Week duration.*

(a) *Cookery.*

(b) *Bakery.*

(c) *Canning and Food Preservation.*

Sufficient working knowledge of English to follow lectures and instruction in English.

There will be two instruction classes each of 3 hours duration per week per course.

Candidates will be admitted from all parts of the country, if found medically fit.

The medium of Instruction English.

## THE NEW ROLE OF THE DISTRICT COLLECTOR

The year 1972 marks the completion of the second centenary of the establishment of the office of the District Collector in India. The institution created by Warren Hastings, was primarily concerned with judicial Administration. Within a decade, the office was enlarged to include administration of revenue along with civil justice and magistracy. Despite early fluctuations of fortunes, the office emerged as a vital point in the administration of British India and it retained its basic character for the next 165 years though the powers of the officer increased appreciably.

It was only after Independence that the role of the District Collector underwent many explicit and implicit changes. Like the Indian tradition, new functions and structures have been superimposed on the old, often without a thorough examination of the implications of process.

The role of the District Collector thus, in respect of public administration in general and the district administration in particular has to be viewed in the context of the emerging situation. The district has remained the primary unit and the focal point of Indian administration, all the functions of government converging on it. It is here that the citizen comes in contact with the government. While the boundaries of districts, with few changes, have remained in tact, the nature of district administration has undergone important changes, especially during the last 25 years.

The Collector, being the king-pin of the district administration, has been regarded as the natural choice for all new programmes at the district level. In this process, his role has been continually redefined and yet there is not full agreement on its various dimensions, which may vary from State to State and even from district to district in the same State.

Two traditional roles of the District Collector were implicit in the title itself, namely the collection of revenue and maintenance of law and order. Different committees and commissions have argued from time to time whether the District Collector should have over-riding control over the police administra-

tion in the district and whether he should be concerned with judicial administration. By and large, there is agreement on his role in maintenance of law and order and his superiority over the Superintendent of Police. But the judicial work has been taken away from him in most States, divesting him of a part of his traditional responsibilities.

#### Expansion of Responsibilities.

The expansion of governmental responsibilities in the areas of development and welfare has tended to expand his role and responsibilities. As a result, the office which was created essentially to administer the interests of the East India Company has come to become an important pillar of administration in free India. With the growing emphasis on developmental work, initially the District Collector became the chief development officer also at the district level, but it was soon realised that the arrangement was not satisfactory.

In the many institutional experiments, including Panchayati Raj, that have been made at the district level the emphasis has been on limiting the role of the Collector in development administration. Until only five years ago, it was generally argued that development administration should be the primary responsibility of the Panchayati Raj institutions and that the Collector should be responsible only for regulatory functions. Now the situation has substantially changed and the District Collector resumed the important role as head of the district development administration also.

If the district has to remain the unit of planning and development and the Collector's role as the Chief Executive of the district has to be reinforced, it will be necessary to place greater emphasis on development administration as part of the District Collector's role. Therefore, I feel that rather than excluding the Collector from development work, efforts should be made to harness this office for development. At the same time, he should be relieved of routine regulatory functions. We must remember that in spite of the changes which have taken place, the District Collector still commands high prestige and status both in the eyes of the district bureaucracy and the population. It is difficult to

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exaggerate the powers of the District Collector. Traditionally, he had had wide discretionary powers and strong authority over his subordinates. Because of his pivotal position, when he shows a keen personal interest in a particular development programme, be it agricultural production, family planning or industrial development, the district bureaucracy works hard to achieve results. To some extent, of course, the intensity of his own interest depends on his perception of the priorities of his bosses in the State capital, but it also depends upon his understanding of the importance of different programmes. So far, the Collector's role has been officially only one of co-ordination. If he is expected to deliver the goods in development, it is necessary that rather than being a mere co-ordinator he becomes the mobilizer of the district bureaucracy. (In Tamil Nadu the Collector is not only the agency for all Development Work but also Planning for the future; the routine Revenue administration is vested in the District Revenue Officer a parallel post.)

#### IMPORTANT FACTORS.

Democracy and specialization are two of the most important factors which have influenced the role of the Collector in the post-Independant period. Largely because of the interplay of these factors, the role of the Collector has undergone major changes even while the exterior seems to have remained unchanged. For example, in the pre-Independence days, he had no competitor for power prestige in the district administration. So long as he enjoyed the confidence of his superiors, he could exercise almost unlimited authority. The introduction of representative institutions at different levels of our political system has, however, created alternative centres of power and prestige in our legislators and elected representatives.

Similarly, with the increasing emphasis on specialization, as represented by the specialist services, the District Collector who has traditionally been a member of generalist services like the I.C.S. and its successor the I.A.S. faces competition from other officers at the district and higher levels.

It is argued that men with long experience in various fields will bring the variety of experience and exper-

tise to bear on the work of development administration in the district. It is also necessary to match the personal skills and interests of the Collector with the needs of the district. For example, a district potential for industrial development should have as Collector a man who not only shares the same beliefs but also understands the dynamics of industrial development.

#### OVER BURDENED.

It has generally been recognised, at least since 1905, that the Collector is over-worked. The typical District Collector spends long days of 12 hours' work, often without Sundays and holidays, particularly in the larger district. This type of routine leaves little time for thought, reflection and planning. Many institutional experiments have been tried out, such as the appointment of a Joint Collector and provision of additional staff. This did not succeed in reducing the Collector's work-load. His work-load can be reduced only if delegation of authority below the Collector is effectively carried out. There is also urgent need for the introduction of proper management practices so that he is enabled to spare more time and energy for innovative and developmental tasks. It is also necessary to make the job manageable. We should not go on adding new functions and responsibilities on the already over-burdened Collector. If too many things demand his attention some of them naturally get ignored. May be, the ones ignored are the ones more important.

#### RADICAL DEPARTURE.

So far, there has been too much emphasis on the importance of a single person in district administration. This has been the source of many a problem. I feel that time has come now to consider radically different structures and styles of administration at the district level. Multiple official representation can make the district administration more rational. Then the Collector becomes only the first among the equals. Since the existing district administration is inadequate in the context of increasing number of development programmes, the new role of the Collector should be defined in relation to the expectations of the society from

the administration. If he has to play a vital role in development, his role needs to be defined not so much in terms of duties and responsibilities or the power to write confidential reports on other district officers but in terms of areas which should receive his personal attention. I favour definition of the District Collector's role with emphasis on his contribution to development. The district administration has enough experience to handle the traditional problems of regulatory administration. This important office is rooted in history and has certain aura about it, not only for the citizens but also for the senior administrators. All the strength of the office should be harnessed to promote economic development and welfare.

#### Radio and Electronic Exhibition to boost the Trade.

All India Radio and Electronics Association consisting of nearly 1,500 members represented by Manufacturers, Distributors, Retailers and Technicians from all over India, has decided to hold an exhibition which will be held for a month commencing from February 2, 1973 in Madras. The Association has many achievements to its credit. The Association has succeeded in inducing the Government to grant an important licence for Rs. 2.5 lakhs for importing obsolete valves for old sets lying idle for a long time for want of these valves. These valves would be distributed equitably to its members. Similarly the Government is persuaded by the Association to grant another import licence for Rs. 6 lakhs which is expected to be received shortly for spare parts not available indigenously to service foreign tape recorders, record changers, etc., for equitable distribution to its members. The Association is thus offering many benefits and services to its members.

The Association is planning to hold a convention in the South after a lapse of more than ten years. The convention will lay special emphasis on the theme "self-reliance". To synchronise with this convention, All India Radio and Electronics Exhibition will highlight the past advancement made in electronics, trade, radio, television, refrigeration and industrial and domestic equipments. \*



#### PERSPECTIVE PLAN FOR NUTRITION FOR 1972-84

Tamil Nadu is way ahead of other States in school nutrition with the mid-day meals scheme which is in operation in 30,603 elementary schools, catering for 18.2 lakh pupils for 200 days in a year. It is to be continued with improvements in the nutritive quality of the food and better nutrition education.

Malnutrition in the early years reduces the productive capacity of adults. Physically, they lack the energy and stamina which are essential for satisfactory work. Furthermore, malnutrition might lead to mental retardation in the young. Chronic and severe malnutrition in childhood increases the chances of children becoming poor readers and poor writers. This, in turn, may lead to defects in neuro-integrative functioning, school failure and subsequent sub-normal adaptive abilities. Malnutrition lowers community resistance to disease resulting in higher incidence of morbidity, which has extensive social consequences. Accident rates are higher among the mal-nourished groups, who tire easily and quickly, lethargy and lack of initiative are the common characteristics of poorly fed groups.

#### People have to be told.

A solution to the problem of malnutrition is so urgent that it cannot wait upon a satisfactory level of economic growth. People have to be told about the types and quantities of food that they

their children need and how to produce nutritive foods at minimal costs. Nutrition has a much to do with hoping for a better standard of life for those at work or for others in the home or elsewhere as it has to do with making most of what there is.

Many people attempt to have more children than either they or society can afford in order to be sure that at least one or two will survive. The fear is well founded because infant and child mortality are still high in Tamil Nadu and in the country at large. If massive measures were taken to secure the survival of the first two children through better nutrition, parents might feel less impelled to provide against mishaps in their manner and would correspondingly be more receptive to the underlying aims and methods of family planning.

A long-range nutrition programme for the State will have to cater to the nutritional requirements of the following groups: (a) Children below 30 months; (b) Pre-school children, 2-1/2 to 6 years of age; (c) Pregnant mothers; (d) School children; (e) Adolescent boys and girls; and (f) Adults.

There are 7.9 million children below six years in Tamil Nadu. Of these, approximately 55 per cent subsist below the poverty line. This means the feeding programmes will have to cover nearly four million children among whom 1.72 million are likely to be below three years.

The first programme proposed is to feed pre-school children in the Kuzhandaigal Kappagams (Balwadis) integrating the efforts made under the Applied and other Schemes of the Women's Welfare Department of the State Government. This Nutrition Programme, CARE and Demonstration Feeding, Family and Child Welfare should cover all the 1,707 Kuzhandaigal Kappagams (Balwadis) functioning in the State with a uniform programme of feeding care and education, which will be based on the quantity of protein and calories to be administered daily; the weekly menus based on local foods; the cost of food, other overheads to support the cooking and feeding operations without reliance on voluntary contributions; and the simultaneous provisions for health care.

The next step will be the progressive expansion of the Kuzhandaigal Kappagams from 1,707 and 12,500 by 1984 with consequential or appropriate changes in menu and costs. These Kuzhandaigal Kappagams with 60 children each will cover 7.5 lakhs of children. The rate at which they can expand by 1984 is limited due to financial and human constraints. It is, therefore, proposed to reach the pre-school children through the existing primary school system which is well extended. This can be done by attaching pre-primary

A Prize Winning photo in 1972-73 competition.



sections to selected primary schools along with a meaningful 2-3 hour educational programme using the school facilities without disturbing the school programme itself. This strategy will cover 9.18 lakh children in 15,300 primary schools with 60 children each.

#### Expectant and Nursing Mothers :

Educational and feeding programmes for expectant and nursing mothers have to be organised together with health care and pre-natal and post-natal attention. The nutritional aspects of these groups will become the responsibility of the health sector when nutritionists are appointed and take up position.

Nutritional rehabilitation programmes are necessary to educate the mothers so that they can spot common signs of malnutrition among pre-school children and treat them by simple, low-cost, locally available and nutritive foods. Nutrition Rehabilitation Centres will arrange demonstrations to show people how nutritive diets can improve their children's health within four to six months and how children ought in fact to be fed. This will also become the responsibility of the health sector. To this end the programme will be integrated with that of family planning in the health sector.

#### Long Term Programmes for Adolescent Boys and Girls :

The nutritional requirements of the adolescent have received scant attention, except perhaps when the adolescent is also a mother. Yet boys and girls grow faster in adolescence than at any other time except in infancy and their nutritional needs are accordingly the greatest at that stage. They need more protein, calcium, iron, riboflavin and ascorbic acid than their adult counterparts.

Nutritional education programmes should also be organised for adolescent boys and girls at high schools, in training establishments and in work canteens.

Similarly a nutrition programme for adults needs to be planned as a long range effort. The demand for calories and nutrients, except vitamin A and iron for women, diminish slightly after the peak period of growth in adolescence,

while demands for protein, calcium, ascorbic acid and Vitamin A remain constant during adulthood. The nutritional status of an adult reflects his contemporary food habits, previous dietary history and is a pointer to his future health and efficiency. Poor eating in earlier years has residual and adverse effects on the body—some remediable, some lasting and others that get worse with time.

Statistics in India indicate that 60 per cent of the population are underfed. Nourishment to the cells and organs of the underfed must be sufficient to support the functioning of the body and its renewal. During 1964, more than 4.5 million people were treated for malnutrition in

must be kept well fed, for their own sake, for the sake of their families and in the interests of full national development. Nutritional programmes for all people should include nutritional education and demonstration.

#### Education and Research :

Nutrition education has in fact to start from early childhood. It has then to be continued through the primary, middle and secondary school years, adolescence and adulthood. In order to incorporate nutrition education in the school curriculum, suitably trained and motivated teachers are needed. Accordingly all colleges of teacher

**"A solution to the problem of malnutrition is so urgent that it cannot wait upon a satisfactory level of economic growth. People have to be told about the types and quantities of food that they and their children need and how to produce nutritive foods at minimal costs. Nutrition has much to do with hoping for a better standard of life for those at work or for others in the home or elsewhere as it has to do with making most of what there is".**

hospitals and dispensaries and of these patients, 3,511 died. In planning an overall nutrition programme for Tamil Nadu, the per capita daily food requirements of adults as well as children need to be considered. The Indian Council of Medical Research has tabulated suitable kinds and quantities of daily intake of vegetarian and non-vegetarian foods, by sex and activity. The tables make useful references for planners of agricultural production and nutritional programmes. Although men are not so nutritionally vulnerable as their children or their child-bearing wives, they are important people who

education will offer a full course in nutrition education. Teachers already in position will receive short orientation-training during summer vacations utilizing existing nutrition bureaux, medical and home science colleges. All students in colleges will also be required to take a short course in nutrition. The available media of publicity—newspapers, magazines, cinema, the radio, films, posters, exhibitions, fairs and camps—which are currently in use for education in family planning, the green revolution, small savings and community development projects and campaigns will also carry the messages of popular nutrition and

health education to the masses. The job chart of all the messages of popular nutrition and health education to the masses the job chart of all extension and health workers in rural and urban areas will henceforth include the education of the families under their care in nutrition and health.

#### Role of Diet in Treatment of Disease :

Nutrition education and the followup of patients need to be further emphasised in hospital work. It is, therefore, necessary to establish nutrition clinics and appoint dietitian-cum-nutritionists at least in the district poly-clinic hospitals and poly-clinic centres and the curricula used for the training of medical and para-medical personnel need to be revised with an added orientation element from nutrition education.

Since nutritional norms cannot be progressively improved without supporting programmes for diversified and increased food production, processing and distribution, all the inter-related professions agriculture, animal husbandry and technology—must include nutrition education in their training programmes.

Research endeavours in the immediate future must become responsive to the need for alleviating hunger and malnutrition. The broad areas of end-oriented research should have a vital bearing on the proposed programmes.

Research work in different institutes has demonstrated that, by creating awareness in and motivating rural communities, effective programmes of nutritional rehabilitation could be worked by the village communities themselves, using local food resources. Such efforts must cover a wider spectrum and should be strengthened on a permanent basis.

Evaluation ought not to be a mere formality gone through at the term end of the programme, but should be so built into the operations that the programme is maintained at a steady and evenly successful pace. Evaluation must

form part of the feeding programmes and the extensive expertise available must be utilised for this purpose. Evaluation data must include an analysis of statistics from health, agriculture, trade and commerce employment and those gleaned from interviews, visit's records, reports, observation of markets and eating places, others bearing on changes in attitudes and food practices; anthropometric, dietary and clinical data, training of personnel and number of the population served.

#### Inter-departmental Collaboration :

Nutrition is a multi-faceted discipline, intimately related to agriculture, animal husbandry, fisheries, health, education, rural development and social welfare. All the departments have thus a vital role to play in nutritional activities and furthering the goals of the programme. To this end, it is recommended that a meeting be held at the Ministerial level of the following departments at periodic intervals. The meetings can be very purposive and fruitful if they come in the wake of a specific programme of action for each department. For instance the Health Department should—

- 1 (a) employ dieticians in large hospitals ;
- (b) map out the geographical areas where malnutrition is highly prevalent and organize ameliorative measures on an emergency footing ;
- (c) impart a nutrition bias or orientation to the training programmes of medical and para-medical personnel ;
- (d) enforce more stringently food laws like the Prevention of Food Adulteration Act, the Catering Establishments Act ;
- (e) organize a "Nutrition Week" in association with campaigns for related subjects ; for example family planning ; and
- (f) produce films on health education ; audio-visual and mass-media programmes on nutrition for intensive and extensive communication ;

#### 2. The Education Department should—

- (a) introduce nutrition studies in the curriculum at all levels of education including that for teacher training ;

(b) scrutinize science textbooks for nutrition topics, check their authenticity and bring out new books where necessary ;

(c) increase the number of children fed under the midday meals programme, interest college planning forums, social service associations and national service corps in the programmes and secure their assistance for raising funds.

(d) organize sale of quality milk to hostels and canteens on a no-profit basis ;

(e) employ dieticians in large catering institutions like hostels ;

(f) produce films on nutrition ;

(g) maintain cumulative health and nutrition records for school-children ;

(h) allot marks weighted for the health and nutrition status of students ; and

(i) urge colleges and Universities to take up the study of nutrition projects.

#### 3. The Rural Development Department should—

(a) give in-service training in nutrition to all functionaries and village-level workers in particular ;

(b) organize intensive nutrition drives in conjunction with campaigns for family planning small savings and others ;

(c) organize competitions in food production, food storage, cooking and food ;

(d) use mobile nutrition units for nutrition education ; and

(e) establish community food preservation and baking centres.

#### 4. The Social Welfare Department should—

(a) train all workers in nutrition ;

(b) organize nutrition education activities in Mahalir Manrams ;

(c) organize competitions in food production, food storage, cooking and food preservation ; and

(d) emphasise nutrition in welfare and relief activities.

5. The Agriculture Department should:-

(a) formulate production plans and targets based on nutritional needs in collaboration with other departments;

(b) increase quality along with quantity in food production by giving price incentives to farmers as nutrition premia;

(c) test new varieties and strains for nutritive;

(d) appoint nutritionists on the governing bodies of Agricultural Universities, Councils and Boards;

(e) promote kitchen gardens, poultry and livestock units and pisciculture; and

(f) supply milk, milk products and eggs at concessional prices to school canteens.

#### PREVENTION OF FOOD ADULTERATION

The State Government has decided to establish a Food Council Cell with adequate staff to prevent food adulteration on a large scale. A consolidated scheme has been submitted to the Government for the appointment of food inspectors who will be attached to district health officers in order to supervise the work of all the food inspectors in their jurisdiction. In addition to sampling work, they will undertake a full-time food inspectors nutrition work. They will besides, be responsible for (1) nutrition and diet surveys on a certain number of fixed days in the week. (2) the collection of food samples and (3) the supervision of the food sampling work done by the sanitary and health inspectors. There is, therefore, need for the post of full-time supervisory food inspectors at the district level. They will also

oversee the work of "food inspectors" in municipalities and their work will be co-ordinated at the apex by their gazetted personal assistants. His post which has a distinct nutrition bias has already been sanctioned and he will co-ordinate the work of all the functionaries in the field of food sampling under the Prevention of Food Adulteration Act. He will also administer the maternity and child health feeding programmes. This staffing pattern will ensure a co-ordinated approach to food and nutrition in the State as a whole.

#### REGIONAL NUTRITION LABORATORIES

Two regional nutrition laboratories will be started at Thanjavur and Madurai and they will serve to improve the quality and quantity of sampling and testing work and to upgrade in turn the nutritive quality of chosen diets in the various regions of the State. The Joint Director (Nutrition) will control nutrition and survey work in the Directorate of Health Services and he will be assisted by nutrition officers attached to the two laboratories and by the health officer who will head the Food Control Cell. The data from the nutrition surveys will be processed by the Central Nutrition Bureau in the Directorate for the purpose. It will have attached to it a State Unit of the National Nutrition Monitoring Bureau of the Indian Council of Medical Research.

A proposal to start two regional nutrition laboratories at Thanjavur and Madurai has also been included to boost the sampling and laboratory work.

A Joint Director (Nutrition) will be in over all charge of the above work at headquarters and he will be assisted by the Nutrition Officer

attached to the nutrition laboratory and the health officer in charge of the Food Control Cell which proposal is under the consideration of the Government; the staff proposed for the Food Control Cell will look after the office work connected with the above scheme.

**Food, Meat, Milk and Market Sanitation:** Food handlers will be screened for carriers and only persons who are free from communicable disease will be licensed to handle food. Food storing perishable food, coldstorage facilities will be organised.

Hotel restaurants and eating shops require proper checks to avoid food poisoning. Areas of habitual food adulteration need to be identified and persons responsible for adulterations penalized in an exemplary manner.

**Meat Hygiene:** Suitable type designs for slaughter-houses will be prepared by the local bodies with the help of the Health Department. Slaughtering of animals outside licensed slaughter houses will be effectively prevented and defaulters penalized.

**Milk Hygiene:** Healthy milkmen health cows and proper containers adequate storage facilities and efficient distribution will be areas requiring immediate attention. All milk-vendors will be licenced and they will sell their milk only at depots notified by the municipalities. Wherever dairy farms exist, milk collected from the vendors (later to be chilled and processed) will be sold within the farm premises.

**Market Sanitation:** The prevention of over-crowding in markets, restriction on goods that may be sold, a working separation of perishable goods from not susceptible to putrefaction offer necessary and further scope for local planning initiative and public health regulation.

## MINERAL EXPLORATION IN TAMIL NADU

In Tamil Nadu, with increasing industrialisation and expanding horizon of mineral trade, mineral exploration has received an impetus and important sectors of the mineral economy have registered steady progress. As far as the mineral production is concerned, Tamil Nadu is emerging as an important State despite its deficiency in key minerals.

Position prior to 1957:

Prior to the year 1957, mineral production in the state was quite unimpressive. In 1957 mineral production contributed an insignificant amount of 0.1 per cent to the net output of the State. The value of minerals produced in the State formed 1.3 per cent of the value of India's mineral production and gave Rs. 0.69 worth of mineral output per capita as compared with Rs. 2.82 in India.

The deficiency of minerals in the State was even more striking during this period in the case of metallic ores and industrial fuels. The bulk of mineral production consisted of 50 per cent salt, 20 per cent of limestone, 11 per cent of magnesite, 9 per cent of ilmenite and 6 per cent of gypsum. The lack of production of any metallic ore and industrial fuel had been a serious set back to the industrial development of the State. For this reason, mining as a source of employment was relatively

unimportant in the State. Employment in 1957 in all mining operations including extraction of common salt from sea was 49,000 or about 5 per cent of the working force in non-agricultural occupations.

#### FORMATION OF GEOLOGY BRANCH.

In order to carry out more detailed geological mapping and prospecting of areas which are mineral bearing, the State Government started the Geology Branch of Industries Department in 1957. The unit consisting of a retired Superintending Geologist from the Geological survey of India and two Assistant Geologists were asked to carry out prospecting and detailed surveys of minerals. The need for expanding the Geology Branch was soon felt and the Government spared no effort to expand the unit, by appointing another Geologist from the Geological Survey of India. The Geology Branch, during 1964, had on its staff 16 officers and 12 Technical Assistants besides a sufficiently large number of chemists. The Chemical and Analytical Laboratory attached to the Industries Department had undertaken the work of analysing, every year, hundreds of samples minerals, rocks, ores and water collected by the Geologists from different parts of the State. Efforts were taken to secure enough

Exhibits of ornamental polished stones of various types found in Tamil Nadu.



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drills for purposes of drilling up to 2,000 feet in hard rock formations and also for the construction of tube wells wherever the ground-water conditions appeared favourable.

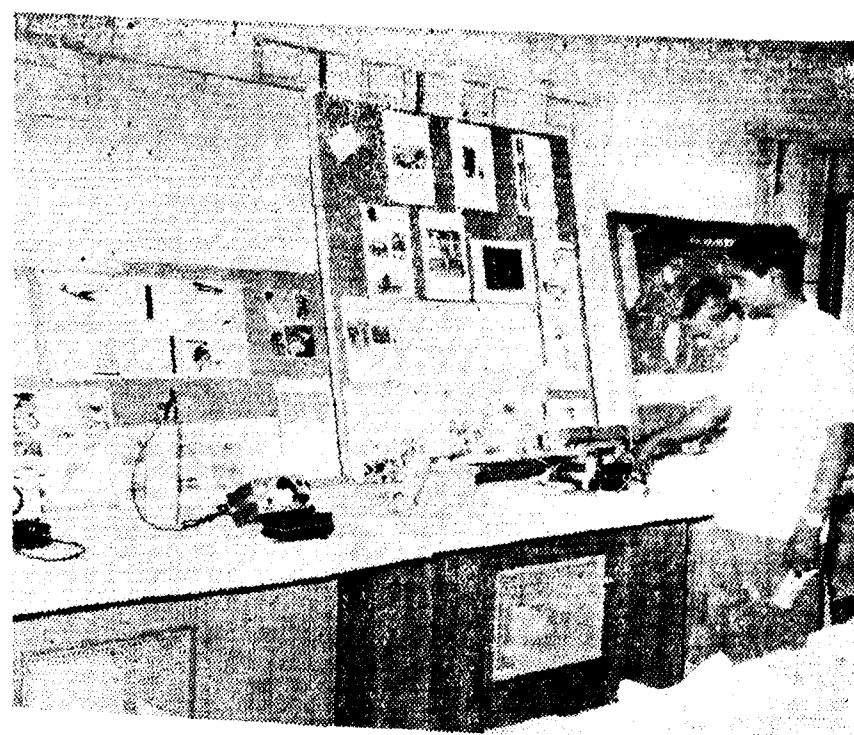
#### EXPLORATIVE ACTIVITIES OF GSI, AEC AND ONGC.

It is gratifying to note that the three organisations viz., Geological Survey of India, Oil and Natural Gas Commission and Atomic Energy Commission contributed their maximum for the exploration activities in the Mineral sector in Tamil Nadu concurrently.

#### ACTIVITIES DURING SECOND PLAN PERIOD.

During the period from 1957 to 1961, the major items of geological work carried out included (i) detailed prospecting work on the bauxite deposits of Shevroy hills, Salem District. (ii) prospecting work on the bauxite deposits near Elada, Kotagiri, Boradai and Dodhabetta in Nilgiri district and (iii) investigations of ground-water resources in the Avadi-Villivakkam area near Madras. Apart from these, mineral surveys for pyrite, in North Arcot district, gypsum (Tiruchirappalli district) and graphite (Tirunelveli district) were carried out in detail. Because of these activities, the share of Tamil Nadu in the All-India Mineral Production in terms of value had risen to 1.7 per cent.

X-ray diffraction analysis for minerals—T.M.D.P. laboratory.



Exhibits of modern instruments for mineral exploration.

#### ACTIVITIES DURING THIRD PLAN PERIOD.

The details of geological work carried out during the Third Plan period (1961-65) are summarised below. An outlay of Rs. 30.31 lakhs was envisaged in the plan period:

(i) Detailed investigation of the iron ores of Kanjamalai and Godu-

malai near Salem was carried out in connection with the setting up of a steel plant utilising the iron ores of Kanjamalai and the lignite from Neyveli. The investigation included large scale mapping and systematic sampling. Further work was taken up in connection with the project by the geological personnel of the Neyveli-Salem Steel Project set up by the Government of Tamil Nadu. This included sampling, drilling, experimental mining, audit work and the preparation of all geological data on the iron ores of Kanjamalai. Further the limestone deposits in the Salem District were examined in detail to assess their suitability as flux in the iron and steel industry.

(ii) Another major achievement was the detailed examination of the limestone deposits in the Ramanathapuram, Madurai and Tiruchirappalli districts in connection with the utilisation of the deposits for setting up cement plants. As a result of these surveys, the total limestone reserves suitable for cement manufacture had been estimated at about 200 million tons. This resulted in the setting up of three cement plants—two in the private sector and one in public sector.

(iii) Detailed prospecting of various promising deposits of Bauxite was undertaken. This resulted in the discovery of Bauxite with reserves of 7.5 million tons and

led to the setting up of aluminium plant at Mettur Dam by Tiruvalargal MALCO with a capacity of 10,000 tonnes of aluminium ingots per annum. This is now being expanded to produce 20,000 tonnes of aluminium ingots per annum.

(iv) Discovery of Gypsum deposits having reserves of 2 million tonnes suitable for meeting the additional requirements of the cement plants in the State.

(v) Graphite deposits with reserves of about 2.7 lakhs tonnes suitable for the manufacture of crucibles were discovered.

(vi) Massive Sillimanite and Sillimanite bearing gneiss with reserves of about 4,000 tonnes was found and is now being successfully exploited by a private firm.

(vii) The refractory clay occurrences in South Arcot district were examined in detail for exploitation and use in the Government Ceramic Unit at Vriddachalam. The total reserves have been estimated at well over 6 million tonnes.

(viii) Quartz and Felspar deposits having a reserve of about half a million tonnes to be used in the manufacture of ceramic-ware were located.

(ix) Mineral surveys were carried out for magnesite, baryte, steatite, corundum.

(x) Investigation for Vermiculite occurring near Tirupattur in

North Arcot district proved to be promising. Thirty-five trial pits were opened of which 25 showed the presence of vermiculate to a depth ranging from 2 to 4 metres. Good quality vermiculate with an expansion ratio of 1:15 occurs up to 17 per cent of the total rock matter. It is estimated that 1.93 lakh tonnes of vermiculate is likely to be available.

The upward trend in the value of mineral production in Tamil Nadu continued in the III Plan period.

The total value of mineral production in the State reached the all time high of Rs. 106.8 million in 1965 as against Rs. 79.9 million in 1964, showing a significant increase of about 34 per cent. The increase in value was mainly due to the phenomenal increase in the output of lignite. The rise in the output of limestone was also a contributory factor towards the increase in the total value of mineral production in the State. As a result the share of Tamil Nadu in the All-India mineral production which stood at 1.7 per cent in terms of value at 1960, rose to 3.1 per cent, and the State reached a position of 8th rank among the States in the value of mineral production. Lignite, limestone, salt, magnesite, gypsum, bauxite, ilmenite are the chief contributors. Compared to 1960 the output of minerals rose in terms of quantity by nearly 40 points (Table IV).

Microscopic study of minerals kept in the Exhibition.



The trend in the value of mineral production in Tamil Nadu during 1956-1965 is presented in Table below. The value is inclusive of the value of the output of "Minor Minerals."

| Year.  | Value.<br>(Rs. '000). |
|--------|-----------------------|
| 1956.. | 13,665                |
| 1957.. | 15,940                |
| 1958.. | 16,679                |
| 1959.. | 16,564                |
| 1960.. | 23,414 (R)            |
| 1961.. | 43,328 (R)            |
| 1962.. | 52,596 (R)            |
| 1963.. | 70,113 (R)            |
| 1964.. | 79,868 (R)            |
| 1965.. | 106,799               |

(R) = Revised.

Table below shows the Index Number of mineral production in Tamil Nadu during 1960 to 1965 (Base 1960=100).

| Year.  | Index.<br>Base 1960=100. |
|--------|--------------------------|
| 1960.. | 100                      |
| 1961.. | 103.6                    |
| 1962.. | 110.0                    |
| 1963.. | 119.5                    |
| 1964.. | 133.4                    |
| 1965.. | 139.6                    |

#### Activities during the Fourth Plan period:

The Fourth Plan programme is based on the groundwork prepared during the previous plan periods. During the three annual plan periods 1967, 1968 and 1969, several systematic mineral surveys were undertaken in hitherto unsurveyed areas especially in the hill tracts of Tirunelveli, Madurai and Coimbatore districts. In the beginning of the IV Plan period, detailed investigations, including drilling of the earlier reported occurrences of minerals like limestone, graphite, clays and iron ores were taken up with a view to test the quality and assess the quantity of the reserves. This has resulted in proving about 30 million tonnes of limestone in parts of Sattur and Srivilliputhur taluks of Ramanathapuram district and culminated in the establishment of the Tamil Nad Cements—a State owned undertaking. Likewise, the high grade limestone (crystalline and sedimentary types) occurring in parts of Salem and Tiruchirappalli districts were reassessed and the areas were recommended for reservation for the proposed Salem Steel Project. A sizeable deposit of massive



sillimanite and cordierite-sillimanite gneiss was located in Kulthalai taluk of Tiruchirappalli district and is now being exploited by Thiruvallur Southern Mines and Metals. About 17,000 tonnes of graphite similar to those around Sivaganga of Ramanathapuram District were proved near Thirumangalam in Madurai district. Investigations were carried out on the earlier reported occurrences of graphite near Kuruvikulam in Sankarankottai Taluk of Tirunelveli district and also on the occurrences near Kallupatti in Usilampatti taluk of Madurai district. During the period under review, a sizeable deposit of dolomite near Kadalai in Kovilpatti taluk of Tirunelveli district with a reserve of about two million tonnes was located and the same has been reserved for use in the Steel Plant. In 1970, Tamil Nadu ranked seventh in the value of mineral production among the States in the Indian Union.



#### Commissioning of UNDP :

A very important event in the geological activities of the State is the commissioning of Tamil Nadu Mineral Development Project in April 1968 under the auspices of United Nations Development Project. According to this programme the experts from United Nations undertook a sophisticated mineral survey, including air-borne geophysical survey on select areas in the State and also in the hilly terrains where the usual field investigation poses a problem. Under the terms and conditions, the State Government had contributed a sum of Rs. 34.62 lakhs for a period of 3 years from 1968-71 while the United Nations Development Programme contributed a sum of Rs. 78.79 lakhs making a composite scheme for Rs. 105.09 lakhs. An area of about 17,000 sq. kms. in parts of North Arcot, South Arcot and Dharmapuri and Salem districts was taken up for extensive and intensive mineral exploration by United Nations Development Programmes. As a result of the survey and ground follow-up work, a huge reserve of iron ores in Kavuthimalai, R.F. in Tiruvannamalai, North Arcot District, was located. As a preliminary finding the experts have estimated the reserves of iron ores to be of the order 140 million tonnes with an iron content varying between 40 and 44 per cent. Detailed prospecting is being continued and the State Government have now requested

the United Nations Development Projects to take up a special feasibility study with a view to set up a concentration plant based on the available ore reserves.

Another important discovery is the location of Radio-Active and rare mineral deposit of pyrochlore containing uranium, niobium and tantalum elements in Sevathur area, Tirupathur Taluk that has led the way for further intensive exploration for these rare minerals by the Atomic Energy Commission. The United Nations Development Programmes also aided in proving the exact reserves of Vermiculite deposits associated in the rare minerals group of rocks (Carbonatite) and estimated those to be of the order of 3.5 lakh tonnes. As beneficiaries, the project received from the United Nations Development Programme costly equipments such as Atomic Absorption Spectrophoto meter, Induced polarisation for geophysical survey, Electro-Magnetic equipments, Gamma Ray Spectrometer and Ore Dressing Equipment, which resulted in the establishment of more modern geochemical and ore dressing laboratories. The United Nations Development Programmes also provided training of counterpart personnel in modern and sophisticated surveys in photo-geology, geophysics, geochemistry and field geology as well as training of a few officers overseas in the above sophisticated fields of geological exploration.

Mineral Exhibition of keen interest to visitors.

#### II phase of UNDP :

As the Project area during the I phase was restricted to a few northern districts in Tamil Nadu, the hitherto neglected hilly tracts in Salem, Coimbatore and Madurai Districts are proposed to be taken up for survey under a Second Phase for which assistance is being sought from the United Nations Development Programmes. The general objective of the II phase of the project is to conduct an intensive exploration survey for new mineral deposits over an additional area of 13,000 sq. kms. and to complete development and economic evaluation of deposits in the present project area. The II phase will produce initially needed basic technical data on the area studied, and provide useful assistance to the surveying of other natural resources for development activities. A detailed investigation to find out the possibilities of further occurrences of phosphates (apatite), rare earths, iron ores, base metals, chromite, etc., is envisaged. Sophisticated surveys such as photo-geological interpretation of structures, geophysical and geochemical reconnaissance are proposed to be conducted in the second phase. The proposals are under the consideration of the U.N. and the project is expected to be completed by the end of Fourth Plan period.

## MINIMUM WAGES TO HANDLOOM WORKERS—AN EXPERT COMMITTEE FORMED

### ALSO FOR SILK WEAVING INDUSTRY.

The Government have already constituted a Committee for advising the Government regarding the minimum rates of wages to be fixed for the employment in Handloom Weaving Industry under the Minimum Wages Act, 1948. The Government have now constituted a separate Committee for advising the Government regarding the fixation of minimum rates of wages for employment in Handloom Silk Weaving Industry.

employees sides has been asked to submit its report urgently so that the Government can fix minimum rates of wages for the employees employed in the Handloom Silk Weavers Industry expeditiously.

After the minimum rates of wages are fixed under the Minimum Wages Act, 1948 the employers will be bound to pay wages to the employees employed in the Handloom Silk Weaving Industry which should not be less than the minimum rates of wages so fixed.

#### Employees' Representatives.

4. Thiru T. S. V. V. Member.  
Thiagarajan,  
Director, Mettupatti Kaithari Javuli Urpathiyalargal Sangam, Madurai district.
5. Thiru R. Venkatachalam, President, Coimbatore Handloom Cloth Manufacturers' Association. Member

6. The President, Madurai Mahalakshmi Weavers' Co-operative Products and Sales Society Limited, Kanpalayam, Madurai. Member.

1. Paramathi Thiru K. Shanmugam, Vadivel Nagar, Coimbatore Road, Karur. Member.

2. Thiru S. Duraiswami, M.L.A., General Secretary, Coimbatore District Dravida Panchalai Thozhilalar Munnetra Sangam. Member.

3. Thiru S. G. Lakshminarayanan, President, Paramakudi-Emaneswaram Handloom Weavers' Sangh, Paramakudi. Member.

After the minimum rates of wages are fixed under the Minimum Wages Act, 1948 the employers will be bound to pay wages to handloom workers which should not be less than the minimum rates of wages so fixed.

The following are the members :

#### Independent members.

1. The Deputy Commissioner of Labour (Welfare), Madras-5. Chairman.
2. Assistant Director of Statistics (Market Intelligence), Madras-6. Independent member.

#### Employers' Representatives.

3. Thiru C. P. Ramadoss, Partner, Sri Mangalambika Silk Throwing Factory, Kumbakonam. Member
4. Thiru N. K. Subbaraya Chettiar, Sri Lakshmi Saraswathi Silk Throwing Factory, Arni. Member.

#### Employees' Representatives.

5. President, Kancheepuram Handloom Weavers' Union. Member.
6. The Vice-President, Kudanthai Pattu Nesavu Thozhilalar Sangam. Member.

The Committee which consists of independent members, and representatives from both employers and

### MINIMUM WAGES TO HANDLOOM WORKERS COMMITTEE FORMED.

The Government have constituted a Committee under the Minimum Wages Act, 1948 to hold enquiries and advise the Government regarding the fixation of minimum rates of wages for employment in handloom weaving industry. The Committee which consists of independent members and representatives from both employers and employees has been asked to submit its report urgently so that the Government can fix minimum rates of wages for the handloom workers expeditiously.

The following are the members :

#### Independent members.

1. The Deputy Commissioner of Labour (Welfare), Madras. Chairman.
2. The Assistant Director of Statistics (Market Intelligence), Madras-6. Independent member.
3. Assistant Director (Handlooms), Office of Director of Handlooms and Textiles, Madras-1. Member.

# TANSI'S SEVENTH ANNIVERSARY

**T**he Tamil Nadu Small Industries Corporation Limited *Tansi* for short was the outcome of the pioneering spirit of the Tamil Nadu Government and started seven years ago. It has justified itself as a most fruitful venture comprising 53 units and turning out industrial and consumer goods, even as new lines of manufacture are being introduced simultaneously. No wonder it is today the largest enterprise of its kind in the public sector.

Seven years is a short period in the life of a consumer oriented concern under the Government. Within a span of seven years, the Tamil Nadu Small Industries Corporation has given a commendable performance not only in diversifying production but also developing new products and services on commercial lines. The price competitiveness and performance of the products enjoy the confidence of the public and the industry.

The variety of its production lines shows the immense possibilities of the small scale sector. Apart from providing employment to thousands and supplying essential goods and services to the industrial and domestic consumers it has also helped industrialisation of the semi-urban areas by the dispersed location of its units.

*Tansi*, in the course of its growth, has had to grapple with several problems, the most important among them, skilled workers. Today it proudly claims to have built a reservoir of skilled technicians who not only serve the various units of *Tansi*, but have been drawn upon liberally by the private sector, too. Though to start with, the enterprise had to depend on foreign technicians to get going the more sophisticated lines of manufacture, it was only for a brief while, and before long local talent had been hunted and trained for use.

As a government organisation, *Tansi* has been in a position to garner raw materials without much difficulty and its products are now

being marketed not only in the country but also abroad. *Tansi* produced leather (finished material) has found its way all over Europe while its transmission towers and stoneware pipes are being marketed in Kuwait and Ceylon. At home, *Tansi*'s main customers are the Central Government departments like the Railways, the Defence Services and the P. & T. and Public sector agencies such as the H.M.T., B.H.E.L. and the shipyards in addition to several major industries in the private sector.

*Tansi* has elaborate plans to come out with a 'moped' the two-wheeler for the common man in the urban and rural areas. Mopeds are already on the Indian roads, but these are being produced with

Within a span of Seven years, the Tamil Nadu Small Industries Corporation has given a good account of itself not only in diversifying production but also developing new products and service on commercial lines. The price competitiveness and performance of the products enjoy the confidence of the public and the industry. Thus it has justified itself as a most fruitful venture:

foreign collaboration. The *Tansi* moped will be 100 per cent indigenous, designed and produced locally, and it will be a low-cost vehicle to suit the middle-class budget. It will run on petrol-50 kms. per litre and even when the gas runs out, the rider would have no reason for despair because the vehicles could be pedalled to its destination. The first moped will roll out of the lines in April 1973 and the production will be ultimately increased to 30,000 units per annum from the seventh year onwards.

There are 52 Small Scale units under this Corporation and of these, thirteen are situated in Madras and the rest in the districts. There are two units in the Structural

Division, one at Mettur Dam and the other at Ambattur to undertake the design for heavy structures and fabricate the same to acceptable specifications. These units contribute about a quarter of the total production of *Tansi*.

*Tansi* Structural and Galvanising Works, Mettur Dam, possess a galvanising bath, the largest in the South. Besides, it has a well equipped structural shop. This unit has specialised in the manufacture of towers which have been provided to many of the States in India. These towers were also exported to Kuwait and the second order is now under execution.

*Tansi* Structural Works at Ambattur have done some outstanding works of complicated nature.

*Tansi* has a site shop at Vizag functioning for the past three years fabricating the structural requirements of Hindustan Shipyard. Our site workshop at Richy is an

ancillary to Bharat Heavy Electricals, Tiruchirappalli, *Tansi* has recently completed the structural works for H.M.T. at Hyderabad.

In the Ceramic Division, the Ceramic factory at Vridhachalam manufactures all types of sanitary-ware besides insulators and crockeries. Stoneware pipes manufactures by another unit at Vridhachalam are in accordance with Indian Standard specifications and they are recognised as one of the country. These pipes are also now under export to Ceylon. *Tansi* Glasswares at Guindy produces specific glass apparatus required for educational institutions besides milk bottles, B.T. bottles

and various other industrial glass equipment.

*Tansi* Tannery in the Leather Division of the Corporation has won international reputation in World Leather Fairs. Situated at Vinnamangalam (North Arcot District), this unit produces finished leathers which are also exported to various European countries. *Tansi* Tannery also offers raw materials to the three units at Perambur and Pallavaram intended for manufacture of leather goods. These leather works manufacture a variety of goods, such as fancy bags, suitcases, belts, shoes and chappals in addition to web and canvas items. The requirements of State Police, Home Guards and Transport Corporations are met with by these units. Certain Public Sector projects such as B.E.L. and H.M.T., Bangalore, B.H.E.L., Tiruchirappalli and Hyderabad have also come forward to meet their needs with the products of the leather units of *Tansi*. Apart from the above there is a wool processing centre at Vinnamangalam which is exporting wool to Australia.

Manufacture of light engineering products is undertaken by ten engineering works owned by *Tansi*. Line materials to Electricity Boards, requirements of private agriculturists, local bodies and others are met by these units. In addition to these units, *Tansi* owns Fabrication Works at Vellore, Palani and Rajapalayam for bringing out quality steel furniture of all kinds. Hospital furniture manufactured by these units are supplied to State and Private Hospitals and Nursing Homes.

Manufacturing of standard and non-standard items of wooden furniture are undertaken by *Tansi* in the Furniture Works at Guindy and seven other centres in the districts. Departments and educational institutions of the Government get their demands met by these units. Besides, the units have also penetrated the private market offices in accordance with the preference of the customers.

*Tansi* Tool Rooms offer servicing in Guindy, Ambattur and in four district centres. They manufacture press tools, jigs, forging dies, fixtures and special gauges required for various types of industries.

In the field of Foundry and Forgings, *Tansi* has secured a pride of place. Simple as well as specialised castings including various items of pipes and specials are undertaken by the four foundries. The two forging works are located at Guindy and Coimbatore. These units undertake light forgings such as those required for oil engines, cycles and two-wheeler motor vehicles. Forgings required by other industries are also undertaken against orders.

## FRIEND OF AGRICULTURISTS.

*Tansi* is a great friend of the Agriculturists too. *Tansi* Farm Implements, Tiruchirappalli, manufactures various types of ploughs, green manure trawlers, buck scrapers, groundnut decorticators and similar other items. This unit has also developed Tractor Trailers. The Brass and Engineering Works at Kumbakonam produces one of the best agricultural dusters and sprayers in the country. This unit also undertakes fabrication of steel windows, doors, ventilators, brass hinges and bolts.

There are seven special purpose units under *Tansi*. It's Die Casting Unit at Guindy is concerned with die-castings of non-ferrous alloys like zinc, aluminium and copper. Energy meter components, calculator components, components for speedometer and other dash board instruments are manufactured in this unit. *Tansi* Pressings and Machine Shop at Guindy is engaged in the manufacture of defence requirements of precision components. *TANSI* Enamelled Wires at Guindy has gained popularity for its products of enamelled and D.C.C. wires. *Tansi* Electrical Works, Guindy, renders servicing jobs for

motors and other electrical equipments. A small printing press under *Tansi* meets the stationery requirements of public sector enterprises and departments. *TANSI* Lock and Engineering Works, Dindigul, has specialised in the manufacture of locks intended for railway coaches. Steel bunks made in this unit at Dindigul are used by the dairy units of Madras, Madurai and Coimbatore for distribution of milk to the public.

The four sales centres established by *TANSI*, two at Madras and the others at Madurai and Coimbatore promote sales of the product manufactured by the production units in addition to the various stockists and agents.

A new unit is being set up in the developed plot estate, Kappalur (Madurai) to cater to the demands of standard and non-standard items of wooden furniture in the Madurai and Ramanathapuram regions.

In keeping with its trend of modernisation, *TANSI* will be shifting to a very modern buildings opposite its present Sales Emporium on Mount Road to facilitate its expanding activities. *TANSI* is dedicated to the small industries but its horizons are vast and unlimited where very growth will be recorded like the glitter of the smallest star.

Sincere and hard work of the employees at all levels and the continued patronage of its customers have brought the turn-over of the Corporation from Rs. 4 crores in 1965-66 to Rs. 8.81 crores in 1971-72. *TANSI* employs more than 6,000 persons and offers apprenticeship to 120 technically qualified persons a year.

Though *Tansi*'s record has been one of gradual progress from the very start, it has received added impetus in recent days as a result of which it was poised to achieve a 25 per cent increase in its turn-over by March 1973.

The Children's Section in the Government Museum is of recent origin but has succeeded in arousing the interest of the many young visitors to the museum. At present, the collection includes, among others, a series of life-like models (reduced to scale) of a selection of sixteen extinct animals that dominated this earth in the past geological ages. These are exhibited in the form of suitable dioramas, so as to present them as far as possible in their natural settings with the contemporary vegetation painted in the background.

A series of attractive enlarged models illustrating the internal structure of the earthworm, fish, frog, garden lizard, pigeon and rabbit, a working model illustrating the circulation of blood in the



human body and enlarged dissectable models of the human heart and the human eye, have also been exhibited with adequate labels so as to make some of the basic lessons in animals and human biology vivid to the children.

Another group of exhibits which is expected to arouse the interest of children, especially of the lower age-groups, in people of foreign lands, is a set of twenty-nine dolls of different sizes, dressed in the national costumes of Yugoslavia. These were presented by the Yugoslavia Cultural Mission which visited the museum in 1953. A number of interesting objects of everyday use belonging to American Indians,

including a pair of beautiful moccasins of exquisite workmanship and a two piece dress worn by the American Indian children also form part of our material collected from foreign countries specially for exhibition in the Children's section.

A set of thirteen dolls dressed in costumes characteristic of the different parts of India and Ceylon have also been acquired to illustrate vividly the sartorial habits of the people of the different States in the country. Another attractive exhibit is a series of dolls illustrating the various classical dances of India, namely, Bharathanatyam, Kathakali, Kathak and Manipuri.

A science section, especially one that is equipped with working models, is an indispensable part of a modern Children's gallery. With a view to fulfilling this need, a number of scientific exhibits have been acquired to start with. These include a series of specimens and photographs illustrating the story of glass in its varied forms, its manufacture and multifarious uses, the Spitz Junior Planetarium capable of projecting a realistic image of the starry skies in a darkened room, a working model of an internal combustion engine, and two globes worked by electricity, one illuminated by an internal electric bulb and the other a rotating one with a model of a man-made satellite revolving round the globe, the relative speeds of the motions of the earth and the satellite being accurately depicted in this working model.

A few scale models of well-known foreign ships and native craft of India which are also available at

present in the collection of the Children's Section are exhibited as part of a series illustrating the evolution of human transport, along with working models of locomotives, aeroplanes and other means of transport, both primitive and modern.

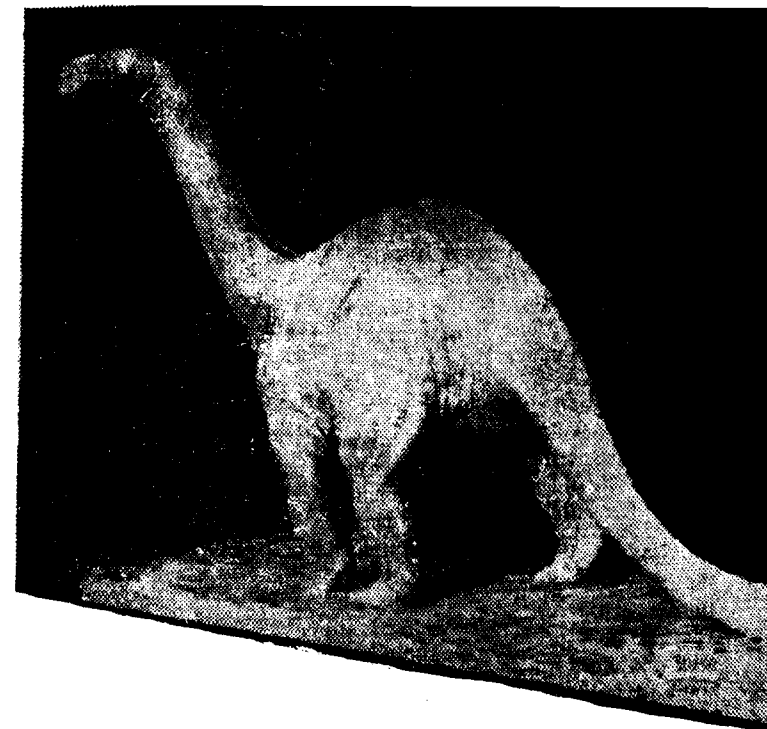


Although this small collection of exhibits, as it stands at present, may appear to be a somewhat random assortment of miscellaneous objects, it would be possible to fit them into well planned and intelligible series, so as to tell connected stories illustrating specific themes in History, Ethnology, Biology and the Physical Science, which would appeal to children, as further material is gradually added. The proposed Children's Section is a new venture, and is still only in its formative stage, but it holds out a great promise for the future and it is hoped in course of time this will form one of the liveliest and most attractive sections of this museum.

## THE CHILDREN'S SECTION

A CYNOSURE OF  
Younger Generation

## ZOOLOGICAL SECTION IN MADRAS MUSEUM



The zoological galleries of the Madras Government Museum, as they stand today, are the tangible cumulative results of more than a hundred years of patient and determined effort on the part of a devoted staff, guided by the expert supervision of a succession of able directors whose powerful initiative and unflagging industry have contributed largely to the high standard of the vast array of material exhibited in these galleries. The past few decades have witnessed a record of steady improvement and expansion in all aspects of museum work relating to the zoological section. Apart from the skill, patience and laborious work involved in the collection, preservation, display, arrangement and interpretation of the exhibits in the public galleries, a great deal of effort had been concentrated on various other fields of museum activity, such as the building up of a substantial reserve collection for research and reference purposes, the organisation of planned collecting tours, faunistic surveys and systematic research work on various groups of animals collected by the Museum, the publication of the results of these researches in a valuable series of bulletins issued by the Museum and various kinds of educational services, particularly to schools all over the State.

The sprawling galleries of the zoological section in this Museum extend over eleven halls of varying sizes both on the ground floor and first floor of the southern wing of the main buildings, adjoining the sculpture galleries of the Archaeological Section. A leisurely ramble round these galleries is at once educative and entertaining giving visitor a glimpse into the multifarious curiosities of nature's creations and exciting in him a keener and more lively interest in his environment of which animals constitute an integral part.

The largest and probably the most reputed and valuable among the exhibits in the zoological galleries is the gigantic skeleton of the Great Indian Fin Whale *Balaenoptera indica* suspended from the centre of the ceiling in the hall of general exhibits at the commencement of the zoological galleries. The whale from which this skeleton was prepared was a fair sized specimen, measuring over 60 feet in length and was washed ashore in Mangalore in 1874. This species inhabits the Bay of Bengal and the Arabian Sea and belongs to the great group of whales known as the Baleen Whales or Whalebone Whales, which have no teeth but possess, remarkable, brush-like structures composed of numerous plates of

baleen or whale bone suspended from the roof of the mouth on either side, enabling the whale to strain out the water from fish snails and shrimps on which these whales feed. They are thus "filter feeders", being wonderfully adapted to this peculiar method of feeding. Fully grown specimens of this species attain a much larger size than the one exhibited here and are said to be largest of animals known, living or extinct.

The other great group whales, the toothed whales, which have solid teeth, instead of the Baleen plates, is represented in this gallery by the enormous skull and lower jaw of the Sperm Whale or Cachalot (*Physeter macrocephalus*).

Among other notable skeletal exhibits in the Museum in the huge skeletons of the Indian elephant and their skulls and tusks of solid ivory deserve special mention. There are two completely articulated and mounted skeletons of the Indian elephant, one in the centre of the mammal gallery and the other in the general skeletal gallery, and two enormous skulls with massive tusks weighing over 50 lb. besides a few sections of the skull which serve to illustrate the comparatively small size of the brain cavity in spite of the



large size of the skull, and the presence of a large number of air spaces in the bones of the head which render the skull surprisingly light in proportion to its size. The entire mounted skeleton in the centre of the mammal gallery is that of a full grown tusker standing over ten feet in height at the shoulder and arrests the attention of the visitor even from a great distance, by its imposing size. The other complete skeleton in the general gallery is that of a female and is considerably smaller.

In the small hall adjoining the gallery of skeletal exhibits, there is an instructive section devoted to exhibits illustrating the phenomenon of flight in the various groups of back boned animals. Though the power of flight attains the climax of its developments in birds, yet it is manifested in varying degrees also in the other well known groups of higher animals such as fishes, frogs, reptiles and mammals. On one side in this hall, the attention of the visitor is attracted by a group of flying fish *Exocoetis* sp. displayed as though they are leaping across the air over the surface of the sea. These are the familiar flying fish of the Madras Coast.

Other selected examples of flying vertebrates, such as the flying frog, flying lizard and the large Indian fruit bat or 'flying fox' are also exhibited against the wall in this gallery, accompanied by enlarged X-ray photographs to show the skeletal adaptations to flight, and a large, well drawn picture of a curious extinct ancestral reptile known as the *Pterodactyl* which possessed a very well developed wing membrane and could fly almost as effectively as any bird.

Although the scope of our collections is limited to examples of South Indian fauna, this Museum can still boast of a small complement of animals and birds from foreign countries which we have been fortunate enough to acquire. This collection has now grown so substantially that it has been found necessary to devote an entire gallery to foreign fauna. Among the exhibits in this gallery the Orang Utan, a model of the bust of the Gorilla, the Tapir, the Kangaroo (*Macropus giganteus*) (Fig. 96), the Duck-billed Platypus and the Cassowary are perhaps the most outstanding ones.

The Malayan Tapir, of which a fine specimen is exhibited in this gallery, is another interesting foreign animal allied to the horse and the rhinoceros. Tapirs are found at the present day in South and Central America and in the Malay Peninsula, Java and Sumatra, thus affording an excellent example of discontinuous distribution.

Australia, as is well known, has a peculiar fauna of its own most of its animals belonging to species found nowhere else in the world. The isolation of this island continent has been largely responsible for the evolution of unique species of animals. Examples of Australian fauna represented in our Foreign Animals gallery are the Cassowary, Kangaroo and the Duck-billed Platypus. The Cassowary ranks foremost amongst the small collection of foreign birds in the Madras Museum.

The Kangaroo and the Duck-billed Platypus exhibited in this gallery are comparatively recent additions to our collection of foreign animals. The skin of a large male Kangaroo was very kindly presented to the Museum by Dr. Herbert Hale, Director of the South Australian Museum, Adelaide, in exchange for a small series of skins and skulls of the Indian Pariah dog which he needed for purposes of comparative study. It is this skin of the Kangaroo that has been stuffed, mounted and exhibited in a characteristic pose in this gallery.

The specimen of the Duck-billed Platypus (*Ornithorhynchus*) exhibited is a gift from Mr. Prescott, the Director of the National Museum, Melbourne. This curious animal confined to Australia, is one the most primitive of living mammals, laying eggs and well adapted for an aquatic habitat. The Australian spiny Ant-eater (*Echidna*) which is also a primitive egg-laying mammal allied to the Platypus, is exhibited in the general gallery of comparative exhibits along with specimens illustrating variations in the integumentary structures of mammals.

A collection of beautiful birds, illustrating bright plumage exhibited provisionally in the ground floor of the new extension to the Natural History gallery makes a particularly impressive display by virtue of the gorgeous colour and lustre of their feathers. These include mostly

foreign birds, but a few are found far north in the Himalayas and some are migratory visiting India only in winter. This series includes the beautiful Macaw from tropical South America—a magnificent multicoloured red parrot, the exquisite little Mandarin Duck from China (Fig. 97) (*Aix galericulata*), the Silver Kaleege Pheasant with its graceful ornamental plumage, also from China, a male Tragopan from the Himalayas with a brilliant ocellated plumage and a male Brahminy Duck, or Ruddy Sheldrake—a brightly coloured migratory duck found in summer in Europe and Northern Africa but migrating down to the plains of India, Burma, South China and Japan in winter. The Tragopan (*Tragopan blythi blythi*) and the Brahminy Duck are recent additions to our collections received from the Madras Zoo. All these birds with their richly coloured plumage serve to demonstrate impressively how lavish mother Nature can afford to be in clothing her children.

But apart from the few exhibits of foreign animals we have just surveyed, the bulk of the Museum's collections, both in the galleries and in reserve storage, consist of specimens of indigenous animals and a student or a layman gets a fairly complete picture of South Indian fauna by making a study tour round the galleries. It may be of interest to refer now to some of the more notable ones among these exhibits, particularly those which have been added in recent years. Among reptiles the visitor will be particularly impressed by a huge specimen of the luth or the leathery turtle (*Dermochelys coriacea*) exhibited in the Reptile gallery in the spacious case containing several other specimens of Indian marine turtles. It is the largest of living turtles, reaching a length of seven to eight feet and is sometimes known as the trunk-back owing to the presence of strong, longitudinal ridges on the back. It is remarkable in that it is the only species of turtle in which the vertebral column is free from the dorsal shield. It feeds on fishes molluscs and crustaceans and comes shore to lay its eggs. Its large strongly flattened, paddle-shaped limbs serves as excellent swimming organs. A tortoise from Seychelles (*Testudo emys*) is one of the important exhibits in the Reptile gallery. This is a black tortoise exhibited in a standing posture in a centre case.

A good representative series of specimens of the Indian species of crocodiles of varying sizes, ranging from very young ones barely a foot long, to giant specimens measuring from about eight to ten feet in length also make an impressive display among the exhibited reptiles in this gallery. Among these, a moderately young, half grown specimen of the Mugger or Marsh Crocodile (*Crocodilus palustris*) about three feet in length, which had been recently acquired from the Madras Fisheries Department is mounted with its jaws gaping open and the teeth exposed, and its colour being fresh, looks more realistic and life-like than the others in this series.

Among snakes, a stuffed specimen of the Indian Python or Rock Snake, which was acquired recently from the Trichur Zoo, and attracted large

crowds when it was put up as a live exhibit at the entrance to the Museum for some days prior to its ultimate preservation, is one of the most remarkable specimens exhibited in this gallery. It is the largest of Indian snakes and is capable of capturing and swallowing animals much bigger than itself, by means of its powerful and widely distensible jaws.

Another interesting exhibit is a stuffed specimen of the Blood-sucker (*Calotes versicolor*) shown in its natural habitat.

A large number of South Indian species of snakes are exhibited in this gallery arranged in systematic series. The exhibited snakes comprise both poisonous and non-poisonous forms and include real specimens mounted in jars of alcohol

as well as plaster and wax casts painted in natural colours. The well known poisonous snakes of India, namely, the Cobra, Krait, Russell's Viper and Sea snakes are represented by fine specimens. Among the most remarkable of the reptilian specimens added to our collection in recent years are the Banded Krait and the Rattle snake—both highly poisonous.

The Diamond-backed Rattle snake is another valuable addition to this gallery. It is an American species of viper, belonging to the group known as the Pit-vipers, characterized by the presence of a well marked pit, the loreal pit, between the eye and the nostril.

The small section devoted to frogs and toads at the further end of this gallery contains a display of specimens representing the various species of South Indian amphibians including an interesting habit group of the common chum frog which lays its eggs in a froth mass on leaves of plant overhanging water, so as to enable the young tadpoles, when they hatch out, to gain ready access to water in which element alone they can proceed with their further development into the adult state. A huge bull frog mounted in a jar also arrests the attention of the visitor in this section; it is the largest of Indian frogs, attaining a length of more than six inches. A few peculiar snake-like creatures known as blind worms or Coecilians exhibited in this section are of special interest as they are more nearly related to frogs and toads than to snakes, despite their superficial resemblance to the latter.

In the large and spacious gallery of birds, adjoining the gallery of reptiles, the visitor is presented with a display of an almost complete series of South Indian birds arranged systematically in their natural sequence—a collection that had been gradually built up through several decades of patient and arduous labour, and stands today as a veritable text book of South Indian Systematic Ornithology.

One of the most unique and valuable of our recent zoological acquisitions were a pair of the Pink-headed Duck (*Rhodonessa caryophyllacea*) exhibited in this gallery among the collection of

Aviary of interest to youngsters.



ducks. This is perhaps the rarest and one of the strangest ducks in the world.

Another notable recent addition to the bird gallery is a fine male specimen of the elegant Mute Swan which was received from the Madras Zoo.

A pair of the Grey Jungle fowl (*Gallus sonnerati*) (Fig. 107) (male and female) collected recently from the scrub jungles around Pudukkottai and mounted and displayed in a natural setting is another exhibit of special interest, as this species is said to be the ancestor of our domestic breeds of poultry. The cock has an attractive plumage. The Grey Jungle fowl inhabits scrub jungles especially in areas where bamboos grow.

Apart from the birds themselves the Madras Museum possess a rich collection of birds' eggs. Collection of birds' eggs and their correct identification are not easy tasks and the Madras Museum may justly be proud of this unique scientific treasure. Recently we were fortunate in having managed to acquire over 500 specimens of named birds' eggs from localities ranging all over the world, belonging to the late Mr. Inglis' collections. Some of them are from distant places such as Japan, Russia, Scotland and other parts of Europe and many of them are remarkable for the beauty of their colour and colour patterns. The greater part of our egg collection is stored up in the reserve cupboards, for want of display space, but a few selected examples are exhibited in a separate series to illustrate the significance of the evolution of colour markings in bird's eggs. Eggs of birds vary a great deal in their size and colour.

In the centre of the adjoining gallery, which is devoted to the display of selected examples of South Indian mammals, stands the huge and predominating skeleton of a male Indian elephant displaying in their full splendour.

Among our collection of South Indian mammals, which has recently been enriched by the addition of two fine specimens of the Indian Sloth Bear (*Melursus ursinus*) one standing erect on its hind quarters and another mounted standing on all fours on an artificial rock-like pedestal and the Indian Wild Boar, (*Sus cristatus*) mounted in a life-like pose on an artificial rock-like base, visitors will be specially interested in the large ferocious carnivores such as the Leopard, the Tiger (*Felis tigris*) and the Hyæna, members of the deer tribe such as the Antelope or Black Buck, the Spotted Deer and the Barking Deer and in the remarkably fish-like aquatic mammals, the Dolphin and the Dugong. One of the notable additions to this gallery is an attractively mounted specimen of the Cat-Bear or Indian Panda, (*Ailuurus fulgens*).

The spacious hall on the first floor, directly above the Mammal gallery, is devoted to a display of Indian fishes in almost endless variety.

The Museum is also considerably rich in its collection of shells—another large group, mostly marine, displaying an almost endless variety in shape, colour and structure. Among these, the ponderous shell of the giant clam (*Tridacna cumingi*), collected from the Laccadives, is one of the most impressive exhibits.

Other notable exhibits in this gallery are the remarkable starfishes, sea urchins and sea lilies which display a characteristic pentaradial symmetry, a large series of insects representing the various important orders of insects, brightly coloured specimens of crabs and lobsters including the enormous coconut crab common on the Andamans and Nicobar Islands, and an interesting collection of Arachnids, which, besides the scorpions and spiders, includes a fine specimen of the unique King Crab (*Limulus*) which, with its heavy armour and grotesque appearance, is often

described as a living fossil as it has stagnated in evolution and practically remained unchanged throughout the long period of its fossil history which dates back to the Triassic period, which is about two hundred million years old.

At the present day, in almost every advanced country, all the world over, Museums have come to acquire a new significance in the scheme of life. From their rather unenviable status of being mere show places or repositories for a miscellaneous assemblage of objects, some years ago, they are now gradually coming to the forefront and beginning to assume a more dynamic function, particularly as an indispensable instrument in the field of education, both of children and of adults. The Museum of the present day should therefore move with the times and be prepared to shoulder many fresh responsibilities if it has to fulfil the growing demand on its resources as an educational institution. In order to achieve this, the primary need is to modernize our Museums, particularly in the methods of presenting and interpreting our material to the public so that they may be viewed and appreciated to the best advantage.

It is with this end in view that we have in recent years, begun to introduce a few new features in the zoological galleries, which aim at improving the organisation and display of the exhibited material.

It is hoped that in the years to come it would be possible for us not only to maintain in trim condition the rich heritage that has been handed down to us in the invaluable collections of the Museum but also to continue the improvements and developments that have been taken on hand recently and hand the collections down to posterity in a refined, augmented and modernised setting as a legacy truly worthy of the traditions of this great institution.

## FAMILY PLANNING ACTIVITIES OF THE ASSOCIATED CEMENT COMPANY, MADUKKARAI

The Associated Cement Companies Limited, Madukkarai, Coimbatore District.

Madukkarai Cement Works, one of the 18 Cement Factories owned by the Associated Cement Companies Limited, is the first modern cement Factory established in South India in 1934. This factory has been progressively expanded to meet the growing demand of cement for dams, roads, bridges, housings, etc. Now it supplies 3.82 lakh tonnes of cement every year for vital nation building activities. To-day, it employs nearly 2,700 persons.

A well-equipped and adequately staffed hospital is run by this factory for the benefit of its employees. They have attached great importance for the National Family Planning Programme and started the Family Planning Programme in the year 1956 itself. They are doing Family Planning Work on their own interest and without any financial assistance from the Government side.

Recently the management of this factory have announced liberalised incentives to its employees who have undergone sterilization operation as detailed below :—

### I. Coverage—

(i) All the employees including Officers irrespective of their salary, are now covered by the scheme. Employees included permanent, temporary, casual and badli workmen.

(ii) Contract labour employed in the factory or quarry—whether permanent, temporary or casual—are also now covered.

### II. Cash awards—

(i) A cash award of Rs. 300 to an employee or his wife who undergone sterilization operation, viz., Vasectomy or Tubectomy as the case may be, after two children.

(ii) A cash award of Rs. 200 to an employee or his wife who undergoes sterilization operation after three children.

(iii) A cash award of Rs. 100 to an employee or his wife who undergoes sterilization operation after four or more children.

### III. Special Leave—

(i) Special leave ranging from one to three days as recommended by the Company's Medical Officer will be given.

(ii) In case of women employees who undergo Tubectomy operation, the period of special leave shall range from 7 to 15 days depending upon the Company's Medical Officer recommendation.

During this intensive campaign about 50 employees of this factory have undergone Vasectomy operation at Arisipalayam Primary Health Centre and benefited by the incentives given by Government and by the factory.

## SCHEME FOR INVITING INDIAN SCIENTISTS AND TECHNOLOGISTS WORKING ABROAD.

The Government have decided to formulate a scheme for inviting Indian Scientists and Technologists working abroad, to work in the Scientific and Technical Departments, Institutions and Colleges in the State.

The salient features of the scheme will be as follows :—

(i) 30 Tamil Nadu Scholars working abroad will be invited to work in Scientific and Technological Departments, Institutions and Colleges in the State during their sabbaticals at remunerations ranging from Rs. 700 to Rs. 1,200 per mensem.

(ii) Under the Visiting professorship scheme 20 eminent foreign scientists will be invited to deliver courses of lectures. The cost of boarding, travel and lodging expenses will be met by the State Government.

(iii) The services of the Scientists, who are in the Scientific pool of the Council of Scientific and Industrial Research will be utilised for the benefit of the scientific and Technical Institutions/Colleges/Departments in this State subject to the condition that this scheme will be further examined and implemented during 1973-74, subject to availability of funds.

The scheme will be implemented with effect from 1972-73.

Education Secretariat will be in overall charge of implementing the scheme and co-ordinating the efforts of the Departments concerned ;

Acordinating Committee consisting of the Secretary to Government in the Industries, Health, Agriculture, Public Works Department, Finance and Education Departments will be set up and will meet at least once in two months to review the implementation of the scheme.

A detailed letter explaining the scope of the scheme will be printed and copies circularised to the Educational Attaches in Embassies for distribution among scientists and scholars from Tamil Nadu, who are working abroad.

ISSUED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS.

Even to the Emperor, Azhagi said that the sheep had been vouchsafed to her by the Lord. Impressed by her devotion, Raja Rajan told her! "Mother, if you have any desire to be fulfilled, do let me know—I would do the needful straight-away".

Overwhelmed by his kindness, Azhagi said: "Oh, Emperor, what more would I have to seek, now that you have addressed me as 'Mother'! The honour is sufficient to me for having provided food to the sculptors engaged in the construction of Raja Rajacharam, that shall be uttering the undimmed glory of your name for all times to come".

So saying Azhagi was about to fall at the Emperor's feet, but he restrained her and said: "I have understood the purity and innocence of your heart. The acts of the monarch do not bring glory to the monarch only. My view too is that it should not be so. Whoever strives for the grandeur of the Chola Empire deserves my gratitude. The Chola realm of today is not the creation of my individual prowess alone. Nor is it the outcome merely of the swordsmanship of my valorous son standing here. It is the sturdy shoulders of innumerable jewels of the Chola clan and the blessings of noble mothers such as you that have brought this Empire into existence. It is in your shade that I am standing now, Mother. And so whatever be your desire, do give expression to it".



#### Shade for the Lord.

After some hesitation the old lady said: "Oh, Emperor, this poor woman has a petition to submit. I have heard the sculptors mentioning that a single rock of somewhat large dimensions is required for the upper slab of the *Vimana*. Such a piece of rock is in my possession and I would beseech you to accept the same". Even before she could conclude this prayer, tears welled up in her eyes.

"A single rock"? required the monarch in surprise, turning to the sculptors.

"Yes Sire," said the sculptors reverently, "Kandradhittan too expressed the view that it would be eminently appropriate if the slab of the *Vimana* were to be of a single rock. The Prince has also accepted that"—

Raja Rajan raised the question! "The *Vimana* is to touch the very skies—would it at all be possible to transport a huge rock to the top at such a height".

At this, the old lady bowed low as she submitted! "Oh, Emperor, if an inclined plane is set up from my abode, it would be an easy task to move the rock to the top of the tower. The distance between my house and the tower would be about four miles. Once the inclined plane is set up, the rock could be rolled on to the top as easily as it could be rolled on level ground". Thus did she suggest a way to tackle the problem.

The Chola Emperor was astonished at the display of her keen intelligence. He decided then and there that the rock donated by her should be used as the slab for the *Vimana*. Smilingly he accepted the decision; H'm, however large a temple I might construct, ultimately the Lord is bound to say, "We are pleased to be enshrined in the shade provided by the old lady"! The monarch sighed as he said this but it was not a sigh of frustration. On the other hand it was a sigh of supreme joy!

Acting on the advice of Azhagi, the sculptors set up an inclined plane from her abode four miles away and along that contrivance they transported the rock to the top of the *Vimana*. The "*Charapallam*", that is, "Hallow of the inclined plane" straightaway. In order to demonstrate his gratitude to Azhagi and by way of honouring her for her acumen and service-mindedness, the Emperor ordered a tank and a garden to be brought into being and named after her, in Thanjavur.

#### Raja Rajan's Grievance

The Temple was nearing completion. Kandradhittan had fulfilled all the tasks in accordance with the suggestions of Raja Rajan, Rajendran and Kundhavaiyar. The only item of work that had not even commenced was the carving of the 108 dance-postures on which the Emperor was very keen. This was a major grievance in the heart of Raja Rajan and peace would elude him until such time as the work was completed.

An elaborate discussion on this subject was scheduled at the place. Kandradhittan was sent for and the participants were members of the Chola family consisting of the Emperor, his son Rajendran, Rajendran's wife Panchavan Madevi and Kundhavaiyar. Kundhavaiyar explained in moving terms to Kandradhittan, the state of mind of Raja Rajan.

Her question was "What is the reason for disregarding the desire of the Emperor"?

Kandradhittan replied: "I submit it would be doing me an injustice to say that the Emperor's desire has been left in neglect. After searching throughout the land, only last week could I discover a competent sculptor".

Raja Rajan asked in some asperity: "Although week has passed since you found a competent sculptor, what bizarre reason do you have for not beginning the work"?

Kandradhittan's even answer was "He is a sculptor who brings rock to life. He is of youthful years no doubt, but in his Art there is the maturity of tradition. He carves even soft flowers on hard rock. He takes his tool, taps a rock with it and gets down to work and within a short while a damsel smiles at you coyly from





"Who is he and what is his name"?

"He hails from Mamallapuram ; his name is Iniyan".

"My question is, why should an artist of such outstanding proficiency tarry in the matter of fashioning the dance-sculptures"?

"That is what I am coming to. He has told me conclusively that in order to assist him in creating the sculptures, a dancer duly trained and proficient in the Art of Dancing has to stand before him and portray appropriate posture and emotion; and only then would it be possible for him to make the sculptures realistic".

"I see—evidently he is a true artist who transmits realism in the Art. You could have made the necessary arrangements as desired by him. Why the delay"?

"An adequately trained danseuse is yet to be found".

"What ! We have recruited as many as four hundred artists, allotting to each one *Veli* of land".

"Is there no one among the lot who knows dancing"?

"One hundred danseuses have performed in front of that sculptor".

"Did not even one of the hundred girls come up to his expectation".

"They who could be called queens in the realm of Dancing, such as Nakkan Raja Raja Kesari and Nakkan Chola-Kula Sundari have danced in front of him, displaying the entire repertoire of their proficiency. But he points out some flaw of other in each of them before he discards her. And his verdict too seems to be in order".

"Is that so"?

"Yes, She who does the Dance of Anger with such consummate skill commits a flaw when she comes to perform the dance of Supreme joy. She who earns kudos seeming to be stepping on fire when she does the Dance of the Three Floating Fortresses. And thus they all get eliminated, one after another".

## HAS ART WITHERED"?

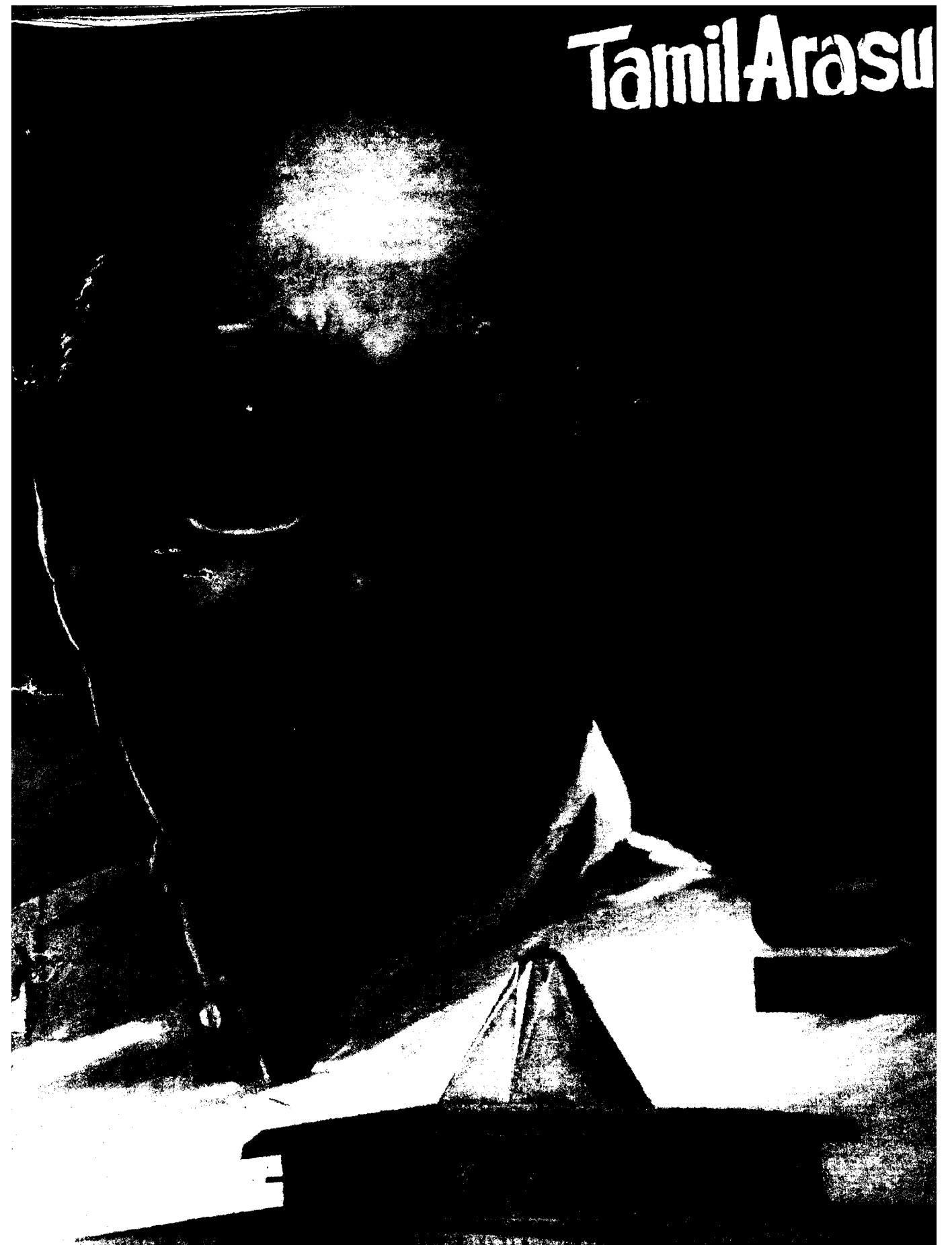
Kandradhitta, does this not mean that the life has gone out of Art in the Chola Empire ? I had been fondly hoping glory would be consolidated for all times to come that the Chola land was the land that nurtured Art. And that hope is now shattered to pieces. When the times to come speak my praise, that I subdued Kalinga and conquered Ceylon, will not be the cacophony also sound that it was vanquished in my own land, through not being able to secure fulfilment of the one desire in my heart ? What has become of the heap of treasures being expended for the development of Art ? Has thunder struck the Art Institutions that are charged with the responsibility of imparting instruction in Art ? What a disgrace indeed ! The ships of my fleet have churned up the monarchs of the western coast ; but now I am myself being churned up by the tidings that Art has withered in the Chola country! Without putting it in so many words, you are telling me now, through the scroching piece of news that Art has been extinguished in Thanjavur, that the pillar of victory I erected on the Mahendra mountain is a mere exercise in futility ! Would the geographical extent of our Empire endure in the times to come ? Even if it remains, my valour at best could be estimated by that. Oh, would not the future bring up the query : "Is that condition, wherein a barbarian stood bereft of Art-consciousness, to be designated as valour ? Was it not, on the other hand, an orgy of the unbalanced" ? Who is to answer that ? My statute in the temple of Thanjavur ? No, no, let that statue be dishonoured. I order here and now that the statue should be smashed into smithereens."

All those present were stunned to hear the utterances of Raja Rajan, charged with anger and grief. Tears filled the eyes of Kundhavaiyar. Kandradhittan turned his face away from the Emperor. As for Panchavan Madevi, she was scanning the face of her husband Rajendran.

By way of alleviating his father's despair and ire, Rajendran buried his face in the Emperor's feet and said in faltering voice : "Father, do please refrain from speaking in this vein. Which of your commands have we failed to carry out so far ? I take upon myself the responsibility of ensuring that the 108 dance-postures are carved by that very same sculptor Iniyan. Oh, do give up your anxiety on this account"! Rajendran's voice sounded firm as he conveyed the assurance and thereupon the Emperor was pacified to some extent.

(To be continued.)

# Tamil Arasu



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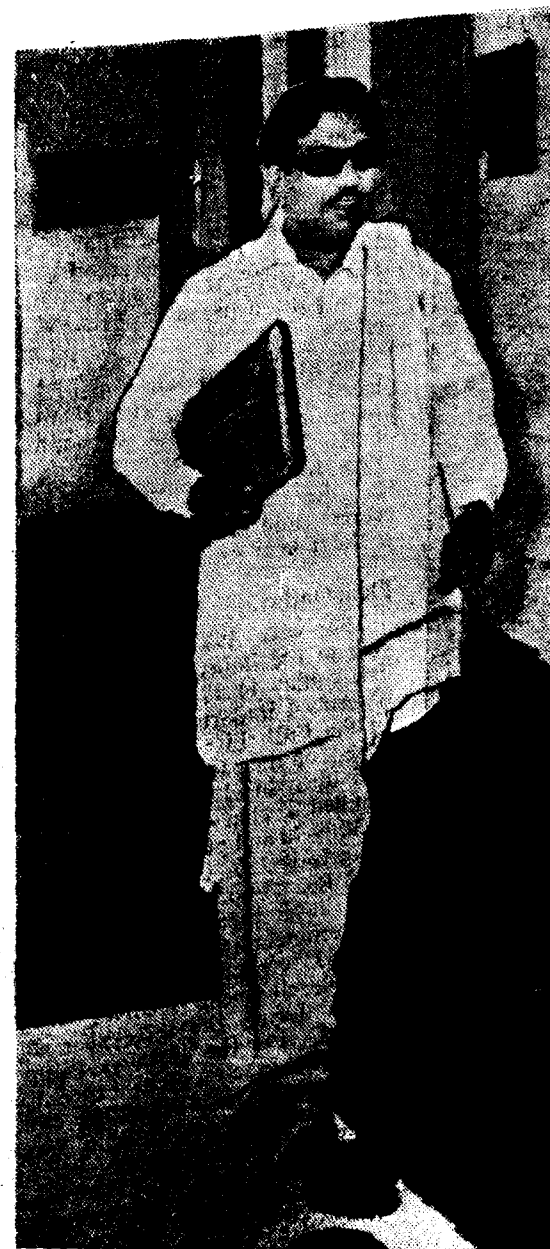
Subject to issue of 2 Series

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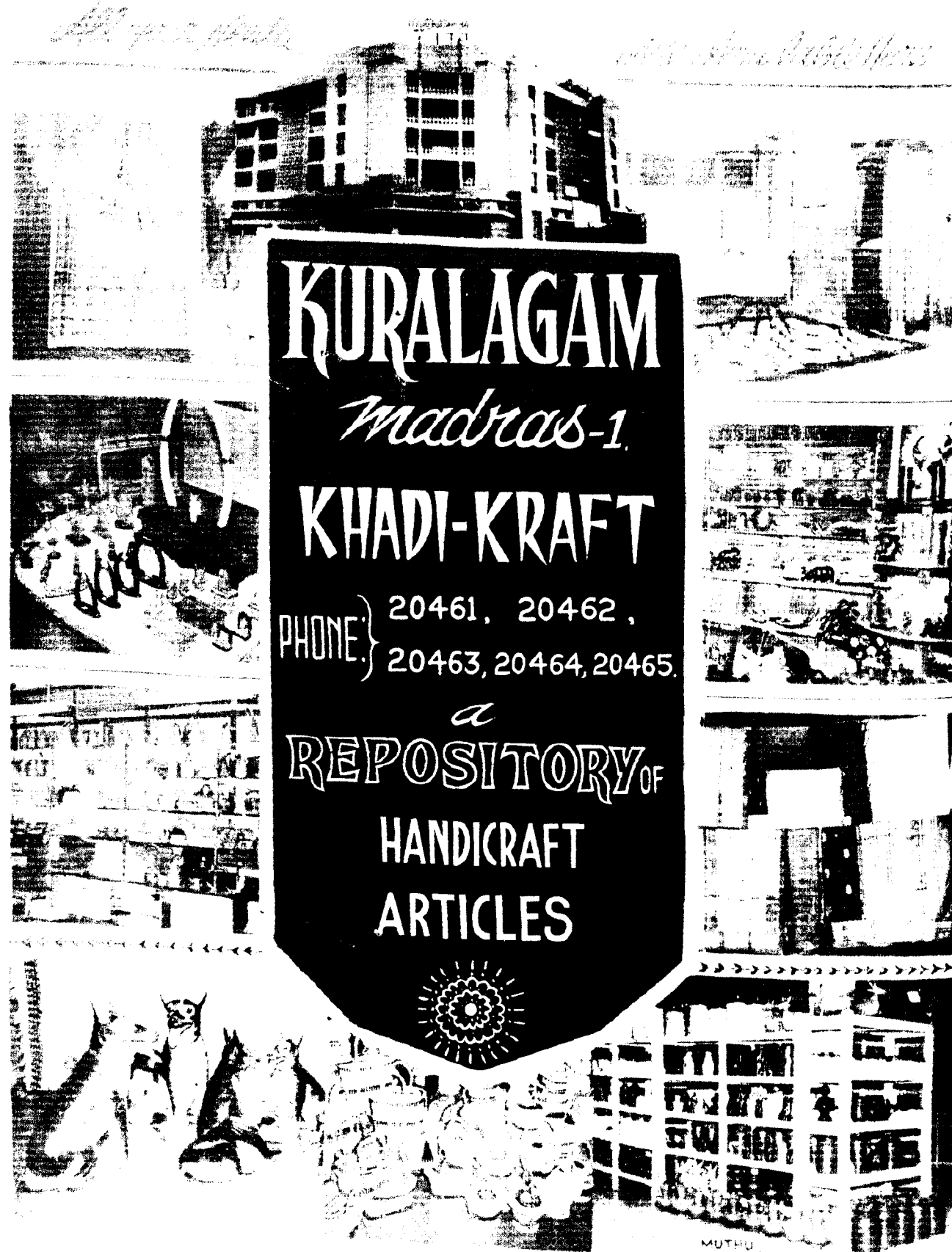


The President's Awards to TamilNadu Police Officers were presented by Governor at a ceremonial function on 10-2-73.

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"Anyone can easily make promises, rare is he who matches his deeds to his words", says the Kural. It is this sage advice which has moved us over these six years to respond to the challenge of building an enlightened, new, socialist society in keeping with our promises to the people. I have placed before you today yet other announcements of decisions that are evidence of our determination. We march forward towards our cherished goal with a mixture of pain and amusement, amused at the stiff resistance offered by erstwhile masters of the bastions of pelf and power, pained at the arrows and slings that are flung at us from quarters we thought least likely to oppose us, in fact, persons who, we considered, would support these progressive schemes and measures. Undaunted by these obstacles, we move ahead. For, as the Kural says, "the whole world gathers under the umbrella of that Ruler who bears patiently when words bitter to his ear are flung at him". It is in this confidence that I now proceed to discharge my pleasant duty of placing these Budget Estimates before this

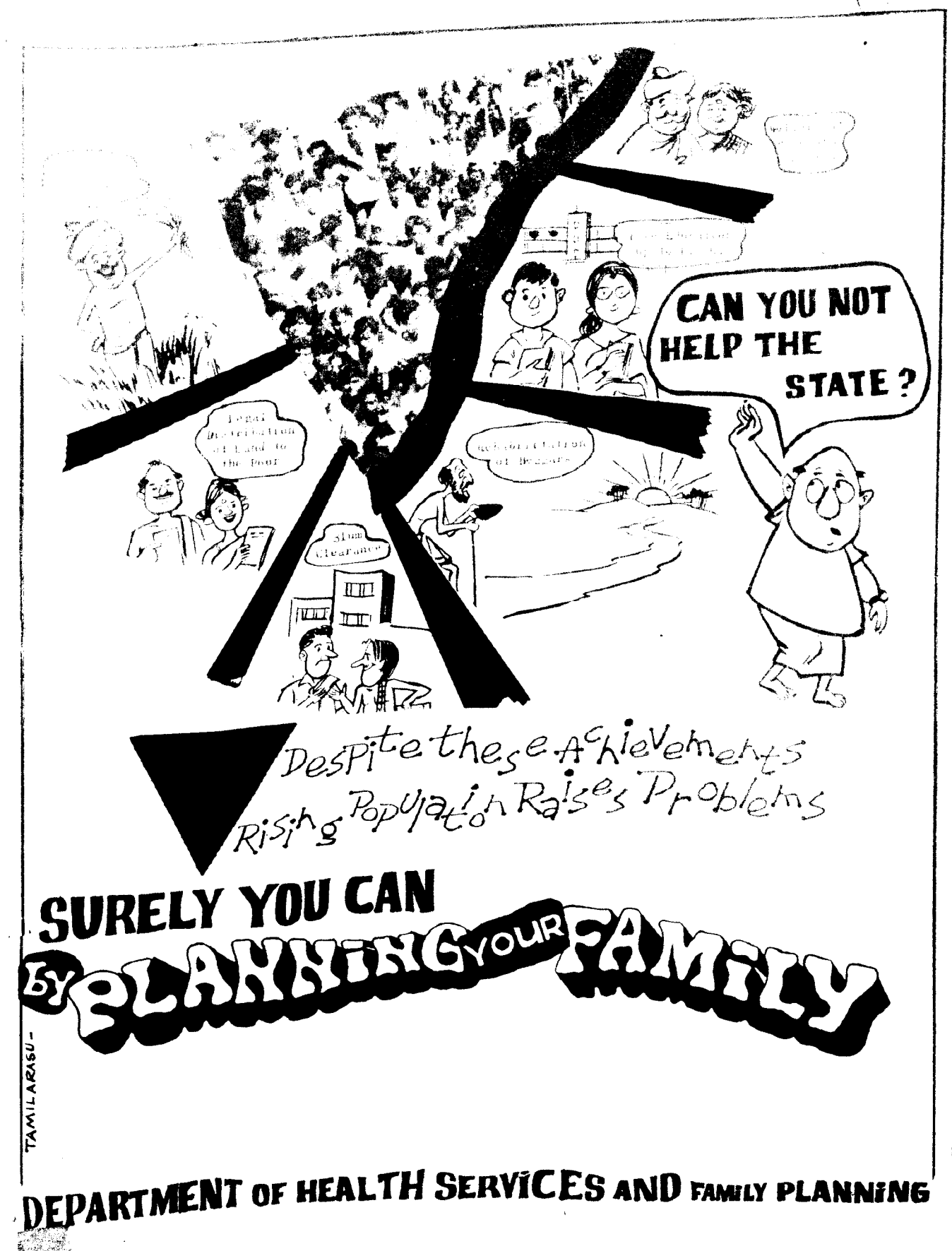
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**DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING**



# TAX-FREE BUDGET OF TAMIL NADU GOVERNMENT



Dr. M. Karunanidhi is seen presenting the budget for 1973-74.

The year 1972-73 is expected to close with a revenue surplus of Rs. 180 crores. Revised Estimates of receipts and expenditure on the revenue account are Rs. 441.04 crores and Rs. 439.24 crores respectively. The Budget Estimates for 1973-74 placed before the House anticipate a receipt of Rs. 465.56 crores and an expenditure of Rs. 465.07 crores, with a surplus of Rs. 49 lakhs in the revenue account.

Out of the total expenditure on the revenue account of Rs. 465.07 crores Rs. 41.47 crores is on Plan outlay on revenue account. I mention this in order to point out that what we call the plan is only a small part of the total expenditure we incur. For instance, when we say our plan on revenue account on education is Rs. 11.78 crores, we must remember that our total outlay on education is nearly Rs. 97.23 crores.

The Budget Estimates for 1973-74 placed before the House make provision for capital expenditure of Rs. 37.97 crores, repayment of loans to Government of India to the extent of Rs. 53.07 crores, and loans and advances to the tune of Rs. 11.50 crores.

## Plan Outlay.

The year 1973-74 is the last year of the Fourth Five-Year Plan. The outlay in 1973-74 is therefore of crucial importance as the tempo of the Fifth Five-Year Plan will be based on the pace of developmental activities in 1973-74. We had fulfilled a plan of Rs. 87.45 crores in 1969-70 and progressively stepped it up to Rs. 97.50 crores in 1970-71 and Rs. 114.07 crores in 1971-72. We have been repeatedly urging Government of India that at least Rs. 575 crores should be set apart for development schemes of the State during the Five-Year Plan period. For the three years up to 1971-72, the plan expenditure is of the order of Rs. 299 crores. We, therefore, presented a revised plan of Rs. 125 crores for the current year and Rs. 150 crores for the Annual Plan, 1973-74.

I had discussions last month with the Union Planning Commission and the Planning Minister on the size of annual plans and the general financial position of our State. During these discussions, it was agreed that the plan outlay for the current year may be of the order of Rs. 116 crores and that of 1973-74 may be around Rs. 120 crores. However, considering the Plan requirements of the State, we have enforced economies in non-Plan expenditure and have included provision in the estimates for plans to the extent of Rs. 120.27 crores in the current year and Rs. 126.44 crores in the coming year.

In spite of all these efforts of the State Government, the Fourth Plan outlay will be only Rs. 546 crores. While this is higher than the figure of Rs. 519 crores originally indicated by the Central Planning Commission, it is still lower than the plan of Rs. 575 crores which we had finally pleaded for.

## Financial Assistance for Plan.

The primary reason for this is the shortfall in Central assistance; as against the original promise of Rs. 250 crores, the Centre has allocated only Rs. 202 crores. The percentage which the Central assistance to Tamil Nadu bears to the total Central assistance to all the State Governments was 10.8 in the First Plan; this became 9 per cent in the Second Plan and it came down further in the Third Plan to 7.4 per cent and has dwindled down to 4.7 per cent in the Fourth Plan. This only shows the step-motherly attitude of the Centre towards Tamil Nadu.

On behalf of the people of Tamil Nadu, I reiterate that at least in the coming Fifth Five-Year Plan, this state of affairs should not be allowed to continue and should give place to a more just allocation. The population of Tamil Nadu is 7.5 per cent of the country's total population. The responsibility for ensuring a just share for Tamil Nadu rests squarely with the Centre.

## The Sixth Finance Commission.

It is our view that the Finance Commission should be the primary channel for the flow of funds from

the Centre to the State Governments. This alone will ensure certainty and equity in the distribution of national resources to the various States. We have pointed out to the Finance Commission that in practice many indicators of backwardness used by previous Finance Commissions do not serve the intended purpose and have urged that this system of allocation must be suitably altered. It is our opinion that the Finance Commission itself should look into the Plan needs and non-Plan needs of States in an integrated manner. We have been repeatedly pleading that there are not only backward States but also backward areas in other States and these backward areas in other States should also be reckoned for considering allocations. We have further urged that the present practice of the Centre assuming jurisdiction in matters which are in the State list such as Agriculture, Education and Health should be given up. All the funds now allocated in respect of such sectors should be canalised through the Finance Commission to the States. We have further emphasised before the Sixth Finance Commission our views that the debt burden of States should be reduced, that the base of divisible taxes should be enlarged, that the "Corporation Tax" which is primarily an income-tax, should be brought into the divisible pool, that the percentage of excise shared by the States should be increased to 50 per cent and that only by such structural changes can States be rescued from financial uncertainties.

## Natural Calamities.

The central team which came for an on-the-spot inspection of the damages on the State due to floods and cyclone was impressed with the relief measures undertaken by the Government of Tamil Nadu. I thank the Centre for having accepted the recommendations of the team and for having come forward to grant us assistance of the order of Rs. 14.25 crores. It is my view that a contingency provision should be made in the provision of all States for relief work plans of all States for relief work to meet natural calamities. Suitable provision should be made in the Plan, based on the experience

gained over a decade in such States regarding cyclone, flood and drought. If this is done as and when relief measures are necessary, a State can draw upon such amounts already set apart and implement relief scheme expeditiously.

## Agricultural Growth.

The production of foodgrains was 70.45 lakh tonnes in 1971-72 and is expected to be 72.02 lakh tonnes in 1972-73. We should be happy that this increase has taken place in spite of adverse seasonal conditions. A crash programme has been launched during the samba season to bring 4.82 lakh acres under paddy in South Arcot, North Arcot and Chingleput districts, 4.13 lakh acres under millets and 6.10 lakh acres under pulses in different districts. Besides, an area of 2 lakh acres will be covered under the sun-flower development scheme.

We believe that through implementation of the schemes for production of cereals, pulses, and oil seeds, the rate of increases of price can be brought down. At this juncture, when both the State Government and the cultivator are enthusiastic about these programmes of production, the Tamil Nadu Government expects the whole-hearted co-operation of the Central Government. So far, we have received Central allocations of only 1.30 lakh tonnes of fertiliser as against our demand of 2.74 lakh tonnes in terms of Nitrogen. When the Central Minister for Agriculture was here recently, we requested him to supply in full our demand for fertilisers and for adequate financial help so that we can not only attain self sufficiency in foodgrains but also help our neighbouring States.

## Agricultural Loans Rs. 100 crores.

The Budgeted outlay on Agriculture for 1973-74 is Rs. 22.36 crores. In counting Governmental outlays on agriculture, we have also to take into account the loss of Rs. 14 crores per annum incurred by the Electricity Board as a result of agricultural connections. It the estimates placed before the House, a sum of Rs. 17.8 crores has been set apart in Revised Estimate, 1972-73 to cover the requirements

# LANDS TO THE TILLERS ASSURED

## MORE POWERS FOR THE STATE DEMANDED

of 1971-72 and 1972-73 and a sum of Rs. 8.2 crores for 1973-74 as subsidies to the Electricity Board to meet in part these losses. Besides this outlay, the amount of Rs. 15.55 crores spent for the maintenance of irrigation has also to be taken note of. As against this, receipts from Irrigation Cess come to only Rs. 3.66 crores. A sum of Rs. 12.23 crores in Revised Estimate, 1972-73 and Rs. 12.44 crores in Budget Estimate, 1973-74 have been allocated for capital outlay on irrigation works. Thus, under various heads, the Government have set apart nearly Rs. 55 crores for the growth of agriculture. Over and above this, we have been sanctioning loans for agriculture through co-operative societies also. So far in the current year, a sum of Rs. 57.27 crores has been sanctioned by way of short, medium and long-term loans up to the end of December 1972. For the rest of the year, a sum of Rs. 40 crores will be sanctioned as loan. For the year 1973-74, a total sum of about Rs. 100 crores is expected to be sanctioned under all these heads.

### Animal Husbandry.

As against a sum of Rs. 4.31 crores set apart in the Budget Estimate for the year 1972-73 under Animal Husbandry, a sum of Rs. 4.89 crores has been allocated in the Revised Estimate, 1972-73 and a sum of Rs. 5.17 crores in Budget Estimate, 1973-74. It has been proposed to establish 5 key village blocks in 1973-74. Intensive Cattle Development Projects will be set up at a cost of Rs. 15 lakhs during the year 1973-74 at Saidapet, Coimbatore and Madurai. Besides, twenty-five Veterinary dispensaries will be opened at a cost of Rs. 6 lakhs.

### Health and Medical Services.

As against Rs. 38.91 crores proposed to be spent in Revised Estimate, 1972-73 on medical and health services including family planning programmes, Rs. 41.17 crores will be spent in the coming year. Taking the two years 1972-73 and 1973-74, 61 Panchayat Union Dispensaries will be provincialised.

Some of the new schemes which are to be taken up for implementation in the coming year are :

Construction of 24-bed hospitals at Karur and Vaniyambadi, a 30-bed ward in Government Kasturba Gandhi Hospital for Women and Children at Madras, a 100-bed ward in Coimbatore Medical College Hospital, a 147-bed ward in Tirunelveli Medical College Hospital; provision of E.C.G. at 5 taluk headquarters hospitals and 6 district headquarters hospitals and provision of X-ray units at 10 taluk headquarters hospitals.

Simultaneously, we are developing the indigenous system of medicine also. A 25-bed hospital at Arumbakkam Arignar Anna Government Hospital in Indigenous medicine and opening of Siddha wings in ten taluk headquarters hospitals are some other features of the Budget Estimates.

From June 1972 till to-day, eye-sight has been restored and glasses supplied free to 35,000 poor villagers under the Free Eye-Camp Project. Besides, under the Beggar Rehabilitation Scheme, beggars afflicted with leprosy have been rehabilitated and medical relief has been given to them. Before the close of the year, 1972-73, ten Beggar Rehabilitation Centres housing 5,000 leprous beggars would be completed and would start functioning.

### Education.

A substantial portion of our outlays has been earmarked for education. The expenditure on education has risen from Rs. 43.86 crores in 1966-67 to Rs. 95.82 crores in Revised Estimate, 1972-73 and to Rs. 97.23 crores in Budget Estimate, 1973-74. Members will be happy to note the change effected in regard to the mode of sharing of expenditure by the Government and the Panchayat Unions on education. Government's commitment on expenditure incurred by Panchayat Unions on this account has risen from Rs. 32.12 crores in 1971-72 to Rs. 35.95 crores in Revised Estimate, 1972-73. If the expenditure on education included under other heads like Medical Education, Agricultural Education

and Harijan Welfare is also taken into account, the total expenditure on education will come to Rs. 108.5 crores for the year 1973-74. This would constitute nearly 24 per cent of the total Budgeted Expenditure on revenue account. Eloquent testimony to the interest evinced by the Government in Higher Education is given by the rise in the number of Colleges from 105 in 1966-67 to 176 in 1972-73.

While we all agree that opportunities for education must be extended to all people including those in the lowest strata of the social pyramid, we continue to face the problem of maintaining and improving the quality of education. Steps are under way to introduce appropriate changes in the curricula with a view to improving the content and quality of education in our schools. Particularly in the case of Science subjects, steps are being taken to impart improved education, even from the elementary school stage. With a view to encouraging teachers to put forth their best, their salary scales have been raised substantially. We can also proudly claim that Tamil Nadu is in the lead among the progressive States of India in extending pay and pensionary benefits to the teachers employed in private schools, comparable to those given to the teachers employed in Government schools. The pay scales recommended by the University Grants Commission have been extended to the teaching staff working in all the colleges.

### Quality Improvement.

Though opinions differ as to the number of years required for various stages of education, there is general agreement throughout the country that the total length of schooling up to the first degree should be fifteen years. The present system in Tamil Nadu also provides for a period of fifteen years up to graduation. Differing views, however have been expressed in educational circles as to whether there should be a Pre-University Course followed by a three-year degree course or a two-year Intermediate Course followed by a two-year degree course. Only when it is finally settled as to whether the

collegiate education should be a four-year course as at present or should be raised to a five-year course will it be possible to decide whether the school education should be for a period of 10 or 11 years. Government of Tamil Nadu will take a final decision after ascertaining the views of all the three Universities of Tamil Nadu on the period of collegiate education.

I had referred, in the speech presenting the Budget Estimates for 1972-73, to the need for utilising the services of talented experts working abroad and stated that a scheme under which these experts can come to Tamil Nadu and serve at least for a year, would be implemented. In pursuance of this proposal, we are in touch with many of our scholars abroad and we hope that at least a few of them will be able to come to Tamil Nadu and serve in our colleges and research laboratories in the coming year.

### STABLE BASE FOR STUDIES.

It is my firm belief that the students community should properly use the opportunities provided by the State and society as a result of their massive investment on Education. Only such an approach will augur well for the future of the students as well as the country. It is the responsibility of all who are interested in the welfare of the coming generation to create an atmosphere in which students can acquire skills in peace and with enthusiasm. I am deeply pained at the efforts made here and there to create an agitated frame of mind amongst the students in regard to questions and issues which have no relevance to education. In all humility, I request that all people should co-operate with Government in this respect and rise above all partisan considerations to help to build a stable base for a prosperous future for our students. It is this Government's policy to adopt appropriate measures on this basis keeping in view the welfare of students and teachers and the need to maintain and improve the quality of education.

### POWER.

The installed capacity for generation of electric power in Tamil Nadu has risen by nearly 500 M.W.

in the last five years. However, along with many other States in the country affected by shortage of power, Tamil Nadu has also had to face a severe power cut. The House is fully aware of the reasons for this critical situation. The State Government had, on many occasions, impressed on the Central Government the need for early establishment of Thermal and Atomic power stations and also for the expansion of the existing thermal power stations so that we need not depend exclusively on hydel power. Under the present set up, it is inevitable that the State Governments have to wait for a long time for the clearance from the Centre even for small schemes drawn up for the generation of electricity. We have to realise that power potential has to be created ahead of industrial expansion; we have already informed the Centre that in the year 1983-84, Tamil Nadu will be facing a power deficit of 3,000 M.W. The Centre should heed our requests and take early steps for implementation of the steps for power cut at Neyveli, Second Mine cut at Neyveli, expansion of Kalpakkam Atomic Power Plant, Atomic Power Plant in Tuticorin and Thermal Power Plants in Tuticorin and Mettur and the Hogenekal Hydro-Electric Project all of which we have been urging repeatedly. I am happy to say that the 200 megawatt Kadambarai Hydro-Electric Project for which we had sought approval in February 1973 and preliminary work is under way. (See separate article.)

Difficulties experienced on account of power cut have been examined and many steps have been taken keeping in view the welfare of the labourers, weavers, agriculturists and the public in general. I assure the House that this Government will not hesitate to take all further steps that may be necessary in this regard.

I would make an earnest plea that this issue has to be viewed as a general question transcending all party barriers. I feel it is possible to solve the problem if all people co-operate on a non-partisan basis.

In the estimates before us, the outlay for the uplift of Handloom

Weavers has been stepped up to Rs. 1.94 crores in 1973-74 from Rs. 1.52 crores in 1972-73. During the current year, Government have sanctioned an interest free ways and means advance of Rs. 1.5 crores to the Tamil Nadu Handloom Weavers Co-operative Society in order to tide over the difficulties on account of credit sales to Government servants. Thanks to this assistance, the apex society has been able to procure Rs. 8.10 crores worth of stock from the primaries. I would like to recall that during 1966-67, material worth only Rs. 3.25 crores was procured.

We have requested the Government of India to reserve production of dhothies, sarees, towels, bedsheets and bedspreads exclusively for Handloom Industry and also to simplify the rules so as to make this reservation easily enforceable. It is to be regretted that the Government of India have not so far taken any action on this.

Another important issue is the supply of yarn to the Handloom sector. Looms in the co-operative fold are being supplied yarn at reasonable prices through co-operative spinning mills. It is also essential that yarn is supplied to looms which do not come within the co-operative fold. We have requested the Centre to empower the State Government to regulate the issue of yarn from all spinning mills. The Centre has not so far taken a decision on this issue.

We have constituted an Expert Committee under Thiru K. Santhanam with a view to suggesting suitable measures for tackling various problems of the Handloom industry. We have also constituted a Minimum Wages Committee to examine the wages obtaining at present in the handloom industry and to suggest measures for fixing minimum wages for handloom weavers. Government will take necessary action on the basis of the recommendations of both these committees.

### INDUSTRIES.

Work is in progress in respect of projects for the manufacture of Nylon, Sodium Hydro Sulphite,

## ALLOWANCES INCREASED TO GOVERNMENT SERVANTS

## MADRAS ALUMINIUM COMPANY NATIONALISATION PROPOSED

Tyre and B.C.T. for which letters of intent have already been obtained. As far as Small Scale Industries are concerned, in the current year, SIDCO has spent Rs. 3.56 crores for the purchase and stocking of raw materials and Rs. 1.80 crores for loans for machinery and for industrial estates. Next year, this is expected to go up to Rs. 8.50 crores. Industries with a total investment of Rs. 6.52 crores have been given assistance in the shape of loan and share capital through SIPCOT. The total aid so given comes to Rs. 1.06 crores. As the House is fully aware, these two institutions were started recently by this Government and are functioning well. It is expected that TANSI, which is managing State owned small industries, will reach a level of production of Rs. 7.00 crores during this year in spite of the prevalent power cut as against Rs. 4.79 crores in the year 1966-67. This will rise to Rs. 9.00 crores in 1973-74.

We are planning and implementing a number of new industrial projects in the State Sector. However, except for the Salem Steel Plant, there has been practically no addition to the Central Sector projects in the State of Tamil Nadu during the Fourth Plan period. During 1972-73, out of the total All-India investments in industries to the tune of Rs. 686 crores by the Centre, it is understood that only about Rs. 20 crores would be in this State. It is worth noting that Tamil Nadu is ideally suited for locating Defence production industries and other major industries. It is in this context that we have sought clearance of Government of India for the following new major industrial projects. Industrial Refinery at Tuticorin (Rs. 52 crores), Petro Chemical Complex at Manali (Rs. 80 crores), Polyester Film Plant (Rs. 13 crores) and a plant for Refractories at Salem (Rs. 10 crores). We have also requested government of India to expedite oil exploration in the Cauvery Basin.

In this context, I would like to emphasize one other request of ours. There is an imperative need to take up expeditiously the execution of Sethusamudram Project, for which we have been pleading

over the last two decades or more. This will cut travel time between the east and west coasts of the country and has great defence and coastal trade potential. I would therefore, request the Union Government to take it up at least during the Fifth Plan. Besides, I would also urge that a ship building yard be located at Tuticorin.

### EMPLOYMENT.

As indicated in the Governor's address, we have been doing our best to increase employment opportunities. We have already initiated special employment schemes costing Rs. 10 crores. Among these are crash schemes for rural employment costing Rs. 3 crores, rural road schemes costing Rs. 3 crores, youth crops schemes at a cost of Rs. 61 lakhs, drought prone area programme at a cost of Rs. 1.31 crores, apprentice schemes to assist diploma and degree holders at a cost of Rs. 47 lakhs, loan schemes to I.T.I. trained persons with an outlay of Rs. 13 lakhs and apprentice teachers scheme costing Rs. 25 lakhs.

In addition to these we have drawn up an elaborate special scheme to tackle the problem of educated unemployment. This scheme costing Rs. 15 cores will be implemented after securing the approval of Government of India.

### RURAL DEVELOPMENT.

In my Budget Speech last year, I had announced a programme to link all habitations with a population of 1,500 and more with the main roads and also connect the small villages en route. I am happy to mention that a sum of Rs. 3 crores is being spent in 1972-73 as a part of the Rs.19 crores programme drawn up in this regard. A sum of Rs. 3 crores has been set apart in 1973-74 also.

Government have re-classified the Panchayat Unions based on the recommendations of Panchayat Education Finance Enquiry Committee and have provided for liberalised rates of local-cess surcharge matching grant payable to Panchayat Union Councils. Consequently, Panchayat Unions are

expected to get Rs. 5.25 crores as local cess surcharge matching grant in 1973-74.

### URBAN DEVELOPMENT.

Honourable Members may recall that the comprehensive Town and Country Planning Bill has become an Act. The setting up of Town and Country Planning authorities under the Act is engaging the attention of the Government. The formulation of the regional plans for the eight regions into which the State has been delineated is nearing completion. In addition to the regional plans, master plans and detailed plans are being prepared for the orderly development of the urban areas.

Government have constituted the Madras Metropolitan Development Authority. The strategy contemplates the development of satellite towns at a distance of about 30 miles from the city as a counter-vailing force to control future immigration into the city. As a first step, the Government have decided to take up an area adjoining Kattankulathur in Chingleput district for implementation of the scheme. This satellite township will be named as "Marai Malai Nagar" in memory of the Tamil Savant, late Marai Malai Adigal. A sum of Rs. 2 lakhs has been set apart in 1973-74 towards preliminary expenses.

### HOUSING.

In 1973-74, the plant provides Rs. 7.08 crores for creation of housing facilities. We are also planning to implement a new scheme for the benefit of middle income and low income groups by getting additional funds from commercial banks. This scheme will be implemented in Tiruchirappalli, Salem and Ramanathapuram districts. The Central House Mortgage Society is also increasing loans for housing. Steps are being taken to get increased funds from L.I.C. for this purpose,

### SLUM CLEARANCE BOARD

As against a sum of Rs. 4 crores which was set apart in Budget Estimate, 1972-73 for clearance of slums in urban areas, we have set apart a sum of Rs. 6.5 crores in the Revised Estimate, 1972-73 and an equal sum in Budget Estimate, 1973-74.

We expect to complete 4,500 tenements in 1972-73 and an equal number in 1973-74. Moreover, basic amenities will be provided for the slums under the environmental improvement scheme.

### TAMIL NADU WATER-SUPPLY AND DRAINAGE BOARD.

Ever since the setting up of the Water-supply and Drainage Board in 1969-70, we have taken up an intensive programme to supply drinking water to Madras Corporation and to other Municipalities. The Veeranam Project intended for bringing adequate water to Madras City is expected to be completed in 1974. Between 1969-70 and the current year, 84 new water-supply schemes for municipalities have been formulated. Forty-three schemes have been completed. In addition, 25 schemes are expected to be completed within this year. In view of all these efforts, out of the 99 municipalities, 80 municipalities will be getting protected water-supply. In addition, schemes are under implementation for the benefit of the 10 more municipalities and plans are under preparation to cover the remaining 9 municipalities.

The Tamil Nadu Water-supply and Drainage Board has drawn up a comprehensive scheme at a cost of Rs. 40 crores to provide all the villages with protected water-supply in a period of six years. As a first step, this year 220 tube-wells are being sunk in villages at a cost of Rs. 1.00 lakhs. 450 bore wells will be sunk next year with an outlay of Rs. 2.00 lakhs. Apart from this in 1973-74 Panchayat Unions will be spending Rs. 1.46 crores under Rural Water-supply Schemes and a sum of Rs. 0.50 crore will be spent under the UNICEF Programme. Thus, for Drinking Water-supply Schemes a total sum of Rs. 20 crores will be spent in 1973-74 as against a sum of Rs. 3.5 crores in 1966-67.

### WELFARE OF SCHEDULED CASTES AND OTHER BACKWARD CLASSES.

Government's abiding concern has always been for the socio-economically weaker sections. Exclusive of the outlay on Nutrition Programme which was earlier shown under the head of account "Harijan Welfare", the outlay for this head in 1973-74 will be Rs. 8.16 crores. The outlay for Backward Classes will be Rs. 5.56 crores. Out of this, the State Plan items and the Centrally Sponsored items are as follows:—

| Year.              | Total.  | Non-Plan expenditure by the State. | State Plan. | Centrally sponsored. |
|--------------------|---------|------------------------------------|-------------|----------------------|
| (RS. IN CRORES.)   |         |                                    |             |                      |
| Harijan 1973-74    | 8.16    | 5.52                               | 2.05        | 0.59                 |
| Welfare.           |         |                                    |             |                      |
| Back-ward Classes. | 1973-74 | 5.56                               | 1.76        | 3.50                 |
|                    |         |                                    |             | 0.30                 |

It will be clear that most of the outlay in respect of welfare of Harijans and Backward Classes is borne by the State Government.

Government have also organised a special coaching scheme for meritorious college students belonging to the Harijan and Backward Class communities. This scheme is to ensure that the meritorious among them are given proper encouragement and intellectual confidence.

Government have also decided to get assistance of Rs. 2 crores from Commercial Banks with a view to constructing Harijan Hostels and Backward Class Hostels. If we take this also into account, our outlay on welfare of Harijans in 1973-74 will be Rs. 9.16 crores and that on Backward Classes Rs. 6.56 crores.

### LABOUR WELFARE.

Keenly interested as we are in the welfare of labour, we have set up a committee to examine the minimum wages to be paid to agricultural labour, as in the case of handloom weavers. Besides, with a view to meeting at least a portion of the cost of filing of writs or writ

appeals by small trade unions before the High Court, Government have decided to give Rs. 150 each to such unions. We have also set up a Labour Welfare Fund for which a grant of Rs. 5.00 lakhs has been given as a first instalment.

### HOUSE-SITES FOR AGRICULTURAL LABOURERS.

Under the Tamil Nadu Kudi-yiruppu Occupants (Confirmation of Ownership) Act of 1971, house-sites have so far been granted for 157,000 persons in Thanjavur district. Out of these, 100,000 are Harijans and 47,000 belong to the Backward Classes. Government have also decided to waive the recovery of the cost of the Kudi-yiruppu land from the State Funds and to bear from the State Funds the entire compensation for the house-sites payable to the owners of Kudi-yiruppu. Government have also decided to extend the Act to all other districts excluding hill areas. Thousands of agricultural labourers will be further benefited by the extension of the Act to all these districts.

Though Government have been taking various steps for speedy growth under many sectors of development, any one who examines this budget will be able to appreciate the fact that the State has in many cases to keep waiting for the approval of the Central Government and to depend on Central assistance. It is only with a view to eliminating these difficulties and implementing worthwhile schemes without any delay that we have been stressing that States should have full autonomy. The relationship between the States and the Centre, should not depend merely on the personalities who are at the helm of affairs in the States and the Centre but should be strengthened, stabilised and incorporated on such a basis in the Constitution. The Constitution should be suitably amended for this. While we are hopeful that this just principle will be accepted, we are also striving our best to implement socialist programmes within the limits of the powers conferred on the State. The recent Bill for nationalisation of bus transport is evidence of the steps taken by the State Government in this direction.



# THE NINE ANNOUNCE- MENTS OF A SOCIALIST

## WHOLESALE TRADE IN FOOD- GRAINS.

In his address to Parliament, the President, has referred to the wholesale trade in foodgrains. Our Minister for Revenue has participated in the Chief Minister's Conference held in this connection on the 24th February 1973. This Government will examine the suggestions discussed in this Conference and take decisions as to how this State can participate in the wholesale trade in foodgrains with a view to controlling prices of essential commodities and in keeping with the special circumstances of our State.

## (2) LABOUR LEGAL ADVISORY CELL.

Many individual labourers as well as many smaller trade unions are not in a position to spend money to get advice on labour laws. It is necessary to give them guidance not only regarding steps to be taken in regard to their special problems but also specifically as to what materials to gather and which forums to approach for assistance. With a view to helping the workers and to render them legal advice, three Labour Legal Advisory Cells will be set up in the coming year at Madras, Madurai and Coimbatore.

## (3) GOVERNMENT EMPLOYEES.

It is our view that there should be an integrated policy in regard to emoluments of Government Ser-

vants both of the Central Government and of the States. We have also urged the view that the Central Government should consult the State Governments when it considers changes in the emoluments of its employees. The Central Government should undertake the responsibility of assisting State Governments to restructure the emoluments of their employees in keeping with those of Central Government.

During the current year, we have brought about considerable improvement in the service conditions of the State Government's employees. We have spent nearly Rs. 5.5 crores on the increase of dearness allowance of employees. The implementation of the recommendations of the One Man Committee and certain other suggestions has cost us between Rs. 4 and 5 crores a year. In the current year, house rent allowance in the city has been enhanced to 12 per cent of the basic pay. Following the recommendations of the Second Pay Commission, house rent allowance will be increased to 15 per cent for Madras City and suitable increases will be made for other areas also with effect from 1st April 1973. For this, the annual expenditure will be Rs. 1.5 crores. When the Government servants and teachers put forth demands for further increase in emoluments, they should keep in mind the difficult financial situation of the State. In spite of these difficulties, in response to the request of Government servants for the increase of dearness allowance, Government

have decided to increase by Rs. 10 per month the dearness allowance for all employees drawing below Rs. 1,000 per month. This increase will take effect from the salaries for the month of April 1973 and will cost annually Rs. 6 crores. In view of the financial stringency facing the State, this increase will be credited to the Provident Fund accounts of employees for a period of one year. As usual, this increase will benefit all teachers and employees of local bodies.

## (4) Harijan Development And Housing Corporation.

Out of the sites acquired for Harijans by the Government so far, nearly 80,000 remain without any houses being built on them. With a view to expeditiously building houses on these sites, Government have decided to establish a Harijan Development and Housing Corporation under the chairmanship of a senior Government official. This Corporation will secure assistance from banks and other financial institutions. It is Government's intention to build houses on all these sites within a period of ten years. As a first step, 10,000 houses will be built in 1973-74.

## (5) Pudukkottai.

I am happy to announce that Pudukkottai will be constituted as a separate revenue district in keeping with the long-standing request of the people of the locality. The Board of Revenue has been requested to examine and make recommendations as to the areas that should be part of this new district and on connected issues.

## (6) Improvement of the Buckingham Canal :

The Cooum Improvement Scheme has been completed. We have set apart Rs. 50 lakhs in the Budget Estimate for 1973-74 for the scheme of improvement of the Buckingham Canal with a view to making it useful for inland navigation. Our intention is to convert this to a canal of 33 feet width and 6 feet draught for the entire length of 100 miles within this State.

## (7) Private Electricity Undertakings :

Legislation will be brought forward in this Session to acquire Kumbakonam Electric Supply Corporation, Nagapattinam Electric Supply Corporation, Vellore Electric Supply Corporation, South Madras Electric Supply Corporation, Tirunelveli and Tuticorin Electric Supply Corporation, Salem-Erode Electric Supply Corporation and Shencottah Electric Supply Corporation. This will complete the acquisition of all the seven licences who now remain in the private sector.

## (8) Aluminium Industry :

Tamil Nadu Industrial Investment Corporation has invested nearly Rs. 115 lakhs in MALCO (Madras Aluminium Company, Limited), which functions at Mettur, utilising bauxite available in Tamil Nadu. Aluminium produced in this factory is a raw material for a number of small and big industries. Government have decided to nationalise this factory with a view to making aluminium more easily available to all industries and generally with a view to utilising our natural resources in the public interest. As a first step, legislation in order to take over the management of this Company will be brought forward in this Session after obtaining the concurrence of the Central Government.

## (9) Land Reforms :

Our policy is that land should belong to the tiller of the soil. A number of measures of land reform have been enacted in this House, on this basis. A number of enactments have already been brought to the statute book for the protection of tenants who have been cultivating landowners' lands for many years. Government have decided to bring forth legislation to confer on these tenants the right to purchase the lands they cultivate from their landowners. Care will be taken to ensure that the poorer and small landowners will not be adversely affected by this legislation. I am happy to announce that this legislation will be brought forward in this Session. Besides, a Tenants Financing Corporation will be set up to assist the poorer tenants to make the purchase.

## Seventy-five per cent power cut for all Industries.

The Government announced enhancement of cuts on certain categories of consumers with effect from 1st February 1973.

(a) The power cut in the case of all industries including continuous process industries shall be enhanced to 75 per cent.

(b) The maximum demand for H. T. industries shall be frozen at 30 per cent of the highest recorded demand during 12 months before September 1972. Option will, however, be given to the consumer to have the demand frozen within the highest recorded demand during the 12 months preceding September 1972 provided he is agreeable to reduce the number of shifts per day or to declare any day or days as additional holidays as may be called upon by the Licensees with a view to regulate the supplies.

(c) The system of fixing weekly quotas for H. T. industries which was removed from 1st February 1973 shall be revived. Similar weekly quotas will be fixed for L. T. Industries also.

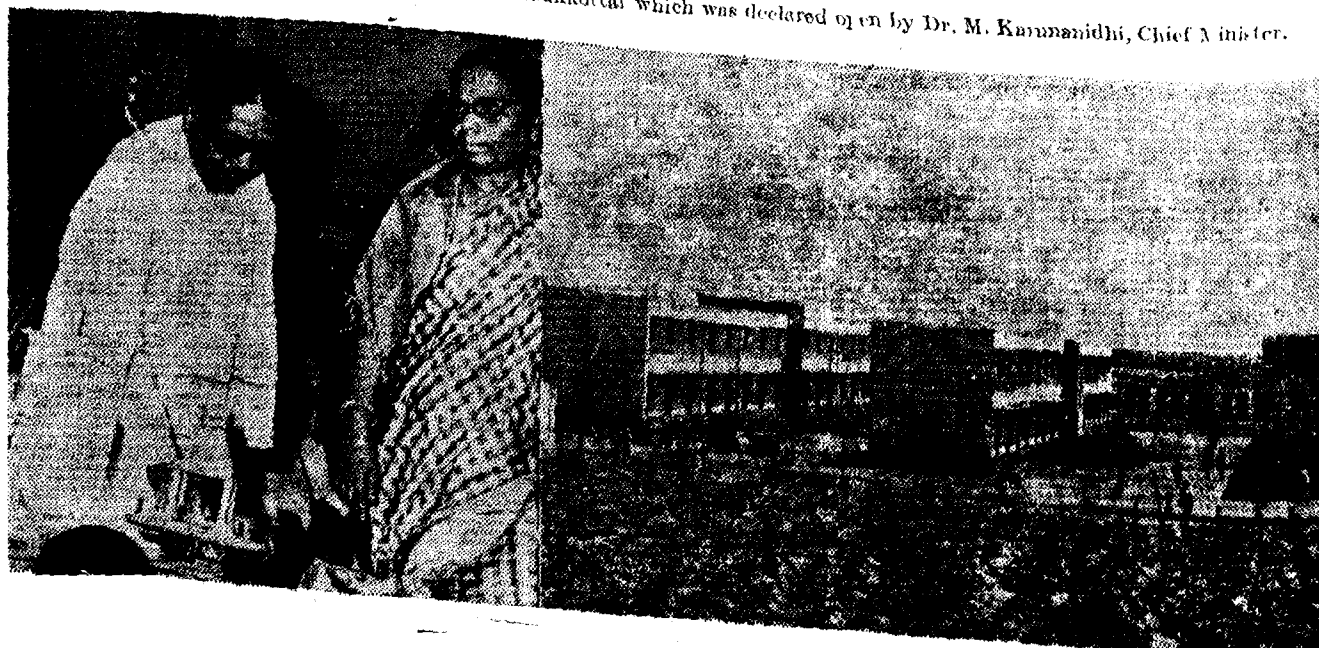
(d) The maximum quota for domestic consumers shall be fixed at 150 units per month, the consumption over and above it being charge at double the normal rates.

(e) Supply of electrical energy to shops and show rooms of commercial establishments shall be discontinued at 8 p.m. except in the case of chemists and druggists shops, hotels and restaurants, petrol bunks and betelnut shops.

(f) Essential services which were hitherto totally exempt from per centage cut will be subjected to a cut of 15 per cent except water supply, sanitary arrangements, dairies and chilling units of State Government and of Co-operatives.

(g) Supply of electrical energy to agricultural purposes shall be restricted to four hours during day time and subject to availability during night time.

The Leprosy Beggars' Rehabilitation Home at Pudukkottai which was declared open by Dr. M. Kammamidhi, Chief Minister.



# PRESIDENT GIRI LAYS FOUND- ATION FOR RAJAJI MEMORIAL

Thiru V. V. Giri, President, laid the foundation-stone on 15th February 1973 for the Rajaji memorial building on two-acre site by the side of the Gandhi Mandapam, Guindy.

The function, organised by the Tamil Nadu Government, was presided over by Thiru K. K. Shah, Governor of Tamil Nadu and was attended by a distinguished gathering of Rajaji's admirers, former colleagues, friends and relatives.

Dr. M. Karunanidhi, Chief Minister, welcoming the President, said "the Tamil Nadu Government proposes to raise an imposing structure at an estimated cost of Rs. 5 lakhs as a fitting memorial to Rajaji. The building will have at the facade, a full-size statue of the revered leader, and inside the hall will be depicted the many facets of his life of sacrifice.

Dr. Karunanidhi described Rajaji as one of the greatest sons of India, a sagacious statesman, an able administrator and an eminent scholar who had rendered into the common man's language the ancient epics of the land. The Chief Minister further said he was one of those who enjoyed the affection and blessings of the revered leader.

Thiru Giri said Rajaji had been variously described as world statesman, scholar, politician, philosopher, man of letters, freedom-fighter,

champion of individual and civil liberties, parliamentarian and administrator who had left an indelible mark on the country's history. His was a life of unequalled brilliance, unswerving patriotism, unquestioned integrity, moral strength and courage.

## Voice of Wisdom.

Thiru Shah, Governor of Tamil Nadu said that in the death of Rajaji, they had lost the voice of wisdom and a prophet of dissent. He was the conscience-keeper of Gandhiji. A memorial to one of the architects of modern India, next to Gandhi Mandapam was a fitting tribute to the departed leader.

Thiru Shah said further that Rajaji was an intellectual of high calibre. In his writings there was an undercurrent of mature philosophy and high scholarship. At the same time, Rajaji had the courage to modify his views if circumstances demanded.

Rajaji had held high offices with rare distinction. He had left an indelible impression on the administration. He had bequeathed high traditions not easy for others to follow. His greatness was that he saw far ahead of the times, while others were carried away by momentary impulses.

# THE NATIONAL CADET CORPS A PREMIER YOUTH ORGANI- SATION

There is nothing like the N.C.C. to bring the best out of the youth. After one has been through the N.C.C. that person is likely to be better at any task than another person of similar qualification but without the N.C.C. training.

Some one has said, "The resources of a nation lie more in the quality of its men than in its material environment." Our country is on the threshold of industrialisation, progress and prosperity. The basic qualities of a nation cannot be changed merely with machines or money, but the qualities of its men and women can change a nation to a remarkable degree.

On the quality and number of boys and girls coming out of our educational institutions depends the future of our country. The aim of education should be to develop in the youth, the art of creative thinking, skill, human understanding, spirit of service and tolerance in the society of which is a member. The class room alone cannot bring the "quality" of the youth nor it can prepare them mentally, morally, physically and spiritually to give their best.

The concept of N.C.C. was born out of the need to supplement education in such a way as to provide our young girls and boys with adequate opportunities to acquire civic sense and confidence, alertness and will power, stamina and strength and above all an indomitable spirit.

The N.C.C. is the premier youth organisation in the country. It aims at developing leadership, character comradeship and ideal of service; to stimulate interest in the defence of the country to the widest possible extent. It also tries inculcate in young minds the spirit of social and national integration through its various programmes. It not only helps to build up physical standard but also physical efficiency mental alertness and qualities like perseverance, team-spirit obedience to rules, national unity and balance of mind in defeat or victory. Another important aim of the N.C.C. is to build up a reserve of potential officers to enable the Armed Forces to expand rapidly in a national emergency.

The Cadets receive training not only in the Infantry but also in Technical Arms. Further, Air and Naval Wings have been added.

The training programme of the girl cadets has carefully drawn up with special emphasis on subjects best suited to them, e.g. elementary nursing, operation of wireless and telephone exchange and casualty evacuation.

Mountaineering is another important feature of the training and more recently para jumping has also been included. Other interesting items of training includes Rock Climbing, Trekking, Boating, Flying, Gliding, Aero-modelling, Traffic control and Civil Defence Measures. The most important and enjoyable part is "Camping", where they develop confidence courage and learn to live together.

Over the years the strength of the Corps has grown steadily, testifying to its popularity among students. Starting with a modest strength of 38,805 on March 31, 1949 the approved strength of the Corps in 1970-71 was 7.85 lakhs for the Senior Division and 7.25 lakhs for the Junior Division.

These days, when the youth is restless it requires guidance at every step in the right direction and this responsibility, the sacred trust, devolves on the parents, guardians and the teachers, who should encourage the youth to join N.C.C. for their own and for the betterment of the society

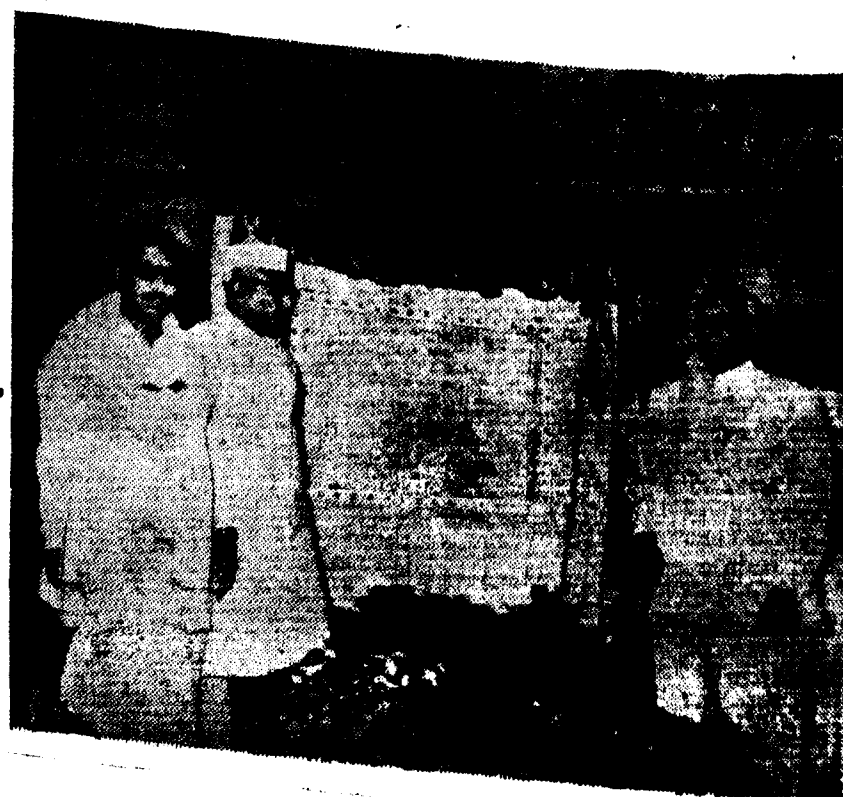
## SIDCO LOANS FOR GENERATORS.

The Tamil Nadu Small Industries Development Corporation (SIDCO) an undertaking of the State Government, will render financial assistance to small-scale industries for purchasing generators and diesel engines under its hire-purchase scheme.

Financial assistance will be given even for purchasing second hand generators in satisfactory working condition, subject to inspection by the technical officers of SIDCO.

Small-scale industries, needing assistance, may approach SIDCO with details of the generators and diesel engines they would like to purchase with pro forma invoices.

Industries Minister S. Madhavan said in Madras on Saturday that the fourth unit of the Ennore Thermal Power Station with a capacity of 110 mw. would start working from April.







Prime Minister Thirumathi Indira Gandhi presenting the DG NCC Championship Banner to S/O VIJAYANALENDRA of NCC Directorate (Tamil Nadu & Pondicherry).

Prime Minister Thirumathi Indira Gandhi with the winners of various competitions. Cadets from T.N. Directorate in the picture are standing, from left to right, 6th, 7th, 10th, 15th and 16th.



## EDUCATION MINISTER CONGRATULATES N.C.C. CADETS.

The NCC Directorate of Tamil Nadu & Pondicherry was adjudged as the best NCC Directorate among 16 NCC Directorates in India and was awarded the DG NCC Championship Banner at the conclusion of the Republic Day Contingent Camp at New Delhi on 27 January 1973. The Banner was awarded by the Prime Minister Thirumathi **INDIRA GANDHI** at a colourful parade at the Garrison Parade Ground, New Delhi.

The Championship is awarded based on the performance of the Directorates during the course of the training year and of the cadets at the Republic Day Contingent Camp, New Delhi. Points are awarded for shooting, Drill, Kit layout, Ship/Aeromodelling and Boat Pulling competitions. Points are also awarded to the 'Best Cadets' at the Camp which contributes towards the award of the Championship Banner.

This is the fourth time the award had come to the Tamil Nadu and Pondicherry Directorate, the earlier winning years being 1962, 1968 and 1971. Commenting on the award Commodore R.S. Malia, IN, Director of N.C.C. said the "banner is going to be enshrined in Madras for ever"

The State Education Minister, Thiru V. R. Nedunchezian said :

I am very happy to congratulate the cadets of Tamil Nadu and Pondicherry in having distinguished themselves in the All India Competition and having won the All India Banner of 1973. It is really gratifying to note that the All India Banner had been won by you in four years out of the seven years in which you had competed. This is a clear evidence of the efficiency with which the officers had done their duty with deep sense of dedication and enthusiasm.

Unless there is discipline in our way of life and thinking, there cannot be any progress and this discipline is best imparted among the students in the NCC. The courses are so designed

WE'RE  
PROUD  
OF OUR  
N.C.C.



Top Pics.

Major M.A. Rashid, the Contingent Commander, being congratulated by His Excellency, the Governor for the outstanding performance of the contingent.

Lt. Col. GP. Pallikal, introducing Sgt. Ashok Kumar Singh to HE the Governor. Ashok was adjudged as the Runner up Best cadet of the Boys Junior wing.

Middle Row Pics.

The 4 (TN) Engineer Company N.C.C. Madras.—Winners of the All India Senior Division "Earl Roberts" Shooting Competition 1972-73.

Left to Rt. Sitting Cpt. Soundara Pandiyan, S. J. O. Janiakiram, CSM. N. Janarthanam, Standing Cpl. Stanley Francis, Cpl. Geoffrey Francis.

Honourable Minister for Education presenting the Souvenir Medal to Sgt. Brinda Kalkura, who was adjudged as the third best cadet of the Girls' Junior wing at New Delhi.

The victorious NCC contingent with the Championship Banner and trophies received at the Railway Station by Commodore R.S. Malia, Director NCC, Officers and Staff of the NCC. The banner is held by Vijaya Nalendran.

Bottom Row Pics.

The First (TN) Naval Unit N.C.C. Madras.—Winners of the All India Ship Modelling Competition held at the Republic Day Contingent Camp, New Delhi 1973 with the Cup and the winning Model.

Left to Rt. Cadet G. Rajendra Babu, Thiru Krishna Babu ; (Ship Modelling instructor) Petty Officer Cadet Jose Ukkuru.

The 2 (TN) Bn. N.C.C. Tiruchi.—Winners of the All India Junior Division Shooting Competition 1972-73.

to develop the qualities of disciplining leadership and spirit of adventure amongst the students, both boys and girls. It is heartening to know that the response for this course is very encouraging in Tamil Nadu and Pondicherry.

I know that there are certain parents who are not very enthusiastic in sending their children to undergo this training. I desire that they are enlightened by our authorities about the necessity of this training to which we attach so much importance. Perhaps the parents think that this may come in the way of the studies of the students. On the contrary, such training is conducive to physical health which is essential for



## SEMI-PERMANENT THEATRES IN TAMIL NADU

### KADAMPARAI PUMPED STORAGE HYDRO-ELECTRIC PROJECT

The project derives its name from Kadamparai (a tributary of Aliyar) across which the head race pond is proposed. The scheme basin lies between latitudes  $10^{\circ} 20'$  and  $10^{\circ} 25'$  North and longitudes  $77^{\circ} 0'$  and  $77^{\circ} 10'$  East. The project is located in the Anamalai hills of the Pollachi taluk in the Coimbatore District, upstream of the Upper Aliyar Dam executed under the Parambikulam-Aliyar Project complex. The scheme is situated in the Poonachi Reserve forest range amidst hills and dales of enchanting scenic beauty and enthralling wild life.

The main Kadamparai Forebay Dam site is 72 k.m. from the Pollachi rail head and 27 k.m. from the Valparai town in Coimbatore District. The power house site is located 7 k.m. from the Upper Aliyar Dam Camp site.

This is a mixed pumped storage project consisting of a forebay dam across the Kadamparai at E.L.  $\times$  1086.92 m. with a gross storage capacity of 6.965 million cu. metres at F.R.L. + 1119.00 m. commanding run off from its direct free catchment area of 22.79 sq. k.m. Also the run off from a catchment area of 60.09 sq. k.m. in the upper reaches of Aliyar will be diverted into this forebay by a series of diversion weirs and flume channels. The power draft is proposed to be drawn through a lined pressure tunnel of length 1248 m. and section 41.28 sq. m. to convey a peak discharge of 150 cumecs required for the ultimate installation of 400 Mega Watts. The tunnel ends in a head race surge shaft 18 m. in diameter and 57 m. deep. Two pipe tunnels take off from the surge shaft to an underground valve house with an access tunnel 42.7 m. long and 6.75 m. wide from which two Nos. steel lined underground pressure shafts, each 486 m. long and diameter 5.1 m. and 4.6 m. in two reaches, and inclined at  $53^{\circ}$  to the horizontal

convey the power draft to the machines. Each pressure shaft will bifurcate into two shafts 2.9 m. diameter at a Y junction at the Power House end to feed a 100 M.W. machine.

An underground power house with a machine cavern 9.15 m. long  $\times$  20.5 m. wide  $\times$  36.5 m. high with two separate transformer caverns 13.4 m.  $\times$  13.4 m. will house 4 Nos. 100 M.W. reversible pump turbines working under a maximum gross head of 373.75 m. the elevation of the centre line of the distributor being kept at +700.00 m. (46.25 m. below the minimum tail water level to avoid cavitation). The tail waters are proposed to be conveyed through a lined tail race tunnel 1013 m. long and cross section 41.28 sq. m. with a

IN THE BUDGET SPEECH A  
PROVISION IS MADE FOR  
KADAMPARAI PUMPED  
HYDEL SCHEME THIS YEAR.  
HERE IS WHAT IT IS.

discharging capacity of 150 cumecs to the existing Upper Aliyar Reservoir which will function as a Tail race pond for the power house. A cable *cum* ventilation tunnel of diameter 4.6 m. and length 237 m. will take the power cable to the outdoor switchyard. The power house cavern will be approached by means of an access tunnel 76.5 m. wide  $\times$  6.125 m. high and of length 936 m. from the foreshore of the Upper Aliyar Reservoir. The approach tunnel will be connected to the Upper Aliyar dam and Attakatti camp, the nearest places of approach through suitable branch roads.

The project is mainly designed, in addition to the utilisation of the natural flows from the free and

diverted catchments upstream of the Kadamparai Dam, as a pumped storage project to meet a part of the likely deficit in the grid during peak hours in future by utilising the off-peak energy that will become available, from the Ennore Thermal/Kalpakkam Nuclear Stations now under execution. Thus, the main benefit from this project will be the supply of peak energy to the grid and preservation of the capacity value of the station during irrigation closure season.

To suit the site conditions and terrain and reckoning also the technical and economic feasibility, the project has been envisaged as an underground installation with the power house and water conductor system proposed to be located completely underground. When the project is completed, this will be the first underground installation in Tamil Nadu and the Second Pumped Storage Project in India, the only other project being the Nagarjuna Sagar pumped storage installation in Andhra Pradesh.

The project is proposed to be implemented in two stages, the capital outlay on the project at the end of the first stage being Rs. 2,143 lakhs and the total cost of the project being Rs. 3,512 lakhs. This affords 400 Mega Watts of firm peaking capacity and about 720 million units of peaking energy per annum to the Tamil Nadu grid. This scheme would normally be operated as a pumped storage scheme excepting during the monsoon periods, when the free flows in the basin will enable the station to be operated as a conventional scheme to generate about 79 million units.

The power generated is proposed to be stepped up to 230 K.V. and fed into the Tamil Nadu grid at Udumalpet by means of two single circuit 230 K.V. lines.

The Tamil Nadu Theatre Corporation is the first of its kind in India and has a unique role in fostering the film industry on the one hand and spreading means of entertainment to the rural areas. The Corporation was incorporated on 12th April 1972 and inaugurated by the Chief Minister of Tamil Nadu on 14th April 1972. Its Board of Directors is so constituted with experts in the field that each proposal enables the entrepreneur to get not only financial assistance but guidance and counselling of a high order to ensure profitable running of the scheme.

The main objects for which the Corporation has been established are: (1) to promote, establish, administer, own and run Semi-permanent theatres in Tamil Nadu, (2) to aid, counsel, assist, finance, protect and promote the interests of persons who desire to construct semi-permanent theatres in Tamil Nadu, (3) to provide them with assistance of all kinds including capital, credit means and resources towards the construction of Semi-permanent theatres, and (4) to enable them to develop and improve their methods of construction, and maintenance of the Semi-permanent theatres and to afford them all knowledge of construction of such theatres.

#### Cinema Rules amended

Tamil Nadu produces a large number of cinema films. But the number of cinema theatres in the State, both permanent and touring, is quite inadequate to absorb them. There is also not much initiative in the matter of building permanent theatres, evidently because of the huge financial outlay which such buildings require. Government have, therefore, allowed the construction of an intermediate type of cinema known as the semi-permanent cinema with licence valid for five years and have also made suitable provisions in the Tamil Nadu Cinemas (Regulation) Rules, 1957, for regulating Semi-permanent cinemas.

It is the desire of the Government that the public should take advantage of the above said provisions in the Tamil Nadu Cinemas (Regulation) Rules, 1957, which enables

the construction of Semi-permanent theatres and that as many Semi-permanent theatres should be constructed as possible so that the large number of films now being produced in Tamil Nadu could have a scope for an economic market within the State itself. In order to give impetus to the development of the semi-permanent theatres by the grant of financial assistance to private individuals, the Government have set up the Tamil Nadu Theatre Corporation.

The immediate object of the Corporation is to finance private entrepreneurs who come forward to construct Semi-permanent theatre in rural areas of Tamil Nadu to the extent of Rs. one lakh or 2/3rds of the cost of the theatres (including the cost

R. NAGARAJAN, M.A.  
Managing Director  
Tamil Nadu Theatre  
Corporation Ltd.

of construction, equipment, furniture, etc.) which ever is less. Semi-permanent theatre is a very important and effective medium of communication of thought and expression, especially to the masses in the out of the way places. In India, Cinema is the predominant medium of mass entertainment and the number of places exhibiting cinema films is quite inadequate to meet even the minimum needs of the country.

#### More films produced

The object of promoting the construction of as many semi-permanent theatres as possible is to see that the large number of films (roughly two per week) that are being produced in Tamil Nadu should not only have a scope in major cities and municipalities but they should benefit the people in the rural areas also. Semi-permanent theatres are therefore quite essential in rural areas of Tamil Nadu. The promotion and construction of Semi-permanent theatres in rural areas are expected to create greater employment oppor-

tunities and will be in accordance with the general policy and spirit of uplifting rural areas.

The Corporation has quite some time ago finalised its rules for the grant of loans to individuals who desire to construct Semi-permanent theatres, and recently released advertisements in leading newspapers calling for requisitions along with crossed Postal Orders for Rs. 10 for supply of prescribed application forms and rules. The response was quite encouraging. The Corporation has so far supplied application forms and rules to more than 760 persons throughout the length and breadth of Tamil Nadu.

#### Standard designs

Besides providing financial aid to applicants, the Corporation is preparing a standard type design for the construction of Semi-permanent theatre and will supply the same after approval by the Chief Engineer, Public Works Department (Buildings), Madras to those interested at a nominal cost. Since the approval for the standard type design will be accorded by the Chief Engineer (Buildings), Public Works Department, it does not require technical approval from the local Executive Engineer (Public Works Department) and formal approval from the Collector of the District (Licensing Authority) could be obtained by the applicant before starting the construction of Semi-permanent theatre. According to Corporation's standard type design, the estimated cost of a Semi-permanent theatre ranges from Rs. 1.60 lakhs to Rs. 1.85 lakhs including the cost of new projector with accessories.

The Board, at its meeting held on 18th January 1973, has already sanctioned loans to six applicants, who submitted their loan applications only six to eight weeks ago. The Corporation has now geared its administrative set up and it can process a loan application and sanction the loan applied for in about four to eight weeks time provided the applicants put forward concrete and viable proposals for the construction of Semi-permanent theatres in rural areas and send along with their applications all necessary documents.

# EXHIBITION OF PORTRAITS OF FREEDOM FIGHTERS

This is the Silver Jubilee year of Independence of India. As part of this important land-mark of our history, the Madras Government Museum has arranged for an exhibition of "Portraits of Freedom Fighters" from February 15 to March 13, 1973 in its Centenary Exhibition Hall. The portraits of freedom fighters have been grouped and displayed in the exhibition in a chronological order that one would easily come to grip with the historical growth of our independence struggle from the year 1885 when the National Congress was formed up to the period of attainment of Independence of the Country. Photos of rare incidents and instances have also been put up for display. The exhibition consists of paintings and photographs of prominent leaders of the freedom movement such as Victor Octovias Hume, Dhadabai Nawroji, Gandhi, Nehru and others of the galaxy of our freedom fighters.

The first phase deals with the period 1857-1905 signifying the beginning of the nationalist movement advocating the method of constitutional agitation for greater Indian participation in the Government.

The second phase of our freedom struggle was the growth of the nationalist movement. In this section, rare photos of V.O. Chidambaram Pillai, Poet Bharathi and others have been displayed which expound the revolutionary character of these leaders. It was during this period that our freedom struggle took a new turn for good and this period in our freedom struggle saw the growth of opposition to foreign rule moving away from constitutional means. The Swadeshi

movement, boycott of British goods and the Home Rule movement marked this phase.

Since 1919 up to 1935, the freedom struggle became mass-based. The contribution of Mahatma Gandhi to this phase became all embracing. Non-violent, non-co-operation and mass civil disobedience were introduced by him in the fight for freedom. Photos relating to this period have been put up in chronological order signifying the third phase of our freedom struggle.

The fourth and last phase of the freedom struggle relates to the period from 1935-1947. It was during this period that the freedom struggle was intensified; the Quit India movement was launched in 1942 and the Independence of India came at long last on August 15, 1947. In this section, photos and paintings of eminent men of freedom struggle and rare incidents have been displayed. It was on the occasion of the Indian Independence that Pandit Nehru, the first Prime Minister of India observed "Long years ago we made a tryst with destiny and now the time comes when we shall redeem our pledge, not wholly or in full measure, but very substantially. At the stroke of the midnight hour when the world sleeps, India will awake to freedom."

Some of the photos of eminent persons displayed in the exhibition are of W.C. Bonnerjee, Mahatma Gandhi, Subash Chandra Bose, Jawaharlal Nehru, Rebhadrnath Tagore, C. R. Dos, Bal Gangadhar Tilak, C. Rajagopalachari, Tiruppur Kumaran, E. V. Ramasami, etc.

The exhibition of "Portraits of Freedom Fighters" was inaugurated by the Hon'ble Justice Thiru M. N. Ismail, Judge of the High Court, Madras at the Centenary Exhibition Hall, Government Museum, Madras at 6 p.m. February 14, 1973.

## DIRECTOR'S WELCOME ADDRESS

Welcoming the Chief Guest, Dr. S. T. Satyamurti, Director of Museums, said that the Exhibition was organised as part of the celebrations of the Silver Jubilee of Indian Independence, "Through such exhibitions and other programmes, the Museum is endeavouring to play its part in bringing before the people various cultural and historical aspects of our national heritage."

## INSPIRING EXHIBITION

Inaugurating the Exhibition, the Hon'ble Justice Thiru M. M. Ismail, said that "the younger generation to-day may not be fully aware of several aspects of the freedom struggle. Those who fought for Independence were all dedicated persons who were prepared to make any sacrifice in the cause of freedom. The movement for freedom brought to the fore some of the greatest of men whose examples must inspire us to a similar dedication to the service of the nation. Such dedicated persons are very much needed for the development of the country. The freedom movement concerned itself not only with political independence but also with social reconstruction and economic betterment." The Hon'ble Judge called on the people to dedicate themselves to the service of the country and expressed the hope that the Exhibition of the "Portraits of Freedom Fighters" would help in inspiring them to do so.

Thiru M. S. Chandrasekhar, Assistant Director of Museums, proposed a vote of thanks.

The exhibition is to be kept open on all days except Fridays from 10-30 A.M. to 5 P.M. till March 13, 1973.

# THE COOUM REGAINS ALL ITS CHARMS

By

A. PADMANABHAN,  
Secretary, P. W. Department,  
Government of Tamil Nadu.

## Six Miles of walkway!

For long, Cooum had been a dark spot on the fair face of Madras City. Visitors to Madras were too familiar with this river—an eyesore and a big drain. Its story was one of a pure and simple river at the upper reaches, getting transformed into a meandering course of filth and pollution within the City limits. Several drain-outlets getting into the river, the misuse of the river margins and inadequate care contributed to this. Although from 1878 proposals were mooted to improve Cooum, it was not until 1967 that serious steps were taken. With great vision and imagination, the State Government launched the Cooum Improvement Scheme in September 1967. To-day Cooum is different from what it was.

The regulator and the sandpump at the sea-mouth now in position keep the approach channel free from sandbar and facilitate maintaining required water level in the river. Improvement to the river as such consists of channelising it and protecting the sides with cement concrete slabs for a length of 6 miles and 3 furlongs including the northern arm of the river and the stretch from Chetput Railway Bridge to Napier Bridge.

## Tourist Attractions.

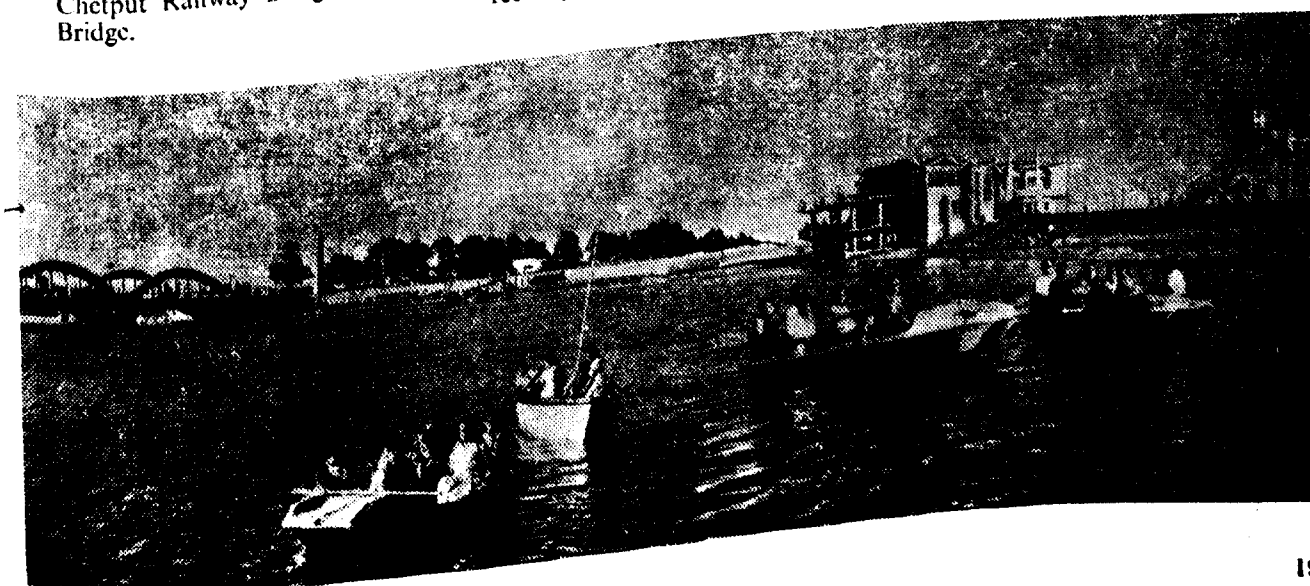
Other attractions, particularly for tourists, are the parks and lawns that are being developed on the river margins, the Swimming and Diving Pools set to international standards where the National aquatic sports were conducted recently and the beautiful Boat

Club-cum-Canteen. The jet Fountain which is getting ready will be a unique attraction; it will throw up water to 300 feet. This is to be flood-lit and suitably illuminated. It may be remembered with grateful thanks that the Jet was donated by the Mayor of Halle/Salle, East Germany to the Mayor of Madras a few years back.

As in several foreign cities, our bridges and archways add charm and grace to make the City beautiful, particularly during nights. With the co-operation of the City Corporation the several bridges that span Cooum—Munroe Bridge, College Bridge, Harris Bridge, Wellington Bridge, Napier Bridge, etc. and the river margins are proposed to be suitably lighted up.

Perhaps only very few places may have the natural scenic beauty and grandeur which the confluence of Cooum and the Blue sea provides, if viewed from the Boat Club or the Swimming Pool.

A wayward and stagnant sullage-carrier has been converted into a vibrant and free flowing river of pleasure and health, thereby making the City more beautiful.





Dr. M. Karunanidhi, Chief Minister is seen inaugurating the Pleasure Boating in Cooum on 4th February 1973.

## PLEASURE BOATING IN THE COOUM

"Within a span of five or ten years, the Cooum river will be developed further in such a grand manner as to outstrip in elegance and importance all such rivers passing through capital cities in foreign countries," observed Dr. M. Karunanidhi, Chief Minister of Tamil Nadu while inaugurating the pleasure boating in the Cooum river in the city on 4th February 1973.

The function was presided over by Thiru Sadiq Pasha, Minister for Public Works while Tamil Nadu Ministers, Dr. V. R. Nedunchezhiyan, Minister for Education and Thiru K. Rajaram, Minister for Tourism and Backward Classes, took part in the function. Thiru M. P. Sivagnanam, M.L.C., Deputy Chairman of the Legislative Council, and Tmt. Jothi Venkatachalam, M.L.A. and others participated.

In his speech at the function, the Chief Minister said: "Today we are participating in a function which warms our hearts in joy and ecstasy. To make pleasure boating in Cooum possible, the Public Works Minister and his staff have worked night and main, night and day, for several months".

"Today we have the opportunity to see the magnificent banks of Cooum raised on both sides with its waters flowing serenely. Inevitably, at such a time, my mind goes back to 19th September 1967. It was in the evening of that day, our cherished leader Arignar Anna, who had also nourished us and brought us up, commenced the work of reclamation of the river Cooum. While inaugurating the commencement of work, Arignar Anna said: 'I have taken great pains to have this scheme

included in the budget of this year in spite of very difficult financial condition of the State. My brother Karunanidhi wanted so much to see the scheme in operation, that I could not refuse him'.

"Started with the good wishes of Arignar Anna, this scheme has been executed surmounting many a great hardship.

"In the Western countries, the rivers that run, cutting across the cities take precedence over and above anything and everything in the matter of beautification of the capital cities of those countries. The magnificent look of those rivers, the pleasure boats that ply in them and above all the tourists who come there attracted by the pleasure boating in the rivers not only add to the beauty of the cities, but also enrich the economy of those cities.

### Phases of Work—

"As a first phase of work, one 35 feet width sluice (Madaku) with two letouts and a jetty of 250 feet length have been constructed at a total cost of Rs. 66 lakhs.

"The second phase of work is slabbing both sides of the Cooum from Chetput railway station to Napier Bridge a distance of more than six miles, plus paving a 10 feet width pedestrian path on both sides of the Cooum all along the same distance and construction of 8 ferry



## PLEASURE BOATING IN THE COOUM

The boats and the happy Passengers of boats in the Cooum testify to the fact that the Cooum is once again a free flowing river with no trace of its former stench.

### BUCKINGHAM CANAL TOO!

"Of course, we have completed the Cooum reclamation work, but there is another waterway in the city which marks the beauty of the city, posing a health hazard in the city. The name of that waterway is BUCKINGHAM CANAL. The Government is thinking of cleaning that also" — so observed the Chief Minister of Tamil Nadu in his speech while inaugurating the PLEASURE BOATING in the Cooum. Keeping his words in mind, the Chief Minister has allotted a sum of Rs. 2 lakhs in the budget for 1973-74 as a token sum to start the reclamation work of Buckingham Canal.



stops throughout the length of the Cooum. This work had been executed at a cost of Rs. 1.5 crores.

Nor is this all. To prove that this government is not only interested in reclaiming the river so as to make it suitable for pleasure boating but also it holds dear and near to its heart the welfare of the hut dwellers, the government has constructed 941 fire proof huts to provide dwelling place for almost all hut dwellers displaced from the banks of the river, at a cost of Rs. 12 lakhs. Thus the total expenditure in all works out to Rs.2.28 crores.

"My friend Thiru K. Rajaram, Minister for Tourism and Backward Classes, should take responsibility to make good the total expenditure of Rs. 2.28 crores spent on the scheme, and not merely Rs. 1.5 crores, as he has pointed out in his speech. If he accomplishes this in good time

I am prepared to extend any help to improve the tourism facilities in other parts of the State.

"We must take up tourism development works having too important points in our mind. First, our works should be executed in such a way as to become objects of tourist attraction. Secondly, it should be in line with the object of meeting the desires of our people.

"The tourism department under the responsibility of Thiru K. Rajaram and under the Chairmanship of Thiru A. V. P. Asaithambi, have, of late, been doing good work for the development of tourism in our State. The recently conducted Pongal Tourism week under the auspices of the Tourism Department is an instance in point.

**Buckingham Canal too.**

"Of course we have completed the Cooum reclamation work, but

there is another waterway in the city which mars the beauty of the city, posing a health hazard in the city. The name of that waterway is Buckingham Canal. The Government is thinking of cleaning that also.

"We must create still more beautiful parks on the banks of the Cooum. After this reclamation, the areas adjoining the river have improved in value, as more and more people vie with each other to purchase lands adjoining Cooum, as these areas do not pose danger to their health any longer.

"Two Swimming Pools of international standard have been constructed near Anna Square. If after a period of 10 years the trees and plants have grown up, the river Cooum would excel in beauty all its counterparts in foreign countries."

# MADRAS PORT BECOMES ONE OF WORLD CLASS

The Madras Port is one of the oldest ports located on the east-coast. Starting with just a single pile pier during 1861 handling a few thousand tonnes of cargo annually, it has grown as a major port with 18 berths and handling 7 million tonnes per annum. Now this harbour has become the first port in the country capable of receiving modern giant tankers and consequent low freight rates for imported crude and export of ores.

The main harbour accommodation consists of 18 alongside berths, for handling assorted traffic like general cargo, coal, iron-ore, food-grains, fertilizers and liquid cargo three moorings and one petroleum and explosive berth for dangerous and hazardous cargo. The total length of quays and jetties is about 3 km. and is served by both road and rail. The quays and jetties are all provided with electric cranes of capacity ranging from 3 tonnes to 60 tonnes numbering 54 in all. In addition the port owns a floating crane with 120 tonnes hoist capacity. The main harbour including Jawahar Dock can take in vessels ranging from 28 feet draft to 36 feet draft.

## ANCILLARY FACILITIES.

To meet the needs of traffic, the port is well equipped with all ancillary facilities, viz., covered storage area, warehouses, cargo handling equipments and floating crafts. For mooring and berthing of ships there are six tugs with bollard pull ranging from 7.5 tonnes to 35 tonnes. To maintain the depths in the harbour, there are four dredgers with 200 tonnes to 2,000 tonnes capacity. There are 16 warehouses covering a total area of 78'00 sq. metres.

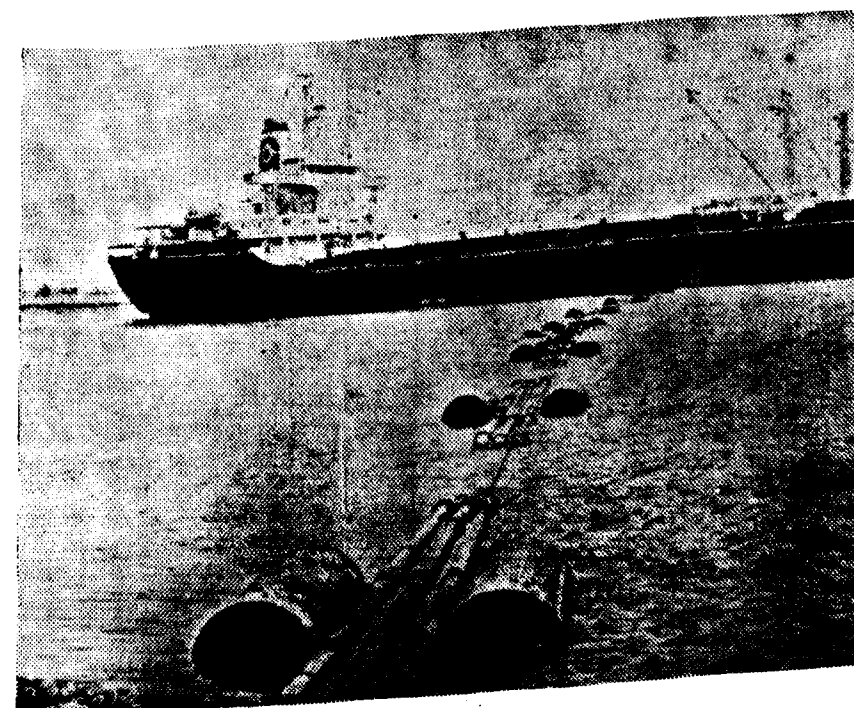
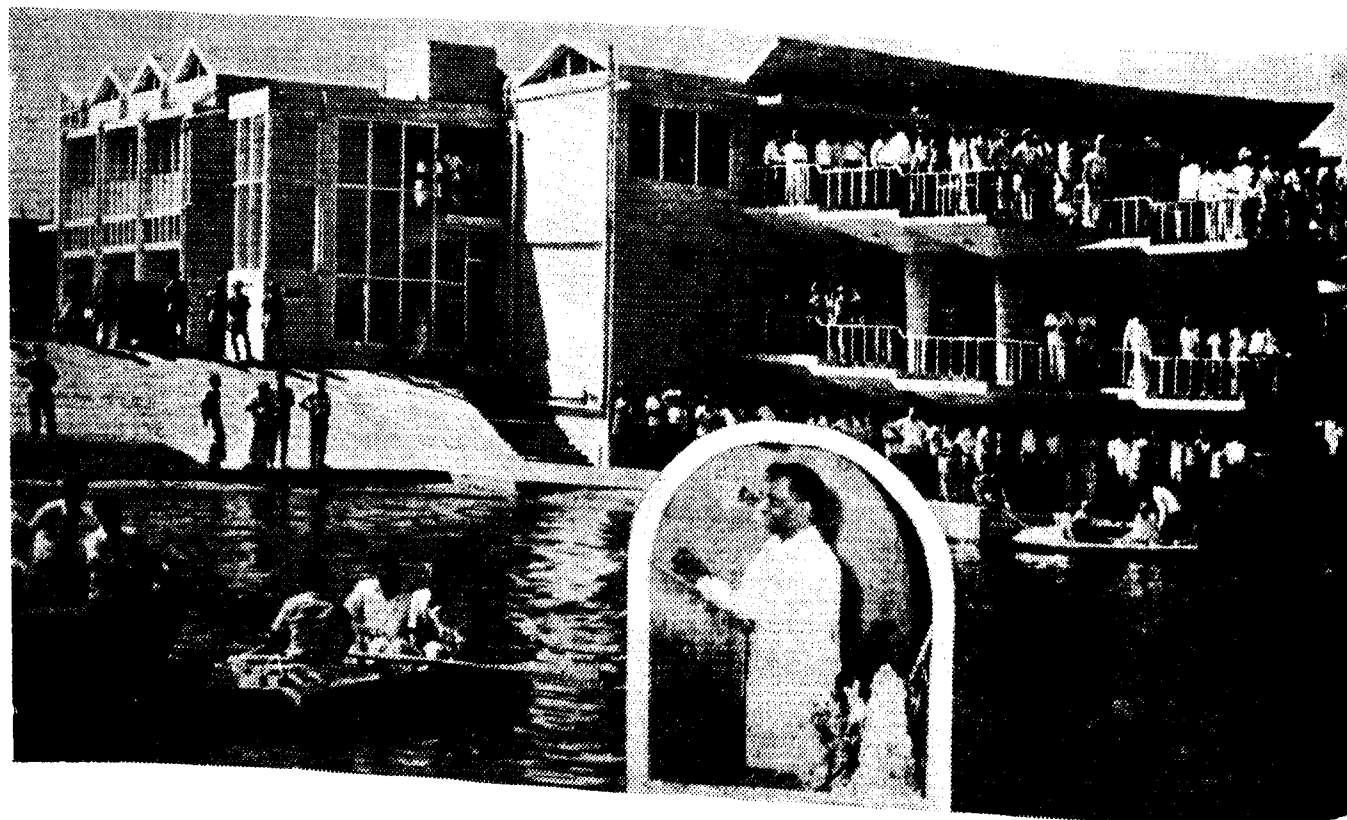
The port has a new workshop consisting of modern machines to undertake manufacture of spare parts and other machinery items required for its use. It houses the diesel loco shop, mobile crane shop, I.C. engine shop, forklift truck shop, electrical shop, sheet metal shop, foundry and forge shop, etc.

## THE BHARATHI DOCK.

The construction of the Bharathi Dock adjacent to the main harbour was taken up to cater to the needs of oil and ore immediately and to

provide potential for three additional deep berths. This dock can accommodate tankers of 77,000 dwt. initially and 1,00,000 dwt. tankers ultimately. The oil berth in the new dock is provided with marine loading arms which can handle crude at 4,000 tonnes per hour and refined products at 700 tonnes per hour.

Provision of facilities for mechanical handling of ore is progressing fast and this project is programmed for completion by early 1975. At present, the port is handling about 2.3 million tonnes of iron ore in the four berths inside the main harbour and Jawahar Dock. The handling of ore at these berths are semi-mechanised and ships of 35,000 dwt. capacity alone can be handled. In view of the vast potential for export of iron ore, provision of the fully mechanised scheme has been taken up. The new ore berths and the handling facilities will be at the Bharathi Dock on the reclaimed area. The ore carriers will be of 70,000 dwt. tonnes initially and 1,00,000 dwt. combination carriers later. The facilities are designed for receiving by rail, stockpiling,



## THE BHARATHI DOCK

The newly built Bharathi Dock in the Madras harbour is a boon to all business in Madras, particularly Madras Refineries. Crude can be discharged from the tankers at the new jetty at the rate of about 3000 tonnes an hour compared to the maximum of 800 tonnes in the improvised jetty which MRL was using since February 1969. Large tankers can be cleared in about 20 hours hereafter.

reclaiming weighing, sampling and shiploading of upto 5 million tonnes ultimately. The designed loading rate of the plant is 8,000 tonnes per hour.

The Bharathi Dock is to be used immediately for handling oil and ore as indicated. The dock has potential for three additional deep drafted berths for handling bulk cargo, such as coal, fertilisers, etc., container cargo and general cargo. The construction of these berths will be taken up based on demand of traffic.

### FISHERIES HARBOUR.

In addition to these, at the request of the Ministry of Food and Agriculture, Government of India, the construction of a Fisheries Harbour, north of the Bharathi Dock is being taken up. This harbour is planned to accommodate 50 trawlers and 500 mechanised boats for the first stage and 150 trawlers and 500 boats for the second stage. The harbour is designed to handle 40,000 tonnes of fish in the first stage. The harbour is programmed to be completed by the end of 1975.

With the commissioning of the Bharathi Dock and Oil Berth, this port will be the first port in India capable of receiving modern giant tankers with significant reduction in freight rates to the users of the port. The Madras harbour which has contributed so much to the trade and economy of the nation has a great future and can justly look forward to an era of further growth.

The Madras Port thus crosses yet another milestone when the giant 88,000 DWT tanker Jawaharlal Nehru entered the newly built Outer Harbour bringing valuable feedstock to the Madras Refinery on 4th February 1973. This ship and the sister vessel Lal Bahadur Shastri, both owned by the Shipping Corporation of India, will be shuttling between the oil-rich Persian Gulf and Madras bringing crude supplies. Madras has the pride of taking in the largest ship-ever by an Indian Port.

### ERA OF GIANT SHIPS

The country entered the era of giant ships in March 1969 when the

"Jawaharlal Nehru" built at Split shipyard, Yugoslavia, for the State-owned shipping Corporation to the highest classification of the American Bureau of Shipping was launched. To-day, the Shipping Corporation has eight tankers in its fleet comprising 3.8 lakhs DWT in addition to combination-carriers capable of transporting both oil and bulk cargoes of 2.3 lakhs DWT together, these constitute 38 per cent of the total of the SCI and 74 per cent of the total Indian tonnage of tankers and combination vessels.

Fifteen more tankers combination-carriers of 10.68 lakhs DWT are on order and will be delivered during 1973. When delivered, the tankers on order would meet in full the requirement of the public sector refineries of Cochin, Haldia and Barauni.

Until now "Jawaharlal Nehru" was employed in international cross trades on a fully competitive basis and in 2½ years of operation the tanker had made a net earning of more than Rs. 5 crores of foreign exchange. The sister vessel "Lal Bahadur" is expected to join in early March and the two will transport 2.5 million tonnes of crude to meet in full the crude requirements of the Madras Refinery.

The Shipping Corporation to-day owns a fleet of 94 vessels of a total DWT of 18.5 lakhs. In addition, 39 vessels of 16.35 lakhs DWT are on order with various shipyards in India and abroad. With the phased delivery of these vessels, the SCI expects to cross the four million DWT mark by the end of 1975.

The SCI is among the largest shipping companies of the world and covers over 59 countries in five continents through its network of fast liner services. It is also a first class tramp operator from next month the SCI's new luxury passenger liner M. V. CHIDAMBARAM named after the patriot late Thiru V. O. CHIDAMBARAM PILLAI, will start playing between Madras and Singapore replacing the existing vessel t. s. s. State of Madras.

### RS. 18 CRORE AIR-PORT EXPANSION FOR TRAFFIC OF 1991.

The Madras Air port is being expanded at a cost of Rs. 18 crores to take care of traffic anticipated by 1990. The steep rise in air passenger traffic has outstripped the facilities now available at the four major airports in India and the International Airports Authority of India (IAAI) has prepared a master plan for the development of new terminal complex and for improving the operational and passenger facilities at these centres.

The plan for the Meenamakkam Airport has been estimated to cost Rs. 18 crores, the figures for the other major airports are as follows; Santa Cruz Rs. 35 crores; Palam Rs. 29 crores; and Dum Dum Rs. 6 crores.

The new complex at Meenamakkam has been planned to meet the requirements of air traffic, passenger and cargo, two decades hence and to take in modern types of aircraft.

By 1990 air passenger traffic at Madras is estimated to be 4.8 millions, as against 0.5 million in 1972. The peak hour aircraft movements are expected to rise to 19 in 1990 from 10 in 1972.

The salient features of the proposed complex are construction of a modern passenger terminal at International standards at a cost of Rs. 10 crores and provision of aero-bridges to enable passengers to board the aircraft.

The international unit of the terminal building will be completed before 1979, during the Fifth Plan period itself. Operations of internal traffic both arrival and departure, will be shifted to the new building and the present area will be released for domestic traffic. Extension of runway will however be completed very soon.

Already at a total of Rs. 3 crores the terminal facilities at Meenamakkam have been improved at a cost of Rs. 3 crores to modify and air-condition the existing terminal. The present apron to the east of the terminal building will be enlarged and the main runway and a new parallel taxi track will be laid. Meenamakkam Airport will also have a new fire station of its own at a cost of Rs. 30 lakhs besides quarters for the staff.

## PALM INDUSTRY IN TAMIL NADU

Palm Industry is an important natural Industry in our Country. Neera, nungu (tender palm fruit), Candy, jaggery naur, leaves and various other palms products are obtained from palm trees and hence palm industry is a unique industry in Tamil Nadu. There are about 4 crore palmyrah trees in Tamil Nadu and about two lakhs employees are employed in the industry.

Of the many products from the palmyrah tree, special mention must be made of neera. It is a natural, healthy sweet drink. It contains many protective vitamins. Research has confirmed that neera is a good nutritious drink especially good for the eyes. It contains calcium to protect teeth and iron to prevent scabies, cold consumption, etc. It is an ideal natural tonic.

Mahatma Gandhi said that if neera is taken every morning, it would be an ideal food.

Palm candy is manufactured from neera. The Siddha Vaithiya literature refers to the medicinal and nutritional values of palm candy. The taking of palm candy reduces the heat in the body. It is used both as food and medicine for patients suffering from cough, small pox, etc.

Neera is converted into syrup and converted into white palm sugar through machinery. There are sugar plants at Madhavaram, Kadapakkam and Parakunnu in Tamil Nadu.

Apart from being used as a sweetening matter, palm sugar is utilised in the preparation of chocolates, peppermints, biscuits, jam syrup and squashes. It is also used in the manufacture of ice cream, palm-o-colo and other aerated drinks, etc.

Neera is also converted into sweet jaggery. Palm jaggery is sweet as well as tasty. Thousands

of workers are engaged in the production of palm jaggery in the villages.

Every part of the palmyrah tree is of use to us. The leaves are used for thatching roofs and for making beautiful baskets, garlands, fans, etc. The palm timber is used as rafters in house building and making furniture, walking sticks and other fancy articles.

From the pathals, obtained from the palmyrah tree fibre is produced. Palm fibre is exported to about forty foreign countries from Tuticorin, Kakinada and Cochin ports. Considerable foreign exchange is obtained. From the Palm fibre brushes for every day household and industrial use are manufactured in brush factories at Madhavaram, Colachel and Udangudi.

by

M. A. VICTOR

The palm industry is of national importance. Many person have contributed to the development of this industry as it is labour intensive and of economic importance.

In Tamil Nadu, it is classified as one of the major industries under the Tamil Nadu Khadi and Village Industries Board. Several schemes have been drawn up and implemented with the main idea of providing continuous work to thousands of workers in the villages.

### Making Process :

Fork like portion of the palmyrah leaf sticking to the trees called "Pathals" are cut from the trees by the climbers. They are beaten and thrashed by wooden mallets to remove the pith and outer skins. The unclean and rough fibre thus obtained is called crude or korah fibre. The quality of the fibre is



A climber at the top of a Palmyrah tree is seen the cutting Pathals.

determined by its colour and stiffness. The fibre obtained from young trees called "Vadalis" is black and stiff whereas that obtained from old trees is white and not very stiff. Fibre consisting of both black and white fibre is known as Kalameni Fibre. Thus the 3 categories of fibre are "Prime Stiff", that is black and stiff soft which is white fibre and "Medium stiff" which is Kalameni fibre.

The Kora is then combed with specially made iron combs. Thus cleaned, it is then tied into large bundles about 24 inches in diameter, with the fibre in vertical position. These large bundles are knocked against the floor to even the butt end of the fibre. The fibre is then sized by hand. The sizing process consists of pulling out the fibres a few at a time and tying into hanks, handful by handful. As the fibres are pulled out from the top of the bundle, the height as well as the diameter of the bundle gets gradually reduced. This process is continued till a very small bundle of fibre about 5 inches long is left. The hanks are then slightly rimmed at the top and are then sorted into different sizes by actual measurements and are stacked in different heaps according to length.

In certain cases, the fibre is dyed. Iron tanks are half filled with water, in which pounded gall nuts, iron sulphate, soda ash, common salt, chemical dyes and small quantity of oil are mixed. The fibres to be dyed are placed in the tank loosely bound and boiled for about 5 hours. It is left overnight in the tanks to cool and taken out and kept in vats where they remain for 3 or 4 days.

The next process is bundling and for this purpose the dyed fibre is spread in the drying floor and partially dried after which it is bundled by first being pulled by hand to get the fibre roughly strait and then combed and tied into neat bundles are therefore, spread in the sun and dried well. The bundled fibre is then hand-pressed into compact ballots, weighing 50 kg. each, secured with bamboo strips and hoop iron. Finally, the ballots are covered with jute hessian and suitably marked to show the country of origin, post of destination and other shipping marks and are ready for export.

#### Co-operatives for Protection.

In the districts of Kanyakumari, Tirunelveli, Ramanathapuram, Coimbatore, Thanjavur and Chingleput several thousands of village people are engaged either in tapping neera from palmyrah tree or converting neera into jaggery or extracting fibre from palmyrah tree or preparing mats and packing materials from out of palm leaves. In order to provide them a reasonable daily earning and also to assure them better marketing facilities for their finished products a net work of Industrial co-operative societies (1563), at the base, a District Federation and the State Federation at the apex under the guidance of the Tamil Nadu Khadi and Village Industries Board have been organized to protect this industry which is a major village industry in Tamil Nadu. This industry has indeed a bright future, particularly in the field of fibre export in the coming years.

#### Export Trade

The export trade was originally in the hands of firms and private merchants. The producers of kora being poor and economically down-trodden, they had to sell away their fibre to petty merchants or

agents of exporters at a very low price. Through these exporters obtained good prices in foreign markets the actual producers were not benefited. Of the Co-operatives, the credit for first entering the foreign export trade in palmyrah fibre goes to the Tirunelveli District Palmyrah Products Co-operative Federation, Tuticorin, which exported fibre in 1963 directly to a few countries like other exporters but keen competition from other exporters, inadequate financial resource and lack of adequate knowledge in export business stood in the way of development of the fibre trade by the district federation. After studying the potentialities of the palm fibre industry in the State, Thiru U. N. Debar, then Chairman of the All India Khadi and Village Industries Commission was pleased to sanction Rs. 20 lakhs as working capital loan to the State Federation in 1964-65 through the State Khadi and Village Industries Board.

The State Federation which is championing the cause of artisans engaged in palm products industry in Tamil Nadu started the trade in 1965 and undertook the following activities :—

(1) It provided sufficient finance to the primary jaggery manufacturing co-operatives to collect raw

materials, clean the kora and size the same to be sold to the district federations,

(2) Provided funds to the district federation to procure fibre from the primaries, run sizing centres, etc.,

(3) Provided lorries to the district federations to collect raw fibre from the primaries and transport them to Export Wing, Colachel and Tuticorin,

(4) Started more than 200 training centres in the villages to train up new artisans in the fibre industry and to impart knowledge of improved techniques to the existing artisans, and

(5) Provided technical personnel to the institutions to advise them in the procurement of fibre, sizing, costing, etc.

The State Federation purchased the fibre processing factory owned by Messrs. Aspinwall and Co. who were in the field from nearly 100 years. It also started a processing unit at Karungal and a branch at Tuticorin. Messrs. Aspinwall and Company, Cochin, are local agents and the Colombo Commercial Company, London are foreign agents to the State Federation.



Processing instruments—Fibre extraction.

By entering the export trade, the co-operatives have ensured a better price for the artisans who otherwise were offered very low prices. The co-operatives also ensure proper weighing and prompt payment to the producers. They are able to provide employment to the tappers during the off season and to many other persons especially during the lean agricultural season. The producers who originally got 0.30 to 0.40 paise per kilo of fibre get nearly a rupee now.

There has been no system of quality control and pre-inspection of stock of palmyrah fibre before export. This lead to cut-throat competition amongst the exporters. When the Government of India thought of introducing quality control and pre-shipment inspection of stock and published draft Palmyrah Fibre (Grading and Marketing) Rules to ensure the quality of the fibre, the State Federation supported the scheme. The private merchants maintained that there had been no complaint of a serious nature for the last 50 years. The Government of India have not yet implemented the scheme.

The palmyrah fibre is resistant to both acid and alkali. It is stiff like metal wire but does not destroy the machine parts and other surfaces when used for cleaning them. Though, of late, there has been competition from arrivals in the field, of substitutes like plastics, pissava, polypoplin, etc., these are not able to replace the palmyrah fibre due to its natural and peculiar characteristics.

The quantity and value of fibre exported by the two co-operative federations are furnished below :—

| Year.             | Ballots of 50 kg. each. | State federation. | Ballots of 50 kg. each. | Tirunelveli district federation. |
|-------------------|-------------------------|-------------------|-------------------------|----------------------------------|
| (1)               | (2)                     | (3)               | (4)                     | (5)                              |
| 1965-66 .. ..     | 3,922                   | 11,73,334         | 2,352                   | 6,54,902                         |
| 1966-67 .. ..     | 10,898                  | 22,58,404         | 9,018                   | 16,91,820                        |
| 1967-68 .. ..     | 9,215                   | 21,86,106         | 6,111                   | 10,96,913                        |
| 1968-69 .. ..     | 12,592                  | 24,15,705         | 5,476                   | 8,68,448                         |
| 1969-70 .. ..     | 13,989                  | 24,15,704         | 2,115                   | 3,06,830                         |
| 1970-71 .. ..     | 13,029                  | 20,83,610         | 1,895                   | 2,89,654                         |
| 1971-72 .. ..     | 7,337                   | 10,42,770         | 3,536                   | 4,73,354                         |
| 1972-73 .. ..     | 4,857                   | 6,67,300          | 1,118                   | 1,60,091                         |
| (up to 31-7-1972) |                         |                   |                         |                                  |



Sizing Fibre.

#### Bottlenecks.

At present, there is no agency or promotion council for export promotion fibre, similar to the Handloom Exports Promotion Council, All India Handicrafts Board, the Basic Chemicals and Soap Exports Promotion Council, etc. Any scheme for granting cash assistance on exports of palm fibre is likely to boost up its exports.

The shipping freights are considerably high. The freight paid works out to nearly one-sixth of the value of fibre. In the case of stalks to United States of America markets, though the cost of one

cwt. of ordinary stalks is Rs. 15, the freight to be paid is Rs. 43.50. If the freight rates are reduced, the costs of the products in the foreign market would be less and there may be scope for the export of more fibres to foreign countries.

It may be seen the tables that Malaya, Singapore, France and Ireland are not buying fibre for two years in a row, whereas Hungary, Czechoslovakia and Romania are placing increased orders. A study of the present trends in foreign markets by deputing one or two persons especially from the co-operative sector could greatly help in building up the fibre trade.

By finding increased sales in foreign countries, that which is now going waste, can be converted into wealth and in the process many will find employment. The fibre industry will thus play an important role in implementing the 'Garibi Hatao' policy of the Government.

The State Bank of India has recently come forward with a scheme of assisting the artisans who are engaged in the production of kora. Under the scheme, small advances are granted to the artisans on the security of personal sureties to enable them to take young palmyrah trees on lease and to produce fibre. The fibre so produced will be purchased by the co-operative federations.



Fibre purchased by foreign buyers are given below :—

| Serial number and name of the country, |    |    |    |    |    |    |    | (Rs. in 1,000.) |          |          |          |
|----------------------------------------|----|----|----|----|----|----|----|-----------------|----------|----------|----------|
|                                        |    |    |    |    |    |    |    | 1966-67.        | 1967-68. | 1968-69. | 1969-70. |
| 1. U.K.                                | .. | .. | .. | .. | .. | .. | .. | 873.83          | 656.89   | 372.07   | 322.24   |
| 2. U.S.A.                              | .. | .. | .. | .. | .. | .. | .. | 702.44          | 629.74   | 837.39   | 470.32   |
| 3. Australia                           | .. | .. | .. | .. | .. | .. | .. | 217.62          | 241.09   | 361.43   | 209.32   |
| 4. Malaya                              | .. | .. | .. | .. | .. | .. | .. | 49.76           | 9.14     | ..       | ..       |
| 5. Japan                               | .. | .. | .. | .. | .. | .. | .. | 10.94           | 180.11   | 170.50   | 60.13    |
| 6. Manila                              | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | ..       | 13.56    |
| 7. New Zealand                         | .. | .. | .. | .. | .. | .. | .. | 19.66           | 17.57    | 19.93    | 11.51    |
| 8. Sudan                               | .. | .. | .. | .. | .. | .. | .. | 4.83            | 3.14     | 15.09    | ..       |
| 9. Netherlands                         | .. | .. | .. | .. | .. | .. | .. | 417.86          | 45.25    | 229.24   | 124.32   |
| 10. Denmark                            | .. | .. | .. | .. | .. | .. | .. | 17.76           | 101.27   | 107.46   | 36.58    |
| 11. Singapore                          | .. | .. | .. | .. | .. | .. | .. | 3.14            | ..       | ..       | ..       |
| 12. France                             | .. | .. | .. | .. | .. | .. | .. | 159.09          | 81.08    | ..       | ..       |
| 13. Ireland                            | .. | .. | .. | .. | .. | .. | .. | 64.87           | 4.98     | ..       | ..       |
| 14. Italy                              | .. | .. | .. | .. | .. | .. | .. | 1.63            | 25.92    | 124.25   | 44.85    |
| 15. Hungary                            | .. | .. | .. | .. | .. | .. | .. | ..              | 129.37   | ..       | 173.00   |
| 16. Mexico                             | .. | .. | .. | .. | .. | .. | .. | ..              | 3.88     | ..       | 102.41   |
| 17. Kenya                              | .. | .. | .. | .. | .. | .. | .. | ..              | 51.07    | ..       | ..       |
| 18. Belgium                            | .. | .. | .. | .. | .. | .. | .. | ..              | 97.34    | ..       | 23.80    |
| 19. Malta                              | .. | .. | .. | .. | .. | .. | .. | ..              | 19.36    | 83.64    | 5.70     |
| 20. Columbia                           | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | 13.82    | ..       |
| 21. Venezuela                          | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | 65.98    | 22.31    |
| 22. Czechoslovakia                     | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | 291.42   | 387.14   |
| 23. Romania                            | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | ..       | 159.81   |
| 24. Others                             | .. | .. | .. | .. | .. | .. | .. | ..              | ..       | ..       | 234.00   |
| Total                                  | .. | .. | .. | .. | .. | .. | .. | 2,543.43        | 2,297.20 | 2,692.31 | 2,401.00 |

## POOR POWER PLANNING BY THE CENTRAL GOVERNMENT

### —INDUSTRIALISTS POINT ACCUSING FINGER

The Southern India Chamber of Commerce and Industry has come out strongly against the Central Power Planning Cell for not having taken early action to meet power demands of industries sanctioned by the Planning Commission. In a prepared statement they say :

"What causes considerable uneasiness and general concern among the industrialists as well as those charged with the duty of distributing electric power, is the statement from the Central Ministry of Power and Irrigation that we shall remain short of power for the next 8 or 9 years. The immediate provocation for the statement may have been the widespread monsoon failure all over the country and the low water levels in hydro-electric reservoirs which culminated in power cuts being imposed by the various Electricity Boards. However, entrepreneurs and industrialists have generally reckoned with the plans providing for the necessary power generation concurrently with the pace of industrial development envisaged in the plans. It is, however, now evident that power planning has lagged far beyond even the recently slowed down pace of industrial development and what we shall therefore very shortly be confronted with a very disturbing gap between power requirements and power that can be made available by the State Power Boards and other Governmental agencies in the country."

#### NEW UNITS TO IDLE?

"From all appearances, it looks as if we shall be erecting industrial units without power being made available for operating those units. This can lead to (a) developmental stagnation on one side and (b) employed capital being rendered infertile, through lack of power to operate newly erected industrial units or augmented capacities in existing units. In so far as Tamil Nadu is concerned, there is reason to feel special concern, as we are poised to put up a steel plant in Salem district. The Neyveli Power Station may not be able to fulfil its announced commitments to the Salem Plant,

at present erratic levels of production. This is apart from the fact that several power-intensive industries have been poised for expansion or have been licensed.

The Fifth Five-Year Plan outline spells out a massive dose of industrialisation and naturally assumes availability of power to energise the units contemplated. This does not fit in with the view that further power generation will be a matter of 7 or 8 years. The question is, are we matching our basic infrastructure facility with the industrial framework we expect to set up before we end the industrial Fifth Five-Year Plan.

#### MERE TALKS?

The layman is left wondering as to how all these occurred, though we have a cell in the Planning Commission in charge of Power Planning, a statutory body like the Central Water and Power Commission charged with the task of power development in the country and various Electricity Boards at the State levels, studying project feasibility and recommending projects to increase power generation. It is well known that while there has been a great deal of talk of inter-State grids, All India Grid for Power State grids, and so on, and uniformity in tariffs and so on, every State has been aiming at self-sufficiency in regard to power supplies to their own industries and in respect of their rural electrification programmes. Even so, it is clear that no action has been taken so far to establish fresh sources of power generation and several projects have remained uncompleted during the Fourth Plan period. The self-sufficiency drives of several States have not taken them far in the matter.

Electric Power has in the last few months become the subject of keen debate all over the country. Power is now recognised as one of the tools of development, the world over and of development countries have regarded power as a paramount prerequisite to industrial growth and rationalisation of agriculture. Indeed it is regarded as an important

segment of the infrastructure of every country. It is fortunate that in India the importance of power was recognised even before we achieved independence and in this State in particular, hydro-electric power development was undertaken at a comparatively early stage. While the State of Mysore was the pioneer in the matter of hydro-electric power Tamil Nadu came as a close second among States.

#### THERMAL AND NUCLEAR GENERATION

Since Independence power development had been an integral part of every Five Year Plan. Potential sources of hydro-electric energy have been prospected, identified and speedily transformed into projects all over the country. In terms of quantity of power, the State of Maharashtra has become a major source of power generation. Our own State has suffered from the geographical accident of too few rivers and of limited size. Most of them are seasonal. Even so, these sources have in major part been exploited particularly the Cauvery. Naturally we had to have recourse to thermal generation units for the additional energy required.

Currently the difficulty is that the hydro-electric projects, even medium size projects, cannot be put in commission in less time than 7 or 8 years, while large size thermal units cannot be established without the relevant plant and machinery being made available by the public sector factories. This is apart from the considerable increase in the cost of power generating units. It is freely said that the Bhopal, Tiruchirappalli and sister factories of Government make deferred delivery stipulations ranging over 6 to 8 years in respect of turbines, boilers and other components of generation units. In so far as the Southern region is concerned, the States of Mysore, Tamil Nadu and Kerala have to reckon with the long distances over which the required fuel, coal, has to be transported for operating economic thermal stations.

# LIST OF INDUSTRIES

Government have issued a notification under sub-section (1) of section 29-B of the Industries (Development and Regulation) Act, 1951 in order to redefine the categories of cases in respect of which exemption from licensing will be available, in the light of the changes announced in their Press Note, dated 2nd February 1973. They have taken this opportunity to consolidate and streamline the previous notifications in this regard and present them as one notification. The notifications Nos. S.O. 713/IDRA/29-B/70-1, dated the 19th February 1970 (general exemption and for new undertakings) 912/IDRA/29-B/70-3, dated the 28th February 1970 (substantial expansion) and No. S. O. 2443/IDRA/29-B/70-5, dated the 18th July 1970 (manufactures of new articles) stand superseded. The notification now issued is a comprehensive one covering exemption from licensing in respect of new undertakings, substantial expansion and manufacture of new articles (diversification).

The notification now issued by Government exempts industrial undertakings from the operation of sections 10 (obtaining registration certificates for undertakings manufacturing articles that may be included in the Schedule of the Act from time to time), 11 (establishment of new undertakings), 11-A (manufacture of new articles or diversification) and 13 (substantial expansion and special cases) of the said Act and the rules made thereunder, in the manner and subject to the conditions indicated in the paragraphs below.

The exemptions will not be applicable :

(a) to all industrial undertakings falling under the categories listed in Schedule II ; and

(b) in respect of all industries listed in Schedule III (Industries in Schedule A of the Industrial Policy Resolution, 1956) and Schedule IV (Industries requiring special regulation). The exemption will not also be applicable, except in the case of small scale and ancillary units, in respect of articles in Schedule I (articles reserved for the small scale sector).

## EXEMPTED FROM LICENSING

Included in Schedule II are undertakings to which Chapter III of the Monopolies and Restrictive Trade Practices Act applies. These will be :

(a) undertakings which, by themselves or in inter-connection with other undertakings, have assets exceeding Rs. 20 crores ; [i.e. undertakings covered by Section 20 (a) of the M.R.T.P. Act];

(b) dominant undertakings which, by themselves or in inter-connection with other undertakings have assets exceeding Rs. 1 crore [i.e. undertakings covered by Section 20 (b) of the M.R.T.P. Act]; and

(c) other undertakings listed in Schedule II are those owned by foreign companies, their branches or subsidiaries or by companies in respect of which more than 50 per cent of the paid up equity share capital is held directly or indirectly by foreign companies, their branches or subsidiaries or by foreign nationals or non-resident Indians.

### SMALL SCALE UNITS

Subject to paragraph 3 above, all industrial undertakings with investments in fixed assets in plant and machinery not exceeding Rs. 7.5 lakhs are exempt.

### ANCILLARY INDUSTRIES.

Subject to paragraph 3 above, all industrial undertakings with investments in fixed assets in plant and machinery not exceeding Rs. 10 lakhs and manufacturing parts, components, sub-assemblies, accessories, tooling or intermediates for supply to other units or for replacements are exempt.

### OTHER EXEMPT UNDERTAKINGS.

Subject to paragraph 3 above, in respect of all other industrial undertakings, exemption up to an investment limit of Rs. 1 crore in land, buildings, plant and machinery will be available for establishing a new undertaking or for effecting substantial expansion or for the manufacturing of new articles, in the manner and subject to the conditions specified below :

(a) No industrial undertaking will function without a licence under the Act if the investment in it exceeds Rs. 1 crore at any time. This means (i) no new undertaking can be established without a licence if the investment in it exceeds Rs. 1 crore ; and (ii) an undertaking which is not registered or licensed under the Act shall obtain a licence when its investment crosses the Rs. 1 crore limit.

(b) Industrial undertakings already registered or licensed under the Act may invest in fixed assets in land, buildings, plant and machinery not exceeding Rs. 1 crore either for establishing new industrial undertakings or for manufacturing new articles or for effecting substantial expansion. These investments may be made for one or more of these purposes and in one or more stages but in no case should be the investment limit of Rs. 1 crore be exceeded, singly or taken together, without obtaining an industrial licence. The investment so made along with the original investment in the undertaking should not exceed Rs. 5 crores, without obtaining an industrial licence at that stage.

*Note.*—Registration under the Act referred to in (a) and (b) above relates to the grant of a registration certificate, under section 10 of the Act, to undertakings which existed at the commencement of the Act or which came under the purview of the Act, as a result of new items of manufacture being added to the Schedule to the Act. It does not refer to the scheme of registration with D.G.T.D.

(c) None of the items listed in Schedule I (items reserved for small scale sector) should be manufactured.

(d) The proposed investment should not require foreign exchange in excess of the following limits :—

(i) More than the equivalent of 10 per cent of the said investment or Rs. 5 lakhs, whichever is higher for the import of machinery and equipment ; or

(ii) More than the equivalent of 5 per cent of the ex-factory value of the annual production or Rs. 5 lakhs whichever is less, for the import of raw materials (other than steel and aluminium) to be used in such manufacturing activity in any year ; or

(iii) More than the equivalent of 10 per cent of the ex-factory value of annual production of Rs. 5 lakhs, whichever is less, in any year after three years of the commencement of the production, for the import of components to be used in the said manufacturing activity.

### C.O.B Licences.

No owner of any industrial undertaking which was previously exempted from the operation of Sections 10, 11, 11A and 13 of the said Act by virtue of the notification referred to in paragraph 1 above and which is not so exempt by virtue of the notification now issued shall carry on the business of such undertakings after a period of six months from the date of publication of the notification, except under, and in accordance with a licence issued in this behalf by the Central Government. In the case of State Governments the previous permission of the Central Government should be obtained to carry on the business. Industrial undertakings which will need to obtain C.O.B. licences include :

(a) Undertakings which by themselves or in inter-connection with other undertakings have assets exceeding Rs. 20 crores, except those which have obtained a licence (as belonging to a larger house or otherwise) ; and

(b) Undertakings with fixed assets in land, buildings, plant and machinery exceeding Rs. 5 crores, if they have not obtained a licence for any of their manufacturing activities.

All industrial undertakings which have to obtain C.O.B. licences should apply in Form E.E. (appended to the Registration and Licensing of Industrial Undertakings Rules, 1952) to the C.L.P. (Co-ordination and Licensing Progress) Section of the Ministry of Industrial Development on or before 15th June 1973.

Undertakings exempt from licensing are expected to register themselves with D.G.T.D. following the existing D.G.T.D. registration procedure.

### SCHEDULE I.

(Articles reserved for the Small Scale Sector.)

1. Absorbent Cotton. 2. Automobile Radiators (Except for expansion on merits). 3. Barbed Wire. 4. Beam Scale. 5. Bichromates (except for exports). 6. Bolts and Nuts (except High Tensile and other special type). 7. Conduit Pipes—Metallic. 8. Domestic Electric Appliances and Accessories such as electric iron, roasters, heaters, washing machines, etc., other than vacuum cleaners, industrial washing machines, etc. 9. and dry-cleaning machines, etc. 10. (a) Azo Dyes (Direct and Disperse) (i) Basic Dyes. 10. (a) Acids and (ii) Basic Dyes. 10. (a) Electrical Wiring Accessories. (b) Electric Light fittings (such as chokes, starters, reflectors, etc.). 11. Expanded Metal. 12. Fire-works. 13. Formulated perfumery compounds. 14. Full P.V.C. Footwear (Chappals, Sandals and Shoes) except for export by predominantly export-oriented units. 15. Glass Holloware by semi-automatic process. 16. Gun Metal Bushes. 17. Hand Numbering Machines. 18. Hand Stapling Machines. 19. Hurricane Lanterns. 20. Hypodermic Needles. 21. Insecticide Dusts and Sprayers (Manual). 22. Laundry Soap. 23. Leather Footwear (except for expansion of the existing units for exports and new units for exports). 24. Machine Screws (except for Socket Head and Special Type). 25. Machine Shop vices. 26. Metal Clad Switches upto 30 Amps. 27. Miniature bulbs. —(a) Miniature vacuum bulbs. (b) Torch Bulbs. (c) Radio Panel Bulbs. (d) Cycle Dynamo Bulbs and (e) Decoration Bulbs. 28. Paints and Varnishes—Dry Distempers, Red Lead, Red Oxide, Aluminium Paints, Birtumen Paints to

I.S. Specification, Wagon Blocks, Graphite Paints, all Paste Paints. 29. Palm Rose Oil. 30. Paper conversion Products. 31. Pine Oil (except for composite schemes). 32. Plaster Boards. 33. Plastic Processed Products :—(i) Bottle caps, buttons, lamp-sheds, etc., produced by the compression moulding technique. (ii) Plastic articles manufactured from plastic sheets, rods, or tubes by the fabrication technique excluding the technique of vacuum forming. (iii) Polythelene film (films with a thickness of less than 0.10 m.m.) and products from the Film such as Bags, etc. (excluding heavy duty bags and multi-coloured printed film and bags). (iv) Blow-moulded containers and other similar products manufactured by the blow-moulding technique (except for captive use, P.V.C. containers and change over by existing units manufacturing Metal containers to plastic containers). (v) Spectacle Frames from Sheets by fabrication technique or by injection moulding. (vi) Manufacture of Polyester sheets for buttons and the processing of the sheets so produced to manufacture buttons.

34. Rivets of all types (including bifurcated) ; 35. Rolling shutters ; 36. Roofing, flooring and a z ed tiles (except plastic and ceramic tiles of sizes 4" x 4" and above) 37. Safety Matches ; 38. Steel wool ; 39. Student's Microscopes ; 40. Surgical Gloves (except plastic) ; 41. Telescopic Aerials (for Radio Receivers) ; 42. Thermometers ; 43. Water Meters ; 44. Welded Wire Mesh (except for expansion of existing units) ; 45. Wire products—all wire products such as Wire Nails, Hob Nails, Panel pins, Horse Shoe Nails ; 46. Wire Brushes and Fibre Brushes ; 47. Wood Screws ; 48. Cycle tyres and tubes ; 49. Electric Horns ; 50. Hydraulic jacks below 30 tonnes capacity ; 51. Tooth Paste ; 52. Pressure Die Castings (upto 4 K.G.) ; 53. Drums and Barrels (upto 50 litre capacity) ; 54. Tin Containers—unprinted (other than OTS) cans upto 19 litres capacity ; 55. Flash Light Torch Cases (Plastic) ; 56. Truck Body Building (wooden structure) ; 57. Battery Cell tester. 58. Pressure gauges upto 50 lbs. per sq. inch) ; 59. Low Tension Insulators ; 60. A.A. & A.C. S.R. Conductors (upto and including 19 strands) ; 61. Electric Trans-mission Line Hardware (other than those manufactured in malleable castings) ; 62. Grease Nipples and

Grease Guns; 63. Exhaust Mufflers; 64. Zinc oxide; 65. Auto Leaf Springs; 66. Chaff Cutter Blades; 67. PVC & VIR Wires of Domestic Types; 68. Metal Fittings for garments and leather goods; 69. Weights; 70. Sodium Silicate.

#### AUTOMOBILE ACCESSORIES

71. Fuel Tank Caps; 72. Fuel Lines; 73. Wiring Harness; 74. Tail Lamp Assembly; 75. Side Lamp Assembly; 76. Stop Lamp Assembly; 77. Spot Lamp Assembly; 78. Horn Buttons; 79. Bulb Horn; 80. Seats for bus and trucks; 81. Ornamental fittings; 82. Rear View Mirrors; 83. Sun shades; 84. Sun visor; 85. Luggage Carrier; 86. Tyre inflators (both hand and foot operated); 87. Ash Trays; 88. Hub Caps; 89. Wind Shield Wipers (Arms and Blades only); 90. Electrical fuses; 91. Electrical fuse boxes; 92. Battery cables and fittings; 93. Spokes and nipples; 94. Steering wheels.

#### GARAGE EQUIPMENTS.

95. Armature tester; 96. Battery Terminal Lifters; 97. Condensers and Resistance testers; 98. Fender spous and hammers; 99. Feeler Gauges; 100. Flaring Tools; 101. Gear Flushers; 102. Puller of all types; 103. Ring Expanders; 104. Ring Compressors; 105. Screw Extractors; 106. Spark plug testers and cleaners; 107. Stud Removers (extractors); 108. Toe in Gauges; 109. Tyre valve pull out tools; 110. Tube cutters; 111. Flanging tools; 112. Valve Lifters; 113. Valve Replacing and Resetting Tools; 114. Camber Testing Equipment; 115. Domestic Utensils (other than stainless steel); 116. Steel Measuring tapes; 117. Cashew Shell oil; 118. Room Coolers (Desert Type); 119. Cotton Measuring Tapes; 120. Rubberised Cloth; 121. Household Knitting Machines; 122. Para-Dichloro Benzene Balls; 123. Potassium Silicate; 124. Calcium Silicates.

#### SCHEDULE II.

(Categories of undertakings not eligible for exemption.)

(1) Undertakings to which Part III of the Monopolies and Restrictive Trade Practices Act, 1969 (54 of 1969) applies.

(2) Undertakings owned by foreign companies, their branches or subsidiaries or by companies in respect of which more than 50 per cent of the paid-up equity share capital is held directly or indirectly by foreign companies, their branches or subsidiaries or by foreign nationals or non-resident Indians.

#### SCHEDULE III.

(Industries specified in schedule A of the Industrial Policy Resolution, 1956.)

1. Arms and ammunition and allied items of defence equipment; 2. Atomic energy; 3. Iron and steel; 4. Heavy castings and forgings of iron and steel; 5. Heavy plant and machinery required for iron, and steel production, for mining, for machine tool manufacture and for such other basic industries as may be specified by the Central Government; 6. Heavy electrical plant including large hydraulic and steam turbines; 7. Coal and lignite; 8. Mineral oils; 9. Mining of iron ore, manganese ore, chrome ore, gypsum and sulphur, gold and diamond; 10. Mining and processing copper, lead zinc, tin molybdenum and wolfram; 11. Minerals specified in the Schedule to the Atomic Energy (Control of Production and Use) Order, 1953; 12. Aircraft; 13. Air transport; 14. Railway Transport; 15. Shipbuilding; 16. Telephones and telephone cables, telegraph and wireless apparatus (excluding radio receiving sets); 17. Generation and distribution of electricity.

#### SCHEDULE IV.

(Industries requiring special regulation.)

(1) Coal falling under (1), Coal lignite, coke and their derivatives' under the heading "2 Fuels".

(2) Textile, falling under the heading 23. Textiles (including those dyed, printed or otherwise processed) manufactured, produced or processed on powerlooms;

(3) (1) Milk Foods falling under (2) Milk foods; Malted foods falling under (3) Malted foods' and Roller flour milling falling under (4) Flour' under the heading "27 Food processing Industries";

(4) (a) Oil seed crushing, falling under (1) vegetable oils including solvent extracted oils and (b) Vanaspathi falling under (2) Vanaspathi' under the heading "28 Vegetable Oils and Vanaspathi"; and

(5) Leather falling under the heading "31 Leather, Leather Goods and Pickers"; and

(6) Matches falling under (3) Matches' under the heading "36. Timber Products".

#### AWARD OF "KISHI PANDIT" TITLE.

Extended to Sugarcane Production also

Crop competitions are being conducted for various crops like paddy, jowar, ragi, maize, wheat and potato. To promote a spirit of healthy competition among cultivators with a view to encourage high levels of production and to increase the average per acre yield of important food crops in the country, these country wide competitions have become a feature.

The title of "Kishi Pandit" is being awarded to the first prize winner in each these crops at all-India level.

The title "செவ்வாறு அறிஞர்" is being conferred on the first prize winners in the State Level Competitions in paddy, cholam,umbu and ragi.

The Government of Tamil Nadu have issued orders that the title "செவ்வாறு அறிஞர்" be conferred on the first prize winner in sugarcane crop also in the State Level Competitions.

Thiru N. Madarkhan of Natham village in Villupuram Taluk, South Arcot District stood out as winner of first prize in Sugarcane yield competition for the year 1969-70 showing a yield of 97.465 tonnes of sugarcane per acre. On 20th December 1972 he along with other price winners were honoured by Food Minister, Mannai P. Narayanaswamy. Thiru Madar Khan has been consistently entering in sugarcane yield competitions held on local basis, but this is the first time he gets State-wide recognition. The seed material Co. 658 was supplied by Nellikuppam Sugar Factory (E.I.D. Parry).

## TOWARDS MORE PRODUCTION

### OF STEEL

Inaugurating the 22nd annual meeting of the Iron and Steel and Hardware Merchants and Manufacturers Chamber of India at Bombay, Mr. Madanmohan Mangaldas, President, F.I.C.C.I., rightly observed that the shortage of steel has been one of the major constraints in the fuller utilisation of industrial capacity of Engineering Industries already installed. What is more, he added, "Not only has this retarded the growth of engineering industries but it also has a decelerating effect on the general growth of industrial output at a rate of three per cent, a far cry from the target of eight to ten per cent set in the plan."

The domestic demand for finished steel and pig iron by 1973-74, is estimated at about 7.12 million tonnes and 1.95 million tonnes respectively. The specific programmes are :

(i) The expansion of the Bhilai plant from 2.5 million tonnes capacity to 3.2 million tonnes and ultimately to 4.2 million tonnes. A plate mill is also to be set up.

(ii) the expansion of Bokaro plant to a capacity of 2.5 million tonnes from 1.7 million tonnes.

(iii) in the private sector marginal additional capacity would be achieved at Burnpur by increasing the capacity of I.I.S.C.O. from 1 to 1.3 million tonnes of ingots.

In all, the total capacity of steel production was expected to increase from 9 million tonnes in 1968-69 to 12 million tonnes of ingots by 1973-74.

(iv) the production of pig iron would increase from 1.3 million tonnes to 3.8 million tonnes, the total capacity raising from 1.3 million tonnes to 4.2 million tonnes.

(v) the demand for alloy and special steels is estimated at 294,000 tonnes in 1973-74. This will be met by production from Durgapur and M.I.S.C.O.

India's annual steel consumption was about 1.5 million tonnes at the beginning of the Second Plan,

whereas her production capacity was around 1.5 million tonnes. The per capita consumption of steel was about 9 kg. in 1955-56. It increased to 11 kg. in 1960-61 and to 13 kg. in 1966-67. India's per capita consumption is not at all comparable with those of the advanced countries (like U.S.A., U.S.S.R., U.K., Japan, France and Western Germany) or even semi-advanced countries like Brazil, Mexico or Israel. However from 1955 onwards, there has been a sizeable increase in steel consumption which

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able with those of the advanced countries (like U.S.A., U.S.S.R., U.K., Japan, France and Western Germany) or even semi-advanced countries like Brazil, Mexico or Israel. However from 1955 onwards, there has been a sizeable increase in steel consumption which

| Year.   | Demand for steel (in million tonnes). |                     |                             |                                        | Ferro-alloys. |
|---------|---------------------------------------|---------------------|-----------------------------|----------------------------------------|---------------|
|         | Mild steel.                           |                     | Foundry grade pig Iron. (4) | Alloy and special steels (rolled). (5) |               |
|         | Ingots. (2)                           | Finished steel. (3) |                             |                                        |               |
| (1)     | (2)                                   | (3)                 | (4)                         | (5)                                    | (6)           |
| 1970-71 | 9.55                                  | 7.12                | 1.79                        | 0.38                                   | 0.17          |
| 1975-76 | 14.10                                 | 10.51               | 2.39                        | 0.58                                   | 0.24          |
| 1980-81 | 20.50                                 | 15.37               | 3.48                        | 0.87                                   | 0.34          |

The capacity/production of ingot steel in the country can reach 14 million tonnes when the production plan at Bokaro is achieved.

The steering group on Iron and Steel of the Ministry of Steel and Heavy Engineering in its report of February 1969 modified the NCAER estimates by assuming that due to decline in domestic consumption of steel from 5.36 million tonnes in 1964-65 to 4.0 million tonnes in 1967-68, the NCAER targets would be achieved by 1973-74 and 1978-79 i.e., domestic demand for finished steel at the end of 1973-74 and 1978-79 was put at 7.12 million and 10.97 million tonnes respectively.

According to the steering group the capacity of both the integrated steel plants and secondary producer

could not be quickly matched by increased production. There was a sharp increase in imports from 1955-56 to 1960-61. Even during the Third Plan period, internal production was inadequate to meet the requirements of the country and there was continued dependence on imports of steel though to a less extent than for the period 1955-60. The decade 1955-65 may be generally described as a period of steel shortages. The H.S.L. started producing steel only in 1959-60. During the First Plan, the only increase in steel production resulted from T.I.S.CO.'s and I.I.S.CO.'s expansion programmes. Mysore Iron and Steel Limited, could not increase much of its production.

The National Council of Applied Economic Research (NCAER) have made long-term projections for iron and steel in India (in their publication of September, 1968). Domestic demand for the four main products covered in their study was as shown below :—

is 7.05 million tonnes of finished steel. The availability which can be taken into account would be 6.3 million tonnes of finished steel. This will be short of requirements for domestic demand plus planned exports by about 2 million tonnes of finished steel in 1973-74. Taking into account the technological improvements, I.I.S.CO.'s expansion, the sixth blast furnace at Bhilai and Bokaro's completion by the end of the Fourth Plan, the availability will increase to 7.8 million tonnes of finished steel leaving a gap of about 0.7 million tonnes. In 1978-79 the gap is expected to be of the order of about 3 million tonnes of finished steel. The steering group expects that a portion of this gap would be met by installation of electric furnace-cum-continuous casting plants. The Group also emphasised upon the



need for new integrated steel plant in 5th Plan to meet the anticipated increase in demand of 5 million tonnes; it discussed the economics of medium-size steel plants of one to 2 million tonnes capacity which would serve as nucleus for further development. It is expected that during the Fifth and Sixth Plan periods, the three Steel Plants at Vizag, Hospet and Salem would not only have commenced production but also have begun their expansion programmes. The availability of adequate quantity of steel will solve the problem of steel scarcity.

In regard to Tamil Nadu the working Group on Raw materials, Finance and infrastructure, in the Task Force on Large Industries, headed by Mr. C. N. Raghavan, I.A.S., has made many valuable recommendations of which the following are important:—

(i) Rationalisation of the distribution of steel through a special network created for the purpose.

(ii) Establishment of a steel Bank for supplying steel for helping medium and large industries.

(iii) Expediting work on Salem Steel Plant.

(iv) Setting up of mini-steel plants in Madras, Tiruchirappalli and Coimbatore.

(v) Assuring an adequate supply of Metallurgical Coke through imports for use in the Steel Plants.

In regards to steel availability in the next 12 years in Tamil Nadu the Reports observes:

There is a serious shortage of steel, non-ferrous metals, coal, coke, ferro-manganese and other items. Even with the coming up of the Salem Steel Plant which will not be

before 1978-79, there will be no source of supply for mild steel except the quantities of billets that will be produced by concast plant at Arkonam. No precise quantification of requirements of steel is possible but having regard to the All-India consumption of 7 million tonnes of finished steel in 1968-69, Tamil Nadu alone may need over a million tonnes (1983-84) annually for feeding the metal based industries and meeting the requirements for residential construction, irrigation, power-project, etc. There will have to be dependence on outside States but with the coming into being of Visakapattinam and Vijayanagar project the position may not be very difficult in the VI Plan. For the V Plan, the State Government will have to make arrangements with Centre for securing a sizeable quota besides making its own arrangement for maintaining banks in strategic locations. There will be no problem of iron-casting but additional facilities will have to be created for steel and non-ferrous casting.

# DEVELOPMENT OF MADRAS CITY

## PLANS COMPLETED FOR ALL NEEDS

Tamil Nadu ranks second among the States of India in Urbanisation as revealed by the census of 1971 (30.8 per cent urban in the total Population of 41.1 million). Madras city, the largest city in the southern region of the country, and the only city in the State with its population exceeding one million, absorbs nearly 20 per cent of the total urban content of 12.5 million in the State, thereby establishing its over concentration.

The city of Madras has rapidly grown in its population from 5.53 lakhs to 24.7 lakhs in 1971. The Madras metropolitan area extending over the Madras City and its adjoining areas in Chingleput District covers about 450 square miles.

The goal of all development planning should be to strive towards better standards of living for every citizen within the context of available resources.

Madras City has attracted a number of large industries. Considerable unemployment and under-employment are noticed in the City, mostly in the age group of 15 to 34. The main approaches in effecting improvement to the economy of the metropolitan area could be—

- (1) Increasing employment.
- (2) Increasing output of goods and services.

The latter could be achieved by fuller capacity utilisation particularly in the secondary sector and also by setting up new industries. The industrial policy has to aim at both balanced regional development to reduce migration into City and stepping up industrial growth within the metropolitan area itself.

The concept of ring towns linked to existing major radial corridor and developing chosen urban nodes fits in as the best choice for the metropolitan area development. This has the advantage of less cost easy direction and also flexibility in allowing preservation and utilisation

of the existing urban centres and the future ones. The existing developments along the corridors will be grouped in well organised almost self sufficient urban nodes with their own employment, housing and commerce. It is proposed to distribute the 53.4 lakhs population in 1991 in a suitable manner in the City and suburbs.

Three ring towns at nearly 40 km. distance from the city are proposed to be developed initially with a population of one lakh each.

The Madras Metropolitan Plan envisages development of six major urban nodes outside the city proper but close to it along the three main

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corridors, apart from limited development along Calcutta Trunk Road, Poonamalle High Road and Mahabalipuram Road. Each major node is designed to hold 2 to 3 lakhs population and will be almost self serving units, linked with city and ring towns by rapid mass transit systems. Intraurban movement among the nodes will also be arranged by road and rail communications.

In urban planning, development of new areas is one aspect and renewal or redevelopment of older parts of the existing urban areas is another aspect.

The congested areas of George town, Triplicane, Mylapore and Chintadripet are ripe for renewal.

Urban renewal programmes can be taken up on capital investment on revolving principle.

Efficient transportation is a fundamental requirement in metropolitan areas. In bringing out a comprehensive traffic plan to achieve balance among various nodes and provide for safe, convenient and efficient movement must necessarily take into consideration present traffic movement, its characteristics, population growth, future land use and future desire lines. Such study has already been completed for the area.

Railways and buses serve as main transit for commuters to the City. In Madras at present, Railways play only a secondary role; both these services operate in overcrowded conditions. The doubling of the population by 1991 is estimated to increase the number of commuters and also result in quadruple increase in the number of vehicles. Such a situation demands establishment of balance between various systems of main transport. The main recommendations towards better transportation, apart from improving existing corridors qualitatively and quantitatively include, construction of rapid transport line along the high density corridors, construction of ring railway, ring roads connecting the major highways, replacement of all major level crossings, over railways with grade separators and improving terminal facilities both for railways and buses.

Housing is a main important sector which requires massive efforts in the metropolitan plan both within the City and metropolitan area. Almost one third of City's population is living in slum conditions. The magnitude of housing shortage warrants special concentrated efforts. The water-supply requirements by 1991 is estimated as 313 mgd. The sewerage system, which is quite unsatisfactory and inadequate now, requires to be suitably redesigned to cope up with the increased water-supply.

the  
living  
past

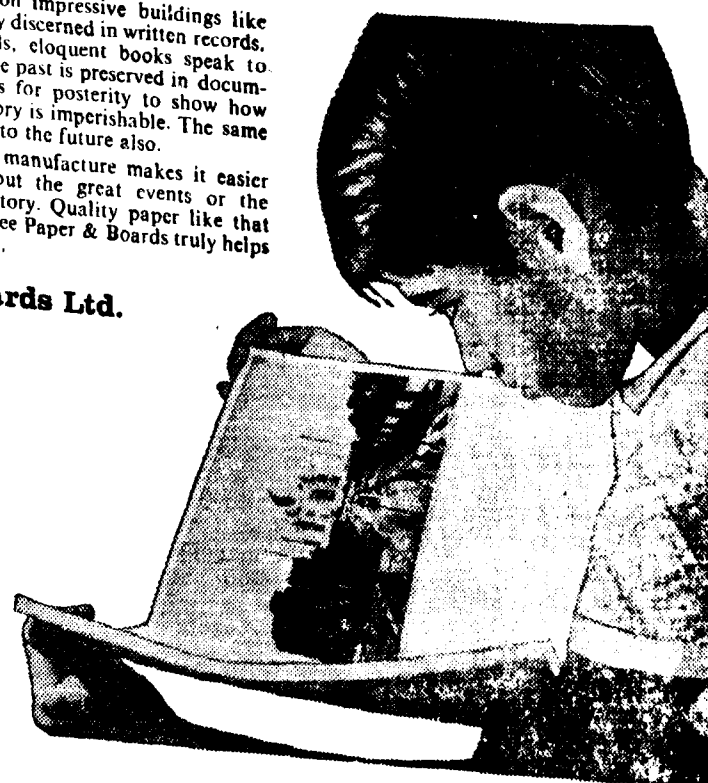
The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records, in place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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# TOURIST CENTRES IN TAMIL NADU

Tamil Nadu possesses a beautiful and attractive landscapes rich in scenic grandeur. It is a bright picture of Nature's tropical charm—a Paradise for tourists. The inspiring temple-dotted landscape with a grandeur of its own, the refreshing scenes of the groves and groves of gracefully swaying coconut and palmyra palms and the glistening verdure of rich paddy fields, etc., will all linger in the onlookers memory for a long time.

V

By

**S. J. SADIQ PASHA,**  
Minister for Public Works.

One of the greatest attractions of India for foreign visitors is the great diversity to be found in every respect, mode of living, dress, food, language and religion. Infact a traveller in India can never get bored. Life will surge past him in a picturesque procession.

Tamil Nadu is rich in scenic grandeur. The general landscape in Tamil Nadu is beautiful and attractive. It is bright picture of Nature's tropical charm. The inspiring temple-dotted landscape with a grandeur of its own, the refreshing scenes of the groves and groves of gracefully swaying coconut and palmyra palms and the glistening verdure of rich paddy fields, the calm villages and the busy towns and cities bustling with commercial and industrial activities will all linger in the onlooker's memory for a long time.

The Government of India and the Government of Tamil Nadu are paying special attention to the development of Tourism, both for its contribution to international understanding and amity and for its return in foreign exchange.

Attention is also now being paid to internal tourism as a potent factor in a national integration. Internal Tourism offers unlimited opportunities.

The places of interest in our Tamil Nadu can be given under the following broad categories :—

1. Places of Historical Interest.
2. Places of religious importance
3. Places of cultural centres.
4. Places of Health Resorts.
5. Traditional Arts and Crafts centres.
6. Industrial Centres.
7. Trade and Commercial centres.
8. Dams and Hydro-electric schemes.
9. Hill stations.
10. Wild life sanctuaries.
11. Places of educational interest, etc.

Tamil Nadu has a agreeable climate right through the year. Tamil Nadu is essentially tropical in its climate and vegetation. The tropical climate is, however, more

equable than in North India—the summers are not as hot, nor the winters as cold.

Tamil Nadu has something special to offer to everyone. There are two fine hill stations in Tamil Nadu, where nature blossoms forth into wild and breath-taking beauty. They are Ootacamund and Kodaikanal. Near Ootacamund is the famous Mudumalai Game Sanctuary. The Madras city which has been described as "the cultural gateway to the South", offers all the comforts of metropolitan city. From the city one can also comfortably visit historical places like Mahabalipuram and Kancheepuram and exhilarating Vedanthangal Bird Sanctuary. As one goes further South, there are the charming towns of Thiruchirapalli, Thanjavur and Madurai. In the Tirunelveli District is the invigorating Courtallam Falls. There are many more places of architectural, historical and other tourist interests. There are also many places with colourful local legends. Indeed, every nook and corner of Tamil Nadu can offer a rich and veriegated field for the tourist-explorer.

Tourism is on the threshold of new era as compared to all other means of cultural diffusion. Transport, stay, food, shopping, entertainment, etc., are very essential to promote tourism. Unlike western countries we can offer much more in cultural contributions in the form of our dances and music. Few countries can rival India in variety, colour and the emotional richness of dance forms. The country abounds in tribal dances. Folk dances and classical dances of great antiquity and virtuosity. Indian dance, particularly the South Indian dance has influenced the art forms of many neighbouring countries such as Ceylon, Indonesia, (particularly Bali and Sumatra) and Thailand and other East Asian countries. Inside India, dance is not regarded as merely an adjunct to Social Intercourse. It is much more than even a mode of aesthetic expression. It is considered to be a method of spiritual realisation itself. Dance is combining in itself action, song and rhythm. It is especially so in India where aesthetic theory has held dance,

music, drama to almost inseperable. All three are based on the principles elaborated in the ancient 'Natyakalai' or dance art.

There are four major systems of classical dance in India the Bharatha Nattiyam, the Kathakali, the Kathak and the Manipuri. Some of the other schools are Kuchipudi of Andhra, Oddisi of Orissa, Mohini Attam of Kerala, the Oyil Attam and Karagam of Tamil Nadu, etc. The classical systems have many features in common. All of them like our music are dominated by the 'Thala' concept. The Dancing foot is aided by hand gestures called 'Muthras' and by appropriate facial expressions.

Bharatha Natyam is the most important of the classical dances because of its religious associations, its intrigate technique and its elaborate style. Its home is Tamil Nadu it is essentially a temple dance. Bhava, Raga, and Thala or emotion, melody and rhythm are the three elements embodied in this classical dance. It has been aptly said that rural life in India throbs with a natural gaiety which expresses itself in popular dances. There are harvest dances, festival dances, dances to pray for rains, dances to lighten toil in the fields and at home, dances for special occasions, etc. Festivals like Pongal are special occasions for expressions of the villagers' love of rhythm. To most tribal people and to some villagers dance is a ritual and a way of life.

Tamil Nadu is very rich in this cultural tradition in preserving the ancient art of music, dance and folk arts. All through the centuries the Tamils have contributed greatly to the cultural heritage of the country. Their inspiring spirit has found ample expression in architecture, sculpture painting, dance and music. The Tamils have maintained contacts and harmonious relations with different countries in the Indian sub-continent and abroad from very ancient times. All through the successive historical periods the key note of the Tamil culture has been the universal outlook and hospitality of the Tamils. They have rightly for their maxim, the saying "Yadum Ure ;

Yavarum Kelir ". (Every country is my country ; Every man is my kinsman").

Some hotel owners in India seem to imagine that the foreign visitor craves for nightclub shows in dim light after a tiring day of sightseeing. Would not Indian Dancing with its rightness and variety to be more appropriate ? We the Tamils have much to offer to the tourists in architecture, sculpture, painting, music and dance. The hotel owners and the travel agents can do much in this regard.

Our villagers have always had a good deal of artistic creative faculty and they still have it. We must try to create opportunities for the tourists to see for themselves such original cultural settings in our land. In the case of internal tourist trade also the aspect should be encouraged. I wish that there must be schemes to promote the internal tourism to promote better understanding among people of different regions. Conducted religious tours, educational and cultural tours could be arranged with much advantage. Cultural fusion and understanding is one of the vital link that promotes both foreign and internal tourism in our country. Even though Tamil Nadu has many natural, historical and cultural attractions that foreign tourists usually look for tourism could not attain the status of an industry till recently. Considerable progress has been made towards the development of this industry in our State during the last five years. The increase in the volume of tourist trade is bound to create a considerable amount of employment in the hotel industry, transport and other allied industries. I congratulate the management of Hotel Asoka for having organised this programme to promote tourism and better understanding. On behalf of the Government and the people of Tamil Nadu, I welcome you all particularly our foreign tourist friends to witness this dance programme specially arranged for their benefit, which I hope that you will all enjoy and appreciate. While concluding my remarks, I wish you all a very happy Pongal Greetings.

(Speech delivered by Thiru S.J. Sadiq Pasha, Minister for Public Works at Hotel Asoka on 16th January 1973 during Pongal Week Celebration.)

## PONGAL- FESTIVAL OF FESTIVALS

Pongal, the harvest festival of Tamil Nadu is celebrated from January 13 to 16 every year, when the sun basks right over Tamil Nadu in the celestial track.

It is a thanks giving festival to the Sun God observed by the farmer who offers him sweet-rice (Pongal). The bounteous harvest of rice, sugarcane and other agricultural products, provided the back drop for mirth and revelry.

The first day is devoted naturally to cleaning the house of the harvested hay and the chaff and is known as Bhogi when a bonfire of the discarded materials in the household takes place. On the second day the Pongal is prepared and after the worship of the Sun God, relatives and friends partake it sumptuously. The third day is the Gala day for the Cows and Bulls, the farmers, friends. The grateful farmer offers them specially cooked rice and worships them decorating them with multicoloured paints and beads. The fourth day is an out-door meet. Donning himself in new clothes, the farmer calls on friends and relations or goes out on sight-seeing trips, picnics and excursions, etc. This day marks the holding of the famous village sport "JALLIKATTU" (cattle chasing and taming).

To have glimpse of this hilarious rural festival of Tamil Nadu, the Tamil Nadu Tourism Department has done its best to take this festival to the cities, the Tourists are visiting.

Pongal is the festival of festivals when the rich and poor alike abandon themselves to gaiety. The terrain of the Tamil country during this period is a carpet of green fields interspersed with golden stalk of paddy plant and full-grown sugar cane, rich bushy stalks. The farmer fortified with bumper harvest is at his best, both in wits and in cheer.

# PONGAL TOURIST FESTIVAL IN TAMIL NADU

As decided by the 13th All-India Tourism Development Council meeting held at Madurai in 1970 that each State should adopt a festival and celebrate it as a tourist festival to attract more foreign tourists and to enlist the co-operation of the people, the Government of Tamil Nadu is celebrating Pongal Festival as tourist festival every year, since 1971.

This year the Pongal Tourist Festival was celebrated from January 14th to 21st all over the State, more particularly in Madras, Tiruchirappalli and Madurai. Government of India, Tourist Offices, leading hoteliers, travel agents, Air India, Indian Airlines, Railways, Indian Oil and others connected with tourism had taken active part in the festival.

The festival was inaugurated on January 14, 1973. The Union Minister for Civil Aviation and Tourism, Government of India, the Chief Minister of Tamil Nadu and Minister for Backward Classes and Tourism, Government of Tamil Nadu were some of the dignitaries who participated in the inaugural function organised by the Department of Tourism. The Valedictory function on January 21, 1973, was arranged by the Corporation of Madras at My Lady's Garden where the Mayor of Madras honoured tourists by hosting a reception. During the rest of the days leading hotels hosted, a reception to foreign tourists.

On the inauguration day Pongal scene in a rural setting was enacted, near Rajaji Hall with the help of Q.M.C. students. The cultural programmes of the week included Bharathanatyam, dance, drama, folk dances like Karagam and Dummy horse, Perani attam, etc.

Foreign tourists arriving on the first day at the airport were received with garlands, sandal paste, etc. The first and every subsequent 100th

visitor were given a gift of special souvenirs and/or free tour to important tourist centres. Special souvenirs were also given to foreign tourists by hoteliers. Airlines like Singapore Airlines and Indian Airlines served Pongal as desert on all their flights during the week. Sugarcane was also served. Picture post cards were distributed to passengers in IAC and AIR India Flights during the week.

Inaugurating the Pongal tourist festival organised by the Department of Tourism, Tamil Nadu, at Rajaji Hall. Dr. Karunanidhi, Chief Minister said that "it is appropriate that the festival is being celebrated for a week commencing from the Pongal day and that it is an occasion for rejoicing for the peasants."

He congratulated the State and Central agencies connected with tourist promotion on their co-operative effort in having recreated the rural atmosphere near the meeting place by putting up a hut cattle shed, a well, a hay stock with heaps of paddy on the threshing floor.

"During my visit to the United States a year ago, I had been invited to witness a festival in Oriando where a typical Red Indian village had been built with the inhabitants in their native customs. He gone out an idea that an ideal Tamil village should be put up on the Nehru Stadium maidan with a programme of music and folk dance conducted in connection with the festival."

"Tourism has a great potential for earning foreign exchange. Switzerland has developed tourism to such an extent that its income from tourists promotion equalled that of the United States. I would like to appeal to the Centre to be more liberal in the provision of

assistance to Tamil Nadu for improvement of tourist facilities."

Thiru K. Rajaram, Minister for Backward Classes and Tourism, who presided, said that the festival had been organised to give wide publicity to places of tourist attraction in Tamil Nadu like the beautiful Marina beach, the hill resorts of Kodaikanal, Ooty and Yercaud and the magnificent sculptures in Temples. A tourist guest house had been constructed in Yercaud hills. The State Government had earmarked Rs. 1.5 lakhs for further improvement of the Sanctuary for Birds and Wild Life at Point Calimers.

A. V. P. Asaithambi, Chairman of the Tamil Nadu Tourist Development Corporation, who welcomed the guests, said that at present only 12 per cent of the tourist visiting India came to Tamil Nadu because there was no adequate publicity for places of Tourist interest in this State. He declared that the Tamil Nadu Tourism Development Corporation would establish top class hotels in each district headquarters within the next three years.

Oliver Paterson, the first foreign tourist to arrive in Madras during the week, was presented with a Thanjavur Plate by the Chief Minister on behalf of Tamil Nadu Department of Tourism. Thiru Paterson said he had landed in Madras only a couple of hours before and that he had been impressed by the friendliness of the people. About 60 other foreign tourists were also feted on the occasion both at Air Port and at their hotels.

## POST OFFICE SAVING ACCOUNT.

One out of every 20 persons in India now has an account in the post Office Savings Bank, according to official statistics released by the P & T Department. The post Office Savings Bank, which is the oldest Government-owned and seperated bank in the country, is also the biggest, with more than 25 million account holders at present. The number of accounts has registered as eight-fold increase since 1947, when there were only about three million depositors.

## SCHEME FOR REGISTRATION OF DEALERS AND INSTITUTIONS

The State Sales Tax Advisory Committee has recommended that business Associations and Trade Bodies which require copies of Bills, Acts, Amendments to Rules, Clarification, etc., should register themselves with the Government and subscribe annually towards their membership.

The Government have decided that the scheme which is in force only in Andhra Pradesh may be suitably adopted in this State also, with certain modification.

The details of the scheme that will be adopted in Tamil Nadu are as follows :—

Any dealer, trade association, sales tax practitioner or other interested person may get himself registered under the scheme with the Deputy Commissioner (Intelligence), Madras by submitting a written application in this behalf addressed to the Deputy Commissioner (Intelligence), Madras and renew his registration every year, if he desires to get copies of the publications. The application shall specify in full, the name and address of the applicant and shall be accompanied by a chalan in token of payment of the fee payable under item (c) below. The fee amount shall be credited to the Head of Account "XII.d. Sales Tax—General Sales Tax—Miscellaneous".

Any person who has registered his name as stated above or has renewed his registration, will be furnished with copies of the following publications :—

Copies of all State Bills, Ordinances and amendment Acts relating to Commercial Taxes published in the *Tamil Nadu Government Gazette*.

Copies of all rules and notifications issued by the State Government under the State Commercial Taxes Laws and under the Central Sales Tax Act and the amendments thereto ;

Copies of all Press Releases issued by the State Government in regard to Commercial Taxes.

The fee for registration or renewal for registration will be Rs. 50 for each year commencing from 1st January. The payment of this fee will entitle the person to a copy of each of the publications referred to in item (b) above. An additional fee of Rs. 5 will be charged for the supply of every additional copy required and the maximum number of copies that may be supplied to any one person registered will be 5 [the fee for which will be Rs. 50 plus Rs. 20 (4 × 5), i.e., Rs. 70].

Any person may register himself or renew his registration during the period commencing from 1st January to 31st December of the succeeding year on payment of the prescribed fee but any such person will be furnished only with copies of bills, Act, etc., issued after the date on which registration has been effected and up to the date on which registration is in force.

Any person who has been registered should promptly notify changes in his address etc., to ensure despatch of the publications to the correct address.

All communications will be sent by ordinary post to the address specified.

Every attempt will be made to send the required number of copies promptly. The Government will however, be in no way responsible for the non-receipt or late receipt of copies or of shortage in the number of copies as received.

The Government will be at liberty to modify the scheme as they think fit without notice.

All the publications including to Press Release relating to the Commercial Taxes Department will be supplied by the Deputy Commissioner (Intelligence), Commercial Taxes, Madras-5.

For further details, the Deputy Commissioner (Intelligence), Commercial Taxes, Madras-5, may be contacted.

## SHORE COTTAGES AT MAHABALIPURAM

An ideal beach resort in keeping with the grandeur of the archaeological monuments has come up on the sea sands in Mahabalipuram near Madras. It will be inaugurated by Dr. Karan Singh, Union Minister for Tourism and Civil aviation, in the first week of February. Twenty "shore cottages" and eight rooms of international standards overlooking the Bay of Bengal and with a good view of the shore temple have been constructed and air conditioned to accommodate 32 couples.

The Rs. 17 lakhs project was undertaken by the Indian Tourism Development Corporation to provide more facilities for tourists.

The cottages are of three different types.... cottages with elevated floor four feet above ground supported by concrete pillars and outer walls covered by bamboos ; twin cottages with first floor and random rubble masonry cottages with sloped roof. Instead of the usual steel and wooden furniture the cottages are provided with cane furniture to give a rural atmosphere.

A "safe swimming area" has been demarcated in the sea by providing buoys. There is a swimming pool with a paddling pond for children in the midst of the cottages. Near the pool is a snack bar with asbestos roof covered by thatched leaves. Other attractions in the complex include a curio shop, number of umbrellas made out of palmyrah trunks and leaves, lacquered bead curtains and cane swinging chair in the front site out of each cottage.

The water supplied from the two big wells has been tested and approved by the King Institute, Guindy, as potable. It will be chlorinated and chilled before distribution. A purified chilled water plant has also been installed.

The ITDC is planning to build 20 more cottages in Mahabalipuram as the tourist traffic is bound to increase in course of time.



# BUS NATIONALISATION IN TAMIL NADU BECOMES REAL

The Governor promulgated on January 13, 1973 the Tamil Nadu Stage Carriages and Contract Carriages (Acquisition) Ordinance which provides for the take-over of passenger bus transport services in the State over a period of five years.

The Ordinance has since been passed as Bill in the Tamil Nadu Legislative Assembly.

Under the Bill the acquisition of stage carriages will begin with the district wherein comparatively fewer number of stage carriages are operating and shall later be extended to other districts. On this basis the buses in Nilgiris District were nationalised in the first instance.

The following order of the districts for the purpose of take-over has been given in a schedule attached to the Ordinance: Dharmapuri, Ramanathapuram, Tirunelveli, Thanjavur, North Arcot, Tiruchirappalli, Chingleput, Madurai, Coimbatore and Madras.

This is in consonance with the Directive Principles of State Policy embodied in the Constitution, and the Tamil Nadu Government considers it expedient and necessary to nationalise the passenger transport system in the State in stages and has decided to complete the process within five years.

## Boost for Nation Building Activities :

The Government is convinced that development of a vital sector like passenger transport on sound lines, having regard to public interest, could not be done of the private sector working merely for profits and expanding only in sectors where profits are available. It recognises the need for connecting all villages in the State to the passenger transportation system to enable the rural people to move about freely and reach marketing and population centres. In fact, without an expanding net-work of transportation system, the Governments' programme of social welfare in fields such as family planning, education and house build-

ing could not be successfully implemented. In the early stages, it would be necessary to run some passenger transport services in these areas which might not be paying immediately, and this would be possible only under public ownership.

The Government has also observed that there is "wasteful competition" in running passenger transportation service in certain sectors, whether it be competition among private operators or competition between private operators and Government transportation systems. The Government has therefore, come to the conclusion that if the passenger transport system were to run on efficient and economic lines for the benefit of the community as a whole, it would have to be nationalised.

## Abuse in Contract Carriage System :

Operation of the contract carriages has led to a lot of abuse. Many of the contract carriages have been functioning like stage carriages resulting in unhealthy competition. It has, therefore, become necessary to nationalise them also.

According to the statement, the Government also recognises that existing laws, Central as well as State are inadequate to speed up the pace of nationalisation. To achieve the objective of taking over the entire passenger transportation system in a phased manner during the next five years, it has been decided to bring in more comprehensive legislation which would override the provisions of all the existing legislations in the field and enable the Government to implement the programme.

## No New Permits :

The ordinance bars any person from applying for a new permit for renewal of the existing permits for any stage carriage or contract carriage in the State. It also prohibits any transfer by way of sale or gift of any

stage carriage or contract carriage liable to be acquired under the ordinance, except in favour of the Government.

Under clause 4, on and from a notified date, all rights, title and interest of the State carriage operator in or over such lands, buildings, workshops and other places and all stores, instruments, machinery and other equipment predominantly used for the maintenance or repair of the stage carriages shall vest in the Government absolutely and free from all encumbrances.

The Government may appoint such number of officers as may be considered necessary as Administrators for arranging the take-over of the acquired property and to carry out such other duties as may be assigned to them.

The ordinance gives the following figures of the total number of buses operating in the State district-wise: Nilgiris-133, Dharmapuri-262, Ramanathapuram-423, Kanyakumari-439, South Arcot-471, Salem-496, Tirunelveli-500, Thanjavur-540, North Arcot-598, Tiruchirappalli-642, Chingleput-645, Madurai-845, Coimbatore-1,056 and Madras-1,371, Total -8,421.

The Government has also published a set of rules framed under the ordinance.

In a separate notification, the Government has fixed January 14, 1973, as the date on which the provisions of the ordinance come into force in Nilgiris District and has appointed the Personal Assistant to the Collector as Administrator for the district for the purpose of the ordinance.

Another notification listed about 20 private transport services operating in Nilgiris district and declared that stage carriages and other properties acquired from them would be transferred to the Cheran Transport Corporation with effect from January 14.

# BEATITUDES SOCIAL WELFARE CENTRE

At Vysarpady, on the northern outskirts of Madras City, is a six-acre plot of land on which is a veritable complex of every type of humanitarian and social service. It is appropriately called the 'Beatitudes' Social Welfare Centre. At the time this project was conceived of in 1955, the late Fr. O. Mantovani S.D.B., an Italian Salesian Missionary, a dedicated social worker and friend and lover of the poor in India the place was a marshy water-logged area, an eyesore of the city.

Today, at the 'Beatitudes' Social Welfare Centre a variety of facilities exist; a workshop, a printing press, providing gainful employment to the blind and other handicapped and the leprosy patients. A hospital, staffed by three lady doctors looks after as many as 80 in-patients and more than 300 out-patients daily. There is also a leprosarium with over 300 inmates.

In the kitchen attached to the Centre 3,000 meals and 1,500 litres of milk are served to the poor.

More than 100 poor girls from the nearby villages are being trained in needlework in the Tailoring section so as to provide them with means of earning their own livelihood. In the Day School, over 700 poor children are studying. The Typewriting Section trains young boys and girls in shorthand and typewriting.

Other activities run at the Centre include 7 night schools; a Young Club for 400 boys and young men and a similar one for girls; a Brick-Making; Cigar making; a school for Driving and Motor Mechanics-Battery Charging; Flour Grinding; Carpentry and Woodwork; Blacksmithy; Cycle Weaving; Tower Bolts and Candle Making.

One more benevolent institution was added to the 'Beatitudes' Centre on the 14th April last, when Sri K. Rajaram, Minister for Housing, Government of Tamil Nadu inaugurated the St. Thomas Centenary Home for Destitutes to coincide with the centenary celebrations of

St. Thomas in Madras. This Home gives shelter to abandoned diseased beggars picked up from the streets of Madras and for other helpless aged people who have none to care for them. Sri Rajaram and Cardinal Parecattil, Archbishop of Ernakulam, who presided over this inaugural function, paid great tributes to the Salesian Fathers for the dedicated service they were doing for the neglected humanity at the Centre and elsewhere in the city and in Tamil Nadu, in the educational, social and cultural fields.

The excellent humanitarian work done at the 'Beatitudes' Social Welfare Centre has aroused the interest and appreciation of international aid giving agencies. Moreover, the West German Bishops Organisation which renders all kinds of aid to developing countries, has donated an ambulance van. Memisa in Holland has offered to build staff quarters and a clinic. Mr. & Mrs. Frank Bray from the Dublin Race Club and a party of Italians from Rome, who are keenly interested in the work of the Centre, made a special visit to Madras to see the progress made and to decide on how to intensify their aid for the much needed acts of charity.

The 'Beatitudes' Social Welfare Centre is an absolutely non-denominational project open to all, irrespective of caste or religion and most of its beneficiaries are non-Christians. Fr. Mantovani S.D.B. the founder who died in 1967 was succeeded by Fr. F.M. Schlooz S.D.B. as Director of the 'Beatitudes' Social Welfare Centre. A dutch national Fr. Schlooz has made a valuable contribution to the phenomenal expansion of the Centre's activities. In May 1970, Queen Juliana of the Netherlands,

conferred on Fr. Schlooz the decoration of Chevalier in the Order of Orange Nassau, "for the excellent services he has rendered to the people of Madras, specially for those whom he has fed, clothed, employed and looked after at the 'Beatitudes' Social Welfare Centre"

At the Centre, there are five foreign and five Indian volunteers helping Fr. Schlooz in his laudable work.

—Gratian Colaco.

## SELF-SUFFICIENCY IN SMALL-POX VACCINE.

Production capacity of the four vaccine producing institutions in the country is being stepped up from 61 million doses to the annual requirement of 156 million doses. This will be achieved during the year 1973-74 which will make the country self-sufficient in freeze dried small-pox vaccine.

The four institutions producing vaccines are: State Vaccine Institute, Patwadangar, U.P., Vaccine Institute, Belgaum, Mysore, Kings Institute, Guindy, Tamil Nadu and Institute of Preventive Medicine, Hyderabad.

## FIVE HUNDRED PER CENT INCREASE IN MEDICAL ADMISSIONS.

The annual admission capacity in the medical colleges in India during the last two decades has gone up from 2,500 to 12,300, registering a 500 per cent increase in the number of M.B.B.S. seats.

The number of medical colleges in the country today is 99 as against only 30 in 1931. 12,300 medical seats in these colleges for a population of 56 crores works out to a ratio of 1:45,000. This has even exceeded the norm of one medical college, with one hundred annual admissions for a population of 50 lakhs as recommended by the Mudaliar Committee.

# KNOW YOUR HEART TO HELP YOURSELF

According to the only available sources of data collection on heart disease—insurance companies, hospitals, epidemiological surveys and autopsies—11.20 per cent of the total heart patients suffer from coronary heart disease; a further 11 to 20 per cent have hypertension; 22 to 40 per cent of the heart patients have rheumatic heart disease; 13 to 18 per cent have chronic cor pulmonale; one to two per cent suffer from congenital heart disease.

A recent study has brought out that the death rate on account of cardiovascular disease is 137.3 per 1,00,000 population. Although the death rate has fallen all over India since Independence, the mortality on account of circulatory diseases has increased by 220 per cent.

## Coronary Heart Disease.

If you are of nervous temperament and get easily irritated, belong to the upper middle class, or generally chair-bound and smoke cigarettes, you are risking a coronary heart disease.

In a coronary heart disease, major arteries get clogged with fat preventing the blood from flowing and causing the arteries to harden, a condition known as 'Ischaemic' heart which may eventually lead to a heart attack. This condition can be avoided by physical exercise, maintaining normal weight and giving up smoking.

Heredity too plays a no insignificant role. If your parents or grand parents suffer from heart disease you have to be more careful than others.

## Hypertension or High Blood Pressure

Abnormal rise of arterial blood pressure, as a result of the narrowing of the arteries, is called Hypertension or high blood pressure.

Even a normal person can experience high blood pressure for a

short while under conditions of emotional stress, shock or violent physical exercise. It is only when the pressure remains constantly high, the condition is recognised as a disease.

Over-weight and a sedentary occupation, under strain of modern life, are also contributory factors. Kidney disease sometimes results in this condition too.

If you suffer from giddiness, palpitation of the heart, difficulty or distress while climbing stairs or taking physical exercise you must have your blood pressure checked up. It can be controlled by administration of modern drugs. The Indian herb 'Sarpagandha' has also been used effectively by some people. Cutting down on salt, fats and carbohydrates in the diet will also help the patient.

*Rheumatic heart disease, not a condition for the rich alone.*

Even if you do not have affluent circumstances, you need not go about with the conviction that you are immune to heart diseases. Not so at all! Living in slums and remaining underfed and undernourished, expose you to the hazards of rheumatic heart diseases.

Acute rheumatic fever results in damage to the heart muscles and is called rheumatic heart disease. It generally manifests itself in childhood and adolescence. One attack of rheumatic fever does not damage the heart, but repeated attacks can damage the heart valves, particularly on the left side of the heart leaving the affected persons seriously disabled for life, sometimes causing death. A child who suffers frequently from attacks of sore throat should be put under medical supervision. Antibiotics have to be administered for a long time. The damaged heart valves can be corrected by surgery.

Enlargement and failure of the right ventricle of the heart as a result of lung disease is called 'Cor

Pulmonale'. Chest infections and chronic asthma over a long period of time strain the heart. The winter smoke in northern India and smoke from cow dung fires make people more prone to chronic bronchitis. The primary chest infection should be treated as soon as possible.

Prevention of air pollution, chimney smoke, automobile exhausts fuel and the like will go a long way in preventing 'Cor Pulmonale'.

Anomalies in the development of the heart in the foetus result in congenital heart disease. The defect may take severe forms and also result in various grades of incapacity.

Rehabilitation of heart patients, specially those who live in rural areas is a major problem. However, satisfactory facilities for the treatment of heart diseases exist in almost all. A major urban centres of India. Departments of Cardiology exist in most of the hospitals attached to medical colleges. In the coming years, more of such facilities will be available at the doorstep of even the rural people through the mobile hospitals, as one such hospital is proposed to be attached to every medical college.

## EFFECTIVE DRUG CONTROL MEASURES.

Several steps are being planned by the Ministry of Health and Family Planning for enforcing effective drug control in the country. States which do not have their own drug testing laboratories will be given financial assistance for setting up combined food and drug testing laboratories. These laboratories will be set up during the Fifth Plan.

To begin with, four States in the country are being requested to initiate action and a provision of Rs. 20 lakhs has been made during the year 1973-74 for the purpose. The existing six food laboratories in the States are being strengthened for which a sum of Rs. 15 lakhs has been allocated during 1973-74.

# HOW TO GET OVER THE SMOKING HABIT?

**"It is difficult to convince the smoker that he is being seriously injured. The main purpose of this article is to point out the evils of smoking and appeal to the addicts, especially the younger generation, to give up the habit".**

Many people have become addicted to the habit of smoking little knowing its evil effects on heart, mental ability and muscle strength. Surely most addicts have succumbed to tobacco when habit, association and appetite have gotten the better of their will power and judgment. The constant increase in cigarette addiction among the present day youth is the example of adults, parents, teachers, doctors and other men of rank and name. It is of course an uphill task to convince the youngsters of the dangers of this habit and persuade them to pledge themselves against the use of tobacco when most of the elders whom they respect and admire are constantly putting around them. The main purpose of this article is to point out the evils of smoking and appeal to the addicts, especially the younger generation, to give up the habit.

It is difficult to convince the smoker, that he is being seriously injured, because, he feels at his best while under the immediate influence of the smoke. In fact this may be said of all habit forming drugs. Nicotine, the active principle of tobacco is one of the most deadly poisons known to science.

It is the poison used by gardeners to kill insects and pests in plants. It is so deadly that it must be very carefully used and in very dilute form. So virulent a poison it is, that its use is now a days given up and other milder substitutes are used. Stychnine commonly known as 'rat poison' is another deadly poison. One or two grains of it is enough to kill an adult human being. But 1/15 grain of Nicotine is sufficient to cause death to an adult and 1/7 grain is always fatal. Such a virulent a poison is found in cigarettes in varying quantity in different brand of cigarettes, the nicotine content running from 1 per cent to 9 per cent with an average of 3 per cent. Nicotine is not the only injurious substance contained in the tobacco smoke. It contains not less than nineteen poisons of which Nicotine, carbon monoxide, carbolic acid, sulphuretted hydrogen are the worst enemies. That which makes the cigarettes specifically injurious is the fact that the smoke of the cigarette is inhaled or usually drawn into the lungs, the mouth, the nose and the related air passages. The delicate membranes allow the poisons to pass into the blood stream leading to a permanent arrest of physical development.

The absorption of these poisons, although gradual and in minute quantity has a decided effect upon the body. Smoking also impairs both the sense of taste and of smell and smokers' throat is a well known condition arising from the action of these poisons on the delicate membranes of the vocal cords. Research 'On the evils of smoking' has shown that tobacco smoke is a large factor in producing ulcer of the stomach.

Nicotine produces an excessive amount of HCl in the stomach and this excess is not only a factor in the causation of the stomach ulcers but also keeps them from healing once they are formed. Duodenal ulcers are said to be common among smokers. That is why

doctors refuse to treat gastric and duodenal ulcers unless the patients will refrain from smoking. Medical researches have shown that smokers are more susceptible to the tubercular germs and all respiratory diseases than non-smokers.

It has been experimented and established that a smoker's heart beats on an average of nine beats faster during smoking and that after exercise, his heart returns to normal much more slowly than the non-smoker's. All medical authorities agree that tobacco is a heart poison. The poisonous effects of smoking lessens the calibre of the elastic muscular tissues of the blood vessels, which helps to propel the blood throughout the body. Consequently extra work is demanded by the heart to propel the blood through the blood vessels. This causes increased blood pressure and hypertrophy of the heart muscles and ultimately resulting in heart failure or apoplexy. The detrimental effect of tobacco on the heart and arteries is undoubtedly one of the causes of the starting increase in cardiovascular ailments these days. Many a man's death certificate simply reads 'Apoplexy' or 'Heart Failure' where as, it should read 'Apoplexy' or 'Heart Failure' caused by long continued use of cigarettes.

by

S. Perumalsamy, M.A., M.Litt.,  
Dip. in Geography.

The liver is the organ to be thanked chiefly for the partial disposal of the tobacco poisons. But when called upon to do double or treble duty in disposing of the nicotine, the smoker absorbs into his blood, its normal work of refining the crude products of gastric and intestinal digestion is greatly handicapped and hence an over worked liver

allows waste elements to accumulate in the blood and tissues. This accounts for the lessened endurance of smokers in sports competition.

Because the evil effects of tobacco are not seen by the naked eye in the smoker's heart, blood vessels, stomach and liver, day by day as he smokes, and because he does not fall dead after he smokes a cigarette, it is foolish for him to conclude that smoking is not bad. Remember that tobacco kills slowly but never less surely. A smoker is committing suicide on the instalment basis.

It is bad enough for grown up men to smoke. They know fully well that they are injuring themselves by habit. But what does it matter for their best days are practically over. Whereas a youth who becomes addicted to smoking is injured to much greater extent. During the years, before full physical and mental maturity has arrived, the poisons of tobacco do irreparable damage. To contract this habit when the growth factors of the body are exerting themselves to their maximum, is to handicap oneself, physically and mentally for life. It is admitted on all hands that in the immature, even the moderate use of tobacco, stunts the normal growth of the body and mind, and causes various nerve disturbances especially of the heart. Probably that was why Thomas A. Edison, the famous scientist had once said, "I would rather see a boy with a revolver than a cigarette. I employ no person who smokes cigarettes".

In fact smoking blunts the whole morale stature and has an appalling effect upon the physical systems as well. It first stimulates and then stupifies. It produces enlargement of the heart. Nine out of ten cases of palpitation of the heart in youth is caused by the smoking habit. Bright boys are turned into lunces, straight forward and honest boys degenerate into dishonest cowards of smoking. Tobacco is not only the greatest menace to mental acumen, but also takes away the will and ambition to rise to top level.

Every leading sportsman has no two opinions about the use of tobacco and cigarette. All of them say that sports and tobacco won't

mix. Non-smokers have far more energy, much greater stamina and much better control of their nerves. No youth can become a star athlete or player if he uses tobacco in any form, because it cuts his wind and affects his heart.

After all this delineation of the evils of smoking, upon the body, mind and morals, the question arises as to how to help the young cigarette addicts to leave off the habit. It is true that but a few of the tobacco addicts ever succeed in giving up the habit even when they have a desire to do so. All the same, one can break a way from the habit, if only he wills.

It is not by smoking a few cigarettes less tomorrow than today and thus keep cutting down the number to thrice a day, two a day and so on, that an addict can give up the habit. This method has often resulted in disappointment. This is also painful to endure. If one honestly desires to rid himself of this habit, he has 'to give it up'. Many fail, because they never reach this desire point. All the will power and determination must be mobilised for action. After completely stopping smoking on one fine day, keep away from smokers and the tobacco laden atmosphere as far as possible, for about a month. After each meal, rinse the mouth with 3/4 per cent of silver nitrate solution; this creates a distaste for tobacco smoke and also will relieve the throat irritation. Drink orange juice, grape juice and when the temptation comes, reach for an orange instead of a cigarette. Keep out in the open as much as possible and keep the mind occupied.

Smokers are generally fond of highly seasoned foods and stimulating drinks. An addict who has resolved to break away, should stop the use of peppers, mustard, hot sauces and other condiments, since they induce an appetite for narcotics and tobacco. Then the craving will be lessened in a short time. Then adoption of a vegetable and fruit diet largely takes away the craving for the tobacco. If the above tips are faithfully followed, the craving will be lessened step by step and by the end of the month it is not unusual to find that the craving has almost disappeared. It is worth-while for the addicts to give it a trial.

## MASS VASECTOMY CAMPS YIELD ENCOURAGING RESULTS.

The tribal district of Baster in Madhya Pradesh has given a new lead in the Family Planning Campaign. In the first ever mass-vasectomy camp organised in the district over 25,000 operations were performed against a target of 10,000.

In the vasectomy campaign launched in Maharashtra in December 1972, nearly three lakh operations have been performed against a target of 2,92,000.

Similarly in four southern States of Mysore, Andhra Pradesh, Tamil Nadu and Kerala and the Union Territories of Pondicherry and Laccadive Group of Islands over two lakh sterilizations and 35,000 IUCD insertions were done during the first half of 1972-73.

Over three lakh vasectomy operations have been performed in the mass vasectomy camps in Uttar Pradesh since October last. With this the State has performed over 12 lakh vasectomies since the inception of the programme. Nearly half the number of districts have fulfilled their targets.

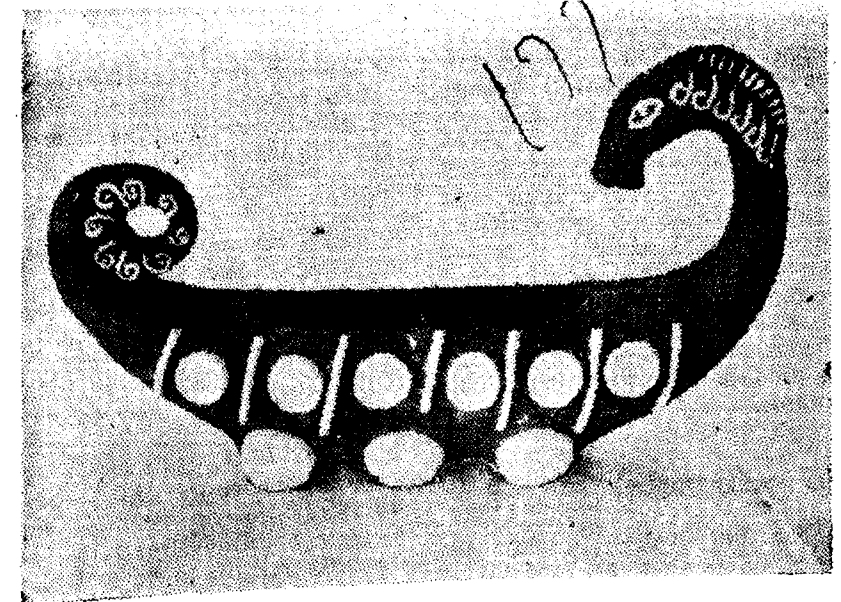
A notable feature of the campaign has been that a good number of muslims co-operated with the programme—one tenth of the total number of persons vasectomised were Muslims.

Every person coming in for vasectomy was given a thorough medical check-up. In case some other disease was discovered, this was promptly attended to in the camp or in the nearest hospital. And this paid rich dividends.

Bihar too has not lagged behind. Over 30,000 vasectomy operations have been performed in the special camps functioning in all the districts since February 11th. In special Family Planning drive in the State, railways have also joined hands in organising to vasectomy camps at Kathir and Samastipur.

# TAMIL NADU MARCHES AHEAD IN CERAMIC PRODUCTS

By  
**P. S. MENON,**  
Joint Director of Industries  
and Commerce.



A fine jasper tableware.

Art pottery is a line which has not at all been developed in our country. Some art pottery is manufactured by few individuals in Calcutta, Delhi and Bombay. Items produced by them are few and they are highly priced. Only the upper sections of the society can afford to buy them.

In more developed countries art pottery items are manufactured not only by individual studio potters but also by fairly large commercial concerns. Therefore such countries produce not only highly expensive ceramic art items executed by individual artisans but also art-cum-utility ceramic items manufactured by commercial units are priced comparatively low. As already stated in our country some ceramic items are manufactured by studio potters but there has been no large scale commercial production of such items.

Considering the vast scope for developing this line, Government of Tamil Nadu has started two training institutions in art pottery items, one at Perambur in Tiruchirappalli district and the other at Vridhachalam in South Arcot district. These units train a total of 25 persons every year in the manufacture of art pottery items. The training imparted consist mainly in casting of articles, decorating, firing, etc. The one year training imparted to them would not enable them to enter the field of ceramic designing as ceramic designing is a highly specialised line. This training would not also enable them to compound their own glazes, colours or bodies. For

such work a more thorough theoretical training and practical experience are required.

The two units run by the Government impart training to students who have some aptitude in art. The minimum qualification prescribed for admission is a pass in III Form. After the one year training in these institutes, it will be possible for the trainees to get employed in ceramic factories as glazers, decorators, casters, etc., in units manufacturing crockery. The trainees, who have completed their training, have found it possible to get absorbed in ceramic factories in the State itself including TANSI Ceramics which has gone on a big way in the manufacture of decorated crockery items.

The two institutions employ artisans for imparting training to the students. These artisans have been selected from those coming out from the College of Arts and Crafts. In designing art pottery one has not only to be a good artisan but must also have sufficient theoretical knowledge about compounding of bodies, glazes, colours, etc. Since the artisans have the necessary skill and have also gained sufficient technical knowledge in the field of ceramics, it was thought that by properly encouraging them, it would be possible to evolve large number of designs in ceramics. An attempt was, therefore, made few years back to hold an exhibition of the designs evolved by the artisans in these two institutes. The exhibition proved a success as many of the designs were appreciated by



public. It was then decided that the artisans should be encouraged continuously to produce new and better designs every year. Therefore annual exhibitions of designs produced by these artisans were held and the artisans whose designs were adjudged as best, were also presented suitable awards. Such encouragement went a long way in creating necessary enthusiasm among the artisans to vie with one another to produce attractive designs for awards.

#### 8th Annual Display.

The 8th Annual display and sales of ceramic art and utility items in the two training institutes was held at Rajaji Hall, last month. It was inaugurated by Hon'ble Thiru K. Rajaram, Minister for Tourism and Backward Classes on 8th February 1973 and was kept open till 25th February 1973.

After watching the work of the artisans, it was seen that some of them are highly skilled in reproducing in ceramics the beautiful statues and other decoration works found in temples in Tamil Nadu. Such artisans were encouraged to develop their skill further by deputing them to various temples to study the art work in them. Artisans like Thiru G. Ponnambalam, have produced in ceramics beautiful sculpture work which are true reproductions of temple art. Some other artisans like Thiru Thirumalai, Thiru Loganathan and others are very good in reproducing a variety of folk art. During

the last year they were deputed to various villages in Tamil Nadu and they have produced in ceramics very pleasing reproductions.

Horses, demons and other figures are usually found as folk arts in our villages. Thiruvallargal Natarajan, G. Raghunatha Bhabu, J. Weldon and others are good in developing new designs in utility wares. They have been encouraged in these particular lines. However, while designing utility items certain restrictions have necessarily to be imposed. For example while designing a tea pot, the artisans have to be told that, that the lids of the tea pots they design should not slip, spout should not drip, pots should be easily cleanable and must be of standard capacities. Such specifications have also to be laid while designing dinner sets and other utility items. Artists like Thiru Chitravelu and others are good in producing statues of rustic figures and many of the designs are more popular. Thiruvallargal A. Hameed, G. Raghunatha Babu, Ananthakrishnan and others are also good in evolving abstracts which are in keeping with modern trends. They have been given full freedom in developing their talents in this direction.

#### Award Winners.

During every year only new items evolved in the units are kept in the display section. Three pieces are selected for awards. During this year a committee consisting of the

following people was constituted for this purpose—

- (1) Thirumathi Meena Muthia.
- (2) Thiru Y. G. Duraiswamy.
- (3) Thiru Pithavadian.

They have awarded the first prize gold medal to Thiru A. Hameed for a wall plaque done in crackled glaze. A silver medal was awarded to Thiru Chitravelu for a table decoration in elephant motif. A flower vase designed by Thiru S. Ananthakrishnan was awarded another silver medal. A bowl by Thiru G. Ponnambalam was highly commended.

The exhibits displayed can be grouped under the following categories.

#### (a) Reproductions of temple art—

During this exhibition a number of pieces which are true reproductions from statues and other decorations found in Tamil Nadu temples have been displayed. These pieces have been given a metallic glaze which has been developed by the ceramic laboratories at Vridhachalam. The pieces are in procelain and in metallic glaze fired to 1,300° C.

#### (b) Village Folk art—

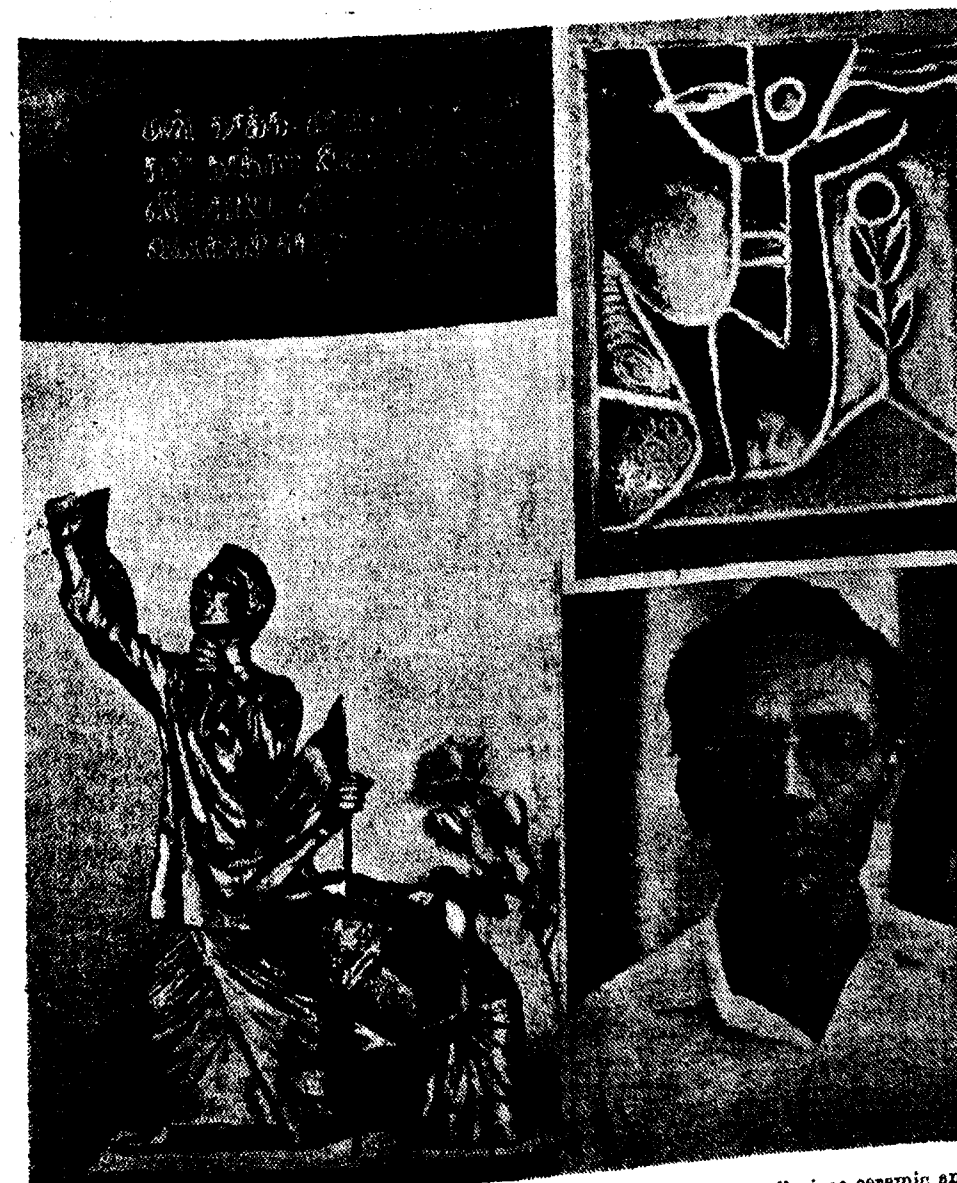
The display contains a number of pieces which are reproductions of village folk art. Some of the items are in glazed terracotta and fired to about 900° C. Some pieces have been made in procelain and in similar sizes to fit in large drawing rooms. Even smaller sizes have been made in procelain as table decorations. Further few pieces have been made in stoneware body and given salt glazing so that they could be displayed in lawns and gardens without a glaze in any way getting affected either by weather or by action of acids alkalis and other chemical agencies.

#### (c) Utility Items—

A number of pleasing designs of utility items are on display. Some interesting results have been obtained by designing utility items in jack fruit, mango and other motif. A dinner set in plaitain motif is also been displayed.

#### (d) Jasper wares—

Jasper wares are ceramic pieces in blue coloured body fired to about 1,300° C. These are given large



The theme of this year was Ceramic Piece to depict Silver Jubilee of Independence.

The Prize winning wall-piece ceramic and the artist Hameed of Perambur Ceramic Training Centre.

## CERAMICS CARRY CONVICTION



They all spare a second look of fondness for fine craftsmanship in Ceramics.



wide embossed decorations. Messrs. Wedged of England are known for their jasper wares. The bodies for jaspers have been successfully developed by the ceramic laboratories and with these bodies the artisans have been able to produce items in jasper which are as good as manufactured even by Messrs. Wedged of England.

#### (e) Abstract in ceramics.

A number of abstract pieces in ceramics have been displayed. Wall plaques in crackled glaze are specially attractive. In wall plaques certain glazes have been used which shatter while colouring. This gives brilliant appearance to the wall plaques. Attempts have also successfully been made in decorating pieces with flow glazes.

There are more than 150 new designs at display. Our sales section sells items which have been proved to be popular during earlier exhibitions. Sales have been steadily increasing and during this exhibition, items valued over Rs. 65,000 had been sold during the first week of the exhibition. There are lot of enquiries for export and there is no doubt that once we are able to display our items in some foreign countries, we can be assured of a steadily increasing export market.

By the complete co-operation between the technicians and the artisans and by judging the tastes of the buyers by displaying new designs every year in exhibitions, the two units have been able to produce

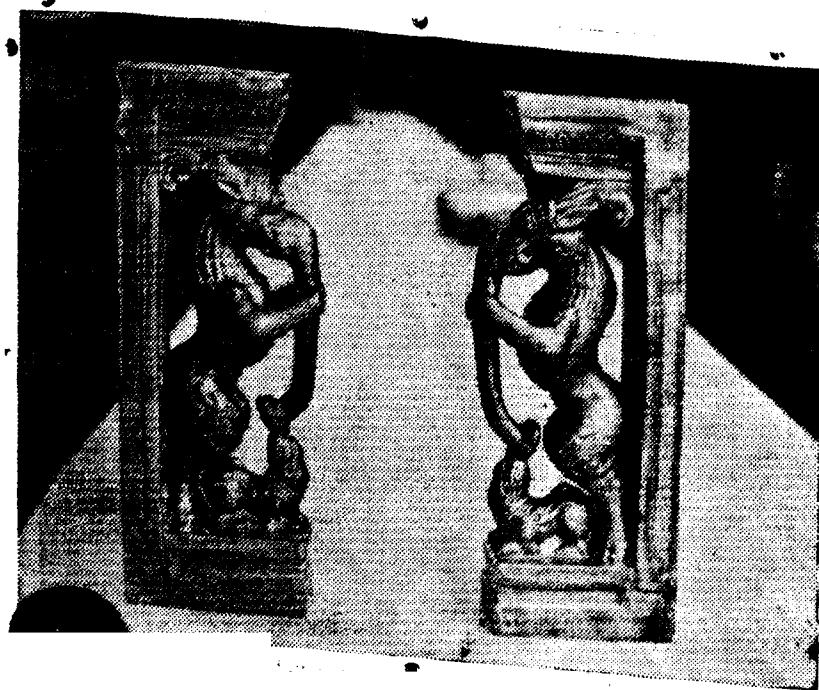
so far over 1,500 pleasing designs in art-utility ceramic wares. This is an achievement which no other State in this country can claim.

#### Future Line of Development.

The future line of development should be to make the two training units work on a fully commercial basis. They should aspire to be internationally recognized like Wedgewood, Dresden, etc. They should produce items for export. They should also supply internal market with art and utility ceramics at prices that a large proportion of our people can afford. The two units should also undertake a four year training course for gifted artisans so as to enable them to express themselves in the medium of ceramics. After the training such artisans can produce in their own studio potteries creations in clay that can be of enchanting, enticing and eternal beauty and inspiration.

The Ceramic Wing of the Directorate of Industries is in a position now to render all necessary technical guidance in the line. It is also possible to organize centre for supply of ready-made body, glaze, colours, etc., to such studio potters. In case a number of such studio potteries is located close by the Department can also think in terms of designing and constructing kiln for the common use of the studio potters.

"Creative Ceramic and Sky is its limit".



### MADRAS INSTITUTION RECEIVES U.S. GRANT FOR STUDY ON AIR POLLUTION

The Indian Institute of Technology (IIT), Madras, has undertaken a research study which may help to control air pollution caused by motor vehicles and ensure a cleaner life for city-dwellers.

The project, "Control of Exhaust Emission from Diesel Vehicles", was received a U.S. government grant of Rs. 85,250. The grant was made available to the IIT by the National Science Foundation under its Special Foreign Currency Programme for research, science, education and related activities.

Presenting the first instalment of a cheque for Rs. 35,000 on Thursday to Dr. B. S. Murthy, Professor of Mechanical Engineering, Dr. William W. Williams, Science Attache, U.S. Embassy, New Delhi, expressed the hope the research study will contribute significantly to the betterment of the quality of life in India, the United States and elsewhere.

Dr. A. Ramachandran, Director, IIT, and Mr. Stephen E. Palmer, Jr., American Consul General in Madras, participated in the function.

Mr. Palmer said on the occasion: "It is a measure of the farsightedness of the civic authorities in Madras that the question of air pollution is being considered a major factor in studying the problem of urbanization in Madras city".

Mr. Palmer expressed the hope that "the efforts of the Indian Institute of Technology to study control of air pollution will add to the world knowledge to help combat this hazard to public health".

Dr. B. S. Murthy and Dr. K. V. Gopal Krishnan, Assistant Professor, will direct the three-year project. Dr. O. A. Uyehara and Dr. P. S. Myers of the University of Wisconsin's Department of Mechanical Engineering, will co-operate with the investigations.

The collaboration between the Indian institution and the University of Wisconsin in the study will help to accelerate IIT's own efforts to give clearer air to urbanites and contribute significantly to similar efforts elsewhere for a better environment. (Source: USIS.)

## KHADI AND VILLAGE INDUSTRIES IN TAMIL NADU

By

D. GANGAPPA, I.A.S.  
Chief Executive Officer.

The programme of Khadi and village Industries started at the All-India level in pursuance of the Decision taken in the All-India Congress Committee in 1922, was taken up in Tamil Nadu as part of the Swadeshi Movement. Hence this year Khadi week's Golden Jubilee year.

The Government initiated the programme of khadi in 1947 as Firka Development Programme. A separate department was created in 1956 with a view to pay more attention to the scheme. It was in 1960, the State Board, a statutory organisation was formed by an Act of Legislature.

Through the Board it is envisaged to provide employment opportunities to the rural artisans, to utilise the idle man-power available in the form of under-employment in the rural areas, to put local raw materials like non-edible oil seeds, waste paper, banian cutting, etc., to better use by converting them into utility articles and to promote the feeling of self-reliance and self-sufficiency in the minds of rural folk. Thus the programme of khadi not only tries to produce the cloth required for public consumption but also carries the practical philosophy that nothing goes waste.

There are now 22 village industries including khadi coming with in the purview of the Board. The programme is implemented through a net work of departmental units. There are 145 production units. Some of the village industries like palmgur, oil and pottery are linked up with industrial co-operatives. There are as many as 2,550 co-operative societies, eight District Federations and two State Federations—one for Palmgur industry and the other for oil and allied products. There are also 170 sales depots and three Khadi Krafts at Madras, Tiruchirappalli and Coimbatore to market the products of khadi and village industries.

#### In the Forefront :

Tamil Nadu has been the first and foremost in the field of development of khadi and village industries by undertaking directly the trading activities, besides implementing the programme on departmental basis. A new dimension was added to the programme with the formation

of the State Board in the year 1960 to implement the programme more effectively. Thus the Board has a proud career of 12 successful years. An account of the progress made during the 12 years in implementing the various schemes for the betterment of the poor is as follows :—

| Industry.              | 1960-61<br>Production. | 1971-72<br>Production. |
|------------------------|------------------------|------------------------|
| (1)                    | (2)                    | (3)                    |
| (RUPEES IN LAKHS.)     |                        |                        |
| Khadi ..               | 111.88                 | 198.12                 |
| Oil ..                 | 67.03                  | 225.71                 |
| Soap ..                | 1.39                   | 34.41                  |
| Leather ..             | 4.35                   | 39.06                  |
| Palmgur ..             | 74.99                  | 316.88                 |
| Bee-keeping            | 0.28                   | 22.59                  |
| Hand-made Paper.       | 0.17                   | 4.65                   |
| Handpounding of paddy. | 11.13                  | 33.01                  |
| Pottery ..             | 2.71                   | 20.80                  |
| Match ..               | 0.14                   | 2.41                   |
| Employment.            | 48.00                  | 158.00                 |

#### Technological Improvements :

As a result of continuous and sustained efforts in evolving the improved techniques and methods to provide more and more job opportunities and to make the industry more viable, capable of assuring higher rate of wages to the artisans, the department has been able to introduce 6-spindle and 12-spindle charkhas, and to introduce power driven ghani, which came almost as a boon to the oil-mongers. The improved kiln and the wheel with ball-bearings are landmarks in the history of village pottery.

The programme of Mini-Mill, known as Rural Fabric Centre to produce coarse variety of cloth mainly caters to the needs of the common man. A study of the percentage distribution of population according to monthly per capita expenditure in Tamil Nadu in 1968-69

## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

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

### Rate of Interest

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

### Initial repayment holiday

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

### Amortisation period

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

FOR FURTHER DETAILS, PLEASE APPLY TO

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## UTILI- ZATION OF MINERALS FOR INDUSTRIAL DEVELOPMENT IN TAMIL NADU

As the primary objective of the mineral development programme should be to find out ways and means of utilizing the mineral resources of the State for building up new industries and for expanding existing ones, the Tamil Nadu Government has been enjoined by the State Planning Commission to undertake Pilot Plant Studies with a view to proving the commercial viability of the processes developed in the laboratories, so that these would be readily accepted for utilization by industry.

A scheme for the establishment of a Pilot Testing Unit has been put up by the State Geology Branch. The scheme involves a non-recurring expenditure of Rs. 18 lakhs towards land and building and a recurring expenditure of Rs. 1.60 lakhs per annum towards staff, reagents, for processing units, spare parts, etc. This is to be accommodated in the V Plan period. Taking into consideration the fact that Salem is centrally situated as regards minerals in the State the Pilot Testing Laboratory has been proposed to be set up at Salem for which the land and building of the former Quartz Crushing Plant (a State Government undertaking) have been taken over with a few assets. It has been planned to procure additional machinery and equipments for the proposed laboratory so as to equip it well for carrying out the bench tests. The extraction of alumina from sources other than Bauxite, like Nepheline, Syenite, Anorthosite and aluminas, preparation of chrome-magnesia-forsterite bricks out of the raw materials available in Salem, separation of Ilmenite from the Beach Sands, concentration of iron ores of Thiruvannamalai are to be studied on a Pilot scale during the Perspective Plan period i.e., 1972-84.

### Minerals to promote wealth.

With a view to develop the Mineral sector of the economy as a source of revenue, proposals have been received by Government to set up a few mineral based industries in the Perspective Plan period. Accordingly, a Vitreous Glazed Mosaic Tiles Industry, two Crockery Units, a High-tension and Low-tension Insulator Units, a Graphite Crucible Plant, small units for manufacturing precipitated calcium carbonate, modern mechanised kilns for the

manufacture of industrial lime, plant for the preparation of magnesium metal are to be started during the plan period, besides a number of other production and marketing units.

A total outlay of 50 lakhs is suggested in the V Plan for this purpose. Of this, an outlay of Rs. 24 lakhs is earmarked for the establishment of the Graphite Crucible Plant at Sivagangai in the Ramanathapuram District, and the balance of Rs. 26 lakhs is for the other schemes. The final allocation will be made only after the project reports, at least of a preliminary nature, are prepared for these schemes.

All these schemes will contribute to the establishment of mineral, metal and chemical-based industries in the State. It is needless to say that industrialisation would accelerate the growth of the economy and contribute to the well being of the people.

### NO POWER TO FAIRS

Under the Tamilnadu Restriction on consumption of Electricity Order, 1972, there shall be no supply of electrical energy for display of lights, neon and other luminous discharges, tube signs and festive illuminations during the power cut period. Notwithstanding this order, several requests are being received by Government through the Electricity Board asking for temporary supply of power for holding fairs, festivals, exhibition, etc. In most of these cases, it is noticed that the Sponsors make all preliminary arrangements and supply to the Government for power connection at the last moment as if, power supply will be given as a matter of course.

It is hereby informed that in view of serious power shortage and the difficulties encountered by the Electricity Board and the Government for meeting the demand of even essential services, it is not possible to supply power for any fair, festival or exhibition during the power cut period and any person making arrangements in the hope that he may be getting connection will be doing so at his own risk.





Dye Screen Printing.



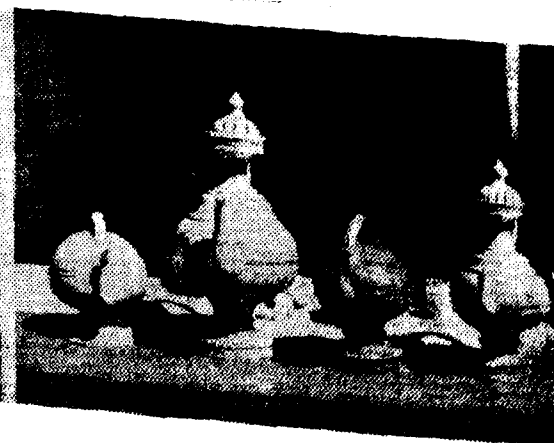
Craftsman Potter at wheel.



Girl weaving alone fibre mat.



Housewives buying fruit juices.



Pottery items.

**Master Craftsmen  
Produce Quality  
Products under  
Village Industries  
Programme.**



C. M. at Seminar of Pottery Craftsmen on 14-2-73 receiving Souvenir from Thiru S. V. Murugan, State Organizer, Tamil Nadu Pottery Industries Association.

will show that 8-10 per cent live on less than Rs. 15 per month, 66.7 per cent live on less than Rs. 34 per month. Still another analysis reveals that 78.1 per cent of the expenditure incurred by the rural population is on food. Clothing accounts for a mere 3.6 per cent. It will, therefore, be clear that a large section of the rural population lives on marginal and sub-marginal levels. According to the statistics available, the present production of coarse and medium counts in the textile mills is around 1,830 million metres. This consists of both wearables and non-wearables. Of this, the non-wearables such as tapestry, table cloth, bed-sheets, furnishing fabrics, etc., account for about 110 million metres. On the basis of income and price elasticities it may be estimated that the total demand for non-wearables will increase to about 140 million metres by 1973-74. Hence, the additional requirements of 30 million metres may be produced by establishing small rural fabric centres.

One unit of Rural Fabric Centre requires a capital outlay of Rs. 1.82 lakhs plus Rs. 2 lakhs as working capital to provide jobs for 68 persons. Through this scheme it is possible to provide jobs with a per capita investment of Rs. 4 to 5 thousands as against Rs. 50,000 to 55,000 required in big industries.

We have already established Rural Fabric Centres at Perumanallur and Sular on experimental measure. For the year 1973-74 we are contemplating to establish 10 more Rural Fabric Centres. The cloth produced in these centres is comparatively cheap in price when compared with that of mill sector. Though there was some hesitation to take up this scheme in the initial stages now the Khadi Commission and the Government of India are convinced that it is a good scheme capable of generating fresh employment opportunities with a very low capital outlay. The first piece of cloth produced in these mini-mills were named 'Mukil' by Dr. M. Karunanidhi, Chief Minister, at the Inaugural Function on 13th February 1973.

**High Quality Consumer Goods :**

One may be interested to know that the village industries produce quality articles of daily use at attractive prices. The palmyrah tree

known as 'KARPAGAVIRUK-SHAM' in Tamil Nadu is put to many uses with the financial assistance and technical guidance extended to them through the co-operatives. It is estimated that there are as many as 40 million palmyrah trees. There are about 2.55 lakhs artisans employed directly or indirectly in this industry. I am happy to mention that the fibre extracted from out of the palmyrah tree is exported to as many as 40 countries from the Ports of Tuticorin and Cochin. The countries offering large markets are U.S.A., U.K., Canada, Japan and Australia. I may make a special mention that the State Board endeavours to assure a reasonable minimum earnings for rural artisans and to ensure the quality of fibre exported. There is indeed a bright future for further expansion of the trade to earn valuable foreign exchange either by producing brushes using the palmyrah fibre here itself or by exporting the fibre directly.

**Tremendous Strides :**

The village industries like hand-made paper, village oil, khadi silk, matches, etc., have made tremendous strides in a short period of 10-12 years.

Regarding the gober gas it may be interesting to note that methane gas which is not required by the crops is removed adopting a simple process to produce gas for the kitchen and to give compost manure, good for the fields. The speciality of the scheme is to make the home more hygienic on the one hand and to relieve the strain which is so great now on the valuable forest fuel on the other. We extend the financial assistance of Rs. 750 as interest free loan repayable in 10 years and Rs. 250 as grant for a standard plant and Rs. 1,000 as loan and Rs. 300 as grant to a bigger plant. The technical guidance is also offered free of cost whenever required. So far we have covered 46 families on experimental basis. The scheme is working very well.

No programme will be a success unless it is entrusted to the right type of personnel equipped with proper training and techniques. We are very happy indeed to mention that in this field also we have started four Training Institutes—Khadi Gramodyog Vidyalaya at Kamuthi, Regional Palmyrah Training Centre at Cuddalore, Regional Pottery Training Centre at Sevvapet and the Industrial Workers Training Centre at Madras.



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## THE SUN-FLOWER OIL REACHING MARKET IN TAMIL NADU.

There is likely to be a shortfall in groundnut production in Tamil Nadu during the current season; but efforts made earlier by the Agricultural department to reduce the khariff crop deficit by offering incentives to farmers to sow sun-flower seeds in the Rabi season, is likely to pay off handsome dividends in the form of edible oil cheaper than groundnut oil. The sun-flower crop needs much less water than groundnut and the extensive power-cut is not likely to matter much with this crop.

Normally 18.5 lakhs acres would be under groundnut crop in the Khariff season in the State and 3.5 lakhs acres crop under irrigated conditions in rabi season, and for this crop, the seeds were sown after December. In about 30 per cent of the lands under groundnut crop in the Khariff season, groundnut was sown soon after rain in the middle of July. Due to the failure of the South-west monsoon the crops did not come up well. From these crops only 80 per cent of the normal yield was realised; but due to total failure of crops in the rest of the country, groundnut fetched handsome returns to the Tamil Nadu farmer.

In view of the increase in the price, farmers have cultivated groundnut in 5 lakhs acres under irrigation conditions after December instead of 3.5 lakhs acres as in normal times.

The Agriculture Department had embarked on a programme to introduce sun-flower cultivation on a large scale. A mini kit containing 4 kgs. of sun-flower seeds and dressing materials for use on each acre of land was distributed free to farmers. Each packet costs Rs. 11. The farmers were advised to sow the seeds by the end of October or early in November. The seeds had been distributed for covering 1.31 lakh acres. And, this crop has come up so well in all areas that there is every reason to expect some edible oil at reasonable prices to the poor. The sun-flower oil is sold much cheaper than groundnut oil.

## HIGH SPEED ERA ON INDIAN RAILWAYS.

Indian Railways are now set to achieve higher train speeds. The introduction of the Rajdhani Express operating between New Delhi and Howrah at a speed of 120 kilometres per hour on March 1, 1969, heralded the high speed era. The maximum speed of this train has now been raised to 130 kilometres.

The Second Rajdhani Express between New Delhi and Bombay, introduced in May 1972, runs at a speed of 120 kilometres.

The maximum permissible speed earlier on trunk routes and main lines on broad gauge was 100 kilometres. The speed for passenger trains (other than mail or express) has been 75 kilometres per hour.

Studies carried out by the Railways have shown that it is possible to speed up trains without large scale capital investment.

### Fast Mail Trains.

The maximum operating speed of some mail and express trains has now been increased to between 100 and 120 kilometres per hour.

They include the Howrah-Delhi Kalka Mail, the Frontier Mail between Howrah and Bombay, the G.T. Express between Delhi and Madras and the tourist Taj Express between New Delhi and Agra.

A number of instrumented trials at speeds up to 140 to 145 kilometres have been conducted on the entire route. In one of these runs conducted in September 1971 between New Delhi and Kanpur, a speed of 162 kilometres was attained for the first time on the Indian Railways.

With the progressive completion of various projects, the Railways have a substantial fleet of locomotives and coaches suitable for operation at 120 kilometres. Over 15,000 kilometres track on the broad gauge system has been brought up to the maintenance standards required at such speeds.

The aim is to speed up gradually all important trains.

## RECOMMENDATIONS OF STATE LABOUR ADVISORY BOARD MEETING

The 25th Session of the State Labour Advisory Board Meeting was held at Madurai on 29th and 30th January 1973 under the Presidency of the Hon'ble Minister for Labour, Tamil Nadu. The following subjects were discussed at the meeting:—

1. Limiting the apprenticeship period of one year for those with technical qualifications.

2. Minimum age for employment to be raised to 16 years for normal occupations and to 18 years for hazardous occupations so as to safeguard the health and education of children.

3. Preference for employment to be given to heirs of retiring employees and those in the age group of 45 years and more subject to suitability.

4. Decided to undertake legislation to fix permanent strength of workers in industrial establishments.

5. The issue of service cards to hotel workers and gang mazdoors of the Public Works Department was agreed to.

6. A committee was set up to go into the question of the code of conduct of parties during strikes and lockouts with the Special Deputy Commissioner of labour as Chairman and with five representatives each on the side of employers and employees.

7. Co-operative Societies to be provided in industrial establishments employing 200 or more workers.

8. Grant of leave with wages to union representatives to attend conciliation proceedings to the extent of two per union or where there is more than one union, one per union.

"Blood can't be manufactured; it has to come from a human being".

## WHY BLOOD DONATION?

Physicians working in the general hospital often come across reluctant relatives of a patient in dire need of a blood transfusion. When asked to donate blood, people often counter naively.

"But doctor! Can't we buy the blood?"

Blood can't be manufactured; it has to come from a human being. This article tells you why.

We often see the hero in Indian movies bravely donating blood for the dying heroine and, behold! She promptly revives after receiving the good man's blood. Are things as simple as that? Transfusion of blood is definitely a great aid, but it is not a mere matter of drawing somebody's blood and putting it into another person. A number of tests have to be carried out before giving anybody blood. Let us consider why?

As anywhere else, every person tries to establish his individuality, even in the matter of blood groups! So, when mixed with another group, the blood "rebels"—leading to hostile transfusion reaction. In early 20th century, a physician named Carl Landsteiner, when any two samples of blood were mixed together, certain combinations became lumpy while some others remained fluid. This led to the discovery of Landsteiner Groups, or Classical Blood Groups—designated A, B, AB and O.

To put it more simply—

A person with group 'A' can take 'A' or 'O' blood.

A person with group 'B' can take 'B' or 'O' Blood.

A person with group 'AB' can take A, B, or 'O' blood. (He is called a Universal recipient.)

A person with group 'O' can take only O blood, but his blood can be given to anybody (He is the Universal Donor). Such is the irony of life! The Universal recipient (AB) cannot give his blood to anybody except another 'AB' while he can accept blood universally. On the other hand the Universal Donor has to wait for another 'O' to turn up when he is in need!

### How much blood you can give?

An oft-repeated question is "Am I not losing too much blood if I donate?" Well, far from it. At a single session only 300 CC of blood is taken. This is less than 10 per cent of the body's total storage (which incidentally, is five litres!) The body more than makes up for the blood lost, by drawing upon its resources fast. So, after a blood donation the body is stimulated to produce fresher, newer blood.

### Formalities

When a volunteer goes to donate blood at a hospital, he is first weighed to ensure that he is not under-weight. After these formalities and tests are gone through, the volunteer is taken to the Blood Bank and made to lie down comfortably on a bed. The doctor checks his blood-pressure, listens to his heart and lungs, and if all is well, he proceeds to draw blood. Thereafter the volunteer is made to rest on the bed for about 10 minutes and later he is taken to a room where light refreshments are served (usually some coffee and biscuits); he is given his donor card on which his name, address and blood group are stated. This enables him to obtain blood when he or his family members are in need. He can also donate blood every three months. Actually even three months are not necessary, since the body makes up the lost blood within a month or so. The 3-month interval is only to avoid any risk what-so-ever.

### Cross Matching

Once the needy patient's blood group is determined the next stage is called "cross matching". For this suitable donor bottle is selected from the cold storage and the patient's blood is mixed with the sample in the test tube attached to the bottle to make doubly sure that the blood is compatible. It is only after all this is over that the blood banks release the blood bottles for use.

That much about classical blood groups. The human system being much more complicated, the physician has to bother about RH groups;—but that is another part of the story.



Towards the close of a day not long after these deliberations the artisans engaged in the construction of the temple were preparing to return to their quarters. The sculptor Iniyan, who had come from Mamallapuram, was, however, seated all by himself near the monolith statue of the Nandi. His thoughts were in flight, high above *terra firma*. Anyone could guess that lines of worry has spread on his face, because although quite a few days had elapsed since his coming to Thanjavur, the opportunity had not yet arrived for him to commence sculpturing. The monarch who had summoned him was none other than the matchless Emperor Raja Rajan of the Chola country. At the very mention of the Emperor's name, hostile lands lay quiescent and subdued. It was such a supreme hero who had invited the sculptor. And the task he had allotted the sculptor was highly prestigious. If it could be completed, then the name of the sculptor Iniyan would sound in unison with the great name of the Emperor Raja Rajan. But that good fortune was nowhere near grasp; actually it was moving away. Iniyan was lost in gloom as he pondered along these lines, when he heard someone accosting him. He turned with a start, to see the old lady Azhagi coming towards him. Iniyan's eyes that focused on Azhagi, involuntarily leapt beyond the old lady and came to rest on the beauteous damsel standing behind.

In a single glance Iniyan had lapped up the complexion of gold, face as charming as the lotus, blue eyes flitting about, tantalising lips so red, eye-brows arched as the bow and a figure of brimming symmetry. It was but an assessment of the artistic eye of the sculptor and not the carnal dissection of a demented man.

"Grandma, can I do anything for you? May I know who is this girl?"

"Dear boy she is my daughter. She returned from Worriyur only yesterday. I brought her with me in order to see you".

Iniyan looked at the damsel once again. She stood there, an embodiment of comeliness and he could appreciate that her unostentatious raiment only succeeded in drenching her in added grace.

"May I know your name?" The question was in the kind and sonorous voice of the sculptor and her answer was in melifluous tones.

"My name is Chamundi".

The old lady proceeded to explain the purpose of her visit. "Dear boy, I am determined to render what all assistance I can, for the successful completion of the construction of this Raja-Rajacharam. That and that alone is the last objective of my life. I heard that although the main work has been concluded, the Emperor has not acquired satisfaction, the reason being that the dance-sculptures are yet to be carved as desired by him. I also heard that the work in regard to the sculptures you are to carve is being held up for want of danseuses to act as models. It is for this I have brought my daughter Chamundi. She has received formal instruction in the Art of Dancing and she would portray the postures, appreciate for your sculptures. Tell me whether with her assistance you would be in a position to fulfil speedily the desire of our Emperor."

With surprise writ large on his features, Iniyan glanced at the old lady and then at Chamundi before intoning, "My first impression itself was that her form and figure seemed proportioned for the Art of Dancing. Chamundi, will you please portray the feeling and emotion of some of the dance-postures I mention?"



### Deity of Dancing.

Iniyar was enormously pleased that an ordinary girl, one who was born in a family that could not have had the Art of Dancing among its legacy the daughter of Azhagi who knew no Art other than that of sheep-rearing, should have courageously come forward to participate in a competition in which hundreds of damsels highly proficient in dancing and who had undergone specialised training for the purpose had sustained failure and returned dejected. The consolation was also kindled in his heart that at long last his sculpturing assignment might be brought to fruition. At the same time doubts arose, in a manner to counter that joy and consolation. "Was she really competent and would she at all be of assistance to him so that his labours in the cause of Art might come to a successful completion?"—these questions raged on the battleground of his mind.

Chamundi touched the ground in reverence and after paying obeisance to her master she stood in front of the sculptor, awaiting his command. The old lady seated herself on a stair near-by, eager to ascertain the mode in which the sculptor Iniyar would test and select Chamundi. The unassailable hope that her daughter would come out successful in the test shone in her face.

Indicating the various stages of the Dance of Ascent, Iniyar first called upon Chamundi to portray the emotions. Chamundi did so with alacrity and finesse. Next was the Dance of Wondrousness and the amazement that kept pouring from her widened eyes, which was itself wondrous in the extreme. Iniyar was astounded at the manner in which her black eyes swirled, each like a beetle in the centre of a silver blossom.

During the Dance of Anger, how could her face, gentle and soft as a flower, get transformed into a blaze of such intensity?

"The Dance of Supreme joy", said Iniyar in trepidation, and at once the blazing features dissolved into the coolness of the smiling moon. The eloquent fingers touched off a surge of bliss in the hearts of the viewers. The splendour of

the Dance of Marvel were such as to thrill Iniyar's heart. He was overjoyed at the wellfounded confidence that his endeavour would be crowned with success. The other postures she portrayed, such as the Dance of the Three Fortresses and the Snake-Dance were in confirmation of this confidence of his.

During the Dance of Destruction she displayed such ferocity that even a hardened warrior with drawn sword would have trembled in dread.

As Chamundi portrayed the Dance of Deluge, Iniyar's eyes sparkled with unshed tears. In the movement of her hands, the very seas were storm-tossed; and as her figure vibrated, the entire landscape was in a tremor. In the swing of her waist, the rivers changed course, and volcanoes erupted as she rolled her eyes. In her laughter of anger, it was lightnings that streaked in tens of thousands. Viewing her delineation of the Dance of Deluge—which was as if the firm earth had slid, in the grip of a quake, and as if storm and fire had come together in intimacy, to leap in violent unison—Iniyar sat in speechless astonishment. The old lady ran forward to embrace her daughter and kiss her on the forehead.

Returning to consciousness of the concrete environment in slow stages, Iniyar moistened his lips as a prelude to exclaiming, "Chamundi, you are a deity fit to adorn the throne of the realm of Art. It can only be said that thanks to Grandma Azhagi's immense good fortunes none other than the Goddess of Learning has been born as daughter to her. Grandma is a blessed woman and that is why her slabstone has reached the top of the Temple-tower of such renown. Your treasure of Art born of her is also to be preserved on the inner tier of the ceiling of the temple. Chamundi, it is my confirmed opinion that even if the Lord himself had put in his appearance and demonstrated these dance-postures he could not have bettered your performance!" Iniyar was proceeding in this strain when the old lady intervened to ask, "Then, my dear boy, shall I ask Chamundi to come here from tomorrow?" "Need you ask me that?", countered the youthful sculptor who was looking almost inebriated, "Art is to endure and prosper because of Chamundi".

Read

## Tamil Arasu

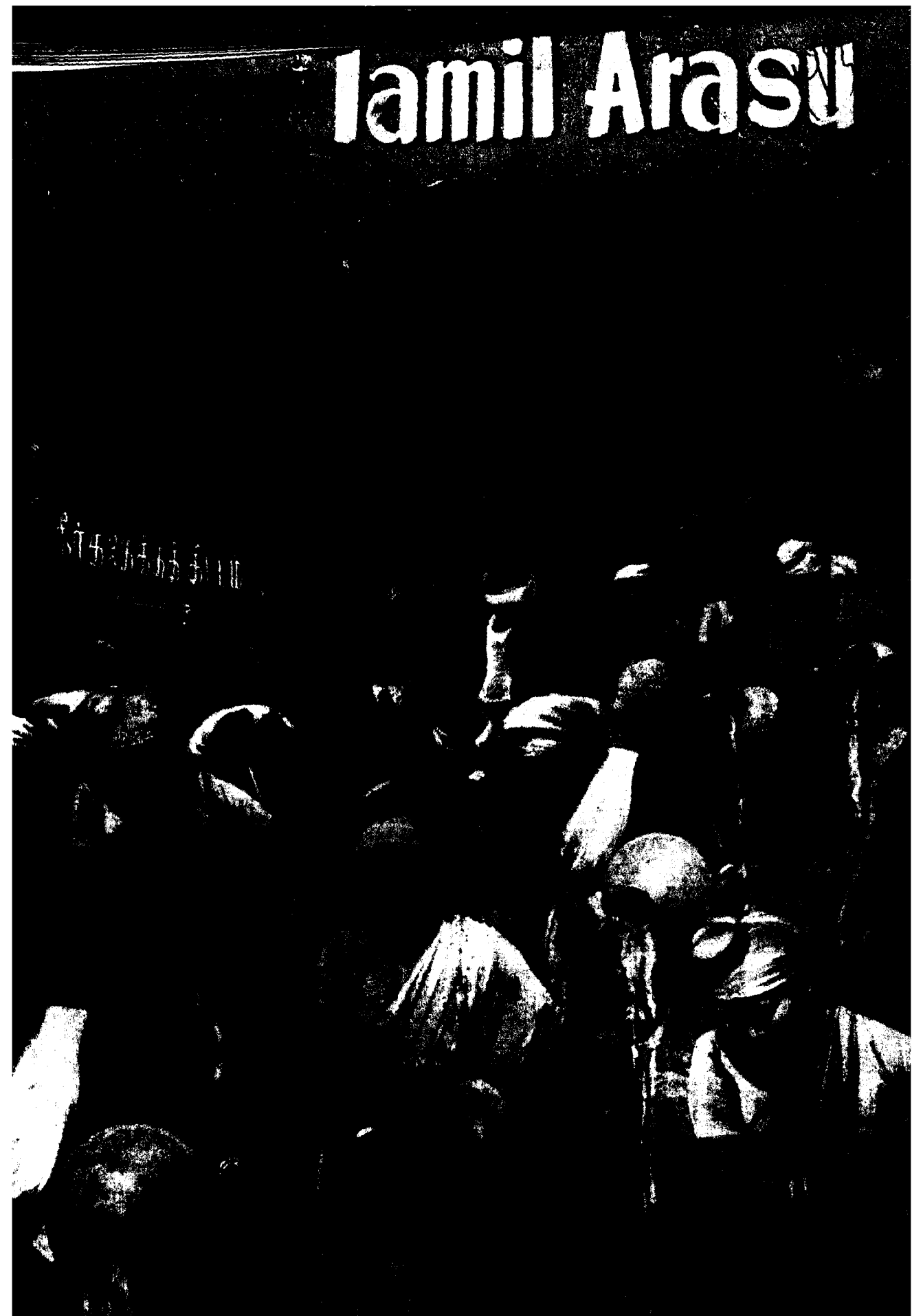
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PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU AND  
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## A PROMISE REDEEMED

By S. RAMACHANDRAN,  
Minister for Transport.

It may be recalled that during the historic mid-night session of the Legislative Assembly and the Council on the 15th August 1972 the Chief Minister had announced that this State would be taking active steps to enable the employees to participate in the equity capital of Public Sector Corporations of this State up to 24 per cent. As a first step towards implementing this promise, it has been decided to introduce employees' participation in ownership and management in the Transport Corporation step by step.

The scheme of employees' participation in ownership and management has been in the air for a long time. But so far in India neither the Union Government nor any of the State Governments have introduced a scheme for employees' participation in ownership and management in any of the public sector projects. Tamil Nadu Government have great pleasure in taking the initiative in pioneering this experiment.

The Tamil Nadu Scheme contemplates of convertible debentures to the employees. As per this scheme, the employee will get an interest of 8 per cent on his share capital. The advantage accruing from this is that the employees will get 8 per cent interest even if the company works on loss. If there is profit and a dividend of more than 8 per cent is declared, the employees have the option of converting these debentures into shares. Thus, they can get better returns on their investments. A period of 10 years is allowed for such conversion of debentures into shares. This is only an interim arrangement pending the amendment of the Central Acts. The important aspects of this Scheme are as follows :—

(1) This scheme is optional in the case of the existing employees. But, in the case of new recruits, it is made compulsory.

(2) Those who get a salary of less than Rs. 500 should purchase debentures worth Rs. 500 and those who get a salary of more than Rs. 500 should purchase debentures worth Rs. 1,000.

(3) In the case of the former this amount may be paid in 50 instalments of Rs. 10 each and in the case of the latter in 50 instalments of Rs. 20 each.

(4) On collection of 10 monthly instalments 100 shares to the total value of Rs. 500 will be given to the employees by endorsing Rs. 100 out of Rs. 500 as having been paid up.

We propose to implement this scheme as an experimental measure in the Transport Corporations. In the first instance, it will be implemented in the Cheran Transport Corporation. Subsequently it will be brought into force in other Transport Corporation in a phased manner. This is yet another opportunity offered to the employees to take part in the ownership and management of the Public Sector Corporations. I request the Hon'ble Members to come forward with their valuable suggestions so that we, in Tamil Nadu, could mould and shape the future of this concept which would be useful to the country as a whole.

# Tamil Arasu

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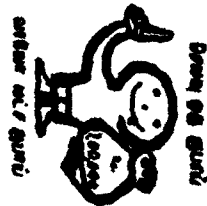
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# NO STAND-STILL IN POWER PRODUCTION IN

During the C.M.'s reply to the debate on the Budget the following points on Power Production Capacity in Tamil Nadu was brought out.

During the First Five-Year Plan period our State produced 110 M.W. power from its own sources. In the Second Five-Year Plan period, the addition to power production capacity was of the order of 315 M.W. and in the Third Five-Year Plan, significant addition was made to the tune of 510 M.W. In other words in a long period of 15 years, i.e., from 1951 to 1967 the total addition to power generating capacity in this State amounts to 935 M.W. whereas within a period of five years from 1967 to 1972, a total of 625 M.W. generating capacity has been added.

Not only this. There is another side of the problem. The daily requirements of power for Kerala, Mysore and Andhra are 60 lakhs units, 130 lakhs units and 90 lakhs units respectively. Thus the total requirement of power per day for all these three Southern States comes to 280 lakhs units whereas, because of the advanced stage of industrialisation and energising of agricultural pumpsets in large numbers making an All-India record, Tamil Nadu requires 225 lakhs units of power for its daily consumption.

## NATURE'S FAILURE.

The present power crisis is the outcome of low storage of water in Hydro-electric Reservoirs which, in turn, is due to the nature's failure and nothing more. As nature has failed us unexpectedly, its regular quota of power from its Hydro-electric power stations has also gone down correspondingly.

Another question posed by the opposition is that this Government has not asked for any more new

## TAMIL NADU

power schemes from the Centre. Thiru Kumarasamy of the Ruling Congress, in his speech, went to the extent of saying "Why can't you start new power stations on your own volition and account and get the approval of the Centre after completion of the schemes?" This is a completely misleading statement. I hope at least the members belonging to the party which had been in power in the past would agree with me that even if a scheme is approved by the Centre for execution in the Fourth Five-Year Plan it could not be completed in so soon a time as now as some of the members in this House tend to think.

Further there are some other bottlenecks in the way to execute work without prior approval of the Union Government. First of all in such cases no factory in the country would come forward to execute orders on behalf of the State to supply boilers, generators, etc., which are the basic requisites for power generation. And the State could import such goods only with the approval of the Centre. So I wish to explain that the State has no option at its command except to execute such schemes with the prior approval of the Union Government.

## NEW SCHEMES.

It is the general accusation of the opposition that the State has failed to ask for new power schemes from the Centre. But the fact belies the opposition allegation. During the past three years, viz., 1971, 1972 and 1973 we have submitted to the Centre fresh

proposals for ten new power schemes. They are (1) The Servararu Scheme, (2) The Nellidurai Scheme, (3) The Solattipuzha Scheme, (4) The Upper Amaravathi Scheme, (5) The Paraliyaru Scheme, (6) The Shanmuga Nadhi Scheme, (7) The Coonoor-Kallaru Scheme, (8) The Lower Meluru Scheme, (9) The Tuticorin Thermal Power Station and (10) The Mettur Thermal Power Station. The total installed capacity of all these schemes as per plan works out to 1,035 M.W. The normal procedure laid down for the approval takes at least about two years. The Nellidurai scheme, the Servararu scheme and the Paraliyaru scheme for which proposals were submitted in 1970-71, have not as yet been okayed and these are instances in point to prove the delay.

## EFFICIENT USE OF POWER.

The other point of allegation raised by the opposition in this regard relates to the utilisation of the available power in the State, and the opposition has blamed the Government that the power has not been used in economical and equitable manner and that the element of corruption has raised its ugly head in this sphere also. They also demanded an enquiry commission to be set up by the Union Government.

In this regard I wish to quote a speech of Thiru K. L. Rao, Union Minister for Irrigation and Power, delivered in the Parliament and published in the Hindustan Times which runs "He (K. L. Rao) complemented Tamil Nadu for making the best use of power without wastage". In a seminar held at New Delhi on 23rd February 1973 he has also pointed out that "The power planning so far has been totally wrong. It should never have been linked to the general Five-Year Plan. Power Planning should be a continuous process".



## BHARATHY DASAN

THE RATIONALIST  
POET OF TAMIL NADU

A facsimile of the Poet's  
hand is given below:

என் கவிதைகள்.

(பாந்தாசன்)

கொந்த யவன் ஏன் தொடர்வைக்  
தோரவில்ல என்ருகைத்தான்  
விதியில்லன் என்ருகைத் தந்தை?  
காதலில்லன் சிவசூன் மேல்  
கட்டழிநீர் கென்றுகைத்தான்.  
எதுக்கென சூர்த்துக் கொண்டு போனான்?

பாடுமொழி யாண்டளம் என்  
பங்கிலில்ல என்ருகைத்தான்  
யோனகயிலே ஏன் திரும்பிப் பார்த்தான்?  
நீ நிகடப்பாய்' என்ருகைத் தோ  
நீத்த விடலான் என்ருகைத்தான்  
தோகை, எவறன் காத்தும் தின் தொட்டான்?

மின்று தலான் நெஞ்சம் என்ருன்  
மீதில் துல்ல என்ருகைத்தான்,  
என்ருகைத்தான் தோன் புந்நான் நன்மை?  
தன்னை மொழி யாதுக் கொண் டென்  
காதலில்ல என்ருகைத்தான்  
என் கவிதைய என்ருகைத்தான்?

A throb I felt to write a Verse  
"Write of me!" the Welkin said  
The leaping stream, the lotuses  
Begged of me to be portrayed.  
The wood, the field, the summer  
cloud  
Tried each one to catch mine eye  
And damsels fair, like peacocks  
proud.  
Wished I sang of love that's high  
The breeze that coolness brings from  
glades  
Green-feathered peacock and the  
'swan,  
That ruby, sun-midst evening shades  
In my mental picture ran.  
The lancer's shoulders broad and  
strong.  
Said "We are mountains, sing our  
praise".  
Thus beauteous sight before me  
throng  
And shout at me to sing their praise.

But ah, my poor Tamil folk  
Of this ill-fated Tamil land  
Are asleep, unmindful of their yoke.  
I pity them, I bleed for them,  
Oh, for an education true  
To the genius of this Tamil race  
To end their woes, their peace renew,  
Courage and purity to raise

[A translation of Poem  
"Tamil Peru")  
(rendered into English by  
M. L. THANGAPPA, M.A.,  
Tagore Arts College, Pondicherry).

# CHIEF MINISTER'S REPLY TO BUDGET DEBATE



*The following are some highlights in the reply to the debate on the Budget for 1973-74 in the Tamil Nadu Legislative Assembly given by Dr. M. Karunanidhi, Chief Minister, on 7th March 1973.*

## Finance Commission.

Some members of this House took exception to the statement in the Budget that the Finance Commission should be the primary channel for the flow of funds from the Centre to the States. But what I wish to explain to them is that the Finance Commission should be provided with the topmost authority only in the matter of allocation of grants to the States by the Union Government and that the Planning Commission should continue to be invested with the power to fix the quantum of financial allocation for States' plans. Thus it is clear from the above explanation that our stand is not to absolve the Planning Commission of complete responsibility in the matter of allocation of funds to the States by the Centre for fulfilling the Plans.

The Planning Commission allots funds for the State's plan which consists of 70 per cent aid and loan and 30 per cent grant. But I would like to insist here that this grant should be allocated on the basis of principles laid down by the Finance Commission. This point has been insisted upon by the Administrative Reforms Commission. This Government is also of the opinion that a Federal Loan Corporation should be created for lending to the States for implementing Plan Schemes, and the States should be given representation on it.

## Land Tax.

Thiru Kasiraman of the Ruling Congress said that the total income derived from land tax, irrigation tax, land cess, and agricultural income-tax in 1966-67 was Rs. 8.40 crores and the income under the same head now also works out to Rs. 8.40 crores. By this he means to drive home the point that there has been no reduction in the land tax burden and that all our claims of mitigation of land tax burden on the peasantry are verbal myths.

We have abolished the land tax completely for dry lands and up to the limit of five acres in the case of

wet lands. Further we have imposed agricultural income-tax only on those farmers who take to commercial crops and are capable of bearing the additional tax burden. This has yielded additional tax revenue to the exchequer. All these additional taxation on the rich land-holders is reflected in the land tax.

Land revenue is a fluctuating source and it is judged best by striking averages for 5-year periods. If we take into account the average collection from land tax for the period from 1961-62 to 1966-67, the average year-wise collection comes to Rs. 8 crores whereas the average year-wise revenue from this source of income for the period from 1967-68 to 1973-74 it works out to only Rs. 6.3 crores. Thus on average the revenue on this account has fallen down by Rs. 2 crores benefiting a large number of small land-holders in the State with the abolition of land tax.

## Share of the State in the Central Tax.

Thiru James of the Con. (O) party in the Assembly alleged in his speech that the revenue of the State has increased from Rs. 194 crores in 1966-67 to Rs. 465 crores this year and that the large revenue increase to the tune of Rs. 271 crores represents new and enhanced taxes imposed on the people afresh during the period of this Government.

His statement that the State's revenue receipt from tax collection in 1965-66 and 1973-74 are Rs. 194 crores and Rs. 465 crores respectively is completely misleading inasmuch as the total revenue receipt of a State Government includes many other items of receipts apart from tax collections. In 1966-67, the State derived a sum of Rs. 29 crores from the divisible pool of Central tax collection as against Rs. 96 crores the State is receiving from the same source in 1973-74. So also, in 1966-67, the total grants received from the Centre amounted to Rs. 23 crores whereas the same has increased to Rs. 54 crores this year. Further the non-tax revenue of the State was Rs. 46 crores in 1966-67 whereas the non-tax revenue of the State now stands at Rs. 89 crores.

After deducting all these receipts from the total revenue receipt of the State, the net amount derived from taxation in 1966-67 was Rs. 95

crores whereas the same works out to Rs. 225 crores this year. The increase in the taxation revenue is not due to undue imposition of new taxes on the weaker sections. All these increases in taxation revenue has been effected through some slight increase and simple rationalistic modifications made in the already existing taxes, through the accelerated growth in the industrialisation of the State and through the general economic growth in the State.

Is it wise to allow the taxation increase to such menacing proportions within a period of seven years? To put the matter in proper perspective let us go back to the past and analyse the matter in the background of the previous seven years' record before 1966-67. In 1959-60 the total revenue realised from taxation in this State was to the tune of Rs. 39 crores and it reached in the year 1966-67 the figure of Rs. 95 crores registering a spectacular increase of 2.45 times more or 245 per cent. But the increase in taxation revenue between 1967-68 and 1973-74 works out to only 2.36 times more or 236 per cent only. From this account it may be clear that comparatively speaking, the increase in taxation revenue between 1967-68 and 1973-74 is not so glaring as made out by the member.

## Price Rise.

Almost all members who spoke on the budget for 1973-74 expressed grave concern over the price rise—and all the opposition members raised the point in an unanimous and universal tone as if this Government is not at all worried over this serious problem. Without seeming to be putting the whole blame on the Centre, I have to affirm that this is an All-India problem and we must look at and deal with it as such.

We have never thought nor do we wish to get away from the problem by shrinking from the burden of the problem and shying away from our duty to the society. But on the other hand, we reflect the same opinion that the opposition leader and the members in this House expressed on this problem. We must also bear in mind that we all have equal responsibility to put the people in proper perspective of this menacing problem.

As per the Economic Survey, 1972-73 of the Government of

India, the growth of National Income in 1968-69 was 7 per cent as against 8.1 per cent increase in the money circulation in the same year. The year 1969-70 registered an increase of 7.3 per cent in the National Income growth whereas the money circulation in the same year increased by 10.8 per cent. In the year 1970-71, as against 4.6 per cent increase in the National Income the increase in the money supply was 11.1 per cent. But in the year 1971-72 the National Income growth got down to between 1.5 and 2 per cent whereas the money supply in the same year registered an increase of 12.9 per cent. The same has been repeated in 1972-73. It is a common knowledge that when money supply exceeds that of the production growth of a country the prices of goods naturally get an upward trend. The power to keep the money supply under control lies with the Centre. Because the Centre is tied up with the responsibility of controlling the money supply, we say that the Centre should take needful and necessary action in this regard.

Nor is this all. There is another point to this problem. The black money holders contribute not a little to the spiralling up of prices. Their holding black money in large sums without letting it out in the open market adds to the price-kick in no small measure. The responsibility to unearth the black money is not with the State. That lies with the Union Government. None is unaware of the complications that black money is creating in the national economy.

As far as Tamil Nadu is concerned we produce rice in enough quantity and so we are in a position to keep the rice price under check by banning the export of rice to other States. But in the case of other food articles such as pulses, oil, etc. we, by and large, rely on the supplies from other States, and we are incapable of bringing their prices under control. Nevertheless, the State Government has started with added vigour and speed the work in the field to produce more such items of food articles that we are in short supply. This zeal and zest of the Government has been expressed in unambiguous and unequivocal terms in the Governor's Address and the Budget for 1973-74.

# BHARATHY DASAN —A POET OF ALL TIMES

A poet listens through his eyes, hears the flower laugh, the trees talk and the stars sing. He catches glimpses of those eternal stars of truth whose lustre is never dimmed by the cloud—confusions of banality.

But there are natures which crave stimulus more than consolation and look for a solution to life's problems that can be worked out while they are in motion. They do not wish—as poets must—to withdraw themselves from active life. The rugged mountains, the lovely lakes, the secluded vales do not attract them as much as the fertile plain with its luxuriant vegetation, the whistling city, the crowded highways of trade and trauma—such a poet was Bharathi Dasan.

Bharathi Dasan wrote of the rich and varied life of Man as one who knows its artificial as well as its natural elements—palaces as well as public inns, courts as well as cottages, Art, Politics, Literature, Science and Reform, all are familiar to him. His message is modern and militant. His real art lies in doubt. Rebellion and discord—taking them into poetry and transforming them. His poetry is very like himself—restless, curious, self-conscious, energetic, with an active questioning spirit.

The poet himself was born in Pondicherry in 1891. His father Kanakasabai, a rich merchant, named him Subburathinam. He received his early education at a French School but his interest and ability in Tamil was both great and genuine. At Calway College where he did his University Education, he stood first in Tamil. Seeing real genius in this budding youth, the College authorities gave him the post of a Lecturer when he was barely eighteen. Abundant goodwill, a sense of rhythm and a balanced felicity of expression all combined in him enabling him to compose good poems which are good to read and much better to hear. He sang to his friends with great intensity and ease which amazed and struck them; and he revelled in it. The truth of this

assertion lies in the fact that many are the orators who have risen to fame and name by merely imbibing a capacity to recite appropriately his poems—so good are they to hear!

At a friend's marriage, after dinner, Bharathi Dasan sang one of Subramania Bharathi's folk songs. Subramania Bharathi himself was present but Bharathi Dasan was unaware of this fact. Bharathiar was greatly impressed. Incidentally none could recite Bharathiar's impassioned poems with the fire and the fervour implicit in those poems, with full throated gusto and brimming vigour. Bharathiar felt that Subburathinam had in him, all the makings of a poet and all the delicacies needed in an artist. So one day when among friends, Subramania Bharathi said that

R. N. SUSILA,  
B.A. (Litt.).

Subburathinam could easily compose poems. Many doubted, when Bharathiar looked at Subburathinam and smiled as if to say "Come on, show them". His first powerful song reverberated the hall, which ran "Power pervades Universe..." The substance and the beauty of the poem made Subburathinam known to the literary world as Bharathi Dasan. He earned the title of "Kavingnar" from Bharathiar and remained as his friend and disciple for over a decade. Bharathi Dasan was a great reformer. He wrote with vehemence about caste and class differences. He was the unpaid advocate for the poor, wretched, down-trodden and the helpless. He dedicated his life to uproot social evils like child-marriage, caste differences, suppression of labour and inequality in classes. He struck at the root of superstition and age old orthodox beliefs. Peasants and poverty were always before him. He gives fulness to a distant-dream of a labour rule where all are equal in the eyes of law and where everybody owned everything.

Bharathi Dasan was a great rationalist. He was the first to express revolutionary ideas in the Twentieth Century Tamil Poetry. He encouraged intercaste marriages, widow remarriage, in the upliftment of women and women's education. He realised that only in a society where women were respected and emancipated could there be a bright and an intelligent generation. His idea was that if he could get people to see that a thing was both ridiculous and cruel, they would want to stop it. He conceived that his duty as a poet was done only when he had shown up the absurd and hateful things, and made people laugh at their ugliness, weep over their inhumanity and become possessed of a longing to sweep them away.

Life was too everlastingly interesting for him to be long unhappy. His own work invigorated him and he went on with his industrious dreaming. He confessed "I write for my pleasure, not to impress any". He hated, dullness, insincerity, stupid humbug and pompous nonsense. So he lived and wrote with a high hand.

Many poems are dry and dusty; there is no juice in them but some have in them an unfailing sap, both from the tree of knowledge and life. Poems that not only tell you how things look like, how people behave but also interpret nature and life to you, in language of beauty and power touched with the personality of a poet, so that they have a real voice audible to your spirit in silence as Bharathi Dasan's poems do.

When we go back to his best works we find another spirit, another message, clear resonant, trumpet, like his voice calls to us proclaiming the glory of this life. His message is incised: Only do not despair, only do not sink into stupid conventionality, superstitions, indifference, mockery and cynicism. Only rise and hope and march forward out of the house of bondage into the land of liberty. The Message is complete and inspiring.

He does not teach us, but tells us to live—and in this he bids us find life glorious though it is still imperfect and therefore full of promise.

Tamil Nadu

## POLICE IN 1972

"As many as 26,080 cases against property including murder were reported in 1972, as against 25,830 cases in 1971 which means an increase by 1 per cent. The investigation of these offences have received attention with particular emphasis on the application of scientific aids to investigation such as the Finger Print Bureau, Vellore and the Single Digit Finger Print Units, the Dog Squad, the Police Wireless Net-work, etc. Thus modernisation of Police Force in Tamil Nadu on scientific line is in full swing."

The Tamil Nadu Police has maintained its reputation of being a very fine, effective and efficient organisation, with a total strength of 43,364 personnel.

In order to assist the Police Force with latest scientific aids, the Government sanctioned the formation of 16 Mobile Laboratory units in the districts in 1971. All these mobile laboratories were equipped during the year under review and they undertake visits to scenes of crime and are being put to good use by Police Officers in the districts. Each mobile unit is manned by a Sub-Inspector who has been specially trained for this work. However, the Sub-Inspectors of these units are being replaced by regular Scientific Assistants on a phased programme and to start with, the Government have sanctioned during this year four posts of Scientific Assistants to man the units in North Arcot, Madurai (North), Chingleput (West) and Kanyakumari districts.

At Headquarters the Forensic Science Laboratory is giving help to the Police on all cases.

The laboratory has acquired during the year a X-ray plant and Reichert Dia pan microscope. An equipment with electric timer to determine the muzzle velocities in fire arms cases has also been acquired by the laboratory.

The Government have issued orders merging the Tamil Nadu Forensic Science Laboratory and the Chemical Examiner's Laboratory into one integrated laboratory from 1st March 1973. The integrated laboratory is called the Tamil Nadu Forensic Science and Chemical Laboratory.

### Crime and Detection:

26,080 cases against property including murder were reported in 1972, as against 25,830 cases in 1971, which means an increase by

250 cases or 1.0 per cent. The increase in crime, though very marginal, is in keeping with such increasing crime trends in developing and developed countries of the world. The investigation of these offences received attention with particular emphasis on the application of scientific aids to investigation such as the Finger Print Bureau, Vellore and the Single Digit Finger Print Units, the Dog Squad, the Police Wireless Net-work, the Tamil Nadu Forensic Science Laboratory and the Mobile Laboratory Units in the districts.

### Dog Squad:

There are 3 Dog Squads at present functioning in this State, one each at Madras City, Madurai and Coimbatore. They have been working quite satisfactorily. The Government have also sanctioned the formation of a Dog Squad at Tiruchirappalli and the construction of kennel has been taken up. It will start functioning after the kennel is completed and dogs are procured. The services of the Detective Dog Squads were utilised in 359 cases during 1972, as against 315 in 1971.

### Police Radio Branch:

All the District headquarters are linked with Madras, which has four control stations known as Central Range, Southern Range, Western Range and Northern Range control stations, in the Tamil Nadu Police Radio Net-work.

Besides the above, there are Madras City Police Radio Net-work and Tamil Nadu Special Police Radio Net-works. The flood emergency stations are in Madras City, Lower Anicut, Grant Anicut, Thanjavur, Bhavanisagar, Thekkady, Mettur, Upper Anicut, Ramana-nathapuram, Madurai and Tirunelveli which are used during monsoons and for communication regarding release of water from reservoirs, etc. There are 43 sub-divisional Stations which were utilised



during all important festivals, strikes, V.I.P. visits and in all other emergencies.

The establishment of Radio Stations at Avadi, Cheyyar, Nilakottai and Virudhunagar sub-division was sanctioned during the year. At present, Police control rooms are functioning at Madurai, Tiruchirappalli, Coimbatore, St. Thomas Mount (Chingleput East), Madras City, Tirunelveli, Salem and Vellore.

The four weather warning stations at Madras, Kancheepuram, Cuddalore and Thanjavur are functioning satisfactorily.

#### Microwave Survey

The microwave survey team began the survey work in February, 1971. A preliminary survey of the microwave route from Madras City to Nagercoil was conducted. A detailed survey was later undertaken. Major hill regions were surveyed and sites for microwave stations were tentatively chosen. The required technical data for the Microwave project has been collected. A project report has been prepared and sent to the Director of Police Tele-communications, New Delhi for inviting tenders. The clearance for the Project from the Electronics Commission, the Directorate of Technical Development and Wireless Planning and Co-ordination is awaited.

A major programme of expansion of the V.H.F. net-work is now underway. Work is in progress for installing V.H.F. sets in 120 Police stations sanctioned under the modernisation programme for 1971-72. V.H.F. sets are to be installed in another 270 Police stations under the same scheme in 1972-73. It is expected that by 1975-76 all Police stations would be linked through V.H.F. radio stations to their respective district headquarters.

The V.H.F. net-work which permits, voice, Teleprinter and Facsimile Communication, connects State headquarters, through five high altitude repeater stations with all the district headquarters towns and also with wireless equipped vehicles in eight such towns which have control rooms. Altogether there are 44 static and 112 mobile V.H.F. sets in operation.

#### Police Commission Recommendation Executed

As many as 122 recommendations of the 133 made out by the Tamil Nadu Police Commission have been accepted by the Government. They cost Rs. 3 crores non-recurring and Rs. 3 crores recurring. Accepted recommendations on which action has yet to be taken will cost Rs. 2,02,66,012 per annum and Rs. 4,64,60,550 (non-recurring). It is proposed to implement these recommendations in a phased manner. The recommendations, which have been accepted, fall into five groups, and their main features are set out below :

**Group I.—Pecuniary conditions of Service.**—Extension of the privilege of free supply of uniform and payment of feeding charges during bandobust to all non-gazetted Police Officers; enhancing the rate of uniform allowance from Rs. 5 to Rs. 7 per mensem to each Police Constable and Head Constable.

**Group II.—Reconstitution of Police Services.**—Two new categories, namely, Police Constables Grade I and Deputy Inspectors of Police have been introduced and certain changes in strength of various categories have been accepted, in order to meet functional and workload requirements, while improving promotion prospects.

(b) The above changes provide for—

(i) One extra Sub-Division in each Police District.

(ii) Circles based on the following formula —

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| 4 stations for a circle. | In rural areas.                                  |
| 3 stations for a circle. | In Grade III municipalities and adjoining areas. |
| 2 stations for a circle. | In Grade II municipalities and adjoining areas.  |
| 1 station for a circle.  | In Corporation and Grade I municipalities.       |

(iii) Transfer of responsibility for Sub-Jail and Sub-Treasury guarding with a man-power equivalent of 150 head constables and 900 police constables, from the Police Department to the Jail Department.

(iv) Augmenting District and City Armed Reserves by 16 Platoons of Armed Reserves in two stages.

(v) Opening of 24 Traffic Police Stations in Madras City and 98 in the districts.

(vi) Augmenting and providing of Traffic Investigation Teams in Madras City, Madurai, Coimbatore, Tiruchirappalli and Salem.

(vii) Augmenting State and District Crime Branches and District Intelligence Bureau for handling Crime with wide ramifications, and provision of one Deputy Inspector for each Circle for attending to local professional crime.

(viii) Augmentation to the State Special Branch.

(ix) Establishment of a Police Academy.

#### KEROSENE IN BREAD FOR HIGH ALTITUDE.

Kerosene is in easy medium of cooking and heating at high altitudes. The Defence Research Laboratory, Kanpur, has developed a process of microemulsion of Kerosene in resinous materials which can be subsequently cast into any desired shape. This spongy resinous material would neither be affected nor would it change the physical and chemical properties Kerosene oil. The emulsionated oil known as "Kerosene Bread" contains 90 per cent by weight of Kerosene oil. The material is light and porous. The spongy material can also serve as a solid fuel when most of its oil has been squeezed out.

The raw materials used to prepare the kerosene bread are oil kerosene superior quality, Urea stock solution, Formaldehyde Phenol, Ammonium Sulphate, Triethanolamine.

The cost of production has been worked out at Rs. 1.15 per kg. and the total capital has been estimated at Rs. 75,000.

The experiments have shown that the kerosene bread can be successfully dropped by Air-Craft and supplied to the hilly terrains without any damage.



Thiru P. U. Shanmugam, Revenue Minister.

## PURPOSEFUL AND EFFECTIVE IMPLEMENTATION OF LAND REFORMS IN TAMIL NADU

The Tamil Nadu Government takes pride in the purposeful land reforms measures introduced and effectively implemented in recent years with a view to usher in a socialistic order and to stimulate agricultural production through the elimination of exploitation of tenants by landlords, the provision of greater security of tenure to the actual tiller and the prevention of concentration of lands in the hands of a few big landholders. The following statement shows the extent of lands so far notified as surplus, extent taken possession, etc., upto 31st January 1973 under the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Act, 1961 :—

|                                              | ACRES. |
|----------------------------------------------|--------|
| (1) Extent notified as surplus.              | 39,253 |
| (2) Extent taken possession out of item (i). | 30,916 |
| (3) Extent assigned out of item (ii).        | 23,557 |
| 4) Number of persons to whom assigned.       | 12,000 |

The following figures would indicate the progress under the Tamil

Nadu Land Reforms (Reduction of Ceiling on Land) Act, 1970 :—

|                                                                                                            | ACRES. |
|------------------------------------------------------------------------------------------------------------|--------|
| (i) Total number of cases taken up for verification.                                                       | 75,104 |
| (ii) Number of cases so far verified out of item (i).                                                      | 54,394 |
| (iii) Number of cases attracted by the ceiling limit out of item (ii).                                     | 6,508  |
| (iv) Number of cases for which draft statement indicating the surplus has been prepared out of item (iii). | 1,617  |
| (v) Probable extent of surplus lands under item (iv) above.                                                | 20,476 |

In order to make the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Act, 1961 a more effective instrument, this Government had in 1970 brought into force, without any notice, necessary legislation to reduce the ceiling of 30 standard acres to 15 standard acres effective from 15th February 1970. With effect from 15th January 1972, Government had also revoked the exemptions granted to sugarcane lands and grassing lands.

The following are the important land reforms measures introduced during 1972-73 :—

(i) Section 59 of the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Act, 1961 originally provided that the provisions of Chapter VIII of the Act relating to the ceiling area for cultivating tenants should remain in force for a period of three years from the date of publication of the Act, viz., 2nd May 1962. The life of this Chapter was extended from time to time by legislation. By the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Amendment Act, 1972, the life of the Chapter has been made permanent.

(ii) By the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Second Amendment Act, 1972, the exemption in respect of lands in hill areas was withdrawn with effect from 1st March 1972. The overall ceiling for a family consisting of more than five members was also reduced from 60 standard acres to 40 standard acres with effect from 1st March 1972.

(iii) By the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Third Amendment Act, 1972 separate ceiling has been prescribed for various categories of charitable

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### AN OPINION.....

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Managing Director G. R. GOVINDARAJULU

## SOCIAL AND ECONOMIC JUSTICE THROUGH LAND DISTRIBUTION

Tamil Nadu can  
take rightful pride in  
its significant progress  
made in the assignment  
of 5.30 lakh acres land  
to as many as 2.65 lakh  
people within a period  
of five years thereby  
accelerating the pace  
of social and economic  
justice.

The Revenue Administration in Tamil Nadu, by a judicious systematic use of all the instruments at its command to aid and assist the Government in its mission of securing the greatest social and economic justice for the greatest number, achieved significant progress in the year 1972-73 to assign the maximum extent of lands available to the landless poor for purposes of cultivation. It is a matter of gratification that during a period of only five years from 1967-68 to 1971-72, the Government have been able to assign 5.30 lakh acres of land benefiting 2.65 lakh persons. The magnitude of this achievements will be clear when we note that during the preceding period of 20 years, i.e. from 1947-48 to 1966-67, the extent of lands assigned was only 2.88 lakh acres benefiting 1.15 lakh persons.

During the current year 63,700 acres of land have been assigned up to the end of December 1972, against a target of 75,000 acres for year ending March 1973.

With a view to minimise the hardship to the persons who had encroached upon large extents of Government lands in Gudalur taluk in the Nilgiris district, Government had taken a very liberal decision in 1971 that all these encroachments which existed prior to the 30th of June 1971 should be regularised subject to the usual conditions. The progress so far made in this regard will be seen from the following figures at the bottom.—

In July 1972, Government issued orders raising the monetary limit for being considered a "poor person" for the purpose of assignment of land. This was done since the monetary limit was fixed several years ago and subsequently there has been a gradual erosion in the value of money. Government have, accordingly, raised the monetary limit of income from Rs. 100 to 200 per mensem in respect of a person whose family consists of five or less members and from

Rs. 150 to 250 per mensem in respect of a person whose family consists of more than five members.

### Assignment of House sites.

The special drive launched in the year 1969 for assigning as many house-sites as possible to houseless persons in the State, in both urban and rural areas, was kept up during 1972-73 also. As against a total of 4,98,718 cases of unobjectionable encroachments to be regularised 3,50,706 cases have been regularised by the issue of house-site pattas by the end of December, 1972. In the year 1972-73, alone (i.e. from April 1972 to December 1972), 34 839 pattas for house-sites were issued.

In 1971, Government had imposed a ban on the assignment/lease of Government lands in the city of Madras and within a periphery of 20 miles from the limits of Madras City and within the limits of Madurai City and the towns of Tiruchirappalli and Coimbatore. The ban was imposed so as to make all Government lands available for the housing programmes of the Slum Clearance Board. Government have recently reviewed the need for the continuance of this ban in its total form since this has resulted in hardship to persons who have been occupying Government lands for house-site purposes for a long number of years. Government have also considered the possibility that some of these lands may not *prima facie* be required for the purposes of the Slum Clearance Board. Government have, accordingly, ordered in January 1973 that all unobjectionable encroachments in Government poramboke lands in the above mentioned areas should be regularised without jeopardising the interests of the Slum Clearance Board. In order to expedite the regularisation of these encroachments through the issue of house-site pattas, Government have also sanctioned the employment of 11 units of special staff for Madras and Chingleput districts.

In continuance of the earlier decisions of this Government to waive the assessment on all dry lands and also the basic land revenue component of the consolidated wet assessment on all holdings of wet lands five acre or less in extent and irrespective of the size of the total holdings Government have, in July 1972, issued orders waiving the basic assessment on all lands registered as *manavari*. These orders took effect from the *fasi* that commenced on 1st July 1972.

| Area in acres<br>Number of<br>families. | Total<br>extent of<br>encroach-<br>ments and<br>families<br>involved. | Pattas<br>issued<br>as on<br>28th Feb-<br>ruary 1973. | Pattas<br>under<br>issue. |
|-----------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|---------------------------|
|                                         | (1)                                                                   | (2)                                                   | (3)                       |
|                                         | 11,352                                                                | 9,060                                                 | 737                       |
|                                         | 7,902                                                                 | 5,573                                                 | 806                       |

or educational institutions of a public nature. It also imposes a ban on future acquisition of agricultural lands by such institutions on or after 1st March 1972. Though the exemption granted to religious institutions and religious trusts has been continued in respect of the lands held by them on 1st March 1972 future acquisition of agricultural lands by these institutions on or after 1st March 1972 was prohibited.

(iv) The Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Fourth Amendment Act, 1972, gave effect to the following major changes :—

(a) The overall ceiling area for a family consisting of more than five members was reduced from 40 standard acres to 30 standard acres, with effect from 1st March 1972.

(b) The exemption granted for lands used for livestock breeding and dairy farming was withdrawn with effect from 1st March 1972.

(c) The rates of compensation prescribed in the Schedule III of the Act was revised so that the quantum of compensation would decrease with the increase in the size of the holding.

(d) The time-limit provided in various sections for filing returns, objections, etc., was reduced to 30 days. The time-limit provided under section 51 (1) for preparing claims by mortgagees of the land for compensation was reduced to 60 days. This was intended to minimise the delay in the implementation of the Act.

(v) By the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Fifth Amendment Bill, 1972, the exemption granted to co-operative societies under section 73 (iii) of the Act has been confined only to any land assigned by the Government and held by any Land Colonisation Co-operative Society. The assent of the President to the Bill is awaited.

(vi) By the Tamil Nadu Land Reforms (Fixation of Ceiling on Land) Sixth Amendment Bill, 1972, provision has been made for the following purposes :—

(a) Under the existing provisions no one can hold land in excess of the ceiling limit prescribed on or

after the date of commencement of the Act. However, since it takes some time for the Government to issue a notification under section 18 of the Act, enabling the actual take-over of all the surplus lands after following the procedure laid down, the owner continues to enjoy the lands even after the date of commencement of the Act. The Amendment Bill provides that the land should vest in the Government even from the date of commencement of the Act, and that the owner of the land or any person deriving benefit therefrom should pay to the Government an amount as compensation, for the use and occupation of the land during the period he was in possession of the land.

(b) In many cases, the owners of lands who have transferred the lands during the period mentioned in section 22, and which transaction has been held void, have indicated in their return their desire to surrender the lands so transferred as surplus lands to be taken over by the Government. Such land owners thereby get the double advantage of receiving both the value paid by the purchaser of the land as well as the compensation payable by the Government for the surplus lands. The Government decided that such unintended benefit should not ensure to the owner of the land and that the land declared as void should be included in the ceiling area of the transferor so that the purchaser may not also be affected.

#### Fair wages for Agriculturists :

In 1968, there was agrarian unrest in East Thanjavur district over the wages payable to the agricultural labourers. With reference to the recommendations of the Commission appointed by Government to enquire

into the connected issues, Government enacted the Tamil Nadu Agricultural Labourers Fair Wages Act, 1969. The Act is applicable to the six taluks of Mannargudi, Thiruthuraiipoondi, Mayuram, Sirkali, Nagapattinam and Nannilam in East Thanjavur district. The life of the Act as originally fixed up to 4th August 1972. It has since been made a permanent Act by the Tamil Nadu Agricultural Labourers Fair Wages (Amendment) Act, 1972. Government have also taken powers to alter the rates of wages specified in the Act. Government have revised the rates of fair wages by issuing a notification on 14th December 1972. The rates of wages originally fixed under the Act and the rates of wages as revised by the notification are as in the table at the bottom of page.

#### Tenancy Rights :

The Tamil Nadu Agricultural Lands (Record of Tenancy Rights) Act, 1969, provides for the preparation and maintenance of complete and reliable records of tenancy rights which would serve as a documentation of tenancy and would go a long way in ending the many evils associated with oral leases. The work under this Act has almost been completed in all the districts. The number of tenants registered under the Act and the extent involved in each district are given in the table at the bottom of the next page.

#### Tenants to own lands :

In continuation of the progressive measures introduced by this Government for the protection of tenants who have been cultivating land owner's lands, Government have decided to bring forth legislation to confer on these tenants the right

to purchase the lands they cultivate from the land owners. It will be ensured that the poorer and small land owners will not be adversely affected by this legislation. Necessary legislation for this purpose will be introduced in the current session of the Legislature. Government have also decided to set up a Tenants Financing Corporation to assist the poorer tenants to purchase the lands from the land owners.

#### Pudukottai district.

In response to the long standing request of the people of Pudukottai area, Government have decided to constitute a separate revenue district for this area. The Board of Revenue has been requested to examine and make recommendations as to the territory that should be constituted into this new district and on connected issues.

#### Upgrading sub-taluk.

As part of a phased programme for upgrading sub-taluks as full-fledged taluks in order to facilitate

administration and to secure greater convenience to the public, Government have decided to upgrade Palacode sub-taluk in Dharmapuri district and Karai-kudi sub-taluk in Ramanathapuram district as full taluks during 1973-74.

#### Patta Book.

A significant reform introduced by Government during the year was the scheme for the distribution of 'patta books'. The difficulties experienced by the ryots in obtaining timely information about the details of their holdings, the assessment thereon and connected matters are well known. It is in order to obviate these difficulties that Government have introduced the scheme for the issue of 'patta books' to every ryot. These books will contain authenticated and detailed particulars of the holdings of each ryot, the assessment thereon, the remittances made by the ryot from time to time and the loans disbursed to him and their repayment. The patta books are to be issued

at a concessional price of 50 paise per book. The scheme was introduced in Paramakudi taluk of Ramanathapuram district on 9th October 1972 and is being implemented in the remaining districts under a phased programme. So far, 17 lakhs of patta books have been printed and sent to the districts for distribution.

### Expansion of Mental Health Service

Setting up of 21 psychiatric clinics in district and teaching hospitals in 1973-74 is under consideration. This will be in addition to 32 clinics already functioning in various States with Central assistance. The 53 clinics will cater to the increasing demand for psychiatric treatment necessitated by rapid industrialisation and urbanisation. Facilities to mental patients in initial stages and aftercare to the cases discharged from 38 mental hospitals in the country, will be available in these clinics.

### Malaria Control Measure

Eighty more towns are being covered under the Urban Malaria Control Programme during 1973-74. These are : three in Andhra Pradesh, one in Assam, two in Bihar, eleven in Gujarat, seven in Haryana, nine each in Madhya Pradesh, Maharashtra and Uttar Pradesh, four in Mysore, three in Orissa, seven in Punjab, five in Rajasthan, three in Tamil Nadu, five in West Bengal and one each in Manipur and Tripura.

The scheme providing for 100 per cent Central subsidy was taken up by the Ministry of Health in 1971-72 when 22 towns in the country were covered. Six more towns were added this year.

The Ministry of Health have laid down the staffing pattern and scale of supplies of material and equipment in the selected towns.

| District.                 | Tenants Registered. | Extent in acres. |
|---------------------------|---------------------|------------------|
| (1)                       | (2)                 | (3)              |
| 1 Thanjavur .. .. .       | 1,24,393            | 2,49,997         |
| 2 Tiruchirappalli .. .. . | 57,909              | 67,086           |
| 3 Madurai .. .. .         | 35,880              | 40,893           |
| 4 Chingleput .. .. .      | 11,738              | 18,088           |
| 5 Ramanathapuram .. .. .  | 15,146              | 14,444           |
| 6 Coimbatore .. .. .      | 12,574              | 34,066           |
| 7 Tirunelveli .. .. .     | 64,891              | 41,185           |
| 8 Kanyakumari .. .. .     | 3,891               | 3,364            |
| 9 North Arcot .. .. .     | 31,559              | 55,279           |
| 10 The Nilgiris .. .. .   | 1,189               | 4,652            |
| 11 Salem .. .. .          | 8,883               | 18,712           |
| 12 Dharmapuri .. .. .     | 8,804               | 25,646           |
| 13 South Arcot .. .. .    | 11,626              | 15,752           |
| Total .. .. .             | 3,88,483            | 5,90,164         |

|         |                                              | Original rates.                                       | Revised rates.                                       |
|---------|----------------------------------------------|-------------------------------------------------------|------------------------------------------------------|
| Men ..  | All kinds of work during cultivation season. | Rs. 3.00 or 6 litres of paddy plus Rs. 1.25 per day.  | Rs. 3.70 or 6 litres of paddy plus Rs. 1.50 per day. |
| Women   | All kinds of work during cultivation season. | Rs. 1.75 or 5 litres of paddy plus Re. 0.25 per day.  | Rs. 2.25 or 5 litres of paddy plus Re. 0.50 per day. |
| Harvest | ..                                           | Six litres out of every 55 litres of harvested paddy. | No change                                            |



# DROUGHT AND FLOOD RELIEF WORK IN

## TAMIL NADU

Consequent on the failure of the South-West Monsoon in 1972, drought conditions prevailed in several parts of the State. Based on the report of the Members of the Board of Revenue, after their tour of the affected districts, Government sanctioned a sum of Rs. 125 lakhs in September-October 1972 for taking up relief works in the districts in the form of deepening of existing public drinking water sources including Uranis, sinking of new public drinking water wells including bore wells, improvement to minor irrigation works, road works, etc. The amount was earmarked for the various districts as follows :—

| District.          | (Rupees<br>in<br>lakhs.) |
|--------------------|--------------------------|
| Dharmapuri ..      | 11-00                    |
| Salem ..           | 11-50                    |
| Coimbatore ..      | 15-50                    |
| North Arcot ..     | 12-50                    |
| Chingleput ..      | 8-50                     |
| Tiruchirappalli .. | 12-00                    |
| Madurai ..         | 12-00                    |
| South Arcot ..     | 7-00                     |
| Ramanathapuram ..  | 12-00                    |
| Tirunelveli ..     | 10-00                    |
| Thanjavur ..       | 6-00                     |
| Kanyakumari ..     | 2-00                     |
| The Nilgiris ..    | 5-00                     |
| Total ..           | 125-00                   |

Government also postponed the collection of arrears of Land Revenue, Loans and Agricultural Income Tax due to the Government in the affected areas till 31st December 1972. In response to the State Government's request to the Government of India for assistance for the relief of drought affected areas and on the basis of the recommendations of a Study Team deputed by the Government of India which visited the State, the Government of India have agreed to grant financial assistance and have fixed a ceiling of Rs. 150 lakhs towards the expenditure under drought relief for the two months of October and November 1972 in this State.

The Centrally sponsored "Drought Prone Areas Programme" continued to be implemented in Ramanathapuram and Dharmapuri districts during 1972-73 also. The Government of India have conveyed their administrative approval to an expenditure not exceeding Rs. 131.31 lakhs (Rs. 66.03 lakhs for Ramanathapuram district and Rs. 65.28 lakhs for Dharmapuri district) under this programme during the year 1972-73.

The Government of India have selected Dharmapuri district for a drought prone area project to be implemented with the assistance of the World Bank. The intention is to start the project sometime in 1973-74 and to continue it for a period 3 to 4 years as part of the Fifth Plan. A project report with a tentative allocation of about Rs. 584 lakhs for the district has been prepared and sent to the Government of India.

### Flood Relief :

As a result of the cyclone that hit the coast of the State in December 1972 and the unprecedented floods in Pennaiyar, Gadilam, Malattar, Palar, Vellar, Baminiyar, Thirumanimuthar, Ayyar and Bhavani rivers, there were a number of breaches in 2,900 major and minor irrigation tanks which, in turn, resulted in breaches to highways and rural roads at 5,800 places. As many as 82 persons lost their lives because of the cyclone and the floods. Paddy crops were totally damaged in 28,000 acres and partially damaged in 170,000 acres. Other crops such as sugarcane, betel vine, cotton and redgram in about 90,000 acres were partially damaged. 1,70,000 families lost their houses. Damages were heavy in the districts of South Arcot, Thanjavur, Coimbatore,

Salem, Tiruchirappalli, North Arcot, Chingleput, Dharmapuri, Madras and the Nilgiris in that order. The total loss of property because of the cyclone and the floods was estimated to be of the order of Rs. 40 crores. The following items of immediate relief measures were ordered by the Government :

(i) The usual cash grant of Rs. 40 towards reconstruction of damaged houses and clothing grant per victim affected by cyclone and floods was increased to Rs. 80. Cash grant at this rate has been disbursed to about 1,70,000 families.

(ii) Gratuitous relief was given at the rate of Rs. 2,000 to the families of sole bread-winners who lost their lives.

(iii) Cash relief ranging from Rs. 500 to Rs. 1,000 was given in other cases of deaths.

(iv) If due to the death of the father and/or the mother in the floods, any child had become an orphan, the Government took over the financial responsibility for bringing up such a child and also for the education of the child.

(v) Takkavi loans have been sanctioned for the replacement of plough-bullocks or milch-cows that died in the floods.

(vi) Full remission of Land Revenue, water cess, local cess and local cess surcharge were given in respect of lands totally affected by the floods for the current fasli, i.e., fasli 1382.

(vii) Takkavi loans at a rate not exceeding Rs. 250 per damaged house was granted to deserving poor families in order to enable them to rebuild the damaged houses.

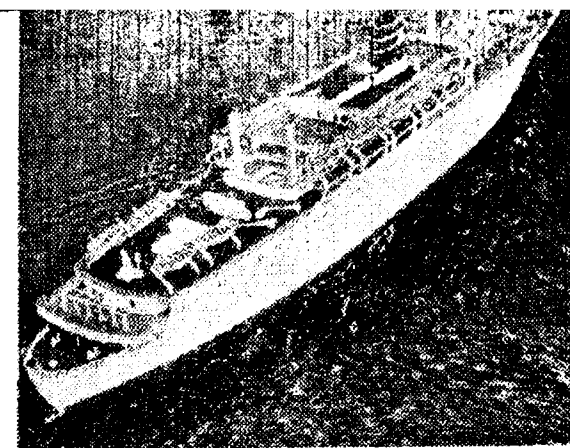
(viii) Government have undertaken to reclaim the lands which have become either sand-cast or eroded due to the floods, so as to make them fit for cultivation. The entire cost of reclamation will be borne by the Government.

(xi) Financial assistance of Rs. 100 to each affected family of weavers has been granted to help them replace their equipments lost in the floods.

Government have so far sanctioned Rs. 731.125 lakhs towards repair and relief items on the following basis :—

|                                                                                                                                                          | (RUPEES IN<br>LAKHS.) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Gratuitous relief including items of expenditure such as free-feeding of the poor, transporting marooned people to places of safety, etc.                | 165                   |
| Repair to major irrigation tanks.                                                                                                                        | 100                   |
| Repairs to minor irrigation sources. Repairs to roads under the control of the Highways and Rural Works Department, Panchayat Union and Panchayat roads. | 250                   |
| Repairs to roads damaged in Municipalities and the Corporation of Madras.                                                                                | 60                    |
| Repairs to damaged water works in the Municipalities of Arni and Tiruvannamalai.                                                                         | 1-125                 |
| Takkavi loans ..                                                                                                                                         | 125                   |
| Reclamation of sand-cast and eroded lands.                                                                                                               | 30                    |
| Total ..                                                                                                                                                 | 731-125               |

The Government of India have fixed an over-all ceiling of expenditure of Rs. 14.25 crores for purposes of Central assistance based on the recommendations of the Central Team which visited the State to assess the damage. In addition to this, there is a possibility of getting further assistance from the Government of India for the reconstruction of Thirukoilur anicut and Gomukhi dam. Out of the ceiling of Rs. 14.25 crores referred to above an expenditure of Rs. 7.25 crores will be incurred during the financial year 1972-73 and Rs. 7 crores during 1973-74. A loan of Rs. 3.50 crores has already been released to this Government towards cyclone and flood relief expenditure in the current year. Further assistance will be released in the light of the progress of expenditure as against the approved ceilings under the various items of repair and relief. ●



### V. O. CHIDAMBARAM ON MADRAS—MALAYSIA SINGAPORE VOYAGE.

The Madras/Malaysia-Singapore passenger service was started by the erstwhile Eastern Shipping Corporation in 1950. SCI has been able to acquire a modern vessel recently which is named after the great patriot, architect of Swadeshi Shipping Company, late Thiru V. O. Chidambaram Pillai, who sacrificed and suffered for the country.

Built in France in 1966, at Ateliers and Chantiers De Dunkerque Et Bordeaux, Dunkirk, with two SULZER Diesel Main Engines, each of 12,000 BHP., the m.v. Chidambaram is having a speed of about 21 knots. Classified as the highest class of BUREAU VERITAS Society, this ship has been recommissioned by the Corporation to suit our requirements in this service.

This fully air-conditioned vessel can accommodate 152 cabin class passengers (146—1st class and 6 Deluxe class) and 1,526 Bunk passengers. Out of these 1,526, 504 are accommodated in 101 dormitories of various sizes of 4 to 10 passengers in each dormitory.

Beautifully designed lounge with tapestries such as those by the famous Picard le Doux, a cinema theatre with seating arrangements for 170 persons, large and decorated swimming pool, nursery for children, lounge with a dance floor, closed circuit television are the special features on this ship. On each deck, comfortable and well arranged berths have been provided for unberthed passengers. Dressing rooms with spacious toilets, and separate dining room for vegetarians and non-vegetarians are also provided.

The cargo carrying capacity is about 4,500 cu.m. In addition it has refer cargo space of about 1,700 cu.m.

The m. v. 'Chidambaram' would complete a round voyage in 18 days compared to about 24 days taken by the 'State of Madras'.

In conformity with modern trends, all non-cabin class passengers are provided with bunk accommodation in this ship, thus completely eliminating deck class travel which constituted a substantial portion of the accommodation in 'State of Madras'.

M. V. 'Chidambaram' sailed out on her maiden voyage from Madras on March 25, 1973, under the command of Capt. N. J. Kavarana.

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Thiru K. Rajaram, Minister  
in Charge of Housing.



## HOUSING AND SLUM CLEARANCE SCHEMES OF TAMIL NADU WIN HIGH ACCLAIM

In 1970, the Tamil Nadu Government decided to launch on a phased programme to eliminate completely the slums in the City of Madras within a period of seven years. The Government also decided that a new image should be given to the slum clearance programme. In pursuance of this decision, the Government constituted a Slum Clearance Board and entrusted to it the following items of work relating to Slum Clearance in Madras City :—

(1) To assess the magnitude of the Slum Clearance Work, emphasis being made on clearance rather than on Slum Improvement;

(2) To take effective steps to prevent the growth of fresh slums;

(3) To plan and co-ordinate all slum clearance activities with a view to eradicate the slums in the City of Madras within a period of seven years;

(4) To acquire and develop lands and construct tenements and undertake all other necessary works required for the clearance of slums;

(5) To maintain, allot, lease or otherwise use tenements, plots and other properties of the Board; and

(6) To do all other things to implement the slum clearance work in the City of Madras.

The Government have also enacted a legislation called Tamil Nadu Slum Areas (Improvement and Clearance) Act, 1971 to implement the scheme. Immediately after the formation of the Slum Clearance Board, a Socio-Economic Survey was conducted to gather particulars of slums with details covering the socio-economic aspect of each of the slum-dwellers. The Survey revealed that there were 1,202 slums in Madras City with a population of 9 lakhs (1,50,000 families).

Based on the preliminary survey the Board drew up a short term scheme for clearance of 87 worst slums and commenced work in slum areas.

### NEW ENACTMENT FOR SLUM CLEARANCE.

The practical difficulties that are being faced in clearing the slums are recounted here to have better appreciation of the work done. When huts are cleared to make the site available for construction of modern dwellings alternate site has to be found near the original slum area for temporary rehabilitation of the slum dwellers as shifting them to a distant place would mean untold hardship for the slum-dwellers on account of their living far away from their places of work. The problem of finding vacant site in a City like Madras can well be imagined. Though the occupation may be for a temporary period, light and drinking water have to be provided and temporary latrines have to be constructed, with the

co-operation of the Corporation of Madras. A few semi-pucca structures have to be pulled down with the consent of the owners by making ex-gratia payment. The slum-dwellers have to be convinced of the necessity to live in storeyed tenements as most of them prefer single units. Hence the performance of the Slum Clearance Board in clearing as many as 75 worst slums and constructing twelve thousand tenements during the short period of two years is really impressive.

#### APPRECIATION BY DISTINGUISHED VISITORS.

*Extracts from the certificates of appreciation given by some distinguished visitors, who had visited the Scheme areas of the Board, are given below:—*

(1) "Consul Breckon and Lache and I are warmly appreciative of the excellent tour of projects and the fine luncheon hosted by dynamic Chairman, Rama Arrangannal. It was heartening to see first hand the splendid work being accomplished in Madras by the Tamil Nadu Slum Clearance Board. The problem of providing improved living condition for less privileged urban-dwellers is a world wide one. It may well be that the work done here will furnish new insights into the potentialities for resolving this problem elsewhere.

With the best wishes for further successes."

(Sd.) STEPHEN E. PALMER,  
Consul-General, United States of  
America, Madras.

(2) "I am proud of the work being done."

(Sd.) TONSE ANANTH PAI,  
Minister for Railways, Government  
of India, New Delhi.

(3) "I was taken round the work spot of Slum Clearance Board in Madras City by the Chief Engineer Thiru K. R. Ramaswamy and Superintending Engineer Thiru K. P. Logavinayagam. I congratulate the Government and the Chairman, Members and Staff of the Board for their devoted and patriotic work to rehabilitate the unfortunate section of our society, namely slum-dwellers. The efforts of the Government is a big leap in that direction and this is the only State in India which can be placed at the top. The work of the Government and the Board is worthy of emulation by other States even though it has long way to go to rehabilitate all the 1,200 slum-dwellers' areas in the City and elsewhere. I am really profited by my visit and I am thankful to them."

(Sd.) BASAVALINGAPPA,  
Minister for Municipal  
Administration and Housing,  
Bangalore.

(4) "I am very much appreciative having had this opportunity to visit the Madras Slum Clearance Board, its Chairman. I am most impressed with the enthusiastic and imaginative way in which the problem of urban rehabilitation is being tackled in Madras.

Best wishes for further success of this venture which, I am sure, will set an example to other cities in India and abroad."

(Sd.) JOCHEN KRASKE,  
1818, H. Street, N.W. Washington, D.C.  
World Bank, India Division.

(5) "An unexpected and remarkable programme, I am sure that it will continue to be a success. How can anything fail when it has such dedicated and inspired people behind it. My best wishes to the Chairman and his staff."

(Sd.) BILSEL H. ALISBAH,  
Deputy Resident Representative,  
World Bank, P.B. 416, New Delhi.

(6) "I have visited Madras in the course of a mission for the United Nations, to see national efforts to solve the slum problem. Few cities can have made such a sincere and effective attack on the slums. The contest between the slum huts and the new tenements springing up alongside there is astonishing and heartening. May your work prosper"

(Sd.) DR. RONALD MENDELSON,  
Department of Housing, Canberra, Australia.

(7) "I have seen slums and Tamil Nadu Slum Clearance Programme. It was a great impression to me. I visited also the new flats, library and doctors practices. I hope that this programme of human welfare and education comes to full success. I wish the slum clearance staff the best for the great programme.

(Sd.) PROF. H. A. KOCH,  
Academy of Medicines, Mycological  
Department, German Democratic Republic.

The magnitude of the problem can well be assessed if we bear in mind that not less than Rs. 150 crores would be required to construct 14 lakhs of tenements to clear all the slums in Madras City.

#### PROGRESS OF WORK.

After the formation of the Board, lands were taken possession by the Tamil Nadu Slum Clearance Board from private parties and temple authorities. In addition to these, lands were also taken over from the Government for the purpose of construction of tenements within Madras City. During 1971-72, construction of tenements within Madras City was undertaken in 16 areas with a target of constructing 10,624 tenements in these areas in a phased programme. Now the number of schemes in progress up to December 1972 is 48 and the number of tenements likely to be completed before 31st March 1973 is 7,818. The total number of schemes sanctioned by the Board for execution is 87.

#### ENVIRONMENTAL IMPROVEMENT TO SLUMS.

All the slums in Madras City cannot be cleared overnight. It has to be done on a phased programme. Till

then, it is essential to provide basic amenities to these slums which may not be taken up for clearance within a period of five years. The Slum Clearance Board has taken up this Herculean task with the grant given by the Government of India.

The Government of India have made provision during the year 1972-73 for allotment of funds to the State for extending the basic amenities to the unimproved and congested slums which may not be taken up for clearance within the next 5 years with a view to enabling the slum families to carry on a peaceful and hygienic life. The aim and object of the scheme are to give immediate relief to the slum dwellers who are living in unhygienic areas without any basic amenities. The allotment of funds depends on the volume of work undertaken by the various States exclusively for this purpose. In pursuance of the above scheme, the Slum Clearance Board prepared proposal for Rs. 418 lakhs for giving basic amenities to 162 slums in the City of under XV Phases, covering over 1.13 lakhs. Madras benefiting a slum population of about 1.13 lakhs. Based on this, the Government of India provided funds to the tune of Rs. 2.50 crores for the current year to this State.

The basic amenities provided to the slum families under this scheme are, (1) neatly paved path ways and access ways, (2) street lighting, (3) water-supply through public fountains, (4) provision of adequate number of bath rooms and latrines, (5) construction of storm water drains to relieve the areas from inundation and stagnation of rain water during rainy season, etc.

#### REMUNERATIVE ENTERPRISES.

In implementing the humanitarian scheme of clearing the slums and giving the slum dwellers a new life in hygienic surroundings, the Board is not guided by the economics of the project but considers it as a remunerative enterprises to minimise, if not to offset, the loss by way of letting the tenements at subsidised rent. The rent at which tenements are let out is only nominal viz., Rs. 15 per month whereas the economic rent should be around Rs. 45. One important factor that weighed in fixing the low rent is the income of the slum dwellers. These people are mostly engaged in odd jobs involving heavy manual labour or petty occupations. In early 75 per cent of the households there is only one earning member. The census study had clearly shown that more than 80 per cent of the slum households had income ranging from Rs. 30 to Rs. 100 only per month and the per capital income was a small fraction of the minimum required for subsistence. To collect an economic rent from these people would perhaps defeat the very purpose of the programme. At the same time, the Board certainly cannot shoulder this heavy subsidy especially when it has still to go a long way in tackling problem and there is real shortage of funds. Such enterprises are proposed to be built up by borrowing of funds from Commercial Banks. After the complete repayment of such bank loans in 5-10 years from out of the rent from the remunerative enterprises, the buildings would yield a permanent source of revenue to the Board.

#### HIRE PURCHASE.

A certain percentage of the tenements is also earmarked for allotments to low paid Government and quasi-Government employees who happen to be slum dwellers and also to the slum dwellers who can afford to pay the instalments on hire purchase basis. Under this scheme, an initial deposit of Rs. 500 is collected and the occupant has to pay a monthly instalment of Rs. 40 for the first five years and Rs. 45 for the next 20 years to get the tenements for himself, subject to the following conditions:—

(i) The tenements allotted on hire purchase basis should not be resold to any subsequent purchaser but only back to the Tamil Nadu Slum Clearance Board.

(ii) Any improvements or changes effected in the tenements allotted on hire purchase should only be with the concurrence of the Tamil Nadu Slum Clearance Board.

(iii) Maintenance of these tenements should be the responsibility of the allottees.

#### OTHER ACTIVITIES.

The task of the Board is not confined only to housing the slum people in the new tenements. Rehousing of the slum dwellers in modern apartments alone may not improve their life unless the economic condition is improved and proper education on environmental sanitation is imparted. To achieve this objective, the co-operation of the various voluntary organisations as detailed below has been enlisted.

#### NEW RESIDENTS WELFARE TRUST.

Sponsored jointly by the Tamil Nadu Slum Clearance Board, The Madras Christian Council of Social Service and the "77" Society, The New Residents Welfare Trust, Madras, was registered on December 30, 1971, the first object of the society being:

"To provide expert social service and advice to families newly housed in the Tamil Nadu Slum Clearance Board Housing Projects".

Beginning with 3 projects on February 15, 1972, the work of the Trust has now been extended to 13 Housing Projects of the Tamil Nadu Slum Clearance Board.

The projects are as follows:—

Nochinagar and Nochikuppam, Visalakshi Ammal Estate, Brindavan, Mambalam Tank Bund Scheme, Subedar Garden, Venkatapuram, Ayodhyakuppam, Pallakkumanyam and Kapalithottam, Srinivasapuram (Foreshore Estate), Dommingkuppam, Kotturpuram, Cemetery Road (West) and Thandavarayapillai Chatram Schemes.

#### VOLUNTARY HEALTH SERVICES.

Voluntary Health Services have set up clinics in slum areas offering treatments to slum dwellers. For this purpose, the local slum dwellers have to enlist themselves as members of this organisation by paying a token



subscription. Members are given periodical medical check-up and wherever necessary even surgical aids are extended to the members. At present Mini Primary Health Centre Clinics have been set up at Kotturpuram and Mambalam Tank Bund.

#### GUILD OF SERVICE.

This association is doing the following services in slum areas mentioned below :—

- (a) Name of the Services.—(1) Yeomen Service to the slum dwellers;
- (2) Providing creache for the children of the working women;
- (3) Teaching handicrafts to the womenfolk in slums;
- (4) To start in stages nutrition on wheels breakfast feeding programme for the primary school children about 200, nursery class with 25 children; and
- (5) Balwadis, creache for children.
- (b) Areas in which services rendered.—(1) Thandava raya Pillai Chatram.
- (2) Mohite Play Ground.
- (3) Goyyathope.
- (4) Ellispuram.
- (5) Indira Nagar.
- (6) Mangalapuram.

#### Y.M.C.A.

This organisation has arranged to supply bread and milk to the school children in some of the slum areas. Now a project has been formulated for running community centres at V.O.C. Nagar and Grey Nagar. They conduct games programme for the children in the vicinity of the college on Saturdays and Sundays. They visit C.I.T. Nagar slums periodically and do street cleaning and speak to the people about health and related problems.

#### MADRAS CHRISTIAN COUNCIL OF SOCIAL SERVICE.

This Council has undertaken the construction of Public Conveniences in slums where there is acute need for such amenity. Twenty-five schemes have so far been taken up. Storeyed latrines have been completed at Andimanyathottam.

#### SWALLOWS IN INDIA.

This is a Swedish Social Service Organisation which is doing social work in North Madras. They are conducting adult schools, nursery schools, catering 250 children, running a clinic, library and reading room and also a Basic Technical Training Centre giving vocational training to the local unemployed and unqualified boys. They are mainly concentrating at Cherian Nagar, Madras-81.

#### POLYGONS.

This Organisation has been rendering the following services in Andimanyathottam :—

- (1) Attending, cleaning and sweeping once a week.
- (2) Collection and disposal of garbages.
- (3) Providing medical aid to the dwellers with the help of free medicines collected from the medical practitioners through Slum Clearance Board.

#### WOMEN VOLUNTARY SERVICES OF TAMIL NADU.

It has been proposed to run a nursery school for children of working women and a sewing class in Mambalam Tank Bund and Nochikuppam by this Organisation.

#### BEATITUDES.

This is a Social Welfare Centre run with the following Social Service Programmes in slum areas mainly in Vyasarpadi and Korukkupet :—

- (1) Creache for babies.
- (2) Daily Dispensary for 300 patients.
- (3) Leprosarium for 300 inmates.
- (4) Home for dying destitutes.
- (5) Day school with 780 children.
- (6) Night schools.
- (7) Youth Club.
- (8) Workshop for handicapped.

#### GERMAN LEPROSY RELIEF ASSOCIATION.

This Association is rendering the following services in the slum areas :—

- (1) Conducting a slum survey to detect early cases of leprosy.
- (2) Giving treatment to the patients suffering from leprosy at the initial stages.

One Leprosy Clinic has been started at Thandavaraya Pillai Chatram in the tenement allotted by the Slum Clearance Board. The Association has extended their services to the patients of Nochinagar two days in a week by running a mobile unit. It has also proposed to start clinics in V.O.C. Nagar and Vyasarpadi in the tenements allotted by the Slum Clearance Board.

#### THE MADRAS SCHOOL OF SOCIAL WORK.

The Madras School of Social Work has come forward to implement a scheme sponsored by the Government of India and UNICEF in Tondiarpet, Jeeva Nagar and Cherian Nagar. The details of the Scheme are as follows :—

- (a) Cent per cent coverage of maternity and health service for children between 1 to 5 years.
- (b) Day Care Services for children between 0 to 5 years.

(c) Cent per cent coverage of primary education for children between 6 to 11 years.

(d) Nutrition to children between 0 to 6 years and expectant and nursing mothers.

(e) Education of parents for promoting the services of health, education and welfare for children.

#### SERVICE CIVIL INTERNATIONAL INDIA.

Lock Nagar Scheme area has been allotted to this Organisation to run Balwadi.

#### WOMEN'S CHRISTIAN COLLEGE, MADRAS-6.

Social Service League of Women's Christian College is doing the following services in Chetput Slum Areas :—

- (1) Craft class, tailoring—specially children's garments, embroidery, toy making, plastic bags, crotchet.
- (2) Nutrition talks and cooking demonstrations.
- (3) Course on hygiene, personal and community.
- (4) Entertainments, films, educational as well as pure entertainment, puppet shows, group singing and impromptu acting.
- (5) Games—specially for children.
- (6) Adult literacy programmes.
- (7) Teaching of nursery rhymes and reading and writing to children.
- (8) Help families to draw up budgets and device ways and means of conserving money.
- (9) Simple elementary first-aid service.

#### WOMEN WELFARE DEPARTMENT.

The programme of the work of this Organisation is as follows :—

(1) To conduct pre-basic class. At present 40 children of the Venkatapuram area are studying.

(2) House to House visit to canvass women members to undergo training in tailoring class and also to guide them in children welfare.

(3) To conduct tailoring class, one sewing machine has been provided by the Women Welfare Department. 22 members are undergoing training in Venkatapuram area.

They are now concentrating in Venkatapuram, V.O.C. Nagar and Dommingkuppam Scheme areas.

Department of Social Welfare of the Tamil Nadu Government has implemented nutrition programme covering all the slums in Madras City.

Day Care Centres have been started in 11 tenemental areas to take care of children between age group of 2½ and 6.

With a view to creating employment opportunities to the slum dwellers, the Slum Clearance Board has proposed to start small industries in the newly built housing

estates with the aid of the SIDCO (Small Industries Development Corporation). As an experimental measure, printing press and a cover making unit has been started in Cemetery Road Estate. A tailoring class with seven sewing machines has also been started.

#### SLUM CLEARANCE IN THE MUFASSAL

The Slum Clearance work in the mufassal is attended to by the Tamil Nadu Housing Board. A provision of Rs. 35 lakhs was provided during each year, 1971-72 and 1972-73 for Slum Clearance Schemes in the mufassal areas. A similar sum has been proposed to be provided during 1973-74.

The Government of Tamil Nadu has taken up this gigantic work of slum clearance in a spirit of social service and the task of uplifting the poor on a motto of one house for every family. The Government welcome all social service organisations both in the country and abroad and other well wishers who are willing to come forward to offer their help in this gigantic work.

“ GOD WE SHALL SEE IN THE SMILE OF THE POOR ”.

**LAND ACQUISITION AND DEVELOPMENT SCHEME.**—(i) This scheme aims at large-scale acquisition of lands in advance, with a view to prevent speculation in land prices and to make lands available for housing purposes at a reasonable cost and also for easing congestion in large growing towns.

The Tamil Nadu Housing Board administers the scheme on a no-profit no-loss basis. It acquires vast tracts of lands in and around the town and develops them into self-contained small townships and/or neighbourhoods with good pucca roads, street lights, water-supply, drainage, play-fields, parks and other common amenities, like schools, hospitals, shops, playgrounds, etc. Under this scheme house-sites are allotted to public individuals, co-operative societies or, other institutions. Some of them are given houses, tenements and flats on freehold basis and they pay back the capital investments over a long period of 15 to 20 years. The conditions of sale under which sites are allotted or sold in public auction, prohibit their reselling, to any other person within a period of 5 years at least during which period the party is required to put up a house. Having thus created an interest, it is very unlikely that the party will sell the land or house and this checks the speculation of land value. The Tamil Nadu Housing Board sells the developed plots at the rate of Rupees 7,000 to Rs. 8,000 per ground. In addition, corner plots are sold in public auction. This scheme is financed from the funds given by the Life Insurance Corporation and also by ploughing back the sale amount.

(ii) Plan achievement under Land Acquisition and Development Scheme :

Extent of land developed during Second and Third Plans—2,759.54 acres.

Amount utilised during Second and Third Plans—Rs. 383.23 lakhs.

Extent of land developed during Annual Plans 1966-67 to 1968-69—796.15 acres.

Amount spent during 1967-68 to 1968-69—Rs. 419.14 lakhs.

Allocation for Fourth Plan—Rs. 500.00 lakhs.

Extent of land developed during 1969-70—251.90 acres.

Amount spent during 1969-70—Rs. 187.42 lakhs.

Extent of land developed during 1970-71—161.86 acres.

Amount spent during 1970-71—Rs. 284.50 lakhs.

Amount spent during 1971-72—Rs. 281.23 lakhs.

Extent of land developed during 1971-72—95.09 acres.

Budget Estimate for 1972-73—Rs. 25.00 lakhs.

Amount spent during 1972-73 (upto December 1972)—Rs. 80.90 lakhs.

Extent of land acquired during 1972-73 (upto December 1972)—105.87 acres.

Budget Estimate for 1973-74—Rs. 25.00 lakhs.

Physical target for 1973-74—62.50 acres.

**TAMIL NADU GOVERNMENT SERVANTS RENTAL HOUSING SCHEME.**—(i) This scheme is intended mainly for the low-paid employees of the State Government to provide apartments on a purely rental basis. The State Government are collecting only subsidised rent of 10 per cent of pay of allottee and foregoing house rent allowance. The quantum of rent recovered on this basis is less than the economic rent and the Government Servants thus enjoy the element of Government subsidy as the difference is met by the State Government. The Tamil Nadu Housing Board is the agency for execution of the scheme and it also maintains the property after execution. The ownership of the buildings vests with the State Government. The houses under this scheme are generally constructed on Government lands.

(ii) *Plan achievement under Tamil Nadu Government Servants Rental Housing Scheme.*—

Number of houses constructed during second and Third Plans—2,228 houses.

Amount utilised during Second and Third Plans—Rs. 187.15 lakhs.

Number of houses constructed during Annual Plans 1966-67 to 1968-69—2,560 houses.

Amount spent during 1966-67 to 1968-69—Rs. 130.82 lakhs.

Allocation for Fourth Plan—Rs. 500.00 lakhs.

Physical target for Fourth Plan—5,000 houses.

Number of houses constructed during 1969-70—502 houses.

Amount spent during 1969-70—Rs. 53.10 lakhs.

Number of houses constructed during 1970-71—500 houses.

Amount spent during 1970-71—Rs. 75.78 lakhs.

Amount spent during 1971-72—Rs. 101.69 lakhs.

Number of houses constructed during 1971-72—929 flats.

Amount spent during 1972-73 (up to December 1972)—Rs. 57.45 lakhs.

Number of houses constructed during 1972-73 (up to December 1972)—432 flats.

Budget Estimate for 1973-74—Rs. 100.00 lakhs.

Physical target for 1973-74—500 units.

**VILLAGE HOUSING PROJECT SCHEME.**—(i) This scheme, is a State Plan Scheme for the development of selected villages in Community Development and National Extension Service areas of the State of Tamil Nadu, to encourage villagers to uplift their living condition on "Self-help basis" by advancing loan amount to a maximum of Rs. 3,000 (since increased to Rs. 4,000) in three instalments, to such of those persons who possess land of their own with repaying capacity of the loan with interest in twenty equated annual instalments. The loan amount of Rs. 4,000 per house is the 80 per cent of the estimated cost of the building. The rest of 20 per cent has to be contributed by the beneficiaries by way of labour, local materials and savings gathered in the course of his work. The house built under this aided self-help basis stands to his stead as a shelter and property acquired in the long run of twenty years.

In the State of Tamil Nadu there are more than 15,000 villages and the scheme is under implementation in 223 villages. Master Plans have been prepared for 1,640 villages. The scheme is very popular and there is demand from villagers for implementing the scheme in more number of villages.

The Government have allotted an amount of Rs. 50 lakhs from the Tamil Nadu Special Welfare Fund for the Village Housing Project Scheme. The amount is proposed to be spent during 1972-73 and 1973-74. The anticipated expenditure during these two years is Rs. 2.00 lakhs and Rs. 48.00 lakhs respectively. 1,100 houses will be constructed with this allocation.

The scheme also provides the villages with the amenities such as streets and drains in the villages, where houses are built, to a maximum of Rs. 10,000 per village. A sum of Rs. 0.50 lakh has been provided in the Budget Estimate for 1973-74 for laying streets and drains.

(ii) *Plan achievement under Village Housing Project Scheme.*—

Number of houses constructed during Second and Third Plans—2,053 houses.

Amount utilised during Second and Third Plans—Rs. 54.91 lakhs.

Number of houses constructed during Annual Plans 1966-67 to 1968-69—472 houses.

Amount spent during 1966-67 to 1968-69—Rs. 29.73 lakhs.

Allocation for Fourth Plan—Rs. 50 lakhs.

Physical target for Fourth Plan—1,500 houses.

Number of houses constructed during 1969-70—218 houses.

Amount spent during 1969-70—Rs. 7.75 lakhs.

Number of houses constructed during 1970-71—240 houses.

Amount spent during 1970-71—Rs. 10.93 lakhs.

Amount spent during 1971-72—Rs. 15.38 lakhs.

Number of houses constructed during 1971-72—309 houses.

Budget Estimate for 1972-73—Rs. 16.50 lakhs.

Amount spent during 1972-73 (up to December 1972)—Rs. 10.05 lakhs.

Physical target for 1972-73—350 houses.

Houses constructed during 1972-73 (up to December 1972)—257 houses.

Budget Estimate for 1973-74—Rs. 28.99 lakhs.

Physical target for 1973-74—600 houses.

**TAMIL NADU SUBSIDISED HOUSING SCHEME FOR PLANTATION WORKERS.**—(i) The scheme was formulated by the Government of India to give loan assistance to planters for construction of houses to their workers. The scheme is now implemented as a subsidised one on the pattern of subsidised Industrial Housing Scheme with effect from 1st April 1966. The Government of India have decided to treat the scheme as a Centrally sponsored one with effect from 1970-71.

The ceiling cost of construction per house under this scheme is Rs. 3,200 for small two roomed houses. Planters are eligible for a loan of 50 per cent and subsidy of 37½ per cent of the ceiling cost under the revised Central scheme.

(ii) *Plan achievement under subsidised housing scheme for plantation workers.*—

Number of houses constructed during Second and Third Plans—195 houses.

Amount utilised during Second and Third Plans—Rs. 3.72 lakhs.

Fourth Plan allocation—Rs. 10.00 lakhs.

Physical target for Fourth Plan—440 houses.

Amount spent during 1971-72—Rs. 0.05 lakh.

Number of houses constructed during 1971-72—Nil.

Budget Estimate for 1972-73—2.00 lakhs.

Amount spent during 1972-73 (up to December 1972)—Rs. 0.18 lakh.

Physical target for 1972-73—60 houses.

Houses constructed during 1972-73 (up to December 1972)—18 houses.

Budget Estimate for 1973-74—Rs. 3.11 lakhs.

Physical target for 1973-74—84 houses.

**RURAL HOUSING SCHEME.**—(i) The object of this scheme implemented from 1950 is to issue loans for construction of houses in the major panchayats and minor panchayats which have a predominantly rural outlook. The scheme is implemented through the Co-operative Wing of the Tamil Nadu Housing Board and financed from State funds outside the Plan. Under the scheme, loans are sanctioned up to 80 per cent of the cost of construction not exceeding four times the paid-up share capital and subject to a loan ceiling of Rs. 10,000. The estimated cost of house should not exceed Rs. 15,000. In cases where the members offer unencumbered lands twice the value of land owned by them as collateral security, the loan assistance will be given up to seven times the paid-up share capital subject to the ceiling of Rs. 10,000. It is programmed to construct 120 houses in 1973-74 for which a provision of Rs. 10 lakhs has been provided in the Budget.

(ii) *Achievement under Rural Housing Scheme.*—

Number of houses constructed during I to III Plan period—906 houses.

Amount utilised during I to III Plan period—Rs. 56.87 lakhs.

Number of houses constructed during 1966-67 to 1968-69—324 houses.

Amount spent during 1966-67 to 1968-69—Rs. 26.16 lakhs.

Number of houses constructed during 1969-70—153 houses.

Amount spent during 1969-70—Rs. 10.41 lakhs.

Number of houses constructed during 1970-71—140 houses.

Amount spent during 1970-71—Rs. 10.27 lakhs.

Amount spent during 1971-72—Rs. 10.00 lakhs.

Number of houses constructed during 1971-72—150 houses.

Budget Estimate for 1972-73—Rs. 10 lakhs.

Amount spent during 1972-73 (up to December 1972)—Rs. 4.05 lakhs.

Physical target for 1972-73—120 houses.

Houses constructed during 1972-73 (up to December 1972)—80 houses.

Budget Estimate for 1973-74—Rs. 10.00 lakhs.

Physical target for 1973-74—120 houses.

**URBAN HOUSING SCHEME.**—This scheme was implemented by the State Government through the Co-operative Wing of the Tamil Nadu Housing Board and financed outside the Plan allocation. This scheme was discontinued from April 1968. Under this scheme the maximum loan limit per individual was restricted

to Rs. 12,000 and no income limit was prescribed. A sum of Rs. 483.73 lakhs was utilised towards construction of 7,473 houses.

**MINI-COTTAGES IN HILL AREAS.** —The Housing Board has drawn up a scheme for the construction of mini-cottages in the hill areas at Ooty, Kodaikanal, Yercaud and Jawadu hills. 10 cottages at Ooty and 10 cottages at Kodaikanal have been constructed under this scheme. Each cottage has a plinth area of 1,100 sq.ft. and the cost per cottage is Rs. 30,000. It is proposed to sell the cottages to the Tamil Nadu Tourism Development Corporation.

**RESIDENCE-CUM-CLINICS FOR DOCTORS IN RURAL AREAS.**—At the suggestion of the Chairman, Life Insurance Corporation of India, the Tamil Nadu Housing Board has proposed to construct some residence-*cum*-clinics for doctors in rural areas at costs varying from Rs. 15,000 to Rs. 20,000. The initial payment will be 20 per cent and the balance will be recovered in monthly instalments. Five doctors have applied for this scheme and is under the consideration of the Tamil Nadu Housing Board.

**HOUSES FOR PERSONS RETIRING FROM GOVERNMENT SERVICE.**—The Tamil Nadu Housing Board has proposed to frame a scheme for construction of houses for the employees who are due to retire in 5 or 6 years. Under this scheme, the employees will be asked to register with the Tamil Nadu Housing Board and pay monthly amounts varying from Rs. 50 to Rs. 100 till the date of their retirement. On retirement they will be assured of a house or flat anywhere in Tamil Nadu. The amount deposited in 5 years will be taken as the deposit and the balance will be recovered from the pensionary benefits accrued to the individuals. The scheme is under the consideration of the Government.

**HOUSES FOR NON-GAZETTED GOVERNMENT SERVANTS.**—There is yet another scheme for the construction of houses for the category of persons who are non-Gazetted Government Officers in the income group of Rs. 200 to Rs. 500. They will be asked to register with the Housing Board and deposit a sum varying from Rs. 20 to Rs. 50 per month. At the end of the fifth year, they will be allotted a plot. The scheme is under the consideration of the Government.

**HOUSES FOR BURMA REPATRIATES.**—(i) The Government in Revenue Department have entrusted to the Tamil Nadu Housing Board the work of construction of 407 catenary type twin houses for the repatriates from Burma, at Tanakankulam village, Madurai South taluk, Madurai, at a cost of Rs. 16.28 lakhs. Out of this 407 houses, construction of 100 houses have been completed.

(ii) The Government have sanctioned another scheme for construction of 2,760 houses for the Repatriates from Burma at a cost of Rs. 1.131 crores at Vyasarpady tankbed and entrusted the work to the Tamil Nadu Housing Board, based on the representation made by the Repatriates for a spacious house, the design has been altered and a revised scheme has been proposed at a cost of Rs. 2.33 crores for the construction of 2,760 houses. Pre-fabricated slabs are proposed to be used in the construction.

**SAVE A RUPEE A DAY SCHEME.—(i) A new** scheme by name “Save a Rupee a Day Scheme” was introduced on Pongal day in January 1972. The scheme requires a person to save a rupee a day in special Hundi Boxes to be kept with individuals which will be supplied by the Housing Board. At the end of each month, the money deposited in the Hundies will be duly credited to the account of the individual kept with the Housing Board. The accumulation of such deposits will be utilised for the purchase of plot and construction of house after a period of five years.

(ii) The Tamil Nadu Housing Board in collaboration with the Syndicate Bank has made arrangements for the collection of the regular deposits at the doors of every depositor who joins the scheme. The object of the scheme is to provide houses/flats/house-sites to the masses and at the same time make them save regularly. Nine hundred and four persons have been enrolled as members of the scheme and the amount involved from the collection from 904 members will be Rs. 25 lakhs on which the Syndicate Bank will give a sum of Rs. 100 lakhs including the collection amount at the end of the five year period.

(iii) Indian Bank has come forward with a similar scheme and the Tamil Nadu Housing Board has resolved to approve the proposal.

**PROVISION OF HOUSE-SITES TO LANDLESS RURAL WORKERS.**—(i) The Government of India have formulated a scheme for provision of house-sites to landless workers in rural areas as a Central-Sector Scheme under which 100 per cent grant is made available to State Governments outside the State Plan Scheme. The salient features of the scheme are as follows :—

(a) The scheme aims at assisting the State Government to provide house-sites free of cost to families of landless workers in the rural areas who do not already own house-sites or a built-up house or hut on land of their own ;

(b) The Government of India will give 100 per cent grant for acquisition and development of lands outside the State Plan Ceiling ;

(c) Financial assistance under the scheme will be admissible only if the State Governments have enacted legislation conferring homestead rights on which their houses/huts stand at present and provided the State Government should have utilised the available lands owned by it in the Districts proposed to be taken up for the scheme for providing house-sites, free of cost to families of landless workers ;

(d) All administrative expenditure connected with the implementation of the scheme will have to be borne by State Governments;

(e) The size of the house-sites should not exceed 100 square yards (The question of enhancing the extent is under correspondence with the Government of India).

(f) The average cost of development of house-site should not exceed Rs. 150 per house-site ;

(g) The term 'development' will cover clearing and levelling of land and provision of paved streets and storm water drains on the lands proposed to be utilised for giving house-sites to eligible families ;

(h) In case where an adequate supply of potable drinking water is not already available, a covered masonry well may also be provided to serve cluster of, say, 40—50 house-sites ; and

(i) Priority should be given only to those districts having sizeable concentration of landless rural labourers, particularly of those belonging to Scheduled Castes and Scheduled Tribes.

(ii) Since the Government of Tamil Nadu have enacted the Tamil Nadu Occupants of Kudiyiruppu (Conferment of Ownership) Act, 1971, and have introduced it in Thanjavur district, and the assignment of all the available lands in Thanjavur district to landless people have almost been completed, the Government have introduced the scheme in Thanjavur district in the first instance. The scheme is being implemented through the State Housing Board, with the help of the Collector and the other district Revenue Officials. The implementation of the scheme is in progress in this district. Under this scheme 1.15 lakhs families will be benefitted in Thanjavur district. A sum of Rs. 75.51 lakhs has been sanctioned by the Government of India out of which a sum of Rs. 18.87 lakhs has been released. The Kudi-yiruppu Act has since been extended by Government in Revenue Department to the districts of Chingleput, North Arcot, South Arcot, Tiruchirappalli, Dharmapuri, Salem (excluding Yercaud Sub-taluk) and Ramanathapuram (excluding Rajapalayam Sub-taluk). The question of extension of the above scheme in these districts also is under consideration of the Government.

**CELLULAR CONCRETE PLANT.**—After the devastation of town and cities during the second world war, the affected European countries began to make a search for alternatives for the conventional type of building materials to hasten the pace of dwellings. In the process a new building material in Cellular Concrete was invented and made use of in the building techniques and constructions. The special feature of this novel building material is that while it is light in weight ( $1/3$  or  $1/4$  that of brick or dense concrete) it can withstand high stress and pressure. So it reduces the dead load of the structures. It is also as workable as wood, i.e., sawing, drilling, driving of nails are possible. These characteristic features of celcrete not only result in sizeable financial economy but also reduces the normal construction period to one half, thus enabling to reap the benefit of quick returns for the amount invested. The East and North European countries are widely making use of this novel building material for the past more than three decades.

The scheme to establish the first Cellular Concrete Plant in India was sponsored by the National Building Organisation, New Delhi. The Union Government entered into an economic co-operation agreement with Poland under which, among other items, the establishment of a Cellular Concrete Plant at Ennore near Madras at a cost of Rs. 3.65 crores forms part.

The task of erection and running the Cellular Concrete Plant was entrusted to Tamil Nadu Housing Board in the public sector, which is catering the major housing

needs of the masses. The funds for the establishment of the project have been granted by interest charged refundable loans by the Union Government through the Tamil Nadu Government.

The plant was commissioned for trial production in February 1972 and the first finished product which conformed to specifications rolled out of the autoclaves on 8th February 1972 and from then onwards the plant is being worked in single shift. After the power position cases the plant will be worked for the second and third phase of production. With a view to reduce the production cost considerably without sacrificing the qualities or rare characteristics of this novel product, there is a proposal to switch on the use of fly ash of the adjacent Ennore Thermal Plant, an industrial waste and which is at present let into the sea. The clearance and orders of the Government of India as also the necessary funds for the switching over are awaited from the Union Government. By using the fly ash technology it is expected to have some savings in the production cost.

With the total designed output of the plant, it will be possible to construct about 11,000 flats per annum with an area of 30 square metres each and the total production value of celcrete per annum will be the order of Rs. 1.5 crores.

**BRICK PLANT.**—A proposal to start a Mechanised Brick Plant by the Tamil Nadu Housing Board with the collaboration of Czechoslovakia was considered. A letter of credit was also opened for Rs. 18 lakhs with the suppliers towards the cost of machinery. The investment cost of the Project and the foreign exchange were estimated at Rs. 98.30 lakhs and Rs. 21.09 lakhs respectively. It was however, decided to transfer the Plant to the Industries Department in stages. All the machineries have been imported and most of them have been handed over to the Industries Department.

**CO-OPERATIVE HOUSE MORTGAGE SOCIETIES.**—The Tamil Nadu Co-operative Central House Mortgage Society and its affiliated primaries were under the control of Registrar of Co-operative Societies, till 15th June 1972. The Government in May 1972 have issued orders to the effect that the administrative control over the Tamil Nadu Co-operative Central House Mortgage Society and primary house mortgage societies should be transferred from the Registrar of Co-operative Societies to the control of the Chairman, Tamil Nadu Housing Board (Co-operative Wing), with effect from 15th June 1972, from when the Chairman, Tamil Nadu Housing Board (Co-operative Wing), is the Registrar for House Mortgage Societies also.

The borrowings of the Tamil Nadu Co-operative Central House Mortgage Society are from the Life Insurance Corporation of India, Bombay. So far a sum of Rs. 8.42 crores has been obtained from the Life Insurance Corporation of India on Government guarantee and the Tamil Nadu Co-operative Central House Mortgage Society was issued loans to the Primary Co-operative House Mortgage Societies to the extent of Rs. 13.42 crores from its inception.

In order to infuse confidence among the public and make them invest in Fixed Deposit of the Tamil Nadu Co-operative Central House Mortgage Society, Madras, Government have guaranteed the Fixed Deposit to the



tune of Rs. 50 lakhs and have so far invested a sum of Rs. 85 lakhs in the share capital of the society to enable it to increase its borrowing power. During 1973-74 it is proposed to invest a sum of Rs. 20 lakhs in the share capital of the above society by the Government.

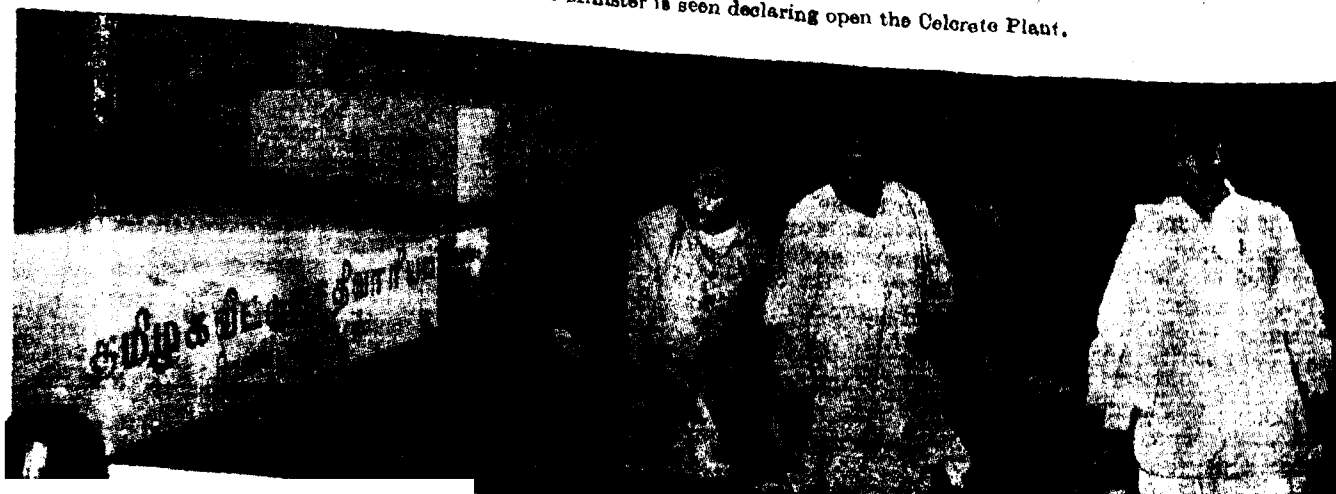
**HOUSING AND URBAN DEVELOPMENT CORPORATION.**—The Tamil Nadu Housing Board forwarded schemes costing Rs. 984 lakhs to Housing and Urban Development Corporation for approval and sanction of loan assistance from its Revolving Fund. Against this, the Housing and Urban Development Corporation approved one scheme, i.e., Korattur Neighbourhood Scheme and sanctioned a sum of Rs. 238 lakhs during 1971-72. Out of Rs. 238 lakhs, the Tamil Nadu Housing Board has drawn Rs. 92 lakhs during 1971-72 and Rs. 20 lakhs during 1972-73.

Subsequently, the Tamil Nadu Housing Board forwarded six project proposals costing Rs. 1,524 lakhs to Housing and Urban Development Corporation for financial assistance from Revolving Fund. The Housing and Urban Development Corporation however sanctioned a sum of Rs. 625 lakhs for construction of houses in the following scheme areas :—

- (1) Kalignar Karunanidhi Nagar.
- (2) Arignar Anna Nagar.
- (3) Kotturpuram.
- (4) Seniamman Koil Scheme.

All the above projects are to be implemented by the Tamil Nadu Housing Board in and around Madras City. The redeeming features of these schemes are that the required lands are already available with the Housing Board and the funds will be utilised for the construction of houses, to satisfy the different income groups. The rate of interest is 6.75 per cent per annum for the loan given by Housing and Urban Development Corporation. The Government have guaranteed the repayment of principal and interest in respect of the loan of Rs. 625 lakhs. Out of Rs. 625 lakhs, the Tamil Nadu Housing Board has drawn Rs. 52 lakhs during 1972-73, thus bringing the total amount drawn from Housing Board so far to Rs. 164 lakhs. A further sum of Rs. 72 lakhs is expected to be drawn from the Housing and Urban Development Corporation by the Tamil Nadu Housing Board before the end of March 1973. As a result of executing these schemes, 3,733 dwelling units would be constructed by the end of 1975-76.

Dr. M. Karunanidhi, Chief Minister is seen declaring open the Celorate Plant.



**PUBLIC LOAN.**—The Government of Tamil Nadu authorised the Tamil Nadu Housing Board to float public loans to the tune of Rs. 100 lakhs during 1968-69, Rs. 200 lakhs during 1969-70, Rs. 100 lakhs each during 1970-71 and 1971-72 by issue of Stock Certificates and Promissory Notes and they were all subscribed fully. For the year 1972-73 also the Government authorised the Tamil Nadu Housing Board to float a loan of Rs. 100 lakhs in December 1972 and the loan was fully subscribed. The State Government have guaranteed the payment of interest and the principal on the Stock Certificates and Promissory Notes.

**HOUSE BUILDING ADVANCE TO GOVERNMENT SERVANTS.**—Advances are sanctioned to Government servants for constructing houses, including purchasing the plots, and also for purchasing ready built houses and enlarging living accommodation in houses already owned by them. All Government servants who are permanent members or who have put in a continuous service of five years under this Government and also the All-India Service Officers serving in this State are eligible for this advance. The Government servants are sanctioned advances up to 60 times their pay or Rs. 55,000 whichever is less, the actual amount in each case being fixed with the due reference to their repaying capacity in their service period, calculated according to rules. This is a scheme welcome very much by all sections of the Government servants, as the scheme affords liberal assistance to provide themselves with a house of their own. The budget provision for the scheme for the year 1973-74 is Rs. 65 lakhs.

In conclusion the main bottle-neck in carrying out the ambitious programme under various housing schemes is the inadequate financial aid. The funds for the schemes are too low compared to actual requirements. With a view to increase the housing activities, the Tamil Nadu Housing Board has been striving to obtain loan finance from other sources and has succeeded in getting its schemes sanctioned by Housing and Urban Development Corporation. The Tamil Nadu Housing Board has obtained a loan of Rs. 100 lakhs from the Syndicate Bank during 1971-72 repayable in three years. The Life Insurance Corporation has given in February 1973 a package loan of rupees one crore for financing many of the Housing Schemes intended for lower income and low-income group persons. It is also proposed to approach Nationalised Banks for loan assistance to Tamil Nadu Housing Board for construction of houses with Government guarantee.

# VEGETABLES ARE RICH FOOD

No doubt, vegetables are rich food, but its richness depends upon how you handle them while cooking.

Vegetables have a few qualities which other foods lack. They help in neutralizing the acids produced in the body during the digestion of meat, cheese and other foods.

As a roughage they promote digestion and help to prevent constipation. They are also rich in vitamins and minerals, especially vitamins A, B and C, and the minerals calcium.

Although many vegetables are not good source of proteins, carbohydrates and fats, dried seeds of peas and lentils are quite rich in this food element.

Potatoes, sweet potatoes and carrots are rich in carbohydrates. Sag, spinach, carrots, coriander leaves, cabbage, beet greens, turnip greens, mustard, broccoli, sweet potato, pumpkin, etc., are very good source of vitamin A which prevents night blindness and helps in orderly development of teeth and beautiful skin. About 100 grams of the above said vegetables provide enough vitamin A for daily requirement of our body.

Whole grain cereals, fruits, pulses and green vegetables like peas, lentils and dry beans provide enough vitamin B.

Amlas and tomatoes are rich in vitamin C. This vitamin cannot stand prolonged heating and is lost during heating, drying or even prolonged storage. Therefore, you must take fresh fruits or vegetables to get this vitamin. Use of soda (sodium bicarbonate) also destroys this vitamin. Cook vegetables in closed vessels to preserve this vitamin. Its deficiency in the body leads to weakness, fatigue, aching of muscles and bleeding in the gums. Wounds do not heal easily.

Cereals and vegetables are minor sources of vitamin D. Sunshine is the main source of it. Its ultraviolet rays act on the skin and produce vitamin D in the body. Deficiency of this vitamin leads to rickets where bones become soft and curved in babies.

Green beans, green peas, potato and matured onions are rich sources of phosphorus. Phosphorus is necessary for the working of muscles as it helps in maintaining normal acid-base balance in the body. It is also essential in building healthy teeth and strong bones.

**DHARAM PAL  
AND  
L. D. SHARMA,  
College of Agriculture,  
H.P. University,  
Palampur, Kangra.**

Turnip green, mustard, potato and broccoli contain appreciable amount of calcium which is necessary for muscle and nerves. For efficient working of phosphorus and vitamin D in the body, the intake of calcium is a must.

Iron is contained in drum-stick leaves, spinach, green beet, mustard and turnip. It is essential for red blood corpuscles which carry oxygen in the blood.

Leafy vegetables like celery, cabbage, spinach and lettuce contain high percentage of cellulose and fibre. Because of their succulence and large bulk, the leafy vegetables and most of the root crops probably

Vitamin C- rich tomato



aid in the digestion of more concentrated foods and prevent constipation.

The tissues of the human body are alkaline in nature and a balanced reserve is to be maintained in the body. Green vegetables like spinach, cabbage, etc., counteract the harmful action of proteinous foods like eggs and meat and maintain a proper balance in the body.

Cabbage, sweet potato, spinach, turnip greens, lettuce, carrots, tomatoes, peas and other green vegetables should be consumed in roughness of skin, night blindness and stunted growth in children. For loss of appetite, constipation, lack of stamina, intestinal and nervous disorders consume spinach, turnip leaves, cabbage, peas, beans and lettuce. For diseased and decayed gums or teeth and loss of appetite take tomato, spinach, cabbage, cauliflower, potato, peas, cucumber, onion and lettuce. For strong bones, take spinach beans and potato.

Excluding a few vegetables like carrot, cucumber and lettuce, most of the vegetables are consumed after cooking. As already mentioned, some vitamins are water-soluble and in order to avoid vitamin

and mineral losses a great care should be exercised while preparing and cooking vegetables. Some important precautions which you can observe while cooking vegetables are given below :—

Always prefer fresh vegetables. After wilting and drying, the nutritive value of the vegetables is lost and the very purpose of using them is defeated.

Most of the vitamins and minerals lie just beneath the outer skin of the vegetables; so prefer to cook the vegetables with the skin.

Do not add soda or strong condiments while cooking vegetables. These are detrimental to health as well as to the nutritive value of the vegetables.

First wash the vegetables and then cut into the required pieces.

Do not cut vegetables unless to be cooked immediately. Just before preparation, cut them into big pieces as it will expose little surface to water and air. In this way, vitamins and minerals can be better preserved.

Never soak or dip vegetables in water for long as water dissolves and removes many valuable vitamins and minerals.

Add only a minimum quantity of water while cooking vegetables. If vegetables have been kept in water before cooking use that water. Do not throw away the water.

For better cooking, pleasing appearance and more food value, add vegetables in boiling water so that they take minimum cooking time.

Many vitamins cannot stand prolonged heating and are destroyed by heat. Therefore cook vegetables for a minimum period of time.

Avoid reheating the cooked vegetables as far as possible.

Vigorous stirring, sieving and straining of vegetables when they are still hot, results in loss of nutrition as air gets mixed and vitamins are lost.

#### GIRL GUIDES GARDENING

It is surprising to note that a twelve year old girl has knocked away the prize for best farmed kitchen garden. In Salem, the Agricultural Department organised a Competition on Kitchen Garden. Kannamma bagged the first prize among 98 participants who raised their kitchen garden in a small area of 100 sq. ft. area in their houses.

On the day of harvest, the small plot gave an yield of 4.25 kg. of Tomato fruits. On her part Kannamma got the seedlings and technical advice free of cost from the Agricultural Department besides devoting her leisure hours in bringing up the kitchen garden. She has been adjudged as the best, kitchen gardener for the year 1972-73 in this district. Besides Tomato, brinjal and Bendai are also under kitchen garden cultivation. Kannammal, the young girl, thus guides gardening. F.P.O. Salem.

## MAXI-MISING CHILLIES PRODUCTION IN TAMIL NADU

Chilli, otherwise known as Red Pepper, is an important cash crop grown in an area of 80,020 hectares in Tamil Nadu with an estimated production of 1,15,450 tonnes.

It is rich in vitamin 'C' and consumed both as green chillies as well as dry pods. About 2 per cent of the total production of chillies is also exported to Ceylon, Malaysia, Indonesia, etc. The main season crop is sown in September-October and harvested in March-May.

K1, a pure line selection from an Assam type is released as a strain. The fruits are shining dark red, with more capsaicin (2.27 per cent). It yields 18 per cent more than the local cultivators. The calyx is strongly attached. Comparatively tolerant to pests and diseases. Four promising types are under study at Regional Agriculture Research Station, Koilpatti.

The crop is mainly grown as an irrigated crop. However in places like East Ramanathapuram, Vilathikulam and Ottapidaram area in Tirunelveli district, in western pockets of Hosur in Dharmapuri district and Ariyalur in Tiruchirappalli district, it is cultivated under rainfed conditions.

Chilli is raised in black and red soil areas. Well drained fertile soil is essential for its cultivation. The distinct seasons are :

The main season is September—October and picking is in March—May.

#### Important package of practices

1. Nursery should be in an elevated place facilitating perfect drainage.
2. Three to four ploughings to get a fine tilth.
3. One cent area may be marked for transplanting one acre.
4. One cart load of well rotten compost may be applied.
5. Raised beds 120 cm x 180 cm (4' x 6') may be formed.
6. Chilli seeds may be treated with 'Agrosan' or 'Ceresan' before sowing at the rate of one gram of the chemical per 500 gms. of seed so as to prevent seed-borne diseases.

7. 750 grams of chilli seeds may be sown in one cent area to produce sufficient seedlings to transplant one acre.

8. After sowing, the seeds may be covered with a thin layer of compost powder.

9. Irrigations may be given on alternate days, but should be adjusted considering the receipt of rainfall and moisture availability in the soil.

10. The nursery beds may be drenched with wet cerasan (1 gm per litre) at fortnightly intervals; the first drenching may be given 10 days after sowing.

11. Two rounds of spraying with Rogor may be given for the control of 'Chilli thrips' (one milli litre in one litre of water).

12. The seedlings may be kept in the nursery for about 40 to 45 days.

#### Main Field

1. Two to three ploughings.
2. The following manures may be applied as basal dressing:—  
(1) Compost . . . 20 Cart loads per acre.  
(2) Superphosphate . . . 150 kg. per acre.  
(3) Muriate Potash . . . 40 kg. per acre.
3. Beds and irrigation channels may be formed with bund former.
4. When the seedlings are about 40 to 45 days old, they may be pulled out without damaging the root system.
5. The seedlings may be transplanted with a spacing of 30 cm (1 foot) between plants in the row and 30 cm (1 foot) between rows.
6. Three rounds of hand weedings and four rounds of hand hoeings may be given.
7. Nitrogenous fertilisers such as Ammonium sulphate may be applied as top dressing. 48 kg. of Nitrogen per acre may be applied in three equal split doses, on the 30th, 60th and 90th day from planting.
8. The ring method of application of nitrogenous fertilisers may be followed for top dressing.

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released subsequently also did not completely provide solutions to problems identified in hybrid CSH. 1. The release of elite variety Swarna, which had nearly as high an yield potential as CSH. 1, was not found adapted to all irrigated millet tracts in this State, and the strain comes up poorly in the southern region during summer. Notwithstanding these drawbacks, hybrids like CSH. 1, and CSH. 3, (CSH. 2 is more suitable for kharif than summer) and varieties like Swarna are being raised. Ratooning is also practiced in the irrigated summer crop of these varieties, as it saves the seed-bill, and brings forth grain returns nearly equal to that of the seed-sown crop.

Among the current lines of work in irrigated summer Chulam, there are studies on the possibilities of exploiting elite inbreds IS 2508 and IS 3541. The former comes up well in summer season at Kovilpatti, while the later has given a good performance at Kudumianmalai. The potentialities of these inbreds would be assessed in the ensuing few seasons and they are likely to be exploited eventually in suitable tracts.

#### Irrigated Cumbu :

The main sowing season is March-April. In Coimbatore it has been

observed that March-sowing gives the best returns. In the middle of the last decade, superior hybrids like HB 1 (developed through a different technique using male-sterile lines) began to be introduced. The synchronous tiller-maturity and delayed senescence of the leaves of these new hybrids were particularly of agronomic value for irrigated cultural conditions. The yield potentials of these hybrids (up to 4,500 kg/ha.) were also superior under high-fertility conditions.

The hybrids that are presently recommended in the State, are HB. 3 and HB. 4, which are better than the earlier hybrids and are also less susceptible than them to diseases. Both the hybrids are primarily developed for unirrigated conditions, but have been found suited for irrigated conditions also during summer. Between the two hybrids, HB. 3 is capable of performing well even under limited, moisture conditions. The more recent hybrid, HB. 5, is yet to be evaluated adequately in our State.

#### Irrigated Ragi :

The main sowing seasons are May-June and December-January in most parts of Tamil Nadu, except southern region, where July-August is the

common season. The strains currently under distribution are Co. 2, Co. 7, Co. 8, Co. 9, Co. 10 and K 2 and 'Saradha'. Among these, Co. 7 is an unique strain, having a grain yield potential around 5,000 kg/ha. under high fertility conditions, within a short duration of 100 days from seed to seed. This strain proved for the first time in ragi, that high yield is not dependent on a long growth period. The strain is adapted to most districts of the State, except in the southern region, where K. 2 and 'Saradha' hold the field. Strain K. 2 matures in 120 days, and is non-lodging besides being somewhat resistant to blast. This is being gradually replaced by Saradha which matures earlier by 15 days and yields better, by 25 per cent. Strain Co. 2 with fifty earheads is one of the best of the earlier releases, and has a continuing demand in many areas. Strain Co. 8 is a moderate yielder, but matures in 89-90 days only (including nursery age) and is suitable for the eastern districts where an early-maturing variety is desired. Strain Co. 9 is a white grained variety and is more proteinaceous (about 11 per cent) than the common brown ragi (having about 7 per cent only). Strain Co. 10 is a short-duration strain released recently and has a good yield potential.



## THE TENTH ALL-INDIA DAIRY INDUSTRY CONFERENCE

The five-day 10th All-India Dairy Industry Conference commenced at Rajaji Hall in Madras on 8th March 1973 and it came to an end on 12th March 1973. Experts on dairy science, cattle development and milk production administration as well as co-operators took part in the deliberations on the technical, commercial and biological aspects of dairy development advancing valid and valuable suggestions for the development of dairy industry in this country under the condition and circumstance obtaining here.

Thiru K. Anbazhagan, Minister for Public Health, presiding over the function, in his speech put the stress on the need for employing progeny-tested exotic bulls which could impart high-yielding traits to the local breeds. He went on to say that quick progress in improving cattle could be achieved if 500 such bulls were available because with artificial insemination using frozen semen, about 5,000 cows could be covered with one bull of high breed imported category. He further observed that "apart from what the Indo-Danish and Indo-Swiss projects are providing as elite breeding stock, we will have to import a number of such good breeding bulls".

Releasing a souvenir on the occasion, Thiru M. Kannappan, Minister for Religious Endowments, suggested a crash programme for cattle improvement and for production,

collection and distribution of milk. He further said that research on livestock feed and fodder should have a practical bias and be immediately applicable in the field by farmers.

Thiru P. Sabanayagam, Chief Secretary and Chairman of the Reception Committee, welcoming the delegates, put out a suggestion that to have a periodical assessment of the implementation of the recommendations of this conference a permanent executive body might be set up to follow up with proper action in time.

Addressing the delegates of the conference Thiru Dr. P. Bhattacharya, President, Indian Dairy Science Association, outlined in his speech that development of dairying should be constructed on the line to ensure social justice and equal opportunities, particularly for the weaker sections of society in the rural area. He went on to say that "co-operatives are best suited for organising milk production" and that they should be strengthened in right earnest. In case of co-operatives failing in their duty, he suggested Public Sector Corporations should be developed.

Inaugurating the Conference Dr. M. Karunanidhi, Chief Minister, said :

"You are quite aware, that in most languages, and in most parts

of the world, the word "milk" is associated with purity. It is not because of its whiteness only, but because it is the thing that sustains life and gives nourishment to the new born infant and it gives strength and energy to the growing child and health to the weak. When a baby is a few hours old, it is the mother's milk—pure and sterile—which keeps it going. Here in Tamil Nadu, milk is inseparable from festivity. All happy occasions, from marriages to birth, are celebrated with milk and milk products. Life in a new house can start only after the milk is boiled. Hence in all languages, the idiom makes use of the word "milk" to describe that which is pure and essential.

"The task before all dairymen all over the world is how to keep up the good name and reputation of this thing called milk. How to keep it pure and clean? How to produce more milk and make it easily and equitably available to many? These issues are simple but the solutions are not so simple

"I am sure that all of those gathered here today will pool their wisdom and vast experience in order to find concrete and workable solutions to the problems facing this country.

"I think this conference is of particular importance in the context of certain new truths emerged

the  
living  
past

The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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9. Irrigations may be given once in a week, but should be adjusted considering the receipt of rainfall and moisture availability in the soil. About twenty to twenty-five irrigations will be required for the crop.

#### Increasing the yield of chillies by planofix spraying

In chillies the setting percentage of fruit is only 11 per cent at Koilpatti condition.

Two rounds of spraying with planofix increases setting. The details are given below :

Number of sprayings of Planofix—2.

(a) 0.5 ml. in 4½ litres—65 days after planting.

(b) 1 ml. in 4½ litres—95 days after planting.

(c) Teepol—1 ml. in 4½ litres to be added as adhesive.

An extra yield of 39 per cent valued at Rs. 408 per acre is obtained by the two planofix sprays which involves a cost of Rs. 24 per acre, inclusive of spraying charges.

By

Crop Specialist, Regional Agricultural Research Station, Koilpatti.

#### PLANT PROTECTION.

| Name of the Pest or diseases.                                                 | Symptoms.                                                                                                                                              | Control measures.                                                                                                                                                   |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Leaf-Curl (Thrips) Throughout crop period & severe till productive phase). | The chilli thrips will suck the juice and thus the leaves will get curled. The thrips are abundantly found on the bottom surface of the leaf.          | Six round of spraying with Rogor (100 milli litres in 100 litres of water) at fortnightly intervals. The first spraying one month transplanting.                    |
| 2. Mite (severe during some years throughout the crop period).                | The leaf will become pale in colour with elongation of petioles, in severe incidence, clustering of tender leaves also will be noticed.                | Spraying with wettable Sulphur at 3 gms. per litre.                                                                                                                 |
| 3. Die-back and fruit rot diseases (from the flowering phase).                | In the affected plants the drying will start from the tip of the plants. The leaves will drop and the colour of the affected fruit will turn to white. | 200 gms. of Diathane M. 45 or Zineb in 100 litres of water at fortnightly intervals. Four rounds and the first spraying may be given one month after transplanting. |
| 4. Fruit borer (in the productive phase).                                     | The caterpillar will bore inside the fruit and the fruits will drop down.                                                                              | Spraying with sevin 50 per cent at 2 gms. per litre. The spraying given late in the evening.                                                                        |
| 5. Powdery mildew (Severe in winter in the productive phase).                 | In the affected leaves ashy out growths will be seen on the bottom surface of leaf and thus the affected leaves will wither away.                      | Spraying with wettable Sulphur at 3 gm. per litre. The bottom surface must be well sprayed.                                                                         |

#### ASSIGNMENT OF LAND IN KANYAKUMARI DISTRICT.

The Government of Tamil Nadu has decided to assign the lands under Kuthakapattom and Kandukrishi Thanathu and Kandukrishi Pattom lands in Kanyakumari district and Shencottah taluk of Tirunelveli district, to the present holders of the lands in partial relaxation of the conditions and restrictions as applicable elsewhere in the State. This information was given by the Revenue Minister Thiru P. U. Shanmugam in the Legislative Assembly on 6th March 1973. The lands were given for cultivation purposes by the erstwhile Travancore Cochin Government.

Persons in possession of lands under Kuthakapattom, and who are eligible for assignment of Government lands, would be assigned these lands upto five acres of dry or three acres of wet, free of land value. Land in excess of these limits in their possession may be assigned to them on collection of single market value provided they have effected very valuable improvements to the lands and provided the lands in excess of the limit prescribed could not be independently assigned to any other landless poor.

Persons who are in possession of these lands and who are normally ineligible for assignment of Government lands may be assigned five acres of dry lands or three acres of wet land, provided they have effected valuable improvements to the land. Such assignment will be on collection of single market value, if their annual income from all sources is less than Rs. 15,000 and on collection of double market value if their annual income from all sources is Rs. 12,000 or more.

Lands held under Kandukrishi and Kandukrishi Pattom would be assigned free of land value to the holders irrespective of the extent held by them and irrespective of whether or not they are normally eligible for such assignment.

## IRRIGATED MILLETS IN TAMIL NADU

Millet under irrigation is a common feature in the cropping patterns of tracts with red loamy soils. Except in project areas where flow irrigation may be available, these crops are raised under the command of wells, in garden lands. Barringumbu which has poor fodder value, all other irrigated millets are utilised for both grain and fodder. The seasons of cultivation vary among the different millets in different tracts, but the main season is summer when the best expressions of the crops are realised. Phenomenal grain yields of over 7,000 kg./ha. became realisable with the hybrids (particularly of cholam), but the genetic systems of these varieties demanded proper agronomic handling and intensive attention, to give the best returns. This situation generated the 'package' approach in the cultivation of elite irrigated millets, leading to the organised extension of the high-yielding varieties at present.

#### Irrigated Cholam :

Irrigated cholam is raised in a major portion (144,000 ha.) and is concentrated in the districts of Coimbatore, Madurai, Tirunelveli, Tiruchirappalli and Salem. The season for the crop is summer and sowings are done from February to April, according to the preferences in different localities. For Coimbatore tract, studies have shown that sowing at the end of February (Masi pattam) brings out the best response in the crop, compared to later sowings. Similarly, it has been observed for North Arcot tract that April-sowing (Chithirai pattam) is the best compared to earlier sowings. In the southern tract sowings at the end of January (Thal pattam) and in April (Chithirai pattam) are in vogue. However, the earlier-sown crop has been observed to be prone to pests like mite in this tract. Strains which have current demand are Co. 4, Co. 12, Co. 18 and K. 4. Among these, Co. 4 serves the tract where red-grained cultivars are desired. Strain Co. 12 has the reputation of withstanding water-stress to some extent while Co. 18 is a high-fertility strain with juicy fodder.

Strain K. 4, a recent release, serves the southern region and is gaining spread in Tirunelveli district. This strain was developed to combine the agronomic base of K. 2 with the superior yield potential and the juicy fodder quality of Co. 18. The replacement of traditional cholam cultivars and of conventional strains from most of irrigated cholam areas was visualised with the introduction of the high-yielding hybrids like CSH. I. However, the yield poten-

tial of this hybrid (over 7,000 kg. of grain/ha. under optional conditions was offset by its high susceptibility to pests and diseases and comparatively poor returns of fodder. It was also not adapted for the southern region, where strain K. 2 (a parent for K. 4, released later) performed better. The genetic superiority of the hybrid was thus weighed down by agronomic weaknesses and many farmers continued to bank on elite conventional strains like Co. 18. Hybrids



The irrigated hybrid (cholam).

in the course of our efforts to improve the rural economy. It is increasingly realised that if the farmer must increase his income, thereby ensuring the way for a better life for himself and the Society around him as well his excessive dependence on food crops must go. This may be achieved by a certain amount of mixed-farming, be it dairy, poultry or any other animal husbandry practice. It depends all on the area, the climate, the soil conditions and the market. I do believe that a small farmer having even one acre of land can improve his income if he keeps two or three good milch cattle provided he can feed his animals economically. This can be done if he could set aside even a few cents of land for growing fodder intensively. For those having two or three acres the task becomes easier. It is for this conference to suggest ways and means of making this practice more economical and more profitable to the farmer in an atmosphere of an easy and viable manner.

"Now, let me deal with a few of the problems facing the milk industry in this country. The average consumption of milk in India came to 105 grams per person per day in 1970-71. According to experts, the minimum nutritional requirement is about 300 grams per day.

The figure for Tamil Nadu is 63 grams per person per day which is far below in comparison to the national average.

#### More cattle but less yield.

"We have more cattle in India than any other country in the world. We have 229 million heads of cattle. Of these, 80 million are breedable ones. But the average yield of an Indian cow is the lowest in the world, a mere 200 litre per lactation, whereas a Danish cow yields 3,700 litres, and an American cow 3,200 litres on average. They say that our milk problems can be solved if, by 1980 we have 25 million cattle yielding an average of 2,500 litres per lactation. How can this be done? Can this be done at all?

"It seems to me that the only solution to the problem of cattle development is an intensive programme of cross-breeding concentrated in some select milk pockets where the chances of success are the highest. Such a programme will have to take breeding facilities to the

door of the farmer. I understand that our Tamil Nadu Dairy Development Corporation has taken up such a programme. This programme has just commenced and it will take some time before the results are known. But if all goes well, there will be remarkable increase in the milk production in the areas selected under this programme within a period of 5 years. I am sure you will keep the aspect of cross-breeding in your view during your deliberations.

"The next important problem is that of Cattle feed and fodder. There has been a remarkable rise in the price of cattle feed in the past few months. This has led to great hardship to cattle keepers all over the country. Urban cattle keepers are the worst affected since they depend entirely on purchased cattle feed and fodder. I hope you will consider the problems of computed cattle feed manufacture and distribution and suggest some speedy measures for removing the present difficulties.

#### Ultimatum to the farmers.

"With regard to green fodder, the position is precarious all over India. As I said earlier, ultimately the solution to this problem lies with the farmers. There must be massive programme for assisting farmers to divert a portion of their cultivable land for growing green fodder. I think the success of the entire milk production programme will finally revolve round this crucial point, namely whether the farmer can be persuaded to devote some of his land to grow fodder. Green fodder has a direct impact on the production of milk. Indeed, it is felt that if concentrates are not available or are too expensive, it is possible to sustain the cow entirely on green fodder. I understand that new strains of grass are being developed by our scientists. I call upon the delegates to make suitable suggestions for popularising the cultivation of green fodder; and the scientists to evolve new and better strains of green fodder.

"While we plan for more production of milk, we should simultaneously set up the capacities to handle the increased milk which will flow into the market. I do hope you will have a free and frank exchange of views on this subject. There are certain controversial issues in this field not only in our

country but in other countries also. What sort of plant capacity should be installed for handling the milk? What sort of packaging is most convenient and economical for the consumers? What should be our system of distribution? How can we ensure that milk reaches the masses of our people at a reasonable price? What are the ideas on milk products and so on. I trust that you will arrive at some sound decisions on these subjects.

#### Role of Co-operatives.

"In the milk industry, it is very desirable that marketing be channelised through strong and viable co-operatives. The basic objective of the entire co-operative programme is to strengthen the economic condition of the farmer, offering him all necessary facilities to market his produce. In the milk industry, the co-operative was intended to eliminate the middleman and thus fetch a better price to the farmer. The co-operatives would also assist the farmer with finance and technique. Whatever measures the Government may take, there is nothing to replace these democratic institutions at the village level. I do hope the milk industry will grow on co-operative lines all over India so that the farmer gets his legitimate share of the milk price and the consumer gets good milk at a reasonable price.

#### Competition between man and beast.

"This is not a conference on family planning, but I would like to draw your attention to the population explosion. To-day there is a bitter competition between man and beast for the limited space available in this sub-continent. Let me take the example of Tamil Nadu. Today we have a human population of 41 million which will reach 48 million by 1980. Our total land area is 13 million hectares of which only 6 million are cultivable. This limited land area has also to support cattle population of 13 million. The land available for free grazing is shrinking year after year due to unavoidable human occupation. When the people of this country have been looking forward to a break-through in various fields, it is for you to consider whether in the present state of affairs, we can provide the minimum 300 grams of milk per day to every citizen."

Thiru L. M. Menezes, Milk Commissioner, proposed a vote of thanks.

# WHAT IS MILK?

What is milk? Milk consists of fat, non-fat solids which include many of the vitamins, lactose which is milk sugar, minerals and water. Dairymen simplify this break up into fat, solids not fat (SNF) and water.

An ounce of milk supplies you with about 30 calories as compared to 31 in an ounce of chicken, 32 in an ounce of pork, 10 in brinjal, 13 in carrot and 9 in cabbage. Hence milk is known as the most perfect food and is the sole source of animal protein for million of our people.

So if milk consists of fat and SNF can these constituents be separated? Yes. Not only separated but also conserved. This is what the milk powder plant does. It separates the fat which is butter. We are then left with milk without fat which is known as skimmed milk. This skimmed milk is dried, which is milk powder.

Can these two elements be re-constituted into milk? Of course. They have simply to be mixed together and homogenized and we have milk again. This is milk in all respects except the absence of that flavour which is usually associated with freshness. Freshness is important, no doubt, but not at the cost of the essential ingredients which can often be diluted by adulteration.

Milk is being collected in stainless steel milk tankers.



L. M. MENEZES, I.A.S.,

Managing Director,  
Tamil Nadu Dairy  
Development Corporation.

What is this thing about high fat milk and low fat milk? Milk as it comes from the animal can be of various types. Roughly the milk we received at our dairy tests is as follows:—

|                                  | Fat.<br>PER<br>CENT. | SNF.<br>PER<br>CENT. |
|----------------------------------|----------------------|----------------------|
| 1 Jersey and Jersey crosses.     | 5.0                  | 8.5                  |
| 2 Fresian and Fresian crosses.   | 3.5                  | 8.5                  |
| 3 Red Dane and Red Dane crosses. | 4.5                  | 8.5                  |
| 4 Swiss Brown and crosses.       | 4.5                  | 8.5                  |
| 5 Sindhi and crosses.            | 5.0<br>to<br>5.5     | 8.5                  |
| 6 Ongole                         | 5.0<br>to<br>5.5     | 8.5                  |
| 7 Kangayam over                  | 5.5                  | 8.5                  |
| 8 Ordinary buffalo over          | 6.5                  | 9.0                  |
| 9 Murrah buffalo over            | 6.0                  | 9.0                  |

Except for whitening of coffee perhaps, most people these days, would naturally like low fat content milk. Many people in western countries even go in for skimmed milk which has all the protein without the fat. Due to the high incidence of heart diseases low fat milk is strongly recommended by medical authorities. Only a few days ago there was news about some Australian research team which has discovered ways of keeping down the fat content in milk by regulating the diet of cows. The report says that the scientists have been trying to find ways and means of keeping down the cholesterol intake from milk and meat.

It is for this reason and also in order to cater to different income groups that the dairy puts out 3 types of milk as follows:—

| Type of milk.        | Fat.<br>PER<br>CENT. | SNF<br>PER<br>CENT. | Price<br>PER LITRE<br>RS. |
|----------------------|----------------------|---------------------|---------------------------|
| 1 Standardised milk. | 4.5                  | 8.5                 | 0.65                      |
| 2 Toned milk         | 3.0                  | 8.5                 | 0.50                      |
| 3 Double toned milk. | 1.5                  | 9.0                 | 0.35                      |

In all we sell 83,000 litres of milk each day in Madras City of which about 20,000 is in cans and the rest in bottles.

The process of toning down the fat content in milk as per the requirement of the consumer is normal practice in most dairies the world over. The impression that the dairy steals the most nutritive portion of the milk by way of fat and creams and proteins and passes on the residuary liquid to the poor customer is almost too funny for words.

#### MADHAVARAM FARM

Milk for Madras City is all produced at Madhavaram? Wrong!

The Madhavaram farm run by the Dairy Development department has 340 milch animals producing 1,900 kgs. of milk only. The cattle colony which is a scheme to resettle the city cattle keepers by offering them some facilities at

Studies in Concentration

## THE FARMER

*The farmer nourishes the crops and fights the pests to reap a bountiful harvest... the result of concentrated effort.*

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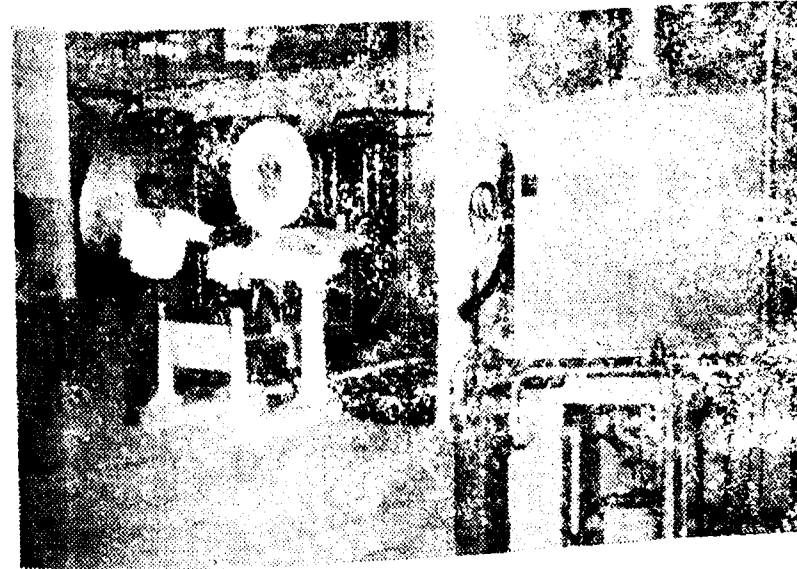
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Pasteurisation of pure Milk.

Madhavaram has 628 milch animals and produces 2,390 kgs. only. The rest of the milk comes from the districts of the Nilgiris, Coimbatore, South Arcot, North Arcot, Salem and Chingleput, occasional supplies are received from Trichy, Thanjavur and Madurai. This milk is collected through a net work of co-operatives and individual farmers, chilled, pasteurised and transported to Madras City by a fleet of 25 stainless steel milk tankers which ply day and night to get the milk to the City. At the Madhavaram Dairy the milk is repasteurised, bottled and sent out.

### PASTEURISATION OF PURE MILK.

What is pasteurisation? It is named after Lusus Pasteur, discoverer of the process, by which milk is heated to 165° F. thus killing most of the bacteria and ensuring longer shelf-life.

What are "lean" and "Flush" seasons? The lean season is apart climatological, part seasonal, part geographical and part genetical feature by which calving takes place during a particular period. This period is November in Tamil Nadu. The result is that during two months before November, most of the animals go dry. Production of milk falls by 50 per cent or more. Our procurement also falls by the same percentage. It is during this period that the dairy has to resort to reconstitutions of milk by the use of butter and skimmed milk powder. This is a common practice in many parts of the world where fresh milk is not readily available or where there is short supply for various reasons. Similarly during the two months after calving, that is after November, there is a

flood of milk. This is the flush season. This season poses equally serious problems to the dairy since we get more milk than we can actually handle. Such seasonal surpluses can be taken care of by a milk product factory like a milk powder plant. We intend setting up such a plant at Madurai by December 1973 to handle 100,000 litres of milk per day.

### OPERATION FLOOD.

What is "Operation Flood"? It is a massive programme sponsored by the Government of India, in collaboration with the World Food Programme of the Food and Agriculture Organisation, to increase milk production in India and step up the sale of good, wholesome, reasonably priced milk in the main consuming centres. The concerned agencies are the Indian Dairy Corporation, Baroda, which finances the project, the National Dairy Development Board, Anand, which gives technical guidance and the State Government which implements the scheme.

1. Madras City will have a second dairy with a capacity of 200,000 litres of milk per day.
2. A skimmed milk powder plant with a capacity of 100,000 litres per day or 10 MT of milk powder will be set up at Madurai.
3. Two large feeder dairies in our milk shed area, one of them having a milk powder plant with a capacity of 5 MTs. a day, will be established.
4. A technical inputs programme to farmers supplying milk to the project, which will consist of personalised services, will be introduced.

## PANEL TO STUDY BEEDI AND COIR WORKERS' CONDITIONS.

The Tamil Nadu Government has appointed a 17 member committee to go into the living conditions of workers belonging to the following industries.—Beedi, Road and building works, sultpans, scented, tobacco, coir, match and fireworks, brick and tiles, laundry, sago, saw mill, cashew, boat building goldsmithy, weaving, flour and oil mills, chank and toddy.

The Committee headed by the Labour Commissioner will suggest steps for providing improving the housing medical and other facilities needed by the workers in these industries. It has been asked to give its report within six months.

## Majority Union Recognition: Chief Minister's Call to Labour

The Hon'ble Chief Minister, Thiru Dr. M. Karunanidhi said that the Tamilnadu Government favoured one union for one industry and that a system of secret ballot could be adopted to decide which union had the support of the majority of the workers.

Addressing the 15th Annual State Conference of the Tamil Nadu Electricity Workers' Federation, he said that if the workers unions of the Electricity Board agreed to hold such a secret ballot, recognition would be granted to the union enjoying the support of the majority. The special leave facilities sought by the Federation for three office bearers would also be granted to the majority union, he said.

The Chief Minister announced that housing facilities demanded by them would be provided in a phased manner. He appealed to the workers to co-operate with the Government in enforcing the power cut and to strike their utmost to minimise loss in transmission.

He said the Government would keep its word to confirm all the daily rated workers who had put in more than four years service as on December 31, 1972 and already 9,000 of them had been made permanent.



## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

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

### Rate of Interest

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

### Initial repayment holiday

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

### Amortisation period

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

FOR FURTHER DETAILS, PLEASE APPLY TO

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## 10th ALL-INDIA DAIRY CONFERENCE

### RECOMMENDATIONS FOR INTEGRATED

The five days All-India Dairy Industry Conference conducted in Madras from 8th to 12th March 1973 has suggested fuller utilisation of co-operatives for the dairy industry and insurance coverage for milch animals.

The other important recommendations of the conference are as follows :—

(1) Ensuring a fair price based on production cost to milk producers ;

(2) Channelling the inputs required by the milk producers through one agency on co-operative lines ;

(3) Taking up steps to eliminate uneconomic cattles to make the best use of land and vital inputs available ;

(4) Adoption of simple and reliable methods of quality control in milk distribution to secure the confidence of consumers ;

(5) Training of farmer producers in the fields of procurement, processing, distribution and management ;

(6) Procurement of milk from only the Co-operative Milk Societies or Unions as an impetus to boost the activities of co-operatives in the line ;

(7) Improved supply of fodders and concentrates ;

(8) Radical changes in agricultural practices in mixed farming or crop rotations involving fodder crops, etc.

Alternative feeds have been suggested by the conference such as tree leaves, monsoon and forest grasses which could be preserved in the form of hay or silage for the lean season by setting up dehydration plants. Agro-industrial by-products like molasses should be used to the maximum extent as cattle feed. An innovation suggested is the use of urea in dairy concentrates in place of the now scarce oil cakes. The Fertilizer Corporation of India should market feed-grade urea for this purpose. The conference urges that export of groundnut cakes and other raw materials useful for feed should be banned.

## DEVELOPMENT OF DAIRY INDUSTRY

To ensure adequate health of cattle it would be necessary to appoint one veterinary surgeon in charge of every 10,000 heads in intensive areas and locate diagnostic laboratory or centres at the State as well as district levels. Mobile veterinary clinics have also been laid on regular compulsory vaccination of animals.

Installing vending machines in metropolitan cities for retail distribution of pasteurised milk and use of single service containers are some of the sophistications proposed by the conference for modernisation of milk distribution considered to be must to ensure low distribution cost, minimum quality impairment and consumers' satisfaction.

### Milk supply to Factories.

An unfailing supply of quality milk must be ensured to the factories by setting up multiple milk processing units. In addition, cheap methods of chilling milk at producer's point should be adopted. All milk schemes, according to the conference, should take steps to supply low fat standardised toned milk and particular attention should be paid to distribute low cost milk with high protein and low fat content to the weaker sections of the population.

The conference has urged that sufficient funds to the tune of Rs. 30 crores should be made available during the Fifth Plan for research during the period. The investigations should find the way to develop indigenous technology to replace at least 95 per cent of the imported technology during the plan period. Extensive research on consumption of pattern of milk and milk products in various parts of the country is considered essential as this can offer guidelines for product diversification and expansion of the Dairy Industry.

## Arbitration Promotion Board For Tamil Nadu

An Arbitration Promotion Board at the State level has been constituted by the Tamil Nadu Government to popularise the use of the voluntary arbitration in settling industrial disputes.

The Board will review periodically the extent of acceptance of voluntary arbitration by employers and workers, compile and maintain up-to-date panels of suitable persons to serve as arbitrators for different areas and industries and lay down scales for their fees, evolve principles, norms and procedures for the guidance of arbitrators and parties, advise parties in important cases to accept arbitration for resolving differences or disputes, thereby avoiding adjudication or litigation in Courts, look into the difficulties experienced by parties in securing speedy settlements of disputes by arbitration and expedite arbitration proceedings wherever necessary, specify from time to time the types of disputes which would normally be settled by arbitration in the light of tripartite decisions and in particular lay down norms for deciding which disputes should be considered as of local nature or of having wide repercussions or creating new rights or involving large financial stakes and advise Government to promote voluntary arbitration.

Thiru K. Ramasami Gounder, retired High Court Judge, will be the Chairman of the Board.

The Special Deputy Commissioner of Labour, Madras, will be the Secretary of the Board.



The per capita availability of liquid milk in Tamil Nadu is 62 grams per day. Nutritional norms require the per capita level to be about 300 grams. The major problem is, therefore, to make our buffaloes produce 4,950 million kg. of milk per day.

The Dairy man has only to confine himself to the production of 4,950 million kg. of milk in the shortest time possible considering that the present lactation yield of a cow in Tamil Nadu is 1.6 kg. and of buffalo 2 kg. a day. This can be tackled by increasing the number of breedable cows and buffaloes and increasing the milk yield per animal.

The rate of growth of the bovine population at 2.33 per cent per annum, nearly outstrips the rate of increase in human population in Tamil Nadu. The available area of cultivable land per head of population works out to less than one acre. Practically, therefore, no land is available to support any further increase in bovine population without causing adverse repercussions on general agricultural economy.

#### A Single Solution.

This practically leaves a single solution to the problem, namely, increasing the lactation yield of cows and buffaloes. In the case of buffaloes selective breeding employing Murrah bulls alone is possible. This will take 70 years or 16 generations to double the existing yield. This time-bound programme is also out of question.

In the case of cows exotic bulls with tested germ plasma capacity to produce 4,000 litres of milk could give the F-1 generation of crosses and milk potential of 2,133 plus 20 per cent extra for hybrid vigour, i.e., 2,500 litres per day which represents a twelve fold increase within a period of 4 years. The ultimate object of cross-breeding is to develop a breed with 3,200 kg. of milk per lactation of 305 days, in effect putting 15 times the present yield into each single cow. At this level of production only 22.0 lakhs

## MORE MILK FOR TAMIL NADU

5,000 cows could be serviced per bull. In order to produce 22 lakhs F-1 crosses in four years only 500 pedigreed and progeny-tested bulls are required. Of course the A-1 programme has to be geared up to the requirements namely to get 22 lakh cows successfully in seminated within a year. Granting that 50 per cent of the calves born under the cross-breeding programme are male, the full complement of 22 lakh cows will become available within the next Plan period. Apparently this is easy enough.

#### Optimum Farms:

The difficulty of maintaining cows which produce 3,200 litres of milk over a lactation is the crux of the problem. Such a cow, at present market rates, will fetch a price of Rs. 3,500. This business of keeping milch animals provides returns every day, if the farmer so wishes, which will provide for the cost of his inputs.

By  
**Dr. U. K. MENON,**  
*Deputy Milk Commissioner*  
(Dairying).

cows will be required to produce the 5 million litres milk required, (even granting that 1/3 of the number will remain dry). When this is achieved, 20 lakhs cows and buffaloes will become surplus is even among the existing cattle population. This will release 36 lakh tonnes of fodder and 6 lakh tonnes of concentrates now consumed each year by these uneconomic cattle. Besides, there will be a corresponding saving in man hours now consumed to look after these cattle.

Cross breeding is, therefore, the only solution to the problem of producing enough milk. Under AI,

A farmer with 3 acres of irrigated land would be an ideal person to start a dairy farm with 10 cross-bred animals. This would mean a minimum investment of Rs. 35,000 for the stock and Rs. 10,000 for the cattle stalls and other buildings. If this farmer has free hold land free of encumbrance, he will be automatically creditworthy to absorb a loan for this investment. If he has to venture into this business he has to be assured of adequate veterinary coverage, A.I. and balanced cattle feed, all to be supplied at the farm-site on an as-and-when required basis, besides being assured a reasonable price for his

milk at farm site. An insurance cover will also help to increase his confidence. It is this organisation which presents difficulties to the dairy administrator.

Incidentally, such farms could be organised in a compact area around our principal cities. The cities will provide the market for milk besides acting as convenient centres for the programme. For example, the daily milk requirement of Madras City is estimated at 4.5 lakhs litres a day. This could be supplied by a herd of 45,000 cross-bred cows. It is easy to start 4,500 such 10-cow units within a 50 mile belt round the city and organise the necessary inputs and insurance cover under a package programme. Adequate and assured production to meet the city's requirements within a fifty-mile belt around the city would effect considerable savings in transport and processing costs when it is reckoned that the Government Milk Project now secures its supplies even at a level of well under one lakh litres from such far away places as Ooty, Erode and Madurai.

#### Steady Production :

There is another advantage in instituting such farms. The animals now available have well-defined calving seasons. Rainfall in Tamil Nadu occurs principally during September-October. The buffalo calving season correspondingly falls between these months and the cows calve a little later in January. This causes very wide seasonal fluctuation in the volume of milk produced. For e.g., the milk produced between November-December is almost thrice the quantity produced during the lean season. Cross-breed animals do not have a 'calving season' and calve throughout the year. They also have the advantage of early maturity and come to production within three years. In order to utilise the seasonal surplus milk it has to be converted into skim milk powder, butter and ghee. Till recently, imported skim milk powder was sold in Tamil Nadu at a price of about Rs. 2,000 a tonne. At this level of prices, it was uneconomic to establish balancing plants for seasonal spray-drying of milk. The Government of India has recently controlled prices with reference to the internal costs of production at nearly Rs. 6,000 per metric tonne. At this level, balancing plants could work profitably despite restricted seasonal



manufacture. One such balancing plant is to be established at Madurai shortly and yet another is planned for Erode.

Milk being a perishable commodity, processing is necessary to increase its life. Tamil Nadu has processing facilities for 3,00,000 litres of milk a day.

These plants are working out to less than half their rated capacity. Dairy machinery is capital-intensive and has to be worked to full-rated capacity in order to cover operational costs. Planning has, therefore, to be directed towards the utilisation of these plants to their rated capacities. The difficulty in achieving this quickly has been the seasonal surpluses which necessitates the fixation of quotas on producers. The producers are, therefore, forced to sell at least part of this milk to other agencies and they are committed to continue to do so even during the deficit season thereby starving the plants during the lean season.

#### Incentive to the Producer :

The prices realised by producers will ultimately determine the popularity of 'dairy farming' as an occupation. This trade requires a margin of 35 per cent to cover costs and provide incentives.

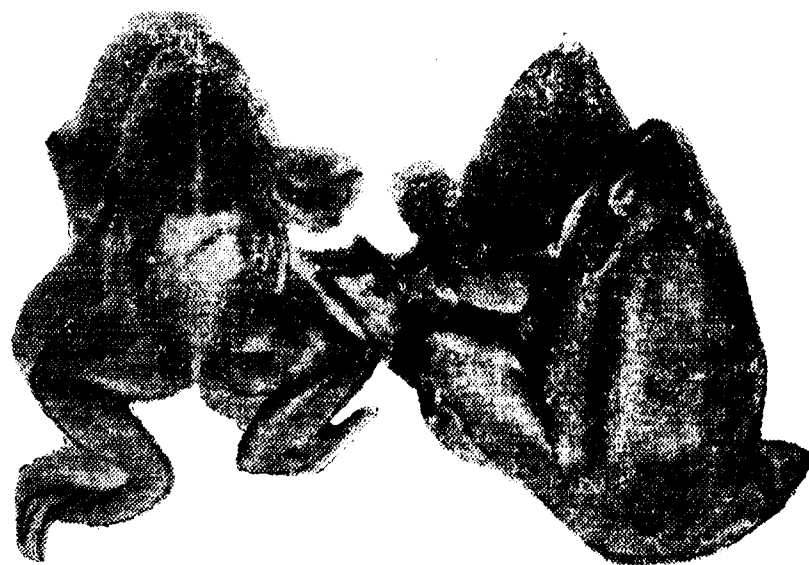
The cost of production in belt areas around cities would be a little higher and prices paid should be correspondingly higher. Such a realistic pricing policy is the first step in planning for increased milk production.

At the low levels of purchasing power of the bulk of our population, it is too much except the vast majority of our populace to purchase in advance coupons for their requirements of milk. If marketing is to cater to the needs of the populace milk must be made available in retail even in fractions of a litre. The lowest capacity that could be tackled economically by a bottling plant is the 1/2 litre bottle. Lower fraction cannot be bottled. Smaller denominations have, therefore, to be vended by other methods. For this purpose, the Mexican system of vending machines is now being tried out on an experimental scale. If the results are satisfactory Tamil Nadu will be getting its vending machines shortly.

#### Neo-Technology :

In Western countries technological developments have resulted in a new process called Ultra High Temperature Pasteurisation which considerably increases the shelf life of milk without any apparent or recognisable change in constituents or taste. Milk processed by this method has a shelf life of one to two months against 24-36 hours in case of conventional pasteurisation. The advantage of the new process is that milk could be retailed from retail shops without any refrigeration and will be available for the sale not at fixed hours as at present but throughout the day. Many dairy factories in the West are switching over to U.H.T. Pasteurisation. Tamil Nadu will be wise to follow suit.

# FROG LEGS FOR FOREIGN EX- CHANGE



The common amphibian creature which used to make a hell of noise in all low lying marshy places and paddy fields during the south-west monsoon was uncared for by the human beings till recently except by the students of animal science in Colleges and Universities. Such a common creature now has created a sensational warm welcome in the markets of America and France on account of its palatability.

It is a common sight that during the rainy season this frogs will come out of their hibernation to enjoy the freshness of the season this and it also happens to be their mating season. Now it is a regular feature in almost all swampy and low lying water spreads in Kerala, Madras, Mysore, Maharashtra and Andhra States to see people during night times with bright petromax lantern, scopping nets tied to poles and gunny bags on their shoulders moving about in search of these frogs. These frogs get stunned by the dazzling light of the lanterns and remain stationary when they are either scooped out by net or caught by hand if they are within the reach and deposited in the gunny bag. Early morning, the frogs thus collected are delivered to the processing factories where they are butchered and frozen for export. The common and most suitable Indian species for this industry caught in our country is the bull frog, i.e., *Rana tigrina* and *Rana hexadactyla*.

## Butchery and Freezing

Only the pair of hindlegs from the frog is utilized by the freezing industry for this purpose, the rest of the body which contains comparatively little eatable flesh portion being thrown as a waste.

Legs thus obtained are washed well in a clear water, each individual pair of legs wrapped in a polythene daper and tied by a rubber band. Before there are put into the storage room, the products are precooled and then individually quick frozen in a blast freezer to a temprature of 40°C and finally graded according to size and weighed quantities packed in card board or plywood rectangular boxes.

In the case of the smallest varieties, sometimes block (in bulk) freezing as in the case of prawns is adopted. Usually the washed, cleaned and packed frog legs weighed to a quantity of 2-27 kgs. is filled into freetrays, ice water is added to level (glazing) and quick frozen at 40°C in a tunnel or contact freezer. After freezing, the frozen block is taken out of the tray, dipped in ice water (reglazing) and packed in wax impregnated cardboard cartons with a polythene lining inside. They are then stored at 23°C, shipped in holds at the same temprature which is maintained until it reaches the buyer.

## External Markets for Foreign Exchange

Frog legs are frozen and shipped from Cochin, Mangalore, Goa and Bombay. Among all the top ranking place is only Cochin. Almost considerable portion of our frozen quantity is consumed by the U.S.A. and France where they are considered to be a good table delicacy. But in our country frogs leg consumption is practically nil. Frog leg meat is considered to be equal in taste as Chicken meat. Processing and sending of frog legs meat to abroad from India was started only five years before. Even though this industry was in an infant stage at the beginning it has risen up to a considerable magnitude on account of its high standard quality.

## Need to conserve the Creature :

It plays an important part in the national economy. It is the frog legs by which the foreign exchange is earned to a considerable proportion. We can realize from the fact that I.S.I. (Indian Standard Institute) has recognised this product for its quality control test. As such the Government of India has introduced a compulsory pre-shipment inspection for it from 1st March 1966. People nowadays have started to take this as a profession on account of the ever increasing demand in the external markets to this product. Therefore, it is felt with fear that there may be a depletion of this creature due to the continuous hunt. Now the Government of India has taken it up as an important aspect in their programme of work and made a policy from the last 3 to 4 months of June and July, which I have already mentioned as a season for breeding. It is needless to stress that there is a vital necessity to develop this trade because it is more connected with economy. So special attention must be paid to culture frogs just like any kind of forming. Government of India has launched a scheme through I.C.A.R. under which a specialist was posted and now it is effectively running in Kerala.

## Scope at Madras :

Being a common species, the frog *Ranasp* can be cultured in almost all our waste water areas,

swamps and the ponds where there is no scope for the culture of major carps. If possible artificial breeding can be done to increase the population of this creature.

As said earlier, the body portion of the frog is now being thrown away. But if the fatty tissues from the body are separated and boiled with water a golden yellow oil rises to the top which can be removed by a laddle. The oil as well as the leg meat are said to be specific cure for the lung disease like asthma, branchiitis, etc. This type is noticed by me in Thanjavur district where such type of treatment is given to babies suffering from Whooping Cough. The rest of the body can be used for making poultry and cattle feed.

## Sentimental prejudice

While cutting the froglegs the manufacturers insists on having them cut from the live ones, as otherwise the meat happens to be highly contaminated by micro-organism. When the legs are severed they make a hue and big cry and the whole body and legs struggle a lot before they die. The society for the Prevention of Cruelty to Animals has, therefore, requested the Government of India to find out a means of killing them without feeling the pain. As a result method of paralysing the frog by electrocution was implemented in fulfilling the object. It has now been reported that if alive frogs are taken in a net and immersed in 10 per cent of Sodium Chloride (Common salt) Solution for about 10 minutes, they become narcotised and do not revive again. The legs can be cut easily without any such struggling on toe part of this creature. Common salt appears to be toxic to frogs.

## The Bacteriological problem

It is quite natural that the surface of the frog is highly dominated

with bacteria due to their marshy habitat. The whole body is completely contained by miro-organisms including the pathogenic types like *Escherichia Coli*, *Faecel Streptococci* and *Salmanella*. If the product is manufactured without proper precautions, these bacteria spoil the flesh to carrying degrees.

This sometimes ultimately can spoil the finished product. So the remedy for this is more essential to produce a quality product. Fortunately enough, all these bacteria are of the type what we can say "Terrestrial" which cannot survive in salinemia. As such, the common salt solution can be used to kill such bacteria. Therefore, it is better to treat the frog before butchery, with a common salt solution for few minutes.

## Impact in Society

Eventhough export of frog legs does not apparently affect the human society in India and is all the more desirable from the point of view of earning valuable foreign exchange. It certainly disturbs the nature to some extent and the recent spontaneous multiplication of mosquitoes in this part of the country is attributed to the large scale of capture of frogs which otherwise feed voraciously on them.

If it is true, on the other hand, it will certainly affect the health of human being and the net result would be spread of water borne disease to a great extent.

Therefore, a through investigation in this line is more essential keeping the view of national economy on one hand and health of human being on the other to have a better way of restoring the loss of life. This could be achieved by imposing a legislation and turning our attention towards the artificial culture of such frogs in large scale.

By  
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# LEPROSY BEGGAR REHABILITATION HOME AT ULUNDURPET COMPLETES THE FIRST YEAR

By. S. SRINIVASAN,

Superintendent, Leprosy Beggar  
Rehabilitation Home, Ulundurpet.



The Leprosy beggars who come forward to join the Rehabilitation Home on their own volition.

The Government Leprosy Beggar Rehabilitation Homes are neither mere hospitals for the treatment of leprosy patients nor are they asylums or sanatoria for keeping leprosy beggars endlessly. The prime object of these Homes is to help rehabilitate the habitual beggars suffering from leprosy and hence the duration of the stay in these Homes of each inmate is determined by the nature of the disease, his aptitude to pick up a trade or occupation and also his desire and anxiety to settle down in society as an honourable and decent citizen. However, in spite of all these, there has been an erroneous impression among the leprosy beggars outside

that these Homes are patterned on old-fashioned Jails and to belie this false impression it is worthwhile to mention here that out of the 824 inmates admitted during the year 1972, as many as 80 were allowed to leave this Home at their own request on their undertaking that they would rejoin their families and not resort to begging again, thereby achieving the cherished goal of rehabilitating 80 leprosy beggars during the first year of existence of this institution.

The Ulundurpet Leprosy Beggar Rehabilitation Home is the second of such Homes and was inaugurated on 22nd January 1972 by Dr. Kalaignar M. Karunanidhi, Chief Minister of Tamil Nadu. With only 103 inmates at the time of the inauguration of this Home, the institution has grown from strength to strength and today we have 300 inmates, including 33 families, anxiously looking forward for their rehabilitation in society.

There are 24 spacious and well-ventilated dormitories where the inmates live. Four of the dormitories are modelled for the families, with separate rooms and ample privacy. The inmates are admitted voluntarily and also on the recommendations of sub-Inspectors of Police or the Medical Officers of the Government Leprosy Control Units.

The inmates, on admission, are given a thorough medical check-up and they are allotted to convenient and suitable dormitories according to the nature of their disease and also their ability to attend to particular type of work. The inmates are given free food (two times tea, a breakfast and two meals a day) and on days of National and other important functions special diet is being given including non-vegetarian dishes. The inmates are given two sets of dress a year and they are also given a pair of micro-cellular rubber chappals to enable them to be more active and at the same time to protect their feet from any possible damage. They are also given coconut oil and washing soap once a week and toilet soap once a month. For those who have crippled fingers, tooth brush and tooth powder are being supplied in addition to spoons to enable them to take their food. Facilities are also given for the periodical free hair cutting and shaving by the Home barber.

## Production Figures

The aim of these special Care and Rehabilitation Homes for beggars suffering from leprosy is to get them cured or arrested of their disease and also to spectacularly transform the once wandering beggars into useful, decent and honourable citizens. Facilities are being given in this Home for vocational training such as Agriculture and Gardening, Mat-weaving, Tailoring, Scavenging, Dohby work, Cooking, Para Medical work, etc., and steps are being taken to have a poultry farm and a weaving section and also a shoe making unit. Wages are also being paid to the inmates according to the nature of the work ranging from Re. 1 to Rs. 2 a week and those who are incapable of doing any work, are paid 25 paise a week as pocket

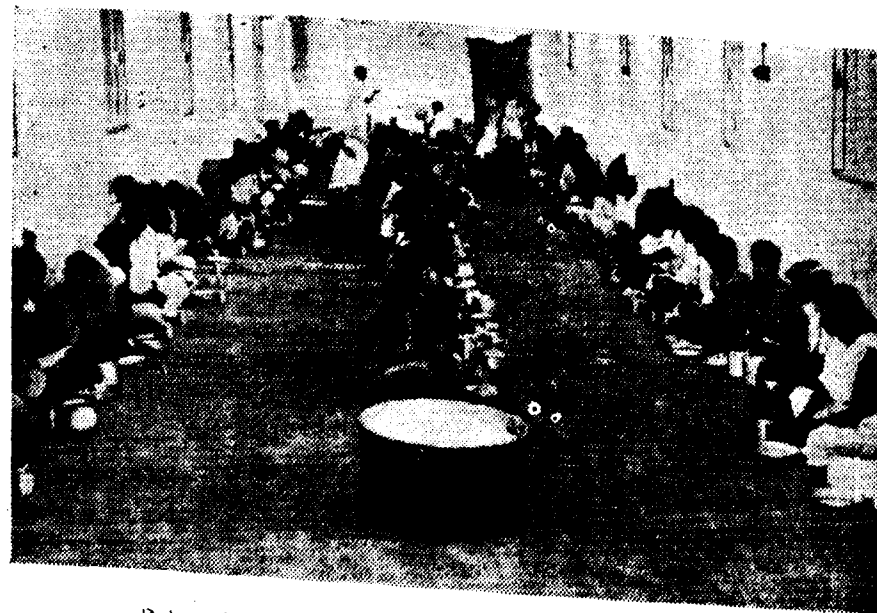


Married couples whose marriages were solemnised by the Superintendent of the Home.

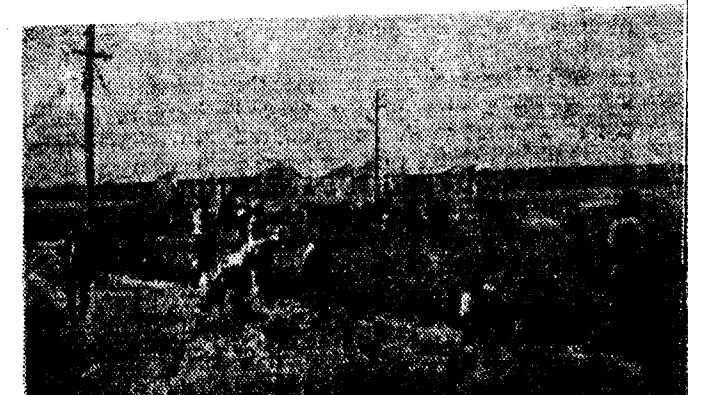
money to enable them to purchase their personal requirements. For this a Co-operative Stores and Canteen are being run by the inmates themselves in the campus. During the year 293 Kora Mats were woven, 406 garments were stitched and with the little water available by waste from the bath rooms, kitchen, etc., vegetable gardens were raised and 431 kilo grams of vegetables were produced by the inmates.

Though the inmates are not usually allowed to go out of the campus as a rule, individual inmates are given permission to visit their relatives and friends on their undertaking that they return on the due dates. Apart from the vocational training given to them, the inmates are also encouraged to engage themselves in some simple Games such as Volley Ball, Tannicoit, Carrom, etc. There is also a reading room where the inmates are given Tamil Dailies and Weeklies and for the illiterate inmates an adult literacy campaign is being organised by the help of the few inmates who have experience in teaching and free books on adult literacy are being supplied. Provision is also being made for the

screening of Films and through the good offices of the Collector of the District, the Rotary Club of Pennadam, makes arrangements for the screening of Tamil Cine Films twice a month. Children of the leprosy beggar inmates are being got admitted in the Free Boarding School attached to the Leprosy Mission Hospital at Vadathorasalur, which is nearby, and during vacation, such children are being taken back to their parents in this home. During the year 1972, two marriages among the inmates were solemnised in the presence of the Superintendent of the Home and the couples live happily as before. With these and more facilities offered by the Government, the inmates respond well to the treatment and rehabilitation programmes and the authorities leave no stone unturned to make life in the Home most happy, useful and purposeful. Since Family Planning is one of the primary methods in the treatment and control of leprosy, a mass campaign was launched in this Home and as a result nearly 164 males (approximately 90 per cent of the eligible fathers) were operated upon for vasectomy, which is a unique achievement for this Institution.



Balance diet is being served to the inmates of the Home.





Medical Ward in a Rehabilitation Home.

## INSIDE STORY OF A LEPROSY BEGGAR'S REHABILITATION HOME IN TAMIL NADU

Tiruvalluvar, the notable bard in Tamil, in one of his couplets, has condemned in unequivocal and absolute term that begging is the most degraded and despicable way of living that a man should resort to. Likewise, throughout the ages beggary has been an object of absolute contempt and condemnation. In spite of it, as our Chief Minister Dr. M. Karunanidhi observed in one of his valuable address at the time of inaugurating a Leprosy Beggar Rehabilitation Home, begging has become an inseparable part and parcel of living of some people in this land and many more have developed a shameless sense of obsession with begging.

All over the world, only a few socialist countries have succeeded in putting an end to begging in their lands. But most of even the most affluent countries, both in the West and in the East, could not eradicate beggary completely from their society, notwithstanding the good efforts made by them in that direction. This shows mere affluency in the midst of glaring social and economical inequality does not yield any substantial result in the line of eradication of beggary. It is only the strong will power of the general public coupled with the balanced economic progress and prosperity of the country on the basis of economic equality and social justice plus the earnest endeavours and efforts on the part of the power-that-be that could provide a complete panacea to this age-old evil practice among mankind.

But the case of leprosy beggars is a different one. They are pushed to begging and even in begging they have to put up with heavy odds against them such as the wrath of the public on account of their filthy and ugly appearance, etc.

Nearly one-fifth of the world's 15 million lepers live in India, and their present figure is estimated at about 26 lakhs. They are generally spurned and treated as a class apart, and their plight would have worse but for the crusade for centuries by missionaries and others to eradicate the disease and to give relief to those afflicted.

A kind person who throws a coin or two into the outstretched palms of a leper squatting on the way-side will not much help remove the stigma of the unfortunate people afflicted by leprosy. As the problem is a monumental one requiring the collective efforts and endeavours of the society as a whole, the individualistic effort on the part of some missionaries and philanthropists in the past could touch only the fringe of the problem. So the Tamil Nadu Government, in its earnest zeal and zest to eradicate begging in the State, has chosen to alleviate the lot of the leprosy beggars at first.

In this light the Tamil Nadu Government chalked out a scheme based on the willing participation of the public to eradicate beggary in Tamil Nadu. Dr. M. Karunanidhi, after assessing in proper

perspective all the aspects of this deeply rooted malaise in our soil from time immemorial, put out an appeal to the public on the occasion of his 47th birthday in 1971 to contribute their mite in a generous and liberal way to the Beggar's Rehabilitation Fund set up solely for this purpose, thereby making the people to take part in this noble scheme on their own volition. The people responded well to Chief Minister's birth day appeal and the public contribution amounting to more than Rupees one crore in a period of less than a year outstripped all the expectations of the Chief Minister himself. This instance points out to the fact that the Tamilians are never lacking in philanthropic spirit.

### Construction of Homes.

After proper planning, the Government divided the work of eradication of beggary into phases. As the first phase of work, the construction of 10 Rehabilitation Homes for leprosy beggars before the end of 1972-73 was taken up for implementation. Accordingly, four homes have been constructed so far. They are at Paranur in Chingleput District, Ulundurpet in South Arcot District, Bargur in Dharmapuri District and Pudukottai in Tiruchirappalli District. And six more homes are to be built at Tiruvannamali in North Arcot District, Manaiyeripatti in Thanjavur District, Vinnapalli in Coimbatore District, Deviakurichi in Salem District, Sellampatti in Dharmapuri District and Pudupatti in Madurai District.

before the end of the financial year 1973-74.

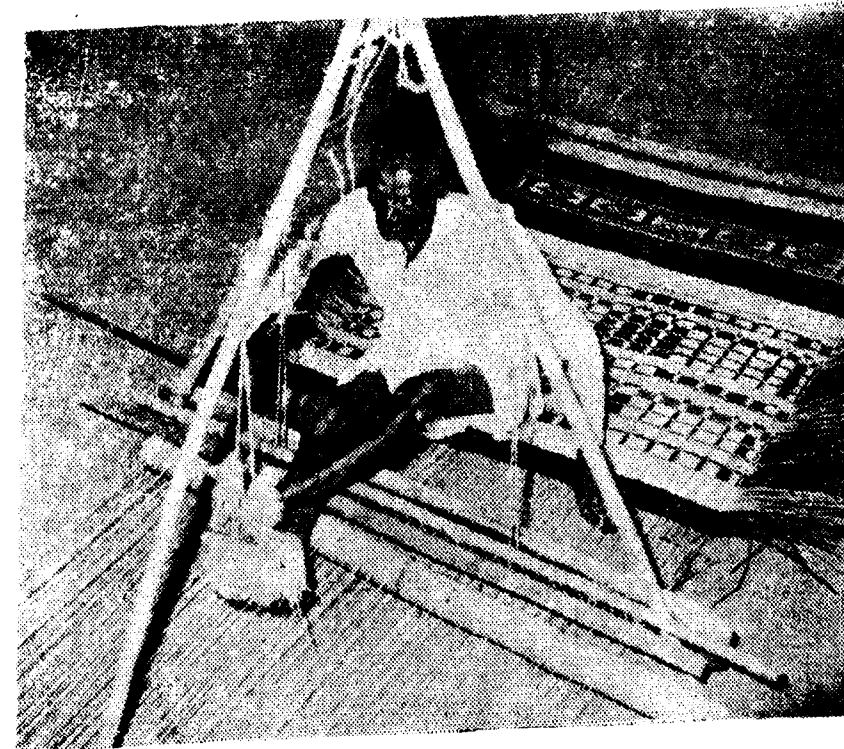
Beggar Rehabilitation Homes are accommodated in spacious area. Four blocks, each capable of accommodation 125 leprosy beggars, are constructed in every home. Each block is parted into small rooms to provide privacy in life for each and every leprosy beggars with their kith and kin. In each home, there is an administrative office, a hospital with ten beds and a surgery block, a research block and a residing block to the administrative staff of the Home.

### FACILITIES TO INMATES.

The inmates of the Homes are looked after well. The rooms and the inside precincts of the Homes are kept in highly hygienic condition. Free boarding and lodging are provided at Government cost for which a sum of Rs. 1.50 for each grown-up and Re. 0.75 for each children are being spent on every day. The inmates are provided with balanced diet. On occasions of national festival days and other important days connected with the Home, sumptuous food is served to all inmates of leprosy beggars.

### FREE MEDICAL HELP.

In each and every home there is one hospital with 10 beds attached to it. The hospital is provided with



An aged leprosy beggar engaged in Mat weaving.

enough medical staff. Complete medical treatment is given to the inmates at free cost. Those who are afflicted with serious type of leprosy, which can be cured only by surgery operation, are taken either to the leprosy hospital at Dharmapuri or to the leprosy hospital at Polampakkam where they are atten-

ded to by the medical officer for leprosy at State level or by the special Medical Officer at the Leprosy Beggars' Rehabilitation Home. Thus all the inmates afflicted with Leprosy are properly given medical treatment so that the inmates are able to live in comfort free from trouble of their deadly disease.

Nor is this all. Apart from these facilities provided to the inmates in the home, they are also given training in some avocation or occupation of usefulness and utility to them in the latter course of their life. They are engaged in agricultural activities. Training in poultry, gardening, etc., is also provided to them. Further they are put in the occupations already known to them. In short all the inmates are taught to stand on their own legs by learning and doing whatever work they like to adopt for their livelihood in future.

### OTHER FACILITIES.

The inmates are provided free clothing at free of cost. Each and every male is given two dhotis, two towels and two shirts per year and the each female inmate is provided with two sets of sarees, jackets, and pavada. Further each inmate is given a mat and a pillow for sleeping and an aluminium plate and jug for eating purpose—R.N.



A Poultry farm maintained in a Rehabilitation Home.

# KNOWING THE DEVIL BEHIND THE OLD WORLD DISEASE

*Leprosy*—the “old world disease” as it is commonly known—has been a curse on mankind down through the ages. Today, more than eleven million people throughout the world suffer from leprosy. Scientists and medical men have been unable to tell us how exactly it spreads. Some hold the view that it is transmitted by close contacts with leprosy — afflicted persons. This contention of late is disputed because of a few others who attribute the spread of leprosy to arthropods or insects. But they have not yet proved their case.

To ascertain the role that insects may play in the spread of leprosy scientists at the Jawaharlal Institute of Post-Graduate Medical Education and Research (JIPMER) at Pondicherry are presently involved in a five year research. The United States Government is helping them financially from PL-480 funds.

The Pondicherry scientists, according to Dr. M. Balasubrahmanyam, Principal of JIPMER, have taken up blood-sucking insects like mosquitos, bed bugs and scabies mites for their experiments. “We are doing this”, says Dr. Balasubrahmanyam, “because the leprosy bacilli are found in the blood of persons suffering from this disease and these insects which feed on blood should be the first ones to pick up the bacilli.”

The JIPMER scientists are conducting their probings in co-operation with Dr. W.F. Kirchheimer of the U.S. Public Health Service Hospital in Carville, Louisiana, U.S.A.

Dr. Balasubrahmanyam says that the researchers at JIPMER are carrying forward their experiments in three stages. In the first stage, they collected the blood-sucking insects from the houses of persons suffering from lepromatous leprosy. The insects were crushed in the laboratory and the crushed material was injected into the footpads of mice.

Source : USSI

But why mice ?

Dr. Balasubrahmanyam notes that scientists recently established that lepra bacilli (which cause leprosy) multiply on the footpads of mice. They have not come across any other animal which breed the bacilli. Though the bacilli multiply on the footpads, the mice are not afflicted with leprosy.

“It has been a slow process and we have had to wait for almost a year to know the results of this initial experiment”, says Dr. Balasubrahmanyam. But after experimenting with over 600 batches of insects, the JIPMER scientists have found that two types of mosquitos carry lepra bacilli. “We also

By

**BHASKERAN THOMAS**

found that two types of these bacilli survived for about 48 hours”, he adds.

Having identified the mosquitos which carry the lepra bacilli, the search began for the source of the insect-borne bacilli. So in the second stage of their studies, they examined the blood of persons suffering from lepromatous leprosy and found a large number of bacilli in the venous blood flow of patients. “Our studies showed that the number of bacilli was higher before treatment than after treatment”, Dr. Balasubrahmanyam notes.

Now, another problem cropped up for the Pondicherry scientists.

Mosquitos also contain organisms other than the lepra bacilli. Hence Dr. Balasubrahmanyam and his colleagues had to make sure that the bacteria they had located in the mosquitos were indeed lepra bacilli. This took them to the third stage of their experiments. They collected female

mosquitos and preserved them in the laboratory till they laid eggs. These mosquitos were destroyed after they laid their eggs to prevent the hatched eggs from becoming contaminated.

The laboratory-born mosquitos were then allowed to feed during the night on the blood of leprosy patients. They were collected the morning and crushed for further examination. The crushed material was injected into the footpads of mice. “We found”, said Dr. Balasubrahmanyam, “that the bacetria were lepra bacilli since they were able to multiply on the mice footpads.” Similar results were obtained with bed bugs also.

The next most difficult task, says the Indian scientists, still lies ahead to find out whether these mosquitos and bed bugs can transmit leprosy to humans. Medical experts hold the view that the disease is not hereditary. Hence there must be some source of primary infection.

To establish this possibility, Dr. Balasubrahmanyam says that his reaserch team is in search of a suitable animal on which to conduct their experiments. “No human being”, he points out, “is going to offer himself for the experiment”.

However, he goes on to say that the project's collobrating scientist Dr. Kirchheimer recently discovered an ant-eating animal in Mexico called the “armadillo” which is susceptible to leprosy. A similar animal is not available in India for the experiments. “So on the basis of this findings, we are conducting our tests on animals skin to the armadillo to achieve our objective”, he adds.

“It is too early”, concedes Dr. Balasubrahmanyam, “to conclude that insects like mosquitos and bed bugs spread leprosy. We have still a long way to go. But with the knowledge gained and the techniques evolved during the studies, we are confident of finding a solution to the transmission of this old world disease”.

# 243 AMOEBIC INFECTION— A CURABLE AILMENT

Amoebic infection is one of the commonest ailments in India which affects mainly the large intestine and liver. This common disease is carried from one to another by carriers. This infection either runs an acute or a chronic course. If left untreated the infection may form an abscess in the liver and may lead to serious complications including loss of life. This condition is curable but the problem is re-infection. The cause of the infection is mainly poor hygienic conditions. The commonest carriers of the infection are servers and cooks who can infect the food easily.

## AMOEBIC INFECTION

Amoebic infection is caused by an organism *entamoeba histolytica*. Having been swallowed with food, etc., the amoeba prefers to settle down in the large intestine (colon). These *entamoeba* burrow underneath the mucus membrane of the intestine and forms an elevation of the surface. Later, such an elevation burst upon and forms an ulceration. Depending upon the severity of the infection there may be membranous ulcers extending from right side of Colon (Caecum) to anus or there may be only a few ulcerations. Sometimes, instead of membranous ulcers there may be elevations of mucus membrane forming a tumour named as amoebic grannuloma. Depending upon the severity it may produce severe dysentery or mild symptoms. When the infection is severe such amoeba sets into the circulation through a vein and reaches the liver. Liver forms an ideal site for it to multiply and cause inflammatory changes. Such changes only produce abscesses in the liver. If the liver is already damaged due to alcohol such persons are prone to develop amoebic liver abscess rather than a person with a normal liver. Occasionally one of these ulcers may lead to severe bleeding or rarely it perforates leading on to peritonitis.

Sometimes if there is a grannuloma causing intestinal obstruction (intussusception) it may necessitate surgical treatment, i.e. removing the diseased portion. Sometimes the large intestine may get thickened and

form a mass in the abdomen. Such a mass will be on the right side of lower abdomen (Amoeboma).

## CLINICAL COURSE.

Usually the patients come with the Chronic Course rather than with acute disease, complaining of loose motions on and off with mucus and blood. This condition alternates with a few days of constipation. The motion at such times is offensive in odour and patients also complain of passing foul smelling gas frequently. Due to passing blood and mucus, they complain of weakness and loss of weight also. If the bowel symptoms are not severe he may have vague abdominal pain in right or left side, lower abdomen or above the umbilicus. So this condition is mistaken for duodenal ulcer or appendicitis.

On examination these patiens have pain in the right and left side of lower abdomen and the affected portion of the Colon is thick due to spasm.

Dr. N. Rangabashyam,  
M.B.B.S., F.R.C.S., F.I.C.S.,  
F.A.C.S., F.A.C.G.,

If the infection is controlled at this stage no problem arises. Mainly the infection spreads to liver and produces pain on the right side of the upper abdomen (below the ribs). The patient is not able to digest fatty foods. Later he has swinging temperature, sweating, and rigor. On examination he has enlarged liver and in some jaundice also occurs. Such an abscess if left untreated, may burst inside the abdomen and form peritonitis or may burst inside the chest. This leads to fatal complications. Recovery at this stage is unpredictable.

## DIAGNOSIS.

Diagnosis is made mainly through examination of the patient. In addition to repeated examinations of the motion for amoeba, examination of the rectum by Sigmoidoscopy reveals the typical ulcers. Smear from them also show active amoebae.

The treatment is mainly medical unless complications like obstruction of intestine, abscess in the liver, etc., ensue. In severe cases when the patient is not having any heart trouble he is given injections of emetin hydrochloride (1 Gr.) daily for 6 days. Along with this patient gets metronidazole tablets (Flagyl) 200 mg. tab. 2 tab three times a day for 5 days. Chronic patient gets DILOXANIDE furoate (Furamide) tablets for 10 days. For liver abscess in addition to the above drugs he is put on Choloroquine. If the abscess has formed, it needs aspiration of pus or removal of pus by operation. One should not resort to self-medication unless examined and advised by your family doctor. Though ailment due to amoebiasis in early stages is minimal, one should not ignore it. The minor ailment may lead to major complications. Detection of carriers, prevention of water and food contamination form the main prophetine barrier against amoebic infestation.

“Prevention is better than Cure.”

## DIRECTOR OF SOCIAL WELFARE AGENCIES.

The Central Social Welfare Board, New Delhi is preparing a Directory on Social Welfare Agencies working in India. The Tamilnad Social Welfare Board has undertaken the work in connection with collection of data in this regard for the State of Tamilnadu as a whole. The Central Social Welfare Board contemplated to complete the work at the earliest possible time. The Chairman of the State Social Welfare Board requests all the Social Welfare agencies in the State to send the details relating to these institutions in the State to send the details relating to their institutions together with their correct addresses to the Tamilnadu Social Welfare Board, Central Office Buildings, Madras-600006 in order to enable the Board to collect data from the institutions to be included in the Directory.



WHEN  
MILLIONAIRES  
ARE  
ON THE  
MOVE

TAMIL NADU  
TOURISM  
CORPORATION  
SMOOTHES  
THEIR  
WAY

Wander lust and the urge to explore is an ancient instinct of a man. It has blossomed into the gigantic concept of Tourism in modern times with far reaching socio-economic repercussions. In the present Jet Age, there are a class of people wanting to do the world in a easy cool deck chair comfort on cruises by Luxury Liners. The Madras port is being patronised increasingly in the recent years by this type of tourists. We have had the honour of receiving the "FLOATING UNIVERSITY", "FLOATING LIBRARY" and recently the famous Luxury Liner "SS. MARI POSA" and the equally famous "SS. ROTTERDAM" both carrying the American Millionaires and rich tourists.

On 1st March 1973, a white, gleaming, two funnelled floating Luxury Hotel "SS. ROTTERDAM" carrying about 500 American Millionaires and rich tourists anchored at the Madras Harbour. The

Tamil Nadu Tourism Development Corporation welcomed them in a traditional Tamilian way playing Nathaswaram, sprinkling of rose water, application of vermillion and sandal paste. The foreign tourists appreciated the reception accorded, so much that they were actually dancing and swinging to the music as they passed through the welcome reception line.

The cruise which left New York on 18th January 1973 will return to New York on 16th April 1973 covering 89 days, after touching several countries. Curiously enough the Luxury Liner anchored at three ports, Bombay, Cochin and Madras, in India.

"SS. ROTTERDAM" is as large as a small town with two differences. For one thing it is a small town devoted to the pleasures of select band of passengers. For another, almost half of the populations made up of crew members to smooth the way, every moment of 89 lovely voyage days. The flag-ship "SS. ROTTERDAM" is 748 feet long, 94 feet wide, 101 feet high with eleven passenger decks, eight passenger elevators with indoor and outdoor swimming pools, automatic stabilisers, with all the latest navigational and operational instruments. On board there is also a theatre auditorium capable of seating 620 passengers.

#### Excursions:

At every port of call the American Express, the renowned Travel Agents, or their Accredited Agents arrange for local sight seeing and extended tours. Tours ashore are optional

at extra expenses. At almost every port of call an attractive selection of tours in and around the ports is featured. The programme often includes performance of national dances and music as well as evening tours featuring dinners of national cuisine. Some of them leave at one port and take inland tours which encompass the attractive tourist spots around and join the cruise later at the next port of call, using the air transportation. In India they had arranged conducted tours in and around Bombay City and to Elephanta, Agra, New Delhi, Benares, Jaipur, Udaipur, Darjeeling, Nepal. While at Madras, the Tamil Nadu Tourism Development Corporation Limited arranged for their sight-seeing of the City and also to Mahabalipuram in their Luxury Coaches and in air-conditioned limousines. A few passengers disembarked at Madras to take pleasure tours in South India and to join the cruise at Singapore, the next port of call.

It is estimated that the five hundred tourists who disembarked at Madras only for a few hours would have spent on an average \$ 50.00 Dollars, per head. This would have earned us \$ 25,000 U. S. Dollars in Foreign exchange. In Indian currency it is Rs. 1,88,000 (approximately). This would ultimately generate Rs. 5.50 lakhs of economic activity. Economics apart, the visit has brought us enough good will and tourist publicity.

(Contributed by D. S. Dheendrayal, Assistant Director, Tamil Nadu Tourism Development Corporation.)

The Luxury Liner at Madras Harbour.



## RESERVOIR ACROSS THE PONNANIAR

The Tiruchirappalli District is the second granary of Tamil Nadu next to Thanjavur District. This District is fed by Cauvery and its tributaries and irrigation is being done by Cauvery water in addition to rainfed tanks.

In Tiruchirappalli District an extent of 1,71,334 acres are being fed by Cauvery Channels, Amara-vathi Channels and system tanks. Apart from Cauvery and system tanks there are about 2,510 tanks (rainfed) irrigating an extent of about 85,750 acres.

During the last 5 years from 1967-68 to 1972-73 excepting

Cauvery system, a Medium Irrigation Scheme has been sanctioned for constructing a reservoir across Ponnaniar near Maghavanur village in Manapparai Taluk to irrigate an ayacut of 1,830 acres in addition to stabilising 271 acres of existing ayacut under the stream. Apart from this Medium Reservoir Scheme, 32 Nos. S.M.I.P. tank formation schemes are being executed at a cost of Rs. 186.66 lakhs to bring under plough an ultimate ayacut of 12,000 acres. Existing sources are being repaired and brought to standard at a cost of Rs. 84.67 lakhs. Attempt has also

been made to desilt the existing major tanks at a cost of Rs. 5.11 lakhs to improve their efficiency.

The Ponnaniar Reservoir Scheme is a first medium project in this district sanctioned under the Fourth Five-year Plan. The Ponnaniar River takes its origin in the Kadavoor hills in Manapparai Taluk, runs about 20 miles in Tiruchirappalli District and joins with river Ariyar which in turn joins river Cauvery. The Ponnaniar River is irrigating an extent of 271 acres at present.

This source has not been tapped so far in a large scale. In order to utilise the surplus water a reservoir is being constructed across Ponnaniar near the village Maghavanur in Manapparai Taluk. This reservoir will get an yield of 362 M.cft. of water from its catchment of 33.60 sq. miles. The capacity of reservoir is 175 M. cft. and it will store 350 M. cft. of water in two fillings. This reservoir is proposed with a dam of 810 feet in length of which 614 feet will be earthen dam and the rest of 196 feet being masonry dam. The height of dam at full reservoir level is about 70 feet from the bed of river.

When this scheme is completed, an extent of 1,830 acres of new ayacut will be irrigated in addition to the existing ayacut of 271 acres. The ayacuts will be irrigated by canals, taking off from the left abutment of this dam. The main canal of this scheme together with distributory reaches for about 19,650 feet is proposed to be lined with concrete to reduce seepage loss in transmission. By this Ponnaniar Scheme, an additional food production of 909 tons is expected.

For the construction of this scheme a separate division with two sub-divisions was formed from 1st September 1970. The headquarters of this division was located initially at Tiruchirappalli and later on shifted to Manapparai to facilitate quicker execution of the project.

S. RAGHUPATHY, M.A.,  
Regional Public Relation Officer,  
Tiruchirappalli.



Ponnaniar Scheme under progress.

## THE MAMALLAPURAM SHORE COTTAGES

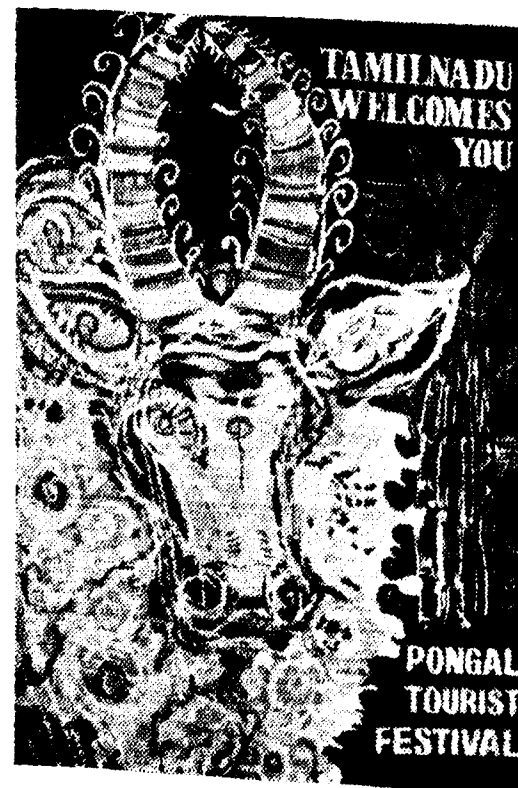
Twenty New Shore Cottages at the India Tourism Development Corporation Travellers Lodge at Mahabalipuram were formally inaugurated on Monday, March 19. This expansion is part of India's bid to capture a share of the enormous international tourist traffic in search of holiday by the seas. Mahabalipuram affords travellers a unique opportunity of combining a beach vacation with visits to some of India's greatest archaeological attractions.

India Tourism Development Corporation Shore Cottages at Mahabalipuram follow the inauguration last December of Kovalam Grove, a beach village at Kovalam, Kerala which is being developed into India's first major planned resort.

At Mahabalipuram the New Shore Cottages have been added to the India Tourism Development Corporation Travellers Lodge which has also been renovated and provided with additional facilities. The Shore Cottages accommodate 48 beds. Each unit includes an air-conditioned room, attached bath, kitchenette and a sit-out which command a panoramic view of the sea-beach and the great Shore Temple. Interior decor utilises local crafts, fabrics and designs. A few cottages have two storeys providing accommodation for four persons. Three architectural modules provide a pleasant variety within the Mahabalipuram complex, while harmonising with its sea-side setting.

New facilities at the India Tourism Development Corporation Tra-

The Shore Cottages of the India Tourism Development Corporation at Mamallapuram combine the charms of local exterior and the convenience of Western Type Hotel.



## TRAVEL AGENTS BODY COMMENDS TOURISM STEPS IN TAMIL NADU

vellers Lodge (which has 8 double rooms) include an air-conditioned restaurant, bar and an open-air barbecue. The new restaurant offers Indian and continental cuisine as well as South Indian specialities. Facilities for parties and meetings are also included.

Apart from visits to the Pallava Temples at Mahabalipuram, India Tourism Development Corporation Travellers Lodge offers car and coach trips to nearby Kanchipuram, Thirukalikundram and the unique water-birds sanctuary at Vedanthangal. Traditional entertainment is also organised for visitors, including special moonlight events with the Mahabalipuram beach and Shore Temple providing a spectacular setting.

The Department of Tourism of Government of Tamil Nadu has received a certificate of merit and the Allan Currimbhoy trophy from the Travel Agents Association of India at its 22nd annual convention in New Delhi on March 25 in recognition and appreciation of meritorious efforts for promotion of tourism.

The Pongal tourist promotion poster of the Tamil Nadu Government depicting a decorated cow was adjudged by a panel of Indian and foreign travel agents as one of the best display materials brought out by a Government. A copy of the poster is reproduced above. It is the work of Thiru R. Bhaskaran, Instructor in Painting in the Government College of Arts & Crafts, Madras.

Combine the charms of local exterior and the



The fresh-water swimming pool at Mamallapuram beside the Pallava monuments makes it an idyllic holiday resort.

The Tamil Nadu Tourism Development Corporation arranged a truly Tamilian welcome to the Millionaire Tourists.





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The headquarters of the two sub-divisions has been fixed at dam-site itself. A small colony has been constructed at dam-site and in this colony quarters have been constructed for two Assistant Engineers, eight Section Officers/Junior Engineers, six Clerks and Draughtsman and six Peons.

In addition-38 Nos. of quarters have been constructed at the dam-site for the workcharged members such as Drivers, Cleaners, Work Inspectors, etc., engaged in this Project.

Amenities such as protected free water-supply and electricity have been provided at dam-site for the staff engaged in this Project.

In addition, free transport facilities for the school-going children of the staff and for medical attendance at the nearest Government Hospital at Vaiyampatti have also been provided. Certain other project concessions by way of additional emoluments are also sanctioned by the Government for the staff engaged in this project.

By this scheme about 1,200 to 1,500 labourers around this dam, site are being benefited and they are having continuous employment. This scheme having been ordered to be got executed on piece work system, small job workers and petty contractors in large number are also getting benefited.

By the construction of this dam, an area of about 150 acres of land get submerged under water. However no hamlets got affected by this submersion. The full Reservoir level has been fixed in such a



Original course of the river before construction.

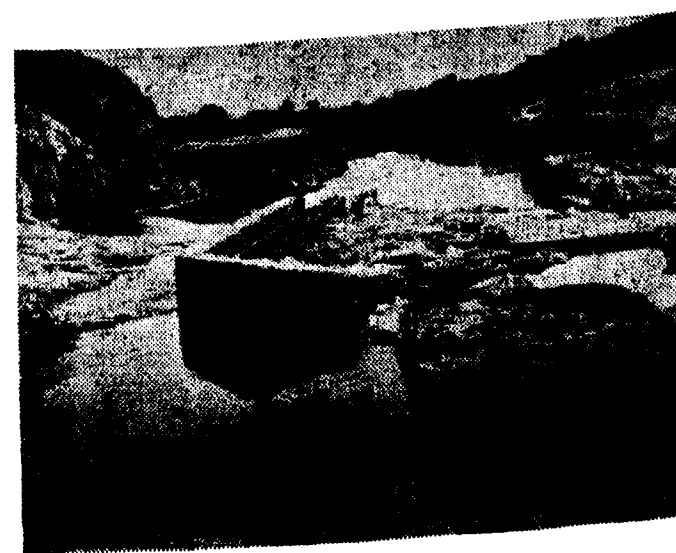
way as not to bring under submersion any of the hamlets or villages situated inside the catchment area. Arrangements have been made for making compensation to the affected land owners and a Special Tahsildar has been appointed to look into this aspect.

In order to obviate the difficulties of the villages in the submergible area due to submersion of an existing cart-track, a new earthen road of 3.55 kilo metres length has been formed on the left side hill slope above the full reservoir water level, according to the existing catchment upstream and the water spread area.

The scheme is in an advanced stage of construction and is expected to be completed by end of February 1974 at a cost of Rs. 99.97 lakhs.

So far about 60 per cent of earth dam works and 25 per cent of masonry works have been completed.

It must not be forgotten that this scheme is the brain-child of Thiru Anbil Dharmalingam Minister for Agriculture and he had pursued the idea with single-minded tenacity of purpose till the scheme got going.



Work under execution.



Canal from the dam for irrigation.





On the next day, Chamundi arrived at the appointed time, and the sculpturing commenced in right earnest. Portraying the requisite dance-postures whenever he wanted, she helped Iniyan to carve the first sculpture in a splendid manner. Expressing his confidence that one sculpture could be completed every day, Iniyan did leave to Chamundi.

The next day too saw the creation of another sculpture as scheduled by them.

Fifty days passed thus. Everytime Chamundi arrived, Iniyan would welcome her in monosyllable. For the rest of the working day, there would be no attempt at speaking. It was Art-consciousness and Art-consciousness alone that dominated him throughout.

No one was allowed access to the spot of sculpturing work; and no one other than Iniyan and Chamundi used to be present there.

Once in a while Azhagi would come there to admire the artistry of her daughter's dancing and kiss her in pride and joy. The old lady would also embrace Iniyan and bless him. "It is true that Chamundi dances even better than the Lord. But are you not carving out sculptures more resplendent than she!" After expressing her sincere praise in this manner, Azhagi would leave.

#### Pangs of Separation:

One day when Iniyan was working on a particular section of rock with care and concentration, it so happened that the cutting edge

of his chisel came into contact with the tip of his finger. He was of youthful age and so blood oozed out copiously from the wound. Chamundi was agitated at the sight. Tearing the pallau of her sari she bandaged his finger. As a result of this minor mishap the sculpturing work was held up for two days, during which Chamundi did not come in the direction of the temple. Not seeing her, Iniyan experienced some undefined sadness in his heart. What was the cause for this melancholy? A feeling that had not arisen all these days, whence did it spring now? Could it be that wrong intentions in regard to her had infiltrated into the bottom-layers of his heart? Were those intentions surfacing and taking to the air, now that she was not to be seen? Was it not a fact that all these days the sculptor had appreciated and admired her only through the eyes? None but Chamundi! Had there been any special meaning in her glance? No, he had not noticed any till then. He had been intoxicated by it.

But now, for some reason, his thoughts were dwelling on her charms and he was a prey to the pangs of separation. Until then, during every delineation of her dance, he had but been thrilled by the elegance of the deity of Art. But now as he recalled the movements of her comely figure, every limb of hers started an upheaval in his mind and he was literally being tortured.

Perhaps it was nothing more than a spell of disquiet occasioned by the absence of a familiar face. Even then, why should some other emotion persist in rearing its head from the bottom of that perturbation? He was certainly not prepared to conceal that emotion, behind the veneer of Art.

After allowing him to wander about, like one demented, for a day or two, Chamundi turned up as usual at the hall of sculpture. He too

welcomed her in the customary manner but there was a tremor in his voice which he himself was conscious of. She, however, did not seem to have noticed it. She enquired about the wound on his finger; and in a rush of words he blurted "I did not apply any medicine but would not the wound heal of its own accord, after it had come into contact with the Pallo of your sari?" Having said this, it took some time for him to control his nerves. She looked at him minatorily and Iniyan tided over the confrontation by saying in an unusually loud voice, "H'm, this is exactly the posture for to-day's sculpture". Then he busied himself with chisel and rock.

#### Passion Mounts:

Contrary to practice, the sculpture that day had not been completed even at dusk. "Only a little bit is left and we might as well finish it", explained Iniyan as he set up some flares and returned to the carving that day. Chamundi was in ignorance of that. Iniyan's one eye only was on the sculpture and the other was riveted on Chamundi. In the fluctuating light of the flares, Chamundi's golden complexion was still more resplendent and relishing the spectacle



to the full. Iniyan somehow managed to complete his work for the day. Chamundi did praise the sculpture before she left, but for some reasons the compliment that day did not give him total satisfaction.

A few days passed in this manner. There were constant symptoms in Chamundi's expression, testifying to the fact that some confusion in regard to Iniyan had arisen in her mind too.

That day Iniyan was asking Chamundi to portray the dance-posture for the eighty-first sculpture. "Delineate the stages of that Dance of the Lord with two pairs of shoulders and sacred thread, with the deer held aloof and brandishing the battle-axe", directed the sculptor. Chamundi proceeded to carry out his bidding and she demonstrated the sequence in separate stages, emphasising the movement of each limb.

Suggesting casually, "would it not be more bewitching if you were to stand with this hand of yours lifted a little higher?", Iniyan sought to touch her arm and raise it. All she did thereupon was to move away from him with a stare. He had anticipated that she would blush and bow her head in bashfulness but he was sorely disappointed.

As if nothing had happened, she continued her demonstration. Iniyan looked foolish.

"Does she not desire me? Does not the entire town say that Iniyan is a handsome youth? They who have seen my study frame and sinewy shoulders, have they not showered the praise on me that I should have been born in a royal

race? How is it that Chamundi alone does not seem to be attracted by me"?—Questions such as these were piercing his heart through and through. But the work of the day proceeded apace. In the grip of fear and agitation, he stepped up the tempo of his activity. Completing the day's carving well in advance of the evening, Iniyan told Chamundi that the eighty-second sculpture would be commenced on the morrow.

Chamundi was more lavish than ever in her praise of the eighty-first sculpture. "Through the prowess of your chisel, you have brought to life finer delineations that what I could actually portray", she said smilingly and at these felicitations from her, his heart became cool as a flower-pond. She took leave of him and he kept gazing at the receding beauty.

He turned back to view the eighty-one sculptures he had created. The sculptures vanished all of a sudden and in their place were dancing eighty-one Chamundis. He lost himself in the splendour of that dance. The sculptures that had been chiselled in pure Art-consciousness were now transformed into the form and figure of Chamundi and they stocked the fire of passion in his heart, even as they danced in gay abandon.

The flames rose high and he could no longer withstand the temperature. He offered elaborate council to himself but it was of little avail. You may chase the cat away from the milk-pot any number of times, but it would only crouch and hide and circle the spot. The uncontrolled power of love that spurted from his heart was in that category.

#### BEAUTY TURNS CHAOTIC:

The next day he was ready to carve the eighty-second sculpture. When Chamundi arrived he welcomed her with his eyes since his tongue would not do his bidding.

"Is it not the eighty-second sculpture today?" she asked.

"Yes".

"There are still twenty-seven to go"!

"What are you weary? Is even Art cloying"?

"Oh, no, I just counted the days ahead, that is all".

"I am thinking, would not there be a hundred more sculptures yet to be carved? Would I not be pleased enough to view Chamundi's artistic beauty for as many days"!



"My thinking is, why has the Emperor stipulated 108 sculptures? Could he not have put the ceiling at eighty-two"?

"Are you mocking, Chamundi"?

"Certainly not.... well, let us turn to work. Why this persiflage"?

Chamundi got ready to portray the dance-posture. Iniyan too picked up his chisel and went to the rock. He, however, felt jaded, as if he did not have adequate stamina to lift the tool even.

"The Dance of Beauty"! He uttered in a weak voice. His tongue stuck to his plate even as he said this.

Chamundi commenced the dance. She herself was a treasure-house of beauty and so what would be the effect if she were to do the Dance of Beauty? He felt dizzy and Raja-Rajecharam himself seemed to swirl before his eyes. But despite his transient infirmity the chisel in his hand was hard at work.

She did not dance on solid ground but on the dais of his gentle heart. She danced in the pupils of his eyes and in his nerves and capillaries. She kept dancing in every drop of his blood. He felt as if her silken feet were dancing on his head and he felt as if her crystalline arms were drawing him into an embrace. In his wild fancy her eyes and her lips were approaching.

The phantasy was cut short as a fleck of hard rock flew into his eye. Writing in pain and agony, he flung aside the chisel and cried out for help.

She was distressed. Running to him she held him from falling. Lifting his face in her beautiful hands, she removed the speck of rock from his eye with her finger in an adroit manner.

A flash of lightning as it were! He held her close to his heart with all the force at his command. Following the lightning came thunder, gale and the semblance of deluge. Chamundi threw him off and he fell to the ground with a wild groan. For a while he did not get up at all. His eyes swirled, as also the hall and the eightyone sculptures he had carved.

The deer danced and then it ran off in fear. Later it was metamorphosed into a tiger and it came in a ferocious leap. The snakes that had been carved around the neck of the Lord, multiplied rapidly and raised their hoods to strike. The flame held aloft by the Lord leapt up and became a conflagration raging in all directions. Iniyan strove to steady his vision and rise from the ground, but he could not.

#### WHO WAS CHAMUNDI?

Just then someone called "Devi" and Chamundi turned. She could hardly delive what she saw when she found Rajendran striding towards her in agitation. Behind him came the Emperor Raja Rajan himself and also Kundhavaiyar. Rushing to Rajendran, Chamundi cried out "Oh my lord"! as she fell into his prospective arms and sobbed her heart out.

"Enough, my lord, enough of my services in the cause of Art", she wept and Rajendran consoled her, "Panchavan Madevi, do not revile the service to Art. All because of the wrong-doing of a stray artist, would it be fair or proper to cultivate aversion towards Art? Iniyan has erred unknowingly and we can afford to forgive him!"

This conversation shook up Iniyan.

Who was she? Panchavan Madevi? Not Chamundi, the daughter of Azhagi of Chazhampalam? Panchavan Madevi, Yes, Panchavan Madevi! Rajendran's consort! Raja Rajan's daughter-in-law!

"Oh, what an error have I committed"!—Iniyan knew not where he was. Was he dying? He could not be certain.

The Emperor Raja Rajan came near his sobbing daughter-in-law and said in a voice throbbing with emotion and grief, "Panchavan Madevi, I shall never forget the sacrifice that you so willingly took on yourself at the behest of your husband Rajendran with a view to fulfilling my desire in the matter of Art. I have no words to command the old lady Azhagi who was of such help to you in this endeavour. She not only sent you to the hall of sculpture, she was also alert and vigilant in her task of protecting you. Only on the basis of the news communicated by her yesterday did we come here, our suspicions having been aroused in regard to the intentions of the sculpture. Do pardon us, Panchavan Madevi, for all the harassment that we have caused you"!

"Please do not seek my pardon, Emperor", said Panchavan Madevi as she fell at the Monarch's feet, "Who is to pardon whom"?

"Let us all pardon the sculptor Iniyan", said the Emperor. But as they turned towards the spot where the sculptor had been standing, they found that he had made himself scarce.

Iniyan was on the run and he would not even look back. Very soon he was beyond the reach of any pardon!

*This tale has been written on the basis of the following historical note—The Chola Emperor Raja Rajan had commissioned the carving in sculpture of the 108 dance-postures of the Lord, on the lower tier of the ceiling of the Big Temple at Thanjavur. The work proceeded according to plan, but for some reason it had to be abandoned on the completion of the eighty-first sculpture and soon after the eighty-second had been commenced.)*

(Concluded).

Read

# Tamil Arasu

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## RURAL INDUSTRIES PROJECT PROGRAMME

The Planning Commission recognised that while, for many years, the largest scope for utilising the manpower resources in rural areas would lie in the programme of agricultural development, road development, village housing and provision of rural housing, a lasting solution of the problem of unemployment and under-employment would require not only the universal adoption of scientific agriculture but also the diversification and strengthening of the rural economic structure. In the report of the Third Five-Year Plan it was pointed out that although several industries such as Village Industry, Khadi Sericulture, Coir and to an appreciable extent, Handloom were already located in rural areas, the development of Small Scale Industries had so far been, by and large, in or near the cities and larger towns. One of the main aims of the Plan, therefore, was to encourage the growth of Village and Small Industries in rural areas and Small towns. The Rural Industries Planning Committee of the Planning Commission accordingly proposed to introduce a scheme for the intensive development of small Industries in Rural Areas as Pilot Projects in 40 selected areas in the whole of India, out of which three were allotted to the State of Tamil Nadu as detailed below during the year 1962-63 :—

1. Sriperumbudur Rural Industries Project in Chingleput District comprising Sriperumbudur and Tiruvellore Taluks and Pennalurpet Sub-taluk.

2. Omalur Rural Industries Project in Salem District comprising Omalur and Mettur Taluks.

3. Nanguneri Rural Industries Project in Tirunelveli District comprising Nanguneri Taluk. Now the programme has been extended to the entire districts of Chingleput, Salem and Tirunelveli and the programme will be imple-

mented in two more districts viz. Dharmapuri and Ramanathapuram from the beginning of the Fifth Five-Year Plan.

The primary objective of the programme is to bring about a Co-operative agro-industrial economy, by an all-round development of agriculture, irrigation, communications, industries, social services, etc. and by stimulation and mobilisation of the initiative and efforts of local residents to the fullest extent. In other words, the purpose of the programme is to develop small scale, cottage and village industries in the rural areas excluding towns having more than 15,000 population. Under this programme, General Purpose Engineering Workshops, Common Facility Service Centres, Training Centres and Departmental Production units have been started according to the availability of raw materials and other things in the Project areas. Loans at concessional rate of interest at 3 per cent per annum are given from Rural Industries Project Funds to private entrepreneurs and for industrial co-operatives at 2.5 per cent per annum in order to give enthusiasm for starting Small Scale Industries in the Project areas. The State Bank of India is also giving loans under its Liberalised Credit Facility Scheme to private persons who intend of starting Small Scale Industries in the Project areas.

In the Five Rural Industries Project districts mentioned above, it has been decided to merge the District Industries Officers Organisations with that of the Project Organisation and a Regional Deputy Director of Industries and Commerce with the designation "Project Officer, Rural Industries Project" will be the head of the new set up in these districts. Certain consequential arrangements such as the redistribution of the jurisdiction of the existing Regional

Deputy Directors of Industries and Commerce have also been ordered. With a view to give an impetus to the programme in the Rural Industries Projects and to provide sufficient technical support and participation in the work, a post of a Joint Director of Industries and Commerce has been created in the Office of the Director of Industries and Commerce and he is mainly in overall control of all the Rural Industries Projects.

The entire expenditure on the programme is met by the Government of India by way of grant and loans under a specified pattern of financial assistance. It is hoped that as a result of these measures, there will be a phenomenal growth of small industries in the areas covered by Rural Industries Projects providing ample employment opportunities as well as living to a large number of people in the rural areas.

### CONVERSION OF PHC's TO 30 BED HOSPITALS.

In a centrally sponsored job-oriented scheme of the Ministry of Health, 200 Primary Health Centres will be upgraded to 30 bed rural hospitals all over the country during 1973-74. It will give jobs to 4,400 medical and para-medical personnel, comprising 800 specialist doctors, 1,400 nurses and 2,200 para-medical staff.

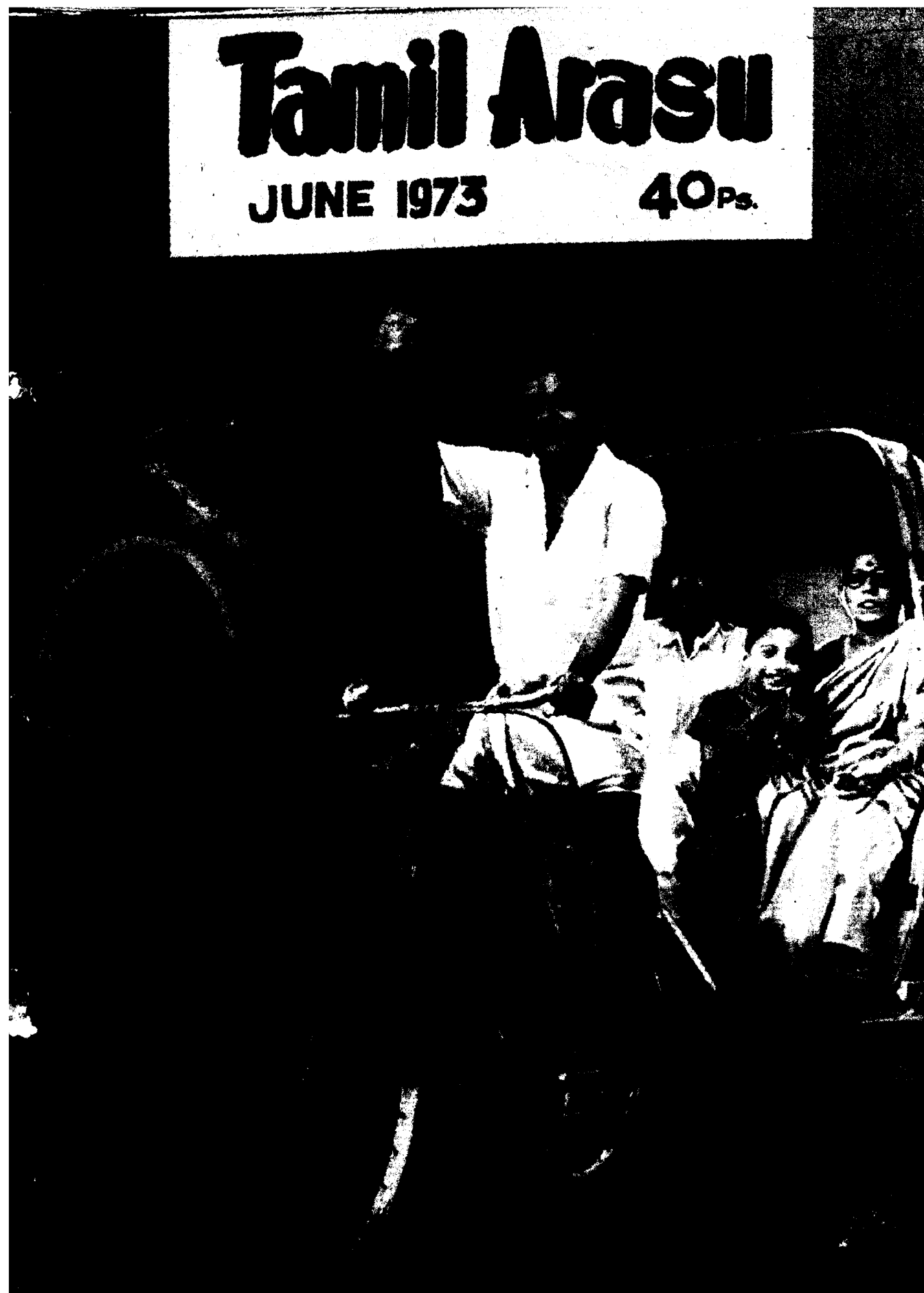
These hospitals will provide specialist services in medicine, surgery, gynaecology and obstetrics including X-ray, operation theatre, ambulance and anaesthetist facilities. The upgraded units will serve as Referred hospitals for the rural population served by 4 or 5 Primary Health Centres.

This Scheme will also meet some of the objections of the Medical graduates to serve in the rural areas as that availability of special services and facilities of X-ray and laboratory will help them improve their professional ability.

Requirements of tribal/backward areas will be given consideration while selecting P.H.C's for upgrading.

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The Chief Minister celebrated his 50th Birthday on 3-6-1973 with donations to the Fund for rehabilitation of rickshaw-pullers affected by elimination of hand-rickshaws.

A sum of over Rs. 20 lakhs was handed over to the Tamil Nadu Chief Minister, Dr. M. Karunanidhi for the Cycle Rickshaw Fund on the occasion of his 50th birthday.

The fund will be utilised for the elimination of hand rickshaws and supplying cycle rickshaws free of cost to all rickshaw pullers in the State.



A school started in Richardson Park, Saidapet by a dedicated social worker for the benefit of the children of nomadic communities hit the headlines in newspapers and magazines all over the country last year. The school obtained the inevitable image of lacking in everything but the spirit of dedicated service and indomitable courage against heavy odds.

Silently without fan-fare the Prosperity Brigade (a disciplined organisation of voluntary

workers formed by the late Dr. Anna) sprang into action to provide one of the essential needs of a school for children of nomadic communities—a hostel. This hostel is to receive inmates from the next academic year and as befitting such a noble venture in the constituency of the Chief Minister—Saidapet, it is being declared open on 5th June, as part of the Birthday celebration of Dr. M. Karunanidhi.

The school had enrolled last year 120 pupils, all belonging to communities known for their nomadic mode of life, like narikkoravars, soothsayers and bairagis. It is run by one Ragupathy who has himself married into one of the nomadic communities and is helped by other voluntary unremunerated but qualified teachers including one B.T. Assistant.

## THE CHIEF MINISTER FREE EYE CAMP CAMPAIGN COMPLETES ONE FULL YEAR

On the occasion of the 49th Birth Day of Dr. M. Karunanidhi, a separate fund designated as "The Chief Minister Eye Camp Fund" was constituted for the purpose of giving free eye treatment and spectacles and collections from the public commenced on and from 3rd June 1972. The money thus collected has been deposited in a Special Deposit Account opened in the Reserve Bank of India, Madras.

An Advisory Committee to advise the Government in administration of the above Fund was set up consisting of Minister for Health as Chairman, the Secretary, Health and Family Planning Department, the Director of Medical Education, Madras, and the Director of Health Services and Family Planning, Madras as members, the Deputy Secretary to Government, Finance Department as Member-cum-Treasurer and the Deputy Secretary to Government (Health), Health and Family Planning Department as Member-cum-Secretary. Apart from those mentioned above, four more non-official members were nominated to the Committee whose term is for three years. The duty of the Committee has all along been to suggest ways and means for collecting funds. The Director of Health Services and Family Planning is placed in overall charge of the eye camps, while the Director of Medical Education is expected to render necessary assistance for conducting the camps.

On the first day of its inauguration, i.e., 3rd June 1972, the total collection swelled to the figure of Rs. 9 lakhs. The contribution consisted of the amount of Rs. 5 lakhs given by a Committee headed by the Sheriff of Madras City, Thiru M. A. M. Ramasamy and a contribution of Rs. 4 lakhs by the visitors who called on the Chief Minister at his residence on his birth day itself. The latter sum included in it the contribution of Rs. 2,02,049 by the temples in the State. Among the notable contributors on the occasion, mention must be made of Rs. 49,000 contri-

buted by the State Electricity Board and Rs. 25,000 made by Messrs. Anjuham Pictures for story and dialogue written by the Chief Minister himself. Now the total contribution to the Fund has swelled to more than Rs. 50 lakhs.

### MOBILE UNITS.

For the purpose, five Mobile Ophthalmic Units were set up, two under the direct supervision of, Dr. J. E. Abraham, Superintendent, Government Ophthalmic Hospital, Madras and three under the control and guidance of Dr. G. Venkataswamy, Vice-Principal, Madurai Medical College, Madurai. Both are noted specialists in their profession in Tamil Nadu.

Each Mobile Unit consist, apart from the head surgeon, of 4 Assistant Surgeons, 12 nurses, one Head Nurse and other medical attendants and assistants in requisite number. Each Mobile Unit is allotted to a specified area. Accordingly, the Mobile Unit one is to conduct camps in Madras, Chingleput and South Arcot districts; the Mobile Unit two is allotted to the districts of North Arcot and Dharmapuri; the Mobile Unit three is to camp in Thanjavur, Tiruchirappalli and East Ramanathapuram districts; the Mobile Unit four is to look after the areas in Coimbatore, Salem and the Nilgiris districts and the Mobile Unit five is put in the medical relief service in the districts of Madurai, West Ramanathapuram, Tirunelveli and Kanyakumari.

Each Mobile Unit is provided with a bus and two Jeeps and other medical paraphernalia worth about Rs. one lakh. Apart from this, the two specialists entrusted with the task of supervising the Mobile units are provided with an Ambassador Car each. Besides these, the conveyances of medical services are taken now and then for use by these units as the need arises.

Each unit is expected to camp at two places every month in its allocated area conducting at least

500 operations in each camp. It was the target fixed at the outset. But the target has been exceeded in some camps such as the camp conducted at Tiruvarur, etc.

So far 94 eye camps have been conducted all over the State at a total cost of Rs. 26 lakhs. Among them, 66 eye camps were conducted at different places in the State such as Tiruvarur, Kumbakonam, Cobi-chettipalayam, Palani, Tiruchendur, Kallakkudi, Nagercoil, etc., by the group of doctors under the supervision of Dr. Venkataswamy and 26 eye camps by the set of medical units under the control of Dr. J. E. Abraham.

Apart from this, an eye camp hospital was set up in C.S.S.W. Mill Marriage Hall at Coimbatore on 24th September 1972 and this camp was continued for a six months period attending to the need of the eye ailment patients in the surrounding areas. For this camp hospital a sum of Rs. 25,000 was allotted and as on 13th November 1972 as many as 588 cases of eye ailments were operated upon. So also a continuous eye camp was conducted at the Government General Hospital in Tiruchirappalli from 21st October 1972.

A record has been made in the Eye Camp at Kallakkudi in Tiruchirappalli district where as many as 1,218 operations were done in a single day. This is a creditable achievement to-date in the annals of Medical History and this record was possibly created only with the selfless, sacrificing service rendered by the local units of Women's Association, Lion's Club and the local colleges.

This campaign is to be continued for four more years in the State and if need be, as the Chief Minister said in his speech at the last camp conducted in Madras in April 1973, this campaign will become a continuous one even after the lapse of four years in the interest of the public at large. The Free Eye Camp Scheme has so far given treatment to 287,931 persons at 92 Camps, as follows:—

## O. Anver OFFER A HUNDRED SALAMS to KARUNANIDHI

Who is it that has brought name and fame to  
Tamilnadu

Thou only KARUNANIDHI.

Great Administrator, Statesman, an upright Judge,  
defender of the helpless, all tolerance and grace

Thy name is KARUNANIDHI.

When Urdu lovers were in despair wailing and  
weeping their lot, who is it that turned their  
tears into tears of joy

Thou only KARUNANIDHI.

Now for lovers of Urdu, a new hope, a new life

Now for them a forward march

Age for them no longer a bar

Doors of education no longer closed

Now look to this down of a new era

O. Anver

Offer a hundred salams to KARUNANIDHI.

Translation of Urdu Poem published in the  
daily Urdu newspaper "The Musalman" dated  
31st March 1973 in praise of Dr. KALAI NGAR  
M. KARUNANIDHI, Chief Minister of Tamil-  
nadu, Moulana Moulvi Abul Barkath Saheb  
Anver, Muslims, Religious Leader (aged 80) on  
the announcement of Urdu Muslims as Backward  
Class.

(Translated by Dr. Md. Maqdoom, Anna Salai,  
Madras-2.)



# ACHIEVEMENTS UNDER FREE EYE-CAMP PROJECT.

| Serial number and name of the place where Free Eye-Camp was conducted.                          | Eye-Camp period.       |                        | Total number of out-patients treated at the camp. | Cataract operations done. | Refractions done. | Minor operations done. | Advance amount sanctioned for the camp. |
|-------------------------------------------------------------------------------------------------|------------------------|------------------------|---------------------------------------------------|---------------------------|-------------------|------------------------|-----------------------------------------|
|                                                                                                 | From                   | To                     |                                                   |                           |                   |                        |                                         |
| (1)                                                                                             | (2)                    | (3)                    | (4)                                               | (5)                       | (6)               | (7)                    | (8)                                     |
| <i>A. Achievements made by the three units which are under the control of Dr. Venkataswamy.</i> |                        |                        |                                                   |                           |                   |                        |                                         |
| 1 Thiruvannamalai .. ..                                                                         | 2nd June 1972 ..       | 10th June 1972 ..      | 15,013                                            | 2,035                     | 1,678             | 120                    | 1,16,630                                |
| 2 Kumarapalayam .. ..                                                                           | 22nd July 1972 ..      | 31st July 1972 ..      | 5,048                                             | 1,051                     | 1,618             | 24                     | 72,918                                  |
| 3 Gobichettipalayam .. ..                                                                       | 15th July 1972 ..      | 7th August 1972 ..     | 10,693                                            | 2,102                     | 2,581             | 49                     | 2,01,938                                |
| 4 Palani .. ..                                                                                  | 3rd August 1972 ..     | 12th August 1972 ..    | 4,650                                             | 847                       | 696               | 27                     | 81,000                                  |
| 5 Thiruchendur .. ..                                                                            | 16th August 1972 ..    | 23rd August 1972 ..    | 4,699                                             | 320                       | ..                | ..                     | 59,760                                  |
| 6 Kallakkudi (Dalmiapuram) .. ..                                                                | 19th August 1972 ..    | 28th August 1972 ..    | 14,328                                            | 2,167                     | 493               | ..                     | 39,006                                  |
| 7 Nagercoil .. ..                                                                               | 2nd September 1972 ..  | 9th September 1972 ..  | 1,451                                             | 151                       | 467               | 20                     | 54,000                                  |
| 8 Thirupattur .. ..                                                                             | 12th September 1972 .. | 23rd September 1972 .. | 6,948                                             | 778                       | 488               | 30                     | 50,004                                  |
| 9 Ootacamund .. ..                                                                              | 11th September 1972 .. | 20th September 1972 .. | 4,715                                             | 306                       | 939               | ..                     | 55,000                                  |
| 10 Coonoor .. ..                                                                                | 13th September 1972 .. | 23rd September 1972 .. | 3,576                                             | 1,770                     | 151               | 63                     | 1,03,860                                |
| 11 Mayavaram .. ..                                                                              | 19th September 1972 .. | 28th September 1972 .. | 8,317                                             | 848                       | 512               | 54                     | 51,174                                  |
| 12 Podinaickanoor .. ..                                                                         | 23rd September 1972 .. | 2nd October 1972 ..    | 6,626                                             | 940                       | 1,134             | ..                     | 1,08,000                                |
| 13 Melur .. ..                                                                                  | 30th September 1972 .. | 8th October 1972 ..    | 4,165                                             | 768                       | 502               | ..                     | 36,000                                  |
| 14 Velur-Paramathi .. ..                                                                        | 21st October 1972 ..   | 6th November 1972 ..   | 4,778                                             | 548                       | 802               | ..                     | 36,000                                  |
| 15 Pudukottai .. ..                                                                             | 28th November 1972 ..  | 7th December 1972 ..   | 2,428                                             | 374                       | 369               | 12                     | 25,800                                  |
| 16 Pollachi .. ..                                                                               | 13th December 1972 ..  | 19th December 1972 ..  | 4,387                                             | 534                       | 879               | ..                     | 28,800                                  |
| 17 Paramakudi .. ..                                                                             | 21st December 1972 ..  | 30th December 1972 ..  | ..                                                | ..                        | ..                | ..                     | ..                                      |

|                          |                        |                       |        |       |       |    |        |
|--------------------------|------------------------|-----------------------|--------|-------|-------|----|--------|
| 18 Usilampatti .. ..     | 23rd December 1972 ..  | 3rd January 1973 ..   | 11,293 | 1,229 | 885   | 14 | 36,000 |
| 19 Karur .. ..           | 26th December 1972 ..  | 4th January 1973 ..   | 5,324  | 592   | 176   | 42 | 18,000 |
| 20 Udumalpettai .. ..    | 28th December 1972 ..  | Do. ..                | 1,250  | 265   | 551   | 16 | 28,800 |
| 21 Kulithurai .. ..      | Do. ..                 | Do. ..                | 379    | 54    | 227   | 3  | 7,200  |
| 22 Virudhunagar .. ..    | Do. ..                 | 6th January 1973 ..   | 2,907  | 412   | 423   | 16 | 18,000 |
| 23 Sivakasi .. ..        | 30th December 1972 ..  | 8th January 1973 ..   | 4,157  | 351   | 390   | 11 | 18,000 |
| 24 Erode .. ..           | 2nd January 1973 ..    | 9th January 1973 ..   | 5,849  | 634   | 307   | .. | 28,800 |
| 25 Thirukarangudi .. ..  | 4th January 1973 ..    | 10th January 1973 ..  | 3,843  | 432   | 243   | 12 | 25,200 |
| 26 Mettur .. ..          | 19th January 1973 ..   | 28th January 1973 ..  | 2,465  | 457   | 477   | 31 | 18,000 |
| 27 Tuticorin .. ..       | 20th January 1973 ..   | 29th January 1973 ..  | 1,325  | 310   | 464   | 2  | 25,200 |
| 28 Musiri .. ..          | 26th January 1973 ..   | 4th February 1973 ..  | 4,625  | 615   | 1,859 | .. | 18,000 |
| 29 Sankarankoil .. ..    | 27th January 1973 ..   | 5th February 1973 ..  | 5,236  | 507   | 419   | 13 | 25,200 |
| 30 Dindigul .. ..        | 9th February 1973 ..   | 16th February 1973 .. | 5,520  | 562   | 533   | 8  | 36,000 |
| 31 Kutralam .. ..        | 12th February 1973 ..  | 19th February 1973 .. | 3,785  | 296   | 477   | .. | 25,200 |
| 32 Manapparai .. ..      | 24th February 1973 ..  | 5th March 1973 ..     | 1,851  | 149   | 495   | 3  | 18,000 |
| 33 Mannargudi .. ..      | 14th March 1973 ..     | 23rd March 1973 ..    | 6,676  | 570   | 537   | 22 | 36,000 |
| 34 Athur .. ..           | 16th March 1973 ..     | 25th March 1973 ..    | 4,326  | 554   | 298   | 33 | 36,000 |
| 35 Ootacamund .. ..      | 17th March 1973 ..     | 26th March 1973 ..    | 1,292  | 51    | 381   | .. | 36,000 |
| 36 Coimbatore .. ..      | 24th September 1972 .. | 31st March 1973 ..    | 10,535 | 1,398 | 1,041 | .. | 31,000 |
| 37 Tiruchirappalli .. .. | 21st October 1972 ..   | 31st March 1973 ..    | 2,175  | 386   | 87    | .. | 14,400 |
| 38 Vaigai Dam .. ..      | 6th April 1973 ..      | 18th April 1973 ..    | 1,606  | 160   | 480   | 7  | 27,000 |
| 39 Jayangondam .. ..     | 16th April 1973 ..     | 25th April 1973 ..    | 1,495  | 397   | 247   | 3  | 18,000 |
| 40 Aruppukkottai .. ..   | 16th April 1973 ..     | 25th April 1973 ..    | 3,141  | 274   | 151   | 10 | 18,000 |
| 41 Thaccalai .. ..       | 19th April 1973 ..     | 26th April 1973 ..    | 2,020  | 37    | 337   | .. | 25,040 |
| 42 Mettupalayam .. ..    | 21st April 1973 ..     | 3rd March 1973 ..     | ..     | ..    | ..    | .. | ..     |

Achievement particulars included in Coimbatore.

| Serial number and name of the place where Free Eye-Camp was conducted. | Eye-Camp Period |                                       | Total number of out-patients treated at the camp. | Cataract operations done. | Refractions done. | Minor operations done. | Advance amount sanctioned for the camp. |
|------------------------------------------------------------------------|-----------------|---------------------------------------|---------------------------------------------------|---------------------------|-------------------|------------------------|-----------------------------------------|
|                                                                        | (1)             | (2) From To                           |                                                   |                           |                   |                        |                                         |
|                                                                        | (1)             | (2) (3)                               | (4)                                               | (5)                       | (6)               | (7)                    | (8) Rs.                                 |
| 43 Cumbum                                                              | ..              | .. 23rd April 1973 .. 3rd May 1973    | 4,474                                             | 292                       | 446               | 11                     | 36,000                                  |
| 44 Thruppur                                                            | ..              | .. 23rd April 1973 .. 2nd May 1973    | 1,548                                             | 186                       | 187               | ..                     | 18,000                                  |
| 45 Thirumayam                                                          | ..              | .. 27th April 1973 .. 6th May 1973    | 2,954                                             | 277                       | 14                | ..                     | 18,000                                  |
| 46 Dharapuram                                                          | ..              | .. 26th April 1973 .. 4th May 1973    | 1,153                                             | 232                       | 178               | 14                     | 18,000                                  |
| 47 Thazhaiuthu                                                         | ..              | .. 30th April 1973 .. 8th May 1973    | 2,057                                             | 363                       | 330               | 4                      | 18,000                                  |
| 48 Sathiyamangalam                                                     | ..              | .. 29th April 1973 .. 7th May 1973    | 1,120                                             | 117                       | 69                | ..                     | 18,000                                  |
| 49 Pattukkottai                                                        | ..              | .. 28th April 1973 .. 10th May 1973   | 8,149                                             | 827                       | 1,319             | 15                     | 25,200                                  |
| 50 Rasipuram                                                           | ..              | .. 7th May 1973 .. 16th May 1973      | ..                                                | 371                       | ..                | ..                     | 18,000                                  |
| 51 Nattham                                                             | ..              | .. 5th May 1973 .. 15th May 1973      | 547                                               | 144                       | 185               | 2                      | 18,000                                  |
| 52 Sivaganga                                                           | ..              | .. 8th May 1973 .. 17th May 1973      | 1,710                                             | 200                       | 142               | 2                      | 18,000                                  |
| 53 Thiruchengodu                                                       | ..              | .. 10th May 1973 .. 19th May 1973     | ..                                                | 509                       | ..                | ..                     | 18,000                                  |
| 54 Nagalapuram                                                         | ..              | .. 12th May 1973 .. 21st May 1973     | 184                                               | 484                       | 191               | ..                     | 18,000                                  |
| 55 Salem Town                                                          | ..              | .. 14th May 1973 .. 26th May 1973     | ..                                                | 1,014                     | ..                | ..                     | 36,000                                  |
| 56 Thanjavur                                                           | ..              | .. 14th May 1973 .. 26th May 1973     | ..                                                | 666                       | ..                | ..                     | 25,200                                  |
| 57 Kottar                                                              | ..              | .. 16th May 1973 .. 21st May 1973     | ..                                                | 31                        | ..                | ..                     | 5,400                                   |
| 58 Sathur                                                              | ..              | .. 18th May 1973 .. 27th May 1973     | 637                                               | 149                       | 193               | 5                      | 18,000                                  |
| 59 Kulithalai                                                          | ..              | .. 19th May 1973 .. 28th May 1973     | ..                                                | 350                       | ..                | ..                     | 18,000                                  |
| 60 Kovilpatti                                                          | ..              | .. 21st May 1973 .. 30th May 1973     | 558                                               | 808                       | 188               | 25                     | 18,000                                  |
| 61 Annur                                                               | ..              | .. 21st May 1973 .. 29th May 1973     | ..                                                | 218                       | ..                | ..                     | 7,200                                   |
| 62 Rajapalayam                                                         | ..              | .. 23rd May 1973 .. 1st June 1973     | ..                                                | 455                       | ..                | ..                     | 18,000                                  |
| 63 Gobichettipalayam                                                   | ..              | .. 25th May 1973 .. 3rd June 1973     | ..                                                | 279                       | ..                | ..                     | 10,800                                  |
| 64 Ambasamuthiram                                                      | ..              | .. 25th May 1973 .. 3rd June 1973     | ..                                                | 473                       | ..                | ..                     | 18,000                                  |
| 65 Srivaikundam                                                        | ..              | .. 27th May 1973 .. 5th June 1973     | ..                                                | ..                        | ..                | ..                     | 18,000                                  |
| 66 Kumbakonam                                                          | ..              | .. 27th May 1973 .. 8th June 1973     | ..                                                | ..                        | ..                | ..                     | 18,000                                  |
| Coimbatore                                                             | ..              | .. 1st April 1973 .. Continuous Camp. | 674                                               | 292                       | 124               | ..                     | 18,000                                  |
| Tiruchirappalli                                                        | ..              | .. 1st April 1973 .. Do.              | 190                                               | 21                        | 8                 | ..                     | 18,000                                  |
| Total                                                                  | ..              | ..                                    | 2,20,852                                          | 34,981                    | 28,368            | 723                    | 2,123,730                               |

**B. Achievements made by the 2 Units which are under the control of Dr. Abraham.**

| 67 Anakaputhur           | .. | .. 3rd June 1972 .. 12th June 1972           | 1,325 | 89  | 165   | .. | 2,000  |
|--------------------------|----|----------------------------------------------|-------|-----|-------|----|--------|
| 68 Chidambaram           | .. | .. 21st June 1972 .. 5th July 1972           | 4,624 | 433 | 1,497 | 31 | 2,000  |
| 69 Vridhachalam          | .. | .. 13th July 1972 .. 26th July 1972          | 4,735 | 537 | 1,235 | 14 | 29,070 |
| 70 Ambattur              | .. | .. 14th August 1972 .. 28th August 1972      | 2,442 | 403 | 610   | .. | 27,000 |
| 71 Krishnagiri           | .. | .. 28th August 1972 .. 9th September 1972    | 3,930 | 333 | 1,896 | 8  | 27,500 |
| 72 Vellore               | .. | .. 13th September 1972. 25th September 1972. | 3,314 | 513 | 627   | 5  | 18,000 |
| 73 Villupuram            | .. | .. 27th September 1972. 11th October 1972.   | 3,985 | 492 | 687   | .. | 18,000 |
| 74 Dharmapuri            | .. | .. 6th October 1972 .. 18th October 1972..   | 4,139 | 512 | 1,015 | .. | 27,216 |
| 75 Nungambakkam (Madras) | .. | .. 20th October 1972.. 3rd November 1972.    | 2,776 | 162 | 267   | .. | 27,000 |
| 76 Cuddalore             | .. | .. 26th October 1972.. 8th November 1972.    | 1,971 | 362 | 509   | .. | 18,000 |
| 77 Kancheepuram          | .. | .. 8th November 1972. 22nd November 1972.    | 2,834 | 525 | 717   | 2  | 36,000 |
| 78 Pennadam              | .. | .. 20th November 1972. 2nd December 1972.    | 1,295 | 169 | 398   | .. | 18,000 |
| 79 Gummidiipoondi        | .. | .. 6th December 1972. 18th December 1972.    | 1,628 | 423 | 201   | .. | 25,200 |
| 80 Thiruvannamalai       | .. | .. 23rd December 1972. 3rd January 1973      | 3,698 | 541 | 574   | 3  | 18,000 |

| Serial number and name of the place where Free Eye-Camp was conducted. | Eye-Camp Period. |                                               | Total number of out-patients treated at the camp. | Cataract operations done. | Refractions done. | Minor operations done. | Advance amount sanctioned for the camp. |
|------------------------------------------------------------------------|------------------|-----------------------------------------------|---------------------------------------------------|---------------------------|-------------------|------------------------|-----------------------------------------|
|                                                                        | (1)              | (2) From To                                   | (4)                                               | (5)                       | (6)               | (7)                    | (8)                                     |
| 81 Thiruttani                                                          | ..               | .. 28th December 1972. 8th January 1973 ..    | 2,813                                             | 483                       | 701               | ..                     | 25,200                                  |
| 82 Chingleput                                                          | ..               | .. 3rd January 1973 .. 13th January 1973 ..   | 1,391                                             | 402                       | 224               | ..                     | 25,200                                  |
| 83 Harur                                                               | ..               | .. 27th January 1973 .. 4th February 1973 ..  | 2,185                                             | 202                       | 443               | ..                     | 18,000                                  |
| 84 Ambur                                                               | ..               | .. 2nd July 1973 .. 14th February 1973 ..     | 2,680                                             | 262                       | 590               | ..                     | 18,000                                  |
| 85 Gudiyatham                                                          | ..               | .. 5th February 1973 .. 17th February 1973 .. | 3,298                                             | 287                       | 667               | ..                     | 18,000                                  |
| 86 Cheyyar                                                             | ..               | .. 23rd February 1973 6th March 1973 ..       | 2,651                                             | 463                       | 773               | ..                     | 18,000                                  |
| 87 Madras City                                                         | ..               | .. 15th April 1973 .. 28th April 1973 ..      | 2,277                                             | 117                       | 610               | ..                     | ..                                      |
| 88 Tindivanam                                                          | ..               | .. 5th May 1973 .. 17th May 1973 ..           | 2,313                                             | 317                       | 499               | ..                     | 18,000                                  |
| 89 Sriperumpudhur                                                      | ..               | .. 8th May 1973 .. Do. ..                     | 1,367                                             | 312                       | 254               | ..                     | 18,000                                  |
| 90 Hosur                                                               | ..               | .. 14th May 1973 .. 26th May 1973 ..          | 1,962                                             | 222                       | 765               | ..                     | 18,000                                  |
| 91 Madurandhakam                                                       | ..               | .. 21st May 1973 .. 2nd June 1973 ..          | 1,446                                             | 299                       | ..                | ..                     | 18,000                                  |
| 92 Chidambaram                                                         | ..               | .. 27th May 1973 .. 8th June 1973 ..          | ..                                                | ..                        | ..                | ..                     | 18,000                                  |
|                                                                        |                  | Total                                         | 67,079                                            | 8,850                     | 15,929            | 63                     | 5,05,386                                |
|                                                                        |                  | Grand Total (As on 28th May 1973)             | 2,87,931                                          | 43,831                    | 44,297            | 786                    | 26,29,116                               |

—R.N.—

## BRIEF SYNOPSIS OF FREE EYE CAMP FOR ONE YEAR ENDING MAY 31st 1973.

|                                                                          |                  |
|--------------------------------------------------------------------------|------------------|
| 1 Number of eye camps so far conducted ..                                | 94               |
| 2 Number of persons treated as out-patients ..                           | 2,93,653         |
| 3 Number of cataract operations ..                                       | 44,681           |
| 4 Number of persons issued free spectacles ..                            | 43,260           |
| 5 Number of minor operations done ..                                     | 786              |
| 6 Number of refractions done ..                                          | 44,928           |
| 7 Amount of advance so far sanctioned by the Government of Tamil Nadu .. | Rs. 29,50,876    |
| 8 Donation received as on 11th May 1973 ..                               | Rs. 46,91,497.51 |

## BRIEF REPORT OF BEGGARS' REHABILITATION SCHEME.

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Number of centres already opened—6 ..                         | (1) Paranur (Chingleput)—2nd October 1971.<br>(2) Ulundurpet (South Arcot)—22nd January 1972.<br>(3) Burgoor (Dharmapuri)—18th June 1972.<br>(4) Pudukkottai (Tiruchirappalli)—17th January 1973.<br>(5) Manaiyeripatti (Thanjavur)—17th February 1973.<br>(6) Pudupatti—(Madurai).<br>Vinnampalli—(Coimbatore)—Not formerly opened but functioning from 15th February 1973. |
| 2 Number of centres to be opened—1 ..                           |                                                                                                                                                                                                                                                                                                                                                                              |
| 3 Number of centres under construction—3 ..                     | (1) Thiruvannamalai.<br>(2) Devikurichi.<br>(3) Selliampatti.<br>Rs. 96 lakhs.                                                                                                                                                                                                                                                                                               |
| 4 Amount sanctioned by the Government for the above 10 centres. | About Rs. 1,06,00,000.                                                                                                                                                                                                                                                                                                                                                       |
| 5 Donation so far received ..                                   |                                                                                                                                                                                                                                                                                                                                                                              |



# DRIP IRRI- GATION AN ADVANCE IN IRRI- GATION SYSTEM

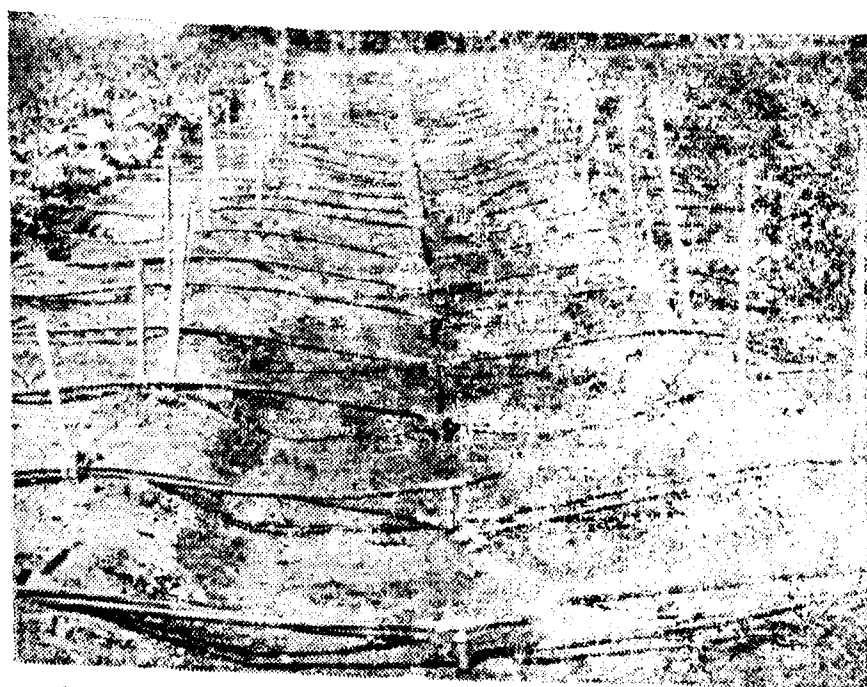
Of the various arts involved in the Agricultural production, irrigation has been rated older and of greater importance than other arts. It is true from the historical and archeological findings that the irrigation has been a major instrument in the advancement of ancient civilization. However, it is surprising to note that though there are immense advances in all walks of life, irrigation was left behind in a stagnant position. It is also true that many irrigation practices used to-day (especially in India) are almost identical with those practiced thousands of years ago. Practically there is no difference between the irrigation in ancient time and to-day in our country.

But in advance countries like United States of America, Europe, Israel and Australia improvement was made in the surface methods of irrigation to find out the optimum length and width of the field to be irrigated in furrow and border strip irrigation. Even this cannot be attributed to a great advancement. Sprinkler irrigation has been practiced in a relatively small scale for about 30-40 years back in the western countries but this has undergone a great change now. In Israel almost all crops are irrigated and over 90 per cent of them

by sprinklers. In United States of America, sprinkler irrigation is replacing the surface irrigation method mainly to save labour and large areas have been brought under sprinkler. In recent years, the Israeli scientists have developed a new method of irrigation which is known as drip irrigation or trickle irrigation or daily flow irrigation. This is going to be the real advance in the science of irrigation in the world.

In the 1930's Dr. Symcha Blass, then a water works consultant in Israel observed that one tree near a friend's house was outgrowing all nearby trees. Blass noticed that there was dripping steadily from a leaky water pipe which ran close to the tree. At that time, he discarded the idea because he felt it was too expensive. With the advent of inexpensive plastic pipes, a system became feasible and Dr. Blass began serious work on drip irrigation for field use in 1959. Meanwhile, another Dr. Blass in England in 1947 introduced the drip irrigation for the glass house watering. The system underwent many changes for underground installation to placing the pipes on soil surface. This idea has spread all over the world and, much work is going on in the drip irrigation research especially in Israel, Australia, South Africa, United States of America. But research is undertaken in India only at three

Plastic pipes drip water near roots of each plant.



Prof. R. K. SIVANAPPAN,  
College of Agricultural  
Engineering, Tamil Nadu  
Agricultural University,  
Coimbatore.

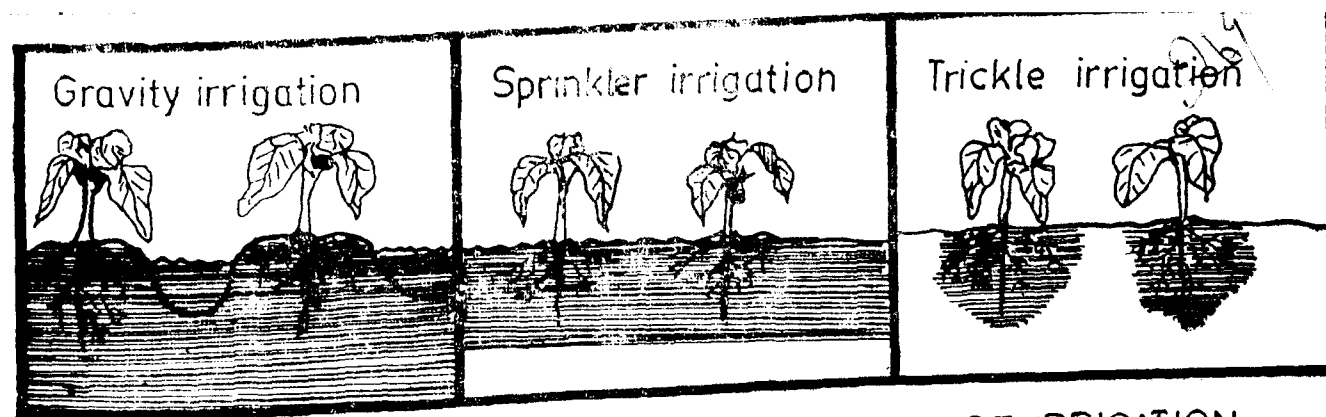


FIG.1. AREAS WATERED BY 3 METHODS OF IRRIGATION

places namely at Hissar (Haryana), Indian Agricultural Research Institute (New Delhi) and Tamil Nadu Agricultural University (Coimbatore) and among the three places substantial work has been done and is in progress in Coimbatore.

## How it works

The irrigation method is based on the conveyance of water with little pressure (4'-6' head) until it reaches points of dispersal and whereupon the water leaves the system through drip nozzles or holes with socket under no pressure. Drip irrigation generally wets a much smaller volume of soil than surface or sprinkler method and causes plants to have swaller root systems. The areas watered in the three main types of irrigation system are illustrated in the pictures above.

Two conditions help compensate for this. The smaller root zone is kept at a higher soil moisture level so that rapid absorption can help balance the smaller absorbing area of root system. It is also reported that in some cases drip irrigation produces faster than the outer methods.

Drip irrigation wets only part of soil surface and the crop is located in this wetted area. The width of the wetted area is a function of the soil type and the depth of wetting is a function of the ratio between rate of water application and evapotranspiration and of the soil type. The discharge of the regular drip nozzles of holes ranges from 1 to 10 litre per hour. The arrangement of drip irrigation is shown in Fig. 2.

## Position in Israel

The position at present in Israel is that all bananas are now grown under drip irrigation and it is stated that they are getting twice the crops with one tenth the amount of water. Results from field trials with tomato using saline water (EC-3 mhos/cm) they get a production of about 26T/acre. They are also getting spectacular success with brinjal, stawberries, cucumbers, etc. with the drip irrigation method.

The work done at Tamil Nadu Agricultural University, Coimbatore on tomato, has proved that by using only  $\frac{1}{4}$  to  $\frac{1}{3}$  of the water utilised by the conventional method (surface) we can raise these crops and at the same time the yield is also increased by 20-30 per cent. The Fig. 3 shows the arrangements of the system in the field.

The drip irrigation is an important advances in the world of agriculture. The results surveyed in various places indicated that there are not only savings of water consumption on drip irrigation but also increase in yields than the surface irrigation methods. The design of drip irrigation unit has not reached its final stage and there are still problems. It is encouraging to note that the evaluation of different designs are still in progress not only at Tamil Nadu Agricultural University, Coimbatore but also in other parts of the world. It is clear that the trickle irrigation can play a considerable part in the nation's agricultural economy and at the same time help us to use our limited water resources more efficiently.

## Panchayat Raj in Tamil Nadu

The National Institute on Community Development undertook a study in the Tamil Nadu, Gujarat, Andhra Pradesh and Madhya Pradesh to find out the impact of Panchayat Raj Administration towards Agricultural Development. The Study has revealed that about 68 per cent of the Agriculturists have the benefit of improved agricultural practices in this State as against 34 per cent in Gujarat. As many as 71 per cent of agriculturists have approached the Panchayat Union Councils in this State for assistance and guidance in agricultural development as against 39 per cent, 19 per cent, 1 per cent in Andhra Pradesh, Gujarat and Madhya Pradesh respectively. 91.6 per cent of the agriculturists are aware that agricultural production was the goal of Panchayat Raj Institutions. It will thus be seen that the present system in Tamil Nadu is working well as compared to other States.

# INDUSTRIAL GROWTH IN TAMIL NADU

Tamil Nadu is one of the highly industrialised States in India. The industrial production relates to automobiles, sugar, cement, textiles, as well as machinery for production of these times, structurals, boilers, cycles and a variety of other industrial and consumer materials. There are a number of Steel Rolling Mills engaged in the production of roads and sections, though primary raw materials for most of these industries being ferrous and non-ferrous metals, are not mined in the State. The State uses about 15 per cent steel produced in India. The only basic metal industry is the Aluminium Plant at Mettur. The other major metal producing industry envisaged is the Salem Steel Plant which is expected to go into production by 1976.

Till a few years ago, the only industry of importance in the State was Textiles, comprising largely of spinning mills. This industry is mostly concentrated in and around Coimbatore though a few big mills exist in Madras, Madurai and other centres. The growth expansion and diversification of different types of industries in the

new lines of manufacture as well as in the production of many sophisticated items, have been one of the remarkable features in the industrial history of the State during the last few years, actually creating new frontiers for the State in this respect.

The number of industrial licences issued for industries other than textiles up to December 1972, bears eloquent testimony to the new frontiers of the industrial sector in the State. Out of a total of 897 licences for the 10-year period up to December 1972, as many as 292 were for mechanical engineering industries, 141 for metallurgical industries, 126 for fertilizers and chemicals, 105 for agro-based industries and 233 for different enterprises such as paper, soaps, cement, timber products, etc. Both private sector as well as public undertakings have played a vital role in the new orientation given to the industrial progress of the State.

Some of the new products of this State which have made a mark on the industrial scene in the recent past are agricultural tractors, paper, castings (Steel and Cast Iron), forg-

ings, pipes and tubes, plastic manufactures, automobiles and cycle tubes and tyres, electrical and electronic items.

Dr. C. N. Annadurai, the first non-congress Chief Minister of the State, decried the over-emphasis given to private sector in the process of industrialisation. Since 1967, therefore, the State Government started embarking on its own for the first time in the development and the promotion of large-sized industrial units. One such venture is the Continuous Casting Steel Plant at Arkonam which has been completed in its first stage with an outlay of Rs. 8 crores, and the capacity is proposed to be doubled to one lakh tonnes of billets. The Alangulam Cement Plant is another State Government venture with an initial capacity of one lakh tonnes in operation and the capital cost so far is Rs. 4 crores. The capability of this unit is to be doubled first to 2 lakh tonnes and subsequently to 4 lakh tonnes per annum.

The State-owned Textile Corporation with an authorised share

capital of Rs. 5 crores is running successfully 14 textile mills taken over for providing re-employment to the labour. The Corporation would also take other incidental steps such as the establishment of processing facilities, new textile mills as model undertakings, management development programmes and labour welfare activities. The modernisation of the sick textile mills taken over by the State owned Textiles Corporation has made satisfactory progress and the Plan allocation of Rs. 2 crores has been found inadequate. The actual expenditure is likely to be Rs. 2.15 crores up to the end of Fourth Plan and the spill-over to the Fifth Plan is likely to be more than Rs. 3 crores. The various mills are at different stages of modernisation and results can be assessed only on completion of the programmes. However, it is worth mentioning here that in respect of one unit, viz., the Cambodia Mills which has nearly completed its modernisation scheme, the results are already very gratifying.

A proposal to establish a model textile mill utilising the latest available technology is under consideration. This is likely to be located near Usilampatti in Madurai district.

The Joint sector, comprising the State and private sector, has made a very good beginning in Tamil Nadu with the formation of the Petrochemical Complex at Tuticorin, which is expected to be in operation almost by the end of the Fourth Five-Year Plan, i.e., 1974 at a total cost of Rs. 73.5 crores. The Joint Sector has witnessed the emergence of a professional managerial class unfettered by the whims of the investor who take charge from the planning stage and control the creation of plant with ruthless efficiency and eliminate wasteful time lags.

Thus, the Fourth Plan has witnessed a significant beginning in three different aspects of the State's industrial progress. Firstly, in reducing the predominance of the textile industry, secondly in the State's entry as owner of new and manager of sick industries for the benefit of the labour and to ensure modernisation and thirdly in respect of the rise of the joint sector for developing industries in the core sector. The Tamil Nadu Industrial Development Corporation and

the State Industrial Promotion Corporation of Tamil Nadu are having numerous schemes on hand which will be implemented in the coming years. The latter organisation has also successfully encouraged the promotion of new industries in backward areas in the State.

Thus the new twist given to Tamil Nadu's industrial economy in the sixties has enabled the State to emerge as one of the foremost states in the country having a well-knit and dispersed industrial base. In fact, it is occupying the third place among States which have promoted new and sophisticated industries and if the momentum is retained the pace of development in the coming years can be such as to induce self-generating growth and help also further impressive progress on an intra-regional and even national basis. A significant contribution has been made by industrialists of Tamil Nadu in negotiating and locating new industries in the neighbouring countries of South-East Asia, Africa and Middle East with a good use of available entrepreneurial and technical skills through the promotion of well conceived joint sector overseas projects.

## Infrastructural Facilities :

The most gratifying feature of recent industrial history are the accordance of proper priorities for the creation of infrastructural facilities, the parallel growth of ancillary industries in the private and joint sectors, with continued encouragement for viable well conceived new schemes and a good use of the entrepreneurial skill. With the present stage of development it is envisaged that per capita income would be doubled in the next 12 years.

The creation of infrastructural facilities has been taking place on ambitious lines for some time past and Tamil Nadu can boast of a vast and integrated net-work of transmission and distribution lines for electricity with effective development of river water resources and also tapping of underground water resources and the well-developed road system, as also a very fine net-work of roads and new bridges. The road intensity in State is highest in India at 8.60 k.m. per square k.m. of its territory and 2.32 k.m. per 1,000 of population.

In spite of the fact that Tamil Nadu has been in the vanguard of the development of power resources and its per capita consumption of electricity has increased more than five-fold in the past two decades, there is an unsatisfied demand for power and dependence has to be resorted to on purchase from neighbouring States.

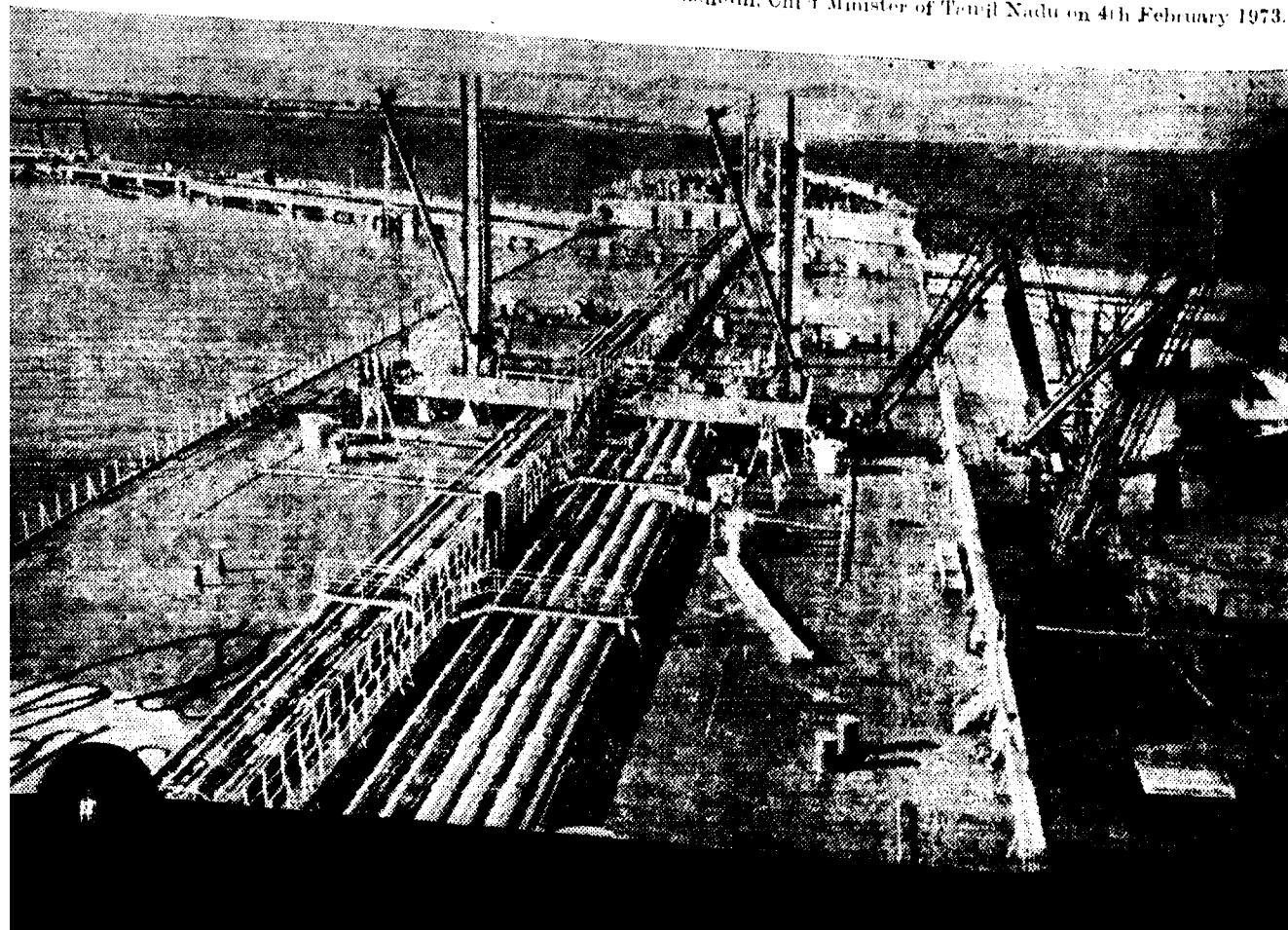
## Raw Materials

With a rising level of production and growing responsibilities any difficulty in obtaining supplies of raw materials and components regularly will have serious consequences on the health of the economy besides resulting in heavy loss of production. To obtain best results the State Government is creating a joint Stock company which will buy and keep raw materials for issue to industries. This will render the role of wholesalers and intermediaries superfluous.

The State's industrial economy in the years to come will become more broad-based and integrated with an increase in the stature of the petro-chemical industries while the mechanical and electrical industries will undertake the manufacture of more sophisticated items. The mechanical engineering industries particularly will gain special momentum with the completion of the Salem Steel Plant by the end of the Fifth Plan. While there is virtually unlimited the scope for the growth of electrical and electronic equipment industries, industries are coming up for effective use of the vast salt resources in the State with the expansion of capacity for caustic Soda, Soda Ash and other items.

The approach adopted by the Government during the last 6 years has been to study the gaps in the pattern of production of the State, identify the necessary schemes to fill up these gaps, encourage Private entrepreneurs to take up new schemes and to enter themselves in those fields where private sector appears to be shy. The field of assistance by the Government to Industrialists has been extended considerably and includes assistance to secure licence, infrastructure facilities like land, water, power and technical-knowhow, institutional finance and supply of essential raw materials. Realising that Government's direct assistance may have its own limitations, the

The new Oil Berth in Madras Harbour inaugurated by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu on 4th February 1973.



State Government sponsored various corporations like Tamil Nadu Industrial Development Corporation, State Industries Promotion Corporation of Tamil Nadu, Tamil Nadu Small Industries Corporation, Small Industries Development Corporation, Tamil Nadu Textile Corporation, etc., with a view to facilitate the industrial activity. The promotional activities of the Government have been mainly responsible for the spectacular growth of industries in the recent years. The industrial indices set out below bear ample testimony to the fact of commendable progress in the industrialisation of this State.

The number of registered factories in the State as well as the number of persons employed in the registered factories are increasing year after year as may be seen from the Table I.

TABLE I.

|                                              | 1969.    | 1970.    | 1971.    | 1972<br>(as on<br>30th June<br>1972). |
|----------------------------------------------|----------|----------|----------|---------------------------------------|
| (1)                                          | (2)      | (3)      | (4)      | (5)                                   |
| Number of Factories registered in the State. | 6,218    | 6,365    | 6,412    | 6,488                                 |
| Number of Workers employed.                  | 3,92,558 | 4,22,040 | 4,32,488 | 4,42,738                              |

TABLE II

| Year.      | Public Companies Registered. | Authorised capital. | Private Companies Registered. | Authorised capital. |
|------------|------------------------------|---------------------|-------------------------------|---------------------|
| (1)        | (2)                          | (3)                 | (4)                           | (5)                 |
| 1967-68 .. | 9                            | 2,66,50,000         | 83                            | 3,14,74,000         |
| 1968-69 .. | 4                            | 1,66,00,000         | 90                            | 2,68,93,000         |
| 1969-70 .. | 13                           | 51,14,90,000        | 103                           | 14,21,94,000        |
| 1970-71 .. | 12                           | 16,15,50,000        | 127                           | 8,44,69,900         |
| 1971-72 .. | 27                           | 36,86,00,000        | 141                           | 12,26,55,000        |

#### Growth of Registered Companies :

The industrial growth is also capable of being deduced from the increase in the number of companies registered under the Indian Companies Act in the State. Roughly 10 per cent of Companies working in India are located in Tamil Nadu. The following Statement in table II illustrates the marked increase in the number of companies registered during the last five years.

The Table III indicates the number and amount of capital issues permitted in this State Vis-a-vis, other States which conspicuously brings out the fact that this State is keeping a high rank in the whole of the country both in respect of the number of capital issues floated and the quantum of capital raised :

The Central Government in its public sector undertakings in Tamil Nadu stood at more than Rs. 377 crores. These industries have an annual turnover of about Rs. 90 crores and employ about 50,000 persons.

The undertakings are : -

1. Neyveli Lignite Corporation Limited, Neyveli.
2. Integral Coach Factory, Perambur, Madras.
3. Surgical Instruments Plant, Nandambakkam, Madras.
4. Hindustan Teleprinters Limited, Guindy, Madras.
5. Hindustan Photo Films Manufacturing Company Limited, Ootacamund.
6. High Pressure Boiler Plant, Tiruverambur, Tiruchirappalli.
7. Madras Fertilizers Limited, Manali.
8. Madras Refineries Limited, Manali.
9. Heavy Vehicles Factory, Avadi, Madras.
10. Ordnance Factory, Tiruchirappalli.
11. Indian Oil Corporation Limited, Madras.

The Industrial undertakings in the Central Sector have been helpful in strengthening the regional economy and some units have expanded their activities considerably. The high pressure boiler plant at Tiruchirappalli has been steadily increasing its production and boilers of bigger capacities are being planned in order to meet new demands. The teleprinter unit in Madras has been functioning profitably and the teleprinters required for the export markets are being specially manufactured. The Neyveli Lignite Corporation is playing a pivotal role in power generation though due to technical and other difficulties, the full use is not being made of the thermal stations capacity, or the fertilizer units capability. There is urgent need for making arrangements for raising the output of lignite so that the integrated project can also make the full contribution in the shape of larger supplies of electricity chemical fertilizer and lignite bri-

quettes. The surgical instrument unit in Madras and the photo film unit at Ootacamund are also finding it difficult to use their capacity fully though latterly efforts have been made to overcome technical problems. The integral coach factory is of course doing good work at and with export orders, the output is being raised continuously. The petro-chemical complex in Manali has made much headway in the current plan period. The Madras Oil Refinery has been functioning efficiently and efforts are being made to raise the throughput with the removal of bottlenecks in some directions. The Indian Oil Corporation has been constructing additional facilities at its installation for handling a larger volume of petroleum products while a lending plant has been established in the Manali Complex for producing different kinds of lubricants. The giant fertilizer unit in the same complex has got over with its teething troubles and after commencing commercial production in November 1971, the output of fertilizers has been rising substantially. The heavy vehicle factory at Avadi is turning out tanks at the stipulated rate and there are also proposals for undertaking the production of other items of equipment. The Ordnance Factory at Tiruchirappalli is also meeting the requirements of the defence service in the form of rifles.

Cable being piped from ship to shore makes Madras the first harbour to have this facility.

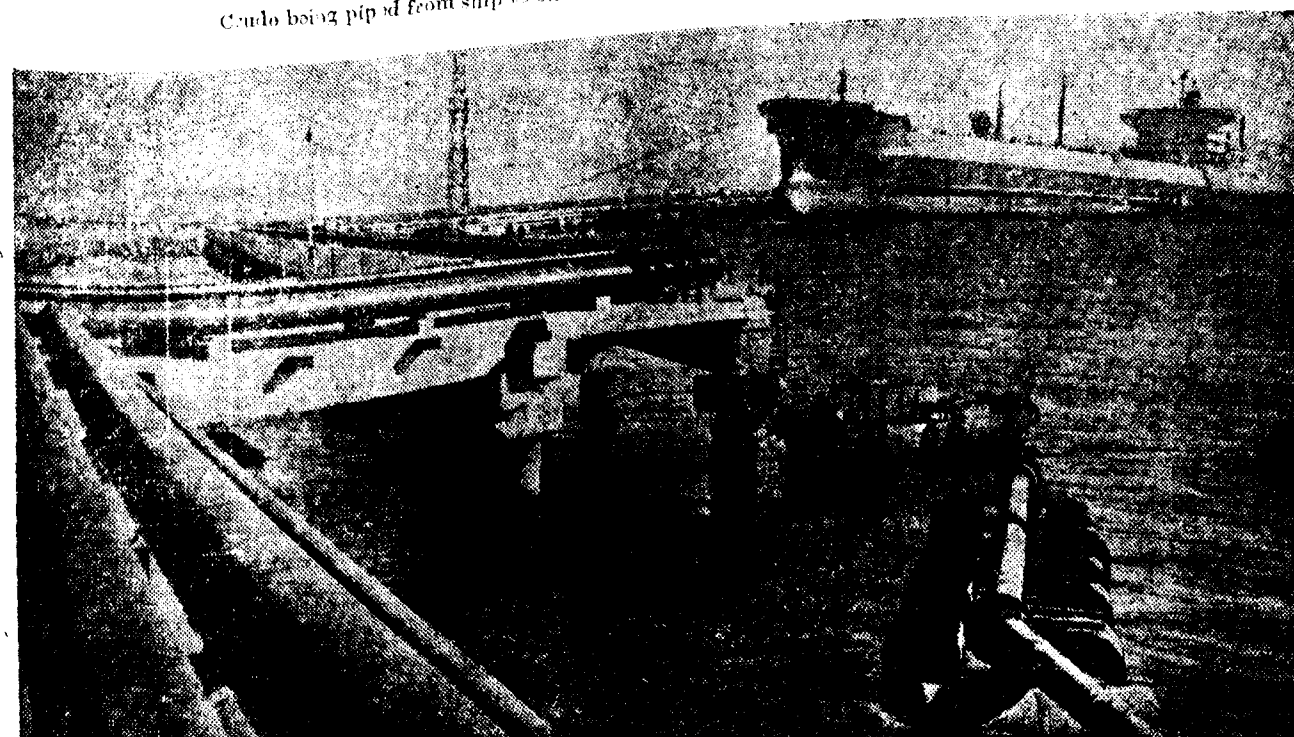


TABLE III

| States.           | Number of consents in 1972. | Number of issues in 1972. | Amount consented.         |
|-------------------|-----------------------------|---------------------------|---------------------------|
| (1)               | (2)                         | (3)                       | (4)<br>(RUPEES IN LAKHS). |
| Andhra Pradesh .. | 7                           | 7                         | 426.60                    |
| Assam ..          | ..                          | ..                        | ..                        |
| Bihar ..          | 2                           | 2                         | 1,112.00                  |
| Delhi ..          | 13                          | 13                        | 1,008.31                  |
| Goa ..            | ..                          | ..                        | ..                        |
| Gujarat ..        | 23                          | 24                        | 1,931.68                  |
| Haryana ..        | 1                           | 1                         | 100.00                    |
| H.P. ..           | ..                          | ..                        | ..                        |
| Kerala ..         | 4                           | 5                         | 209.07                    |
| M.P. ..           | 6                           | 6                         | 310.89                    |
| Mysore ..         | 9                           | 9                         | 1,570.99                  |
| Maharashtra ..    | 90                          | 95                        | 7,396.70                  |
| Orissa ..         | 1                           | 1                         | 113.00                    |
| Punjab ..         | 6                           | 6                         | 321.77                    |
| Rajasthan ..      | 1                           | 1                         | 30.67                     |
| Tamil Nadu ..     | 29                          | 29                        | 1,922.51                  |
| U.P. ..           | 11                          | 11                        | 765.52                    |
| West Bengal ..    | 36                          | 38                        | 2,131.01                  |
|                   | 239                         | 248                       | 19,350.72                 |



province and to advise Government and Local Administration on Town Planning. In 1915, he visited many towns and delivered series of lectures on various concrete problems of Town Planning and his reports were published by the Government. Later on, in the next year Government appointed Mr. H. V. Lanchester, another Town Planning expert of the United Kingdom as Town Planning Adviser to the Government for a short period of time. He too visited a number of places and delivered lectures and held classes in the Madras College of Engineering. His lectures and recommendations for the general development of the Madras city were published by the Government. He laid stress on the need for a Madras Town Planning Act and indicated the lines on which such legislation might be framed. In 1912, the Government of India impressed upon the Government of Madras, the need for regulating and controlling the growth of their towns and sought their views on the legislation. The Government of Madras, however, finally decided to have a Town Planning Bill for the province and sent a draft Bill framed on the lines of the British Housing and Town Planning Act, 1909, only adopting the provisions relating to Town Planning. The Bill was subsequently amended with reference to certain suggestions from the Government of India and final approval of the Government of India was obtained in 1917. But, due to war and other causes the Bill was not finally passed and placed on the Statute Book until 1920.

#### STATUTORY RECOGNITION

Town Planning secured statutory recognition for the first time in the legislative history of the province of Madras in 1920 (The Madras Town Planning Act, 1920) and the Local bodies were empowered to prepare and implement Town Planning schemes relating to development of land in towns. This Act provided for appointment of a Director of Town Planning for the Province. Town Planning being a highly technical and intricate matter, with its wide ramifications into all problems concerning the physical growth, development and improvement of our cities, towns and villages, could be dealt with only by the organisation of specialised departments of Town Planning, both at the Provincial centre and Local areas. The principal and subordinate tech-

nical officers and staff should necessarily be men qualified and trained in Town Planning. In 1921, Government appointed Mr. Reginald Dann, qualified technical expert recruited from England as Director of Town Planning for rendering such advice and direction to the local authorities on planning and improvement of towns and villages. It was observed that there had been limited technical staff and the local authorities too suffered from finances to adopt progressive town planning policy, but in spite of the handicaps, certain progress had been made in the field of planning. Mr. Reginald Dann relinquished his office in March 1936 and was succeeded by Mr. R. D. N. Simham, the then Personal Assistant to the Director. In 1938 the Government issued orders abolishing altogether the post of Director of Town Planning and allotting his function to the Inspector of Municipal Councils and Local Boards as Ex-officio Director of Town Planning. This combined office was held by an officer belonging to the Indian Civil Service; the present Indian Administrative Service. During 1944-45, Government permitted the Local authorities (Municipalities) to employ separate Town Planning staff.

#### EXPANSION OF DEPARTMENT

Government in G.O. No. 3578, Public Health, dated 29th October 1947, appointed the Provincial Town Planning Enquiry Committee to make recommendations for improving town planning activities in the State. The Committee (headed by the then Minister for Health, Thiru Karanth) had elaborately dealt with the subject and expressed its opinion that the order of the Government abolishing the post of Technical Director further retarded the progress of Town Planning in the Province. The recommendations of this Committee had not been implemented.

There had been expansion of the department of town planning during the Five Year plan periods. Till 1956 there had been only two Gazetted Technical posts in the Department. From 1956 there has been overall increase in planning activity of the State and the establishment and staff position gradually expanded along with increased responsibility for preparation of Master Plans, Regional

Plans and Metropolitan Plans. At present there are 54 Gazetted Technical posts in the department.

#### REGIONAL UNITS

At present there are eight Regional Units set up with their respective headquarters at (i) Madras, (ii) Vellore, (iii) Salem, (iv) Coimbatore, (v) Tiruchirappalli, (vi) Madurai, (vii) Sivaganga and (viii) Tirunelveli. Each region comprising of district and part or whole of adjoining districts differs from the Revenue Administrative district in the State.

There are two Corporations and 94 Municipalities in the State. In all Municipalities, except the recently constituted ones, there is separate Town Planning wing functioning under the overall control of the respective Executive Officers. Most Municipalities have Town Planning Officers of various grades (I to III) as heads of the wing or section.

#### RESEARCH IN URBAN DEVELOPMENT

Urban Planning has been gaining importance throughout the World on account of the rapidly increasing population and consequent urbanisation trends. Migration from Rural areas into Urban centres is a significant occurrence of the era encouraged by employment potential and industrialisation in cities and towns. Such inflow of population creates serious problems affecting safety and comforts of human race residing in cities. It results in straining the existing services such as water-supply, drainage, transport apart from lowering standards of sanitation, certain of slums in haphazard manner and overcrowding. All these undesirable and unhealthy trends will continue to increase in future; therefore it becomes a matter of vital and urgent importance to control and regulate growth of urban centres with a view to minimise the evil effects and to ensure safe, healthy and comfortable living for the citizens.

Cotton textiles, which clothed almost everybody not long ago, today face a growing threat to its dominant position from man-made fibres.

Though the production of cotton textiles in India continues to increase year after year, non-cotton textiles show a greater rate of increase.

This is a disquieting trend for the cotton textile industry, which is the largest single industry in India today.

To meet the challenge of the synthetic apparel, research institutions associated with the cotton industry work on a war-footing to improve the quality of the cotton fibre.

One such institution is the South India Textile Research Association (SITRA) of Coimbatore. As a first step, scientists at SITRA are currently engaged in a study to understand the properties and characteristics of the cotton fibres.

The five-year project at SITRA is supported by a U.S. Government grant of about Rs. 2.5 lakhs. Thiru K. N. Seshan, Senior Scientific Officer, SITRA, leads a team of scientists working on this project.

The quality of cotton varieties according to the varieties of cotton. In fact, it differs from plant to plant. "Even on the same plant," Mr. Seshan observed in a recent interview, "there is variation from ball to ball. We find that even in one cotton seed the fibres are highly variable. There can be variability within a fibre itself".

The quality of the fibre depends upon the properties of the fibre, he added.

Elaborating, Thiru Seshan noted that the seed hairs are distinct from any man-made fibres. "There is a gradual decrease in the thickness of the fibre from one end to the other whereas in man-made fibres, the cross-section is uniform throughout its length," he pointed out.

Although the existence of taper has long been known an accurate method for estimating taper, its relation with gross physical properties, and its technological importance have not been fully investigated.

## BETTER COTTON MAKES BETTER TEXTILES

As far as is known, no research of this nature is underway anywhere in the world. The U.S. Department of Agriculture (USDA) chose SITRA for the project for its laboratory facilities. Further, the Coimbatore institution is well equipped for conducting research and for carrying out tests under controlled conditions of temperature and humidity.

Thiru Seshan and his associates concentrated on measuring the taper of many kinds of cotton varieties to determine its influence on the physical properties of the fibres.

USDA furnished samples of several commercial varieties of seed cottons grown under different environmental conditions in the U.S. for the study. In addition, samples of representative Indian grown varieties were included in the project. So far about 30 varieties have been studied including six from the U.S.

The SITRA investigation revealed that when the fibre had a great degree of taper, the variation increased. Correspondingly, the variations decreased when the degree of taper was less.

Answering a query how these findings will help the textile industry, Thiru Seshan remarked: "The cotton breeder can take up the task of breeding uniform cotton fibre. Further, the physicist and the chemist could work together to improve the uniformity in cotton fibre".

SITRA'S success may mean a bright future for the cotton textile industry, which provides employment for nearly ten million handloom weavers. The mill industry provides direct employment to nearly 7,59,000 workers. The value of the annual textile output amounts to Rs. 800 crores.

Striking a note of optimism, Seshan notes that "the joint efforts of the botanist, physicist and chemist will soon provide the cotton industry with a fibre to match, if not excel, the synthetic fibres of today".

#### COTTON IMPROVEMENT IN TAMIL NADU.

Cotton is one of the chief commercial crops of Tamil Nadu, the normal area and production being respec-

### Growth of Medium Industries.

The State is also not lagging behind in promoting medium industries. The number of medium industries registered with the Directorate-General of Technical Development during the year 1972 is 50 as against the figure of 82 for six years from 1966 till the end of 1971, showing the recorded rate of increase in the number of medium industries registered. These companies have proposed to produce items like road rollers, cranes and winches and many other engineering goods including electric typewriters.

### Small Scale Industries.

Tamil Nadu has been one of the pioneers in the country in encouraging the growth of small scale industries from 3,000 small scale units in 1961, it has grown up to 23,208 units by June, 1971. A survey conducted by the Directorate of Industries and Commerce, Madras, reveals that the total capital invested by 11,800 registered units in the State at the end of 1967 was about Rs. 64 crores, employing 1.86 lakhs persons. On an average a small scale unit employs 16 workers; a Small Scale unit invests as an average about 45 percent of its total investment on machinery alone. About 30 per cent of the units in the State do not use power [e.g. safety

matches, leather utensils, (non-ferrous) agricultural implements, bricks, bakery and confectionery units]. For uplifting the economic prosperity of rural population and for dispersal of job opportunities, it is essential that small scale industry is promoted considering districtwise development, the highest share of the total investment in plant and machinery is in Madras (27.1 per cent) followed by Chingleput (24.3 per cent) and it varies from 0.18 per cent to 12.2 per cent in other districts. It is also seen from the development of the industry in the past, that apart from Ramanathapuram where a higher percentage of persons are employed, Madras City and Chingleput have larger percentage of Small Scale Industries, the Cottage Industries around Virudhunagar and Sivakasi have contributed to the industrial activity of the Ramanathapuram district which is one of the industrially backward districts.

Power-loom development is a sphere where the small scale section can play a considerable role. There is good demand in foreign countries for goods of artistic value. A number of agro-industries too can be developed in the Small scale sector. As the economy of the State is largely based on agricultural resources, the food processing industry has significance. Vegetable processing, fruit processing, grain processing, etc., could also

be adopted. There is quite a good scope for small scale industries, utilising the available raw materials, on food processing line both of plant origin and animal origin, marine, poultry and dairy based. The natural coast line of Tamil Nadu extending to 1,000 Kms. offer scope from different types of raw materials like fish, prawns, seaweeds, etc.

Assistance to Small Scale Industrialists is available in different forms such as technical advice, improved utilisation of equipment and tools, provision of credit facilities, supply of raw materials, supply of power at subsidised rates, provision of service facilities, through common facility workshops, general purpose of model production units. The Government have set up the Tamil Nadu Small Industries Corporation Limited with a capital of two crores to formulate plans to develop small scale industries and to actively assist them with finance, raw materials and marketing. The industrial estates established by the Government of Tamil Nadu have contributed considerably towards the development of industries in the State. These estates provide on a rental basis factory accommodation and other basic common amenities to group of small entrepreneurs who would otherwise find it difficult to secure these facilities at reasonable rates. ●

## URBAN DEVELOPMENT AND TOWN PLANNING IN TAMIL NADU

The process of urbanisation has been very rapid in Tamil Nadu during the 1961-71 period and as a corollary the number of towns has increased from 339 in 1961 to 443 in 1971. The number of Class I towns having population one million and above has increased from 9 to 17 in the 10 year period.

This rapid growth of urban centres has taken place without a concomitant increase in facilities for healthy life, which call for heavy investment of capital. This problem of rapid growth without the provision of capital intensive social amenities is not confined to the cities but is equally pronounced in all the urban centres of the State. The Government have therefore ordered the constitution of the Urban Development Fund comprising 50 per cent of the proceeds of Urban Land Tax and the entire surcharge on General Sales Tax and Motor Spirit Tax collected in Madras City and its environs and the Madurai Corporation and the municipalities of Tiruchirappalli, Salem and Coimbatore.

Financial assistance in the form of either grant and/or loan will be made available from the fund to the local bodies to enable them to implement specific schemes of importance and value to their areas.

The Rural Development and Local Administration Department will administer the fund in accordance with rules to be laid down from time to time.

The growth of population in general and urban population in particular in Tamil Nadu since Independence has been striking and its attendant problems have been quite severe in the Corporations of Madras and Madurai and the Municipalities of Tiruchirappalli, Salem and Coimbatore.

Financial resources now available with these local bodies will be inadequate for the proper planning and organisation of urban development programmes.

It is interesting to trace the history of Planning Administration in Tamil Nadu during the past century. The initial step towards tackling the problem of insanitation of towns commenced with the nomination of the Royal Sanitary Commission by British Parliament in 1859 recommending the appointment of Sanitary Commissions with the object of gradual introduction of sanitary improvements. Accordingly Sanitary Commissions were appointed in 1864, in the then three Presidencies of Madras, Bengal and Bombay for giving advice and assistance in all matters relating to public health and sanitation and also to advise on the sanitary improvement of native towns and prevention and mitigation of epidemic diseases. The Sanitary Commission of Madras consisted of a President and four members, one of whom acted as Secretary was functioning till 1886. Thereafter the duties of the Commission were passed on to a Sanitary Commissioner who was in charge of health and sanitation of the Presidency. In 1890, a Sanitary Board consisting of the Sanitary Commissioner and of the Sanitary Engineer was set up for the purpose of planning or executing any particular sanitary work or works in the districts. In 1896, the Board was reconstituted with the Chief Engineer, Public Works Department as President and the Surgeon-General and a Member of the Civil Service as Members, the Sanitary Commissioner and the Sanitary Engineer being made the advisers of the Board in their respective professional capacities. Municipalities

and other sanitary matters. Subsequently as a result of the recommendations of the Public Service Commission and of the introduction of the Government of India Act, 1919, sanitation and public health became a transferred subject and the Sanitary Commissioner was replaced by the Director of Public Health.

Prior to 1884, the legal enactments providing for improvements to Municipal Towns and towns in rural areas were the Madras Local Funds Act, 1871 and the Madras Town Improvement Act, 1871. In 1884, these Acts were superseded by fresh Acts namely the Madras Local Boards Act, 1884, the Madras District Municipalities Act, 1884 and the Madras City Municipal Act, 1884, under which the principles of Local Self Government were first introduced in the Madras Presidency. These Acts were again replaced by another set of Acts in 1919 and 1920, namely the Madras Local Boards Act, 1920, the Madras District Municipalities Act, 1920 and the Madras City Municipal Act, 1919.

A widespread movement in favour of better ideals of Civic life developed among the upper class of Indian society as a result of spread of education and desire for higher standard of living and safe-guarding against the havoc caused by epidemics such as plague. The Government of India came forward in 1908-1909 to assist Provincial Governments with special grants for promoting sanitation and for projects of isolated town extensions and town improvements. The All India Sanitary Conference held in 1911 in Bombay and in 1912 in Madras served to focus and intensify for the first time the interest in Town Planning matters taken by officials, by Local Authorities, as well as by the public generally. With a desire to awaken special interest in the subject of Town Planning in relation to Civic administration and health conditions of life, the Government invited Professor Sir Patrick Geddes, a Town Planning expert of the United Kingdom, to visit the

### GONE, GONE ARE THE DAYS OF HAND - PULLED RICKSHAWS



The hand-pulled rickshaws surrendered at the Police Commissioner's Office. In lieu of them cycle rickshaws were distributed to them free of cost on the occasion of the 50th Birth day of the Chief Minister Dr. M. Karunanidhi.

## Preservation of antiquities in all climates

During the dry summer months khas curtains can be used to introduce extra humidity or certain water-evaporators known as water-coolers. Water sprayers that spray water in a fine atomised form in the room have also been found useful in dry conditions.

For lowering relative humidity, inexpensive apparatus is now available based on the refrigeration principle or the use of silica gel (with indicator). The first type of apparatus consists in the main of a finned refrigerator with ventilator, the water being collected in a container placed beneath the apparatus. The second method uses a ventilator with a reservoir containing a large quantity of humidity absorbing silica. Silica gel is an artificial product having the same compositions of natural silica (sand or quartz), but containing like a sponge, innumerable fine pores. Thus it can absorb large quantities of water. The remarkable property is that it can be used again and again after saturation, if it is heated to above 100°C.

Thus we find that not only light biological agents, soluble salts, atmospheric gases and impurities and physical agencies but also the atmospheric changes are responsible for causing deterioration on antiquities. Everything possible could be done actively in conserving the vast and rich cultural patrimony of our country.

## AUTONOMOUS CORPORATION FOR CONSTRUCTION OF SCHOOL BUILDINGS

In spite of the efforts taken by the Government it was found not possible to provide funds for the construction of school buildings both for the elementary and higher elementary schools, in rural areas. Out of 22,140 Panchayat Union Schools, 16,123 Schools are accommodated in their own buildings, 1,160 school buildings are reported to be under construction. With a view to complete the construction of schools buildings in a phased programme, the Government have drawn up a comprehensive programme for the construction of school buildings for both the Elementary and Higher Elementary Schools. The proposal is to approach the Life Insurance Corporation of India for financial assistance for covering all Panchayat Union Schools. By this programme it is proposed to construct 7,377 Elementary School and 1,112 Higher Elementary School buildings at an estimated cost of Rs. 13.83 crores spread over a period of three years. In order to get the Life Insurance Corporation of India's loan assistance the Government is considering the question of constituting a Rural Development Board on a statutory basis so that the rural Development Board can draw loans from the L.I.C. and pass them on to the local bodies and later recover them and repay to the L.I.C. In addition to this, the Government are providing assistance out of the Tamil Nadu Special Welfare Fund from out of the Tamil Nadu Raffle Scheme for the construction of School buildings. In the School buildings constructed out of the special fund they bear a tablet to the effect that it has been constructed out of the aid received from the State Raffle Scheme.

The Government have revised the ceiling of Government grant from Rs. 4,000 to Rs. 8,000 in the case of Elementary School Buildings and Rs. 7,000 to Rs. 13,000 in the case of Higher Elementary School Buildings maintained by the Panchayat Union. A minimum contribution of Rs. 4,000 and Rs. 6,000 have to be collected in respect of Elementary and Higher Elementary School Buildings respectively.

In the Budget Estimate 1973-74 a sum of Rs. 92.27 lakhs has been provided for the construction of school buildings as against Rs. 52.60 lakhs hitherto provided in view of the importance of the programme of construction of school buildings.

### ELEMENTARY EDUCATION

The entire responsibility of management of Elementary Education in Panchayat Union areas has been entrusted to the Panchayat Unions on a mandatory basis. There are about 27,830 Schools (Elementary and Higher Elementary) in the Panchayat Union areas, of which about 22,140 are run by the Panchayat Unions and the rest are aided institutions. The number of Teachers employed and the number of pupils receiving instructions in these schools are 1,24,100 and 42,00,000 respectively. The expenditure on this account is shared by the Government and the Panchayat Union in certain ratio.

The Government have accepted the recommendations of the Panchayat Education Finance Enquiry Committee for the revision of payment of grants to the Panchayat Unions for Elementary Education. Consequent on this, the Panchayat Unions will be getting an additional sum of Rs. 7.00 crores from 1972-73 over and above the allotment they were getting before revision.

## TAMIL STUDIES IN LENINGRAD

Leningrad has long been known for its traditions in the study of Indian languages, Academician A. Barannikov, who is rightfully regarded as the founder of Modern Indian Philology in the Soviet Union, lived and worked there.

Up to the '50s, the three modern Indian languages, Hindi, Urdu and Bengali were taught at the Oriental Department of the Leningrad University. At present, in the early '70s the India Chair of the Oriental Department has Hindi, Urdu, Marathi, Tamil and Telugu sections. In the near future, it is planned to open Oriya and Malayalam sections. The courses of the Indian languages, study aids and grammars were part of Leningrad Indologist's independent, original research work.

### Development of Soviet Dravidology

The development of Soviet Dravidology in general and Tamil studies in particular, is closely connected with Samyon Rudin, a talented Leningrad scholar.

Samyon Rudin graduated from the Oriental Department of the Leningrad University, Hindi being his special line. Among his teachers were academician A. Barannikov, V. Beskrovsy, a prominent lexicographer, who had compiled the first Hindi-Russian dictionary in the Soviet Union.

Upon graduation, Rudin was on the staff of the Chair of Indian Philology, where he began to teach Hindi and Urdu. He also studied Hindi dialects prepared and was the first to start lecturing an introductory phonetic course of Hindi.

After some time, the question of the need to start teaching Dravidian languages was raised at the University. Frankly speaking, this task was not an easy one. The Dravidian languages had never before been systematically studied at Soviet higher educational establishments. And Dravidology as a science had, indeed, been a blank spot on the map of Indian linguistics in the Soviet Union.

Being well versed in the history of the culture of both North and South India, Samyon Rudin decided to



Samyon Rudin

tackle the study of the Tamil language, one of the most developed Dravidian languages in India. The young Leningrad scholar had to study Tamil independently, making use of any possibility of familiarising himself with the Tamil press and literary and colloquial Tamil.

"Among the Russian Indologists", Samyon Rudin says, "it was A. Hervart who engaged in serious studies of the Tamil language." The '30s saw the publication of his "Grammar of the Tamil language". Unfortunately, he had no disciples. When I was offered to take up the study of the Dravidian languages, I had to start working practically from scratch.

"K.S. Krishnan, the well-known Indian physicist, who worked in the Soviet Union for some time, was", Samyon Rudin recalls, "one of my first Tamil teachers. This association with the scientist enabled me to grasp the structure of Tamil to pick up its colloquial form."

Later, in 1955 for the first time in the Soviet Union, the Tamil language began to be taught at the Oriental Department of the Leningrad University by S. Rudin. The publication of Tamil-Russian and Russian-Tamil dictionaries, compiled with Rudin's active participation, was a notable event in Soviet Indology.

V

By

A PLESHKOV



tively 3-6 lakh hectares and 4-80 lakh bales accounting for nearly 7-8 per cent of the country's cotton production. At present two commercial varieties Cambodia belonging to species *G. Hirsutum* and Karunganni belonging to species *G. Arboreum* are grown in the State. The Cambodia cotton was introduced in the State in 1905.

The research work on cotton in Tamil Nadu was initiated in the year 1901 with the establishment of the Agricultural Research Station at Kovilpatti and further work was intensified from the year 1924 with the appointment of a full-time cotton specialist. Since then, much progress has been made in the improvement of cotton both in yield and quality. In arboreum cotton, the seed cotton yield was increased from 300 kg. to 470 kg./ha. the ginning outturn from 28 per cent to 36 per cent, the staple length from 26 mm. to 24 mm. and spinning from 16 counts to 36 counts. The crop duration was reduced from 210 days to 195 days. In hirsutum cotton, substantial improvement has been effected by stepping up the average yield of seed cotton from 850 to 1,350 kg./ha. The ginning per cent was improved from 32 to 37, the staple length from 21 mm. to 29 mm. and spinning capacity from 24 to 70 counts. The crop duration was brought down from 200 to 165 days.

Based on seasons of cultivation, species of cotton grown and agro-techniques followed, the cotton cultivation in Tamil Nadu is classified under six different sub-zones. A distinct strain covers one or two zones. In general, MCU. 5 is recommended for Winter Cambodia Zone, MCU. 4, for Summer Cambodia zone, MCU. 6 (Bharathi) for rainfed Cambodia zone, K. 7 for rainfed black soil arboreum zone, MCU. 7 for long rice fallows and PRS. 72 for short rice fallows. Of these, MCU. 4 and MCU. 5 represent outstanding land mark in the history of cotton in India. Both are extra-long staple cotton varieties with a staple length of 1-3/16" (29 mm.) and are suitable for spinning 70's yarn unsurpassed by any other American variety under commercial cultivation in India. MCU. 5 has also shown its adaptability to certain localities in the States of Mysore, Andhra Pradesh and Maharashtra. An improved variety, MCU. 7 is useful for rice fallows in the State and has been released recently.

This strain is particularly recommended for Tiruchirappalli, Thanjavur, Chingleput, North Arcot and South Arcot.

In arboreum cotton, the present cultivated strain K. 7 has not only unified the entire Karunganni race, but also is the best smaller quality cotton among the arboreum varieties grown in the country. A superior cotton in arboreum strain K. 8, is to be released shortly.

An extra-long staple barbedose strain introduced by Sijun from China, about 90 counts, is being introduced in the State of Tamil Nadu. This is in progress to evolve a *barbedose* strain with shorter duration and higher ginning.

In recent years, a new wilt disease was found spreading on irrigated Cambodia crop in many of Coimbatore district causing serious damage to the crop. Investigations revealed that the disease was caused by the fungus *Fusicladium alienatum*. Studies on the control of the disease are in progress and initial findings indicate that application of 0-1 percent water emulsion of DDT or burning trash and exposing the soil before sowing cotton would prove to be effective prophylactic measures.

Agronomic investigations have demonstrated the possibility of obtaining considerable increase in yield of irrigated cotton through close planting, timely weeding especially in the early stages of the crop, application of N and P at appropriate time in required quantities, judicious regulation of irrigation and proper plant protection. It is significant to note that as a result of these, the average lint yield of cotton which was 113 kg. in 1955-56 has risen to 196 kg./ha. in 1970-71 in this State. Each of these improved practices has been estimated to yield 150 per cent to 175 per cent increase over the local method and the combined application of all the departmental recommendations to the extent of 280 per cent over the traditional method.

#### Additional Cotton Area :

The State Planning Commission has envisaged that an additional 15,000 hectares could be brought under the crop in Parambikulam-Aliyar project area, another 15,000 hectares under the new wells scheme in Coimbatore, Salem and Dharmapuri districts.

In the rice fallows of Thanjavur, it is estimated that, by 1974, additionally 10,000 hectares could be brought under cotton and another 10,000 hectares in Tiruchirappalli and Tambaraparni basins.

About 10,000 hectares had been projected under the inter-cropping programme with groundnut in Coimbatore, North Arcot and Chingleput districts.

The wide fluctuations in the market for cotton has been quite a puzzle, because the State produces only 4 lakh bales against a demand of 12 lakh bales.

The Tamil Nadu Textile Corporation, a wholly-owned State Government undertaking, has formed a Cotton Division to encourage and develop cultivation and procure cotton for use by mills.

The Cotton Division will directly buy kapas from the agriculturists in addition to purchase of cotton from the trade and abroad. Such a step is aimed at remunerating the cotton growers sufficiently and at the same time procuring the right quality and quantity of cotton required by the mills in the public and co-operative sectors in the State.

The Cotton Division has proposed to start procurement centres in Tiruppur, Pollachi, Dindigul, Theni, Rajapalayam, Kovilpatti, Thanjavur, Salem, etc., in a phased manner.

The Corporation has already been entrusted with the management of 13 textile mills in the State. There are also 12 Co-operative Spinning Mills under the control of the Director of Handlooms and Textiles. All these mills purchase cotton to the tune of Rs. 25 crores annually.

Speaking at a Cotton Seminar, the State Agriculture Minister Thiru Anbil Dharmalingam suggested to cotton-growers to start ginning factories on co-operative basis and assured assistance from Government.

He admitted that there was shortage of chemical fertilisers and the Government had urged the Centre to allot more fertilisers to the State.

He also called upon the State Agricultural University to suggest a crop insurance programme for cotton and other crops.

## EXCAVATED ANTIQUITIES

With many antiquities that are excavated quite a few get exemplified in no time. An antiquity is in a state of equilibrium with the surrounding when it is buried for a long time. When excavated, it is brought to a new climate, the equilibrium is upset and the object suffers damage. This is especially true in the case of organic materials which absorb moisture or lose moisture giving rise to dimensional changes. Such dimensional changes manifest themselves in swelling or shrinking and warping.

An object excavated from a damp soil should not be dried quickly. It should be allowed to dry gradually to the new climate above ground. The sudden loss of moisture may cause shrinkage and severe distortion in the case of organic materials. Crumbling may take place in the case of stone and pottery. Such deterioration can be prevented by keeping the object in a cool place out of the sun and allowing it to give up the moisture slowly.

The problem is serious in objects such as wood, bone and ivory when they become waterlogged. The object can be treated by one or other standard process in the laboratory after transportation from the site. The object is immersed in water until such time as they can be packed in wet clothes and transported to the laboratory. No amount of re-soaking will help to restore the original shape and the cellular structure may damage if dried quickly.

The problem is doubled in the case of an object which is buried in salty ground as it is exposed not only to moisture but also to the action of salts dissolved in the ground water. When such materials are excavated, the water evaporates and the salt crystallizes. In the process the object is weakened and the surface often disrupted. In this case what the laboratory technician has to do is to wash out the salts with distilled water (free from salts) before crystallization takes place.

Corrosion ceases in the case of a metallic object buried in salty ground after a time when it attains a state of equilibrium with its surroundings. But on being excavated and brought

to the new conditions above the ground, the corrosion starts afresh. Therefore it should be given proper treatment and preserved.

Museum Materials may suffer deterioration by exposure to ordinary everyday atmospheric changes. For example, easel paintings are very sensitive to changes in the atmosphere and in particular to varying relative humidity. When a painted panel is subjected to variations in relative humidity, the wood undergoes dimensional changes which impose rhythmical strains on the painting ground (gesso) and the paint layer. As a result, cracks and blisters are developing and the paint flakes off.

Continuous recording of temperature and relative humidity is taken on a floor. At the same time it is also recorded continuously indoors.

S. THANGAVELU,  
Government Museum Madras.

The records obtained are compared with the record taken inside the show case at the same time. It is interesting to note that the change of temperature and relative humidity is minimised in indoors when compared with the outdoor climate. The record taken inside the show case is nearly constant and there is no much fluctuations of temperature and relative humidity when compared with the other two records. Therefore it is always better to keep antiquities inside the closed show case or frame which are not susceptible to moisture changes.

#### Control of climate conditions.

The only effective way of fully preventing the deterioration due to climatic conditions is to control the temperature and the humidity of the atmosphere. During the war, the collections of the British Museum and Victoria and Albert Museum were housed in an air-conditioned repository (at 60 per cent R.H. and 16° C). In this collection, there was no record of deterioration. Number of evidences could be brought forward to illustrate the paramount importance of maintaining temper-

ature and atmospheric relative humidity constant at an appropriate level in Museums and picture galleries. Under such conditions there is no longer any risk of damage by atmospheric pollution and soot. In the circumstances, it is safe to remove glasses from frames so that pictures may be enjoyed without the complication of specular reflections. But the installation and maintenance costs are very high and therefore only few institutions could afford. It is therefore usual to try to obtain an optimum relative humidity which specialists consider to be between 50 and 60 per cent.

Temperature and relative humidity are inter-dependent. In a museum gallery the choice of temperature will be predetermined the suit the comfort of visitors, 16 to 25° C. Within this temperature range, the limit of relative humidity that can be considered safe for the collections have to be established. The limits are determined by observing how the most susceptible materials are affected by exposure to extreme conditions and variations of relative humidity.

Taking into consideration the susceptibility of all organic materials to damage by desiccation; the lower limit of relative humidity should be fixed at 50 per cent. The greatest danger that can arise from an excessively high humidity is the tendency for moulds to grow on many materials that can provide nutrient, such as glue, leather, paper. The presence of mould growth is a warning that the atmospheric relative humidity is above the limit of safety. By keeping the upper limit of relative humidity at 65 per cent, the mould growth can be prevented. This relative humidity optimum is, very often impossible to obtain. In most climates where museums are built of solid materials, the screen provided by the thick walls prevents relative humidity in the galleries oscillating more than 50 and 70 per cent, even when the figures for outside range between 30 and 90 per cent. The fluctuations is even slighter when the museum contains regularizing materials such as tapestry which absorb moisture or when objects are kept in water tight cases. In this last eventuality, fluctuation hardly exceeds 10 per cent.

Staff workers of the Chair of Indian Philology recall with sincere gratitude the invaluable assistance rendered them by the Indian Professor M. Audilakshmi in organising the teaching of the Dravidian languages in 1958-62, when she worked at the Oriental Department, the first students specialising in Tamil studies successfully completed the course of instruction. The study of Telugu, another Dravidian language, was also started.

### Communist Literature Translated into Tamil

Today, graduates of the Tamil and Telugu sections are successfully applying their knowledge in various institutions. They work at Radio Moscow, which for several years now has been conducting broadcasts both in the North Indian and Dravidian languages. In the progress publishing house, they translate into the Dravidian languages works of Karl Marx, Friedrich Engels, V.I. Lenin, classical Russian literature and books by Soviet authors. For example, the publishing house has recently put out in Tamil Engels, "The Origin of the Family, Private Property and the State" and "Diamilya", along short story by Genghiz Aimatov, a prominent Soviet Kirghis writer.

Nikite Gurov specialising in the Telugu Philology, regards Samyon Rudin as his teacher. At present Gurov is successfully working on a most interesting problem—the deciphering of the proto-Indian inscriptions in Mohenjo-Daro and Haryana, the language of which, according to some scholars, is close to the Dravidian languages in its structure. In his research working he is making use of data not only in Telugu and Tamil, but also in other Dravidian languages.

Istvan Major, a student from the Hungarian People's Republic, also studied in the Tamil section of the Oriental Department. Today he is one of the leading Dravidologists in Hungary.

### Samyon's Visits Tamil Nadu

Samyon Rudin happened to visit India twice. In 1966, he had practical training in Madras University,

where he studied dialects of the Tamil Language and visited the State of Madras extensively. In 1968, Samyon Rudin attended the Second International Conference of Scholars of Tamil studies, held in Madras.

The Leningrad scholar is well known in India, in Tamil Nadu in particular. Samyon Rudin keeps in touch with many Indian Philologists. Thesis on Dravidian linguistics are sent to him in Leningrad from India for reviewing. Currently, for example, Rudin is reviewing P. Kodandaraman's work "Constructive Analysis of Tamil and Telugu (Transformation Approach)" and J. Subbay's work "Descriptive Grammar of Kota language".

### Study of Tamil Grammar

Samyon Rudin's scientific interest lies mainly in the sphere of the grammar of the modern Tamil language. A few years ago, he successfully presented a thesis on the subject "Morphological Structure of the Tamil language". The year 1970 saw the publication of his book on the same subject. In recent times, Samyon Rudin has been working on the problem of the syntax of the Tamil language.

The Leningrad scholar is also paying much attention to translations from Tamil. In 1971, for example, a collection of short stories by Tamil writers "Light in a Temple" was published as part of the "Modern Eastern Novelle" series. Most of the short stories included in the collection were translated by Samyon Rudin and his disciples. Incorporated in the collection are works by the prominent Tamil authors Padumapittan, B. C. Ramiah, K. B. Jagannadan and others. Still another collection from the "Modern Eastern Novelle" series is now being prepared for print in Leningrad. It will include works by short story writers of the whole of South India.

### Samyon — A Polyglot

Samyon Rudin is not only a talented scholar. He may be justly called a polyglot. He knows several European languages and practically all major Indian languages, speaks fluently Hindi, Bengali and Tamil. During his stay in India, Samyon Rudin's Indian colleagues referred to him as *Sambiyan*. Under that name he is known to many people in Tamil Nadu, with whom the Leningrad scholar used to talk in their native language.

### Research work in Tamil poetry in Moscow

Tamil studies are now conducted in the Soviet Union not only in Leningrad, the birth place of Soviet Dravidology, but in Moscow as well. Dravidian languages are taught at Moscow University and at the Institute of International Relations. Alexander Dubyansky, a young Moscow scholar, is doing research into the ancient Tamil poetry. In 1972, Mikhail Andronov, a scholar specialising in Tamil studies, presented a D.Sc. thesis at the Institute of Oriental Studies in Moscow, which he based on the world's first standard grammar of the modern Tamil language. Early this year, Mikhail Andronov's "Grammar" won him prize from the Tamil Nadu Government as the best work in the field of Tamil linguistic in recent years.

Tamil studies, which were started in Leningrad, have now come to hold an important place in Soviet Indology, and the research work done by Soviet scholars specialising in Tamil studies has won well-deserved recognition both in India and in many other countries.

# ENTREPRENEURSHIP — OLD AND NEW CONCEPTS

An important aspect of entrepreneurship is the necessity to adopt new responsibilities. To do this more effectively the management sector has to grow far ahead of times. Further, the developed economical achievements in the shape of technological progress presents challenging opportunities for the developing economies. To achieve a higher rate of economic growth the developing countries should strive to make the best use of these opportunities, besides making a dent on the concept of entrepreneurship.

The achievement of immense technological progress attained by the developed economies presents challenging opportunities for the developing economies. It is for us to make the best use of these opportunities for achieving a higher rate of economic growth. This, however, is not possible if we do not make a dent on the concept of entrepreneurship.

### New responsibilities for entrepreneur

An important aspect of entrepreneurship is the necessity to adopt new responsibilities. This is particularly important in view of the dynamic nature of old theories and concepts. At one time theories and concepts were written for a period when the authors were influenced by the effects of the inventions of their age. But with the advent of newer sources of power, the concepts have to be so modified as to meet the requirements of a different and altogether new environment. It is because of this snag that we have not been able to make the best use of new challenges and situations. The traditional handicrafts worker was a designer, worker, salesman—all put together and this concept was no longer suitable for the next stage, namely the stage of cottage industry. The concept of cottage industry itself had undergone a change on account of the transformation that has occurred in the use of the different sources of power. They produce now a wide variety of goods for a large market. The small cottage industries of to-day require such facilities as research centre, marketing organisation, sales service, co-operative credit, etc. Thus, in order to keep itself abreast of times, even the cottage industry has to avail of all these techniques of organisation. To do this more effectively, the management sector too has to grow far ahead of times. It must have a growing characteristic, a dynamism, and all alertness to adopt the changes that ultimately pose a challenge. If this is

so with the cottage sector, the position in regard to the large-scale sector will be much more so and they may need more specialised assistance. So, when we plan for large industries, we have to plan for a "dynamic manager" too.

### Captains of Industry

Managers of to-day have to adopt themselves to new circumstances. Apart from this, they must have the calibre to tackle new situations. Real growth depends not merely on the putting up of plants with larger and larger capacity but also on the provision of the right type of men to man them. Adaptability to new circumstances, the urge for improvements and the leadership to man 'big projects' are all qualities that could not be got in a day or two. Great 'Captains of industry' are men of born genius. Occasionally, right

Prof. C. S. MAHADEVAN.

training could make them too. The urge to do new things with the existing resources is the one single factor which could serve as a test on the capacity of these pilots of industry.

According to Solow, who tried to measure the effectiveness of technical change on the economy in U.S.A. within a period of 40 years (1709-49), gross output per man hour doubled with 87.5 per cent of the increase being attributable to technical change while only a balance of 12.5 per cent was attributable to increase in the use of capital. The question here is not so much as to how this could be done in India but as to who will do it? Where are these men? Do we have a large supply of these men? Are these great Captains of Industry 'born' or 'made'? And it is here that management training has a very useful role to play.

## EXPANDING TECHNOLOGY

What is needed for a developing nation like ours is the creation of specialists who will easily adjust themselves to an expanding technology. This is so with every aspect of industrialization. The need is there in every industry and it is the lack of these men, having some elasticity, which has considerably effected our industrial growth. An examination of certain industries will show that this is the need of the hour.

(a) *Steel*.—Let us first take the case of the Steel. At a time when U.S.A. is producing 120 million tons of steel ingots and U.K. making 70 million tons of steel ingots, we are not even in a position to produce 10 million tons of steel ingots per annum. The reason for this low progress is accounted by the inability of the Management Sector to show with the growth of production techniques. For instance, what was economically feasible in steel production some twenty years ago was a 2.5 lakh tons capacity, and the standard capacity some ten years ago was 5 lakh tons, while to-day a capacity of one million tonnes has not only become feasible but also "economically sound." Naturally, with the growth in economic feasibility of such big projects, the need for transport, raw material, personnel, etc., have also grown. But all these have not simultaneously expanded and consequently, there is a gap between personnel and technique and this gap can be met only by making management technique more dynamic.

(b) *Transport*.—No other field calls for better management as the transport sector. This sector has a significant role to play. We are living in the jet age. Fast movements are the order of the day. Unless movements are quick, there will be bottlenecks in marketing the products. The quick movement of raw materials to plants also calls for the presence of a quicker means of communication. When the people world over are living in the jet age, we are still in the 'bullock and cart stage'. To effect a revolution in the means of communication again, what we require is the presence of men of the order of the 'great Railway Masters of England'. It is only these people who could keep ahead of times.

(c) *Textiles*.—The Textile Industry, to-day, is badly in need of modernisation. Apart from the fact, our spinning mills and weaving mills have become outmoded, there is the big obvious trend in consumption which shows that the tastes of consumers have changed and no amount of effort at modernisation can succeed if we ignore this factor. People have a preference for cloth made out of synthetic fibres. Hence, our mills have to adopt changes in such a way as to hasten the manufacture of synthetic yarn and synthetic cloth. For this research in chemical technology has to play a useful role. Advancement in technology means "more of men" belonging to that sphere of activity. The mill manager of to-day has to be an expert in all aspects of technology beginning from spinning and ending with the finishing process. Higher output at lower cost, nearer varieties for all classes of consumers, and the ability to manage the newer aspects of production and sale, etc., will require people with a lot of dynamism. In short, what is needed is an expansion in management technique.

(d) *Cement and Sugar*.—In such industries as Cement and Sugar, the problem of management has become much more significant than it was some thirty years ago. The feasibility of a Cement Plant some ten years ago was only a capacity of 60,000 tonnes and this first moved up to one lakh tonnes and then to two lakhs tonnes and to-day it is possible to establish Cement Plants having an annual capacity of four lakh tonnes. Similarly, in the case of sugar industry, an economic unit in 1935 was only a crushing capacity of the order of 400 to 500 tonnes daily and this moved up to 600 to 800 tonnes and then to 1,250 to 1,500 tonnes and to-day economists feel that 4,000 tonnes per day is a sound proposition for any unit.

These changes in technique and technology calls for a simultaneous growth in management talents to cater to the needs of new situations. The manager of tomorrow has to be more capable, more intelligent, and more dynamic. A better class of managers will be required to deal with the new situations. The question is as to whether we have succeeded in producing "such men".

## Five talents for Effective Executive

According to Peter Drucker, the author of "The Effective Executive" five talents are essential to build effectiveness in an entrepreneur. These are management of time, choosing what to contribute for a particular organisation, where and how to apply one's strength, right priorities and effective decision making. To us, who have been conversant with the philosophy of Valluvar, these ideas are not strange. On the concept of management of time, verse 483 in the Kural says "If a King with adequate resources carefully chooses the proper time for action, is there any task which he cannot achieve". What holds good for a King is applicable to an entrepreneur. What the King is to a country so is an entrepreneur to an industry. An efficient manager will cut back unproductive demands on his time. He will consolidate his discretionary time in such a way as to concentrate on big tasks that will really make a contribution.

## Three Step Process

Prof. Drucker recommends a three-step process and they are recording time, managing time and, consolidating time. Time use can be made to improve with practice. We have to find out the "non-productive, time-wasting activities" and get rid of them one by one. This will imply turning the torch within and asking certain question of a diagnostic nature. First, one has to identify and eliminate the things that need not be done at all things that are purely waste of time without any results whatever. The next step is to find out which of the activities on his time lag could be done by somebody else just as well, if not better. Time wasting defects such as over-staffing, mal-organisation or mal-functioning can sometimes be remedied fast. The fruits of such efforts will be in terms of time gained.

## Valluvar shows the way

All these ideas could be found reflected in Kurals 516 and 517 which show that Valluvar was far ahead of his times.

## Proper Management

Kural 516 says :

"Let the King first determine who is the person fit to do the work by natural aptitude and ability, and then what is the nature of the work, then the proper time to begin it. After clear idea about these three he must start the work. After all a modern captain of an industry is more or less like a King. His functions relate to these of the King of ancient time. It is in his choice of a proper management cadre depends the ultimate success of his business. The qualities outlined by Valluvar focus on the same objectives to which the qualities stressed by Drucker also focusses.

Again Valluvar says :

"If after deliberation the King comes to the decision, that a particular man is fit to do a particular work according to a definite Plan then let the matter be left entirely in the hands of the Officer" (517). This is suggestive of the choice of the right type of managers who will observe to the conditions laid down by Drucker. If the choice is right, he will not waste time. Once the choice has been made there should not be interference from the higher level."

## Right Type of Entrepreneurs

The right type of entrepreneur is the one who knows what to contribute to a particular organisation. Kural 511 may be examined in this context. The fertile idea contained in it stresses :

"Who examines carefully the merit and demerit of a particular work, who gladly accepts the good means to execute the work and who bears a good character, only him the King shall employ to execute that work". Only such a person can contribute something original to an organisation. Every entrepreneur cannot contribute to innovation. Certain qualities are essential to do so. Only the captain of the industry has these qualities he can function very effectively.

## Stress on progress

Valluvar stresses on progress. He wants the executive to remove all impediments to progress. This idea, which is similar to those of Dr. Schumpeter, who stresses on 'progress', can be seen in Kural 512 which says : "Who increases the revenues, promotes the prosperity of land, removes all the impediments to progress, let him be entrusted with the execution of the work". Removal of impediments to progress and increasing of revenues are essential for any business. The one is dependent on the other.

## Shortage of competent managing staff

Shortage of competent managers has been a continuing problem and this has not only affected the growth of industry but also its efficiency. The problem has two aspects ; the immediate, which consists of increasing the supply of 'talented managers' in specific fields ; and the more fundamental one of improving the quality of the existing managers in order to enable them to cope with new situations.

While all efforts necessary to create facilities for training personnel to man industry should undoubtedly continue, special emphasis must be given to improve the overall competence of existing managers. It is on this no less than on the construction of heavy and basic industries that the acceleration of the process of industrialisation rests. The role of a highly qualified competent managers will be two-fold, it will be in the first place directly assist industrialisation, and, in the second place, by making industries more efficient, it will facilitate exports which in turn would promote faster industrialisation through enlarging foreign exchange earnings. Thus, what is required is a leadership of a high calibre.

## AIR STRIP FOR OOTY UNION MINISTER'S SUGGESTION.

Thiru Om Mehta, Union Minister of State for Works, Housing and Parliamentary Affairs, said that India should strive hard to attract more number of international tourists, as the tourist traffic to India on comparison to other countries is negligible. Considering the importance of Ootacamund as a Hill Station, he hoped that the Civil Aviation Ministry would seriously consider the desirability of constructing an air strip at Ootacamund. He made this observation while declaring open the Additional Block of Tourist Bungalow built at a cost of Rupees Ten Lakhs by the Tamil Nadu Tourism Development Corporation Limited at Ooty in the Nilgiris, on 8th April 1973.

Thiru K. Rajaram, Minister for Tourism, Government of Tamil Nadu, while welcoming the Union Minister stressed the need for wide publicity for tourist potentialities in Tamil Nadu in foreign countries.

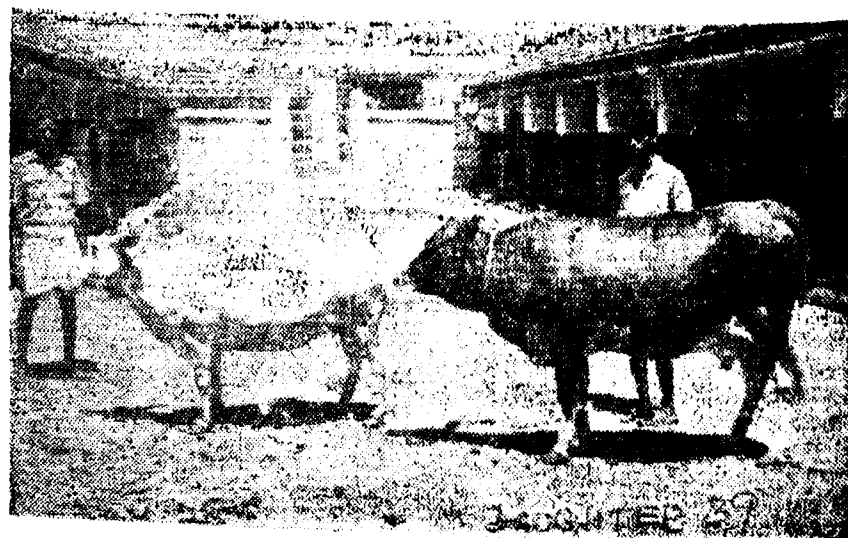
Thiru A. V. P. Asaithambi, Chairman of the Tamil Nadu Tourism Development Corporation Limited said that a rope way between Dodabetta Peak and Ooty Botanical Gardens is under active consideration of the Government. He hoped that the Government of India will come out with generous financial help for this project.

Thiru M. S. Sundara, Chairman and Managing Director, India Tourism Development Corporation, New Delhi said that Ootacamund, being a cosmopolitan tourist centre of national importance, moderately-priced accommodation and other infrastructure should be provided to attract more number of tourists.

Thiru A. S. Ahluwalia, I.A.S., Managing Director of the Tamil Nadu Tourism Development Corporation Limited said that with the construction of the Additional Block, the number of beds available at the Tourist Bungalow Complex, Ooty had been increased from 1972 to 235 beds besides a Conference Hall and a big dormitory for holding conventions and seminars.



# Role of Cross Breeding and Grading in Augmenting Milk Production



DAM COW No. 28.  
NON DESCRIPT.

DAUGHTER No. 39.  
NON DESCRIPT JERSEY.

Note the effect of crossing with Pure Exotic Sire on the Body size.

A dairy cow to be economical should have high yield, mature early, breed regularly and have a short dry period. A non-descript cow lacks these traits. The average annual milk yield of a Desi cow is only about 204 kg. A good exotic cow like Jersey or Brown Swiss breed is beyond the reach of the common man. Under the existing circumstances the only way of infusing economic traits in indigenous cattle is to cross them with exotic sires of high merit. The above object can be achieved by grading or cross-breeding. With a view to study the above, two non-descript cows, Nos. 28 and 29 and three Sindhi cows, Nos. 1, 2 and 3 from the college dairy field laboratory were used.

## Performance of Jersey non-descript graded cows.

The cows 28 and 29 were weighing 140 and 141 kg. respectively. By proper feeding and management in the college dairy field laboratory their weights increased to 152 and 187 kg. respectively.

These animals were inseminated with Jersey semen and their progeny were studied. Of the ten calves born so far, 5 were bull calves and 5 were heifer calves. The calves had an average birth weight of 19.57 kg.

The heifer calf 25 of cow 29 attained a weight of 175.5 kg. at sexual maturity in 14 months and gave birth to its first calf just within two years (721 days). The milk yield of daughter was 1,062 kg.

as against its Dam which was only 472 kg. The heifer calf 39 of cow 28 weighed 201 kg. at sexual maturity in 11-1/2 months. It gave birth to its first calf in 619 days (21 months). The lactation yield of the daughter 39 was 1,142.5 kg. as compared to its Dam 28 which was only 420 kg.

The milk production of the daughters in the Jersey non-descript grades (50:50) was more than double (245.91 per cent) as compared to their Dams.

The first generation Jersey non-descript (50:50) grades are again crossed with Jersey to produce second generation Jersey non-descript (75:25). The experiment is being continued.

## Performance of Sindhi-Jersey crosses.

Three Sindhi cows were used as foundation stock. They were crossed with Jersey and the following parameters were studied in the resultant first generation Jersind (50:50) crosses such as age at maturity, lactation yields, number of days in milk, intercalving period.

## Results :

The Sindhi have calved at an average age of 51 months and the crosses at 21 months with clear advantage of 30 months for the crosses.

## Lactation yield.

The 300 days yield for the first lactation was 1,712 kg. for the crosses and 1,062.7 kg. for Sindhis with an advantage of 649.3 kg. for the crosses which is 61 per cent increase over Sindhis.

## Number of days in milk :

Sindhis averaged 303 days and the crosses 335.5 days.

## Calving interval :

The interval between the first and the second calving was 397.7 days for the crosses and 559.3 days for the Sindhis with an advantage of 161.6 days for the crosses.

## Summary :

1. There is an increase in the birth weight of calves in both pure bred and non-descript crosses with bulls of exotic breeds.

2. There is a greater increase in the gain of body weight in both the crosses.



DAM COW No. 29.  
NON DESCRIPT.

DAUGHTER No. 25.  
NON DESCRIPT JERSEY.

Note the effect of crossing with pure exotic sire on the body size.

3. The above crosses matured early.

4. The length of lactation is also found to be greater in cross breeds.

5. The crosses had a short dry period.

6. The calving interval is also reduced.

7. The milk production in the crosses is considerably increased.

In view of the above advantages farmers are advised to get their cows inseminated artificially with Jersey semen and increase the milk yield of their cows.



## Big Leap in Indigenous Technology

The boilers produced at the Bharat Heavy Electricals have acquired a world-wide market. The Picture is the 200 M.W. capacity boiler-the biggest one of its kind ever produced in this factory and the country as well. Ten more boilers of this size are to be produced soon in this factory.

# ACTIVITIES OF THE NATIONAL EMPLOYMENT SERVICE DURING FEBRUARY 1973

An overall review of the various Employment Exchange activities during the month of February 1973 showed an upward trend in placements and vacancies filled. On the other hand, slight decrease was noticed in the number of registrations and in the number of vacancies notified. Compared to January 1973 placements, vacancies filled and Live Register have increased by +6.5 per cent and +5.4 per cent and +1.3 per cent respectively, whereas registrations decreased by -17.5 per cent.

There was no change in the ratio of vacancies notified to registration. The Employment Officers in Tamil Nadu registered 28,700 applicants during February 1973, a decrease of -6,091 or -17.5 per cent over the previous month. Placements effected were 2,683, an increase of +163 or +6.5 per cent over the previous month. The number of vacancies notified to the Employment offices was 4,077 a decrease of 196 or -4.8 per cent over the last month. The Live Register at the end of February 1973 stood at 4,94,564 an increase of 6,395 or +1.3 per cent over the previous month.

Shortage of manpower were reported in the following occupations :-

"A" Class medical practitioner in Siddha and Ayurvedic, pharmacist in Siddha Medicines, Pharmacist (Scheduled Caste), Maths B.T. trained 1970 or earlier, Registered Maternity Assistants, trained Tamil Pandit (Women), Malayalam Pandit, Kannada Higher Grade Teacher, Librarian, B.T. Assistant (S.C.), Field Surveyor (S.C./S.T.), Technical Assistant (S.C./S.T.), Moulder Instructor with not less than 3 years experience (S.C./S.T.), Sanitary Inspector, Air Compressor Operator, Laboratory Technicians, Salesman with experience, Air Craft Mechanic, Armourer, Boiler Attendant, Air Craft Finisher and Junior Scientific Assistants (B.Sc. Physics and Chemistry, (S.C./S.T.).

The Special Employment Officer for Physically Handicapped applicants at Madras registered 35 (Blind 2, Deaf-Mute 4 and ortho 29) and placed 6 orthopaedically handicapped applicants during February 1973. At the end of the month, there were 1,217 (Blind 132, Deaf-Mute 127 and orthopaedic 958) applicants on the Live Register of this office.

## Occupational Information Unit

In the occupational information unit attached to the Directorate of Employment and Training, the work in connection with the special industry occupation survey, preparation of occupational outlook, career literature, revision of career pamphlets and translation of career pamphlets were in progress.

The Vocational Guidance units in Tamil Nadu gave group guidance to 7,878 applicants and individual guidance to 334 youths during February 1973. Eight individually guided registrants were placed in job during the month. The number of persons who received individual information during February 1973 was 460.

## Stipend to repatriate trainees

In the Employment Liaison unit stipend amount to repatriate trainee and institution fee in respect of repatriate trainee were paid to the Institute of Catering Technology and Applied Nutrition, Adyar, Madras-20. Arrangements were made to pay a sum of Rs. 160 being the examination fee in respect of 8 repatriates undergoing in training in Cookery and Water's Course. Particulars of 21 repatriates were forwarded for consideration for training in Farm Machinery utilisation service at Tractor Training and Testing Station, Budni (M.P.). The officer on special duty, D.G.E. & T., New Delhi selected 2 of these repatriates for this training course commencing on 1st March 1973 and these two candidates were despatched by the Collector of Madras on 6th March 1973 for the training at Budni.

Lt.Col. Prasad, the officer in-charge, Technical Training Centre, Mana Camp visited this State and as a result of his interview, selected 66 repatriates, 7 at Madras, 23 at Madurai and 36 at Tiruchirappalli for admission to the Heavy Vehicle Mechanic-cum-driver's course. Of these, 63 repatriates were despatched to the Technical Training Centre, Mana on 6th March 1973 with the assistance of the Collector of the district concerned.

# Welfare Measures To Improve The Facilities To Teaching Staff In Tamil Nadu

There are at present about 2.34 lakhs of teachers working in the schools in Tamil Nadu and their salary bill runs into Rs. 70 crores. With a view to enhance the facilities available to the teaching community who are the torch-bearers of enlightened knowledge to the society as a whole, ever since the introduction of free education in schools up to the school final stage, the Government who bear the entire expenditure on the emoluments of the teachers, both in Government and in aided schools, have become responsible for, and come forward to share in a major way the expenditure for the welfare and improved service conditions of the teachers in all the schools in the State. The salary bill of teaching staff has gone up from Rs.55 crores in 1970-71 to about Rs. 70 crores in 1973-74 accounting for about 86 per cent of the entire expenditure on school education in the State. These steps should prove an incentives for attracting the best talent to the teaching profession.

## Scales of Pay.

In common with other categories of State Government Servants, the teachers (those in Government service as well as those in Aided and Local Body service) have been allowed substantially higher scales of pay

The Governor Thiru K. K. Shah distributed the State Award to Elementary and High School Teachers in a function held at the World University Service Centre, Egmore, under the presidency of Dr. V. R. Nedunchezhiyan, Minister for Education on 18-2-1973.

Picture shows the Governor distributing the prize to Thirumathi Ilamurugu Porselvi.



from 2nd October 1970 on the implementation of the recommendations of the Second Tamil Nadu Pay Commission as modified by the One Man Commission. Selection Grade has been introduced for the first time for the various categories of teaching staff under all kinds of managements. House Rent Allowance and City Compensatory Allowance are also given to Aided and Local Body teachers from 2nd October 1970 at the same rates as for Government servants.

During the past few years, 24,500 Secondary Grade Teachers working in Higher Grade posts have been allowed Secondary Grade scales of pay by upgrading their posts into secondary grade ones. Orders for upgrading 5,000 more posts with effect from 2nd October 1973 have been issued.

## Pension to Teachers in Non-Government Service.

The pension rules for teachers in non-Government services (i.e., Aided and Local Body Schools) were successively liberalised in the past few years and the culmination of this was the momentous step of bringing those teachers also, with effect from 1st June 1970, under the Liberalised Pension Rules and Liberalised Family Pension Rules applicable to State Government

Servants. Tamil Nadu is perhaps the first State to achieve parity in retirement benefits between teachers in Government and non-Government services. From 1st April 1972 even the non-teaching staff in aided schools have been granted the same pensionary benefits as State Government servants.

B.T. Assistants and Headmasters who retired before 1st July 1960 were eligible to get only a maximum pension of only Rs. 30 to 35 per month. These maxima have been raised to Rs. 60 to 75 per mensem with effect from 1st April 1972.

The terms of family pension admissible to teachers in non-Government educational institutions, in respect of cases arising before 2nd October 1970 have been liberalised during 1972-73.

### National Foundation for Teachers' Welfare

Assistance is given from the National Foundation for Teachers' Welfare Fund to the teachers in service and to retired teachers. The State Working Committee of the National Foundation sanctions recurring, monthly and lump sum grants to deserving teachers from out of the funds allotted. Monthly grants ranging from Rs. 10 to Rs. 100 are given to needy and indigent retired teachers and widows of deceased teachers and to dependents of teachers. In some cases lump sum grants up to Rs. 1,000 are given for medical expenses, etc. A sum of Rs. 12 lakhs has so far, been disbursed to 2,100 teachers who needed such help.

### Other Benefits

State Awards are given to teachers of elementary and high schools in each of the 47 educational districts. In each educational district, two elementary school teachers and two high school teachers are given State Awards every year. Each awardee gets a certificate of merit, a silver medal and a cash prize of Rs. 200.

### Teacher's Home

In 1970-71, a Teacher's Home was established at Vellore to serve as a centre of educational activities and as a home to serve the needs of teachers visiting the District Headquarters. The State Government gave a grant of Rs. 50,000 to supplement the collections raised voluntarily by the teachers. A grant of Rs. one lakh has been sanctioned for constructing a Teachers' Home at Ootacamund and the question of sanctioning a grant for a Home at Kodaikanal is under consideration.

### Other Measures

The Government have in recent years removed a number of long-standing grievances of teachers of Aided Schools. In 1968-69, the leave rules of aided high school teachers were liberalised. Recently teachers in aided schools have been allowed the same leave facilities as teachers in Government service, including that of encashing leave.

In 1969-70, a Committee was constituted to go into all questions relating to teachers of aided schools. In pursuance of the Paul Committee Report, the Government have introduced a Comprehensive Bill for protecting the conditions of service of teachers of Aided Schools.

### Concessions to aided School Teachers

From 1970-71, a number of concessions have been extended to aided school teachers, viz., (i) House Rent Allowance, Winter Allowance, Hill Allowance, etc., in specified localities; (ii) Festival Advance; (iii) Advance for purchase of Handloom Cloth; (iv) Marriage Loans; and (v) Free medical attendance in Government Hospitals. In 1971-72, free medical attendance was extended to non-teaching staff also of aided schools. When a teacher of an aided school migrates from one school to another, his past service is taken into account for purposes of weightage in increments. In respect of teachers of aided high schools transferred from one category to another, service in identical scales of pay is reckoned for purposes of fixation of pay.

### Relief to unemployed

The Government are concerned about relieving unemployment among trained teachers. During the past six years, about 33,000 additional posts of teachers were sanctioned, apart from 1,800 posts during 1971-72 and 1972-73 under the Central Unemployment Relief Scheme. During 1973-74 about 1,475 additional posts of teachers is to be sanctioned under the State Plan Schemes and about 900 additional posts under the Central Unemployment Relief Scheme and the question of sanctioning more additional posts under a special scheme is being examined. Further, under the Apprentice Teacher Scheme in force from October 1970, employment was provided to about 5,746 teachers in posts of apprentice teachers, and nearly all of them have since been absorbed in regular vacancies.

Teaching has come to be very respected profession in Tamil Nadu and the lot of the teacher is much better in Tamil Nadu than in any other part of the country.

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# Tamil Nadu Education Budget Crosses Rs. 100 Crores

In 1973-74, the last year of the Fourth Five-Year Plan, the proposed outlay under Demand Expenditure on Education is likely to be Rs. 100 crores, which represents 21 per cent of the entire Revenue Budget of the State (Rs. 465 Crores) and is the highest single component in the Budget for 1973-74.

The outlay for Primary Education is Rs. 4,440 lakhs and that for the Secondary Education is Rs. 2,890 lakhs. The outlay on Collegiate Education is Rs. 932 lakhs and that on Technical Education including Industrial Training Institutes is Rs. 578 lakhs. The balance amount includes allotments for the development of Archaeology, Museums, and for Government Examinations.

The above figures of expenditure do not include the expenditure on Harijan Welfare and Backward Class schools and hostels, scholarships to Scheduled Caste and Tribe and Backward Class students, and on a few other items such as approved schools, etc. The total of these miscellaneous items is about Rs. 14 crores.

The Budget makes separate allotments for Medical, Agricultural and Veterinary Education under the respective departments of about Rs. 5 crores in 1973-74. If the expenditure under those two items (Rs. 14 crores plus Rs. 5 crores) is also taken into account, the total outlay on Education in the Budget Estimate for 1973-74 will be Rs. 122 crores.

1973-74 being the last year of the Fourth Plan, it will be appropriate to take stock of the work done so far in this State in the field of Education, and assess the nature and magnitude of the problems that have to be tackled during the next five years. In the matter of literacy and in the matter of investment in Education, Tamil Nadu is one of the leading States in the country. In the matter of fulfilling the Constitutional directive of providing free primary education up to the age of 14 for all children, this State is also ahead of most of the other States in

the country. The main feature of educational development after independence has been the phenomenal quantitative increase in all sectors of educational activity—Primary, Secondary, University and Technical. The number of pupils in schools in this State went up from

In College Education also there has been a vast increase in the number of students and colleges. The number of colleges has increased from 59 in 1961-62 to 176 in 1972-73. The number of students in colleges increased from about 45,000 in 1961-62 to about 2 lakhs in 1972-73.

"In the matter of literacy and investment in Education, Tamil Nadu is one of the leading States in the country. In fulfilling the Constitutional directive of providing free primary education up to the age of 14 for all children, Tamil Nadu is also ahead of most of the States in India. The number of pupils in schools in this State has gone up from 32.91 lakhs in 1956-57 to 74.36 lakhs in 1972-73 along with the increase in teaching staff from 1.08 lakhs in 1956-57 to 2.34 lakhs in 1972-73. The number of educational institutions in this State has also registered a phenomenal increase. The number of high schools has increased from 894 in 1956-57 to 2,763 in 1972-73 and that of colleges from 59 in 1961-62 to 176 in 1972-73. A good number of schemes are also in the implementation stage to effect qualitative improvement in educational set-up and system alike."

32.91 lakhs in 1956-57 to 74.36 lakhs in 1972-73. Similarly the number of teachers increased from 1.08 lakhs in 1956-57 to 2.34 lakhs in 1972-73. The number of schools has also increased phenomenally from 894 high schools in 1956-57 to 2,763 in 1972-73.

The Education Budget as a whole has gone up from Rs. 15 crores in 1956-57 to about Rs. 100 crores in 1973-74 (rate of increase being 45 per cent per annum).

This rapid increase in numbers, though necessary and inevitable,



has naturally created problems in respect of the quality of the instruction given in schools and colleges. Hence one primary concern for future plans should be greater emphasis on factors which influence quality.

#### Minimum Needs Programme.

In order to ensure qualitative improvement in educational institutions and in order to keep pace with the requirements of the expanding population in the school going age, a "Minimum Needs Programme" for the Fifth Five Year Plan is now being drawn up. It will be a statement of the State's basic needs in terms of the financial requirements for adequate school buildings, adequate equipment for schools, for the additional teachers required during the Fifth Plan so that the State can achieve cent per cent enrolment of all children up to 14 years, for teacher training facilities and for incentives to pupils in the form of midday meals, free books and free uniforms.

It is proposed to take up the question of Central Aid for the minimum needs programme with the Government of India, emphasising the fact that Central assistance should not be weighted against comparatively advanced States like Tamil Nadu in the name of removing regional disparities.

The Task Force on Education set up by the State Planning Commission, which was entrusted with the work of drawing up a Perspective Plan for Education for the State has submitted its report to Government. Working groups and sub-groups have been formed to examine and finalise the sectoral plans for Elementary Education, Secondary Education, Collegiate Education and Technical Education. These groups will draw out detailed schemes to be included in the Fifth Five Year Plan.

#### The Pattern of Education.

It now takes fifteen years of study at school and college to obtain a degree in this State. This is in line with the All-India pattern of fifteen years. However, the structuring of these fifteen years (whether it should be 10 or 11 years at school, followed by a two year or one year Pre-University Course and a 3 year degree course) is a question which

has been under discussion for some time. The State Planning Commission, in its Task Force Report, has recommended a 10+2+3 pattern. The other three Southern States have also adopted this pattern.

#### Nationalised Text-Book Committee.

The Tamil Nadu Text-Book Society which was set up in March 1970, has been taking vigorous steps to implement the policy of Nationalisation of Text-Books. The programme of Nationalisation of Text-Books at the school level was almost completed in the academic year 1972-73. The only books which remain to be nationalised are (1) the Text-Books for the Elective subjects, Algebra, Geometry, Physics, Chemistry and History in Tamil medium for Standards X and XI, (2) the Text-Books in Minority languages like Telugu, Malayalam and Urdu for various subjects and (3) the Text-Books for language subjects in Minority languages.

The Tamil Nadu Text-Book Society printed and distributed about 260 lakhs of copies of text-books for use in 1972-73 and it will be printing about 300 lakhs copies for use in 1973-74.

The direct sale of the text-books to schools and retailers by the Society was extended during 1972-73 to the Chingleput Revenue District in addition to Madras City. In the other districts, the Society appointed 55 taluk stockists and 595 retail dealers during 1972-73. A new feature of the system of distribution during the year was that three Consumer Co-operative Societies were appointed as Taluk Stockists for the Society's books.

To handle the large volume of printing, the Society proposes to acquire a Text-book Press solely for its use. Negotiations in this respect are under way with the Government of India.

#### Production of Children's Literature.

Under the scheme for the award of prizes for children's literature in Tamil, 10 prizes not exceeding Rs. 500 are awarded every year. Besides this, under a scheme sponsored by the Government of India for the conduct of a prize competition for Children's Literature, a cash award of Rs. 1,000 is also given for the best work in Tamil.

### INTERNATIONAL INSTITUTE OF TAMIL STUDIES.

The Institute was formally registered as a Society under the Societies Registration Act in October 1970. The principal object of the Institute is to promote in all possible ways research in all aspects of Tamil Studies and allied fields with the active co-operation of international scholars interested in such studies. The Institute is publishing from 1972 a half-yearly International Research Journal—the Journal of Tamil Studies—containing articles written by scholars all over the world.

It is also proposed to have a language laboratory and audio-visual equipment to promote research on Tamilology and to prepare standard works on Tamil literature and language. The Institute is now carrying out its projects in collaboration with the Government of Tamil Nadu and the Indian National Commission for co-operation with UNESCO.

For the present the Government of Tamil Nadu are meeting the entire expenditure of the Institute of the order of Rs. 70,000 per year.

## COMPREHENSIVE HEALTH CARE SERVICES IN TAMIL NADU



Sophisticated health care is made available in all District H. Q. Hospitals.

Health is not merely absence of disease. It is a state of complete physical, mental and social well-being. Every individual should be assured reasonable opportunity to maintain his health at the highest possible level so that he can contribute his best to the society by his productive efforts. Towards this aim, the Government of Tamil Nadu have taken steps to provide various community health services for the promotion of community health care including maternal and child health, the improvement of nutritional status of people, prevention and control of communicable diseases, the registration of vital events and the spread of health education among the people and the promotion of environmental sanitation.

#### PRIMARY HEALTH CENTRES

As nearly 70 per cent of the State's population live in rural areas, it is the Primary Health Centre that caters to these people. The Primary Health Centre is an institution which offers a package of services to the people living in its jurisdiction which is usually the area covered by a block (now Panchayat Union). Primary Health Centres have been established in all the blocks except two. Thus there are 377 Primary Health Centres in the State.

The services rendered by a Primary Health Centre include general medical care, improvement of

maternal and child health, family welfare planning, improvement of environmental sanitation with emphasis on sanitary disposal of excreta, safeguarding drinking water sources, control of communicable diseases by immunisation with suitable vaccines, and by surveillance to detect the occurrence of communicable diseases like small-pox, cholera and malaria, nutrition education and control of nutritional diseases, collection of vital events of births and deaths and health care and education of school children.

For the purpose of medical care, every Primary Health Centre has an out-patient department and an in-patient section with 6 beds. At the out-patient department, the patient is examined and given appropriate treatment. In the conventional dispensaries and hospitals, while the services stop sharp at the level of dispensing drugs, at the Primary Health Centre, further services extend from these patients to their contacts who are given appropriate treatment both preventive and curative. The patient and the contacts are educated about the nature of the disease, its mode of spread and about the methods of disinfection of infective materials. The average annual attendance at all the Primary Health Centres is about 15 million. The average daily attendance of out-patients per Primary Health Centre is 70 new

## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

Minimum: Rs. 1,00,000 (for small-scale industries: Rs. 25,000).  
For Technocrats and Rural Medical Practitioners: Rs. 10,000

Maximum: Rs. 25,00,000 (Rs. 2 lakhs and Rs. 1 lakh in the case of Technocrats and Rural Medical Practitioners respectively).

### Rate of Interest

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

### Initial repayment holiday

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

### Amortisation period

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

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## HAS HOMOEOPATHY AN ANSWER TO ALLERGY DISEASES?

No system of medicine can boast of being perfect. What is lacking in one might be found in another. A striking instance is of Asthma and other allergy diseases which have puzzled practitioners of allopathy and tormented their patients. While eminent allopathic physicians have accepted this as a 'reproach to the sciences of medicine', homoeopaths claim to have an effective cure for these diseases.

Interesting indeed are views of an eminent homoeopath, on allergy diseases and how best they could be treated.

What he explained was that human body had the capacity to develop specific resistance to various infections by forming anti-bodies. This is what he described as immune-response. Not confined to harmful infecting bacteria alone, immune-response may as well be created against otherwise harmless non-living, organic substances. Reaction to harmless agents is 'allergy' or hypersensitivity. In medical terminology, these foreign bodies or agents are known as 'allergens' or 'antigens' against which the human body tends to defend itself through various reactions. An exaggerated and out-of-proportion response follows in its wake. How and why it occurs involves complicated processes. Very often it is due to inherited factors. In simple words, if your father or forefathers suffered from asthma or any other allergy disease, there are greater chances of your getting it too.

Besides, common allergic ailments are seen in every-day life. There is a high incidence of drug allergy and allergic reactions to environmental pollution. Today a much larger number of persons suffer from allergy and connected diseases than what was 30-40 years ago. Unfortunately the modern allopathic system does not provide a specific and satisfactory treatment. At best it is palliative and tends to suppress the disease. Of some use, however, are the desensitization techniques which

follow several skin tests to bring out offending factors to which the patient is allergic. Once these factors are detected, the patient can be desensitized through small doses of injections prepared from allergy-producing material. The eminent homoeopath, however, claims that homoeopathy had one of the best curative treatments for such diseases.

Common allergy diseases like allergic rhinitis, allergic dermatitis, asthma and urticaria (nettle-rash) can be treated and cured for ever by proper homoeopathic treatment. If allopathic medicines, more so the steroid drugs, had not been

An eminent homoeopath asserts that homoeopathy has the best curative treatments for allergy diseases whereas the modern allopathic system does not provide a specific and satisfactory treatment.

administered earlier, response is quicker. Those who have had steroid therapy generally do not respond to homoeopathic treatment. For instance, in children, asthmatic conditions generally disappear at puberty. Homoeopathic treatment, however, ensures a full and quicker cure. Asthma catches a person rather young—say at the age of 10 or so. Its victims are more boys than girls.

### Homoeopathy best remedy for Tonsillitis.

If tonsillitis is treated with antibiotics or if tonsils are removed surgically in children with allergic family history, reactions in the lower parts of breathing system generally

follow in its wake. Children of allergic parents should, therefore, as far as possible be given homoeopathic treatment. Antibiotics should be restricted only to severe infections or when suitable homoeopathic treatment cannot be given. Such children suffer from frequent attacks of tonsillitis and do not respond to antibiotics well. Far more troublesome are the asthmatic attacks which occur in the fourth decade of life. Homoeopaths claim that such cases can be treated best by their system. Palliation and suppression of disease has to be avoided unless homoeopathic remedies fail to elicit response. This will help save a good deal of suffering and expenditure too.

### Drug reactions.

Since synthetic drugs are extensively used these days, incidence of adverse reaction to these drugs has gone up considerably. Continued introduction of new drugs has made the matters worse. Most of the reactions generally result from individual idiosyncrasy and are, therefore, allergic in character. Avoiding modern drugs will prevent discomfort and suffering, specially in every day infections. For example, infections of the upper breathing parts (nose, throat and wind-pipe), like common cold, sinusitis, tonsillitis and the like form a major part of diseases treated in the out-doors. Homoeopathy offers simple and effective remedy for all these diseases. It also prevents indirectly drug allergy, besides other toxic effects.

Protagonists of homoeopathy put forward strong plea that dispensaries and hospitals at various levels should be manned by competent homoeopathic physicians along with allopathic doctors. Allopathic physicians too should be given intensive orientation courses on the use of simple homoeopathic remedies in common cases of allergy.

For economy, efficiency and alleviation of human suffering to the maximum extent possible, this supplementing of effort is a must. ●

cases and 40 old cases. The average attendance per day at all the Primary Health Centres is about 42,000.

### Second Primary Health Centres for all Blocks.

The Government of India have recommended that in order to serve a larger section of the rural people a second Primary Health Centre may be established in each block. The State Government are examining the question of establishing second Primary Health Centres in the blocks in a phased manner, the blocks having a population of one lakh and more being selected for the establishment of second Primary Health Centres in the First Phase.

The total amounts allotted for the Primary Health Centres for the last two years, the current financial year and for the year 1973-74 are as follows :—

| Year.         | Amount.<br>(IN LAKHS.) |
|---------------|------------------------|
| 1970-71 .. .. | 127.57                 |
| 1971-72 .. .. | 177.10                 |
| 1972-73 .. .. | 176.48                 |
| 1973-74 .. .. | 181.15                 |

### Maternity Centres.

In maternity and child health services the emphasis is on ensuring the birth of a healthy child to a healthy mother and safeguarding the health of mother and child thereafter. For this purpose, at present mothers, when they are in the 5th month of pregnancy, are enrolled for ante-natal care. The ante-natal registration is done at the Primary Health Centres as well as at more than 3,800 maternity centres in major villages of each block.

Every would-be mother is given health check-up especially to detect any abnormality in her or in the lie of the foetus. Special emphasis is given to detect anaemia, signs of toxæmia and mal-nutrition in the pregnant woman. She is given proper advice on the diet to be taken and on her personal care during pregnancy. She is educated on infant feeding, immunisation



Families of workers receive E. S. I. health care.

schedule and childhood diseases and on family planning methods.

Natal services are mainly domiciliary. The Auxiliary Nurse Midwife visits the home of the expectant mothers at the time of delivery and conducts delivery by aspective techniques. She follows the infant for ten days after birth.

The Health Visitor supervises the work of Auxiliary Nurse Midwives and also takes active part in conducting ante-natal clinics at the various maternity centres. She refers such cases requiring further attention to the Medical Officer of the Primary Health Centre. She advises the mothers regarding prophylactic immunisation and actively participates in D. P.T. immunisation.

As per the Tamil Nadu Panchayats Act, 1958, it is the responsibility of the Panchayat Union Councils to open and maintain Maternity Centres. At present, Maternity Centres are established at the rate of one per ten thousand population. The total number of Maternity Centres as on 1st January 1972 is 38,770. The centres maintained by the Panchayat Union Councils are in receipt of a Government grant equivalent to two-thirds of the recurring expenditure incurred by them. A sum of Rs. 45 lakhs was spent on these centres during 1971-72, by way of grants, etc.

There are 68 Maternity Homes and 303 Maternity Centres functioning in the municipalities. They are in receipt of the Government grant equivalent to 25 per cent of the recurring expenditure incurred by them. During 1971-72, a sum of Rs. 6,59,617 was sanctioned for the purpose of the above grant.

### Children Immunisation Programme.

The immunisation of pre-school children is being implemented in rural areas of this State from 1st October 1964 through the agency of Primary Health Centres. The children in the age group 0-5 years are taken up for immunisation with triple vaccine as a prophylactic against diphtheria, tetanus and whooping cough, concentration being made on children under one year of age. Each child is given three doses of D.P.T. at intervals of one month between each dose. The target for immunisation is 900 children per Primary Health Centres per year. About 3.5 lakhs children have so far been immunised. To prevent blindness in children vitamin A capsules are supplied.

### Improvement of Nutritional Status of People.

The Nutrition Bureau of our State was started as early as 1964. It is equipped to conduct chemical

analysis of food and biological experiments. The objects of this bureau are to find out the dietary habits and nutritional deficiencies prevalent in the State to make regular anthropometric survey, thereby establishing norms for the State and to advise on the nutrition programme.

The nutrition and diet survey is carried out in respect of all available pre-school children, ante-natal and post-natal mothers. So far clinical and diet surveys have been completed in the following blocks since June 1971 :—

1. Athoor (Madurai District).
2. Erumaipatti (Salem District).
3. Agastheeswaram (Kanyakumari District).
4. Villivakkam (Chingleput District).
5. Alangayam (North Arcot District).
6. Harur (Dharmapuri District).
7. Kodaikanal (Madurai District).
8. Kurinjipadi (South Arcot District).

### 9. Arantangi (Thanjavur District)

Different cheap nutrition receipes were tried utilising protein rich groundnut cake powder, roasted bengalgram, roasted greengram, roasted horsegram, wheat flour, C.S.M. and pea-nut butter either in combination or singly. Demonstrations on the preparation of such receipes were made to the trainees undergoing training in nutrition, to members of Mahalir Sangams, teachers in Balwadies and to the public in rural and urban areas utilising the mobile kitchen van.

Under kitchen demonstration programme, a total of 86 demonstrations were held during the period January to December 1972. Cheap receipes like groundnut cake powder, keeraikoottu, ragi pagoda, balahar wheat, pongal with groundnut oil cake powder, roasted bengalgram, conjee and ragi potato bajji were prepared and distributed, thus encouraging use of indigenous food products.

### SUPPLEMENTARY FEEDING PROGRAMME :

This is in vogue in this State from 1950 onwards. The object of the programme is to combat malnutrition among pre-school children, expectant and nursing mothers who constitute the major segment of

the most vulnerable group of population. At present the programme is being implemented with the assistance of CARE which donates as gift the required quantity of food commodities such as cornsoy milk and salad oil. During the year 1972, about 25 lakhs kgs. of food items were received from the CARE and distributed through 3,327 Primary Health and Maternity Centres.

### SCHOOL HEALTH.

A scheme of medical check up for school children is in force in 18 primary health centres. As per the scheme, the Medical Officers of these selected Primary Health Centres examine 2,000 school children in the age group of 6-11 years, per annum. The school children showing signs of ill-health are supplied with medicines and diet supplements by the Medical Officers of the Primary Health Centres. In the cases where specialised treatment is necessary, they are referred to the nearby hospitals for treatment.

Two urban medical units have also been established at Tiruchirappalli and Coimbatore for implementing the scheme in these towns. There are two Medical Officers in these units and each of them examines 10,000 school children per annum and follow them up.

Health Care in Primary Health Centres is equally Comprehensive.





# KEY TO GOOD HEALTH IN A CHILD

The first key to good health of a child is adequate nutrition. This depends on the health of the mother too. Before birth one infant gets its food, warmth and protection from the mother. Adequate and well-balanced diet for the mother will, therefore, ensure a good foundation for physical and mental development and well-being of the infant.

After birth, the baby needs nutritious diet. Mother's milk is an ideal food for the infant. For some reason, if mother is not able to breastfeed her child, good quality milk given at regular intervals can make up for it. Motherly affection and emotional closeness are, however, a must to avoid behavioural problems in later years.

As the child grows, he needs a lot of protein, extra supply of minerals, iron and vitamins 'C' and 'D'. Discontinuance of breastmilk will call for supplementary feeding—Milk, fruit juice, vegetables, pulses and the like. Poor nutrition affects growth and development of the child. It may as well afflict the child with one or the other disease.

Food articles contain five types of nutrients, namely, protein, fats, carbohydrates, mineral salts and vitamins. Body requires all these nutrients and in adequate proportions too. No single item of food can provide all the nutrients at a time. Variety in the diet is the only way to procure proper nourishment. Anaemia, Scurvy, Beri Beri and Night-blindness are some of the diseases caused by not properly balanced diet.

This is more so in the case of growing children. The children often suffer from a lack of adequate proteins and also lack of adequate calories. As a result, what little protein they do get is utilised for the production of calories. Hence this diversion of protein aggravates the protein malnutrition. Hence they need some supplementary food stuffs of sufficient nutritive value.

Bran and groundnut oil cake, to a great extent, fulfil these requirements. They are also cheaply and easily available everywhere. They can be used as supplementary food stuffs. A few varieties of preparations that

can be made out of them are given below.

## GROUND NUT OIL CAKE.

### 1. Toffee.

Roasted bengalgram—40 gms.  
Groundnut oil cake powder—25 gms.  
Jaggery—50 gms.

Jaggery syrup is made by adding 5-10 ml of water to 50 gms. of jaggery and heating it till it reaches the thread stage. This can be tested by drawing it between two fingers, it will come like a thread. Add powdered groundnut oil cake, roasted bengalgram and keep on stirring 3-4 minutes. Then pour it into greased plate. When cool cut into required bits.

### 2. Rice Pongal.

Rice—56 gms.  
Greengram dhal—28 gms.  
Groundnut oil cake powder—15 gms.  
Condiments (Ginger, pepper, cunnia) oil—10 gms.

The cleaned rice and dhal are cooked in water with salt till the grains are soft and becomes semi solid. Then add the groundnut oil cake powder and stir it well, allow it to cook for 2 minutes. Lastly season it with the condiments (pepper, cumin and ginger) Rice bran.

### 1. Laddu :

Roasted bengalgram—40 gms.  
Roasted groundnut—10 gms.  
Rice bran—15 gms.  
Jaggery—25 gms.

Remove the skin from roasted groundnuts and crush coarsely. Make jaggery syrups and add the roasted bengalgram, rice bran and crushed groundnuts in it. Mix well and make into balls.

### 2. Pogoda.

Maize flour—40 gms.  
Onions—2.  
Bengalgram or green gram flour—40 gms.  
Green chillies —4.  
Salt to taste.  
Rice bran—25 gms.

Mix chopped onions and green chillies with the other ingredients adding enough water to form a thick batter. Small portions are shaped and fried in deep oil till brown.

The nutritive value of 100 gms. of rice bran and groundnut oil cake are given below :

#### Rice Bran :

Calories—393  
Carbohydrate—48.4 gms.  
Protein—13.5 gms.  
Fat—16.2 gms.  
Minerals—6.6 mgms.  
Calcium—67 mgms.  
Phosphorous—1410 gms.  
Iron—35 mgms.  
Thiognishe—2.7 mgms.  
Ribo flavin—0.48 mgms.

#### Groundnut Oil Cake :

Calories—386  
Carbohydrate—38.8 gms.  
Protein—40.9 gms.  
Fat—7.4 gms.  
Minerals—2.5 mgms.  
Calcium—213 mgms.  
Phosphorous—548 mgms.

Demonstrations for groundnut oil cake preparations were conducted in various Mathar Sangams under the Women's Welfare Department in the City.

Besides a balanced diet, a child needs protection against communicable diseases through immunization which should be done early in life and repeated periodically later.

Another priority for hygienic environments is a safe water supply free from anything harmful to the body. Good lighting, ventilation and protection against heat, cold, and dust are the other requisites of a clean and happy home.

Accidents which generally occur in the home like falls, cuts, burns, drowning, poisoning, etc., should be avoided. Care has to be taken to prevent small children from entering the kitchen where most of the fire accidents occur. Matchboxes should be placed beyond their reach. So is for electric plugs and other gadgets.

#### Small Family.

Some health problems also arise directly from the process of human reproduction. When children are born with proper spacing, they will be better cared for. Limiting of family size results in lowering infant and maternal mortality and morbidity too.

## ANATOMY OF RURAL ELECTRIFICATION EXTENSION IN ALANGANALLUR AND VADIPATTI BLOCKS IN MADURAI DISTRICT

This scheme envisages extension of supply to 360 numbers of agricultural pumpsets, 150 numbers of L.T. industrial and 2,470 numbers of domestic services, 290 numbers of commercial and 1,130 numbers of street lights in 52 Census Villages in Alanganallur and Vadipatti Blocks of Nilakkottai taluk in Madurai district except two urban panchayats each in the two blocks. All the census villages in the two Blocks have been covered in the scheme.

Madurai district has an area of about 12,467 Square Km. and a population of over 32 lakhs. All the towns, villages, hamlets and Harijan colonies in the district have been electrified. There are 8 taluks in Madurai district, out of which Nilakkottai is one taluk. There are 4 blocks in Nilakkottai taluk.

1. Vadipatti.
2. Alanganallur.
3. Batlagundu.
4. Nilakkottai.

The present project report covers the first two blocks mentioned above. There are 52 census villages in the blocks (excluding two urban census villages, viz., Sholavandan and Alanganallur). There are at present 1,659 agricultural services, 3,935 domestic services, 644 commercial services, 110 Industrial L.T. Services and 2,031 street lights.

The present project report for Alanganallur and Vadipatti blocks of Nilakkottai Taluk, Madurai District covers further extension of supply to 360 Nos. of agricultural, 150 Nos. of L.T. Industries and 2,470 Nos. of domestic services 290 Nos. of Commercial and 110. Nos. of street lights within 5 years. The State Ground Water Directorate has certified that there is ground water potential for energising 460 wells in these two blocks and the number of pumpsets proposed in this project (viz. 360 nos.) is well within this ceiling.

The Project Report has been prepared on the principle of area coverage and intensive development of the area selected. Hence a composite Project Report has been prepared comprising the existing infrastructure in the shape of HT Distribution lines, transformers

agricultural services, LT Industries, etc. as well as the additional inputs in the shape of new HT and LT lines, agricultural pumpsets, LT. Industries etc. The other Departments in the area have been consulted to the extent possible in order to coordinate with their programmes.

The scheme report is for a total period of 10 years and has been prepared taking into account the depreciated cost of the existing distribution in the Alanganallur and Vadipatti blocks in Nilakkottai taluk based on the present market value less depreciation as per the tour note of Chairman, Rural Electrification Corporation for the period from 21st to 26th March, 1972 and the same has been shown as capital at the beginning of the first year in the financial statement provision for contingencies and centage has been made for existing assets also.

In this connection, it is to be pointed out that by adopting the market value less depreciation, the calculated depreciated value of the existing assets is more than the real book value less depreciation. However, this method has been adopted in preparation of the project report to avoid delay. The financial returns arrived at on the above basis in this Project Report are, therefore, conservative and actual returns are expected to be much higher than indicated.

For the calculation of Gross Revenue cost of power and miscellaneous revenue, half the services connected during the year and all the services of the previous year have been taken into consideration.

Capital outlay is Rs. 37.735 lakhs at the end of fifth year as against Rs. 40.625 at the end of the tenth year.

#### Energy Consumption.

In assessing the energy consumption for the various categories of loads actual average consumption per service now being obtained in the area has been adopted. The total energy loss in Distribution Transformers and LT lines has been taken as 10 per cent.

#### Cost of energy :

The cost of energy on the HT end of distribution has been taken as 6.75 paise per unit based on the average for 3 years (i.e.) 6.63 paise for 1969-70 and 6.70 paise for 1970-71 and 6.91 paise for 1971-72. The depreciation and operation and maintenance expenses have been assumed as 3 per cent each on the capital outlay at the beginning of the year and 1½ per cent on the capital outlay during the year.

#### Gross Revenue :

In assessing the anticipated revenue the actual average consumption in the area for a normal year have been adopted for the different category of loads, and the tariffs in vogue have been applied to this consumption for arriving at the Gross Revenue.

#### Payment of Interest :

The interest on the capital is worked out at 6 per cent on the capital outlay at the beginning of the year and 3 per cent on the capital outlay during the year.

#### General :

The extensions envisaged in the Project Report are from existing 11KV lines emanating from 110/11 KV Ramarajapuram sub-station and the 33/11 KV Samayanallur SS in this area.

The Project is for the feeding clusters of pumpsets at the same time meeting the demands of domestic and industrial loads in that area.

#### Return :

The anticipated nett revenue return at the end of the 5th year and 10th year are 5.758 per cent and 6.704 per cent respectively.

The approximate and additional acreage in the district that would be benefited when the project is completed will be about 1,500 acres by the end of the 5th year and 1,840 acres at the end of the 10th year.

#### Voltage Regulation :

Duplicate feeders as indicated below are provided for better voltage regulation :

1. Samayanallur-Parai 11 KV Feeder—12.85 KM.

2. Ramarajapuram- Katchaipatty 11 KV-Feeder—8.70 KM.

Cost of the above improvement is included in the capital cost of the project report. The voltage regulation will be within permissible limits as to be seen in the list of feeders given below :—

|                                            | PER CENT. |
|--------------------------------------------|-----------|
| 1 Ramarajapuram—The-thur 11 KV feeder.     | 5.33      |
| 2 Ramarajapuram—Thi-dian 11 KV Feeder.     | 7.45      |
| 3 Samayanallur—Shola-vandan 11 KV Feeder.  | 3.84      |
| 4 Samayanallur—Alanga-nallur 11 KV Feeder. | 8.16      |
| 5 Samayanallur—Andi-patty 11 KV Feeder.    | 6.85      |
| 6 Samayanallur—Parai 11 KV Feeder.         | 7.35      |
| 7 Ramarajapuram—Katchaikatti 11 KV Feeder. | 5.8       |

#### Source of Supply :

The loads covered by this scheme will be fed off from the sub-stations at Ramarajapuram and Samayanallur. The present capacity of Ramarajapuram sub-station is 2×5 MVA as against the maximum demand of 4.7 MVA and that of Samayanallur is 2×3 MVA against the maximum demand of 3.7 MVA. So the sub-station capacity is adequate to supply the proposed loads.

The Project estimate has been drawn up based on the Rural Electrification Standards.

#### NEW STRATEGY ON FAMILY PLANNING.

A 10 point programme to boost Family Planning has been taken up under the new strategy. The steps being taken are :

\* Family Planning is being made an integral part of total health care.

\* A new motivational strategy seeking to present Family Planning as a part of the total welfare programme comprises : higher age of marriage for girls with increased emphasis on women's education ; better care for the health of mothers and children ; more opportunities for education and upbringing of children ; and prevention of fragmentation of land holdings.

\* Emphasis on special programmes like post-partum, which means adoption of any method of Family Planning immediately after child birth by wife or the husband ; and the intensive district programme.

\* Emphasis on better and indigenously produced contraceptives.

\* Emphasis on large-scale vasectomy camps and keeping therein persons undergoing sterilisation for at least 48 hours to ensure adequate follow-up and post-operative care.

\* Concentration on couples in the reproductive age group who have yet to adopt Family Planning.

\* Special attention to States where the programme has lagged behind.

\* Introducing population education in the school curricula, adult literacy programmes as also programmes for non-student youth.

\* Launching motivational and service campaigns for the benefit of economically backward and socially deprived sections of society.

\* Better and intensive training facilities for persons engaged in the Family Planning work.

These are the 'ten commandments' which seek to popularise Family Planning and help reduce birthrate from 37.1 to 32 per thousand of population in about two years.

## COMMITMENT TO SOCIAL OBJECTIVES

### ADMINIS- TRATION'S ROLL IN CHANGING MILIEU

Just as the problems of change, of modernisation and of socio-economic transformation are many-sided, so the solutions to these problems have to be many-sided too. We cannot isolate one factor in the process of change and pin on it the responsibility for success or failure. For example, it would be unrealistic to suggest that we have a big implementation gap solely because we have administrative structure that does not respond to the challenges of development. There are many other factors in the contemporary situation which are responsible for our difficulties. It would not be fair to ignore this fact. It would also not be fair to ignore the larger socio-economic and political environment in which the administrative system functions.

Nevertheless, there is no getting away from the fact that much in the administrative system that could and should have been changed, was not changed. And this is not due primarily to lack of will on the part of what is contemptuously described as the political establishment. In spite of all the difficulties, the political leadership of the country has not fought shy of introducing structural changes in society. I would mention the recent decision of the Government to take over the wholesale trade in foodgrains. This is not something that a Government struggling desperately for safety and survival would do.

The covert sniping by the civil services at political parties has deep historical roots. The normal refrain of a reasonably efficient and upright civil servant is somewhat as follows: We are prepared to work according to rules. We are objective. We are neutral as between contending individuals and interests. We only wish to adhere to the law. And we can do a lot of good if we are allowed to function freely, without any pressure, without influences of one kind or another. But we are helpless.

The politicians mess around. Their only concern is to help people who support them. The country could go to hell for all they cared.

This view of politics as something inherently evil, and the politician as the very incarnation of the devil, goes back to the days of the Raj when it was good form for civil servants to describe politicians as mere agitators and malcontents. No doubt, there were many distinguished officers who stood up and who even helped the nationalist movement. But, by and large, there was this tendency to think of politics as something anti-social. The autonomy of the civil service and the sanctity of its rules and procedures was, therefore, to become a deeply ingrained habit of mind. It acquired the halo of a religious doctrine which was not to be questioned. This kind of an attitude and this kind of behaviour pattern did not disappear merely because the administrative services had to function in an independent India with democratic parliamentary institutions.

New and even more difficult problems lay beyond. Those problems had little to do with the outlook, the skills, the attitudes, and the values which had characterised the steel frame. The problems of modernisation of the social and economic structure appeared on our social horizon with a suddenness and rapidity unknown in our history. Now tasks came into existence. Even the old tasks, like that of maintained law and order or collecting taxes, had to be re-defined. The whole perspective of administration changed. An opportunity existed for re-designing the system. But we merely changed the labels. And we stubbornly stuck to the old structures, old formulae, old rituals and old standards of apportioning praise and blame.

D. P. DHAR,  
Minister for Planning,  
Govt. of India.

## CRISIS IN ADMINISTRATIVE SYSTEM.

The result is nothing short of a crisis in the administrative system today. The conception of the administrative system as a kind of an autonomous corporation within the State, with its own rules and privileges, belongs to the middle ages. Just as the Church had its dogmas, the civil service too had its dogmas. One of the most venerable was the theory of neutrality. This was its most effective theoretical armour. What have these concepts of the place and of the role of civil services in modernising society led to? They have not led to any sustained and powerful movement within the civil services for adapting themselves to changing social, political and economic environment. There has undoubtedly been some marginal embroidery—some new courses, some new institutions, some new departments in the Government.

It would appear from the newspapers that the basic problem of administrative reforms in India is pay scales. The various services associations do not appear to be concerned with the basic problems of citizens with which their members have to deal. Their question simply is, who gets what in terms of status, remuneration and privilege. Their question is not who does what for the country.

## REVOLUTIONARY CHANGE NEEDED

The Prime Minister once said that what we need is a "revolution in the administrative system without which no enduring change can be brought about in any field". Before this revolution can take place, the thinking of the services must undergo a profound transformation. Instead of regarding themselves as members of tightly knit corporations concerned with maximising their gains in a perpetual war against their fellow competitors, they have to think of themselves as instruments of socio-economic transformation. Unless this revolution in thinking occurs, we cannot bring about the reforms we badly need. It is not easy to persuade people that the process of change in traditional societies requires not neutrality but commitment. It is not easy to shake people out of their comfortable illusion

about the permanence of status and privilege in a fast changing world.

It does not profit me as railway user to know that the Railway Board has been reorganised if I have to stand in the queue for the same duration of time as I stood before the Railway Board was reorganised. This is the ultimate test. The fifth plan recognises the vital role of the administrative set up in fulfilling the objectives of the Plan. It calls for basic changes in the administrative structure.

If the existing framework or rules, procedures and regulations is invested with a mystique of irreproachable wisdom, then all talk about change becomes a ritual, a pose, a mannerism and a retreat into the world of make-believe.

Commitment to a new social and economic order has to be consciously built and nurtured through the careers of our civil servants. Commitment to a doctrine or to a set of methods is not so important as commitment to the basic goals of social and economic transformation of our society. It has become more important and imperative in view of the changed circumstances we live in and welfare ideology we are wedded to.

## DISTRICT ADMINISTRATION.

For instance we may look at the training that is imparted to enable officers to function in the districts. We know how important district administration is because what happens in the districts touches the lives of millions of people.

Development at the district level is not a matter of conforming to certain rules. It is a question of comprehending in their totality the relationship between a large number of factors. It is a matter of asking systematically questions about the resource endowment, questions about the alternative types of investment, about the existing levels of productivity, about the kind of responses that need to be generated to external and internal stimuli and about the kind of organisations that are necessary to make such responses

effective in economic and social terms. This involves the whole methodology of formulating a district plan in a perspective of regional, State and national development.

Do we give our officers the skills and the techniques to attempt this kind of work? Do we train them to innovate? Do we train them to appraise investment? Do we train them to evaluate performance? We do none of these things. And yet we expect that the district officer would be the leader of the district development team. We expect him to co-ordinate. We forget that leadership cannot be built on principles of heredity. Today leadership is the function of knowledge. The kind of knowledge that was appropriate to conditions 20 years ago is no longer appropriate.

## SOCIO-ECONOMIC FACTORS AND MERIT.

Take the question of minorities. The problems of minorities are often seen only in terms of communal disturbances. All our theories about communal tensions have a ring of banal simplicity.

Pandit Jawaharlal Nehru repeatedly described communal violence as a manifestation of social and political reaction. In our conditions what appears as a religious conflict is largely an expression of the deeper cleavages between economic classes. Exclusive reliance on the Criminal Procedure Code cannot give to an officer the kind of insight he needs for dealing with law and order problems in a complex social and economic

environment. An understanding of the sociology of communalism is indispensable for an officer who has to function in our society and to deal with the day-to-day problems of relationship between the majority and the minority communities.

One of the sources of insecurity and fear among the minorities is that their members have very inadequate representation in the forces entrusted with the maintenance of law and order. The answer to such a problem is likely to be that we recruit people on merit and not on any other ground.

## CONCEPT OF MERIT

Like the concept of neutrality, the concept of merit has been drained off all its sociological and historical content. It becomes a lever in the hands of the strong to buttress their position at the expense of the weak. The operation of the principle proceeds without reference to the larger national objective of integration. We have to bring into the national mainstream sections, classes, communities which have led a deprived life, a life of fear, of subjugation to dominant interests, and of lack of opportunities to grow. A concept of merit which keeps out such communities from public services and from other areas of economic and social activity is a retrogressive concept.

A similar situation obtains in the implementation of programmes for the welfare of backward classes and tribes.

Some time ago, a Committee on Untouchability went into the question of inadequacy of existing law for punishment of offences relating to untouchability. It found that very few prosecutions had been launched under the existing law. The stock reply in such cases is that there is no evidence. Our jurisprudence requires independent evidence. Our social system makes such evidence difficult to obtain. In such a situation discrimination against the weak and the poor goes on.

Once again, it is a manifestation of conflicts between different social and economic classes. But we take refuge behind the conventional explanation of the caste system and of the sanctity

of the Law of Evidence. What should an administrator do in the context of these social tensions? Does he have no role other than to find elaborate reasons for not being able to enforce the law? How does the training that he receives equip him to deal with human situations of such immense social significance?

## SOCIAL POLICY OBJECTIVES PARAMOUNT.

This brings me to the question of motivation for change. The concept of neutrality which has governed the thinking of the administrative services of all varieties is irrelevant to the conditions of under-development. In a democratic society, legislation embodies social policy. Therefore, what becomes important is not law in itself, but the broader objectives of social policy that inform the legislative process.

The civil services play an important part in preparing legislation which ultimately is approved or disapproved by the elected representatives of the people. Later on, the law is administered by the civil servants, sometimes in a purely executive capacity and sometimes with quasi-judicial functions. In their actions the civil servants reveal what is the kind of society they would like to see established.

The basic problems today involve clear choices between different sets of objectives and goals. So unless and intellectual and emotional identification with the basic goals of planning takes place among our civil servants, we cannot move ahead at a fast pace.

One of the ways in which we may try to build this motivation for change among our young officers is by exposing them systematically to the thought of Mahatma Gandhi and Pandit Nehru. They laid the foundations for a new society. Panditji, both before and after independence, constantly struggled to inculcate among our people the values of a free and modern society. Our young officers should study Gandhi and Pandit Nehru, not in Gandhiji and Pandit Nehru, not in a spirit of uncritical adulation, but for gaining a deeper understanding of the historical forces operating in our country, of the effort and sacrifice that need to be made to build a modern society and of the obligation of leaderships in our contemporary situation.

Commitment to a new social and economic order has to be consciously built and nurtured through the careers of our civil servants. Not commitment to a doctrine, or to a set of methods, but certainly commitment to the basic goals of social and economic transformation of our society.

## MEDICAL TERMINATION OF PREGNANCY.

### CERTIFICATE OF REGISTRATION FOR MEDICAL PRACTITIONERS.

The Medical Termination of Pregnancy Act, 1971 has come into force with effect from 1st April 1972 in Tamil Nadu along with the other States in the country. This Act provides any pregnant woman to approach a Registered Medical Practitioner to have her pregnancy terminated under any of the reasons given therein.

As per the Medical Termination of Pregnancy Rules, 1972, only a Registered Medical Practitioner, who possesses the Certificate of Registration issued by the Board constituted by the State Government under the said Act, could undertake termination of pregnancies. The Government of Tamil Nadu have already constituted a Board with the Director of Health Services and Family Planning, 49 Pantheon Road, Egmore, Madras-8 as its Chairman for the Certification of the Registered Medical Practitioners etc.

A Registered Medical Practitioner shall make an application in Form 'A' prescribed under the Medical Termination of Pregnancy Rules, 1972 to the Director of Health Services and Family Planning in the above address for the registration of his name for the issue of a certificate. The Board under the Chairmanship of the Director of Health Services and Family Planning will verify the information contained in the application and issue to the applicant a Certificate in Form 'B'.

The Registered Medical Practitioners who want to obtain the Certificate of Registration may apply to the Director of Health Services and Family Planning for further details, if any, and for sending a copy of the application in Form 'A'.



"To-day Tamil Nadu is a State keenly conscious of its role in the general economic development of the country. It ranks tenth in respect of area, seventh in respect of population, but third in respect of industrial development among the States in India. Further during the last five or six years, Tamil Nadu has made spectacular achievements in population control, agricultural development, industrial advancement and most important, social welfare activities."

## A PEEP INTO THE ECONOMIC DEVELOPMENT OF TAMIL NADU

Tamil Nadu, today, is one of the progressive States of India. Situated at the South-east extremity of the Indian peninsula, Tamil Nadu ranks tenth in respect of area and seventh in respect of population among the various States of the country. The area of the State is 129,901 sq. kilometres and its population, according to the latest census of 1971, is provisionally estimated at 41.10 millions.

In March 1967, when the new ministry under our late beloved Anna took office in the State, the economic climate was hardly encouraging. There were acute food problem, steep rise in prices and industry was badly affected by an unprecedented recession. Now, Tamil Nadu has made spectacular achievements in population control, agricultural development, industrial advancement and most important, social welfare activities. It is a pioneer State in introducing Planning Commission at State level for quickening the pace of economic development. We all know that this is a dynamic approach as compared to other States.

### On the food front.

The strength and prosperity of the State depends on the extent of success achieved on the farm front. Accordingly, the new Government

in 1967 took various measures for tackling the food problem. The State gives due importance on diversification and stepping up of agricultural production to strengthen the base of the economy. Both extensive and intensive cultivation programmes have recorded significant success in maximising agricultural production during the last five years.

The Green Revolution has done its best in regard to rice in the

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State. Green Revolution is nothing but a technological break-through in agriculture which is made up of the introduction of new and high-yielding varieties of improved seeds, increased application of the recommended doses of fertilisers and extension of the use of pesticides so that the crop produced can be saved from insects. The expenditure of the State Government on agricultural development is given below :

For 1973-74 the State's budgeted outlay on agriculture is Rs. 22.36 crores. In revised estimate, 1972-73 a sum of Rs. 12.33 crores and in budget estimate 1973-74, Rs. 12.44 crores have been allocated for capital outlay. On irrigation works under various categories, the Government has allotted nearly Rs. 55 crores for the growth of agriculture. This shows that how far Tamil Nadu Government have invested in the agricultural sector.

Total area under foodgrains cultivation rose marginally from 5.1 million hectares to 5.2 million hectares between 1961-62 and 1970-71. In 1961-62 total production of foodgrains stood at 57.03 lakh tons which rose to 70.34 lakh tons in 1970-71, registering a 23 per cent growth. In 1971-72 the food grains production was 70.45 lakh tons which is expected to be stood at 72.02 lakh tons in 1972-73. Increased agricultural productivity leads to an increase in the food production. It depends on a large number of factors such as use of high-yielding varieties of seeds, pest control, introduction of multiple cropping, increased input of fertilisers, provision of adequate and timely credit to the farmers, adoption of modern agricultural implements, etc., which very much influence agricultural production. The State provides all these adequate facilities to farmers for increasing agricultural output. The recent removal of food controls is a boon to agriculturists for increasing production on a large-scale.

Production of certain essential agricultural raw-materials such as cotton, sugarcane and groundnut is steadily improving. The State has an exportable surplus of a few plantation crops—tea, coffee, cashew and livestock products. Among the States of India, it occupies an important place in exporting hides and skins. There is also a surplus in sugar, cement and textile yarn.

Large-scale programmes of institutional financing have been initiated during the last five years. Luckily, Tamil Nadu has an efficient organisational structure to meet the needs of development schemes. Nationalised Commercial Banks, Land Mortgage Banks and the Agricultural Refinance Corporation have all been strictly asked for

providing adequate and liberal credit facilities to farmers. "As a result of such ambitious programmes, today the deficit State has become a surplus State with exportable quantity. Food is no longer a problem in the State."

### Industrial development

Public sector undertakings have played an important role in the industrial development of the State. Major industries are automobile products, electrical goods, chemical fertilisers and plastics. Tamil Nadu ranks third among the industrially developed States of India. Even though the State is not endowed with large quantity of mineral resources, it has made a rapid progress in the industrial field. This has been mainly due to the favourable economic climate, political stability, efficient administration, efficient industrial entrepreneurs and technocrats, incentives for starting new industries given by the Government and other facilities. The State has invested much for its industrial development during the last five years. It can be seen from the table given below :—

| Years.        | Rupees in crores. |
|---------------|-------------------|
| 1966-67 .. .. | 2.95              |
| 1967-68 .. .. | 5.97              |
| 1968-69 .. .. | 6.32              |
| 1969-70 .. .. | 4.87              |
| 1970-71 .. .. | 8.41              |
| 1971-72 .. .. | 12.47             |

In 1966-67, the investment on the industrial front was Rs. 2.95 crores which rose to Rs. 12.47 crores in 1971-72.

With 1960 as the base, the index of industrial production stood at 172.8 in 1969 which rose to 182.5 in 1970 and further to 188.9 in 1971. For 1972, the index figure for industrial production is provisionally estimated at 192.5. This portrays that how far Tamil Nadu has made a significant progress in the industrial growth during the preceding five years. The State has played an important role in establishing production units, either directly or in the form of co-operatives, in respect of a certain essential commodities such as

yarn, sugar, cement and bricks and through the development corporations of the respective industries.

The Tamil Nadu Industrial Development Corporation (TIDC) was established with the task of setting up and running of public sector ventures owned by the State Government. It has now become an agency for attracting, introducing and promoting participation by entrepreneurs in raw industries and for securing necessary capital from traditional capital markets.

The establishment of the Madras Refineries and the Madras Fertilisers in Manali near Madras, provides the nucleus of a new large-scale developmental complex in the State. New centres of industrial development in the State would be Manali and Neyveli and Tuticorin will be the third area where the new major harbour is being developed. As a result of the dynamic approach of Tamil Nadu to development a new sector known as the joint sector has also emerged.

A fertiliser plant has been set up by the Southern Petro-Chemical Company at Tuticorin. It involves an investment of Rs. 7.2 crores. There are good chances in the State for developing the salt and marine chemical industries due to its long-coast line. With regard to the State sector, other areas of new development are the steel complex at Salem and the continuous casting plant at Arkonam. The achievement of the Salem Steel Plant is a landmark in the industrial programme of Tamil Nadu.

The State Government provides top priority to relieving the distress caused by the crisis in the textile industry. With a view to help the cotton textile industry some concessions such as reduction in the surcharge on electricity rates, postponement of loan-repayment, provision of working capital to sick, etc., were given in 1969. The setting up of the State Textile Corporation is to take over and run viable units which have closed due to management deficiencies.

There are remarkable achievements in small-scale industries sector also. The Tamil Nadu Small Industries Corporation Limited was set up in 1965 for spreading up

The Green Revolution has done its best in regard to rice production in the State. The State has an exportable surplus of a few plantation crops such as tea, coffee, cashew and livestock products. It occupies a predominant place of pride among the States in India in exporting hides and skins. Surplus has also been registered in sugar, cement and textile yarn productions.

small-scale units throughout the State. The Tamil Nadu Small Industries Development Corporation was inaugurated in May 1970 with a view to provide each and every assistance to small-scale industries. The Industrial Estate at Guindy is well-known throughout the country and abroad. The Ambattur Industrial Estate is also set up with improvements suggested by the experience of Guindy.

Besides, a progressive entrepreneurial class has played a crucial role in diversification of the State's economy during the last three plan periods. Excellent facilities such as securing licence, power, water, transport and communications, institutional financing and supply of essential raw materials, technical education, etc., are available to entrepreneurs who came forward for setting up of new industries in the State. The Directorate of Industries and Commerce also provides a variety of assistance through schemes meant for industrialists establishing small-scale units.

"The agricultural and industrial development of Tamil Nadu is part and parcel of the general economic development in which the improvement of living standards stands out as a measurable

achievement". For example, the development of electric power is indispensable for economic growth. The high rate of utilisation of power for agricultural purposes is a remarkable feature of the State's grid. Regarding the utilisation of power the State occupies an important place. In the entire country, the tempo of rural electrification in Tamil Nadu has made it the leading State in this field.

The State has power development schemes on hand and those under consideration from the point of view of the long-term, will undoubtedly generate adequate capacities to enable the State substantially to meet all its demands for power.

#### The State Planning Commission.

The State Planning Commission is entrusted with the responsibility of improving welfare activities in Tamil Nadu. It pays due emphasis in allocating adequate resources for extension of social services along with investment in agriculture and industry. There are schools, colleges, Polytechnics and technical training Institutes, hospitals, dispensaries, health centres and transport and communication facilities in the state. Rs. 41.17 crores will be spent in the budget estimate, 1973-74 on medical and health services including family planning as against Rs. 38.91 crores in the revised estimate, 1972-73. In 1966-67 the expenditure on education was Rs. 43.86 crores which rose to Rs. 95.82 crores in revised estimate 1972-73 and Rs. 97.23 crores in budget estimate 1973-74. For creation of housing facilities, the plan provides Rs. 7.08 crores in 1973-74. The aim of these huge investment is to raise the quality of the human resources in the state. Family Planning is the most vital programme of population control in Tamil Nadu.

#### SOCIAL WELFARE ACTIVITIES

Keeping the goal of establishing an egalitarian social order based on science, the State has launched upon various social welfare activities. They are, abolition of beggary,

The agricultural and industrial development of Tamil Nadu is part and parcel of the general economic development in which the improvement of living standard stands out as a measurable achievement. Further, keeping in view the setting-up of an egalitarian society, the State has embarked upon various social welfare schemes such as abolition of beggary through Beggar Rehabilitation Homes, Free Eye Camp Campaign, Slum Clearance Board, etc.

Eye relief project, Slum Clearance scheme, relief for weavers, etc. Recently, the social backwardness among the backward classes has been removed and recommendations of the Backward Classes Commission for improving the living standards of this section are under implementation.

#### FULL AUTONOMY FOR STATES

Today, Tamil Nadu all in all, is a State keenly conscious of its role in the general economic development of the country. If adequate financial resources are available, undoubtedly, Tamil Nadu would be a self-reliant state. Tamil Nadu has been stressing that all States should have full autonomy. "The relationship between the States and the Centre should not depend merely on the personalities who are at the helm of affairs in the States and the Centre, but should be strengthened, stabilised and incorporated on such a basis in the constitution. The constitution should be suitably amended for this".

#### SALIENT FEATURES OF THE REPORT ON WORKING OF TAMIL NADU SHOPS AND ESTABLISHMENT ACT, 1947. FOR THE YEAR 1970.

The Tamil Nadu Shops and Establishment Act, 1947 continued to be in force in the city of Madras, in all the Municipal areas and class I Panchayats in this State and also in some special areas notified by the Government.

In 1970, there were 2,12,732 establishments covered by this Act in the State as against 2,12,294 during the previous year. Of these 2,05,102 were shops; 6,965 were commercial establishments, 636 theatres; out of the 2,05,102 shops, 1,48,114 shops were run by owners without employees. The total number of persons employed in the establishment was 2,09,166.

Temporary exemption from the provisions of the Act relating to working hours, opening and closing hours and weekly holidays was granted by the Commissioner of Labour in the case of 37 fairs and festivals. The stalls installed in 13 exhibitions were also exempted from all the provisions of the Act. The Government granted exemption in 14 cases and the Commissioner of Labour granted temporary exemption in 6 cases.

The Inspectors appointed under the Act conducted 3,06,600 regular inspections, 2,266 surprise inspections, 18,424 holiday inspections, 3,389 special visits and 519 night visits. At the beginning of the year, 145 prosecutions case were pending. 1,037 prosecutions were launched during the year for the contravention of the provisions of the Act. During the previous year, the number of prosecutions instituted was 875. During the year under report, 906 cases ended in conviction, and 11 cases in acquittal. At the beginning of the year 183 appeals were pending against discharge or dismissal of employees in shops and Establishments. During the year 362 appeals were filed. Of the above 345 cases, 344 were disposed of during the year. 10 applications for rulings on the applicability of the Act were pending at the beginning of the year. 2 cases were received during the year. Out of these 12 cases, 9 were disposed of.

## NEW APPROACH TO IMPROVE WETLAND PULSES CULTIVATION

The culture of wetland pulses is quite unique and different from that of other pulses. In the Cauvery delta covering a major portion of Thanjavur and portions of Tiruchirappalli and South Arcot districts characterised by deep, heavy alluvium, which develops big cracks during the summer months, growing blackgram or greengram in the rice fallows is a common practice. The seeds are sown broadcast in the standing crop of *Samba* or early *Thaladi* paddy, after the fields are drained off to facilitate harvest. The seeds germinate with the moisture available in the fields. When the paddy crop is harvested, the young plants attain a height of 5 to 10 cm. A few of these plants get trampled down by the labourers at the time of paddy harvest. But many of the plants so trampled down recover afterwards and grow into normal plants. For a crop of this kind, excepting the cost of seeds and sowing, nothing is spent by way of preparatory cultivation, irrigation charges, cultural operations and the like. The crop matures with the help of early morning dew that is present in January and February. The crop is ready for harvest in April.

Evolution and isolation of high yielding strains and fixing suitable agronomic and plant protection schedules can substantially increase the yield in these crops.

#### NEW APPROACH :

Breeding by way of pureline selection was commenced during 1955-56 on wetland pulses at the Regional Agricultural Research Station, Aduthurai. As a result, one strain ADT-1 each of blackgram and greengram suitable for wetland cultivation in January-February were released. Blackgram ADT-1 ripens in 90 days with an yield potential of 450 kg. grain per hectare while greengram ADT-1 ripens in 80

days, yielding 495 kg. grain per hectare.

This was only a small beginning of a big problem. Considering the importance of these crops and to intensify research, a scheme for the improvement of wetland pulses in Tamil Nadu was initiated at the Regional Agricultural Research Station, Aduthurai, on 7th January 1972. The technical programme of the scheme has been drawn up as to find out ways and means for maximising production in wetland.

Improvement of the local types by pureline selection, introduction of new varieties, hybridisation and mutation breeding, fixing up optimum seed rates and manurial dosages, finding out the efficacy of foliar application of N and P and bacterial fertilisation, finding out proper time of sowing and fixing suitable plant protection measures are the main aspect.

The existing strains greengram and blackgram ADT-1 are poorer. Strains yielding higher than these have to be evolved. With this objective many varieties of blackgram and greengram have been collected from different parts of the country and abroad for detailed study.

#### RESEARCH FINDINGS :

The results of the optimum seed rate trial conducted during 1971-72 have shown that the yield of wetland blackgram and greengram can be considerably increased by adopting higher seed rate. The seed rate of 30 kg/ha for blackgram and greengram gave the highest grain yield of 699 kg. and 904 kg. per hectare respectively.

#### FERTILISATION

Direct fertilisation for wetland pulses increases the yield. A

manurial combination of 11 kg. N-34 kg. 1205+22 kg. K. 20/ha. gave the maximum yield of 630 kg. grain per hectare in blackgram ADT-1 during 1967-68. The no manure plot has recorded 400 kg. grain per hectare. Fertilisers were applied after the last irrigation to the paddy crop and blackgram seeds were broadcast before the harvest of paddy.

A manurial dosage of 20 kg. N + 30 kg. P 205+10 kg K. 20/ha gave the maximum yield of 872 kg. of grain per hectare for greengram ADT-1 during 1971-72. The manures were applied as basal dressing. The no manure plot recorded 736 kg. grain per hectare.

Trials conducted during 1971-72 with blackgram ADT-1 have shown that 17 kg. DAP/ha, applied as foliar spray at 3 per cent concentration has recorded the maximum yield of 855 kg. grain per hectare while the non-sprayed plot recorded only 605 kg. grain per hectare.

Bacterial fertilisation is effective in increasing the yield. A trial was laid out by treating the seeds with suitable bacterial culture using two varieties in each of the pulses. Profuse growth and greater nodulation were noticed in treated plots. The treated plots of blackgram ADT-1 and green gram ADT-1 respectively recorded 669 and 879 kg. of grain per hectare respectively recording 10 per cent and 30 per cent higher yields over the control.

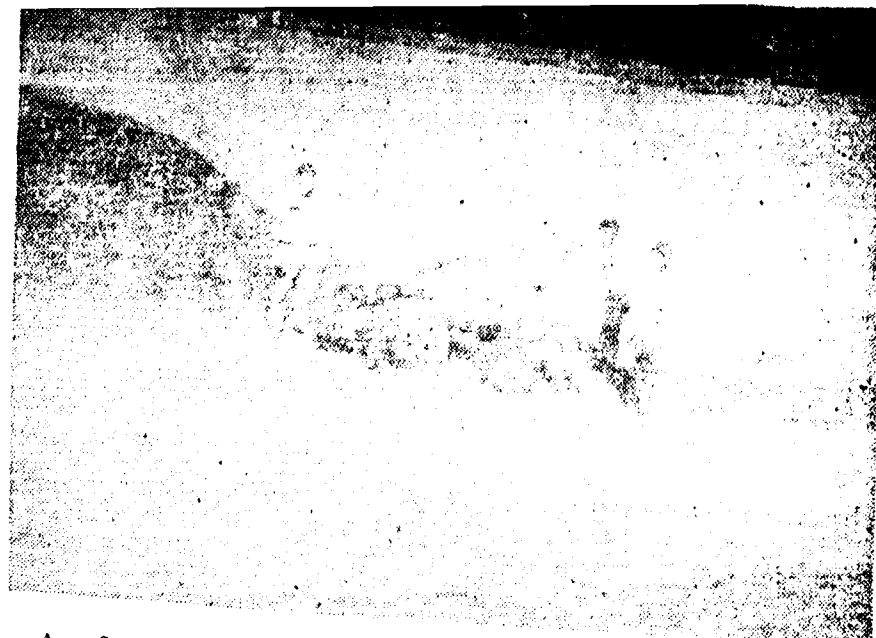
#### DDT 5 PER CENT DUSTING

Proper plant protection measures is an inevitable must to ensure good yield. Dusting BHC 10 per cent and DDT 5 per cent (5 kg. each/ac) during the 15th day and during flowering period against aphids, plant lice and leaf eating caterpillars is a normal and desirable practice to be followed.

Introduction of higher yielding varieties, timely sowing, adoption of proper fertilisation, optimum seed rate, bacterial fertilisation and plant protection measures are the ways and means to maximise wetland pulses.

By  
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Station, Aduthurai.

# INDO- GERMAN NILGIRIS DEVELOP- MENT PROJECT



A profusion of power-driven agricultural implements have been introduced.

The Indo-German Nilgiris Development Project came into being in 1967 on the basis of an agreement between the Government of India and the Government of Federal Republic of Germany. It started functioning from May-June 1967. The project was given effect to jointly carry out advisory activities for development of agriculture in the Nilgiris district of Tamil Nadu.

The Project was to cover the following fields :—

- (i) Arable farming, plant nutrition and fertilising ;
- (ii) Plant cultivation and plant breeding with special reference to potato cultivation and potato breeding ;
- (iii) Fruit and vegetable development ;
- (vi) Plant protection and pest control and
- (v) Rural water management.

The main object of the scheme is to achieve a rapid rise in the level of agricultural production and to improve the economic condition of the Nilgiris farmers by affording them necessary facilities to take up intensive agriculture.

The extension of the period of the Project beyond 31st December 1972 is under the active consideration of the Government of India in consultation with Government of Federal Republic of Germany.

A sum of Rs. 36.05 lakhs is provided in the Budget for 1972-73. The total expenditure incurred till 31st December 1972 is Rs. 11,55,412-81.

The Government of India have been moved to give exemption

from customs duty for the import of "Dasnit".

The Indo-German Project for Development of Nilgiris will set up a small farmers' development Bank from the sale of 12,000 tonnes of ammonium sulphate, valued about Rs. 67 lakhs gifted by the West German Government to the project.

The sale proceeds will be utilised to help the small farmers in various ways such as subsidising cost of treating their potato fields with Dasnit, a chemical pesticide, construction of a road from Thengumorahada where a 25-year old Co-operative Farming Society is functioning to Kiloktagiri at an estimated cost of Rs. 10 lakhs, construction of check dams in Gudagetable and fruit cultivation in the district.

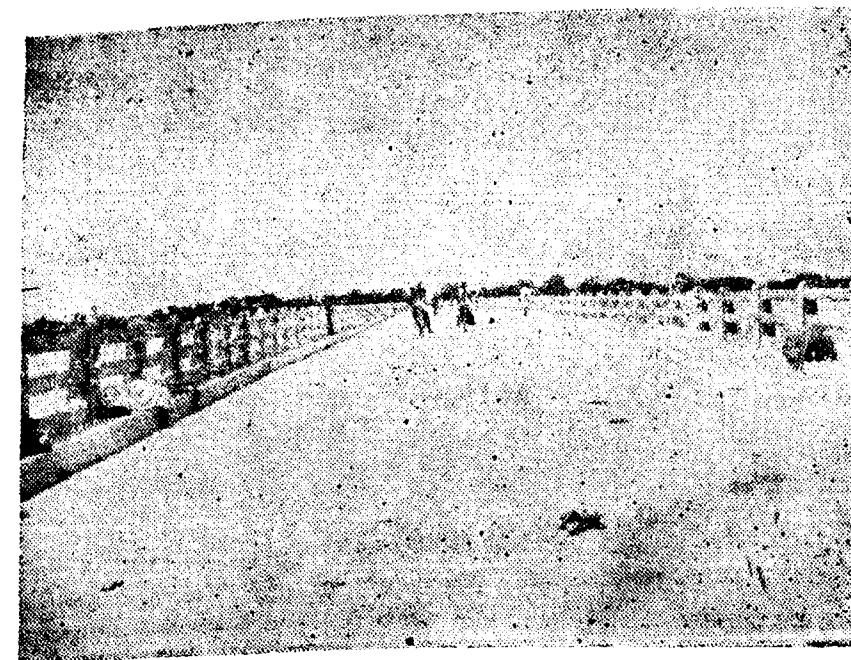
Six thousand tonnes of ammonium sulphate will be sold to the Nilgiris Co-operative Marketing Society Limited and the rest to private fertiliser manufacturing firms.

Under the Nematode Pest Control Programme, a total of 3,844.3 acres had been treated with Dasnit and the third and final phase is in progress now.

Dr. Wolpers and Mr. Chockalingam stressed the need for a system of crop rotation.

About 6,000 to 7,000 acres would be brought under barley in Nilgiris by 1975 if the programme is simultaneously supported by the malt production industry and it is hoped that the opening of breweries in several parts of Tamil Nadu and Kerala would give a fillip to barley cultivation as barley is essential for beer.

## AMAZING WORK AT TAMIL NADU AMAZON



Thirumanur Bridge which is to be thrown open for traffic shortly.

On the far west of Tiruchirappalli district the river Cauvery acquired maximum breadth and dimensions whereas it is called "Aganda Cauvery". It was split into two then and the northern strip was named "Coleroon" (Amazon of Tamil Nadu) while the southern strip continued as Cauvery passing through Thanjavur district and Tiruchirappalli district. Srirangam is situated in between these two strips.

### Karikalan Constructed Banks.

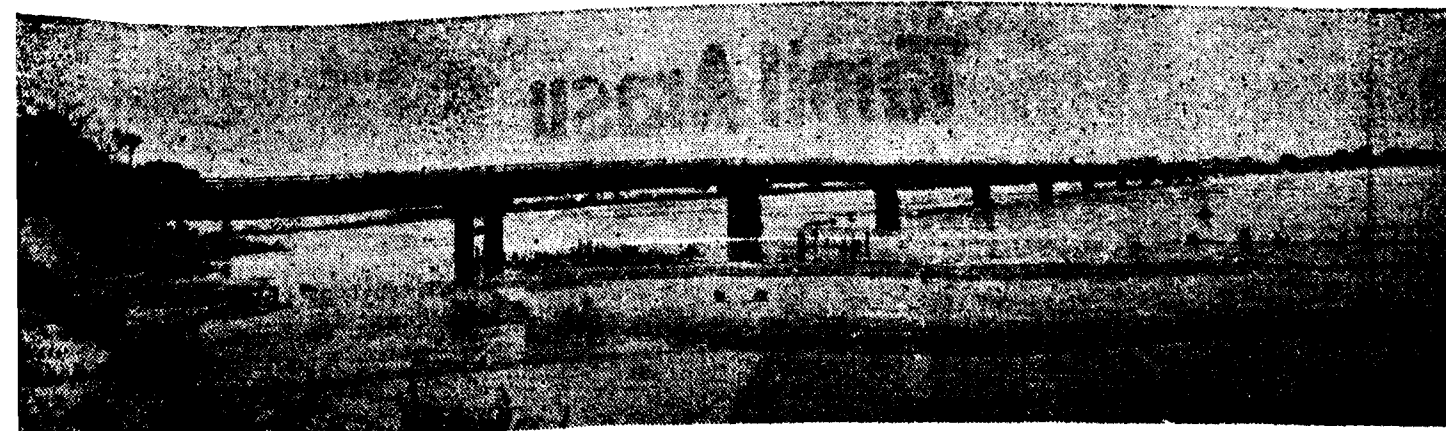
In olden days, the Chola King Karikalan constructed banks for

Cauvery and dams were also constructed at very many places, for the utilisation of Cauvery waters in the Chola Kingdom. Time after time dams, bridges and tributaries were all constructed to improve the cultivation facilities of Thanjavur and Tiruchirappalli districts.

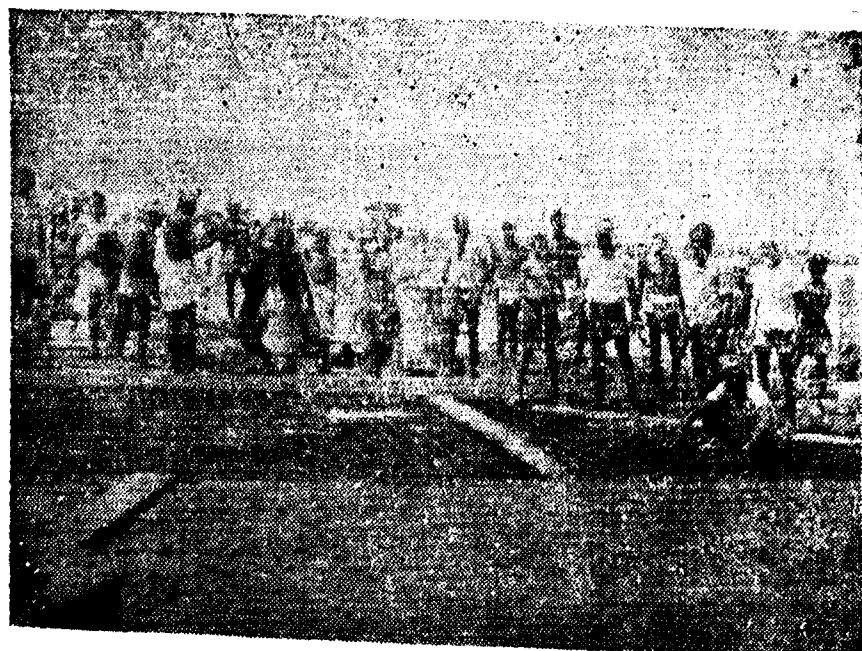
### Longest Bridge in Tamil Nadu.

The construction of the longest bridge in Tamil Nadu across Coleroon connecting the two districts Tiruchirappalli and Thanjavur at Vilangudi and Thirumanur respectively marks an epoch in the history

S. RAGHUPATHY,  
Regional Public Relations Officer,  
TIRUCHIRAPPALLI.







The bridge work in execution.

of rural developments and road transport. It is expected that the bridge will be completed for traffic by the middle of June 1973. By its construction the distance from Thanjavur to the northern parts of Tiruchirappalli district and on the Madras side is shortened to provide easy and quick transport service for marketing products and agricultural yields.

### French Design Construction.

This construction of the bridge is wholly financed by the National Road Funds from the Centre. There was a stand still till 1969 on account of financial sanction being not got over. Though the original estimate of the bridge was Rs. 50.82 lakhs due to the increase in cost of materials, a further sanction was accorded amounting to Rs. 65 lakhs in total. The total length of the bridge is 3765' 9" with 23

spans of 152' 3" each. Another unique feature of this bridge is that it is being constructed with free stressed twin box girders based on the French design. Cole-roon bridge in between South Arcot and Thanjavur Districts near Chidambaram is also of the same type, the first of its kind. The bridge work was actually started on 20th October 1969 and its completion is expected within four years.

Construction of this longest bridge in Tamil Nadu connecting the two districts for inter transport and marketing facilities to and across Thanjavur and Tiruchirappalli districts were not taken till 1967. The completion of the present bridge at Vilangudi is really a monumental work and the present Ministry under Dr. Kalaignar is taking very keen interest in promoting such transport facilities and the construction is also pushed to be completed earlier than the stipulated date.

## YOUTH AGAINST FAMINE SCHEME

The Government have sanctioned a development oriented educational programme called "Youth against Famine".

The programme is being organised by the Ministry of Education Social Welfare in co-operation with the State Governments and Voluntary Organisations.

- It involves one lakh youths. Of these, 75,000 will be drawn from universities and colleges and the rest from non-students youths.

- The objectives of the scheme include supplementing the academic of the university students by bringing them face to face with the realities of the rural situations and providing opportunities to youths to participate in nation building activities.

Under the scheme work projects would be undertaken for completion by the students and teachers within the stipulated time.

- The implementing agencies of the programme would be the national services units of universities.

- The programme would be undertaken during the summer vacation this year by organisation of youth camps.

- The programme would be entirely financed by the Centre.

## WORLD-WIDE MARKET FOR T. I. DIAMOND CHAIN OF TAMIL NADU

Tamil Nadu has everything to gain by its chains—The Diamond Chains: T.I. Diamond Chain Limited, Ambattur is India's largest producer of rubber chains. Though originally meant to cater to the needs of cycle industry, it has also embarked on the manufacture of industrial chains, used the lining of an engine, the driving of a motor cycle or the variations of speed in a machine tool. Diamond chains have the pride of place not only in India but also in many countries abroad like U.K., Europe and countries in the far East.

The T.I. Diamond Chain Company of Madras manufacturing bicycle and industrial chains with technical collaboration from the parent Indiana firm, in U.S. has won worldwide market in United Kingdom, West Germany, Australia and Italy and also in some Asian and African countries and in the face of severe competition from Japan. At the same time they are going all out to meet the demand for chain within India.

T.I. Diamond Chain Company was formed about ten years ago as a subsidiary of the T.I. group of companies at Madras. The parent Diamond Chain Company of Indiana holds 27½ per cent of the equity shares of the Madras Company. Experts from Indiana assisted in setting up the factory and in overcoming initial technical problems related to production. Specialists and other personnel from the parent company have been visiting Madras regularly to offer technical advice and to evaluate progress.

In the short period of ten years since it was formed, the growth of T.I. Diamond Chain Company has been phenomenal. Capital investment and production capacity in plant and machinery have increased very significantly. The employment potential has risen considerably and is still rising. From the manufacture of bicycle chains alone, the company have now progressed to the manufacture of industrial chains

as well. It makes these in a wide range of sizes to serve the needs of every conceivable type of industry.

In 1968, the company exported 45,000 bicycle chains and 28,000 feet of industrial chains. For 1972, the figures are 430,000 bicycle chains and 157,000 feet of industrial chains. The foreign exchange earnings on bicycle chains alone is about 12 lakhs of rupees a year. Indigenous production of chains, especially industrial chains, has meant more over not only an increase in India's export earnings but a substantial reduction in money spent for imports.

For its outstanding performance as an export earner, T.I. Diamond Chain Company was recently awarded a Certificate of Merit by the Engineering Export Promotion Council.

The best index of the company's growth is to be found in T.I. production figures. In 1971, after ten years in business, T.I. Diamond Chain Company was making 17 lakh units of bicycle chains and 16 lakh feet of industrial chains. In 1973, it will turn out 20 lakh units of bicycle chains and 25 lakh feet of industrial chain.

### INCREASED DEMAND.

Undoubtedly the demand must grow and it is expected to grow manifold in the years ahead. India manufactures 2 million bicycles annually. Diamond Chains are used as original equipment as well as for replacement both in India and in a world wide market. The bicycle boom, while it continues, will mean a boom in the production of chains as well. As for industrial chains, they are

used as timing chains in cars, trucks, motor cycles and scooters. Textile mills, jute mills, construction equipment manufacturers and a host of other industries need various types of industrial chains. The market is here in India and in other countries of the world, and the company is geared to increase its production to meet the increasing demand.

### INCENTIVE SCHEME TO WORKERS.

As the company grows and prospers, its workers share in this prosperity. The company has introduced an incentive scheme, linked to productivity. Because of this scheme, every worker in the factory can increase his own earnings as the company's production grows. The worker who, in 1969, earned an extra 9 per cent of his basic pay under this scheme, now takes home an extra 26 per cent. This scheme has paid rich dividends in the form of smooth and trouble-free boosts to production.

The link between Diamond Chain, Indiana and T.I. India has been to the mutual advantage of both companies. Together they have made the name 'Diamond Chain' synonymous with high quality. They have contributed to the growth of many related industries throughout India. They have been able to export even to sophisticated markets in the U.S.A. and Europe and to earn valuable foreign exchange. Indian personnel have been trained in the intricate technology of manufacturing industrial chains. About eight persons from the company have already received this specialised training. The company have been able to manufacture indigenously machinery of sophisticated designs for our chain factory. This company has provided employment opportunities to about 500 people in Madras itself, and indirectly to several hundreds in the distribution trade.

As diamond stands for hardness, strength and durability, T.I. Diamond Chain is building a similar reputation throughout the world.

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## MEMORY TRAINING

A wife once asked her husband to go to the bakery and buy a loaf of bread. Down in the street, the husband could not remember what he was supposed to buy. Getting hold of a bottle of yoghurt "just in case", he came back. "What do you mean by bringing this yoghurt?" the wife cried. "Didn't I tell you to buy some butter?"

This is a joke, of course. But it is very near the truth. Forgetfulness is something we all suffer from, and it gets worse with advancing years. Yet, it is not so much the result of sclerosis and other affections peculiar to age, as of the "loss of form"; when we stop studying, our memory loses its retentive capacity, for it needs training as much as any other mechanism in our body.

If you want to keep a good memory you must train it every day, forty-five minutes morning and night, or, better still, fifteen minutes six times a day. You should also start a "note-book of persecutions" in which to write down all cases of memory failure.

Say you see a familiar face in the street crowd but just cannot remember his or her name. Do not simply dismiss the problem. Remember that with years one's recollective capacity becomes weaker as it is blocked by irritation, weariness and so on. This capacity needs training more than any other. Sit down on a bench and write down the distinctive features of the person you are trying to remember and then forget all about it.

Only after you have made a dozen or so entries in your note-book—regarding the author of some lines of verse, the name of a film, the breed of a dog, etc.—you should sit down and do a bit of "detective work" in your time allotted to

memory training: look through your notes, concentrate, try to remember things related to the elusive problem. In a week or two you are certain to have figured out most of the puzzles.

This is but one kind of memory training, the most important one in mature years. Give it twenty-five minutes every day. The remaining time should be spent on memorising poetry, reading the encyclopaedia, leafing through dictionaries of foreign words, writing out the terms you find interesting and trying to memorise them. When visiting exhibitions or picture galleries make a point of remembering the general appearance of various works of art and then, looking through reproductions try to remember the painters. If you like music, try to recollect the work and the composer without looking at the writing on the record. The more varied these exercises the better; don't spend too much time on any one of them.

— Courtesy "Soviet Union" March 1973.

## the living past

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## CUSTOMS ADMINISTRATION

### IN INDIA

Though people are generally familiar with the Customs Department, very few know the precise details of its field of activity. For passengers travelling in and out of the country, the Customs mean perhaps a band of officers who go through their baggage causing some annoyance. For a recipient of a foreign post parcel the hand of the Customs is not seen unless the contents exceed the limits within which clearance free of Customs duty is permitted.

For a student of public finance, Customs merely stand for the organisation set up for collecting the duty of customs. For the importer, it is the department which not only collects the customs duty but also enforces the restrictions on imports imposed by the Government through the Chief Controller of Imports and Exports. For the exporter, it is the department which, apart from collecting export duty where leviable assesses the value of the goods requiring him to satisfy the Reserve Bank about the repatriation of the foreign exchange proceeds with reference to the assessed value. And for the romantic young man, it is the department which employs those brilliantly uniformed men who are ever chasing smugglers in the true James Bond style.

All these, however, only partially reflect the multifarious activities of the Customs Department. Ever since independence, these activities have increased and become more complicated. In statistical terms, the current annual revenue of Rs. 700 crores is no doubt impressive. But this by itself can hardly suggest the complications which arise before this revenue is realised; nearly 10 lakh assessment documents, thousands of adjudications, claims for refund, appeals and revision applications. The number of passengers and post parcels (10 lakhs and 7 lakhs respectively) is equally staggering. The problems of customs administration are multifarious. There is, no doubt, the problem connected with the collection of comparatively every much larger revenue than in earlier years. But the real complication has arisen out of economic changes which have taken place

from bases in the Sheikdoms of the Persian Gulf developed. Soon this became the main channel of smuggling as the Customs could not cope with this menace in the absence of coastal guards.

Side by side, as its scope expanded, the administration had also to deal with representations and redressals of grievances. A vast cadre of expert officers for handling the increased volume of work and the new responsibilities of import control and export promotion was built up.

In the field of import and export trade there has been a small revolution in Customs concepts in India. Gone are the days of mistrust and suspicion. Advisory Committees in the Ports and the Advisory Council at the Centre have been organised to enable traders to represent their views on customs policies and procedures affecting the clearance of goods.

The institution of Public Relations Officers has also been introduced in each Custom House for helping and advising the trade. The number of supervisory officers has been increased so that greater opportunities are available to settle disputes. The Departmental machinery for dealing with appeals has also been reorganised providing for the appellate function to be discharged by a separate set of officers not directly connected with the executive machinery. The same arrangement has also been extended for dealing with revision applications against appellate orders, at the Government level.

Recently the Department of Customs has taken steps to streamline procedure. Declarations are filed, even before the arrival of goods so that by the time the imports arrive, the documents are ready for examination and delivery. This ensures maximum utilisation of limited port facilities and the immediate utilisation of foreign exchange spent in importing goods. In cases of dispute goods are cleared provisionally on the basis of an undertaking to comply with the

since independence. With increasing emphasis on greater industrialisation and substitution of imports, the need for controlling imports on a wider scale has arisen. To finance developmental effort, emphasis has also been laid on proper realisation of the foreign exchange proceeds of our exports. Both these aspects concern the Customs Department very intimately. It is the Customs who enforce the import restrictions. It is also their responsibility to value exports properly so that, on the basis of that valuation, it is ensured that full foreign exchange proceeds are realised.

Change in law and procedure has affected Customs administration in their handling of imports and exports and in their dealings with passengers. The number of Indians visiting foreign countries, especially by air, has gone up by leaps and bounds. So has the tourist traffic, and the facilities provided to them thereby greatly increasing the work of custom authorities. Increasing demand in the country for imported consumer goods and their shortage owing to controls provides incentive to passengers for bringing such goods. The demand for gold by tax evaders and blackmarketeers for hoarding has also gone up. Attempts are made to utilise the facilities given to tourists to smuggle gold, diamonds, and precious stones. This again creates a demand for unauthorised remittances to pay for smuggled goods.

Conventional smuggling through ships, aircraft and carriers continued for a while. This did not make a dent in the country's economy. However, as the unsatiated demand for gold and other goods kept on increasing, a new trend of smuggling through unmanned coastal areas of the country

ultimate decision, backed by suitable bank sureties. The requirement of bank sureties has been relaxed in cases where acceptable sureties can be provided by firms of standing, Government securities are also accepted.

Arrangements for handling chemical test have been expanded to avoid reference to outside testing houses with attendant delay. The institution of clearing agents, which assists the trade, has received considerable attention and the quality of their services has improved.

On the export side, steps have been taken to permit examination of goods in the docks and jetties on a shift basis. The concept of drawback (permitting refund of the import duty paid on different articles imported and used in the exported product) has also been completely changed. Instead of restricting the facility to goods which were re-exported in the same form as imported, the facility has been extended to goods subsequently manufactured here in the country before being exported. This no doubt provides a significant incentive to our industries enabling them to make their products competitive in international markets.

In the field of anti-smuggling activities, there is not much scope for public discussion of the actual measures already taken and those which are contemplated. The unmanned coastline is the main problem as it is impracticable to man it economically. The alternative of intercepting smugglers by strengthening intelligence and improving legal measures for facilitating detection and confiscation of smuggled goods have been already utilised. As far as tax evaders and black marketeers are concerned, the deterrent of higher punishment under the Customs Act and the Gold Control Act has been provided. If people co-operate by reporting on such persons they will help the department considerably. Incidentally, the department allows a handsome reward for specific information leading to recovery of the contraband. This can be as high as Rs. 20 per tola of gold and 10 per cent of the value of other goods.

## COIMBATORE WEST ASSEMBLY CONSTITUENCY ELECTORAL ROLLS PUBLISHED

The Electoral Rolls of the 105 Coimbatore West Assembly Constituency were finally published on 9th May 1973. The electoral rolls so published have come into force from the date of this publication.

The final rolls are open to inspection by the public at the office of the Electoral Registration Officer, namely the Municipal Commissioner, Coimbatore and copies of the rolls for the constituency as a whole, are available for sale to the public on payment of the price in cash, at the rates fixed by the Government. Full particulars regarding the electoral rolls can be obtained from the Office of the Electoral Registration Officer.

All attempts have been made to ensure that correct particulars are entered in the electoral rolls in respect of the voters. However, it is just possible that in a few cases, some errors may have crept in. Such voters can apply under section 22 of the Representation of People Act, 1950, in Form No. 8 to the Electoral Registration Officer for the correction of the incorrect entry. The Electoral Registration Officer will make the necessary correction after due enquiry. Any person whose name is entered in the electoral roll of a constituency may also apply to the Electoral Registration Officer for transposing the entry to another place in the same constituency. There is no prescribed form for this purpose. The Electoral Registration Officer, will make the necessary amendment after due enquiry. An objection to the inclusion of the name of a person already included in the roll, can also be made in Form No. 7. The applications for transfer, correction or deletion, under section 22, should be made only to the Electoral Registration Officer.

The name of an eligible person whose name is not found in the electoral roll can be included in the

electoral roll under section 23 of the Representation of People Act, 1950. For this an application has to be made in Form No. 6, to the Electoral Registration Officer. The "qualifying date" for the inclusion of new names is 1st January 1973.

An appeal can be made to the Chief Electoral Officer, Fort St. George, Madras-9, against an order of the Electoral Registration Officer under section 22 or 23.

All applications except applications for transfer of names from one place to another in the same constituency should be submitted in the prescribed forms. Printed forms will be available in the office of the Electoral Registration Officer. It is not compulsory that the applications should be made only in the printed forms. Typewritten, cyclostyled or handwritten applications in the prescribed forms will also be accepted.

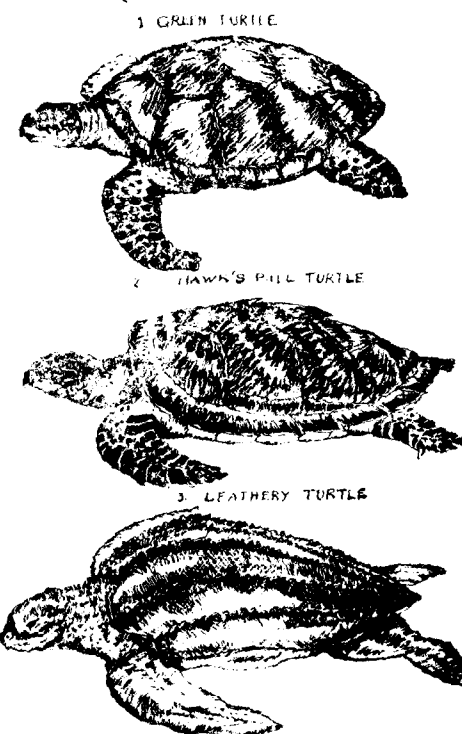
The prescribed fee for preferring an application is ten paise in the case of applications to the Electoral Registration Officer and Rupee one for appeals to the Chief Electoral Officer. The fee shall be remitted into the Treasury or the Reserve Bank of India or its agents under the head of account "L. II. Miscellaneous Receipts in connection with Elections" and the chalan should be enclosed with the application in proof of the fee having been deposited. It can also be paid in cash to the Electoral Registration Officer or the Assistant Secretary to Government, Public (Elections) Department, Fort St. George, Madras-9, in case of appeal.

The fee shall in addition to the above procedure be paid by affixing one or more non-judicial stamps to the application or appeal as the case may be. Where non-judicial stamps are not available, the applications or appeal shall be made on non-official stamp paper of the same value.

## UNIQUE SEA TURTLES

T. S. N. MURTHY.

### UNIQUE SEA TURTLES



In his never ending quest for tapping hidden resources of food and commerce in nature, man has been relentlessly exploiting the sea which still remains to be the vast reservoir with inexhaustible nutrients. With the rapidly increasing population running a close race with deficit food supplies, we are increasingly diverting our attention to all sorts of animal protein including Sea Reptiles other than snakes.

Two-sea-going turtles—the edible Green turtle and the Hawk's billed turtle have gained world-wide recognition because of their immediate utility. Inhabiting the tropical and subtropical seas of the world, the living marine turtles are known by five species. Though there are 215 kinds of living turtles known today, only the Green Turtle and the Hawk's Bill Turtle are chiefly hunted.

### Adaptation

All the marine turtles are perfectly adapted to a life in water. Their forelimbs are modified to form "flippers" specially designed for swimming. The streamlined body narrows towards the back and the head cannot be withdrawn into the shell.

One can easily recognise these creatures by their box like rigid shell which is their most conspicuous and distinguishing feature. In short, this protective armour or shell covering these creatures consists of an upper shell (carapace) and an under shell (plastron).

### Valuable Green Turtle

The Green turtle is the most valuable of all living sea reptiles of the world because its flesh has long been known as a delicacy. Its home is in the Atlantic, Indian, and Pacific Oceans. Though the adult is coloured Olive or brown, it derives its popular name 'Green Turtle' from the hue of its fat which is greenish. It grows to a length of 4 feet and often it weighs upto 850 lb. which indicate its heaviness and also its

basking asleep on the coasts, they are sometimes stealthily approached in boats and then harpooned. Till recently these creatures were caught in different parts of the world in yet another original and novel way. In this mode of catching, the turtle-fishers take the aid of the sucker fish to whose tail a long string is tied. After spotting the turtle, they release the fish from the boat which in its hurry to protect itself fixes itself tightly with its tenacious sucking apparatus to the plastron of the grazing turtle. Then the job is more than half done when the lucky turtles following the string tied to the fish slowly manoeuvre the defenceless animal towards shallow water when it is caught either by diving or harpooning.

But the most inhuman way of acquiring these valuable turtles is just by "turning" them in large numbers. The pity is sometimes all the turtles turned over their backs may not be upto the trade requirements of the greedy hunters. Thus several half grown specimens will either perish or become a ready prey for predators hovering about them.

### Breeding of Turtles

Though these turtles spend a major part of their lives in the open sea, the females have to come ashore to lay eggs. The breeding of marine turtles makes interesting reading and this act of the turtles has fascinated some poets.

The female comes ashore at middle of night often making painful sighing noises made during the tiresome exercise of dragging its heavy weight up the beach. It breeds several times a year each time laying hundreds of eggs which take only one and a half to two and a half months to become baby turtles.

### Gracefull Swimmers with Awkward Movement

Though they are graceful swimmers in sea, their movements on land are awkward. Taking undue advantage of this factor and the easy accessibility of the

### Vegetarian

Though it preys seldom upon Crustaceans and molluscs, the Green turtle unlike most reptiles in strictly a vegetarian feeding mainly on marine plants. Its favourite diet is a sort of sea grass called Cymodea and naturally the distribution of this turtle depends to a large extent on the abundance of this particular type of sea grass.

### Collection / ostehd

Green turtles are caught either by nets or harpoons while they are in water. As they are fond of



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females going up the beach to lay eggs or making a return journey home towards the sea, they are "turned" and easily captured by the turtle fishers waiting in ambush. Moreover, only the females containing eggs are especially valuable from the commercial stand point as the turtle as well as its eggs fetch the turtlers a good remuneration. The young ones are the target of attack by predatory sea birds, crabs and lizards and hence only a limited number of these newly hatched young ones will make a safe journey back to sea. Perhaps their potential for survival would have been quite different if they too, like Sea snakes, delivered live young ones.

#### MIGRATION.

It is remarkable that the edible turtle is capable of migrating to long distances and in this respect it is known to be the only reptile to have achieved this feat. It is claimed that a green turtle marked after nesting on Ascension Islands (West Indies) has been found feeding 1,400 miles off the coast of Brazil.

#### TORTOISE SHELL.

The Hawk's bill turtle, so called because its upper jaw is drawn into a hook-like point resembling the bill of a bird, is another valuable chelonian. Although not eaten, it is famous for its yields of the real "tortoise shell" of commerce known as "Carey". "Tortoise Shell" is derived from the soft and flexible horny coverings of the carapace of this animal. It is said that the best tortoise shell comes from the species of the Indian Ocean. Each turtle may yield about 6 to 8 lbs. of this valuable product. This famous product has been used for centuries for inlaid work though the recent development of the plastic industry has greatly reduced its commercial use.

The Hawk's bill does not reach the size of the edible kind and it is strictly carnivorous living upon fish and molluscs. It is found in all tropical and sub-tropical seas.

#### EXPORT.

A moderately sized export trade is slowly developing around these turtles on Indian coasts but at a proverbial tortoise's pace. Already

our varieties of Edible and Hawk's bill turtles have earned reputation—the former because of the unrivalled flavour of its meat and the latter for its beautifully colored shell. There has been news recently that an experimental farm for breeding these valuable turtles is proposed to be set up in Laccadives.

The Leather back turtle or Luth is the king of the marine reptiles because of its size, weight and rare appearances on land barring the egg-laying females often stranded off coasts. It reaches a length of 7 feet and weighs up to 1,500 lbs. It is unique in yet another feature in that unlike other turtles, its shell is covered by black leathery skin resembling the blubber of a whale instead of the usual horny shields. With its large and powerful "flippers", it can swim well and is said to cruise the open seas for weeks and months. Its flesh is not eaten but oil is extracted from its fat. This remarkably strong and rapid swimmer is widely distributed but scarce in tropical seas. The loggerhead growing up to nearly 4½ feet and weighing 900 lbs. is the second largest marine turtle.

Constant predation by man and beast alike have eliminated the nesting places of these valuable sea reptiles. It is on record that during one single year, nearly 16,000 nests of the green turtle were rifled on some islands in Borneo and in Burma, the yearly haul of the turtle eggs is reported to be nearly 1.6 million eggs. In spite of all this large-scale exploitation and wanton destruction, it is incredible that these hardly reptiles of the sea have not been exterminated though it must regrettably noted that they have been fished out of some of their breeding places. The built in advantages of their breeding several times a year, laying hundreds of eggs per clutch and early development are the main factors of their survival; yet it is to be hoped that nature conservationists would bestow thought on preserving these valuable creatures too as some of these turtles remain a major source of food in many parts of the world.

Fig. 1 : The Edible Green turtle much sought after for its "flesh".

Fig. 2 : The Hawk's bill turtle—the source of tortoise shell Objects D'art.

Fig. 3 : The Luth—the king of marine reptiles.

## PROSPERITY BRIGADE

The Prosperity Brigade was launched five years ago with the avowed objective of creating a new social awakening among the masses. The members of Prosperity Brigade are devoted to Voluntary Service, during their spare time. Their activities are construction of school buildings, desilting of tanks, roads formation and various other important works for the benefit of the public.

There are at present 44,524 volunteers in the State of Tamil Nadu. A sum of Rs. 12.60 lakhs was provided for 1972-73 for implementation of Prosperity Brigade Scheme throughout the State. There are 534 Seerani. Arivagams in the State under Prosperity Brigade Scheme, which function as Adult Education Centres in the State.

The number of works undertaken and completed for the period from 1st April 1967 to 31st March 1972 are given below.—

School Buildings constructed 1,221 Nos.

Desilting of canals and tanks 1,494 Nos.

Link Roads formed 942 Nos.

Reclamation of waste lands 500 acres Nos.

School buildings white washed 13,523.

Spraying works undertaken 1,500 acres.

Name boards supplied to schools 2,562 Nos.

Vegetable gardens 3,248 Nos

The value of works done Rs. 1,38,80,280.

The Government expenditure Rs. 54,46,060.

# ADULTERATION OF FOOD AND DRUGS

## —A HEALTH HAZARD AND SOCIAL EVIL

*(In view of the prevalence of food adulteration and the danger they pose to the community, publicity to arouse public conscience against the evil is necessary.)*

Offences relating to food adulteration and drug adulteration are anti-social in that these practices are detrimental to the health of the nation. The practices of adulteration appear to be widespread. According to a survey by the Central Committee for Food Standards, out of a total of 1,04,225 food samples examined, 30,173 were found to be adulterated. Three hundred families in Dum Dum area in Calcutta were recently struck by paralysis after taking adulterated mustard oil for cooking. The people and the Government should therefore necessarily be vigilant and should make a concerted drive to root out the evil.

Instances have come to light where foodstuffs are adulterated with all types of material which are poisonous and deleterious to health. Wheat, rice and dals mixed with stones, dust and other impurities are too well-known. Coconut oil is adulterated with harmful mineral oil, dal with talc, turmeric with lead chromate. When a consumer buys adulterated stuff he is not only cheated of his money but he is running the risk of injuring his health and that of his people.

Again, if a consumer is supplied with a spurious drug, he has no means of knowing it to be sub-standard or fake. He uses it in good faith and is perplexed when it does not give the desired results or when it worsens the condition.

In fact, adulteration of food and drugs is a very serious crime. Such anti-social and criminal practices need to be curbed at all costs. Laws and regulations to curb such practices are there.

### Report to Food Inspectors

The relevant Central Acts aimed at combating practices of food adulteration are: Prevention of Food Adulteration Act, 1954, and the Prevention of Food Adulteration Rules, 1955. The legal provisions are comprehensive. The executive implementation of the provisions of the 1954 Act rests with the Food Inspectors who are appointed by the Central or State Governments. Purchasers can lodge complaints with Food Inspectors or pursue cases of food adulteration themselves. Food Inspectors are required to conduct investigations into complaints of food adulteration received by them and carry out the prosecutions.

Similarly the offences relating to manufacture, import and sale of drugs are dealt with in the Drugs and Cosmetics Act, 1940 (as amended from time to time) and the Drugs and Cosmetics Rules, 1945. For offences related to misbranded or adulterated drugs produced within the country, the punishment can go upto 10 years of imprisonment and fine. The law also provides for confiscation of drugs which are the subject of the infringement of the Act and the Rules. Under the Act, a purchaser of a drug is entitled to obtain a test report from a Government Analyst. The executive implementation of the legal provisions vests in Inspectors appointed by the Central and State Governments for the purpose.

### Publicity and Public Co-operation Necessary

It is true that punitive action against offenders under the Acts relating to adulteration of food and drugs will have some deterrent effect on those indulging in such malpractices. But it will not go a long way in eradicating the evil. Sustained publicity in arousing the will of the people to expose and condemn such practices will have a more lasting effect. The consciousness of the manufacturers and traders should be raised against the

evil. It is in this field, the enlightened citizens, voluntary organisations and publicity men can help eradicating the evil and in creating a climate of opinion in which the practices of adulteration is held in contempt and a moral stigma attaches to those indulging in it.

### Adulteration Must Be Reported

The people can benefit by the services of voluntary organisations like Citizens' Central Council which has been organising a campaign against food adulteration. They may report cases of adulteration to the concerned Food and Drug Inspectors.

The consumers will help themselves and the society by realising that those indulging in food and drug adulteration are committing offences against society. They will be helping again if they take a few practical steps like reporting cases of adulteration to the Food Inspector or Drug Inspector, purchasing drugs only from licenced dealers at prices not higher than those marked on the container and against cash memos, and disfiguring or destroying bottles and containers of drugs to prevent their being used for sale of spurious drugs.

### Public Co-operation Ensures success

The State has enacted legislative to combat the menace of adulteration. The Food Inspectors and Drug Inspectors are there to prosecute the offenders under the Act. Their success depends on the people's willing co-operation. The public should be encouraged to give up apathy and neglect in exposing the offenders. Their consciousness against the evil and their vigilance and their active assistance to the Inspectors and other voluntary organisations campaigning against the evil will help a great deal in minimising the anti-social practice.

# Tamil Arasu

JULY 1973

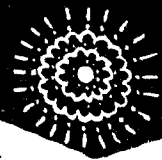
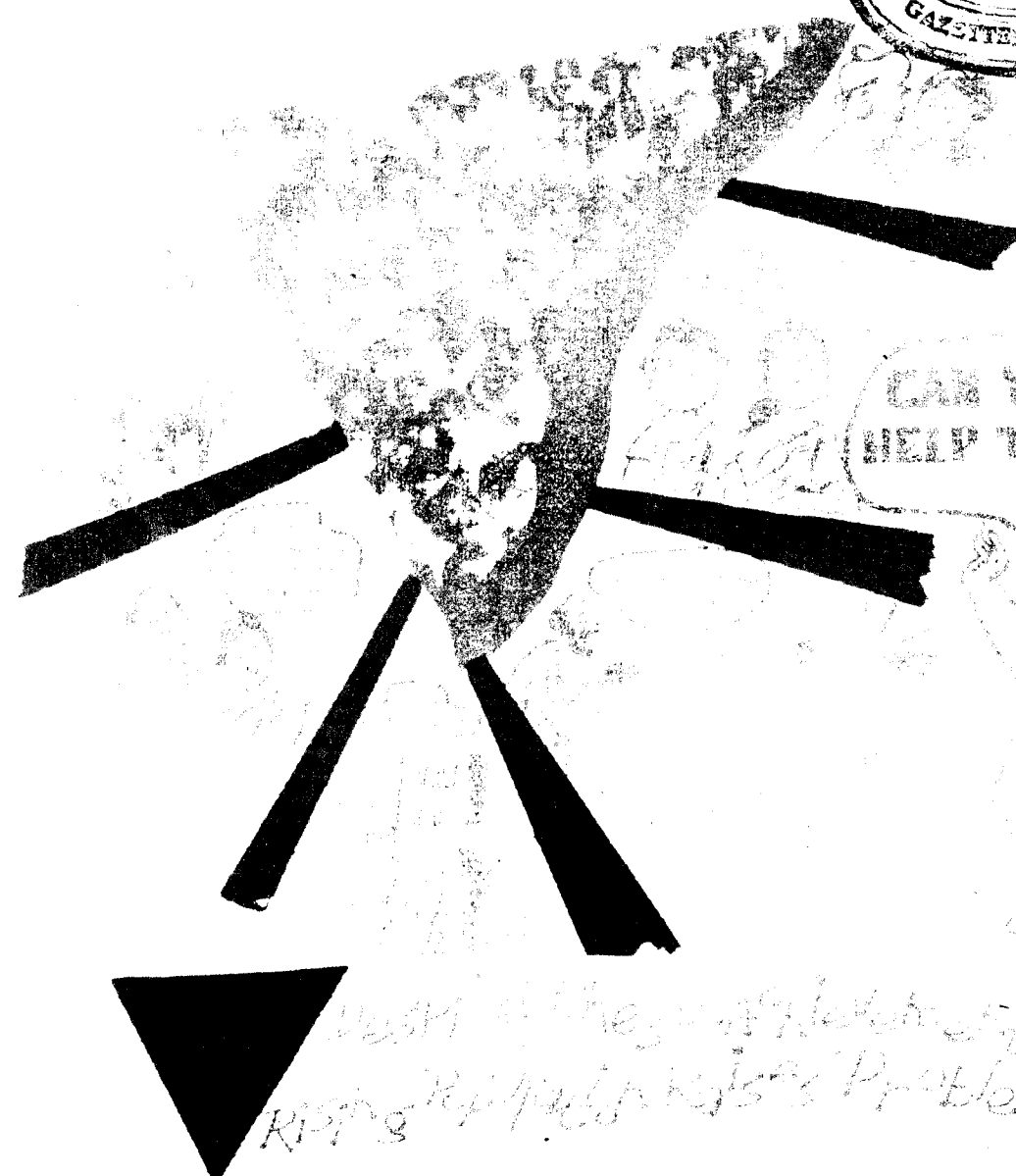
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Subject to issue of 2 Series

**Tamil Arasu**

94/42/73  
12 JUL 1973

Vol. IV

JULY, 1973

Issue J. T. MADRAS

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The Prosperity Brigade goes into Action.

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



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

S. VISWANATHAN,  
in *Industrial Economist*.



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

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

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

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

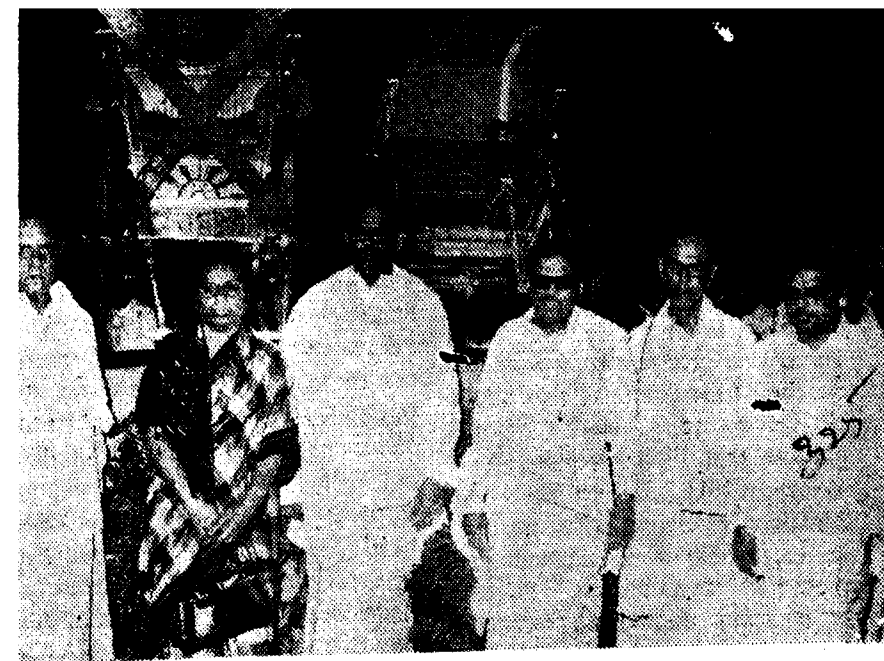
its assuming powers—schemes that are designed to ensure the reach to the largest number of people.

## Laudable Efforts

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

## Beggar 'Hatao'

The beggar rehabilitation fund was introduced on this principle on the



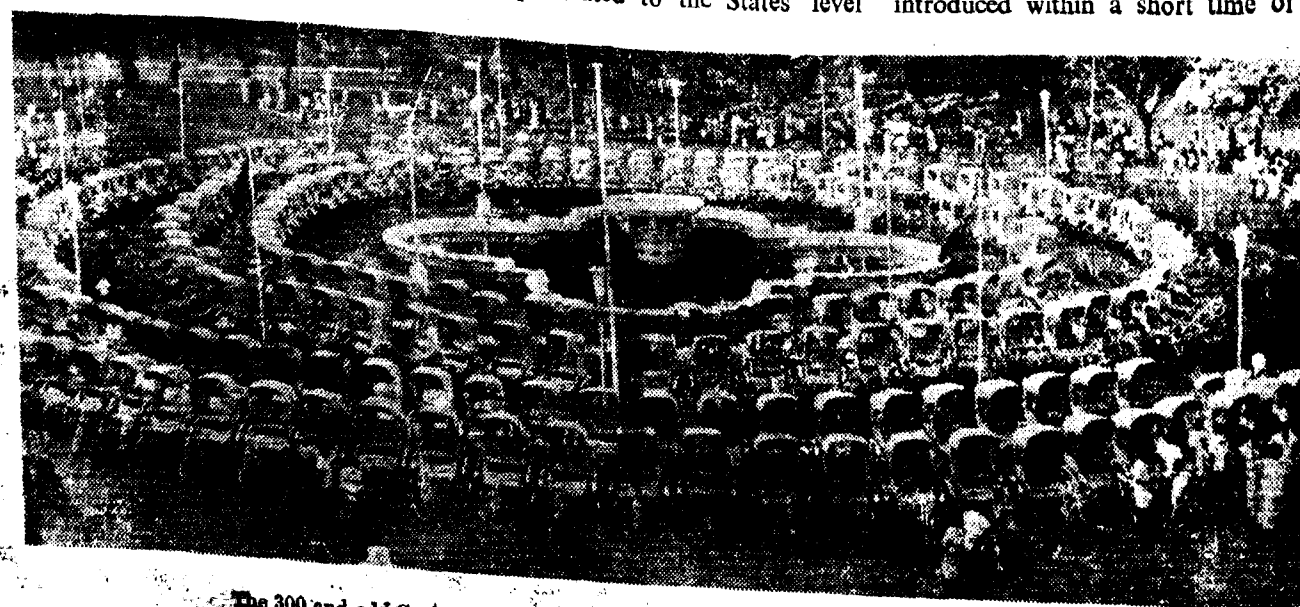
The photo picturing the Chief Minister and his Cabinet colleagues and a cross-marked hand-pulled rickshaw and Cycle-rickshaw symbolises the change in the line of socialistic attitude and activity of the State Government.

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

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



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



The 300 and odd Cycle-rickshaws distributed to hand-rickshaw pullers on 6th June 1973.

## Ninty Free Eye Camps And 40,000 Operations

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

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

#### A Tyranny of Six Decades :

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

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

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

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

#### A Symbol of Social Injustice :

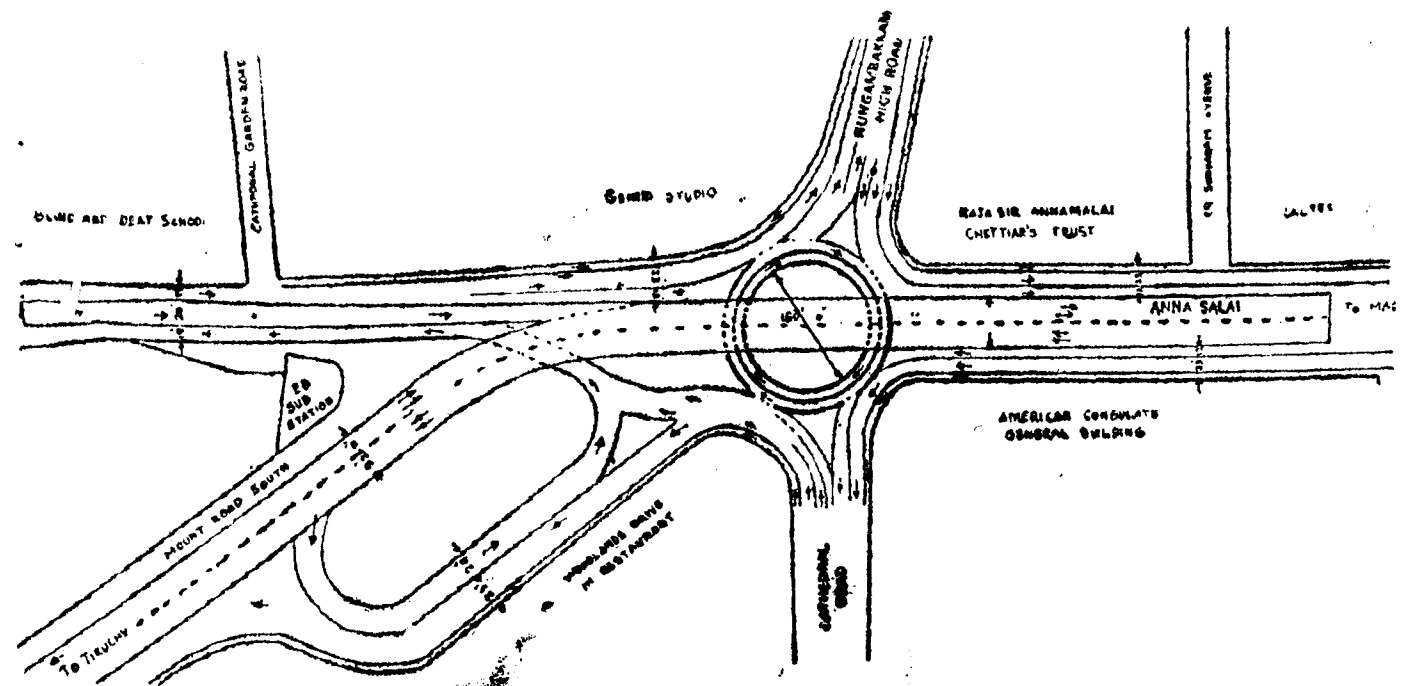
The hand drawn rickshaw was certainly a symbol of social

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

#### Facile Collections :

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

## ALL ABOUT THE ANNA FLY-OVER



LAYOUT PLAN OF ANNA FLY OVER

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

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

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

## INDIA'S BIGGEST FLY-OVER COMES INTO USE

## HAPPY HOMES FOR THE HAPLESS



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



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

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

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

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

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

## PORTFOLIOS OF TAMIL NADU MINISTERS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## THE OBJECTIVES OF

# THE ARIGNAR ANNA MEMORIAL CANCER INSTITUTE



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

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

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

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

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

### History of Kancheepuram.

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

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

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

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

### The short-term objectives were—

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

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

(c) to train the relevant personnel where necessary.

### The long-term objectives were—

(a) to demonstrate cancer control,

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

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

# ANNA FLY-OVER AT GEMINI INTERSECTION

## IN MADRAS CITY

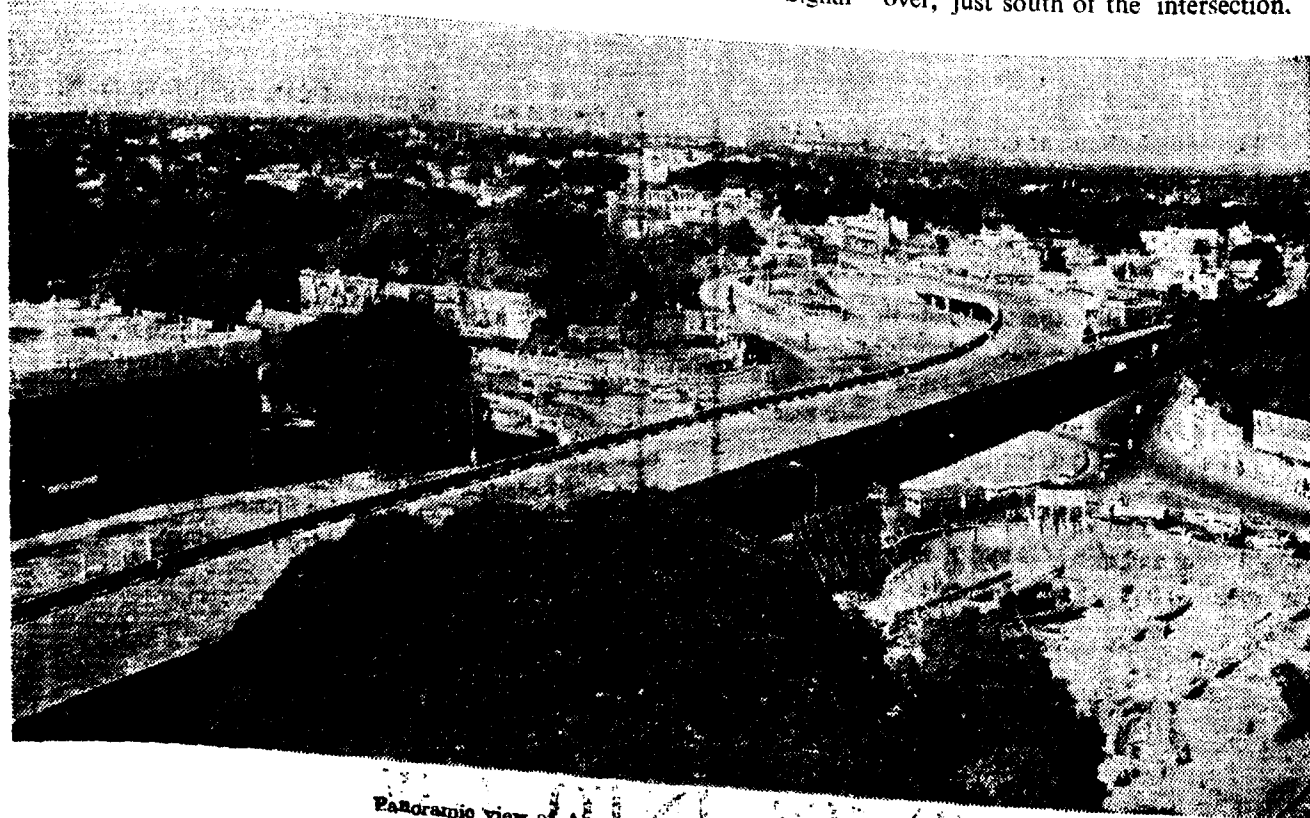
A Fly-over differs from an Over-bridge in the strict technical sense that the former provides an additional tier of road-way usually of long lengths, obviating the delay and difficulty due to cross-traffic, while the latter just bridges an intervening gap like a railway line or a water-crossing. Fly-overs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

The Madras metropolitan area is the fourth longest urban concentration in the country with a population of 31 million in an area of 1,180 sq. k.m.

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

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

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



Panoramic view of Anna Fly-over at Gemini Intersection

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

### SERVICE ROADS LAID

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

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

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

(1) Western half of Main Fly-over and access ramp on Gopathy Narayanasami Chetty Road,

(2) Portion south of junction in the eastern half and the clover-leaf and

(3) The balance of eastern half of main Fly-over.

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

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

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

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

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

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

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

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

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





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

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

### (3) Funds and Mode of Operation

#### (a) World Health Organisation Aid

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

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

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

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

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

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

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

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

for the purchase of radiotherapeutic equipment for this Institute.

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

### Government's Contribution.

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

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

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

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

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

Later, in light of developing a Regional Centre for Cancer and Research and to build a 300-bedded Cancer Hospital in a phased manner Government have since ordered the acquisition of a 22.5 acre plot of land on the main National Highway from Madras to Bangalore on the eastern side of the Bhakthavatsalam Polytechnic. Plans and estimates for Rs. 27 lakhs for the construction of a 100-bedded Cancer Hospital during the 1st phase 1971-72 with physical facilities to house a Cobalt 60 (6000 curies source) Caesium



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

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





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

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

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

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

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

#### Statistical Studies :

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

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

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

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

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

#### Cervical Screening Programme

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

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



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

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

## Growing Need for Social Research in Tamil

(In Sociological Terms)

L. PALANIAPPAN, M.A.

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

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

## EXCHANGE OF IDEAS

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

## WELL - MAINTAINED LITERARY TRADITION IN TAMIL NADU

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

## STRENGTH OF TAMIL LANGUAGE

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

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

## BHARATI A SOURCE OF INSPIRATION

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

## GROWTH OF INDIAN LANGUAGES

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

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

## Collection Bonus in Pallavan Transport Corporation

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

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

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

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

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

# Improve- ment of School Education in Tamil Nadu

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

Re-training the teachers cost Rs. 40 lakhs.

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

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

English Language Teaching Campaign :

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

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

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

Examinations :

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

Library Movement :

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

Sports and Physical Education :

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

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

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

#### Aims and objectives of the Research Programme

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

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

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

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

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

#### (2) Origin of Matriarchal pattern

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

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

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

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



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

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

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

—V. V. GIRI,  
President of India.

## TAMIL IS UNIQUE

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

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

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

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



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

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

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

#### MEDICAL CHECK UP.

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

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

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

# MEDICAL EDUCATION

## IN TAMIL NADU

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

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

Education in respect of Plan Schemes.

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

|                      | 1972-73.          | 1973-74. |
|----------------------|-------------------|----------|
|                      | (Rupees in lakhs) |          |
| Medical Education.   | 11.17             | 12.33    |
| Medical Services     | 10.93             | 12.35    |
| Indigenous Medicine. | 13                | 20       |

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

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

#### PLAN OUTLAY.

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

#### MEDICAL EDUCATION.

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

#### POST-GRADUATE INSTITUTE.

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

### Mobile Science Labs. Take Science Teaching To All Schools.



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

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

#### RESEARCH.

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

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

#### EMPLOYMENT OPPORTUNITIES.

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

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

#### INCREASE IN REMUNERATION.

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

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

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

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

## GROWTH OF SUGAR INDUSTRY IN TAMIL NADU

Prof. C. S. MAHADEVAN

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

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

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

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

| Name of the Factory.<br>(1)                                                 | Existing capacity in 1971-72.<br>T.C.D.<br>(2) | Production in 1971-72.<br>(in M.T.)<br>(3) |
|-----------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------|
| <b>I. Co-operative Sector.</b>                                              |                                                |                                            |
| Madurantakam Co-operative Sugar Mills, Padalam.                             | 1,000                                          | 12,717                                     |
| Amaravathi Co-operative Sugar Mills, Limited, Krishnapuram.                 | 1,250                                          | 13,644                                     |
| North Arcot District Co-operative Sugar Mills, Ambur.                       | 2,200                                          | 26,210                                     |
| Salem Co-operative Sugar Mills, Mohanur.                                    | 1,000                                          | 17,497                                     |
| National Co-operative Sugar Mills, Alanganallur.                            | 1,000                                          | 9,698                                      |
| Kallakurichi Co-operative Sugar Mills.                                      | 1,250                                          | 13,360                                     |
| Dharmapuri District Co-operative Sugar Mills, Palicode.                     | 1,250                                          | 1,767                                      |
| <b>II. Private Sector.</b>                                                  |                                                |                                            |
| Thiru Arooran Sugars, Limited, Thanjavur district.                          | 1,200                                          | 14,676.4                                   |
| Deccan Sugar and Abkari Company Limited, Pugalur, Tiruchirappalli district. | 1,500                                          | 21,912.0                                   |
| Cauvery Sugars and Chemicals Limited, Tiruchirappalli district.             | 1,000                                          | 13,939.0                                   |
| Madura Sugars, Limited ..                                                   | 240                                            | 5,107.39                                   |
| E.I.D. Parry Limited, Nellikuppam, South Arcot district.                    | 2,200                                          | 29,619.0                                   |
| Kothari Sugars and Chemicals Limited, Tiruchirappalli district.             | 1,500                                          | 17,163.2                                   |
| Aruna Sugars Limited, South Arcot district.                                 | 1,200                                          | 25,338.17                                  |
| Sakthi Sugars Limited, Erode Coimbatore district.                           | 2,000                                          | 55,709.16                                  |
| South India Steel and Sugars Limited, South Arcot district.                 | 1,250                                          | 18,509                                     |

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

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

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

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

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

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

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

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



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



A view of the INSTRONICS Estate, Adyar.

## ELECTRONICS COMPLEX NEAR MADRAS

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

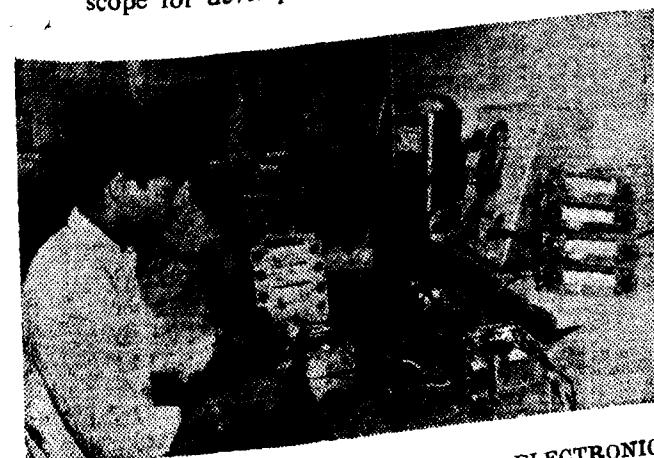
A thorough study of the types of electronic industries which have scope for development in the State

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

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

ancillaries and final-assemblies would be located in this estate. The estate is situated opposite the Lattice Bridge in the Technological Campus, Adyar and is accessible both by the Lattice Bridge Road and the Central Polytechnic Campus Road. The factory buildings in this estate are specially designed to be free from dust, noise, and Radio interference. The location of the estate itself is very close to the Indian Institute of Technology, College of Engineering, Polytechnic and other National Laboratories of the C.S.I.R. Complex, where from testing and consultancy facilities may be availed of by the entrepreneurs. Special protected water-supply is made available to this estate from a departmental well and a pumping unit put up at a distance of 1½ miles from the estate.

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



ELECTRONIC ASSEMBLING PROCESS.



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

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

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

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

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

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

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

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

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

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

## HANDLOOM INDUSTRY IN TAMIL NADU

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

### Problems of Handloom Industry.

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

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



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

### Special Assistance For Disposal Of Stocks :

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

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

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

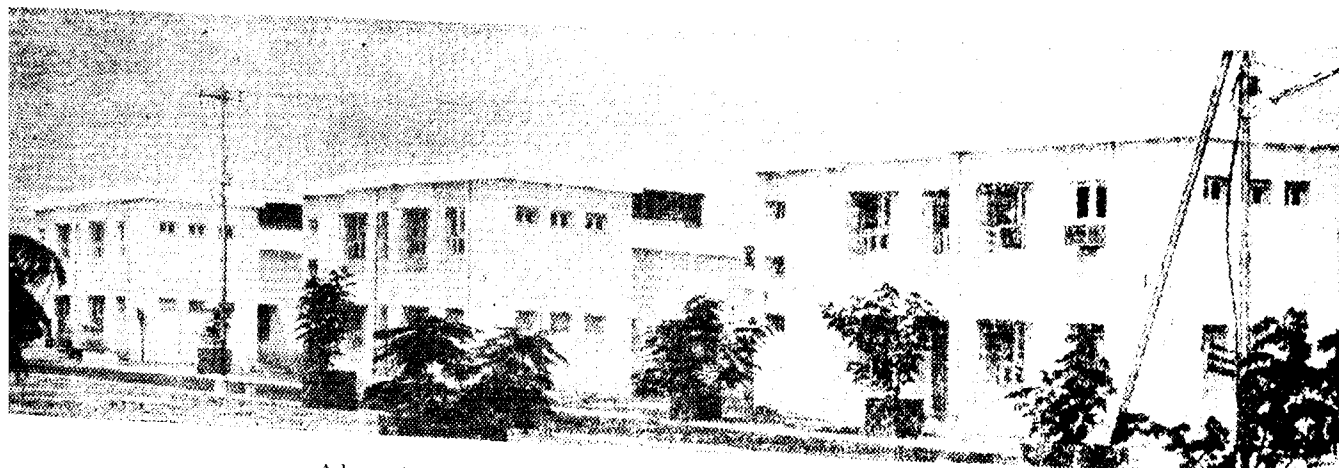
the above limit was relaxed in the year 1972 and the State Government issued orders that the entire share capital required for the admission as member of Weavers' Co-operative Society might be given as loan subject to a maximum of Rs. 100 per member. Loans are also given to the existing members for strengthening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

### Reorganisation of the Societies :

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

### Working Capital For Weavers' Co-operative Societies :

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



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

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

1. Electronic Recording and Indicating Temperature Controller for Chemical Plants, Plastic Units, Sugar Plants, Refineries, etc.,

2. Industrial Thermometers and Pyrometers for Refineries and Fertilizer Plants,

3. Resistors for Electronic and auto-electric industries,

4. Glass Instruments like Hydrometers, Mercury Switches, etc.,

5. Car Radios,

6. Standby Power supplies to Defence areas,

7. Instruments,

8. Electrical and Electronics measuring instruments,

9. Sub-units for larger Electronic equipments.

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

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

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

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

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

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

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

It can be hoped without the least doubt that this Complex, aptly called INSTRONICS CAMPUS, with the private units of the Estate, Laboratory and the Service

Centre will be one of the most important nerve-centres for the development of Electronics Instrumentation in the country.

## EXPORTS OF INDIAN HANDICRAFTS

### DIRECTION OF EXPORTS

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

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

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

### EXPORT PROMOTION.

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

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

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

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

### COMPOSITION OF EXPORTS

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

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



Electronic testing.

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

## DEVELOPMENT OF INDUSTRIES THROUGH ANCILLARIES AND

### SUB- CONTRACTING

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

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

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

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

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

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

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

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

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

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

The ancillaries are under three categories, viz.—

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

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

(c) Replacement parts for open market consumption.

### Goal of Self-reliance

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

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

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

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

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

12. Tele-communication equipment;

13. Industrial instruments (Electronics);

14. Radio and electronic equipment;

15. Mineral oil and Petroleum Products and

16. Air-conditioners and cold storage equipments including refrigerators.

### PATTERN OF ASSISTANCE BY GOVERNMENT.

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

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

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



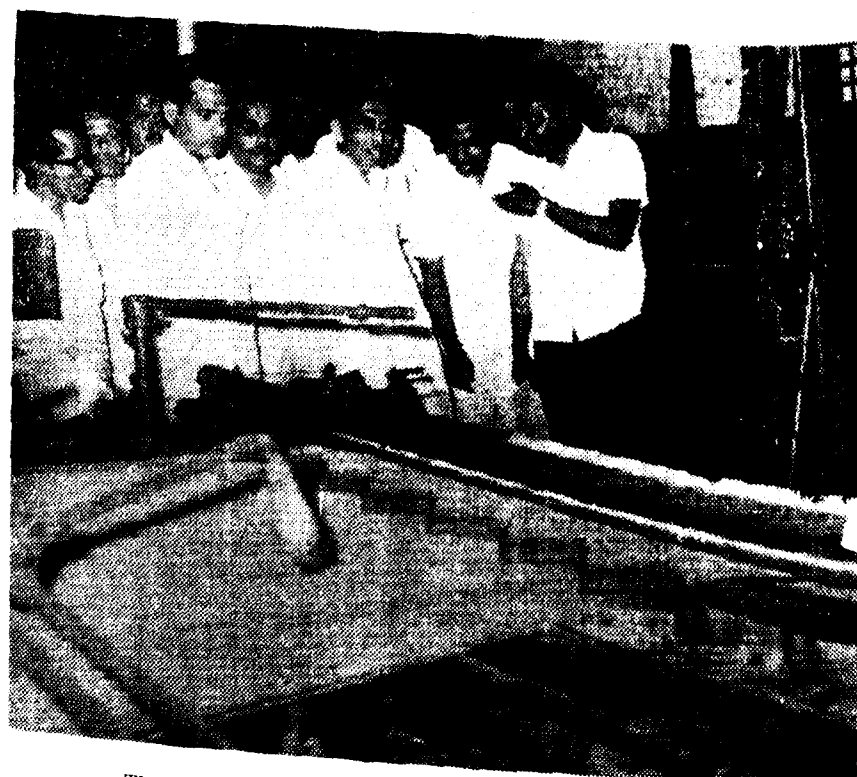
Thiru Mannai Narayanasamy, Minister for Co-operation, enjoying the going round in the Khadi Krafts Sales Emporium at Mount Road, Madras.



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

### THE ANCILLARY DEVELOPMENT IN TAMIL NADU

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



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

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

### The Sub-Contract System.

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

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

The important functions undertaken by this Exchange are :—

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

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

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

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

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

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

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

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

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

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

### PLANT LOCATION.

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

(a) Sub-contract the expanded capacity;

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

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

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

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

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

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

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

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

(d) Location with good transport facilities.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## WORK OF AGRO-ENGINEERING AND SERVICE CO-OPERATION FEDERATION

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

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

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

To service and to repair agricultural machinery and equipment ;

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

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

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

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

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

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

## DO YOU KNOW INDIAN JOINT VENTURES ABROAD?

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

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

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

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

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

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

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

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

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



# Glow Of Freedom Comes Through Respect To Rule of Law.

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

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

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

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

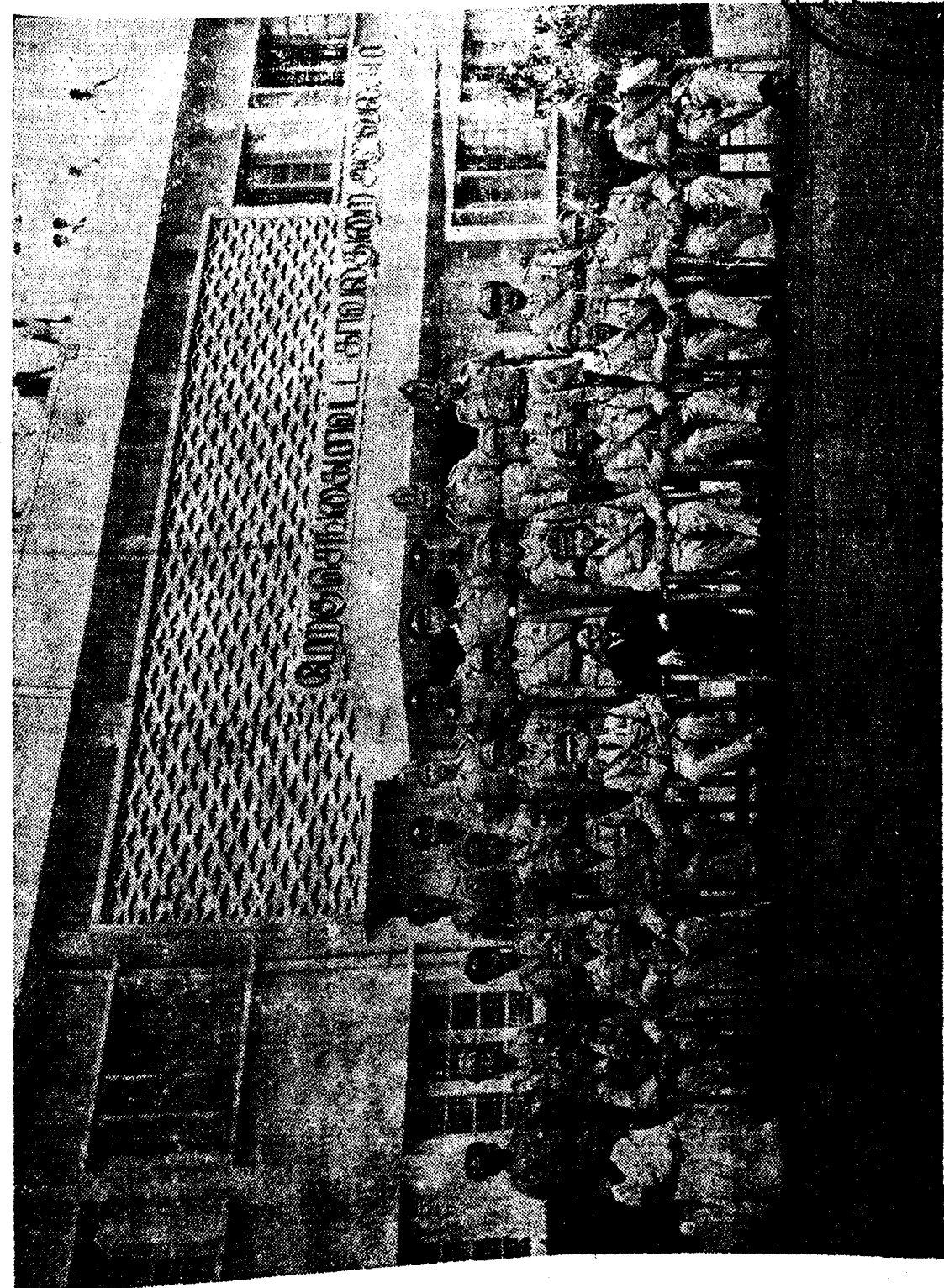
firmness. Healthy and cordial police-public relationship can succeed in evolving norms of public life so that violence as a means of airing grievances may be avoided and democratic methods for redress of grievances may be evolved. Let us all respect the Rule of Law and contribute to the growth and maintenance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

## A Rightful Step.

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

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

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



The recipients of Police Medal Awards.

OFFICE OF THE STATE  
12 JUL 1973  
MADRAS



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

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

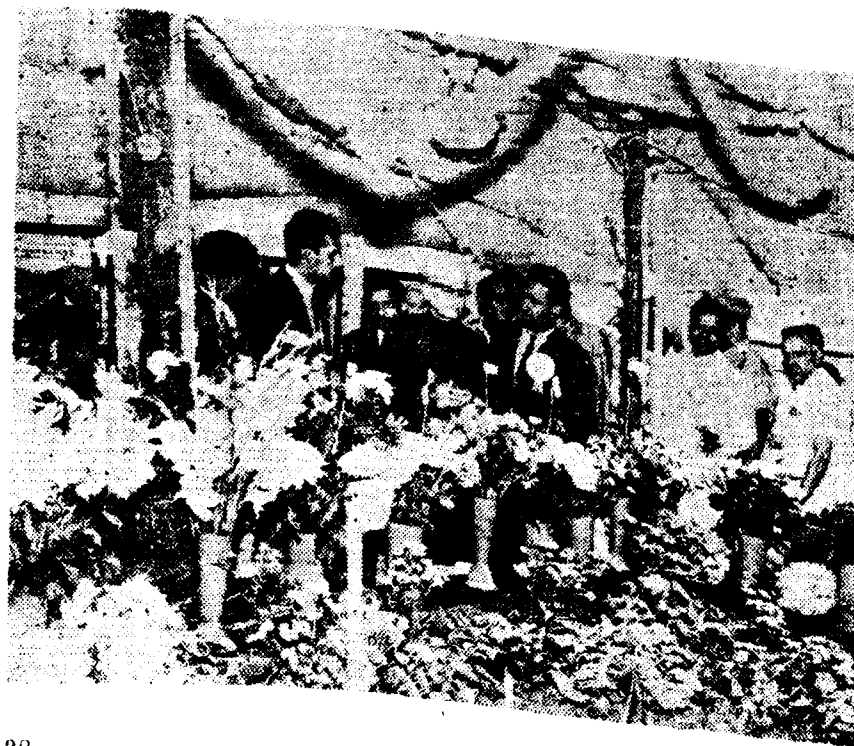
The Government are also aware of the growing traffic, particularly in cities and towns, and have already initiated a number of schemes to ensure free flow of traffic and reduce hazards to the travelling public.

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

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

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

## FLOWER SHOW AT OOTY



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

## THIRUMANOOR—THE BEST PANCHAYAT UNION IN

### TIRUCHIRAPPALLI DISTRICT

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

#### Agriculture.

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

#### Education

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

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

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

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

#### Mahalir Mandrams

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

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

#### Co-operation

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

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

#### Link Roads

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

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

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

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

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

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

### BLACK MONEY—A PARALLEL ECONOMY.

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

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

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

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

### DEDUCTION HAZARDS.

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

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

### CASH TRANSACTIONS

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

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

### PARTNERSHIP OF A STILLBORN CHILD

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

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

### Silver Bricks with 'Valid' Railway Receipts.

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

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

### More Powers And Penalties.

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

### Need For Public Consciousness And Support.

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

There is increasing realisation in all quarters that tax evasion must

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

#### THE CASE OF A FOREIGN IMPORTER OF MICA.

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

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

#### CIRCUITOUS BOOK ENTRIES.

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

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

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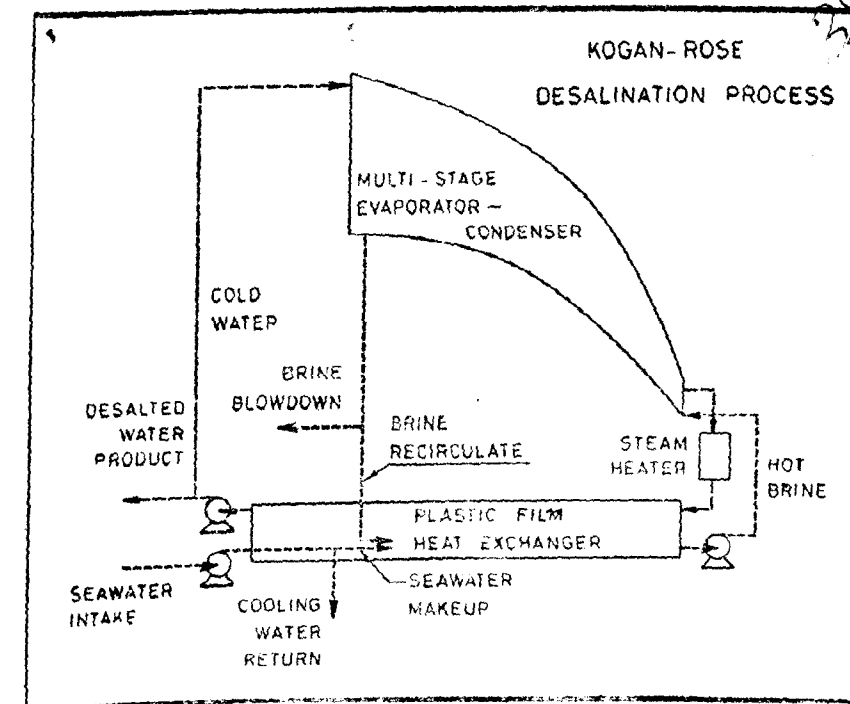
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## New Desalination Process May Be The World's Cheapest



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

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

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

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

total water consumption, could also be in operation.

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

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

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



# FAIR WAGES FOR LABOURERS

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

## Fair Wages

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

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

## Engineering

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

## Sugar

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

## Implementation of Wage Board Recommendation in Tamil Nadu in 1971

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

## Road Transports

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

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

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

## Electricity

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

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

## Leather Industry

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

## Heavy Chemicals

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

## Evaluation and Implementation Committee of Labour Department

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

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

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

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

## WONDROUS WATER DIVINER

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

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

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

With best wishes,

**K. KANDASAMY,**  
Water Diviner,  
(Member of the British Society of Dowers, London).

Ganapathy Post,  
COIMBATORE-6.

PHONE: 31912.

ADV

# DIGESTIVE DISEASES

## CAUSES AND CURES FOR THEM

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

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

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

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

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

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

### GASTROENTERITIS

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

### CHOLERA

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

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

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

### PEPTIC ULCER

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

### HEPATITIS AND CIRRHOSIS OF THE LIVER

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

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

### CHOLECYSTITIS

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

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

### PANCREATITIS

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

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

### ABDOMINAL TUBERCULOSIS

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

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

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

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

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

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

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

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

## COTTON LEAVES FOR CITRIC ACID PRODUCTION

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

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

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

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

pest problem would be lessened, Dr. Mukherjee said.

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

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

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

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

X X X

POST BOX No. 5415

## FOR COMPLAINT OF FOOD ADULTERATION

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

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

## CANE CULTIVATION CATCHING UP IN CAUVERY DELTA

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

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

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

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

## WATERSHED MANAGEMENT BOARD SETUP IN TAMIL NADU

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

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

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

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

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



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

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



## The Tamil Nadu Industrial Investment Corpn., Ltd.

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

### The terms and conditions of assistance

Minimum: Rs. 1,00,000 (for small-scale industries : Rs. 25,000).  
For Technocrats and Rural Medical Practitioners : Rs. 10,000

Maximum: Rs. 25,00,000 (Rs. 2 lakhs and Rs. 1 lakh in the case of Technocrats and Rural Medical Practitioners respectively).

### Rate of Interest

9.75 per cent in the case of major and medium-scale industries.  
7 per cent in the case of units in backward areas and for Technocrats and Rural Medical and Veterinary Practitioners.

8½ per cent in the case of other small-scale industries.

### Initial repayment holiday

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

### Amortisation period

Ranging from 8 to 10 years.

Special concessional terms are available to small-scale industries, technocrats, rural medical and veterinary practitioners.

FOR FURTHER DETAILS, PLEASE APPLY TO

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## POISONOUS BUT INOFFENSIVE SNAKES OF THE SEA

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

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

T. S. N. MURTHY.

### ADAPTATION.

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

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

### Poison.

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

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

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

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

### Long Lines.

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

### EDIBLE.

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

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



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

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

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

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

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

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

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



Heyward, the American Alligator in the Snake Park.

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

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

Source :

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

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

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

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

Two Irulas demonstrate cobras handling at the Snake Park.



A large group of cobras in their offensive attitude.





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TANSI

## FUNCTIONS OF NATIONAL EMPLOYMENT SERVICE IN TAMIL NADU

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

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

### Placement

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

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

### Employment Market Information

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



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

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

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

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

## MULTI-PURPOSE USEFULNESS OF PLYWOOD

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

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

### THREE KINDS OF PLYWOOD

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

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

### MORE USE OF PLYWOOD

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

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

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

## NEWS- PRINT IN INDIA



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### Vocational Guidance And Employment Counselling Programme

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

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

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

power requirements, as and when requested by private industrialists.

#### Occupational research and analysis

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

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

#### Employment Liaison For Burma/ Ceylon Repatriates

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

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

#### Station Apprenticeship Scheme For Technical Personnel

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

- (1) Graduate Engineer—Rs. 250 per mensem.
- (2) Diploma Holders—Rs. 150 per mensem.
- (3) Craftsman—As per the Apprentices Act, 1961.

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

#### State Board For Physically Handicapped

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

#### Staff Training Programme :

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

#### SERVICE TO SPECIAL CATEGORIES OF JOB SEEKERS.

##### (a) Physically Handicapped

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

##### (b) Professional And Executive Employment Office

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

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

#### (c) University Employment Information And Guidance Bureaux

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

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

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

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

#### NEW CORPORATION.

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

(1) Nagaland Paper/Pulp Project with a capacity of 30,000 tonnes per annum.

(2) Kerala Newsprint Project with a capacity of 75,000 tonnes per annum and

(3) Assam Pulp/Paper Project with a capacity of 10,000 tonnes per annum.

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

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

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

#### IMPORTED NEWSPRINT.

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

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

#### RESEARCH.

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

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

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

#### UTILISATION OF WASTE.

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

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

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

#### F.A.O. REPORT.

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

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

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

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

#### ALLOCATION.

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

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

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

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

# PLANNING PROSPERITY TOGETHER

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

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

#### A Modest Beginning.

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

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

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

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

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

Contributions made by each of the six major donors are :

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

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

|                  | US \$          |
|------------------|----------------|
| New Zealand ..   | 55,500,000     |
| United States .. | 28,658,000,000 |

35,828,610,000

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

#### Thousand Projects helped.

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

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



## Increase in Membership

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

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

## Tremendous changes achieved

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

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

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

## Exchange of students

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

acquire new friendships and a wider outlook.

## Maximisation of use of manpower

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

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

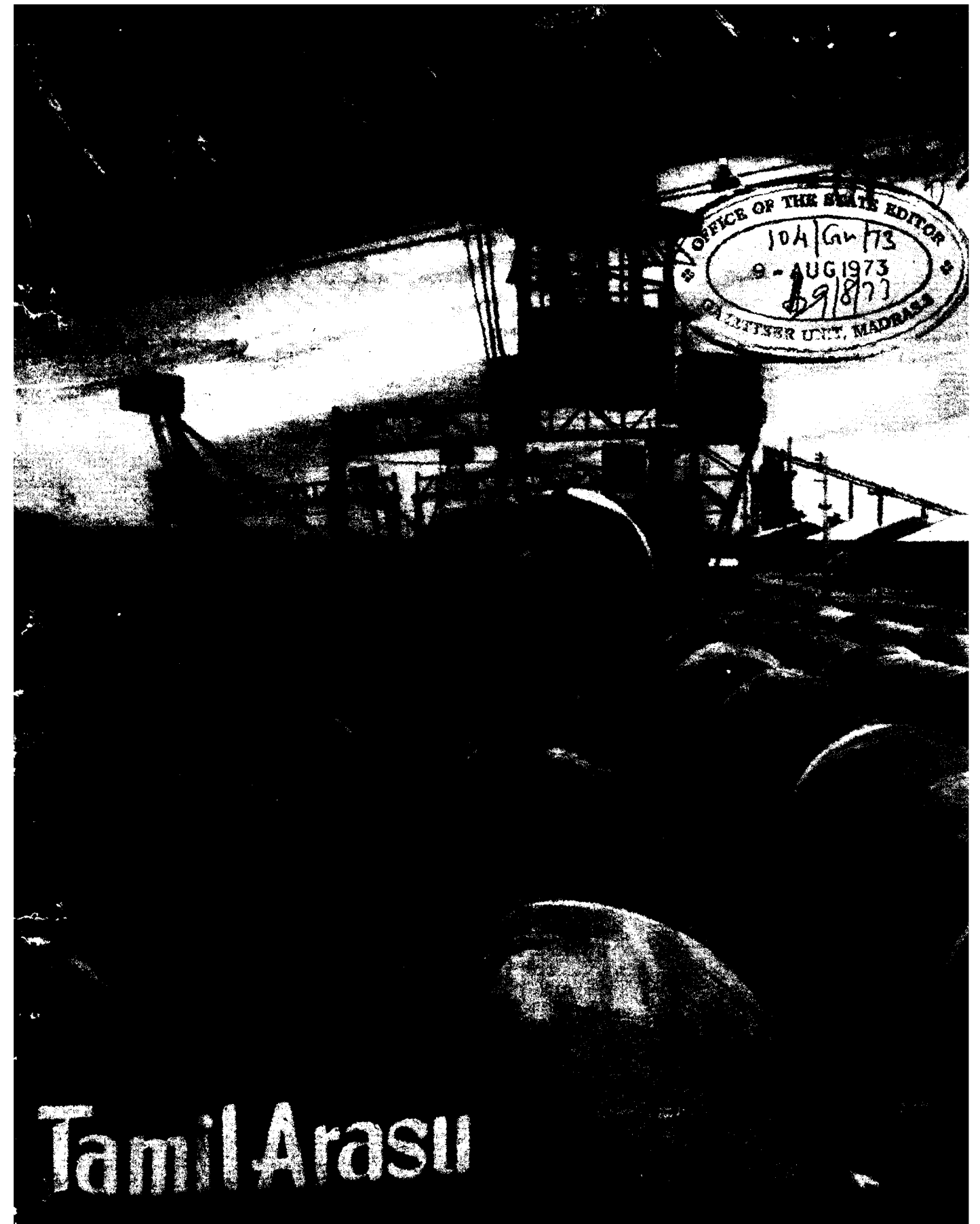
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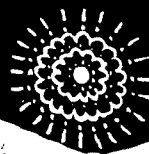
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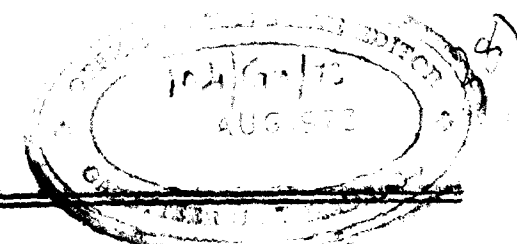


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Issued by Director of Information & Public Relations, Government of Tamil Nadu, Madras-9.  
All Correspondence should be addressed only to the Director of Raffle, Tamil Nadu, Madras-2

\* Subject to issue of 2 series.



## Tamil Arasu

Vol. IV AUGUST, 1973 Issue 2

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



### SILVER JUBILEE INDEPENDENCE YEAR AWARDS.

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



# A FRIEND OF MUSLIMS INDEED IS KARUNA

For long, Urdu lovers were disheartened  
Karuna has made their hearts gladden.  
Poor, helpless, forsaken were they through  
Forward  
Karuna has made them now 'Backward'  
Concessions, Privileges denied to us so long  
Generation so young will benefit for long  
Proclaim this to the citizens of this land O' Anwar  
Beloved is Karuna, the Tamil Nadu Leader

## FRIEND INDEED OF MUSLIMS IS KARUNA

Reigns of Tamil Nadu lies in his benevolent hand  
The country who knows him by the name of  
Karuna  
Stalwart of Fair Play, Justice and Statesmanship  
Hospitable to the core, a Dayalu, O' Karuna  
A word so popular in every home is Karuna.  
Worried and care-worn were the Urdu public  
Cursing their Fate so long.  
Who could forget the mosque 'episode' of T' Nagar  
A matter so delicate handled so ably by Karuna.  
Eye-Clinics opened for the sightless in every  
District.  
For time considerable, I am sightless too.  
Birth days 121 may I wish you celebrate  
For people may prosper so long.  
Proclaim this to the people of the land O' Anwar  
A friend of Muslims indeed is Karuna.

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

## GOVERNMENT ORDERS ISSUED

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

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

# GOVERNOR'S PRAISE FOR TAMIL NADU OFFICIALS

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

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

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

## Sense of restraint

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

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

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

## Student unrest

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

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

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

#### Labour Unrest

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

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

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

#### Village Housing Project

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

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

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

#### Important Subjects in Agenda

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

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

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

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

#### Cream of Devoted Officers

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

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

# WE ARE IN POWER

## ONLY TO BE OF SERVICE

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

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

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

#### More Schemes for Village Improvement :

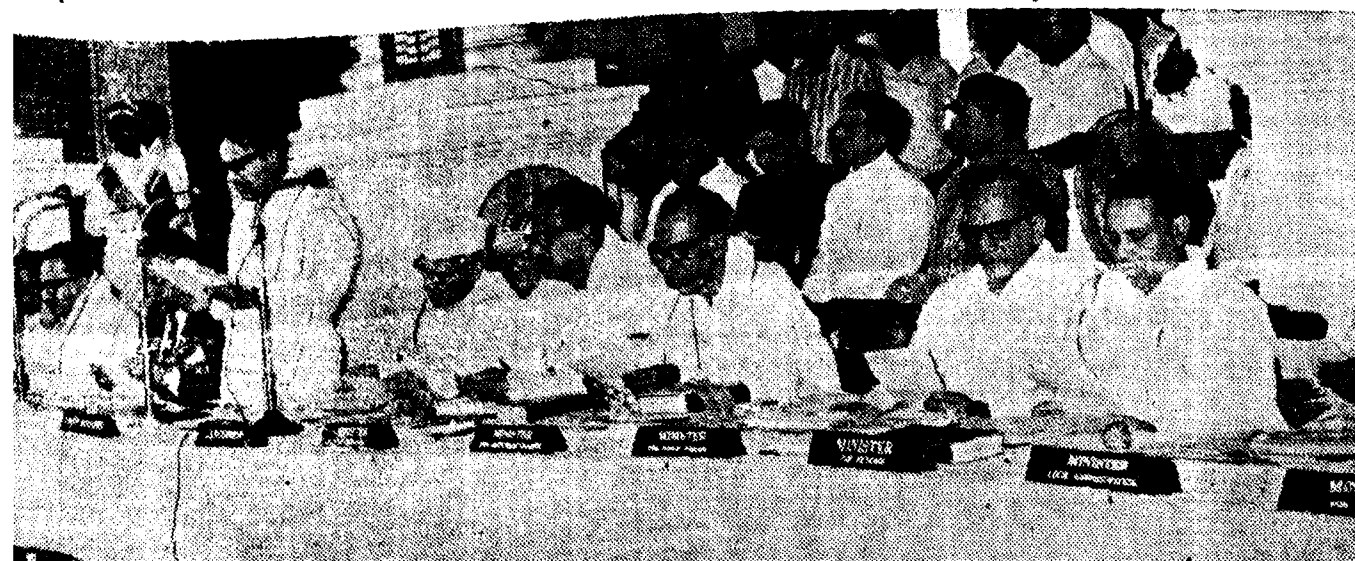
As a matter of fact, we are yet to formulate many more welfare-

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

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

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

C.M.



# WHY INTERMEDIARIES

## FOR LAWFUL CLAIMS?

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

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

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

### Panacea for Political Corruption

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

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

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

### Pressure for Personal Gains :

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

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

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

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

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

### Our Socialistic Measures

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

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

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

### When Misery Struck

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

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

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

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

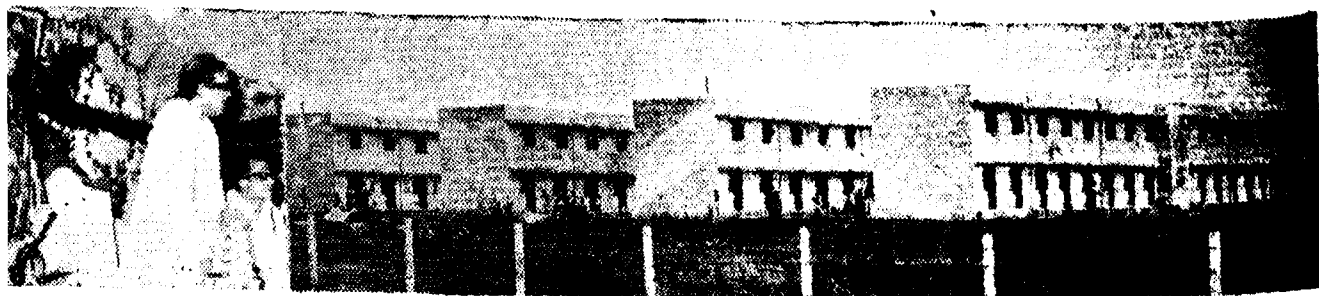
### Violence Must not raise its head

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

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

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





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

## THE EIGHTH 'TEMPLE' OPENED

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

### Voluntary admission of leprosy beggars.

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

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

### Thorough Medical check-up on admission.

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

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



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

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

### Recreation for inmates.

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

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

### Hospital facilities.

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

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

## All Modern Facilities Provided In The Beggar Rehabili- tation Homes

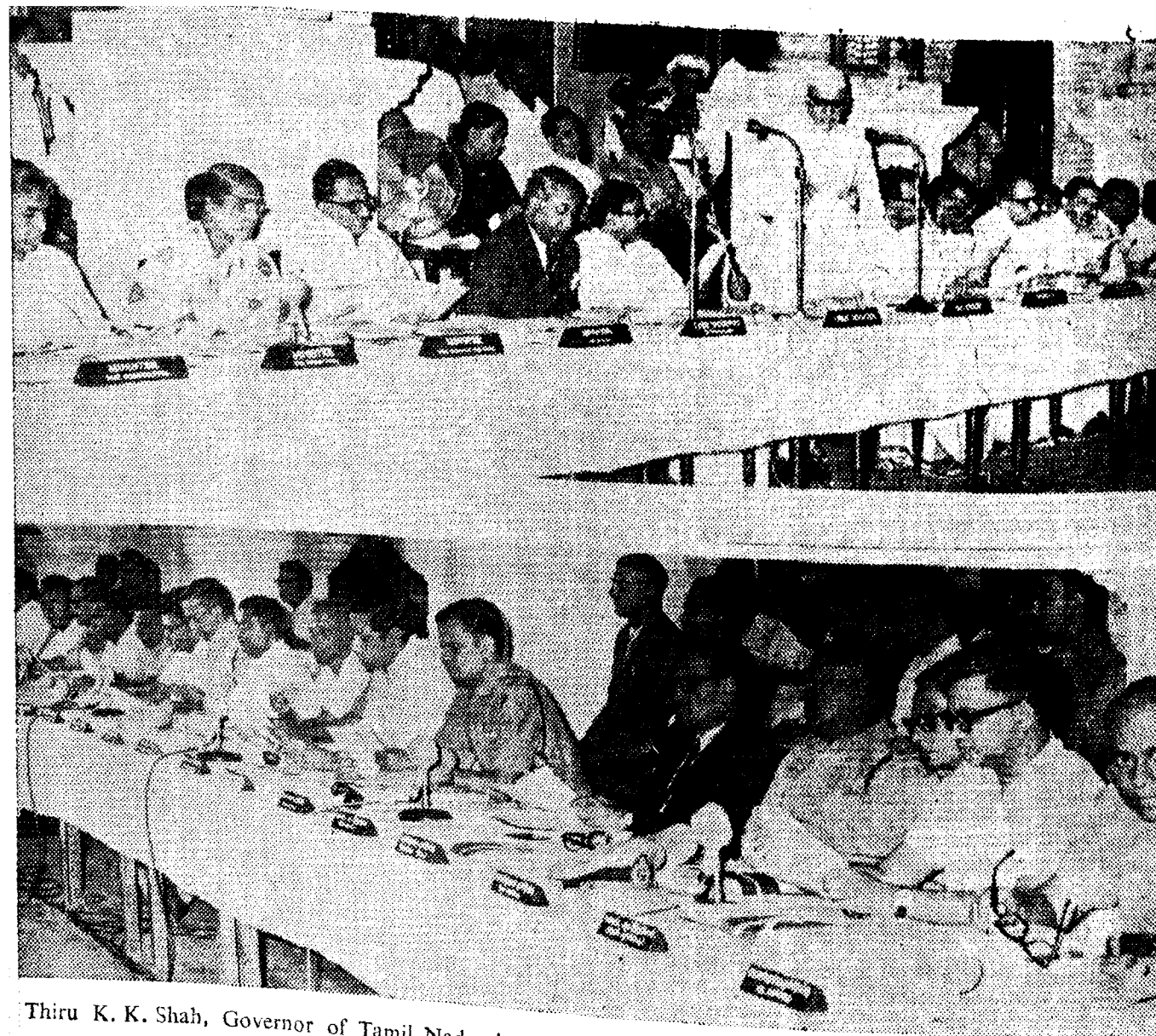
Trained inmates are given appointments in the Homes in occupations such as para-medical work, kitchen work, sanitary workers, peons, Nursing Assistants, etc., and they are given a consolidated salary of Rs. 70 a month in addition to free boarding and lodging and so far nearly 18 such inmates have been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

### Located in vast area.

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

## GREAT STRIDES IN MARINE PRODUCTS

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

Another view of the Collectors' Conference.



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

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

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

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

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

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





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

## WATER-SUPPLY IN MADRAS CITY

### BOLD NEW SCHEMES TO KEEP PACE WITH DEVELOP- MENTS

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

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

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

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

#### Short term measures

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

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

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

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

#### Filtered Water Reservoirs and Connecting Mains :

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

#### Suction Chamber :

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

#### Pump House :

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

## VEERANAM PROJECT A BOON TO THE RESIDENTS OF MADRAS CITY

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

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

#### Delivery Pipe Lines :

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

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

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

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

#### Distribution of water from Southern Headwork.

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

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

#### Utilisation of Southern Headworks for distributing Cauvery water.

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



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

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

#### Future Planning.

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

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

## Redesigning The Entire Distribution System Of Water Supply In The Offing

#### Spillover Schemes.

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

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

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

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

#### New Schemes proposed to be taken up for execution are :

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

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

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

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

By  
S. Rajaratnam.

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

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

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

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

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

#### The R. B. I.'s Role.

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

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

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

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

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

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

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

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

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

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

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

## RECOMMENDATIONS FOR INEXPENSIVE PANCHAYAT ADMINISTRATION

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

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

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

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

### Intensive Auditing

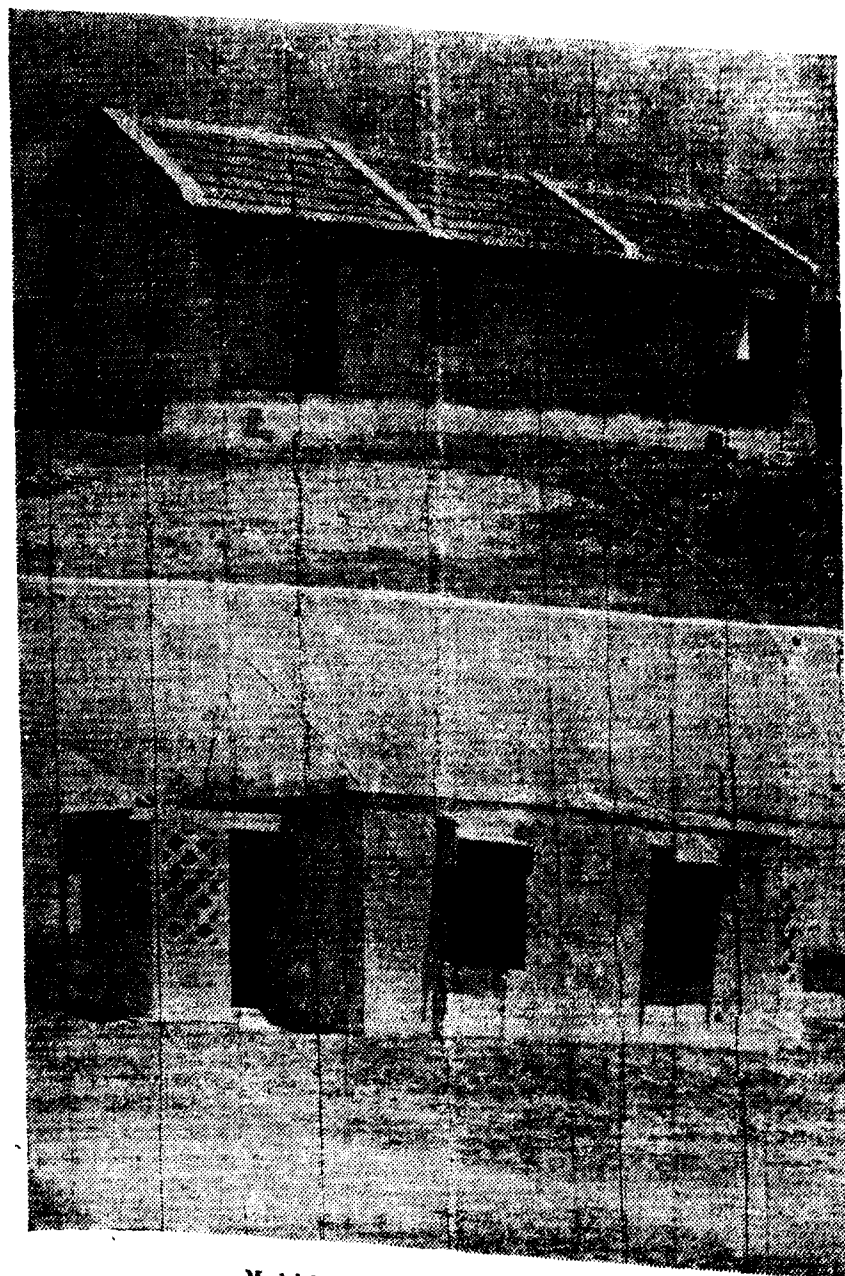
The Commission has drawn attention to the large volume of pending audit objections and recommended the constitution of an efficient accounting organisation and also a high power Committee on the model of the Public Accounts Committee to deal with major audit objections.

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

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

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

# VILLAGE HOUSING PROJECT NEW IMPETUS AND MORE MONEY



Model houses for Village Housing Project.

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

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

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



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

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

## AT MADHAVARAM

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

## NATURE OF THE BLOCK.

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

## MODEL HOUSES

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

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

|                  | Cases. |
|------------------|--------|
| Polal .. ..      | 20     |
| Kadirvedu .. ..  | 24     |
| Soorapattu .. .. | 3      |
| Total .. ..      | 47     |

## LOAN SCHEME

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

## HOUSING PROJECT SCHEME

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

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

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

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



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

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

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

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

Salem.  
North Arcot.  
Coimbatore.

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

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

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

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

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



## Retiring Police Personnel Spared From The Agony Of Retire- ment



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

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

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

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

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

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

as a whole and have ensured safety to the people.

Uncomplaining they endured stress and strain and at the worst even wounds and death. These fifty officers and men have likewise laboured in sun and rain, by night and by day and having laboured thus they have now reached the last phase of superannuation and retirement. I am happy for you and for your families that we have been in a position today to give you the pension orders and other monetary benefits within 6 days of your retirement.

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

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

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

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



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

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

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

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

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

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

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

### Special Efforts Taken

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

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

### Be Careful about the Cash

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

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

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

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

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

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

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

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

# ISSUING RICE ON SUGAR CARDS HAS LED TO POOR MISSING RICE

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

In order to ensure that the stocks moved into the district were properly distributed to the consumers, as an interim measure, the Collector authorised issue of identity slips by village officers to enable the people who had not received the cards to draw their supplies. However, it is found that in the district as a whole, the card population covers nearly 13.75 lakhs of people as against the census figure of about 12½ lakhs. In such a situation, issue of identity slips would further add to the figure. The obvious inference is that there is considerable duplication of cards or inflation of the number of members.

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

## NEW ENUMERATION IN KANYAKUMARI DISTRICT TO ENSURE FAIR DISTRIBUTION

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

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

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

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

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

## TEMPLES IN THE SERVICE OF MAN

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

1. Arulmigu Palani Andavar Arts College, Palani.
2. Arulmigu Palani Andavar Senthamil Kalloori for Women, Palani.
3. Arulmigu Palani Andavar College of Arts for Women, Palani.
4. Arulmigu Devi Kumari College for Women at Kuzhithurai, Kanyakumari district run by Kanyakumari Devaswom Board.
5. Arulmigu Parasakthi College for Women, Courtallam.
6. Arulmigu Ramanathaswami Devasthanam College, Rameswaram.

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

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

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

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

### High Schools and Elementary Schools

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

### Nathaswaram Schools

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



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

1. Arulmigu Dhandayuthapaniswami Thirukoil Nathaswaram School, Palani.

2. Nathaswaram School at Valivalam, Thanjavur district, maintained by Arulmigu Iruthayakamalanathaswami Temple.

Twenty students are undergoing training in Nathaswaram and 10 students in Thavil in the school at Palani and 15 students are undergoing training in the school at Valivalam, Thanjavur district.

#### Schools for the Deaf and the Dumb.

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

#### Orphanages.

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

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

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

3. Arulmigu Vaidhianathaswami Temple, Vaitheeswarankoil, Sirkali taluk, Thanjavur district.

4. Arulmigu Srinivasaperumal Temple, Nachiarkoil, Kumbakonam taluk.

5. Arulmigu Meenakshi-sundareswarar Temple, Madurai.

6. Arulmigu Dhandayuthapaniswami Devasthanam, Palani.

### The Birth Day Gift



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

|                                                                                                                                                                                                                                       | Number of institutions. | Extent of lands belonging to the institutions (wet and dry).<br>ACRES. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------|
| 1 Number of institutions found not under the control of the department as a result of investigation.                                                                                                                                  | 40,247                  | 198,920.53                                                             |
| 2 Number of cases out of item (1) above for which preliminary reports were received from Inspectors (out of this 2,162 institutions have been brought under the control of the Hindu Religious and Charitable Endowments Department). | 6,000                   | 41,664.08                                                              |
| 3 Number of institutions in which temple lands were not in actual possession and enjoyment of the temple but found to be under the enjoyment of private persons.                                                                      | 15,944                  | 26,065.88<br>cultivable<br>lands +<br>656.62<br>urban lands.           |
| 4 Number of cases in which action has been taken to recover possession of lands (S.No. 3).                                                                                                                                            | 880                     | 2,250.41                                                               |
| 5 Number of institutions where possession has since been recovered.                                                                                                                                                                   | 186                     | 717.43                                                                 |

7. Arulmigu Nelliappar Devasthanam, Tirunelveli.

8. Arulmigu Subramaniaswami Devasthanam, Tiruchendur.

9. Arulmigu Vazhaithottathuayyan temple, Ayyanapalayam, Palladam taluk, Coimbatore district.

10. Arulmigu Thirumalaikumaraswami temple, Panphozhil, Tenkasi taluk, Tirunelveli district.

#### CRECHES.

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

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

2. Arulmigu Subramaniaswami temple, Kumaravayalur, Tiruchirappalli district.

3. Arulmigu Ranganathaswami Devasthanam, Karamadai, Avanashi taluk, Coimbatore district.

4. Arulmigu Mariamman temple, Elampillai, Salem district.

5. Arulmigu Dhandayuthapaniswami Devasthanam, Palani, Madurai district.

#### HOME FOR THE OLD.

Last year a scheme was formulated for starting homes for the old from out of the surplus funds of the temples. Based on this scheme, a home with provision to admit 30 persons in it, has been started under the auspices of Arulmigu Dhandayuthapaniswami Devasthanam, Palani and is functioning from 15th February 1973 onwards. Further under the auspices of Arulmigu Meenakshi Sundareswarar temple, Madurai and Arulmigu Subramaniaswami

temple, Tiruchendur two homes for maintaining 20 persons started functioning from 15th March 1973.

#### HOSPITALS.

Realising the necessity to establish hospitals and dispensaries for the benefit of the public including the worshipping public and the pilgrims, 23 Siddha Vaidyasalas and one Allopathy Dispensary are being maintained under the auspices of the temples. Instructions have been issued to the trustees and the Executive Officers of the temples to start more Siddha Vaidyasalas in view of their importance.

#### LIBRARIES.

Libraries are functioning effectively in 204 temples with a view to promote general knowledge besides impressing upon the readers the tenets of Hindu religion. Further suitable instructions have been issued to the affluent temples to start libraries.

#### TEMPLE LANDS.

Besides several useful activities undertaken under the auspices of the temple, action has also been taken at the same time to increase the revenue of the temples by taking possession of their lands and other immovable properties under unauthorised occupation and bringing them into accounts of the temples. The following details will clearly indicate the steps taken by the department in this regard.

The Government have sanctioned the employment of special staff consisting of a Special Officer in the cadre of District Revenue Officer and four Special Deputy Collectors with the necessary ministerial staff to attend the work of gathering particulars regarding the lands owned by the temples in Tamil Nadu and to take suitable action to vest the entire lands in the temples themselves. Additional staff was sanctioned in 1971 to expedite the inspection work to see that all immovable properties belonging to the religious institutions are in their

actual possession and are registered in their names and properly entered in the Property Register and that those properties which are not in the possession of the temples are also brought into account and the income from the property is properly accounted for. Details of the lands, buildings, sites, etc., owned by each temple, are being gathered to see whether they are under proper lease, whether there are encroachments, unauthorised occupation or possession, etc.

As a result of preliminary investigation, the special staff have detected the following :—

The special staff have submitted reports relating to 33,703.86 acres of agricultural lands ; 772.89 acres of urban land and 2,218 buildings belonging to religious institutions which are in receipt of a low rental income.

They have also reported on the profitable utilisation of 6,694.87 acres of temple lands which are lying waste. Action is being taken in this regard by the Departmental Officers.

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# THE COIMBATORE FARM SETS A MODEL FOR THE WORLD

"A well organised farm. A model for many parts of the world", remarked Dr. A. A. Johnson, an expert of the Ford Foundation, New Delhi, who recently visited the P.S.G. Farm near Coimbatore.

Popularly called the Vedapatti Farm the P.S.G. Estate is situated about eight kilo metres west of Coimbatore town behind the Sugarcane Breeding Institute.

The Farm has an area of about 200 acres growing new crop varieties plantation crops, fruit trees and vegetables. All high yielding varieties of rice, sorghum (jowar) bajra are first tested at the Farm. With the co-operation of the Farm operators the experts of the Agriculture University and the Agriculture officers of the State Agriculture Department use the Farm as a Demonstration Farm.

Not a single scientist, expert, administrator, Minister or Governor has failed to visit this Farm. In fact every specialist of the Ford and Rockefeller Foundations and any foreign visitor who counts make it a point to see this farm. It is no wonder that it has come to stay as a model farm not only for India but for the whole world. The visitors' book containing the appreciations

of a galaxy of visitors testifies the Farm was an attraction to top scientists and experts of more than 24 countries in the world.

Thiru G.R. Govindarajulu, the gentleman farmer, who is the architect of the P.S.G. group of Industries, is managing the Vedapatti Farm. The Farm was developed to its present fine state by the American educated Thiru G.R. Varatharajan who died very recently in his prime of life.

The Farm operators were the first to introduce the Blue dawn rice from America over a small area. Today the rice variety has become one of the popular rice varieties propagated by the Agriculture Department.

The Farm has many firsts to its credit. It was here that chicory was grown for the first time. The farm was the first in the state to have grown maize on a commercial scale. The farm owners were again the first to grow potato varieties in the plains and cocoa. They were the first farm family to grow Anabie-Shahi and other grape varieties. Mulberry plants are the latest new crop introduced in the Farm.

As for cotton, the latest long-staple varieties of Sujata and Suvin have found a place in the crop pattern

M.C.U. 5 Cotton bred in Tamil Nadu has brought a cotton revolution in the State.



The Vedappatti Farm near Coimbatore is a well-organised one and a model for many parts of the world. It was here that chicory was grown for the first time. The farm was the first in the State to have grown maize on a commercial scale. Thus the farm has many firsts to its credit.

of this model farm. These varieties are of equal quality with imported Egyptian cotton varieties. Another cotton variety M.C.U. 5, which is equal to a Sudan cotton variety, is grown over a large area of the Farm. It is a favourite variety with cotton (textile) mills as it blends with all types of cotton. The farm operators have also succeeded in growing it as a rain-fed crop although it is an irrigated variety.

## A unique irrigation system followed.

Above all, P.S.G. Farm has a unique irrigation system with underground pipe lines connected to an irrigation wells grid and an overhead tank system. Called the syphon system, the irrigation method has attracted and won the commendation of experts and scientists, the press and the public.

Several American Farm Leaders and their wives have stayed at the Farm when Sri G. R. Govindarajulu and his brother played host to the farm programme participants. They were all fascinated by the loveliness of the farm and its salubrious climate. They also made the farm a place for study and education.

Thiru Norris E. Dodd, the Director-General of F.A.O. who visited the farm, wrote that the P.S.G. Farm was



A luxuriant crop of C.S.H-2 Jowar ready for harvest at the farm.

"a well planned and laid-out farm in such a high state of cultivation with water, good seed and good management". No wished "every farmer could spend some time in this farm".

## A model farm for the world.

The Farm which is a model for farmers can be better understood and appreciated through the words

of Mr. Earle K. Rambo of the U.S. Agriculture Department, who was a former Irrigation Adviser to the Indian Government, "I saw enough evidence of sound judgment and good planning to convince me that the fields were not green by accident. That those green fields were made possible inspite of the dry surrounding country-side, is evidence enough that much could be learned from the operators of this Farm".

Source : S. Sundaram

Read

# Tamil Arasu

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Tamil Nadu Government has streamlined the system of distribution of fertilisers through Co-operatives to enable farmers to get the vital agricultural input in time and to eliminate malpractices. The new system has come into force from the commencement of the current agricultural season. According to the new system, the Tamil Nadu Co-operative Marketing Federation is the wholesaler for the entire State except Thanjavur district where the District Marketing Federation is to act as the stockist.

## AGRICULTURAL CREDIT SOCIETIES— EXCLUSIVE FERTILISER RETAILERS

About 3,200 Agricultural Co-operative Societies in Tamil Nadu have become the exclusive retailers for pool fertilisers, while in the case of non-pool fertilisers, private trade also will be in the field. In the course of a year, all the 5,000 societies will start retail sales, thereby bringing fertilisers nearer to the farmers in the villages covered by them. A strong directive have been issued to ensure that there is an agricultural credit society functioning as fertiliser retailer in a radius of not more than 3 to 5 miles. It is hoped that the combined sales of these societies will be of the order of Rs. 25 crores this year (1973-74) as against Rs. 9 crores in 1972-73.

In the light of complaints received from farmers about delay in receipt of fertilisers and other irregularities in the distribution of fertilisers, the Tamil Nadu Government has streamlined the system of distribution of fertilisers through co-operatives to enable farmers to get the vital agricultural input in time and to eliminate malpractices. Under the new system, which has come into force from the commencement of the current agricultural season, the entire distribution of pool (imported) fertilisers is entrusted to the Tamil Nadu Co-operative Marketing Federation and the Thanjavur Co-operative Marketing Federation.

A  
DEPOT  
IN  
EVERY  
THREE  
MILES  
RADIUS

The former federation will act as wholesalers for the entire State except Thanjavur District where the district Marketing Federation will act as the stockists.

The supply will be effected by the two organisation direct to village credit societies which will function as retailers. The two federations will also continue to distribute non-pool (indigenous) fertilisers. Private traders and panchayat unions were also engaged in the distribution of pool fertilisers hitherto and this is being eliminated.

### Proper Check.

The Government has asked the two federations to keep track of the fertilisers (both pool and non-pool) till they reach the retail point. Officers deputed by District Collectors and the Agricultural Department will check the distribution at the village society level. A Co-operative fertiliser committee will be formed in each district with the Collector as Chairman to regulate the supplies on the one hand and on the other, to ensure timely settlement of accounts by the societies.

The State's requirement of imported fertiliser for 1973-74 is 3.17 lakhs tonnes of nitrogen, 1.03 lakhs tonnes phosphorus and one lakh tonne of potash.

### Regional Offices Opened.

Thus, the Tamil Nadu Co-operative Marketing Federation and Thanjavur Co-operative Marketing Federation will handle nearly 60 per cent of the fertilizers made available for the farmers in the State as against 25 per cent last year. This is due to the allotment of the pool fertilizers entirely to the Co-operatives this year. The Tamil Nadu Co-operative Marketing Federation, whose main business is fertilizer distribution, has opened 10 regional offices for this purpose in all the districts except the Nilgiris, Kanyakumari and Thanjavur.

### Assessment of Requirements.

The following instructions have been issued in this behalf: The agricultural credit societies, which will be the retailers for both pool and non-pool fertilizers, will assess the total requirements of fertilizers variety-wise for a year and send before the end of April a statement to the Regional Officer of the Federation under copy to the Central Bank and Marketing Society concerned. The statement is to indicate also the quantity required in respect of each variety of fertilizers every month and the total for the whole year. The assessment will generally be based on the actual sales in the previous year with the addition of anticipated increase in the coming year. The Central Bank and the marketing society will send their recommendations to the Regional Officer of the Federation before 15th of May. The Regional Officer will place the statements of requirements of all the retail societies before the District Co-operative Fertiliser Committee (consisting of the District Collector as Chairman, the Chairman and the Executive Officer of the Central Bank, the Regional Joint Registrar, the Deputy Director of Agriculture and the Regional Officer as members) and submit the same to the Federation with the views of the Committee.

### Retailers.

While offering its recommendations of the statements of annual requirements of each agricultural credit society functioning as retailer, the Central Bank will specify the maximum limit up to which the



Thiru S. Ramachandran, Minister for Transport, distributing the land assignment deeds to the landless at Cuddalore on 6th July, 1973.

society can be permitted to keep stocks at a time. The limit may be fixed with reference to the seasonality in the area of the society and other factors.

### Within Easy Reach.

Steps are being taken to ensure that there is an agricultural credit society functioning as retailers for a radius of not more than 3 to 5 miles. Wherever necessary, additional agricultural credit societies will be got appointed as retailers. All the viable and potentially viable agricultural credit societies should function as retailers. Where a society is dormant or mismanaged, the neighbouring society will be asked to serve the area of the former society till it is revived or its affairs are set right. If warranted, the opening of a depot by the neighbouring society may also be considered.

credit society may be asked to open a depot.

### Indents

Apart from the monthly indents, ad hoc indents may also be sent when there is an unforeseen and urgent demand for fertilisers. The marketing society will forward the copy received by it to the Regional Officer of the Federation with its recommendations within three days from the date of receipt, failing which the Regional Officer will act on the copy received direct. The marketing society will maintain a Society-wise Register for entering the details of the indents and its recommendations, before forwarding its copies of the indents to the Regional Officer of the Federation.

### Purchase of Fertilisers.

So far as non-pool fertilisers are concerned, the private trade is also in the field. With a view to securing the advantages of large scale purchase and avoiding competition among the co-operatives, it has been decided that only the two Federations should purchase non-pool fertilisers and distribute them through the marketing societies and agricultural credit societies. The question of independent wholesale business by the



marketing societies does not arise even in respect of non-pool fertilisers, as all the retail societies will be distributing only the fertilisers supplied by the Federations. The marketing societies will continue to function as sub-wholesalers under the Federation for the distribution of non-pool fertilisers also.

As regards pool fertilisers, the Federation will, on receipt of allotment orders from the Collector, remit the initial payment, open the letter of credit and lift the stocks for distribution. The marketing societies will function as sub-wholesalers in the case of pool fertilisers as also in the case of non-pool fertilisers. The entire stocks of pool and non-pool fertilisers will thus belong to the Federations and be held by the marketing societies and the agricultural credit societies on consignment basis.

#### Sales Against Loan

The agricultural credit societies will distribute fertilisers towards the kind portion of the cultivation loans sanctioned by them as well as for cash. The cash sales may be both to members and to non-members. The societies should

endeavour to enroll non-members intending to purchase on payment of cash as 'A' class or 'B' class members. The quantity to be distributed per farmer (member or non-member) will be with reference to the instructions, if any, that may be issued by the District Collector, as far as pool fertilisers are concerned. While the non-pool fertilisers may be completely reserved for sale to the members only against kind portion of the loans or for cash the distribution of pool fertilisers to the members and non-members may be regulated with reference to the instructions of the District Collector.

#### Role of the Central Banks :

The Central Banks have been requested to ensure that the societies receive and distribute the fertilisers properly, remit the cash sale proceeds atleast once a week, send the weekly sales statement promptly to enable to Central Banks to adjust promptly to the account of the Federation the sales made against kind portion of cultivation loans, keep the accounts-up-to-date and send the fortnightly stock statement in time.

Supervisors have been appointed by the Federations to inspect once a fortnight the fertiliser accounts of the societies and verify the stocks, the remittance of cash sale proceed and submission of the returns. They will particularly check the sale bills with reference to the quantity sold as against the extent and crops cultivated to ensure that all the sales are genuine.

Wherever necessary, the Central Banks may also open additional branches. About 80 per cent of the fertiliser sales represents sales towards kind portion of the cultivation loans issued by the Central Banks. The Central Banks have launched upon a larger credit programme. The allocation of pool fertilisers for sale only by the Co-operatives will help this programme as also enlargement of the membership of societies. The Central Banks have been requested to pay their special attention and ensure that the agricultural credit societies play their role effectively in the revised fertiliser distribution system. In fact, the Central Banks have to play a very important role in the revised system of fertilisers distribution.

the  
living  
past

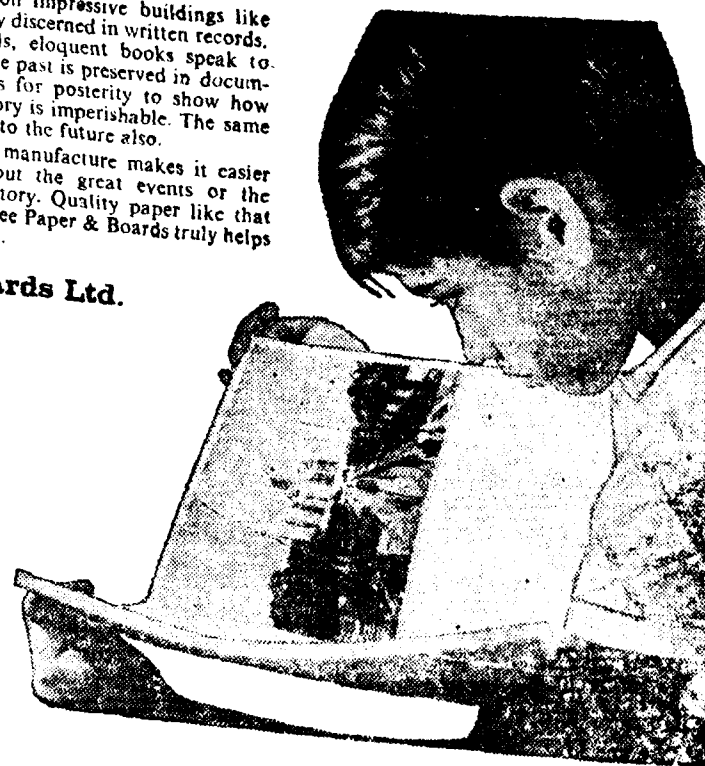
The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also. Modern paper manufacture makes it easier to write or read about the great events or the mighty makers of history. Quality paper like that produced now by Seshasayee Paper & Boards truly helps the study of the living past.

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பிரியின்மை, செல்வம், விளைவு, இன்பம், ஏழ்மை  
அணியென்ப நாட்டிற்கு இவ்வைந்து-குறள்.

The essential features of a good State are: (i) the people should be protected from diseases; (ii) there should be wealth from natural sources; (iii) there should be production of agricultural and other wealth; (iv) people should enjoy life from artistic and cultural activities; and (v) defence against enemies. These five essential features are the ornaments of a State according to the Tamil sage, Thiruvalluvar.

In order to ensure all these five essentials to its people, the State should have to undertake different kinds of surveys. Most of the surveys are inter-twined, the chiefest being Land Surveys.

Geodesy, a branch of mathematics dealing with the figure and area of the earth or large portions of the earth, is one of the most important such surveys that are needed for planning for the welfare of the State. Geodesy is not only essential to ensure the defence of the State against outside intrusion but helps in having a graphic picture of our terrain and the manner in which the topography of the terrain affects the weather, etc., conditions.

#### System of triangle

The basic geo-metric figure from which the geo-detic map of a terrain can be built up is a triangle. It is why when we survey a terrain we also say it has been "triangulated".

The Survey of India covers the terrain with very large triangles whereas the Tamil Nadu State Survey adopts much smaller triangles as the purpose of the latter is to arrive at the extent of each individual holding which is the unit for Revenue Administration and compile a cadastre (Land Register). The triangles in the detailed field surveys undertaken by States are mainly formed by measuring the lengths, breadths and fixing the correct positions of the other required points by taking the offsets on the nearest base of a triangle by using a simple instrument called the cross-staff. The accuracy of the measurement of these small "Cadastral survey triangles" is ensured by

## A Brief Note On The Importance Of Nungam- bakkam Obser- vatory

By  
**S. GANESAN,**  
Jt. Director of  
Survey and Land Records.

comparing the measurements with those obtained by the State Surveyors triangulating the bigger blocks like the Main Circuits (two or three numbers in a Taluk) and the Village Circuits with the help of the theodolite, which consists of circular discs, both horizontal and vertical, on which the 360° of a circle are divided into degrees, minutes and seconds and are provided with verniers to have the required minimum readings. There is a telescope hinged to the discs which can rotate horizontally a full circle, and vertically for about half the circle. The State Survey Village Circuits are compared to the Survey of India data to ensure accuracy.

It was the Britishers who first conceived the idea of triangulating the terrain adopting trigonometry for calculations and they attempted their first triangulation in Madras State and it was in the City of Madras that the first base line was measured on 10th April 1802. The Standard Meridian of Madras was taken as the basis for the national survey mapping.

#### Madras - Cradle of the Survey

Thus, Madras has been the Cradle of the Survey of India which, in turn, was the basis of the trigonometrical surveys of the Britishers who were the pioneers in trigonometrical survey.

Why has this mantle fallen on the neck of Madras?

In his learned article "Astronomical Survey Key to all Surveys", in Land Surveys, Tamil Nadu, published a Souvenir on the occasion of the opening of Madras Regional Centre of the Institution of Surveyors (India) in 1969, Thiru S. Singarajan, M.A., M.Litt., Director of Tamil Nadu Archives, observes:

"The geographical position of Madras observatory is such as to render it a most important link as regards other observatories in opposite hemispheres of the globe. It is precisely midway in latitude between St. Petersburg (Leningrad) and the Cape of Good Hope, the extreme limits on either side of the equator. It is also nearly a quarter of the earth's

circumference eastward of Greenwich while the National observatory at Washington is about the same distance to the west of the Royal Observatory. Hence many of the important occasional phenomena invisible elsewhere may be recorded at Madras, when otherwise they must be altogether lost. Further, its situation within the tropics renders it especially adapted for observations of planets and comets in either hemisphere, whether with meridian or equatorial telescopes. The work of the observatory has not been limited exclusively to scientific objects, but it has, through its connection with the Great Trigonometrical survey and by its notification of the local time by time ball or gun firing, proved of direct practical benefit while it has indirectly afforded important assistance in the prosecution of the hydrographic survey of the coasts of the Indian Peninsula. It has also been found greatly useful in carrying out the Wind Power Survey for growing crops by harnessing Wind Power for irrigational purposes".

Thus, the Nungambakkam Observatory is internationally important due to its ideal geographical position with several historic survey monuments. Theodolite was first set within the campus of this observatory to commence the Great Trigonometrical Survey (G.T.S.) in India. The first base line was measured here and it forms the backbone for the General Mapping of the World (Atlas-Making).

It is indeed with great pleasure that we, therefore, expect the arrival of Col. K. L. Khosla and Col. N.K. Sen, Geodetic Survey Experts in the Survey of India on the 23rd of this month in Madras and we look forward to their paying a visit to the observatory at Nungambakkam. They will, of course, be delighted to answer our queries regarding this great and practically important science of Geodesy.

It may not be out of place to mention here that the Initial Cadastral Survey in India was initiated in 1002 A.D. by Raja Raja the Great, the founder and Emperor of the Chola, Dynasty in Thanjavur of Tamil Nadu State

and that Survey is still called the Celebrated Survey of 1002 A.D. as is seen from the epigraphical evidence available at the Big Temple in Thanjavur town. The accuracy of this Raja's survey is borne out by the fact that the land as small in extent as 1/52428800000 of a veli was measured and assessed to land revenue.

### The Co-operative Autorickshaw in Coimbatore.

None of the 950 autorickshaws in Coimbatore City go without grumbling if the passenger paid the metered fare rate. But the 24 co-operative sector autorickshaws smilingly accept the fare. In automobile passenger transport also the co-operative sector in Coimbatore made a mark as it has in agricultural and consumer commodities.

The Autorickshaw Co-operative Society in Coimbatore was formed in the second week of January 1972, with Thiru Manickavasagam as its President. About 50 members joined and paid each a share of Rs. 10. The finance for the purchase of 24 autorickshaws to the members was got from a nationalised Bank at the rate of Rs. 11,750 per autorickshaw. The Chief Minister of Tamil Nadu gave away to the 24 drivers as May Day gift. Now it has 150 members in its fold.

In the course of their earnings, each driver paid Rs. 8-95 per day towards the repayment of Rs. 11,750 spreading for four years. Almost all regularly repaid their daily instalments.

These 24 co-operative autorickshaws became the hope for the travelling public to go on a metered fare without any unexpected quarrel. Others are also slowly falling into this mode of operation.

Source : F.P.O., Coimbatore.

### Free Medical Aid To Dissuade Drinking Habit.

Effective enforcement of extending free medical facilities to all the poor and needy citizens of India is being carried out by the Government. Voluntary efforts also join hands with this task to cover the vast area. The prohibition council of Coimbatore Gandhi Peace Foundation Centre is one such to provide free medical aid to the poor harijans and muslims of Kempatty colony.

The prohibition council under the leadership of Dr. P. R. Subbaiyan, with the help of two other doctors gave free medical aid to 7,500 poor people of the slum area in the 30th and 6th wards. With the preparation made by the Secretary of Gandhi Peace Foundation Centre, Thiru C. B. Sadagopal, the doctors visit the municipal colony and the slum thrice a week. They attend to the patients and supply free medicines in addition to the free consultation. Though initially few harijans benefitted in it, slowly muslims, Christians and others visited and accepted the benefit.

The idea of extending such a voluntary help struck to the President in one of their meetings to combat the drinking habit. As an incentive to those poor who abstain from drinking, this free medical aid was introduced. Later the council also included the alcohol addicts so as to enlighten them on the evils of drinking. Because of this, 50 persons voluntarily confessed in the various meetings and promised to give up the drinking habit. So far Rs. 400 worth of medicine were given to 7,500 people. So much encouraged by the result, the prohibition council has extended its scheme to two more slums in Coimbatore.

F.P.O., Coimbatore.

## MACHINE TOOL INDUSTRY IN INDIA

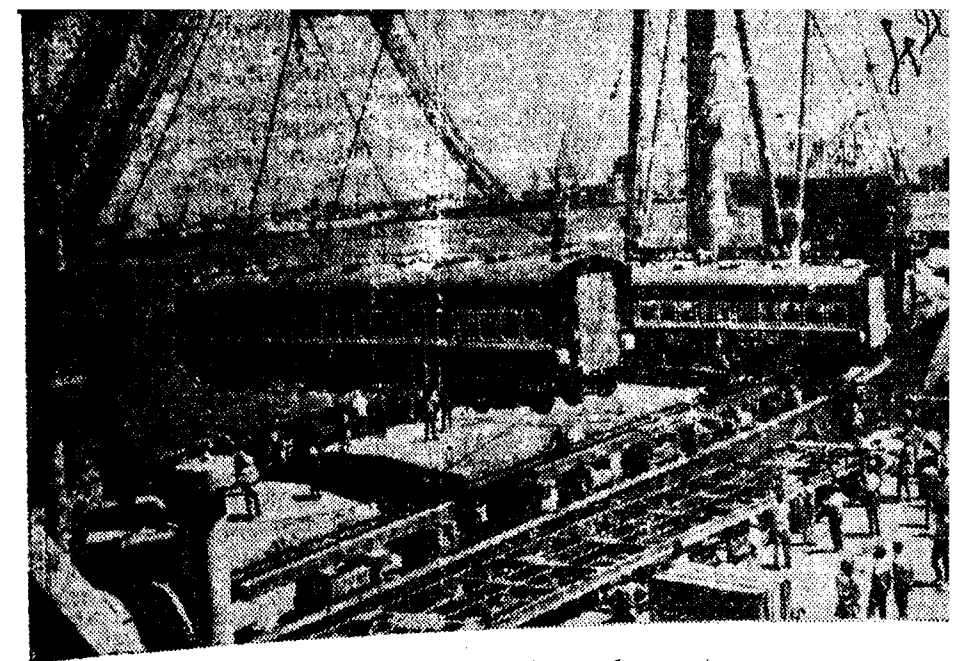
The Machine Tool Industry in India has achieved spectacular progress, both horizontally as well as vertically over the past twenty years. Not only the production has gone up, the range of products too has widened considerably. The industry, which was confined to only a few places twenty years ago, has now spread to many centres in the country.

The value of production of machine tools spurted from less than Rs. 1 crore in 1955 to over Rs. 50 crores in 1972.

The Machine Tool Industry provides the necessary tools for the rapid development of engineering and machine building industries. The importance of the industry in the industrial development programme of the country is recognised by the Government and high priority has been accorded to this industry in the various five year plans.

### HISTORICAL BACKGROUND

History of manufacture of machine tools in India can be traced back to the earlier years of the twentieth century when one or two small manufacturers of common engineering items like agricultural implements felt the necessity of manufacturing simple types of machine tools like cone pulley lathes and drilling machines pri-



Loading of Passenger Cars at the Madras Harbour for export to Taiwan Railways.

marily for their own use. During the first world war, a number of small workshops undertook the production of machine tools suitable for making shells and their manufacture continued throughout the war. It was only in 1935 that an organised manufacture of machine tools like cone pulley lathes was undertaken on commercial basis. Thereafter, manufacture of machine tools received considerable impetus specially during second world war when supply of foreign machines was stopped. During the six years of war, nearly 20,000 machine tools valued at Rs. 6 crores were manufactured by 215 manufacturers.

### DEVELOPMENT OF MACHINE TOOL INDUSTRY

Planned progress of development for the industry started during the first plan period, i.e., 1951-56. The machine tool industry being capital intensive and the gestation period being long, Government felt the necessity to undertake the manufacture of machine tools in the public sector also. To cater to the developing demand for machine tools comparable in design and accuracy to those available from other industrialised countries, Government decided to supplement the efforts of the private sector and established during this period two State-owned machine tool factories, one at Ambarnath and the other

at Bangalore. Ambarnath factory, known as Machine Tools Prototype Factory, was essentially meant to manufacture special types of machine tools to meet the requirements of defence. The Hindustan Machine Tools, Bangalore, popularly known as H.M.T., was planned for a capacity of 1,200 general purpose machine tools per year and went into production at the end of 1954. At the end of 1956, the level of production stood at Rs. 1.20 crores.

The Second Plan period, i.e., 1956-61, being oriented towards industrial development, gave a special impetus to the machine tool industry. In 1956, a Machine Tool Committee was appointed to recommend the programme of development of machine tool industry. A programme of manufacture was also indicated to the major units then in production. In the context of the plan framework, several units in the private sector entered into foreign collaboration for the production of various categories of machine tools and this was a development with far-reaching consequences to the country. During this period, Government took over Praga Tool Corporation at Hyderabad so that the facilities available in that factory for the manufacture of machine tools could be expanded substantially to meet the increased requirements. During the Second Plan, production rose from Rs. 1.20

crores in 1956 to nearly Rs. 6.70 crores in 1960.

To cater to the heavy industrialisation programme during 1961-66, i.e., the Third Plan period, it was decided to develop the machine tool industry on a priority basis. Apart from doubling the production capacity of existing unit of Hindustan Machine Tools at Bangalore, three more units each with a production capacity of 1,000 machine tools a year, were set up at Pinjore, Kalamassery and Hyderabad. The expansion programme of the Praga Tools Corporation was also completed and new types of machine tools and accessories were introduced.

With a view to meet the requirements of heavier types of machine tools, steps were taken to set up a Heavy Machine Tool Plant along with the Heavy Machine Building Plant at Ranchi. This factory has already gone into production. Necessary encouragement was also forthcoming from the Government to the private sector to take up the challenge. This brought about a rapid growth of the industry in private sector also. Almost all the existing units expanded and many new units were set up. At the end of the Third Plan period, i.e., in 1966, the industry achieved a production level of Rs. 28.5 crores.

Since 1966, the industry has been going through an intense phase of diversification. To cover the gaps in product range, almost all the major units have already taken up the manufacture of new products. Government also took steps in this connection and a public sector unit, namely, Machine Tool Corporation, was set up at Ajmer, primarily to manufacture different types of grinding machines with assistance from Czechoslovakia. This unit has already gone into production.

The present installed capacity in the machine tool industry is nearly Rs. 70 crores a year. The production target of Rs. 65 crores is likely to be achieved by 1973-74 and the installed capacity would then go up to Rs. 80 crores.

### Small-scale Sector

Apart from the organised sector, small-scale sector also occupies a very important place in the machine tool industry today. The units in the small-scale sector are manufacturing a wide range of simple machine tools thereby meeting a vital need of the country particularly in the low price range. Today more than 1,000 small-scale units are manufacturing machine tools.

### Product Range

The range of products covered by the indigenous manufacturers has also increased substantially. During the First Plan period, the main concentration was on manufacturing more common types of general purpose machine tools like lathes, shaping machines, drilling machines and hacksaws. The indigenous industry today is in a position to supply even very high capacity presses and sheet metal working machinery of almost any kind, size and capacity. The industry can also produce highly sophisticated machines like thread rolling machines, internal grinders, centreless grinders, crankshaft grinders, vertical spindle grinders, tapping machines and hydraulic equipment.

The industry is today capable of offering turn-key projects for the manufacture of general purpose machine tools like lathes, drilling machines, milling machines and shaping machines. It can cover market survey, project report, erection of machinery, supply of major part of the capital equipment, product design, training of personnel and establishment of production. In the field of more sophisticated machines, licence has been granted for a mini-chucker to a famous British manufacturing group.

### Research and Development

Machine tool units, both in public and private sectors, have regular research and development activity. Major inplant research and development activity is done by Hindustan Machine Tools. Starting with the turret lathe seven years ago, they have developed the designs of quite a few machines like heavy duty lathe, low-cost simple lathe, ram turret milling machine, models of general purpose milling machines,

a small cylindrical grinder and a mini-chucker. In addition, they have also developed a series of lathes and radial drills for the export market.

The Central Machine Tools Institute, Bangalore, is also engaged in basic research and development of new designs. The activities of the Institute include: Design and development of machine tools, standardisation and rationalisation, machine tools testing and training of Design and Development Engineers.

The National Committee on Science and Technology is also engaged in Research and Development in the machine tool industry.

### Export

India, as a comparatively newcomer in the field of machine tools, has to face an uphill task in the highly competitive international market for machine tools but there are very favourable factors such as availability of raw material and low-cost labour which should make India one of the leading nations exporting machine tools.

The export of machine tools which was barely Rs. 15 lakhs a decade ago, stood at nearly Rs. 3 crores last year. Australia and New Zealand have emerged as major buyers of Indian machine tools. Recently in some of the trade agreements concluded with East European countries, machine tools have been included.

### Future Trends

The machine tool industry is in an intense phase of diversification and will be going for the manufacture of more sophisticated and special purpose machines. With the rapid development of electronic industry, machine tool industry will be adopting more and more electronic controls on machine tools. A beginning in this direction has already been made. Digital Read-outs have been developed which can be fitted to any machine. Provision of numerical control system of controls in machine tools will certainly help in getting consistent repeatable accuracy, higher machine utilisation and saving of jigs and fixtures.

# Soviet-Indian Collaboration in Ferrous Metallurgy

The author of this article is Oleg Grigoriev, Giprometz executive (Giprometz is the leading Soviet institute for steel plant designing), who took part in designing the Bhilai and Bokaro works and many times came to India as an adviser. For a long time Grigoriev worked in the Central Engineering and Design Bureau in Ranchi where the bulk of Indian steel designers are engaged.

Not long before his tragic death, which deeply grieved all of India's friends in the Soviet Union, Minister of Steel and Mines, Mohan Kumaramangalam, said in an interview that by the end of the 1974-1979 Five-Year Plan the manufacturing capacities of all Indian steel mills would reach 18,500,000 tons of steel a year. The projects of Soviet-Indian co-operation—Bhilai and Bokaro—would account for nearly 10,000,000 tons, he emphasised.

### Fully Appreciated.

As a specialist in ferrous metallurgy I fully appreciate the difficulty of reaching this target. At the same time, knowing the iron and steel production growth rates in the country, I am sure that this task will be carried out. In 1947 India made only 1,000,000 tons of steel, whereas in 1971 its production topped 7 mln. tons. My confidence that India will successfully accomplish her tasks is strengthened by the fact that the country already has the necessary industrial base. Thus, for example, the Ranchi Heavy Machine-Building Plant put up with Soviet participation along with the related foundry and mechanical works erected with Czechoslovakia technical assistance, is the biggest engineering complex in Asia.

India also has her own designing base. Working in the Central Engineering and Design Bureau in Ranchi, I could see for myself the high skills of its personnel capable of solving complex engineering problems.

To day the Ranchi office is the main design organisation in its field. It decides, on a nation-wide scale, questions related to the construction of new and the expansion of old steel plants and prognosticates the development of ferrous metallurgy in India.

Establishment of such an office came as a natural result of Soviet-Indian collaboration. In his speech at the December 16, 1957 meeting at the Bhilai works, Jawaharlal Nehru said that India had invited Soviet specialists to learn from them. After the completion of the construction period, he added, if we wanted to build another plant, we would not need the same degree of assistance from the outside.

### Successful Achievement.

The aim of Soviet co-operation with India is to help the country in its industrial advance. And this aim is being successfully achieved. In the summer of 1971, the sixth blast furnace went into operation at the Bhilai works. Significantly, for the first time in the history of Indian ferrous metallurgy the designing of a blast furnace was done by Indian specialists. Nehru's prediction came true. The Soviet experts, who used to carry out the bulk of the work, this time played the modest role of advisers.

Currently, the Ranchi office is doing extensive work to expand the enterprises in Bhilai, Bokaro, Rourkela and Durgapur. The Bhilai works, for instance, is operating at a stable level of annual output of more than 2,000,000 tons of steel. Last year it was decided to expand its production to 4,000,000 tons, but now Indian and Soviet experts have arrived at the conclusion that its capacity should be brought to something like 7,000,000 tons. As regards Bokaro, a decision has been taken to bring the capacity of this biggest plant in Asia to 10,000,000 tons.

These are bold decisions. Bold also because they will be increasingly implemented indigenously. The Ranchi office has already begun detailed designing for the second stage of the Bokaro plant with necessary technical aid from Soviet organisations. The same provision has been made for the expansion of the Bhilai plant.

With the change in conditions, there has come a change in relations between the Ranchi Design Office and Giprometz. These design organisations have long established close contacts. But if previously Giprometz did the greater part of the work, now it is being done by the Ranchi office. During the construction of the first stage of the Bokaro plant the Indian side did one-fourth of the designing work, whereas at the second stage the Indian designers are doing the whole job with Soviet specialists providing consultations when necessary. A contributing factor here is that the Soviet side handed over to the Indian side standard and methodological materials on the organisation and technique of designing ferrous metallurgy enterprises. These materials are widely used by the Ranchi office.

### Bridging Gap.

In some respects, Soviet designers still have greater experience than their Indian colleagues, and Giprometz consultants working in the Ranchi office greatly help to bridge this gap. Besides, Indian specialists take regular training in the Soviet Union. They familiarise themselves with the newest practices, doing fruitful independent work. A group of probationers has worked out an original design of a converter shop for the second stage of the Bokaro plant, with provision made for the installation of highly efficient 300-ton converters.



## PILOT SCHEMES FOR INLAND FISHERIES

Recently, the National Sample Survey Organisation has suggested pilot scheme for inland fisheries statistics collection to be taken up in one district. If this proves successful, the methodology can be extended to the other districts. Apart from catch statistics, we also need reliable data on the census of fishermen, indigenous craft and gear, mechanised boats in operation and quantities of fish, marketed fresh, processed and consumed in the internal markets, as well as the quantities exported and their value. All these data are essential for future planning of the industry as well as in the supervision and the evaluation of the projects implemented. This calls for strengthening of the departmental statistics organisation.

Assuming that the IV Plan targets will be achieved, the investment for the V Plan and VI Plan has been worked as follows:—

|                          | Rupees<br>in lakhs. | Per-<br>cent-<br>age. |
|--------------------------|---------------------|-----------------------|
| V Plan.—                 |                     |                       |
| 1 State sector           | 36,68.04            | 42.65                 |
| 2 Centrally sponsored.   | 6,75.00             | 7.84                  |
| 3 Central sector         | 12,27.58            | 14.27                 |
| 4 Private sector         | 6,66.04             | 7.74                  |
| 5 Co-operative sector.   | 1,00.00             | 1.16                  |
| 6 Institutional Finance. | 22,68.54            | 26.34                 |
| Total..                  | 86,05.20            | 100.00                |

|                        |           |        |
|------------------------|-----------|--------|
| State sector ..        | 71,21.60  | 46.50  |
| Centrally sponsored.   | 3,17.50   | 2.08   |
| Central sector         | 11,65.38  | 7.60   |
| Private sector         | 19,85.60  | 12.96  |
| Co-operative sector.   | 3,30.75   | 2.16   |
| Institutional Finance. | 43,94.67  | 71.31  |
| Total ..               | 153,15.50 | 142.61 |

## MAN-POWER REQUIREMENT

The man-power requirements for the period of the perspective plan have been estimated both for marine and inland fisheries. By the end of the IV Plan, additional employment for 12,500 persons will be generated for operating the boats and trawlers, processing of fish marketing and fish based industries. By the end of the V Plan, another 57,500 persons will find employment. Additional 55,000 persons will be employed by the end of the VI Plan. As regards inland fisheries, additional employment for about 22,000 persons will be generated by the end of the IV Plan, 12,000 persons by the end of the V Plan and 28,000 persons by the end of the VI Plan.

## FISHERY DEVELOPMENT CORPORATION

In order to execute massive programmes during the period of the perspective plan and to organise the activities on commercial lines, there is urgent need to organise a fisheries development corporation. This corporation will have two wings, the Banking wing and the Development and Operation wing. The Banking wing will look after the obtaining of the resources and generating the investment. The Development and operation wing will look after the commercial and promotional tasks like operations of boats, processing plants, etc. ●

## Neyveli Lignite Corporation Addressed To supply Its entire Production

It may be stated in this connection that the total requirement of chemical fertilisers in this State is 2.5 lakhs tonnes per year, against which the allotment expected is 2 lakhs tonnes, leaving a consumption deficiency of 0.5 lakh tonnes.

The Neyveli Lignite Corporation have not been able to supply adequate quantity to the Co-operative Federations in the State this year due to their commitment to supply 40 per cent of their production or 40,000 tonnes to Messrs. Rallis, and their production was inadequate even to meet this commitment. Since the agreement of the Neyveli Lignite Corporation with Messrs. Rallis comes to an end in July 1973, the Corporation has been addressed separately to supply their entire production of Urea to the Tamil Nadu and Thanjavur Co-operative Marketing Federations, when the contract of the Neyveli Lignite Corporation with Messrs. Rallis comes to an end. ●

# FOOD FROM THE SEA

The seas cover approximately 360 million kilometres of the global surface but by and large the exploitation of the marine living resources is still restricted to the vicinity of coasts in the so-called continental shelf areas which are only about 7 per cent of the total ocean surface. It is estimated that nearly 200 million metric tonnes of fish could be harvested from the world oceans, out of which only 62.4 million metric tonnes are caught now.

The use of mechanised fishing units has substantially enhanced the area of operation and sophisticated technology has increased the catching efficiency. However, the deep sea and the open ocean are biologically less productive than the shallow areas except where there is constant replenishment of nutrient salts. To a large extent economical and technological factors as well as the natural abundance of resources form the basis for the development pattern.

To-day perhaps the greatest importance of sea to man lies because its biological life can provide to a great extent the protein needs of the increasing human population. There is hardly any marine living resource that cannot be utilised for human consumption directly or indirectly and in some form or the other.

## HIGHER YIELD POSSIBLE

Yet we make use of only a relatively small number out of the 25,000 or more of the existing species of fish. Those that are captured consistently for food are only about 200 species. Among the many crustaceans and molluscs, which include shrimps, crabs, lobsters, oysters, mussels, squids, cuttle-fish and clams, the proportion that we fish is perhaps even less.

It is estimated that more than 10 million metric tonnes of fish could be caught from the Indian Ocean. Our shelf area alone can yield nearly 2.5 million metric tonnes as against the 1.15 million metric tonnes caught now. Such targets of attainment are well within achievable limits and the technical know-how available.

The fact that India's estimated marine fish landings have doubled during the last two decades or so

indicates the development that has taken place in recent times. Yet our needs are much more. It should be realised that despite an apparently impressive increase in our catch during the past two decades, our exploitation is still largely confined within a distance of about 25 km. from the shore.

## UNPREDICTABLE FLUCTUATIONS

When one talks of food from the sea, the natural priority is for fish, then the prawns or the shrimps followed by a few other less important items. The items exploited within the narrow coastal belt could be broadly classified as the pelagic complex or surface community and the demersal or the bottom stock.

There is no doubt considerable variation in the proportion of the pelagic and demersal components in the fisheries from coast to coast and from zone to zone. Nevertheless, in the Indian marine fisheries as

by  
DR. R. RAGHU PRASAD.

a whole, the quantitative predominance of the pelagic varieties is evident. This is primarily due to the two groups, viz., the sardines and the mackerel. Their abundance or otherwise usually determines the success or failure of the total marine landings for any year. Both these are dominant components mostly of the south-west coast.

The well-known oil sardine which is almost restricted to Kerala-Konkan coast provides sustenance to the entire coastal population of that region. But the capricious nature of the fishery resulting in near-total failure in certain years has also brought unexpected misery to the fishermen. The magnitude of fluctuations in annual landings would be obvious from the fact that the catch varied from a mere 7,000 to over 3 lakh metric tonnes during the last 20 years.

Compared to the sardines, the mackerel fishery shows less intense annual fluctuations. Its annual catch had varied from 16,000 to over 1,80,000 metric tonnes. Their



When one talks of food from the sea, the natural priority is for fish. To-day perhaps the greatest importance of sea to man lies in the fact that its biological life can provide to a great extent the protein needs of the increasing human population. Further there is vast scope for increasing fish output in India.

# PERS- PECTIVE PLAN FOR THE DEVELOP- MENT OF FISHERIES IN TAMIL NADU

Fish production in Tamil Nadu, which stood at 119,900 tonnes in 1950, has increased to 278,500 tonnes in 1970. In spite of this phenomenal growth in fish production, the State has to go a long way to reach the point of full exploitation of all the available resources in the line which is estimated at over 9 lakh tonnes.

Tamil Nadu has vast resources of both marine and inland fisheries, because she has a long coast line of 1,000 Kms. and a large extent of inland water-spreads consisting of river systems, reservoirs, tanks and large irrigation wells. The average annual rainfall in normal years is 400 mm. Only the inshore belt of the extensive coast line is exploited at present by indigenous crafts and small mechanised fishing boats. The potential catch from the inshore and offshore of Tamil Nadu base is estimated at over 9 lakh tonnes, of these less than 2 lakh tonnes are exploited now, mostly from the inshore region.

Fish production in Tamil Nadu, which stood at 119,900 tonnes in the year 1950, reached 150,900 tonnes by 1960 and further rose to 278,500 tonnes by 1970. The production has increased at 2.6 per cent per annum over the period 1950 to 1960 and at 8.5 per cent per annum over the period 1960 to 1970. The above production is made up of marine and inland fish catches. The marine catch which was 85,900 tonnes in 1950 increased to 107,800 tonnes in 1960 and to 158,500 tonnes in 1970, representing an average annual rate of growth of 2.5 per cent and 4.7 per cent respectively. The inland catch was 34,000 tonnes in 1950, 43,100 tonnes in 1960 and 120,000 tonnes in 1970. This gives an average annual rate of growth of 2.7 per cent and 17.8 per cent respectively.

## Marine Fisheries.

On the marine side, the rate of growth has not been much being 2.5 per cent over the first decade and 4.7 per cent over the second decade. The growth can be regarded as more or less steady. This is the result of the introduction of mechanised fishing boats and the use of nets made of fishing grounds for prawns and lobsters

and silver bellies as a result of survey conducted by the Inshore Fisheries Survey Stations which has contributed to increased catches. The use of trawl nets and bottom-set gill nets has become popular from the demonstrations of the Inshore Fisheries Survey Stations and the training imparted in the training centres for the fishermen. There has been an improvement in the handling, preservation and transport of fish for internal marketing and processing for export. In the second half of the decade 1960-70, Tamil Nadu has entered into the export trade for frozen shrimps, lobsters and frog legs. There is also a conscious effort to revive the dried fish export trade with Ceylon.

## Inland Fisheries.

The rate of growth in fish production in inland fisheries is very significant during the decade 1960-70. This is primarily the result of the production of fish seed by the method of induced breeding of carps by pituitary hormone injections (Hypophysation) and intensive and extensive stocking of inland water areas. The development of reservoir fisheries adopting a clear management policy has contributed to sustained yields of fish from the reservoirs. The connected river systems have also been benefitted by the improvement in the fishery of the perennial reservoirs.

The State Domestic Product from the Fisheries Sector at 1960-61 prices has been estimated at Rs. 20.35 crores for 1970-71. The average growth rate in fish production over the Perspective Plan period worked out as follows :

|           | Per cent. |
|-----------|-----------|
| 1971-1974 | 26.5      |
| 1974-1979 | 9.2       |
| 1979-1984 | 14.0      |

The estimated income from the Fisheries Sector towards the end

of 1974 is Rs. 36.54 crores, the growth rate being 5.4 per cent over 1971, Rs. 53.54 crores by 1979, the growth rate being 3.4 per cent over 1974 and Rs. 90.75 crores by 1984, the growth rate being 7.5 per cent over 1979.

Assistance for non-mechanised traditional fishing will be extended to the fishermen in all possible ways by substantial financial outlays in the Plan. The socio-economic betterment of the fishermen will also receive greater attention.

In order to exploit the offshore and deep sea fishing grounds, we must have medium and large fishing vessels. The operation of bigger vessels requires certain infrastructure facilities such as fisheries harbours.

The available capacity of the existing fisheries harbour wharves and landing jetties has been assessed and the capacity of the proposed harbours, jetties, etc., have been worked out. Taking into account the capacity of the different fisheries harbours and jetties, the number of small mechanised boats and bigger trawlers, which will be put into operation during the perspective plan, has been worked out. These boats have been allocated among the State sector and private and the co-operative sector for indicating the necessary financial outlays. Vessels over 13.8 metres will be entirely for offshore and deep sea fishing. The Central Government will be responsible for providing the subsidy for construction of these bigger vessels. The private and co-operative sectors ought to contribute a maximum of 20 per cent of the cost of the small and bigger vessels and the balance of capital has to come from banks and other financing institutions. The construction and commissioning of small mechanised boats which are less than 9.8 metres should be progressively discouraged.

In view of the expansion of the mechanisation programme and the commissioning of larger vessels, it is essential to augment servicing and repair facilities. The small mechanised boats also catch fish and shrimps suitable for processing and export and thereby earn foreign exchange. There is, therefore, adequate justification to extend subsidy for the small mechanised boats in order to encourage the small operators interested in offshore fishing.

Diesel oil contributes to a major share of the cost of operation of fishing boats. The cost of diesel oil in India is very high because of the high percentage of excise duty. In order to make fishing operations a viable proposition, the cost of fuel must be subsidised to the extent of the excise duty payable.

The establishment of fish-net making plants will be encouraged. Besides encouraging the establishment of fish-net making plants in the State, the construction of the sanctioned fishing harbours should be taken up on a priority basis. Investigations for the new harbours should be expedited and preliminaries for their sanction and execution should be undertaken according to a definite time schedule. The necessary shore facilities at the Fisheries Harbours for the handling, processing and marketing of fish should be created.

Fish transport facilities including refrigerated road and rail vans should be expanded significantly to achieve better marketing including containerisation.

Training programmes to meet man power requirements of fishing vessels, processing plants, fisheries administration and research have to be given high priority. Our knowledge of the offshore and deep sea fishing grounds is very scanty.

The programme of deep sea fishing wherein enterprising entrepreneurs are expected to participate, will be attractive and successful only if there is adequate information of the fishing grounds for dissemination to the industry. Therefore a comprehensive plan of survey is necessary. The Government of India who will be primarily responsible for undertaking these surveys will work in close association with the State Fisheries Department so that the fishing grounds charted by the Government of India vessels will be covered in the programme of experimental fishing by the State and it will also fill up lacunae in the survey made by the Government of India. With reference to the offshore and deep sea regions to be covered 9 medium and bigger trawlers have been provided for in the V Plan and 15 vessels in the VI Plan. The main idea will be to complete the exploratory survey during the V and VI Plan periods.

Provision has been made for commissioning 7 ships on a phased programme during the Perspective Plan.

## Fish for Export.

The increase in the catch of our marine fisheries will be export-oriented, even though there is considerable demand for fish in the internal markets. The world trend is in the export of frozen shrimps, lobsters and tuna and other fish of high unit value. Canned shrimps and Sardines, tuna, crustaceans and molluscs have also an increasing export demand. Tamil Nadu have already made a beginning in the export of marine products earning a foreign exchange of Rs. 1.7 crores (1968) and the trend is on the increase. It is envisaged that the existing export of about 6,000 (product weight) tonnes will be stopped up to 15,000 tonnes by 1974, 39,000 tonnes by 1979 to fetch a foreign exchange of Rs. 32 crores; and to 77,900 tonnes by 1984 realising a foreign exchange of about Rs. 77 crores. Simultaneously, our domestic markets will also be developed. Frozen fish will be popularised and made available for people in the interior areas of the State.

On the side of inland fisheries, the crucial factor is production of large quantities of fish seed in order to stock all culturable water sources. The breeding of grass carp and silver carp will have to be done on a large scale. Seasonal tanks and irrigation wells can be stocked with Tilapia.

The research set-up of the department is to be strengthened and given the status of an institution. Research programmes will be given greater information and co-ordinated research projects with the Indian Council of Agricultural Refinance and the centre on practical problems and pilot schemes will be formulated wherever feasible.

Marine fish is landed in more than 300 centres along the coast. The position regarding inland fisheries is worse, because fish landings are made on the banks of rivers, tanks and other water sources. The department is collecting catch statistics of marine landings at a few centres where staff are sanctioned.

distribution is also more widespread and they form a fishery both in the west as well as in selected areas on the east coast. The fish on an average constitutes 10 per cent of the total marine fish production and is a highly esteemed food fish.

Recent investigations have revealed the abundant occurrence of mackerel and less frequently sardines beyond the traditional fishing grounds. Similarly large shoals of anchovies also were recorded in these regions. These could be readily caught with suitable techniques.

As an item of food and from the point of view of commercial significance, the prawns occupy a very notable place in the present days' marine economics, with an estimated annual catch varying between 62,000 and 1,58,000 metric tonnes. The penaeid prawns have emerged as the largest single export item in our marine products bringing an annual foreign exchange of nearly forty-two crores of rupees. Twenty years ago, prawns had hardly figured in our total marine fish landings. Along with prawns, lobsters also constitute an important marine food resource.

The Bombay duck, a fish which derives its popular name from its region of importance combined with its resemblance to the water bird, has the same regional status in the Maharashtra-Gujarat coast as the oil sardine has in Kerala-Mysore region. Another notable feature is that most of this fish is available for local consumption either in the fresh or dried form.

Among the major food fishes of the seas mention should be made of the tunas and billfishes. At present the quantity that we are able to exploit is only a fraction of what is actually available in our seas. I specially underline we because it is now well-known that other nations are able to make a far better utilisation of this rich resource from the Indian Ocean than what we could because of our lack of adequate facilities. Nearly 1,75,000 metric tonnes of these varieties are caught from the Indian Ocean of which we catch only 5,000 tonnes.

Thus these tunas, billfishes and sword fishes together constitute one of the best potential resources and offer immense scope for further intensive exploitation by us especially since the waters around the islands in the Arabian Sea and the Bay of

Bengal are known to be rich in these varieties.

Apart from the major category, there are many other less important items that are now being caught and utilised, each of which may account to anything between 10 and 35 metric tonnes per year. We can ill afford to ignore the significant contributions made by nearly a dozen groups of fishes such as ribbon fishes, soles, pomfrets, hilsa and threadfins. Each of these by itself and in a collective scale helps considerably in maintaining the economy. It also provides cheap nutritious dietetic requirements for the economically weaker section of our population.

Hitherto I have been dealing with the more conventional food items from the sea. But what we have been deriving has become quite inadequate to meet our increasing demands. This situation has given us an opportunity to search all over the accessible regions of the seas for other varieties and for better utilisation of all resources. Thus, along with intensification of fishing operations further exploration of the seas as well as diversification of fishing activities which will tap latent resources and at the same time relieve pressure from some of the over-exploited stocks, are currently going on. Exploratory fishing has brought to light the existence of commercially exploitable stocks of breams, perches, butter-fish lizard-fishes, fit fishes, a number of deep water prawns and lobsters. All these together with a variety of items such as crabs, squids and cuttlefishes offer considerable scope for more intensive exploitation.

#### SEAWEEDS AS FOOD

In this context a special mention may be made of seaweeds as food. Several species of these are used as food in Japan and attempts to popularise this in our country are likely to be advantageous. Among the varied food items mention must also be made of the possible use of marine plankton as human food. Man in his search for newer resources for his sustenance has even begun to experiment on this. In this process it is only to be hoped that the poor small fish in the sea will not be deprived of their natural food.

Having dealt with the various food items constituting the wild stock which are only to be exploited judiciously to obtain a sustained yield, I will now pass

on to the question of farming the sea. To day there is an increasing demand for high quality yet cheap protein food, and marine fishing is becoming more and more capital intensive.

It is now well recognised that it would be difficult to meet the increased need from the wild stock alone. Consequently one of the recent developments is the interest shown in culturing marine food organisms. Besides several species of fish, a number of shellfish, mussels, clams, oysters and algae lend themselves to marine aquaculture or mariculture as the technique is now popularly used.

The methods employed vary considerably according to the species, their requirements and the area where they are to be practised. The successful shrimp culture operators in Japan or the mollusc culture of Spain and the Mediterranean and the eel culture of France and the Adriatic are all examples which deserve emulation and practice in our country.

Yields as high as 300 metric tonnes per hectare of mussels as against 4 to 5 tonnes from natural beds are considered possible. Limited success has already been achieved in some of our experiments in this direction. It is hoped that this work will gain a foothold in future so that we may obtain a variety of marine delicacies at our will.

The seas and oceans, which cover over 70 per cent of the earth's surface, offer one of man's great hopes for future food supplies. However, with the growing use of the seas for a variety of purposes and as populations and industries move to the coasts the menace of pollution of the marine environment comes into sharp focus. Pollution presents potential harm to living marine resources and dangerous materials can be transmitted to man through the marine food chain.

We should therefore remember that increase in catch alone is not adequate as the acceptability of the catch would depend on a healthy marine environment. Higher production is possible through intensive exploitation of traditional fisheries and mariculture. The future outlook in the production of food from the sea is bright, thanks to the development of necessary infrastructure and application of new scientific and technological tools. ●

(Based on A.I.R. Talk.)

## RECLAMATION OF WATER FROM WASTES FOR IRRIGATION USE

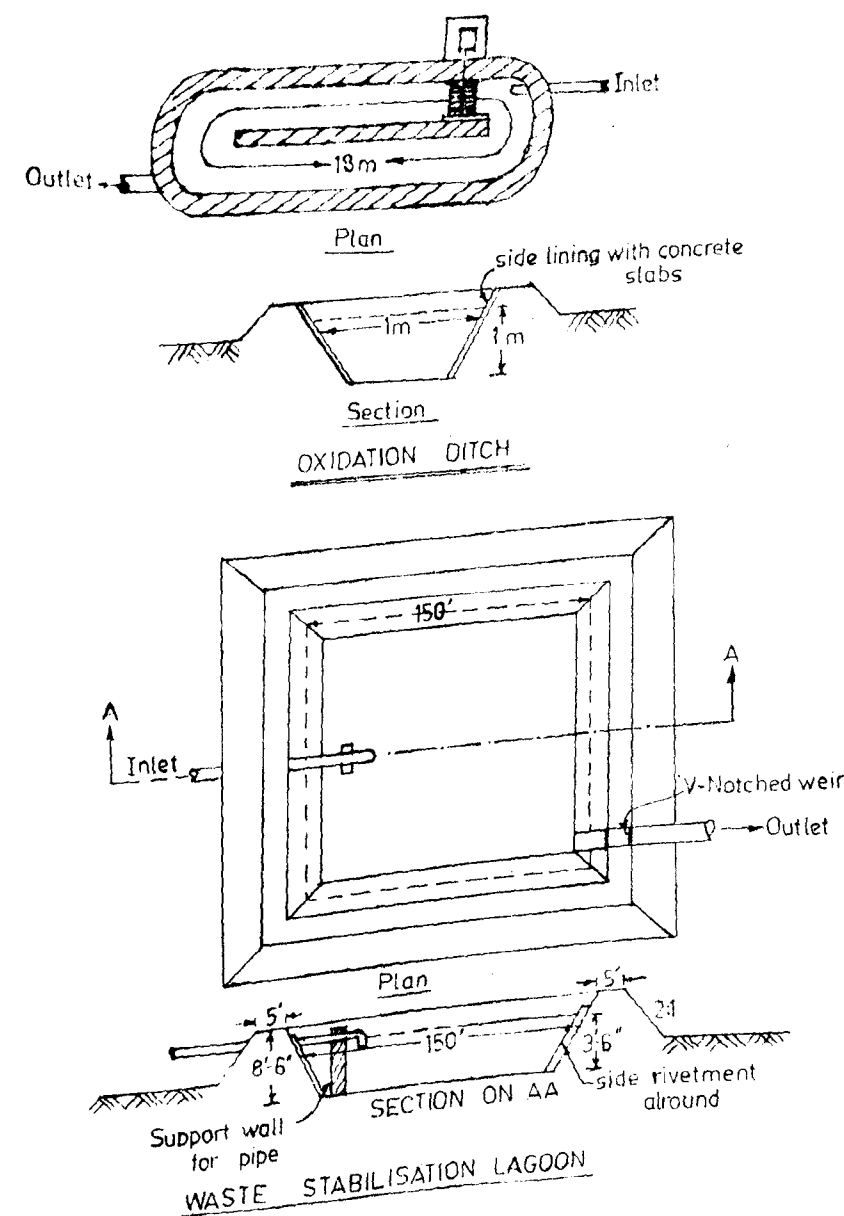


Fig.1

In Tamil Nadu, 95 per cent of the surface water and more than 60 per cent of the ground water have been harnessed to irrigate 3.2 m. hectare of land and for industrial and municipal uses. The irrigated area is only about 43 per cent of the total sown area. The demand for more water has arisen from the ever increasing population for their food and other needs. As local sources of water have been almost fully developed, it has become necessary to meet the ever increasing demand with imported water from the neighbouring States. But this seems to be very bleak to this State and hence the use of reclaimed water from wastes should be considered as a means of supplementing the existing water-supply.

The water used for irrigation is mostly used by the plants as consumptive use and even the unutilised water is reclaimed as under-ground water. But only 10 per cent of the water taken by the industries are consumed and the balance are left as waste. Similarly

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appreciable percentage of water is drained from the houses. It is estimated that about 80 per cent of the total domestic and industrial water supply are going as waste water. If this amount of waste water is reclaimed, it is possible to irrigate thousands of acres in Tamil Nadu.

The total population of Tamil Nadu is 42 million. The population is scattered in towns, villages and hamlets. Hence it is difficult to collect all the waste water for reclamation and also there may not be sufficient waste to take up reclamation work. The population living in the municipalities and major panchayats may be 10 million and the average consumption can be taken as 20 gallon/day/person. This works out to about 200 mgd. of which about 80 per cent or 160 mgd. can be reclaimed for utilisation. It was estimated that about 40 mgd. was flowing as



waste water in Madras City in 1972 and is expected to reach about 100 mgd. in 1976. If one million gallon water is available, it is sufficient to irrigate one acre of paddy or two acres of other crops. Hence it is possible to irrigate about  $40 \times 360 = 15,400$  acres of paddy or 30,000 acres of other crops from the waste water of Madras City alone if the same is properly reclaimed and used. The waste water available for the entire State, if reclaimed, can be used to irrigate more than one lakh acres of land.

The quality of water used for irrigation is determined by the type of substances which are dissolved in it. The characteristics of water that determine its quality are (1) total concentration of dissolved constituents, (2) sodium absorption ratio, (3) concentration of bicarbonate and (4) concentration of brown and other toxic substances.

The total concentration is usually measured in terms of electrical conductivity or total milli equivalents per litre of cation and this can be up to 5 millimhos/cm. The irrigation water should not have S.A.R. value much above 8 to 10.

Na.

$$SAR = \frac{\sqrt{Ca \times Mg}}{2}$$

Bicarbonate in water can precipitate as normal calcium carbonate. When the irrigation water is concentrated in the soil the calcium is precipitated, but the sodium remains in solution. This results in an increase in the S.A.R. and related sodium hazard. As little as 1 ppm. boron in irrigation water is almost the upper limit for use on sensitive plants while 4 ppm. of boron is about the maximum for even the more tolerant plants.

The raw sewage water collected through the underground pipe system is pumped to a settling tank and then to oxidation pond. It is necessary that this water is allowed to stand for at least 7 to 12 days in the open tank for oxidation. In the quicker process oxidation is done by stirring the sewage in an oxidation ditch and it is sufficient if the sewage is allowed to stir for 8 to 24 hours. The schematic diagram for treatment of sewage is shown in Figure 1.

In Los Angeles (California) the sewage water is reclaimed and used

for drinking purposes after recharging it into ground through water spreading basins. In San Diego, U.S.A., the reclaimed water is used for irrigation. The reclaimed water is used for all types of fruit crops in that area. Hence, there is vast scope to utilise the waste water after properly reclaiming in our State.

At present the waste water from the municipality and industries are

not properly and profitably used. As this water is substantial in quality, it is necessary to reclaim it through inexpensive methods. The reclaimed water can be used for irrigating any crops in that area. The oxidation plant seems to be economical one and this method can be adopted wherever it is possible. This way we can bring more areas under irrigation and save large quantity of water, otherwise it will be a waste.

## HERE COMES THE ROYAL JASMINE

JATHI MALLI, the aristocrat among jasmies, can earn you Rs. 2,500 to Rs. 10,000 per acre from the third year of planting.

One of the popular flowers of South India, Jathi Malli belongs to the family of Jasmies and is highly valued for the rich fragrance of its flowers. Its flowers fetch a much higher price (sometimes as much as Rs. 10 per kg.) in retail sales than other jasmies. The variety is grown in several parts of Tamil Nadu.

### Two distinct types :

There are two distinct types, one producing white flowers and another with pink colouration on the outside. The pink variety is preferred because of its richer fragrance.

The essential oil of jasmine is extracted from this pink type in France, U.A.R., Morocco and a few other Mediterranean countries.

### Improved selection :

In the pink Jathi Malli variety, an improved high-yielding selection has been recently made at the Tamil Nadu Agricultural University, Coimbatore. This gives nearly three times more yield than the local type. It is also superior in other respects as shown below.

Every 100 gm. of this variety will have 738 flower buds. The yield of flower buds per plant per year is 23,406 and their weight 48.88 gm. The improved selection gives not

less than 4,500 kg. of flowers per year per acre from well-grown bushes under good care. This yield is considerably more and the flowering season is also longer than in other countries where this is grown for essential oil extraction.

### Cultivation :

Jathi Malli is propagated by layers. Plant well-rooted layers just before rains in pits spaced 1.75 metres either way. Irrigation, manuring and pruning are important for securing top yields. Irrigate at least once in four days.

Prune from one year after planting. The best time is from late December to second half of January in Tamil Nadu. Cut back all the shoots to a height of 75 to 90 cm. from ground level. Follow this by complete removal of all the remaining leaves and dead shoots.

Apply manures after pruning and again in July. Dosage per plant is : well-rotten compost or cattle manure 15 kg., ammonium sulphate 800 gm., superphosphate 750 gm. and muriate of potash 200 gm. You can reduce the above dose by half for plants less than one year and to one-fourth for plants less than six months.

A leaf spot disease sometimes causes serious damage usually during the cold and rainy months. Black spots appear on the leaves which later dry up. Control the disease by three or four sprays (at weekly intervals) of Dithane 278 (25 grams in 10 litres of water) or Bordeaux mixture.

# TOWARDS DEAR MONEY POLICY

Thiru K. M. Mammen Mappillai, President, Hindustan Chamber of Commerce, rightly observed that the unprecedented rise in the Bank rate had come as a shock to the business circles. The immediate impact of the measure, he said, would raise the cost of borrowing to the trade and industry. More or less the same view was held by the F.I.C.C.I. when it observed "the decision of the Reserve Bank of India to raise the bank rate from six to seven per cent would increase the inflationary tendencies".

the interest rates charged by the commercial banks), because there is a definite relationship between the two. An increase in bank rates tends to discourage borrowings by business men and consumers from banks, resulting in a fall in the intensity of inflationary pressures in the economy.

But Keynes himself recognised the limitations of the re-discount rates as a weapon to check an inflationary boom. There are three situations where the interest policy may prove ineffective. They are:

The announcement of the Reserve Bank of India, effecting an increase in the bank rate from 6 to 7 per cent, marking a new step in the direction of "Dear Money Policy", is not likely to produce any optimism in the minds of seasoned economists. This will be so for two reasons. In the first place ours is not an organised economy in the sense as it is understood in U.K. or U.S.A. A very large part of the credit still falls outside the organized monetary sector. Secondly, the interest rate will not always function as an anti-inflationary weapon. One per cent increase in the rate of interest may not seriously mean anything for those who invest from borrowed resources. There can still be profitability at higher rates of interest. A higher rate of interest need not necessarily reduce the availability of money. If there should be check on inflation what is required is either a reduced availability of money or an increased production and proper distribution of what is produced can save the economy. Also, reduced public spending can be a more effective check than an escalated rate of interest.

1. If the bank rates (i.e. interest rates on loans charged by commercial banks) do not rise *pari passu* with the rise in re-discount rates, there will be no decline in business and consumer borrowing and hence the inflationary pressures will continue even though the re-discount rates have been raised.

2. The effectiveness of higher re-discount rates as an anti-inflationary weapon shall be considerably undermined if the commercial banks have an easy access to additional reserves. For example, the commercial banks which are in possession of large amounts of short-term Government securities can increase their reserves by selling some of those securities to the central bank or by converting the maturing securities into cash. Instead of borrowing from the Central Bank at higher re-discount rates, the commercial banks might prefer to sell their low-yield securities during inflation.

3. An increase of re-discount rates will fail to check inflation if non-bank holders (e.g. insurance companies, etc.) of Government securities were to convert their holdings into cash. This conversion of non-bank holdings into cash would have the effect of increasing the velocity of money consequent upon increased cash balances. At a time of rising prices and falling value of money, there is strong temptation on the part of holders of fixed-income yielding assets to convert them into cash.

Using the interest rate as an anti-inflationary device was suggested by the late Lord Keynes. He held that to curb inflation, the Central Bank of a country can increase its rediscount rates. An increase in rediscount rates increases the cost of borrowing funds for business and consumer spending and thus discourages excessive activity based on borrowed funds. The whole thing happens in this manner. An increase in re-discount rates leads to an increase in interest rates (i.e.

BY  
Prof. C. S. MAHADEVAN.

# Better Household Equipments For Rural Women

From time immemorial, women have carried upon their shoulders the crushing burden of household work. It is only with the advent of technology-based modern civilisation that the members of the weaker sex heaved a sigh of relief, but mainly in the western countries.

Indian women, particularly three-fourth of them living in villages, have not yet benefited from scientific progress to a comparable extent. They still are in daylong toil in the kitchen. In this context, the question of application of simpler technology for the uplift of women is being examined here.

The household equipment industry in our country is being developed rather irrationally. Various defective equipments have flooded the market for being sold at exorbitant rates. Pressure stoves often burst instead of burning properly, electrical and mechanical appliances cost more in repair charges. This has a fleeing effect on the consumers. While such is the situation in urban areas modern equipments have not yet entered rural homes.

Millions of peasant women cook their meagre food and light their huts with primitive-type equipments. The age old mud chulhas spewing obnoxious smoke in abundance are largely responsible for the declining health of village housewives. The pattern of work distribution still indicates that the entire household work is treated as the exclusive burden of the woman.

An important requirement is the eradication of illiteracy. Our society is getting technically-based and to

cope up with this change, women in our homes will be called upon to apply technical skill for higher efficiency and economy in day-to-day household activities.

Although universal literacy among women must be the basic aim, it is possible to spread the uneducated women some elementary technical skill by means of giving them practical training. With dexterity attained by training, anyone can handle modern household equipments properly. Technical skill, creative ability, resourcefulness and alertness are infused in the normal course of school education but these can also be acquired through mass education by mass media, audiovisual aids, etc., at community development centres.

## AVENUE OF IMPROVEMENT.

In order to survey the present level of efficiency in domestic work

BY  
R. C. MISHRA.

among women and also to suggest avenues of improvement, an all-India seminar-cum-exhibition on household equipments was organised in last January at Ludhiana by the Home Management Department of the Punjab Agricultural University. It was an attempt to focus attention upon an obscure field of activity.

The seminar-cum-exhibition helped to direct the searchlight on the characteristics of available household equipments and the current practices, their price structure, etc.

It also helped to give guidelines to housewives for wise selection of equipments and to the manufacturers for further improvements in design.

As a result of the seminar, it was realised that the household equipment market in India has not developed to an extent comparable with those of western countries. The production value of grinders, mixers, washing machines, irons, geysers, cooking ranges, ovens, room heaters, toasters, saucepan kettles and miscellaneous items, is only Rs. 43 crores per year. Use of equipments like coffee percolators, egg boilers, food warmers, dish washers, shavers and other personal-care devices are still to be made popular and there is plenty of scope for development here.

## USE OF SIMPLER TECHNOLOGY.

The writer of this article who presented a paper and chaired a session at the seminar made a suggestion to implement a plan of socialism in household equipments with the objective of helping larger sections of the masses. Since the manufacture of household equipments involves simpler technology it was suggested that the Khadi and Village Industries Commission should enter this field in a big way.

The Khadi organisation has deeper penetration and popularity among the masses and so it will be easier to popularise its improvised makes, particularly in villages. The Government should also introduce a quality marking system for ensuring that defective products do not reach the market. It should be made compulsory on the part of manufacturers to offer service before sale, service during sale and service after sale to the consumers.

The Khadi organisation with its greater influence in rural parts should exert to transform the age-old laborious practices of work-disposal into need-based efficient and economic methods. The organisation should also exert its influence to change the unjust and obsolete attitude of men towards women in the matter of household work and to alleviate the drudgery of the weaker sex.

## PROTEIN MAL-NUTRITION

## QUANDARY OF THE SECOND DEVELOPMENT DECADE

By  
W. AUSTIN SIMMONDS.

Tens of millions of children in the developing world are doomed to second and third class existence because they, or their mothers when expecting them, did not eat enough of the right types of protein. Recent research has confirmed what scientists long suspected that protein-starvation during critical periods of pre-natal infant development produces damage to the brain's structure and consequently to its functions. And this damage is permanent. No amount of extra protein in later life will make for this crippling deficiency.

In non-industrialized countries this means that the problem of actually providing enough to feed children is greatly complicated by the need to re-orient, re-educate, sometimes even to change completely traditional patterns and habits of eating. But it must somehow be done. Children with such brain damage are handicapped when they try to learn to read and write. Their ability to profit from the knowledge they acquire in school is also reduced. Should such damage become widespread, it will likely impede a country's development.

This is a real danger. About half of the population of the 'developing world' is at present under 20 years of age, about a quarter is below the age of eight. Population control is no answer for children who are already born and who are in vital stages of their growth. Only international public opinion and action can prevent the 'protein deficiency' problem from assuming disaster proportions. To a large measure, the United Nations and its specialized agencies have brought the problem to the attention of governments. The Protein Advisory Group of the United Nations System (PAG) was set up in 1960 and comprised specialists from the United Nations, 1960 and Agriculture Organisation (FAO), the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF). In July 1969 UNESCO began full participation in its activities and the International Bank for Reconstruction and Development joined in 1972. The task of the PAG is carried out in three main directions: adequate food production, research in the human sciences and reorientation of existing methods and techniques and customs tailored to the requirements of present-day indigenous needs.

After centuries of existence under the threat of famine and near

starvation, the non-industrialized countries of Asia, Africa and Latin America are now becoming, one after the other, self-sufficient in the production of cereal grains. Work carried out by the International Rice Research Institute in the Philippines and the International Maize and Wheat Improvement Centre in the Mexico has resulted in the last five years or so, in a major breakthrough in cereal production in many countries. Last year when these two institutes were awarded jointly the UNESCO science Prize for their "outstanding contribution to the technological development" of Member States, the citation declared their work 'has brought not only hope but the reality in solving the problem of food shortages in many areas'.

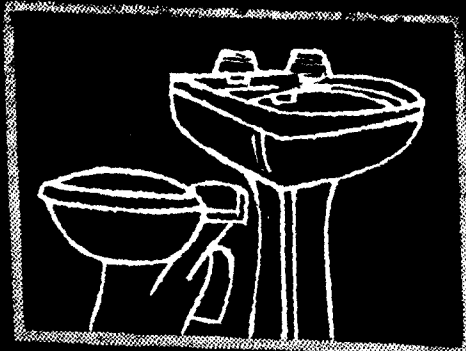
## Danger of displacing protein-rich crops:

But the economic benefits of this 'Green Revolution' have also the danger of the displacement of protein-rich crops. Productions of legumes, beans and peas and oil-seeds, such as soya and rape-seed is being reduced in favour of the short-term economic benefits to be derived from the sale of surplus cereals like wheat and maize. Now, fundamental genetic research, that has been so important in the selection of insect and disease-resistant strains of cereals, must be extended to other crops. Many scientists think there is hardly any time to intensify research programmes designed to produce new high-yielding protein varieties and to develop new production methods. They estimate that this will take from eight to ten years to pay off.

As it has been already established that lack of protein causes cerebral deficiency, children living in poverty-stricken areas, including most of the developing world, are, in effect, doomed to failure in both economic and social development. But while the future cannot be predicated it can be invented; today it is within the power of young scientists and educators to control the future.

In order to stop producing future generations of mentally retarded people, the time has come to cry "Halt". Nutrition education must become a built-in component of every type of education plan.

Courtesy,—  
World Informo.



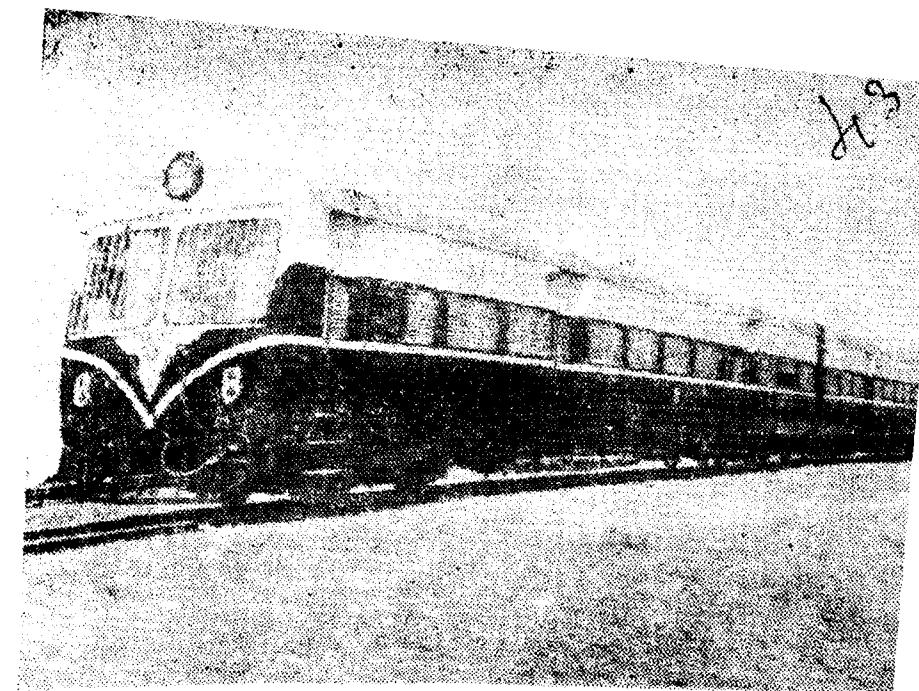
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## STEADY AND SPECTA- CULAR GROWTH OF INTEGRAL COACH FACTORY



An exterior view of Diesel Railcar.

Since October 1955, when the Integral Coach Factory produced its first railway coach, over 9,300 shells have rolled out of its assembly lines. Set up in technical collaboration with Messrs. Swiss Car and Elevator Manufacturing Corporation, Schlieren, the factory's initial target was to produce 350 broad gauge shells per annum. Since then, the factory has come a long way and in 1972-73 I.C.F. has turned out 750 furnished coaches and has set a target of 750 furnished coaches in 1973-74.

It has thus proudly earned the distinction of being one of the largest single producer of railway

coaches in the world under one management.

Diversification has been the key note of I.C.F.'s steady progress.

**K. VAIDYANATH,**  
General Manager, (Retd.) Integral  
Coach Factory.

Not only 32 different types of coaches, both broad and metre gauges, have been placed at the disposal of the travelling public, but diesel rail cars and electrical



An interior view of the Air-conditioned Chair Car of the  
Ratthana Express made at I.C.F., Madras.

An interior view of the Passenger Car turned out by I.C.F.  
for export to Taiwan Railway.



## GENERAL INSURANCE PROBLEMS AND PROSPECTS

Nationalisation of general insurance was debated over the years in Parliament and outside and some saw in nationalisation yet another instrument for accelerating the pace of socio-economic reform. But it was only in 1970 that the ruling party adopted it as an item of policy. The promise has since been fulfilled.

As a first step towards nationalisation, Government took over on May 13, 1971 the management of over 100 Indian and foreign Insurers carrying on general insurance business; the cost, by way of management compensation, was Rs. 33 lakhs per month. Actual ownership of the business was acquired at the beginning of 1973 at the cost of a little over Rs. 38 crores. Thus, the total cost of the entire process of nationalisation covering 107 insurers (including 44 foreign insurers and the General Insurance Corporation of India) is of the order of Rs. 45 crores.

Under the terms of the General Insurance Business (Nationalisation) Act, 1972, the Government has formed a company known as the General Insurance Corporation of India, with an authorised capital of Rs. 75 crores and initial subscribed capital of Rs. 5 crores. The Corporation is entirely owned by Government which appoints its Directors. All the existing Indian Insurance Companies have become subsidiaries of the Corporation; Undertakings of insurers other than the Indian Insurance Companies (Co-operative societies, mutual companies and the Indian branches of foreign insurers) have been transferred to four of these Indian Insurance companies, namely, National Insurance Company Limited, New India Assurance Company Limited, Oriental Fire and General Insurance Company Limited and United India Fire and General Insurance Company Limited. Government will soon frame schemes under which the subsidiaries will get merged with one another in such a way that ultimately there will be only four subsidiaries, each carrying on business all over India. This

would introduce an element of healthy competition among them and the size of their clientele would depend on the efficiency of the service they render.

The Corporation and its subsidiaries have the exclusive privilege of carrying on general insurance business in India, barring certain organisations like the State Insurance Departments, which have been allowed to continue in their existing limited fields.

An important task thrown up by nationalisation is the integration of a large number of employees with widely varying terms and conditions of service. Their continuity in service has been maintained and, for the present, they are also allowed to continue on the same terms and conditions with regard to pay, allowances, etc. But Government is empowered to make alterations and to make provision accordingly in the schemes for mergers of the subsidiaries. These matters are being examined by an Expert Committee which was set up last year to make recommendations for an integrated and rationalised organisational set-up for the future.

It is a truism that nationalisation is not an end in itself. With the change in ownership, a new meaning and a new purpose has to be imparted to the industry. There has to be greater emphasis than ever before on self-sufficiency, probability and prompt and efficient service to the policyholders.

The nationalised set-up has to establish a strong base for future operations so that we could eliminate our dependence on re-insurance abroad (and the consequent drain of foreign exchange) and provide protection to the hitherto uninsured or under-insured sectors of the economy. At present, the more affluent sections of society engaged in commerce and industry, get the maximum benefit of general insurance; other substantial areas of activity (such as the small-scale sector) have not received adequate

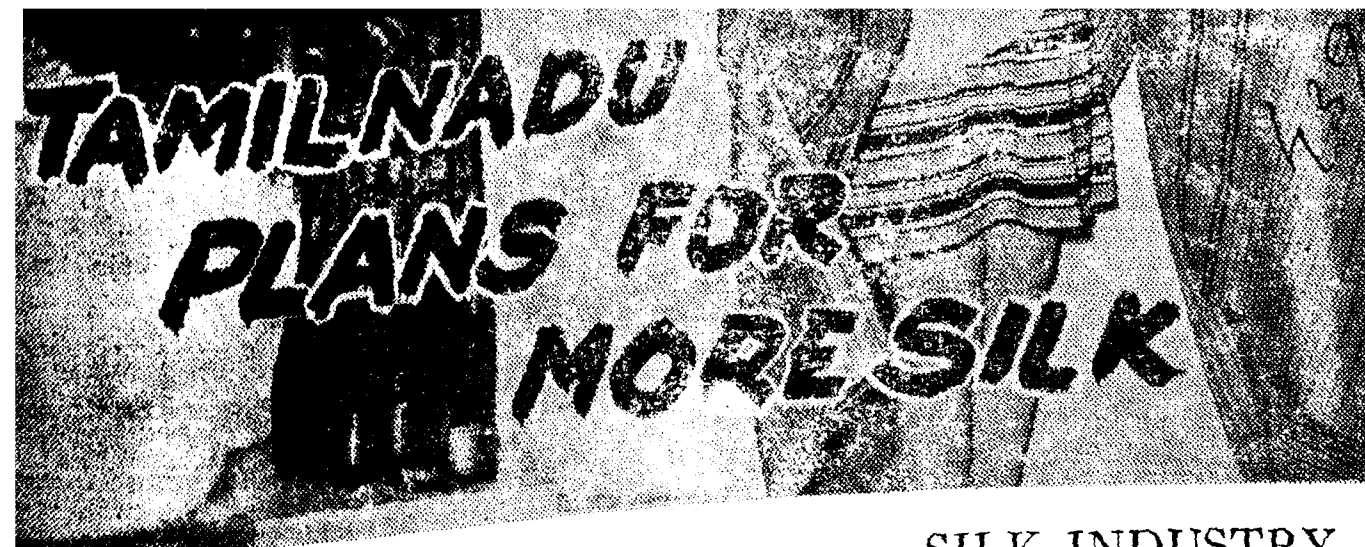
attention hitherto. Similarly, not much headway has been made in certain types of insurance, such as householder's comprehensive insurance, fire and theft insurance, agricultural pump-sets and allied insurance.

With State monopoly in insurance, it should now be possible to study in greater depth the nature and extent of demand for insurance and to collect adequate data and analyse them for arriving at scientific premium rates for the large variety of insurance cover which would be required by the different sections of society.

The aim of nationalisation should be to meet the needs of the consumer at the lowest possible price, to act as a model employer and to maximise the welfare of the nation. Though profit-making is not the sole or primary aim, profitability is an index of good performance and it is a condition which a nationalised undertaking is expected to satisfy. Due attention has, therefore, to be paid to sound underwriting practice, proper investment of funds and rigid control of expenses.

In the coming years, greater attention would have to be paid to scientific rating of premiums for the large variety of risks to be underwritten; for this purpose there would also be need for exchange of information with insurers abroad. As regards investments and expenses, the controls provided in the Insurance Act continue to apply to the nationalised set-up. It is to be hoped that the creation of large undertakings would secure the full economics.

In general insurance, particularly, time is of the essence. The machinery must be kept geared all the time to speedy underwriting and expeditious settlement of claims. While due care has to be taken to assess risks and in estimating losses, policy holders must receive prompt, efficient and courteous service. By this criterion, more than any other, would the success of the new venture be largely judged.



## SILK INDUSTRY IN INDIA

Silk industry is one of the ancient industries in India. Indian Silk was prized high among the gifts in ancient days and formed one of the commodities for barter deals. In spite of the industry being old, it got confined to localised spots mostly, hilly areas where labour was cheap, and plenty and where climate played the major part in its successful establishment. India occupied the fifth place among the silk producers of the world, the first four being Japan, China, U.S.S.R. and South Korea in that order. Japan is finding its internal consumption increasing and is gradually withdrawing from world market. China is making entry in a big way. With phenomenal speed, South Korea has developed the industry and has usurped India's fourth place.

India has the pride of producing all varieties of silk, viz., Mulberry, Eri, Muga and Tussar. The total production of all these varieties is around 22.50 lakhs kg. The export of Indian Silk, which was Rs. 35 lakhs in 1958, increased to Rs. 5.5 crores in 1968. In 1969, export touched an unprecedented level and exports amounted to Rs. 14.30 crores which earned recognition for silk as an export-oriented industry. The present level of production borders on self-sufficiency and to the extent that export trades pick up, the gap for demand and supply would arise.

The industry in the main was practised in Kashmir, West Bengal and Mysore mostly. It is said that the industry spread in Mysore during the time of Tippu Sultan. The spread to Tamil Nadu was only in the areas bordering Mysore and Kollegal.

## SILK INDUSTRY IN TAMIL NADU

In 1956, with the reorganisation of States, Kollegal merged with Mysore and the State lost 22,000 acres under mulberry. The State was left with 1,500 acres in Hosur Taluk of Dharmapuri District and Thalavadi firka in Coimbatore District. It took some time to reorganise the industry to suit the immediate needs and for consolidating the same in the existing places. During the II Plan (1956-61), the State sanctioned schemes for such consolidation and for the introduction of Sericulture in a few places like Tenkasi and establishment of a reeling unit at Hosur with a total provision of Rs. 2.13 lakhs.

Due to the interest evinced by the Government and propaganda by the staff, the mulberry acreage almost doubled during this Plan period (1,204 hectares). During the III Five Year Plan (1961-66) schemes for improvement of farms and expansion of the existing units were also brought under Plan schemes. Additional marketing facilities were also provided. New farms in Krishnagiri, K.V. Kuppam, Kolli Hills and Shencottah were started. Financial assistance was offered to dig 25 wells and for construction of 31 rearing sheds. The Plan provision was limited to Rs. 13.00 lakhs, though the expenditure came to Rs. 15.25 lakhs. The mulberry acreage went up by 234 hectares. During the 3 annual plans (1966-67, 1967-68 and 1968-69) 13 schemes envisaged for the Fourth Plan to commence in 1966-67 were got sanctioned and work was started wherever lands were available. Four farms one each at Hosur, Erumadu, Uddanapalli and Gearmalam were established.

**TIPPU SULTAN  
INITIATED  
SILK  
INDUSTRY  
IN MYSORE  
WHICH  
SPREAD  
TO  
TAMIL NADU**

multiple units have also been built in this factory. Two-tier and three-tier sleeper coaches were introduced for the comfort of third class passengers. The air-conditioned deluxe coaches and the Rajdhani rakes are some of the standing examples of I.C.F.'s technical excellence combined with travel comforts. Manufacture of 48 seater first class coaches equipped with super cushioned reclining chairs with revolving arrangements to cater for short distance first class travel is in progress. For relieving congestion for short distance travellers, design of double decker coaches is in hand. This would combine the features of reduced tare weight with increased carrying capacity.

Manufacture of A.C. third class sleeper coaches for improving the standard of passenger amenities offered to third class passengers is on the drawing board. I.C.F. has been entrusted with the responsibility of developing metropolitan stock for Calcutta metro. The organisation has thus been keeping up its promise of achieving self-sufficiency in all types of passenger coaches.

#### LATEST TRENDS

I.C.F. has ventured to keep pace with the latest international trends in coach building. The weight of the coaches has been on the increase as a result of providing better

comforts to passengers such as increase in the capacity of water tanks and the height of the coach for better head room, etc. The weight reduction has, therefore, constantly engaged the attention of I.C.F. designers and various measures are in hand. Use of corten steel, replacement of asbestos-insulation by fibreglass, modified type of flooring, use of lighter fittings, fibreglass reinforced plastic (FRP) water tanks and seat frames, to quote a few, are some of the steps being taken not only to counter the increased weight but also to reduce it still further.

The incidence of corrosion on steel bodied coaches has been a matter of serious concern. Detailed investigations have been undertaken at various railway workshops and series of trials have been initiated. Window sealing arrangement, sealing of through floor by vermiculite, restricted use of stainless steel trough floor in the lavatory portion, trials with FRP or stainless steel bathroom cubicles, use of FRP surface mats over trough floors in one of the intermediate layers of paint, use of corten steel for shell, are some of the promising features which are being incorporated in I.C.F. design and it is expected that the problem of corrosion would be minimised considerably.

Apart from the standardisation of raw materials, the question of



An exterior view of Third Class Through-floor Sleeper Coach

standardising the design to enable extensive interchangeability and facilitate production is constantly receiving the attention of designers of the I.C.F. It has been possible to cover different types of coaches on a limited number of types of standard shells. I.C.F. has also been able to reduce substantially the large number of items stocked for production.

#### ALL-COILED BOGIE.

The collaborators of I.C.F. provided them with a bogie with coil spring for primary suspension and laminated springs for secondary suspension. It was possible to engineer independently an all-coiled bogie with hydraulic dampers on the primary suspension and shock absorbers on the secondary suspension with much better riding qualities. For achieving higher speeds, the search for a new bogie design continued and two prototype bogies fit to run at 160 km. per hour have already been built and are under extensive running trials with the Research, Designs and Standards Organisation of the Railways. Besides achieving higher speed, the new bogie shall be utilising the indigenous plain roller bearing as against the imported spherical bearings, thus completely eliminating the import content on the bogies.

A full-fledged development cell is constantly endeavouring to develop small-scale and other industries to cater to the requirements of

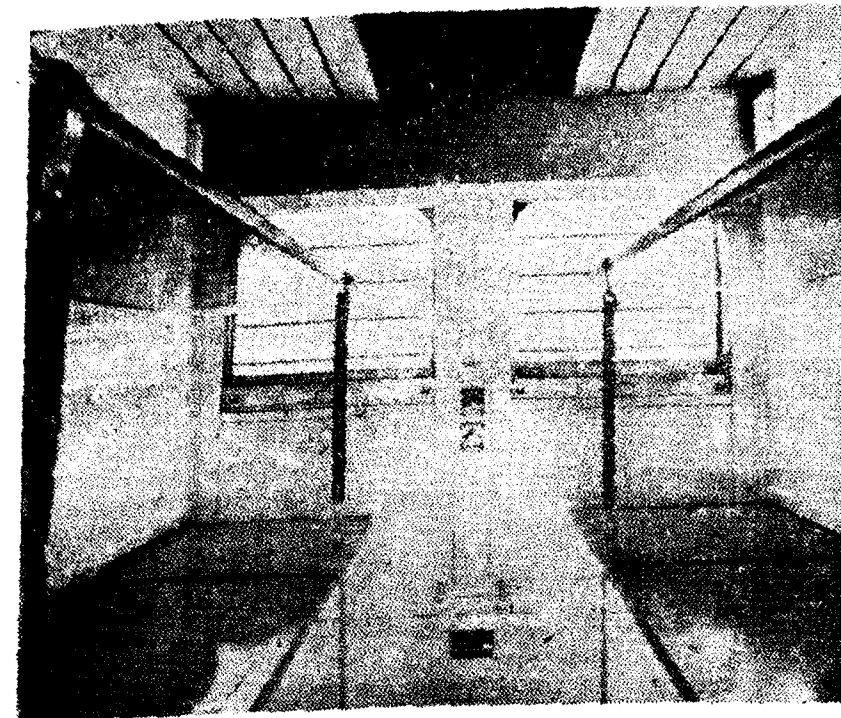
the bought-out components for coach construction. It has been possible to develop alternative sources of supplies thus breaking monopolies. Not only the prices have come down in such cases but also uninterrupted supplies have been assured which has been a frequent feature due to a spate of lockouts, strikes, power-cuts and what not. Regional development has also contributed to shorter procurement time and thus smaller inventories.

Design developments have been possible only with the efforts of the development cell which has been responsible for finding suppliers for unconventional items, viz., PVC mouldings, rigid PVC pipes, FRP wash basins, lavatory pans, wall protectors, seats for EMUs, polythene hush cocks, shower roses and fish-tail heads, etc. In the ever-increasing list of alternative materials, nylon bushes and components, high density polyethylene cloth for the vestibule bellows, FRP lavatory chutes, and partition frames ventilators, mirror frames, shelf below mirrors, are likely to set the pace for the future improvement in the internal decor of the coaches. The use of plastic materials in preference to metals is also expected to contribute to decrease pilferages as the re-sale value of these items is low.

#### BRUSHLESS ALTERNATORS

With the experience gained from imported brushless alternators fitted on the Taiwan Railway coaches, it has been possible to develop a local firm for similar equipment which is now undergoing trials. Apart from improved reliability of this item which will ultimately replace the D.C. dynamo now in use, it is expected to save approximately Rs. 400 per coach annually in maintenance cost. For providing better passenger amenities, it is proposed to introduce fluorescent lighting in coaches.

Preliminary investigations have also been undertaken to develop nickel cadmium battery in co-ordination with Central Electro-Chemical Research Institute, Karaikudi. This development shall ensure greater reliability of power in the storing system of coaches apart from reduction in coach weight and shall bring us in this respect on par with the coaches of the developed



An interior view of a Third Class Through-floor Sleeper Coach

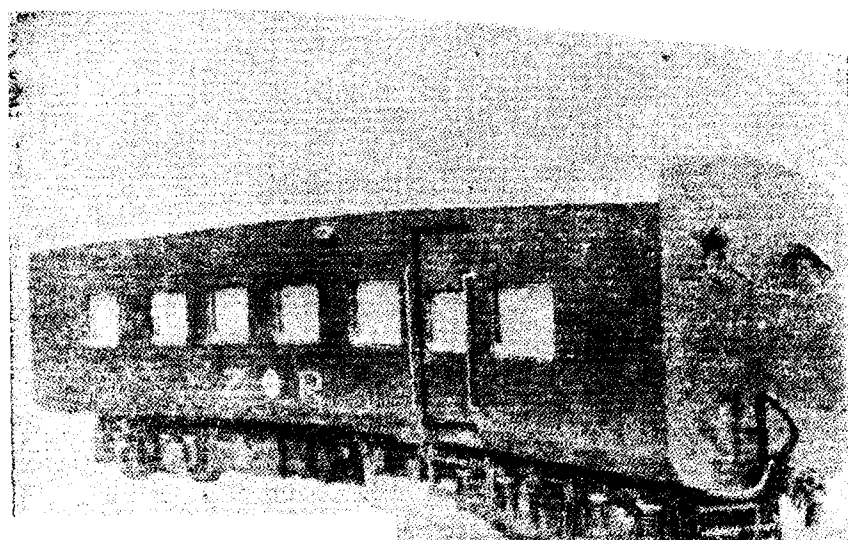
poly of suppliers of air-conditioning equipment of coaches, indigenous development was undertaken for the second Rajdhani Express by ordering the equipment from different sources and matching them to give the desired performance for the air-conditioning required in the coaches. This resulted in a saving of Rs. 16.5 lakhs for the Rajdhani Express. This successful experiment is being extended now for the equipment on the power cars.

With I.C.F.'s sustained efforts in designing, engineering and building, the various equipment like evaporators, control panels, etc. a saving of Rs. 2,00,000 is expected for the partial A.C. coaches. The power generating equipment and the associated drive for partial A.C. coaches have also been progressively manufactured in the country resulting in foreign exchange savings of about Rs. 1,00,000 per coach. Efforts are also in hand to develop hypoid gear box for fully air-conditioned coaches. The proposed indigenous manufacture of components for the MG suburban A.C. electric multiple units is expected to

#### EXPORT MARKET.

I.C.F. entered export market in 1969 with an export of two bogie trucks to Thailand. Since then 60 bogie trucks to Burma Railways, 45 bogie trucks to R.S.R., Thailand and 100 bogie trucks for Taiwan Railways have been exported. The real break-through, however, came in 1971 with the execution of an order for 113 passenger coaches to Taiwan Railway Administration against keen competition from technologically advanced countries like Japan. It bears ample testimony to the expertise and will of the I.C.F. that the coaches to Taiwan Railways costing over Rs. 3.8 crores were delivered in time in spite of several new features.

Thus, export of coaches, bogies and spares has become a part of regular activity of the I.C.F. With quotations pending for 30 coaches for Philippine Railways and 86 coaches for Zambia Railways and spares for Thailand Railways, the I.C.F. of India hopes to establish



An exterior view of a Coach for export to Zambia.

# SILK SCHEMES OF TAMIL NADU IN FOURTH PLAN

Establishment of two large-scale silk farms is another new feature of the Fourth Five-Year Plan. These are being established in the remote corners of the Dharmapuri District and Talavadi firka of Coimbatore District providing large-scale employment opportunities to the rural folks aiming at the same time expansion of the industry at a quicker pace. A twisting unit with 360 spindles was also sanctioned and has been commissioned during the last quarter of 1968.

## Coonoor Research Station.

An expenditure of Rs. 75.87 lakhs is envisaged in the Fourth Plan on various sericultural schemes on both spillover and new schemes. The mulberry acreage is expected to register an increase by 1,000 hectares in the private sector and 350 hectares in the public sector by the establishment of large-scale silk farms. During the first three years of the Fourth Five-Year Plan (1969-70, 1970-71, 1971-72) a sum of Rs. 25 lakhs has been spent on continuation of two large-scale silk farms. Four chawkie centres and new demonstration farms were opened during the years and by now nearly 1/6 of the total seed requirements of sericulturists have been made available through Government chawkie reared worms

which has boosted the cocoon production per unit area in our State. A research and extension centre at Coonoor has commenced functioning from March 1971. Production of suitable combination of silkworm races has also begun. Experimental large-scale trials are being conducted to test their efficiency in the sub-centre at Masinagudi.

Reclamation and planting to the targetted aim of 500 acres has been completed in the large-scale silk farm in Kolatti (Dharmapuri District) and has started yielding successful cocoon crops and it is expected to break even by the end of this plan period. The other farm in Madahalli (Talavadi) is half way through its planting programme. These farms offer employment throughout the year for nearly 1,000 rural folks in economically backward areas. A silk testing laboratory is to be established for testing and ensuring quality control of the raw silk produced for which machinery is being purchased from Japan. At the end of the Third Plan period, Tamil Nadu could boast of their achievement in the expansion of the industry in all its sectors attaining self-local and foreign race cocoons, production of industrial breed seeds, cocoon production programmes for reeling into silk, etc.

The present position is as follows :—

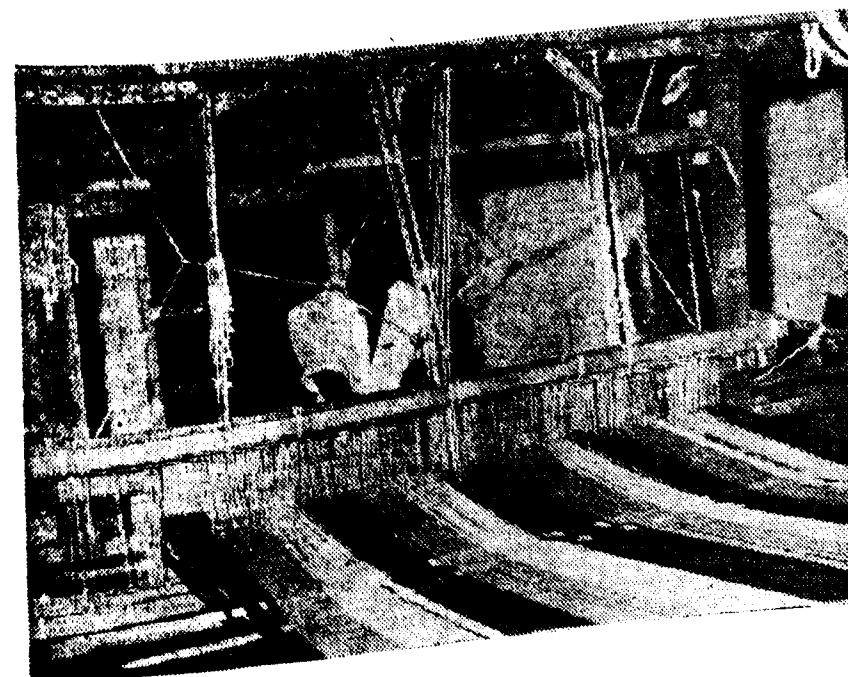
|                     |                           |
|---------------------|---------------------------|
| Area under mulberry | 2,950 hectares (7250 ac.) |
| Seed Production     | 6 lakhs in layings.       |
| Cocoon Production   | 2 lakhs kgs.              |

Silk Production—

|                         |           |
|-------------------------|-----------|
| Raw Silk                | 2,000 Kg. |
| Cottage basin Cora Silk | 7,000 Kg. |

## THE FUTURE OF INDIAN SILK INDUSTRY.

The production of silk in India has reached a stage of self-sufficiency. When there was a gap between production and demand, the deficiency was made up by imports which led to a chain reaction if the import exceeded or fell short of the gap. This reaction had an impact on the development of the industry. Having reached self-sufficiency, the industry will have to necessarily examine the scope for exports. The main consumers of raw silk in the world are Japan, Italy, Switzerland, West Germany, U.K., South Korea, and U.S.A. Due to the increase in the domestic consumption of raw silk in Japan, which was the largest supplier of this item to the world market, she had to import silk to meet local demand. Of late, South Korea has developed the industry in a remarkable way to become a supplier to the world market. The current World Market condition for raw silk offers scope for India to enter the same, provided the quality of exports is acceptable to overseas buyers. It will thus be seen that *Export Orientation* has to be given the necessary priority. The boom in 1969 proved the potentiality for export which should be sustained through proper planning of production and quality and reduction in costs by concentrating further development of the industry in areas where it is already well-established. The improvement in quality can only be got by rearing silkworm races which could produce superior cocoons and getting them reared efficiently. It is expected that other States would be planning to increase production in the years to come and therefore a glut is likely to occur if export orientation programmes are not taken up.



While silk production is to be oriented on export basis, the internal demand for lower grade silk has to be met. In this respect, Tamil Nadu is at an advantage over other States as it has 20,000 handloom weavers using such silk. Due to the nascent stage of development of the industry in the State, production of high grade silk straightaway is not desirable and possible and therefore, to begin with, production of charkha silk may be aimed at in the State. The industry has developed in the plains areas like Vinnamangalam, Palladam, etc. Though the potentialities for production are there, because of the warm climate, production of bivoltine cocoons resulting in elimination of local races will be difficult. Therefore, production of high grade silk will be a tall talk. Taking a realistic view of things, the State has to aim in the years to come at production of silk that will cater to the needs of the 20,000 handloom weavers.

## Silk for Warp and Weft

With an estimated annual requirement of 25 kg. for a loom, the calculated requirement for the handloom weavers of Tamil Nadu will be 5-12 lakhs kg. of raw silk. With the anticipated increase in looms, the final requirement can be taken as 6 lakhs kg. On the basis of a ratio 4:5 for warp and weft, the requirement will be about 2.6 and 3.3 lakhs kg. respectively. The requirement for warp will be of

## TAMIL NADU PLANS TO FULFIL SILK NEEDS OF ALL 20,000 SILK WEAVERS



finer denier, not easily obtainable from charkhas. So an ambitious programme for the production of about 3 lakhs kilos of raw silk of 20/24 denier for weft purposes, can be at once set as the goal to be reached in the years to come. As pointed already, over production may result in glut and the finer denier requirement of silk for warp can be expected to be produced from the States with established sericulture and where rearing of improved varieties for producing silk with such denier is possible.

## The Premises and the Strategy

The Plan for sericulture development will be oriented on this premises. It must however be stated here that the development of the industry will be influenced to a great extent by the policy that will be laid down for the whole of India in general and by the neighbouring Mysore State in particular. For example, import-export strategy of the Government of India will influence the cost of silk and consequently of cocoons. The continued production of charkha silk in the established Mysore area and the slow development in production of high grade cocoons/silk will also affect the State. The purchase policy for cocoons or the sale price of silk, which result in losses even in neighbouring States, will also affect the pace of development. This, of course, is an issue to be brought to the notice of the Central Silk Board to protect the interests of the State.



The Dharmapuri Sericulture Demonstration Unit.



To achieve the target of 3 lakhs kilo silk of wet quality, Tamil Nadu will require either 72,000 acres of dry mulberry gardens (at 50 kilos per acre) or 24,000 acres of irrigated gardens (at 150 kilos per acre). Depending on the areas available or those to be tackled, the expansion programme has to be chalked out. On the assumption that about 25,000 acres of dry and irrigated garden have to be brought under mulberry to meet the requirements of silk for wet by the weavers, the phasing has to be made according to the export market and the gap in internal demand. If an ambitious target of realising 25,000 acres is set for a 10 years period, an expansion of 2,500 acres per year has to be brought about.

In this context, it may be examined how the expansion scheme has functioned so far. The pattern has been to start a Demonstration Silk Farm in select places and to encourage ryots later to take up to the industry. The establishment of the farms themselves in ideal situation has been found difficult and time consuming. The spread of the industry in Talavadi/Hosur all these years and the recent spread in lower elevations of Coimbatore district would show the difference. While in Talavadi and Hosur a cautious approach was made with Demonstration Farm to begin with, the expansion has been slow. In Coimbatore district a new approach was made without Demonstration Farms as such and involving private persons directly. The expansion has been rapid. If these were to be a pointer, the future expansion which has to be necessarily rapid could be on the pattern of Coimbatore district. The cautious approach in Hosur and Talavadi involves besidetime factor, creation of assets and expenditure and departmental agency. With a future which calls for rapid expansion with least expenses on departmental agency, a new strategy has to be evolved.

The area under mulberry in Dharmapuri district is 1,860 acres held by 2,100 families. This has been achieved over the years by offering the following incentives:—

- (1) Free supply of seed cuttings,
- (2) Supply of Dfss. at nominal cost,
- (3) Supply of rearing appliances at subsidised cost,
- (4) Rearing and supply of young worms,
- (5) Grant of loan for sinking

irrigation wells and construction of rearing sheds with 50 per cent subsidy to be needed.

For supply of Dfss. a cross breed gramage for production of 10 lakh Dfss. was established. Chawkie (Young) worms rearing centres were established at 3 places.

An attempt at large scale silk farm was done at Kolatu to provide job opportunities to rural folk. 868 acres of Government land were taken over and cultivable area planted. The farm is providing employment to 150 agricultural labourers.

Besides attempts to utilise waste land by Government, a scheme for conditional leasing of Government poramboke lands was also taken up, the stipulation being 50 per cent of the land would be planted with mulberry for a period of 5 years. An extent of 5,042 acres was leased to benefit 2,119 families. The plantations are being taken up in the leased lands.

The silk production has increased from 200 kg. to 2,000 kg. in the course of 10 years.

In the light of experience, it is proposed to make the leasing schemes more effective by offering assignment benefits as soon as the condition of mulberry plantation is fulfilled. Mulberry takes over 3 years to establish itself and stands for over 15 years. For such a crop, the offer of lease has to be on a long-term basis and its absence lends a doubtful bias to investment on improvement. In order to overcome the time lag and expenditure in the initial stages, it is proposed to give financial help at Rs. 100 per acre.

It is proposed to allow the natural spread of the industry under rainfed conditions in Hosur and Denkanicottah taluks in patta hand poramboke lands. Vigorous propaganda for expansion of industry in new places like Dharmapuri and Krishnagiri will be taken up. As irrigation is a must for these new places, aid for irrigation will be afforded for sinking wells and bore wells. It is learnt that a total extent of 92,000 acres of ex-estate Zamin lands is available in

Tamil Nadu has captured cocoon Market.





Hosur and Denkanicottah taluks. If the ambitious target of development of 25,000 acres is to be achieved, at least 25 per cent of these lands will have to be earmarked for mulberry cultivation. These lands can be developed and leased out to agriculturists. For expeditious implementation of this scheme, appointment of special revenue staff is being considered.

The area under mulberry is 4,735 acres and being mostly a dry area, each sericulturist owns about 2 to 3 acres. All concessions offered in Hosur were also extended to sericulturists in Talavadi. A unique scheme of conditional assignment of lands to landless, with a condition that 2/5 of extent be brought under mulberry, was implemented in 1964. This gave a boost; but the full benefit of mulberry expansion could not be achieved as the beneficiaries were mostly non-resident and major lands remain to be resumed for breach of conditions. An expansion of 25,000 acres is envisaged in these two areas, Hosur and Talavadi. But in the next ten years the area under mulberry will go up by

The spread in new areas has to be under irrigated conditions. With capacity to rear 750 silks an acre under irrigated condition and a production of 15 kg. silk, an extent of 17,000 acres under irrigated condition will have to be brought under mulberry. This would mean getting 1,700 acres per year if the target is to be achieved within the planning period. As this cannot be achieved by existing personnel of the sericulture section, the agency of Block and Rural Development will be tapped for the expansion.

Sericulture has already spread to areas in North Arcot and Coimbatore districts. Intensification of efforts in these areas of promise will give immediate realisation. In other adjoining districts, wherever new agencies take up allied works, their services will have to be utilised. For example in South Arcot, the centrally-sponsored scheme of Small Farmers Development Agency will be useful and full advantage arising out of this will be derived. The expansion in areas like Kolli Hills, Elagiri, etc., is proposed to be taken under schemes for the uplift of hill tribes. To the extent silk fabric manufactures would organise silk production to meet their requirements, encouragement will be given.

A small pilot unit, which will take up all aspects of work, will be organised to study all aspects right



from seasonal conditions to silk reeling. This will be the nucleus for future expansion and training ground for the prospective entrepreneurs. The increased acreage would call for increased production of eggs. It is proposed to have the entire production in Government hands as the microscopic test is involved and quality seeds can be produced without descending to commercialisation by Government. This is the expressed desire of the Central Silk Board that all eggs should be tested and legislation should be created to prevent production of unexamined seed.

There are individual cases of outstanding performances in the sericulture section. But techno-

logically, there has not been much improvement. For example, study on dry farming has been neglected. As bulk of the existing area is under dry cultivation and improvement could be brought about only by research, a research unit has been established in 1971 and it will tackle problems which are of practical importance. The maximisation of production in a unit area alone is capable of reducing the cost of cocoons (consequently silk. Studies leading to this factor are being given top priority. Evolving disease and heat resistant varieties will be another major task that will be tackled by the Research Unit.

Export orientation of handloom fabrics is outside the provisions of

this scheme. It is expected suitable measures will be taken by Handloom Board and Export Promotion Council to encourage export of handloom fabrics so as to create the necessary base for larger commitments in the years to come, as fashion is something unpredictable. The advances made, and that will be made in man-made fibre may also be phenomenal. A saving feature is that silk contributes about 1 per cent of the total textile fibre production of the world. Even with an increase of 200 per cent in the production of silk in India in the last 40 years, it accounts for only 1/5 of 1 per cent of the total textile fibre production. Even with this infinitesimal production, it has carved a place of its own in textiles.

## HOSUR FARM'S SUCCESS IN COCOON AND SILK PRODUCTION

The Royal Government of Bhutan has asked for the finest quality raw silk yarn from the Hosur Silk Farm and a sample consignment has been despatched.

Thiru M. Radhakrishnan, Assistant Director of Sericulture, said the Government Silk Reeling Unit at Hosur has specialised in producing superior quality raw silk suited for production of zari. The unit was sending 1,500 kg. of yarn for zari production to Surat every year. Hosur silk has also captured the handloom market in Kancheepuram and Kumbakonam. Production at the unit, which was 400 kg. in 1959, had gone up to 3,600 kg. in 1972 and plans were afoot to step it up to 6,000 kg. by installing modern equipment.

The unit was located in Hosur with the prime objective of arresting the flow of cocoons in the area to Mysore State. A cocoons market, where arrangements will be made to buy cocoons from mulberry cultivators, was inaugurated at Berikai on 27-7-73 by the Director of Industries and Commerce, Thiru H. B. N. Shetty.

The cross breed grainage programme undertaken at the Hosur Silk Farm has increased egg production from 1,38,128 in 1968-69 to 8,03,435 in 1972-73. The layings are of finest quality and are in great demand even from traditional sericulturists from Mysore.

# INCENTIVES FOR DEVELOPMENT OF TAMIL LANGUAGE

On account of the alien rule in the Country for a very long time the languages of the Indian soil had not been allowed to have their normal and due growth as they were relegated to the background, importance being given to English for all official purposes. After the dawn of Independence, the languages of this soil were slowly but in a sure way elevated to the status of official language of the respective states. Accordingly, Tamil was recognised as the official language of the then Madras State in the early 60's. But till 1967, the policy was not given effect to with so much zest and zeal as the problem required. After 1967, when the new ministry under the stewardship of Dr. Arignar Anna, as the Chief Minister of Tamil Nadu assumed power in the State, all kinds of encouragements and incentives have been given to accelerate the use of Tamil in all branches administration including the sphere of Judiciary.

The progressive introduction of Tamil as the Official Language and the adoption of Tamil as the Medium of Official correspondence are being pursued vigorously by the State Government in accordance with the policy directive given by the State Legislature in its resolution, dated 23rd January 1968.

District Officers have now been appointed to accelerate the pace of inspection and the adoption of Tamil in the District Offices, and to give constructive advice to the members of the staff in noting and drafting in Tamil.

A translation section is also functioning in the Directorate of Tamil Development with three Officers for translating the Codes, Manuals, Acts and Regulations of the State Government into Tamil. A consolidated glossary of Official terms is to be prepared and published during 1973-74.

As an incentive to Government servants to adopt Tamil in their drafts and notes, 15 cash awards of

Rs. 500 each are being given annually to the Government servants who are adjudged to have produced the best drafts or notes. From 1973, one prize of Rs. 500 will be awarded to the Government servant adjudged to have made the best use of the official language in the secretariat.

The Directorate is engaged in preparing the bibliography of Tamil publications from 1867 up to 1940. During 1973-74, final proof correction for the bibliography Volumes III, IV and V each in three parts will be completed. The preparation of Volumes VI, VII and VIII will be taken up in 1973-74.

The Tamil Development and Research Council has been encouraging the production of literature in Tamil by awarding prizes. From 1971-72, the prize amounts have been increased and one first prize of Rs. 2,000 and one second prize of Rs. 1,000 are being awarded every year to the two best books in each of 20 chosen subjects.

The Council is also implementing a scheme of financial assistance to authors to encourage the publication of books in Tamil. Assistance under this scheme has been given so far to three authors and the question of extending assistance to some more authors is under the consideration of the Council.

The Government have been giving generous grants to the Tamil Academy for the publication of the Childrens' Encyclopaedia in Tamil to the Southern Languages Book Trust for its general publication programme (including a Tamil edition of the UNESCO Courier), and to the Dravidian Linguistics Association, Trivandrum, to further the objective of bringing together the four major Dravidian languages of South India. Certain Universities in other States have also been given grants for conducting research work and for post-graduate Studies in Tamil. Under this Scheme, Government have granted assistance to the Osmania University, the Kerala University, the Agra

University, the Venkateswara University, the Viswa Bharathi University and the Calcutta University for the promotion of Tamil or for the creation of fellowships or for the institution of chairs in Tamil.

Since June 1971, a Committee of Scholars under the Chairmanship of Dr. Mu. Varadarasanar appointed by Government, is engaged in writing an authentic history of Tamil Nadu in Tamil. The history will consist of six parts and the first one, on the Pre-historic period will be published in 1973-74.

## TAMIL MEDIUM IN LAW COURSE.

As in the case of Arts Colleges in the State where Tamil medium has been in vogue for the study of all art subjects, the Tamil Medium of instruction is to be introduced in Madras Law College during the coming academic year (1973-74), if there is sufficient demand for it from the students. Almost all the staff of the Law College have volunteered to co-operate in the experiment which is designed to provide students in Tamil Nadu with an opportunity of studying law in the mother-tongue. Many North Indian Universities already offer students the option of studying law in Hindi.

The Madras Law College students who choose to study law in Tamil medium will have the option to take the examination in English or Tamil. The Tamil medium will be available for the evening course students only in June 1974 when a new batch is admitted.

The Tamil Nadu Textbooks Corporation, a State Government undertaking, has initiated the necessary action for bringing out books on law in Tamil; in the context of the State Government's efforts at introducing Tamil medium in various courses of study. Manuscripts for books on almost all law subjects have been prepared by the staff of the law College by a special committee. A textbook in international law in Tamil by Prof. A. Palaniswamy, Director of Legal Studies, has already been brought out. The State Official Languages Committee has brought out a law Lexicon in Tamil, containing a glossary of legal terms in Tamil.

Law students who opt for the Tamil medium could of course have access to the original case laws in English to augment their knowledge.





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**a**

**REPOSITORY OF**

**OUR BELOVED Anna**

Glory to our land! This ancient Tamil land  
Whose wisdom in the Past and Present shine alike  
Glory to her sons dignity incarnate  
As our late Anna bears witness adequate.  
Long live thy name! Anna! Our Leader!  
Enshrined in our hearts, our beloved Brother!

OF THE STATE EDITOR  
27 SEP 1973  
C. P. J. UNIT, MADRAS

The lowly and the humble were thy foremost care;  
Your own health, you bestowed scanty care;  
Generous to a fault, and courteous to all,  
Faithful to the cause, You sacrificed thy all.  
Long live thy name! Anna! Our Leader!  
Enshrined in our hearts, our beloved Brother!

You raised your voice against the march  
Of an alien tongue coming to scorch  
Our life and language; we rallied as one  
You led us to the front and the battle was won  
Long live thy name! Anna! Our leader!  
Enshrined in our hearts, our beloved Brother!

Looked down we were—There were insidious foes—  
An enlightened race fell on evil days.  
This illustrious land gave birth to this son  
Who routed her enemies and glory brought again  
Long live thy name! Anna! Our leader!  
Enshrined in our hearts, our beloved Brother!

R. NATARAJAN

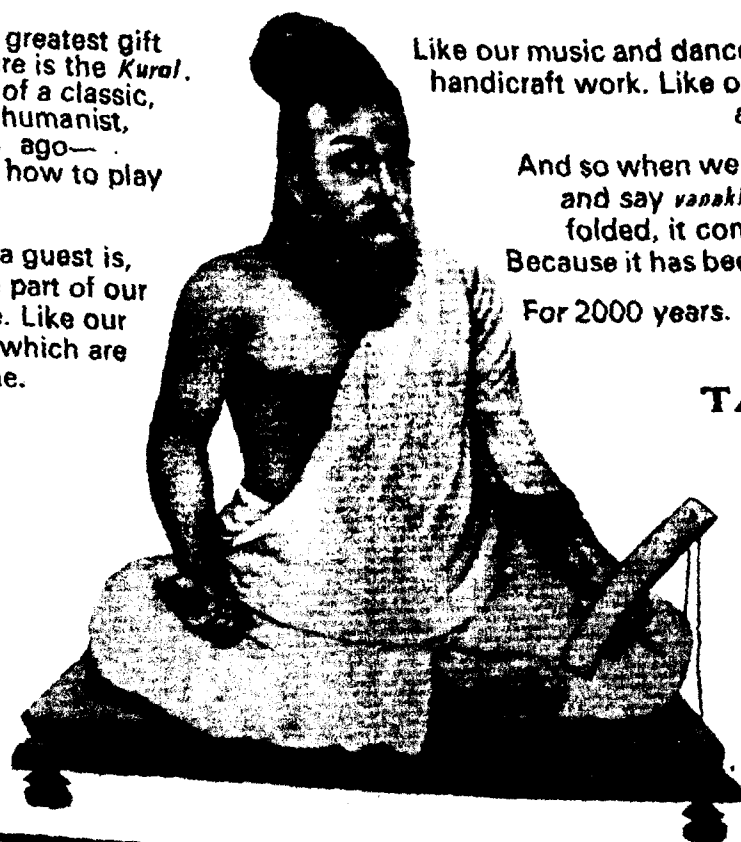
**Tamil Arasu**

Vol. IV SEP. 1973 Issue 3

# A poet asked us, about 2000 years ago, to keep an open house ... and we still do

Perhaps, Tamil Nadu's greatest gift to the world of literature is the *Kural*. And through this gem of a classic, Tiruvalluvar, poet and humanist, taught us 2000 years ago—among other things—how to play the host and like it.

The art of welcoming a guest is, therefore, an essential part of our great cultural heritage. Like our magnificent temples which are really sermons in stone.



Like our music and dance, folklore and fine handicraft work. Like our golden beaches and glorious skies.

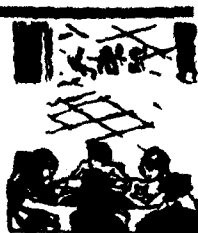
And so when we bid you welcome and say *vanakkam* with our palms folded, it comes naturally to us. Because it has been a way of our life.

For 2000 years. Maybe, even more.

**TAMIL NADU**  
WHERE HOSPITALITY  
IS AN ART



All over Tamil Nadu, there are hotels aplenty... offering excellent accommodation and suave, sophisticated service. And restaurants where you can enjoy gourmet dining. De-luxe coaches and taxis are always available for sight-seeing.



**DIRECTOR OF TOURISM,**  
GOVERNMENT OF TAMIL NADU, MADRAS-600009

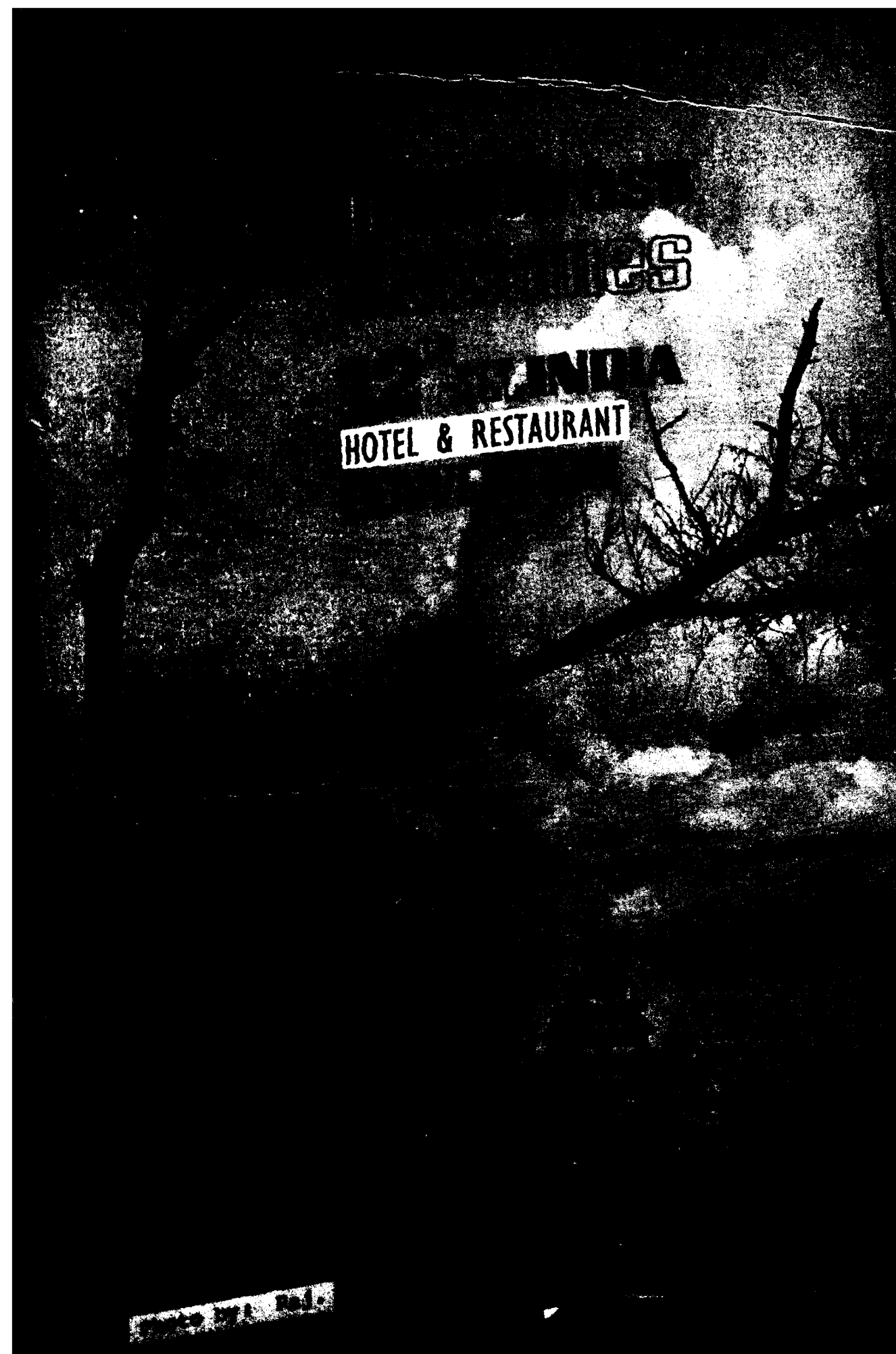


Photo by I. Redi.

THE TAMIL NADU TOURISM DEVELOPMENT CORPORATION  
GREETES

THE DELEGATES TO THE 12TH ALL INDIA HOTEL AND  
RESTAURANT CONVENTION AT MADRAS

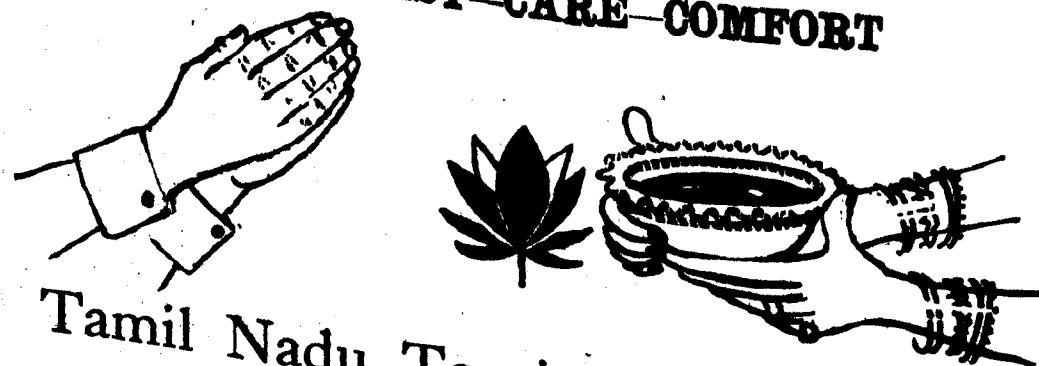
AND  
WISHES TO SAY THAT IT IS ALSO THEIR PARTNER IN  
PROVIDING THE TOURIST INFRA-STRUCTURE IN TAMIL NADU.

The Tamil Nadu Tourism Development Corporation Runs a chain of  
eight well appointed Tourist Bungalows at Tiruchi, Madurai, Tiruchendur,  
Kanyakumari, Ooty, Kodaikanal and Yercaud in Tamil Nadu.

It also operates CONDUCTED TOURS AND PACKAGE TOURS  
covering all Tourist Spots in Tamil Nadu.

Plans to build Tourist Bungalows in "Tourist Centres", "Health  
Resorts", "Sea-side Resorts" in the coming years.

For **COURTESY—CARE—COMFORT**



Tamil Nadu Tourism Development  
Corporation Limited.

34, ANNA SALAI, MADRAS-2.

# Tamil nadu Tourism Development Corporation Launched



With a view to promoting Tourism  
on commercial lines the Govern-  
ment created a Public Sector Under-  
taking on 1st July 1971 with an  
authorised share capital of Rs. 50  
lakhs.

The main objective of the Corpo-  
ration is to start, operate and  
promote establishments, under-  
takings, enterprises of any descrip-  
tion which, in the opinion of the  
Corporation, are likely to facilitate  
or accelerate the development of  
Tourism in Tamil Nadu. As  
accommodation and transport are  
the two major factors for tourism  
development, the Corporation will  
necessarily concentrate on their  
development.

The Corporation took over  
six Tourist Bungalows run by the  
Government at Tiruchirappalli,  
Madurai, Ootacamund, Kanya-  
kumari, Tiruchendur and Cape  
Hotel at Kanyakumari.

At the time of the formation of  
the Corporation, the Tourist  
Bungalows had only 256 beds to  
offer. In the course of one year  
and six months the Corporation  
has increased its bed strength to  
340 beds.

## New Tourist Bungalow at Kodaikanal

It has been a felt need of the  
tourists for a long time to have  
a Tourist Bungalow at Kodaikanal  
on the pattern of Ootacamund.

The Tamil Nadu Tourism Deve-  
lopment Corporation Limited there-  
fore acquired a Tourist Bungalow  
Complex at Kodaikanal from the  
Y.M.C.A. at a cost of Rs. 4.5 lakhs.  
This bungalow was thrown open  
immediately for the use of the  
tourists during the summer season,  
1972.

## Tourist Cottages at Coonoor

The Corporation took over eight  
Tourist Cottages built by the  
Government at a cost of Rs. 2 lakhs.

These cottages were popular with  
family groups, as they have an  
attached Kitchenette during the  
summer of 1972.

The Corporation took over a new  
Tourist Bungalow at Yercaud built  
by the Government at a cost of  
Rs. 2 lakhs. It was inaugurated  
on 20th October 1972 by His Excel-  
lency, the Governor of Tamil Nadu.

## NEW LOOK TO THE TOURISM BUNGALOWS

To run the Tourist Bungalows  
on a commercial basis as a matter of  
policy, the Corporation has placed  
catering technologists in-charge of  
the Tourist Bungalows. Catering  
has been introduced in all the Tourist  
Bungalows for the convenience of  
the boarders. The Corporation  
has also been giving a modern  
look to all the Tourist Bungalows  
by improving the decor and provid-  
ing better facilities and modern  
amenities like Channel music, run-  
ning hot water, soap, towel, bed  
coffee, etc. Foreign tourists now  
patronise our Tourist Bungalows  
in large numbers, besides the  
domestic tourists.

The Corporation has also acquired  
ten independent Tourist Cottages  
at the Golf Links at Ootacamund  
built by the Housing Board. These  
cottages have been offered to the  
tourists from April 1973.

## RATIONALISATION OF TARIFFS

Having given a new look, the  
Corporation has rationalised the  
tariff structure in all the Tourist  
Bungalows in view of the high cost  
of materials and service.



## EXPANSION OF EXISTING UNITS

Encouraged by the growth of tourist traffic, the Corporation has initiated action to expand the existing accommodation at the following Tourist Bungalows:—

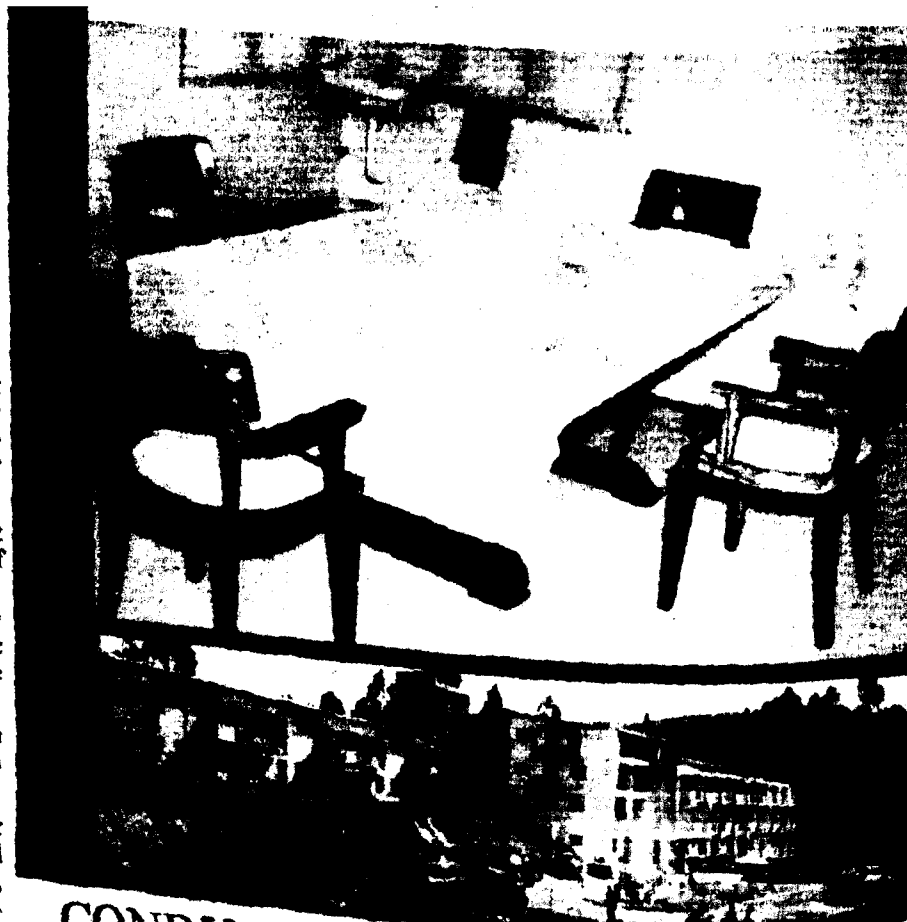
1. *Ooty*.—The Corporation has completed an additional block in the Tourist Bungalow, Ootacamund with 98 beds. This was thrown open to the tourists during April, 1973. The Tourist Bungalow at Ootacamund will have facilities for conferences and seminars and also dormitory type accommodation for large groups.

Additional block at Tourist Bungalow, Madurai at a cost of Rs. 2 lakhs is under construction.

*New projects*.—Keeping in view the growth forecast of tourist traffic the Corporation is taking up the following projects:—

Construction of a new Beach Resort Complex at Mamallapuram at a cost of Rs. 41 lakhs.

Construction of new Tourist Bungalow Complex at Hogenakkal at a cost of Rs. 9.5 lakhs. Besides, the Corporation proposes to construct a Tourist Bungalow Complex at all District Headquarters and identified Tourist Centres (where traffic is already established) like Chidambaram, Courtallam, Nagapattinam, Tuticorin, etc. Action has already been initiated to acquire suitable lands at these places in District Headquarters.



## CONDUCTED TOURS

The Corporation has, to begin with, acquired two luxury coaches for operating conducted tours. A choice of the following two conducted tours is being offered to the tourists:—

*Tour No. 1*.—Madras-Kanchipuram-Tirukalikundram-Mamallapuram-Vedanthangal (during season)—Madras.

*Tour No. 2*.—City sight-seeing in and around Madras. Besides regular Package Tours are conducted on two day and seven day trips.

During the summer season of 1972, the Corporation organised special conducted tours at the Nilgiris.

The coaches are being given on private hire to the Travel Agencies and other hoteliers for the use of foreign and home tourists.

The Corporation has taken over the Lake at Ootacamund to exploit it commercially. Action has been initiated to modernise the Boating service with fibre glass boats, etc. The Corporation is also running a Cafeteria at the Boat House at Ootacamund.

Action has been initiated for the opening of a Souvenir Shop at Anna Square on Marina. It is proposed to sell Souvenirs, Handicrafts, etc., manufactured in Tamil Nadu.

The Corporation is actively associating itself in all the tourism promotion activities with the Travel Trade.



# CAN WHAT WE DO ABOUT HOTEL ACCOMMODATION?

More than anything a tourist basically requires a comfortable place to stay at a reasonable price. The type and quality of accommodation influences directly the period of stay of tourists. A clean toilet and a comfortable bed are essential for the tourist to relax and reflect on what he has seen and enjoyed during the day. There can be no growth of tourism unless accommodation at various levels, both for international and home tourists, is assured so that agencies that handle tourist trade can plan and organise with confidence visits of large groups from abroad and home. The changing trends in tourist traffic demand more number of middle class accommodation rather than high class and luxury type. A general tendency among tourists to travel wide and see more places of interest and spend more money on purchases than to pay high prices for top class hotels (as five and four starred hotels) is fast developing. Tourist desire to spend most of their time in visiting places and keeping themselves engaged in enjoying the rare opportunity of their visits and mostly they return to hotels only for rest and relaxation during nights. Their main requirements are therefore neat and clean accommodation and good food. Planning future requirements of accommodation is therefore to be proceeded with reasonable caution. The costs of construction are such that, if too much accommodation is built, units will operate at occupancy factors which will not furnish a good return on the investment. Conversely, inadequate accommodation will affect growth of group-tourism. Growth of traffic and expansion of accommodation are closely interrelated. Hence accommodation has to be built first to provide sure and sound base without which it is not possible to advertise and "sell" a place in a big way. A certain amount of risk has to be faced at initial stages and unless we plan boldly and embark on fairly large scale construction programmes, it would not be possible for tourism to develop in the near future on the desired lines and we would not be able to take full advantage of the world boom in tourism predicted in the late seventies.

Another important development is at the home front. With the increase in the per capita income and the general level of literacy and with greater awareness and consciousness among the people of their national heritage the desire to travel and see places is becoming more and more pronounced. Domestic tourism will form the foundation and provide the basis on which a proper and comprehensive frame work of infrastructure to the tourism industry can be developed.

**The New Developments**

There are various new developments in tourism that have added a new dimension to the sector and lend support to the above approach. Notable amongst these is the technological advancement in air travel with the introduction of Jumbo Jets making it possible to transport large groups at almost considerably low fares. This will bring hordes of travellers from all over the world to be proceeded with reasonable caution. The costs of construction are such that, if too much accommodation is built, units will operate at occupancy factors which will not furnish a good return on the investment. Conversely, inadequate accommodation will affect growth of group-tourism. Growth of traffic and expansion of accommodation are closely interrelated. Hence accommodation has to be built first to provide sure and sound base without which it is not possible to advertise and "sell" a place in a big way. A certain amount of risk has to be faced at initial stages and unless we plan boldly and embark on fairly large scale construction programmes, it would not be possible for tourism to develop in the near future on the desired lines and we would not be able to take full advantage of the world boom in tourism predicted in the late seventies.

The available accommodation in the State is quite inadequate. Even the State capital of Tamil Nadu, Madras is not adequately equipped with required number and type of hotels to cater to both foreign and domestic tourists and visitors. Most of the tourist centres of the State and this indirectly influences adversely the flow of tourist traffic.

places. The solution for such cases lies in a spatial distribution for all the tourist centres. This can be effected by clustering around a "centre city or town"—where adequate infrastructure exists—grouping of different spots has to be effected in such a manner that each centre is accessible from the "centre city or town" by means of adequate transport facilities.

The recently formed Tamil Nadu Tourism Development Corporation Limited, has, at its first phase, taken over the Tourist Bungalows at Ootacamund, Tiruchirappalli, Madurai, Kanyakumari and Tiruchendur and also the Cape Hotel at Kanyakumari. The Corporation is on the move to construct new tourist bungalows at Hogenakkal and Mahabalipuram and also to improve the existing tourist bungalows at Ootacamund and other places. It has opened a new tourist cottage complex in Kodaikanal and has an ambitious programme of construction of Tourist Bungalows at all District Headquarters and important tourist centres viz Tirunelveli, Courtallam, Madurai, Tiruchirappalli, Nagapattinam, Chidambaram, Cuddalore, Kancheepuram, Mahabalipuram, Vellore, Salem, Dharmapuri, Hogenakkal and Coimbatore at an approximate cost of Rs. 131.50 lakhs. Cottages for tourists have been constructed in Ootacamund, Coonoor and Kodaikanal during last year and these are gaining popularity.

As recommended by the Working Group, the types of accommodation required can be categorised as follows:—

(a) suitable for high-spending foreign tourists and affluent home tourists. This will be in 3 to 5 star hotels.

(b) suitable for low budget foreign tourists and middle class home tourists. This will comprise one and two star hotels and also comfortable, neat unstarred units having all the modern amenities.

(c) suitable for mass traffic like groups of students, agriculturists, industrial workers (mainly domestic and to some extent foreign). This will be of the Dharmasala. Dormi-

tory and Youth hostel type charging a low tariff and providing just the bare minimum facilities.

It is very difficult to estimate the accommodation needs of the domestic traffic in tourism. Daily passenger arrivals by road and rail at Madras, Madurai, Coimbatore, Tiruchirappalli, Salem, Thanjavur, Rameswaram, Kanyakumari—the major pilgrim and tourist centres—may be taken as tentative indication of inter-state domestic traffic. It is estimated that 75,000

in the State. On further assuming that only 10 per cent will require overnight accommodation and other facilities in hotels and similar establishments, three million people will have to be provided with accommodation and other facilities.

For enabling accommodation for large groups of tourists, it should be made possible to utilise the existing Kalyanamantapams in major cities and towns for such tourists at nominal rates; these Kalyana-



persons arrive at Madras every day through various modes of transport. Considering the other places as a whole we may assume a figure of 75,000 arrival daily, this makes a total of 1.50 lakhs arrivals daily

mantapams are to be well equipped with sanitary arrangements, good and adequate water essentially. At interior tourist spots where no such large accommodation could be immediately made available tourist

sanitary facilities can be provided.

accommodation. The total financial outlay would therefore be —

The working group on Tourism has recommended as follows:—

It may therefore assume for the purpose of the assessment that the volume of tourist traffic requiring facilities for overnight stay in Tamil Nadu by 1984 would be not less than 2 million domestic and three lakhs foreign tourists.

The requirement of beds for this traffic could be worked out as follows:—

|                    | (RUPEES<br>IN<br>CRORES.) |
|--------------------|---------------------------|
| Category I .. ..   | 17.5                      |
| Category II .. ..  | 7.5                       |
| Category III .. .. | 50.0                      |
|                    | 75.0                      |

For the three lakhs foreign tourists, the requirement would be 10,000 in the starred category assuming an average stay of one week for each tourist. Of these, 5,000 will be in first category, i.e., 3 to 5 stars. The remaining 5,000 could be in the second category, i.e., 2 stars and below. No provision is made for them in the third category, i.e., Dormitory or Dharmasala type as these requirements, if any, can be met out of the accommodation planned for the domestic traffic under this category.

#### The Home Tourists

As regards, 3 million domestic tourists, the number of beds required could be put at roughly 50,000 assuming an average stay of one week. Of these 10,000 will be in the low-starred or unstarred category providing, however, all modern facilities at a reasonable tariff. The balance 40,000 will have to be in the third category, i.e. Dormitory, Dharmasala and Youth Hostel type, as the bulk of the domestic traffic would comprise the lower middle class, student groups and industrial workers. Some accommodation would be required in the three star and above categories but no separate provision need be made for this, as it would be taken care of under the corresponding provision for foreign tourists.

The financial implications of these could be worked out at an average cost of Rs. 35,000 per bed for three stars and above, Rs.15,000 for two stars and below and Rs. 5,000 for the third category.



#### TRAINING FOR HOTEL INDUSTRY



## EXISTING HOTEL ACCOMMODATION

| Serial number, name of the hotel and town.      | Number of beds. | Serial number, name of the hotel and town.      | Number of beds. |
|-------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| <b>EXISTING HOTELS.</b>                         |                 |                                                 |                 |
| <b>Category A and above.</b>                    |                 |                                                 |                 |
| Hotel Imperial, Madras .. .. .                  | 112             | 7 Hotel Aristo, Tiruchirappalli .. .. .         | 35              |
| 2 Carlton Hotel, Kodaikanal .. .. .             | 80              | 8 Tourist Hotel, Madras .. .. .                 | 32              |
| 3 Hotel Connemara, Madras .. .. .               | 140             | 9 Hotel Arun, Madras .. .. .                    | 78              |
| 4 Hotel Dasaprakash, Madras .. .. .             | 352             | 10 Hotel Madras International, Madras .. .. .   | 48              |
| 5 Hotel Ashoka, Madras .. .. .                  | 176             | 11 Hotel Apollo, Madras .. .. .                 | 14              |
| 6 Hampton Hotel, Coonoor .. .. .                | 65              | 12 Travellers' Lodge, Rancheepuram .. .. .      | 4               |
| 7 Savoy Hotel, Nilgiris .. .. .                 | 70              | 13 Travellers' Lodge, Madurai .. .. .           | 14              |
| 8 Woodlands Hotel, Madras .. .. .               | 271             | 14 Travellers' Lodge, Tiruchirappalli .. .. .   | 6               |
| 9 Pandyan Hotel, Madurai .. .. .                | 114             | 15 Travellers' Lodge, Thanjavur .. .. .         | 6               |
| 10 Hotel Savera, Madras .. .. .                 | 190             | 16 Hotel Dasaprakash, Ootacamund .. .. .        | 200             |
| 11 Hotel Victoria, Madras .. .. .               | 70              | 17 Everest Boarding and Lodging, Madras .. .. . | 140             |
| 12 Hotel Ganpat, Madras .. .. .                 | 6               | 18 Gupta's Ajanta Hotel, Madras .. .. .         | 107             |
| 13 Hotel Palmgrove, Madras .. .. .              | 128             | 19 Nellai Lodge, Tirunelveli .. .. .            | 80              |
| 14 Hotel Mayfair, Madras .. .. .                | 44              | 20 Hotel Guru, Coimbatore .. .. .               | 101             |
| 15* Veecumsees Silver Sands, Mamallapuram. } 69 |                 | 21 Tourist Home, Madras .. .. .                 | 49              |
| 16 Travellers' Lodge, Mamallapuram .. .. .      | 56              | 22 Udipi Home, Madras .. .. .                   | 110             |
| Total .. .. .                                   | 1,743           | 23 Hotel Hari Nivas, Madras .. .. .             | 63              |
|                                                 |                 | 24 Geetha Hotel, Madras .. .. .                 | 65              |
|                                                 |                 | 25 Hotel Alankar, Coimbatore .. .. .            | 94              |
|                                                 |                 | 26 Hotel Garden, Madras .. .. .                 | 11              |
|                                                 |                 | 27 Hotel Sri Durga, Madras .. .. .              | 63              |
|                                                 |                 | 28 Hotel Swagath, Madras .. .. .                | 71              |
|                                                 |                 | 29 Hotel Visharam, Madras .. .. .               | 38              |
|                                                 |                 | 30 Lalitha's Lodge, Madras .. .. .              | 30              |
|                                                 |                 | 31 Hotel Ramprasad, Madras .. .. .              | 56              |
|                                                 |                 | 32 Hotel Aswathi, Madras .. .. .                | 24              |
|                                                 |                 | 33 Hotel Shrelekha, Madras .. .. .              | 119             |
|                                                 |                 | Total .. .. .                                   | 1,490           |
| <b>Category B and above.</b>                    |                 |                                                 |                 |
| 1 Ashby Hotel, Tiruchirappalli .. .. .          | 21              |                                                 |                 |
| 2 Hotel Dwaraka, Salem .. .. .                  | 47              |                                                 |                 |
| 3 Hotel Oceanic, Madras .. .. .                 | 80              |                                                 |                 |
| 4 Queen's Hotel, Madras .. .. .                 | 54              |                                                 |                 |
| 5 Ritz Hotel, Nilgiris .. .. .                  | 52              |                                                 |                 |
| 6 Hotel Claridges, Madras .. .. .               | 88              |                                                 |                 |

\*Seaside resorts.

| NEW PROJECTS (Planned/under construction).      |                 | NEW PROJECTS (Planned/under construction)—cont.                          |                 |
|-------------------------------------------------|-----------------|--------------------------------------------------------------------------|-----------------|
| Serial number, name of the hotel and town.      | Number of beds. | Serial number name of the hotel and town.                                | Number of beds. |
| (1)                                             | (2)             | (1)                                                                      | (2)             |
| <b>Category A.</b>                              |                 |                                                                          |                 |
| 1 Adyar Gate Hotel, Madras .. .. .              | 250             | 10 Hotel Mullai, Madras .. .. .                                          | 150             |
| 2 Hotel Taj Coromandel, Madras .. .. .          | 450             | 11 SAS Hotel, Madras .. .. .                                             | 290             |
| 3 Hotel Air India, Madras .. .. .               | 335             | 12 Hotel Ganpat, Madras .. .. .                                          | 85              |
| 4 Hotel Oberoi, Madras .. .. .                  | 350             | Total .. .. .                                                            | 2,731           |
| 5 Hotel Atlantic, Madras .. .. .                | 150             | <b>Category B.</b>                                                       |                 |
| 6 Hotel Select, Salem .. .. .                   | 76              | 1 Tamil Nadu Tourism Development Corporation Limited at various centres. | 1,168           |
| 7 B. D. V's. Hotel, Mamallapuram (Since opened) | 20              | 2 Youth Hostel, Madras .. .. .                                           | 47              |
| 8 Hotel Sudarshan International, Madras.        | 75              | 3 Tourist Bungalow, Rameshwaram .. .. .                                  | 48              |
| 9 Hotel Essor, Madras .. .. .                   | 500             | Total .. .. .                                                            | 1,263           |
| <b>New Projects.</b>                            |                 |                                                                          |                 |
|                                                 | Existing.       |                                                                          |                 |
|                                                 | Private Sector. | Public Sector.                                                           | Total.          |
| Category A .. .. .                              | 1,687           | 56                                                                       | 1,743           |
| Category B .. .. .                              | 1,460           | 418                                                                      | 1,878           |
| Grand total .. .. .                             | 3,147           | 474                                                                      | 3,621           |
|                                                 |                 | Private Sector.                                                          | Public Sector.  |
|                                                 |                 | 2,731                                                                    | 1,263           |
|                                                 |                 |                                                                          | 3,994           |

## LOW COST BABY FOOD FROM COIMBATORE

A ready to serve infant weaning food mixture has been developed by Dr. Rajammal P. Devadas, Principal of Sri Avinashilingam Home Science College for Women, Coimbatore.

This low cost infant weaning food was developed out of indigenous vegetable food sources and its efficacy has been evaluated as a weaning food in improving the nutritional status of infants 6 months—3 years of age.

As a first step in this research, surveys were conducted to gather information on the prevailing weaning practices and locally used protein rich foods in Coimbatore district. Based on the information collected, six ready to serve

infant weaning foods were formulated utilising the cereals (millets): cholam, ragi, or maize, one pulse—greengram dhal or bengalgram dhal, groundnuts and jaggery. All the six food mixtures thus developed were found to be good in protein quality. Two hundred infants from two rural communities namely Perianaickenpalayam and Iothipuram of the Perianaickenpalayam Block were fed with maize greengram mixture by Miss S. Jamala, the Assistant Research Officer. A group of 50 children from the same area with a comparable socio-economic background but did not receive the supplement were also selected as controls. Eighty gram of the infant weaning food mixture per day per child supplying 305 calories and 11.46 g. of protein at a cost 10 paise were

given to the selected children for a period of 12 months for 6 days in the week.

The nutritional status of the selected children was evaluated in terms of increments in heights, weights haemoglobin levels and clinical picture. The mean increase in the height of the children who received the mixture was 5.93 c.m. for the year as compared to the 2.63 c.m. registered by children in the control group. The mean increase in the weight of the children who received the food mixture was 2.15 kg. for the year whereas that of the control group was 1.19 kg. Thus it is evident that a low cost indigenous food mixture can help in the nutritional improvement of the children by supplying extra and protein.



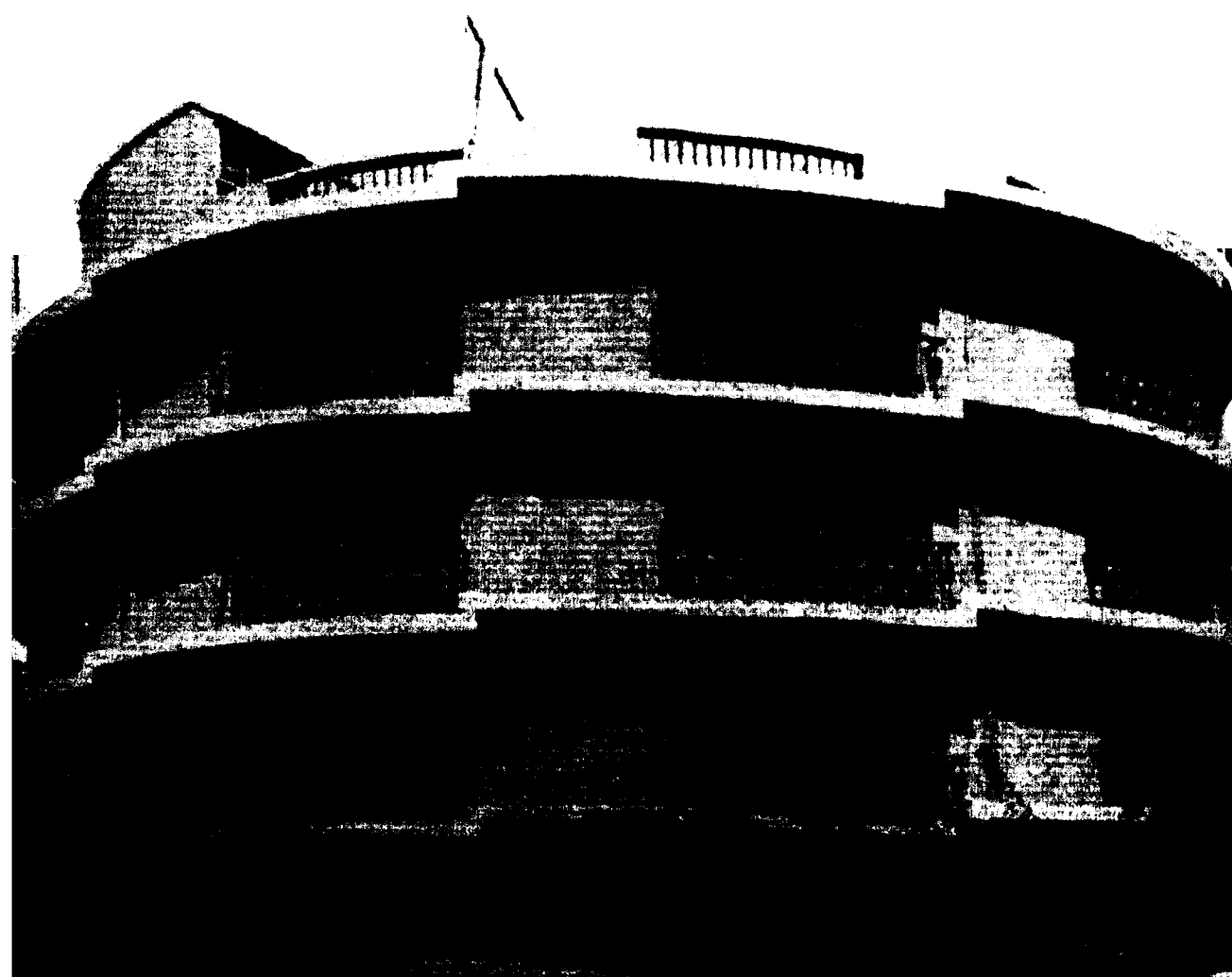


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# TOURISM AND HOTEL INDUSTRY

By

A. V. Kuppuswami, Principal, Institute of Catering Technology and Applied Nutrition.



The realisation of the importance of tourism and its profit making possibilities have dawned much earlier in the west than in countries like India. Many nations after the World War II have wiped out their trade deficits and over came their adverse foreign exchange position by developing tourism. The potentiality of tourism as an Industry can be seen by the fact that countries like Switzerland and Spain owe their affluence to their revenue got by tourism.

The tourism industry is an expert industry and it ranks above all other export industries and is unique by itself. It earns large sums of foreign exchange without actually exporting any material goods. It is an invisible form of export. This is the only export trade which brings returns without any sacrifice on the part of the exporting country. In this industry no heavy investment is needed.

Tourism can aptly be described as a group of industries rather than a single industry. This group includes aviation, shipping, other forms of transport, hotels, handicrafts, etc. The growth and development of these industries as well as a few other subsidiary industries are closely linked to tourism. If tourism flourishes in any country, it automatically means that all these allied industries are thriving well.

Of the major industries closely connected to tourism is the hotel industry. Our country got into the tourism map rather late and hence the development of hotel industries also has come rather late. Till very recently the progress of the hotel industry had been only in the private sector. But after the achievement of independence in 1947, with the increase in international traffic, the hotel industry had to increase its accommodation and facilities. Especially during the past one decade the progress made by the hotel industry is very remarkable. A good many big and luxurious hotels were constructed especially in the major cities like Bombay, Delhi, Calcutta and Madras.

In the next two or three years it is expected that Madras will have at least two 5-star hotels to cope with the demand of the tourist traffic, apart from the numerous hotels to cater to the middle income groups. The Tourism Development Corporation of India came into being and has under its control a chain of hotels and tourist homes. To supplement the need, the Tamil Nadu Tourism Development Corporation started tourist homes in most of the places of tourist interest and have also plans to construct a luxurious hotel under its control in a centrally located place in Madras.

To meet the demands of these luxury hotels, tourist homes, as also Airlines, and shipping Catering service, the Institute of Catering Technology at Madras, Bombay, Delhi and Calcutta are training candidates both for the managerial and supervisory cadre as well as for the different trade connected with the hotel industry such as Cookery, Bakery and Confectionery, Reception, Restaurant and Counter Service, Housekeeping, etc. The demand for the trained personnel in this industry has gone so much that the Institutes are not able to cope up with the same and it is

expected that with increased facilities these Institutes should be in a position to meet the demand in due course.

## BETTER TYPES FOR INDUSTRY

It is obvious that no industry can sustain its growth rate unless it can draw upon a reservoir of trained manpower capable of running the establishments successfully. It is significant that the training facilities available in our country have been expanding rapidly. Apart from the four major training institutes located in Delhi, Calcutta, Bombay and Madras, there are six craft institutes which train persons for skilled jobs such as cooks, waiters, etc. In addition the big hotels have their own training establishments.

There is also a major change with regard to the type of people who enter the profession. In the past only a limited number of persons entered the industry because there was little prospect of making a permanent career. Opportunities for promotion were extremely limited. The establishment of a large number of new hotels has given a new entrant steadily expanding opportunity with vast scope for improving his prospects, with the result that young persons are getting into it with the full confidence that they would be able to end their career with a substantial amount of salary comparable to what can be earned elsewhere. This opening up of the vista of opportunity has imparted greater stability with regard to career opportunities in the catering industry. The hotel industry at the moment is on the threshold of phenomenal expansion, and if the rate of expansion continues for another three or four years, the industry would reach the requirements of the tourist traffic estimated in official reports.

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## HOTELS-HOUSEWIVES OF NATION

By

\*R. RAMACHANDRAN

The Hotel Industry is to the Nation what a housewife is to a happy home. This is especially so in a country which has launched a big scheme to promote tourism.

The analogy is quite apt to the Indian conditions. We have always been a nation of kind hosts. We have never turned away any visitor without entertaining him to the best of our ability and resources.

It has been our social tradition that the husband goes out for work and toils all day and whatever he brings home is pleasantly accepted by the wife and spent in such a way that maximum satisfaction is obtained. Guests can be entertained only with the unstinted co-operation of the housewife.

Receiving guests and sending them back with happy memories and the part played by the lady of the house in this regard have been extolled in many of our literature.

If hotels are the housewives of the nation, the travel agents are the husbands. They travel all over the world, often under trying circumstances, facing difficulties and working against heavy competition, in search of potential tourists. And when the tourists reach our country, the hotels have to play an important role in sustaining their enjoyment throughout their stay.

Of course there are other factors also for successful development of tourism. But the role of the hotel industry is a significant one.

Now tourism has been accepted as an important industry by all countries without exception. Even the materialistic-minded America and Japan have come to realise its economic aspects. This is one of the most human enterprises undertaken singly and in the mass, recognised as the world's greatest industry with the biggest turnover in money in the history of civilised society. From arrival to departure, a tourist gives business to carriers, hoteliers, shop-keepers, jewellers and many others.



Dr. Clement of the Department of Commerce of the U.S., while referring to the tourist areas of the Pacific and the Far East, recently pointed out that every 1,000 dollars invested by a tourist, the break-up was as follows :-

- 250 for accommodation
- 320 for food and drink
- 250 for shopping
- 100 for entertainment
- 50 for local transport, and
- 30 for miscellaneous items.

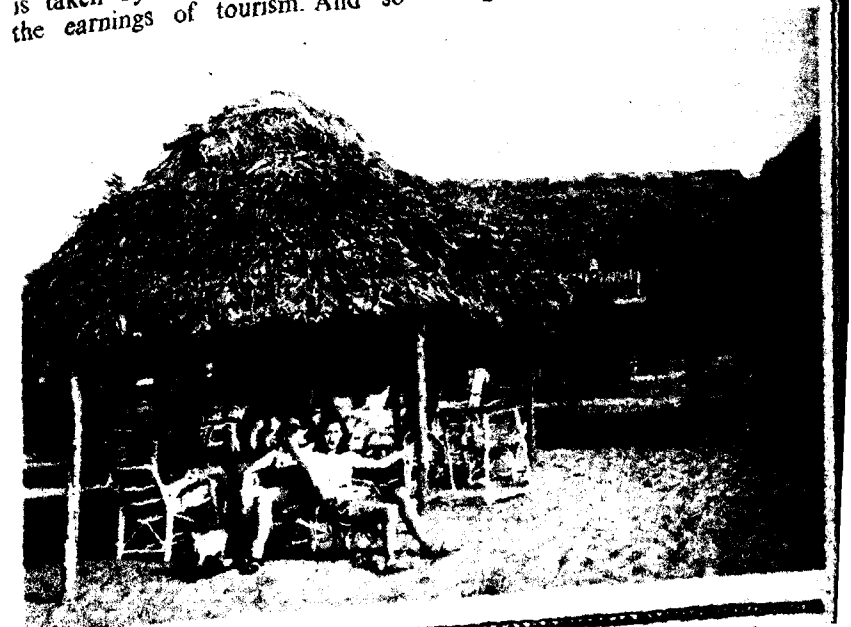
This shows that the Lion's share is taken by the hotel industry in the earnings of tourism. And so

the responsibility of hotels is all the more greater in fulfilling the great expectations created in the minds of the tourists by Travel Agents. In a strange land the hotels must serve as a home for the tourists away from home. The tourist gets the first impression of the host country from the way he is received and treated in the hotel he has chosen to stay. He wanders about all day to see as much as available in as short a time as possible and when he returns to his place of stay for rest, almost exhausted, he expects a refreshing bath, sumptuous food (to which he is accustomed and also to varieties and specialities which may not be available in his own country) and a clean and comfortable bed.

Accent on cheer and cleanliness.

All the tourists may not be after luxuries, but every one of them will insist on maximum comforts at minimum costs, good food and courteous service and cleanliness. If these are not available, the tourist will think of packing off for some other country even on the very first day of his arrival.

So the stress need not be on starred hotels only. Travellers' Lodges and tourist homes, modestly



35 • Managing Director, Asian Travels (I) Private Limited, Director, Tamil Nadu Tourism Development Corporation, Chairman, Travel Agents Association of India, Southern Region.

priced, neatly kept and offering service with a smile are more important and the attention must be focussed on these aspects while sanctioning schemes for building new hotels.

It is learnt, I wish it is wrong, that landing points of various international airlines in India are linked with the landing points given to Air India in their respective countries. In the wider inter-

There should be concentrated regional action wherever it is needed instead of duplicating efforts.

The Second need is for top and middle management to understand the "Philosophy of pleasure

Silversands is used by major tour operators of Europe.



#### Can Air India help the South?

The hotels which we think very big in South Indian towns are perhaps of four and less starred categories only.

The reason for this pitiable situation is perhaps because only a fraction—about 10 per cent—of the tourists coming to India are attracted towards South in spite of the fact that this region is full of places of tourist importance—beauty spots and centres of archeological and religious significance, more than the rest of India. This gold mine is left not properly exploited for reasons only known to people at the helm of affairs. Of course, of late, there seems to be some activity in this direction, but not of the magnitude the situation demands.

One of the known reasons for this low development is the lack of proper air connections. More international airlines must touch Madras and other Southern Cities, if the country is to take full advantage of the tourist potential in this part of the country.

rests of the country's economy, Air India should evince greater interest getting more international flights touching the South until such time we become strong in our economy. Indian Airlines also should improve their services so as to instill confidence in the foreign tourists that they can keep up their schedule and don't get stranded. Standby aircrafts are important for this region to avoid frequent cancellation of flights, causing avoidable annoyance to tourists in a hurry.

When these improvements are made, the flow of tourists to the South is bound to increase, leading to the necessity of starting more hotels.

#### The Asian decon :

The question will then arise what type of hotels we are going to build. It has been suggested that they should be modelled on Asian traditions—in architecture, in set-up, in decoration, etc. but with modern sanitary conditions and cleanliness, according to international standards. This will avoid comparison with Star classifications that exist in the various parts of the world.

The whole problem of promotion of tourism can be summed up in the words of Mr. F. Marvin Plake, Executive Director, Pacific Area Travel Association (PATA) :

The first and foremost is the need for "meaningful" co-operation.

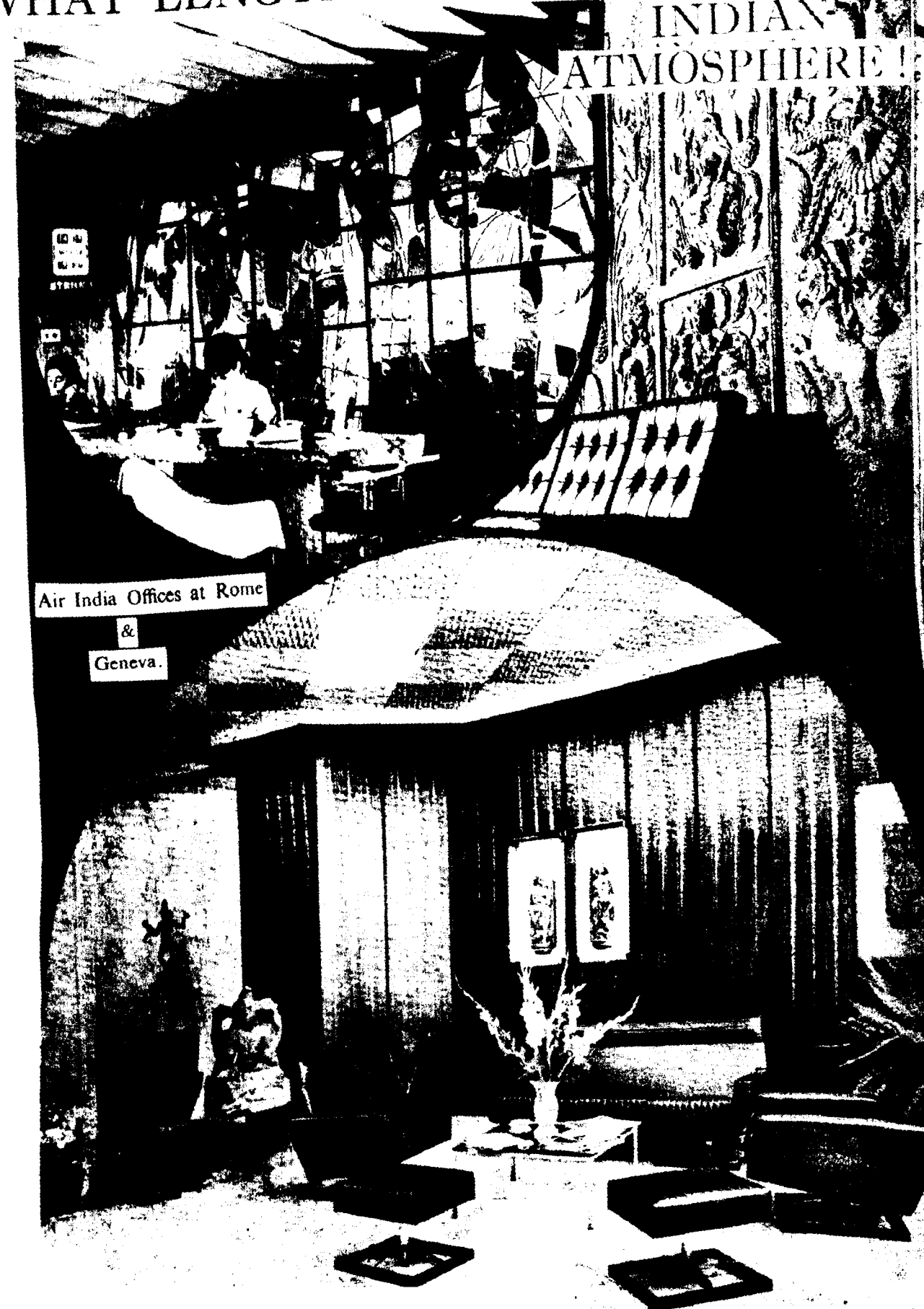
travel". "The tourist simply is not willing to sacrifice his life-style to sleep in a lumpy bed with stained sheets."

The third requirement is properly trained workers. It is an obvious and vital requirement in which Government can do much. The hotels and other travel organisations should also get moving on effective and continuous staff training programmes.

Fourth and last, there is an urgent need for standardisation on regional basis. "There should be standardised procedures governing, for instance, cancellation charges, the use of credit cards and commission and discounts to airline and travel agency employees." Such a scheme would help hotels as well as the tourists.

We hope that the Twelfth All-India Hotel and Restaurant Convention, to be held at Madras, will suggest solutions for all the problems.

## WHAT LENGTHS THEY GO TO GIVE IN INDIAN ATMOSPHERE!



Air India Offices at Rome

&  
Geneva.



# HOW MANY LICENCES BEFORE ONE CAN RUN A HOTEL?

C. M. Sambandamurthi, MHC (Lond.) AMRSH (Lond.), Instructor (Hotel Reception and Law).

In Ancient days, travel from one place to another was done mostly by troops to wage war and by the Merchants to sell their Merchandise and by Pilgrims. Maharajahs and affluent landlords built wayside shelters, i.e., four pillars with a roofing and a nearby well for drinking water for the travellers. Even today, these can be seen while going on the Highways in most parts of India. The next stage of accommodation was the regular shelters with walls on two or three sides and a nearby well for drinking water. Then came the pharimasalas and Chattrams, giving free accommodation for travellers. In the early part of the 19th Century Locomotives, were introduced and travel increased and the need for traveller Lodges was keenly felt and introduced. Still later, the ships and ocean liners, brought travellers from far and wide and thus the world closer. Then hotels came into existence. In the Modern Era, in the Mid Thirties, Planes came in for travel, cutting down the distance and time and more and more hotels sprang up. Today we have a number of Posh Five Star Hotels of International Standards in India. Travel by cars and Buses has registered a very rapid growth in recent days. This has necessitated construction of hotels on the Highways, to cater to the needs of travellers by providing Accommodation and food service to them. Hotels also have provision of Petrol Bunk Facilities and also toilet shop. As the Hotels with Boarding and Lodging facilities came up, the Government introduced certain Licences to be taken out, to keep up the standards of the Hotels and to protect health hazards. The licences required to start a hotel, depending on the size and standard of the Hotel and the area, are as hereunder.—

1. The Municipal Licence for an eating House or Hotel.
2. Licence for Radio (Commercial).
3. Licence for Loudspeakers (Amplifiers).

4. Licence for storage of Matches and Cigars (Only beyond a certain limit).
5. Licence for extension of Hotel working up to mid-night.

6. Licence for keeping a place for public entertainment and amusement, including Cabaret.
7. Licence for butchering.
8. Licence for billiards.
9. Licence for storing of butter over 7 lbs.
10. Licence for Baking.
11. Licence for Aerated Water manufacturing.
12. Licence for a bar or permit room.
13. Licence for sale of foreign liquors in retail.
14. Registration of Establishment under shops and Establishments Act.
15. Licence for direct import of Foreign goods for use only.
16. Coal, Sugar, Food grains, Flour, Milk Powder are also rationed from time to time and a permit is necessary.
17. Licence for money exchange.

In addition to the above, to regulate the conditions of work in hotels and catering establishments, the Madras Catering Establishments Act, 1958, and the Madras Catering Establishments Rules 1959, were enacted by the State Legislature of the Government of Tamil Nadu and similar acts are in force in the different States of India conforming to the Central Government Factories Act of 1948, and also the payment of Wages Act, 1936.

Licences required to be taken for running a Lodging House in Tamil Nadu.

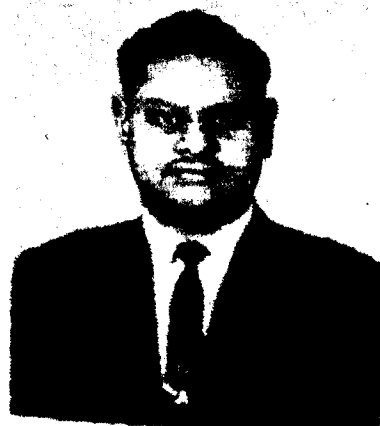
1. Police no objection Certificate.

2. Licence under Madras Catering Establishments Act (From the Labour Inspector of the Division).
3. Municipal Licence for running a Lodging House under Public Health Act. (For this a sanctioned plan, with room capacity, size, etc., should also be submitted.)
4. Municipal Licence for running of a Restaurant with meals.
5. Licence under Food Adulteration Act (obtainable from the Corporation).
6. Police Licence for running a Lodging House.

## Subsequent years—

Before 31st January Municipal Licence (renewal) for running a Lodging House and Restaurant (two Licences separately should be taken) duly remitting the amount into the Corporation. After remitting the amount, before 31st March, application should be made to the Commissioner of Police, for renewal of the Lodging House Licence.

Licence should also be renewed under the Madras Catering Establishment Act, every year.

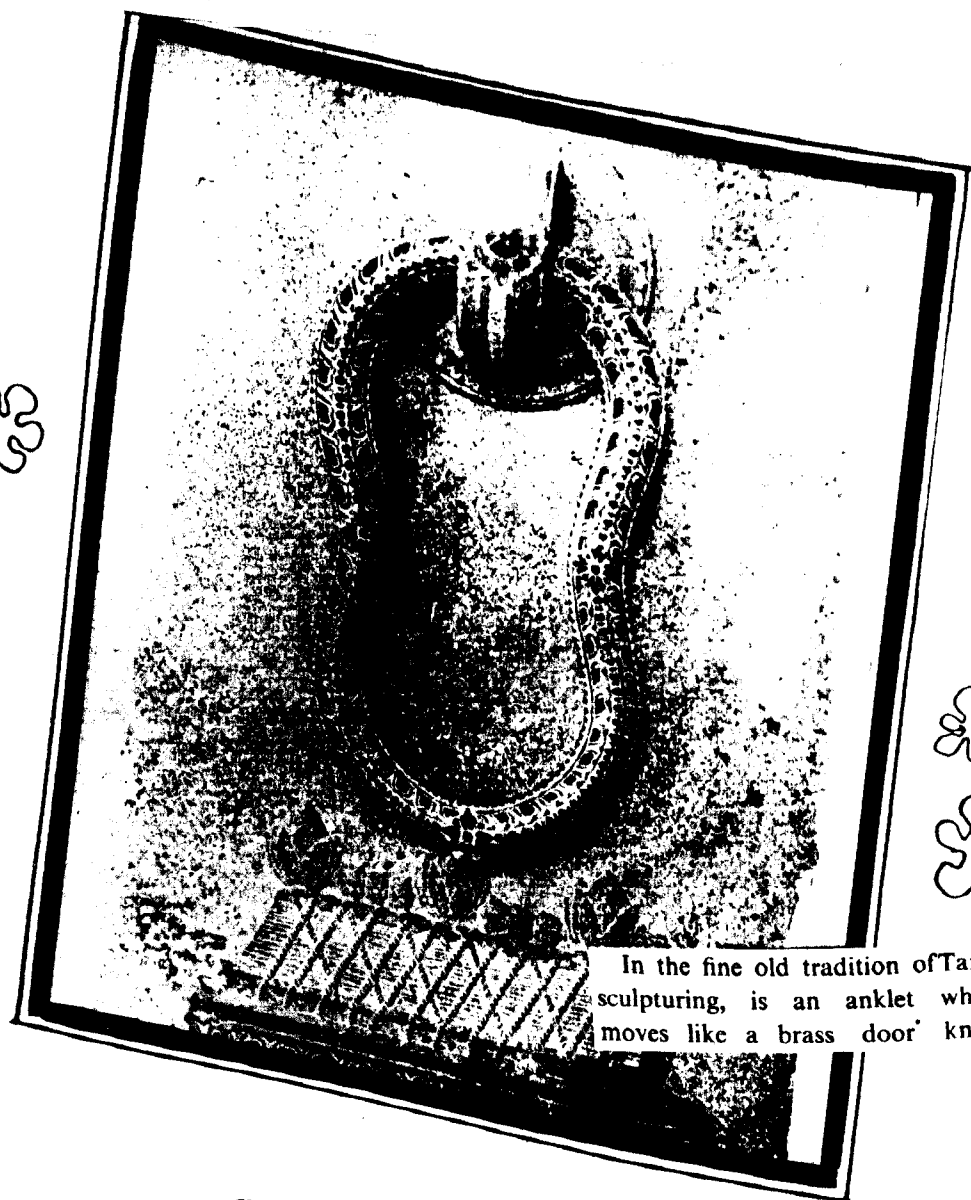


# PUHAR IS REAL



Till now only to archaeologists and historians, Phuar was real; alike, the scholars of Tamil literature were positive that the Chola kings of Tamil Nadu had a flourishing trade with countries of east

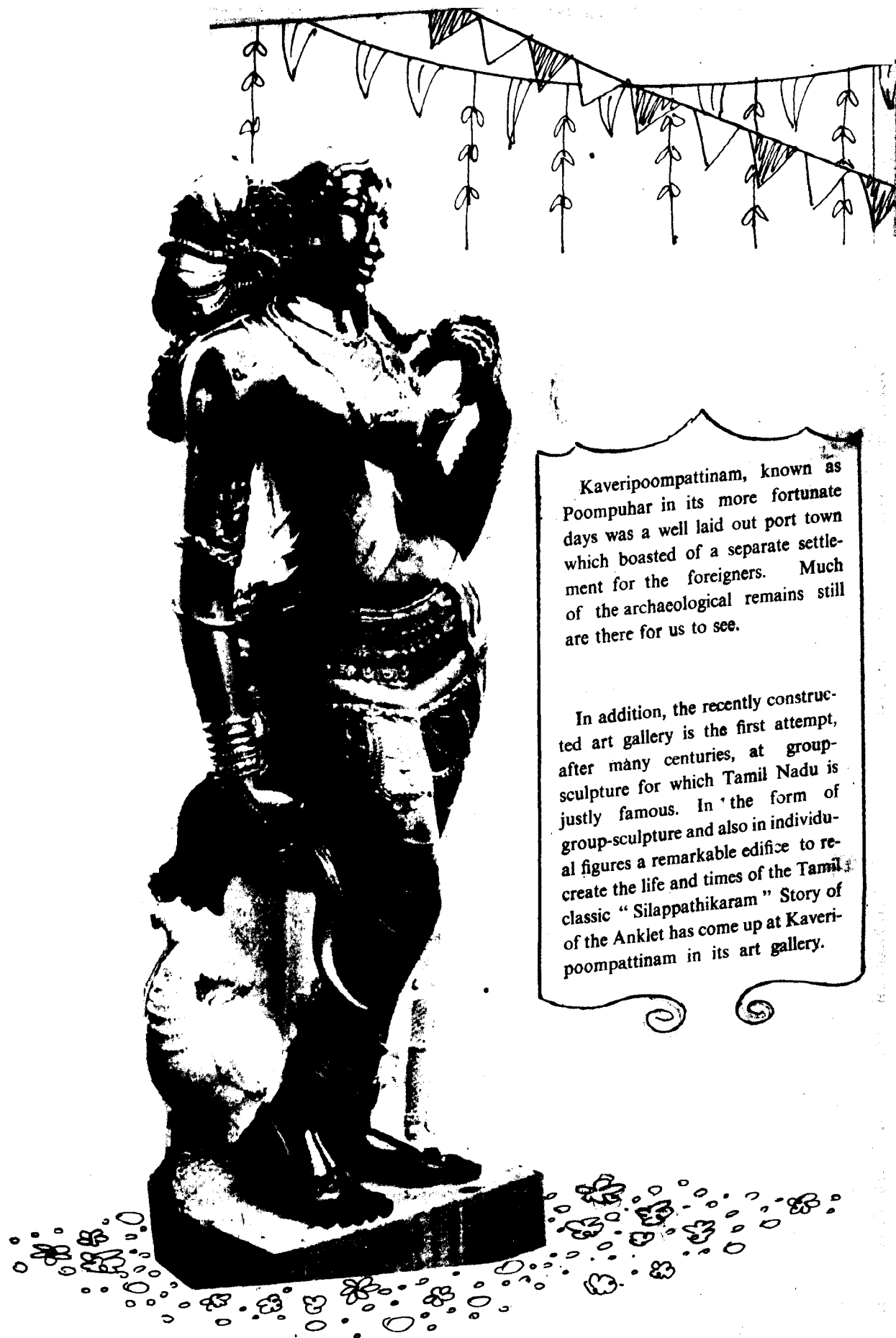




In the fine old tradition of Tamil sculpturing, is an anklet which moves like a brass door knob.

and west centred round the port town of Puhar. Also many literary pieces sacred to Buddhism, refer to Puhar and the Vihara constructed there. Only by the beginning of this century did archaeological excavations point to the actual location of the lost city, the world's market town of Puhar.

Layer upon layer of this lost town has been laid bare at Kaveripoompattinam the coastal town of Tanjore District, 24 km. either way from Sirkali or Mayuram so that the place which finds mention in Ptolemy's Geography and Pliny's Travels can be seen by travellers and tourists alike today.

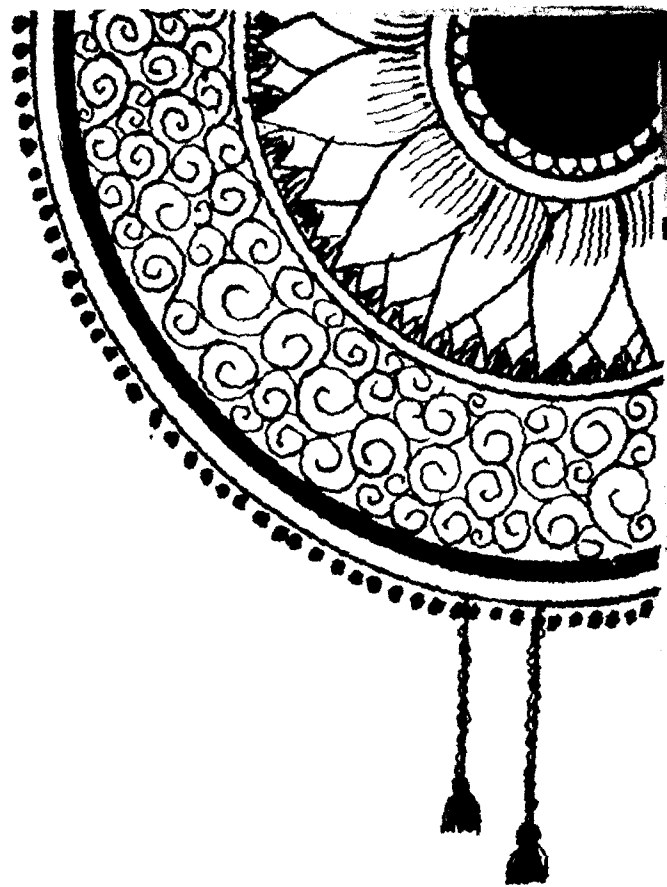


Kaveripoompattinam, known as Poompuhar in its more fortunate days was a well laid out port town which boasted of a separate settlement for the foreigners. Much of the archaeological remains still are there for us to see.

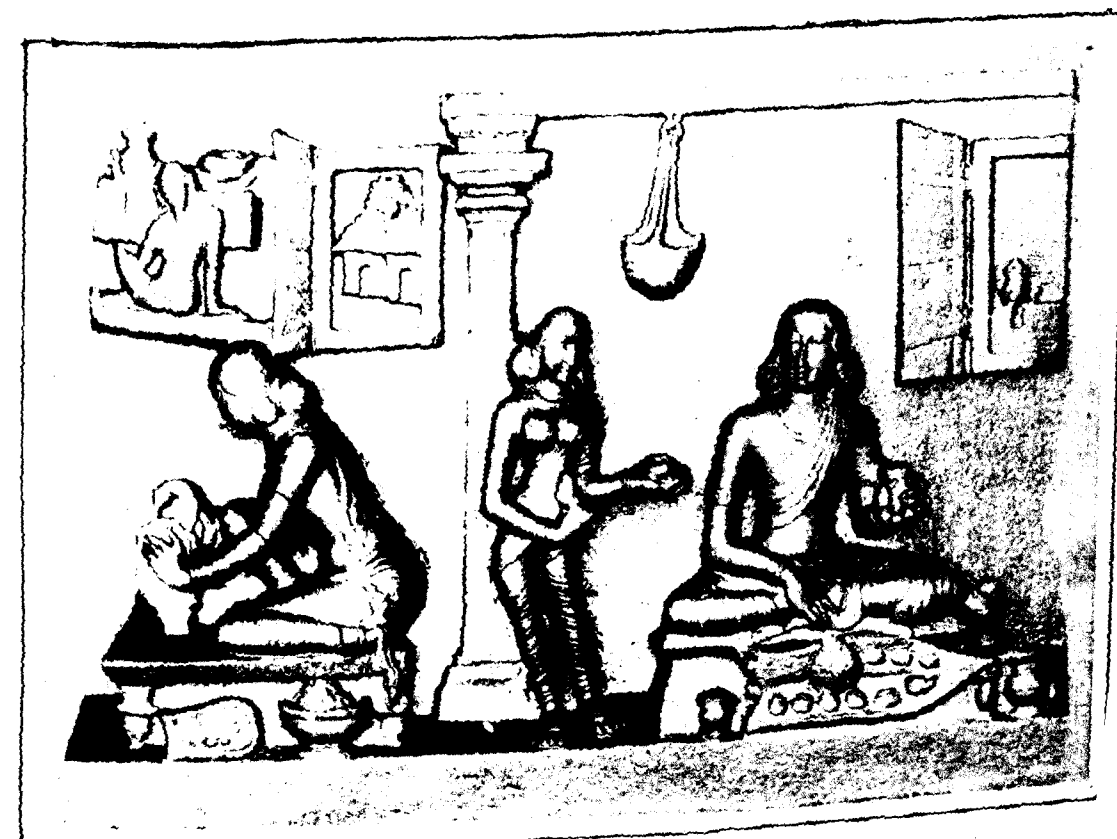
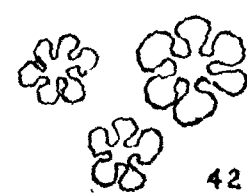
In addition, the recently constructed art gallery is the first attempt, after many centuries, at group-sculpture for which Tamil Nadu is justly famous. In the form of group-sculpture and also in individual figures a remarkable edifice to recreate the life and times of the Tamil classic "Silappathikaram" Story of the Anklet has come up at Kaveripoompattinam in its art gallery.

In the fine old tradition of Tamil sculpturing, is an anklet which moves like a brass door knob. In line with the best of the ancient sculptures, the whole art gallery excels both in grandiose conception of giants and the minute chiselling of the jewellers. In about 49 panels the story of the Anklet (Silappathikaram) is told. The large dimension sculptures are those of Kovalan with his consort Kannaki and that of Madhavi (the dansense).

Thus Kaveripoompattinam now has acquired the stature of a monument with the added attraction of a beach. Thus one can imbibe Tamil Culture while availing the benefits of a beach resort.



PUBLIC ANNOUNCEMENT OF KANNAGIS MARRIAGE



## Solicitude Hall Mark of South Indian Dinner Service

The photo depicts Kannagi serving food to Kovalan in one of the panels at Poompuhar art gallery. Served in the traditional South Indian way, on plantain leaf, with the diner sitting on a slightly raised wooden plank, the sculpture captures a poignant scene in Silappadikaram.

The following will be the order of service of the various items in such a dinner. On the top portion of the leaf, from (left to right): Pachadi (salads), pickles, 'Kosumalli' of two kinds, vegetable 'foogath' and 'Koottu' are served; appalam being served from time to time. For the first course, rice, dhal and ghee are served, followed by sambhar and rasam, which are poured on rice in adequate quantity. After, rasam, sweet payasam is served followed by the last course, curd rice.

Such a service naturally calls for personal attention at every stage, as befitting the lofty ideals of hospitality enjoined in Thirukkural. Such a service has necessarily to be with attentive solicitude, which the sculpture narrates in minute detail.

The Cover Page of this issue depict the inauguration of Poompuhar Art Gallery.

—Abridged from an article written for Tamil Arasu, by Thirumathi U. Natarajan of Institute of Catering Technology, Adyar, Madras.



# ARE YOU A "DO IT YOURSELF" ADDICT IN TRAVEL ALSO?

## TIPS FROM A SUPERAGENT

BY SHERIDAN H. GARTH, CHRISTIAN SCIENCE MONITOR

Anyone who is thinking of taking a trip—even far in the future—should understand clearly the function of a travel agent, and how he can profit by using one. Once understood, the services of an agent can be employed intelligently, economically and expertly.

Under his "one roof" the agent represents airlines, cruise lines, hotel owners, tour operators, car-rental companies and other organizations. He thus can provide valuable guidance and necessary information, make the required reservations over any combination of routes and provide the services that an individual needs for his particular trip.

Inquiries about travel are thus spared the trouble of going from one airline office to another, from one hotel representative to another, seeking the service which is available all the time at a travel agency.

A travel agent gives you descriptive folders, supplies information on places and routes, answers your questions, makes recommendations on the type of trip that would be suitable for you. He then makes the reservations with the transportation and other companies, issues you precise tickets and vouchers, tells you in detail how to be prepared for your departure, and offers any other ancillary operations you may request of him.

No charge for consulting.

There is no charge for discussing travel ideas with any agent, or for asking him information regarding a resort or a type of trip you would like to arrange. You have no obligation in your dealings until the agent asks you for a deposit to hold a particular reservation for you. And even if you pay the deposit, you can get your money refunded if you should have to cancel your travel plans. Of course, this is subject to any exception stated specifically to you by the

agent. When paying your deposit, you should certainly ask your agent for a clear answer on this point.

Now, you might think: Why not ask two travel agents to work for you and then choose the one you trust the most?

The answer to that is that it is unfair to any agent who works for you without charge by looking up facts and information, to have you patronize a rival agency. The situation is even worse if you ask a second agent to make a second reservation while the first is working on it. This confuses both, and in some cases the request is thrown out by the hotel, cruise line, or airline when it is discovered that two agents are conflicting over the same client.

Make inquiries at as many agencies as you want, but when the time comes to decide on your trip and make reservations for it, you should choose one of the agents and stay with him.

It is indeed true that a travel agency does more for its clients' business. To enumerate:

Your agents will:

Answer your travel questions;

Give you information on suitable travel offerings;

Act as a counselor with the best advice he can and

Make reservations for the trip you select.

If you then pay a deposit to hold these reservations and make your trip eventually, he issues all the tickets and gives you detailed instructions on obtaining passports, visas, customs, regulations, lunousines to the airport, baggage weights, etc., as well as other useful information on packing and preparing for your trip. Because a travel agent performs so many services advertised as free, that is no reason to overtax

his time or ask for counsel and services without expecting to pay something.

If you ask him to work out an individual travel plan, or to make special inquiries, or to enter a series of reservations at various hotels and over connecting routes, then he will quote you a rate for these services which included the cost of his time in performing this duty.

However, if you ask him to reserve you a place on a tour, or a cruise or a package vacation, or for an air flight, then you will pay no fee and get his services gratis. The agency receives its commission from the airline, ship line, or tour operator whose services he obtains for you.

Can you save the commission?

Some travellers may ask if it would not be just as easy to go directly to an airline office or a cruise line's headquarters, thereby "saving the commission". This is not so at all. Fares are published officially by air line and steamship line agreements. If you stand in line at an airline office, the rate for your tickets is the same as if you bought it at the travel agency, and with the difference that the travel agent represents all companies and can book you over any line that is best adapted to your plans. And as for steamship lines or even tour operators, it is sometimes difficult to locate those organizations who rely almost 100 per cent on travel agents to sell their wares.

Regarding the type of service you receive from your travel agency, there is no doubt that more and more agents will ask you to browse for your trip from among racks of folders and thus they extend you no counselling.

Feel free to leave such an office without asking anything more or paying any money, unless you know exactly what tour or what flight you want, and the agent has only to do your bidding.

However, if you feel uncertain about a country to visit, the proper season to go, the most appropriate way to travel and the choice of hotels to accept or whether you can do something less expensively and get the same enjoyment, then go to another agency that will give you counselling from experts who can offer you first hand advice from their own vast experience and from information in their files. This counselling costs you nothing, presuming you allow this agency to make your reservations and issue your tickets when you have made your decision.

### Unfair Criticism

Much criticism has fallen unfairly on travel agents because of news headlines about travellers stranded overseas due to dishonest organisers. The defaulters are usually tour operators who materialise temporarily and then disappear after payments are collected. Individuals, who deal directly with these tour operators to obtain a greatly reduced air fare without any contract or guarantee, are the only ones victimised by such events.

Because of this growing concern over reliability, various cities and States have been urged to set up plans for licensing retail travel agencies (At present anyone can set themselves up as a travel agent). However, there is as yet no agreement about how to establish a fare rule for the licensing procedure and on what grounds.

Another important thought in the minds of many is how one pays his travel agent when it's getting close to trip departure time. The deposit paid to the agent is evidence of good faith and assurance that you are seriously intending to take the trip agreed upon. The deposit "clinches" your reservations and assures you of space on the cruise ship, airflight, in the hotel room, or on the tour of your choice. The deposit is usually 10 per cent for an air ticket, a cruise or a tour, or 25 per cent for a more intricate, higher-priced trip.

Then when your departure date get closer, say about six weeks in advance, your agent sends you his bill for the balance of the cost. Up to that time you can cancel your plans at any time and the agent will refund your deposit in full. The exception is when the agent has done much special extra work to assemble the pieces of your

trip together for your individual benefit. He probably would refund your deposit less any costs for his time and for his cable charges. Thus the traveller should always ask his agent, when paying his initial deposit, whether he will indeed receive all of his deposit back in case of cancellation.

When you receive the final bill for your trip, payment should be made in the form of cash or cheque. Credit cards cannot be used invariably in payment to travel agents except to cover the cost of air tickets involved. Collection procedures from a credit card company are too slow and the cost of a trip usually too large for an agent to be willing to wait for payment.

The next question, which might arise, is what an agent does if you cancel the trip after the final payment has been made and request your money be refunded. The cancellation will still be honoured if your agent is skilled and well trusted by the transportation and hotel companies.

Operators of some expensive tours, if faced with such a last-minute cancellation, are entitled to withhold some of the final payment to compensate them for their loss of revenue. If there is some expectation that events will cause a last-minute cancellation, be sure to clear this eventual point with your agent in good time when making your final payment or even before that.

Now as the result of all these steps, most travellers go off on their trips and have a wonderful time. But how about the few cases when things go wrong—such as a hotel not honouring a reservation, or an airline mixing up your seating or some emergency such as a strike or bad weather intervening? None of these is the fault of your travel agent. If your ticket or vouchers is correct for an air seat or hotel room, you can always cable your agent at home and ask his help in getting the airlines and hotel offices to do something for you. But in almost every case, you will have to lean on the airline involved or try out a local travel agent to find a solution for your hotel imbroglio or to help arrange alternate transportation or lodging. When you return home your own agent will investigate all transactions that occurred and refund you for any services that were not provided as promised.

The largest travel agencies maintain offices in many parts of the world, and these offices will work freely to make you alternate arrangements and get you back on schedule. They may have to charge you for extra services to do this, but some of this is refundable when you report home.

A new development in the travel fields is the expansion into tour operations by many airlines, which splash large advertisements in the papers offering "tours" at enticingly low prices to the most exotic places in Europe.

Such tours have been classed as "throw aways" in agent's parlance. They consist of reduced round-trip fares to Europe, plus a minimum of "land arrangements" to qualify for use of these lower rates. The restrictions are that only certain dates of departure can be chosen, and that service overseas consists of a modest hotel (some-times in a remote location) also a rented car or rail travel and a transfer at the beginning and end of the trip.

Many agents are reluctant to sell these "throw away packages" since they have no acquaintance with the European operators and because so many features, especially meals, are not included in the price. However, they will sell them if requested, in their capacity as agents of the airlines, but they can give very little recommendation of one over the other.

Low-cost "packages" like all other commodities, have to be judged on how much is paid for them. If their fare is very low, one's expectations should also be low. If one's expectations are for a higher standard of comfort and service, then other types of offerings should be considered.

To sum up the whole subject, a reputable thorough, skilled, understanding travel agent is worth his weight in gold. He gives good counsel, handles all the nitty-gritty details and the voluminous paper work of arranging your trip from among many, plus issuing your tickets. He does almost everything short of putting you right on your plane or ship himself.

After all, agents want you to come back happy. They can't move their office away. They're there, and when you return home they want you to come in and tell them what a grand time you had, and that you will use them again, and refer your friends to them too.

# TOURISM NEEDS TRAINED GUIDES

With the formation of Tamil Nadu Tourism Development Corporation in May 1971, the department of Tourism looks after general, administrative and promotional activities such as allotment of tourist taxis, hotel classification and approval of plan schemes, publicity, etc., while the Tamil Nadu Tourism Development Corporation has taken over the tourist bungalows and has improved the existing amenities and also is planning expansion of accommodation and facilities wherever necessary. It also runs tourist coaches to Kancheepuram, Mamallapuram and sight seeing trips in Madras. A new innovation popular with home tourists are its Package Tours of three and seven day duration with a trained guide.

## Training Scheme

There are numerous places of tourist importance including historical, monumental, cultural, archaeological and art interests. Tourists, while visiting such places, have the urge to know the previous history of the place and any important event or events connected with the place. This urge could be satisfactorily met by educated and specially trained tourist guides capable of explaining the importance of the place in languages familiarly known to the various tourists. To-day there is no systematically trained guides employed by the State Government or the Tourism Corporation who could do full justice as guides referred to above. Hence a special scheme for training suitable persons (with minimum general qualifications—a Bachelor's Degree in Arts with additional knowledge of 2 or 3 languages in addition to mother tongue) has to be included in the Perspective Plan. It is important to see that knowledge in additional languages such as French, German, Russian, Arabic, Malay, Singalis, Spanish, Italian, Chinese, Japanese and also Indian languages such as Hindi, Telugu, Canaris, Bengali, etc., are included in the training course so as to enable each trained candidate to know atleast 2 other foreign languages, in addition to

English and 2 other Indian languages in addition to Tamil.

The tourist guide has not only to be knowledgeable enough to point out and explain things to the tourist but also maintain such excellent relationship with the tourist in creating interests for this purpose. He should be well equipped with knowledge of history, architecture, local topography, travel facilities, accommodation, entertainment, food, shopping and culture. He should also be tactful, friendly and helpful. He should be a person of mature judgment, well dressed and trained to deal with foreign visitors also. A course of Tourism has been designed in the University of Delhi for the B.A. degree under its programme of vacation-oriented studies. A college in Bombay has also been assisted in introducing a one-year certificate course in tourism and travel agency. A scheme for instituting fellowships for doctoral thesis in the field of tourism at the Delhi School of Economics has also been prepared. It seems there is proposal to extend the scheme to other Universities. Later, Madras University may be moved for instituting a special course of study for tourist guides.

Training opportunities are also reported to have been secured abroad through international organisations. The Government of India imparts training as Tourist Guides through their various offices. The course extends to 8 to 10 weeks duration and is basically designed to give a good grounding in the subjects in which the tourist will evince interest during his sojourn in India. Lectures on the various subjects are delivered by eminent experts and practical demonstrations are also conducted during the course. On completion of training, students have to appear for a written test which consists of two papers and a viva-voce examination.

The Government of India's Department of Tourism deals with the report of lectures on all aspects of Indian history, various religions, archaeology with special reference to the temples in South India, Indian gastronomy, planning of itineraries, etc.

An integrated development of tourist spots, pilgrim centres, archaeological and historical monuments and introducing package tour programmes with trained guides will be a popular means to satisfy tourist.

Tourists are becoming conscious of money values spent on tourism. The desires is to visit and cover as many tourist spots during a single trip. Bearing this aspect in tourism development, package tours are to be arranged in a convenient manner and such integrated tourist spots and areas have to be developed adequately with all necessary infrastructure. Priorities are to be given to the following "Packages".

1. Madras — Kancheepuram—Vedanthangal — Thirukalikundram, Covelong and Mahabalipuram.
2. Coimbatore — Pollachi — Valparai — Anamalai — Munar — Periyar—Kodaikanal and Madurai (along Western ghats).
3. Tiruchirappalli — Thanjavur Kumbakonam Mayuram — Sirkali —Kaveripattinam—Nagapattinam—Vedaranyam—Kodikarai and Pichavaram forests.
4. Tiruchirappalli — Thiruvanaikaval—Srirangam — Samayapuram —Puliancholiai and Gangaikonda Cholapuram.
5. Madras — Mahabalipuram — Cuddalore — Kaveripattinam — Nagapattinam—Vedaranyam—Point Calimere — Tondi—Rameswaram—Tuticorin—Tiruchendur and Kanyakumari (along sea coast).
6. Madurai—Alagarkoil — Tiruparankundram—Dingidul—Palni.
7. Tuticorin — Tiruchendur—Tirunelveli — Papanasam and Courtallam.

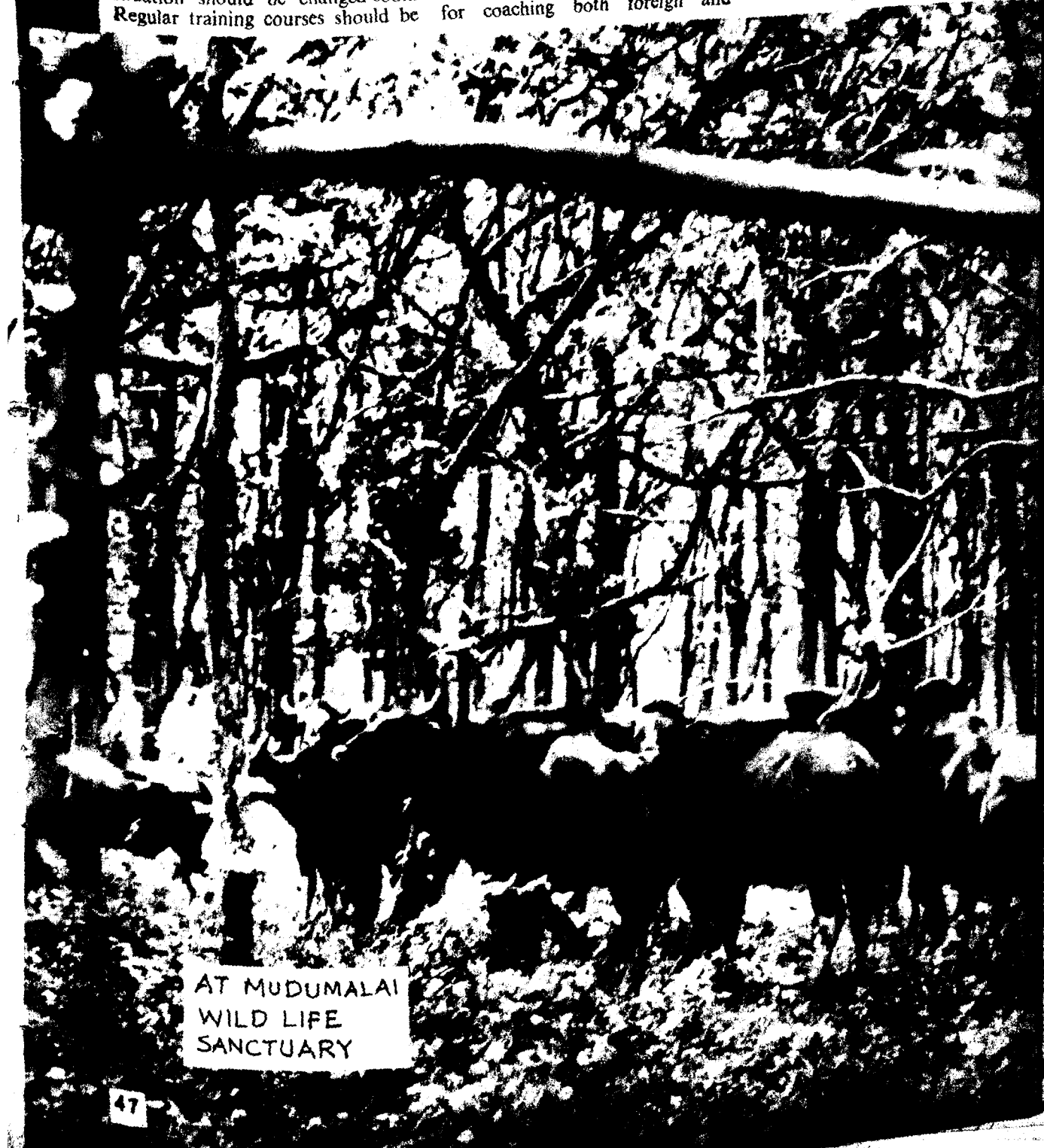
Tourists, quite naturally, are eager to know the history, important events and such other details related to the tourists place of visit. Also, the important aspect of the particular tourist place will have to be conveyed to the tourist to make him more interested in

visit. Better and useful service could be rendered in this direction by employing suitably trained tourist guides at all important tourist centres. Such guides can also be of much use in accompanying tourists on travel during package tours, to make tourists happy and feel more interested in Tamil Nadu. Absence of such organised and properly trained guides gives scope for unauthorised persons acting as guides and often conveying legendary tales to the visitor. This situation should be changed soon. Regular training courses should be

commenced for persons their minimum qualification should be an Art degree or quite fluent in English and at least one more Indian and another foreign language. It is the language in conversation that makes tourists feel happy and homely and hence the trainees should be able to converse and explain the importance of the place to the tourists in a number of languages to enable the respective visitors to understand. As such, facilities should be made available for coaching both foreign and

Indian languages, Russian, French, German, Malay, Arabic and Singapore Hindi, Telugu, etc. Organised training facilities for tourist guides, and lectures as also for those officials connected with Travel Trade and Industry, Health Staff, bus drivers, conductors and taxi drivers have to be provided at State level to facilitate securing required number of trained guides. A sound knowledge of cultural heritage has to be imparted to the trainees.

(Task Force on Tourism, State Planning Commission.)





## TOURISM-SUBJECT FOR DEGREE AND TRAINING

Tourism has now been recognised as a very important agency in providing employment directly in the tourism ancillaries like accommodation facilities, restaurants, transport operators, transportation companies, travel agents, guides, etc., as well as indirectly in the field of handicrafts, building trade and other types of industries ancillary to the creation of tourist complex. Particularly, in providing services for the different types of market, the domestic and the international, the low budget, the medium budget and the high budget, it is necessary to use utmost ingenuity, imagination and dynamism. But all this and the creation of a satisfactory infrastructure would be meaningful only if people associated and employed in the tourism field are able to tackle their assignments with professionalism. This would be possible only with the concerted efforts of all agencies to provide adequate training for potential workers as well as on-the-job training to employees.

The Tourism Department has been very conscious of the need to impart such training and at the moments, proposals are under way for the creation of high level institution for training in tourism studies. Even other Universities are also realising the need for introducing tourism for a serious subject of study. The Delhi University has introduced a course on Tourism for the B.A. Degree candidates from the Academic session 1972-73. Aurangabad University has also instituted Tourism Studies in its course. The Polytechnic attached to the Sofia College in Bombay has been given assistance in offering one year certificate course in tourism and travel agencies and in addition to full assistance in designation of course and assistance in running some of them, a scheme for institution of

Fellowship for Doctoral thesis in the Delhi University has also been formulated. Seminars covering various facts of tourism have been conducted by the Department for the benefit of its own officials as well as members of the travel industry. Advantage has also been taken of various fellowships offered for training in tourism. The Department is in very close association with the Regional Institutes of Catering Technology and Applied Nutrition as well as craft institutes.

### Language Courses

As far as Department's direct involvement is concerned, several language courses have been held so far for the officials of the Department and guides who have had the benefit of training in French, German and now Japanese. One main involvement has been in organising guide training courses as well as refresher courses for guides at various centres through the field officers. These courses, which are conducted for a period of 8 to 10 weeks, are for young graduates with a special interest in Indian History and Tradition.

An array of experts on varied subjects like Indian History, Geography, Philosophy, Sociology, Fine Arts, Archaeology, etc., have been lined up and their services utilised for lecturing to the guides on their special subjects.

At the end of the course guides have a practical examination as well as two written papers of University Standard. Successful candidates are given special identity cards and allowed to take assignments on a fixed rate as free lancers. It has been found that good guides have no dearth of assignments and do make a very lucrative livelihood out of what they consider a very interesting hobby. Special efforts are made to recruit young people

familiar with Indian customs and traditions so that they can interpret India intelligently to the visitor from abroad. Candidates with knowledge of foreign languages are particularly in demand.

The importance of guides to tourism cannot be overstressed regardless of the kind of tour organised, whether it be for low budget or high budget. Every one in tourism is aware that no sight-seeing tour can be complete unless it is conducted by a qualified guide. While it is true that a small percentage of tourists do read up exhaustively on the country they plan to visit and prefer to go around sightseeing with a standard guide book, the majority have invariably found the services of a guide an absolute necessity. The guide meets the tourist at the time of his arrival and is with him till his departure from the city and in some cases accompanies the group or individual throughout his tour in the country. Therefore, it is quite natural that a special kind of personality should be sought for a guide. The questions asked by tourists range from the very simple and mundane like climatic conditions in the area, or the possibility of shopping for special goods to very specific and intricate questions like political situation, or India's Foreign Policy or the concept of God in Hinduism and India's attempts in the field of population control or industrialisation. In fact, very often seemingly simple questions can stump any of us and it requires, for a guide to be successful, a background of interest from flora and fauna to philosophy and economics. Our courses are, therefore, designed to give this basic introductory background so that a guide can afterwards go deeply into some of the subjects and specialise.

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## THE HANDICRAFTS OF TAMIL NADU

The Tamil Nadu Handicrafts Developments Corporation, a Government owned public limited company was formed and registered under the Indian Companies Act on 26th July 1973 and the certificate of commencement of Business obtained on 31st July 1973. The Corporation has commenced business on 1st August 1973.

The authorised share capital of the Company is Rs. 50 lakhs. It has taken over from the Industries Department nine Government Emporia running at different places in Tamil Nadu and will soon take over the Emporia run by the Tamil Nadu Handicrafts Co-operative Marketing Society. The Corporation will operate 14 emporia all over the State and one at Delhi. It has planned to open more emporia in Bombay, Calcutta and other important centres.

The Corporation which will be engaged only in the marketing of Handicrafts for the time being, will gradually take over the production units now run by the Industries Department, and control the complete range of activities from the procurement of raw materials to the marketing of their products. The Corporation will also undertake exports of handicrafts in a big way.

All the units of the emporia will be named as "POOMPUHAR" as Poompuhar marks the revival of stone sculpture after 12 centuries of dormancy.

### Stone Sculpture :

Stone Carving as a basic art blended with the Hindu Civilisation. This Craft is mainly concentrated in Mahabalipuram of Chingleput district, Modaiyur and Thiruvannamalai of North Arcot district and in Myladi of Kanyakumari district. The superb expression of the magnificent sculptures in rhythmic form found in the Temples of Tamil Nadu have been a perennial theme for the study of art connoisseurs. Monolithic



### Bronze Icons :

Bronze Icons are produced by the *cire perdue* process (Lost wax process) and this craft is mainly concentrated in Swamimalai in Thanjavur district. There are also a few artisans of this craft in Madras, Madurai, Tirunelveli, Erode, Kancheepuram and Salem. The serene expression, the dynamic symmetry of the posture, the original yet artistic anatomy and the grace of gesture projected with high skill in all minute details witnessed in the Nataraja and other icons show the iconographic talents of the artisans of Swamimalai.

### Ball Metal Lamps :

Perfect in their form and flawless in their technique those lamps are traditionally known as Kuthuvilakkus and are mostly used for religious and suspicious occasions. The new type of lamp recently developed, known as Thonda Kuthuvilakku (self-filling lamp) is an ideal substitute for candles used in dinner, a new trend in the use of these traditional items in modern environments. This craft is mainly concentrated in Nachiarcoil of Thanjavur district, Kancheepuram of Chingleput district and in Vaigai kulam of Tirunelveli district.

### Wood Carvings :

The splendid specimens of wood carvings with their chisel-excellence are striking and convincing examples of the characteristic skills in delicate carving. The craftsmen engaged in this craft are mainly concentrated in Nagarcoil of Kanyakumari district, Madurai, Virudhunagar and Karaikudi of Ramanathapuram district, Papanasam and Mayur of Thanjavur district, Salem, Madurai and in Thirumazhisai of Chingleput district. This traditional craft is to the amazing magnitude of small rice figures (one cm.) to the gigantic sandal wood Rathe Temples, car, temple chariots, which in intricacy and precision of arabesques and carvings captivate the attention of the onlooker and imagination of the artist.

Musical pillar stones with 16 slender pillars made of resonant stone, which adorn the temples of Madurai and Suchindram Temples are unique sculptural works of Tamil Nadu which no foreigner would miss to see. Similar Musical Pillars could be manufactured at the Sculpture Training Centre, Mahabalipuram against firm orders and the cost would be Rs. one lakh at site.

### Art Plates :

The Art plates, popularly known as Thanjavur Art Plate made of brass with motifs drawn from the Hindu Mythology, encrusted in Silver and Copper against an artistic and ornamental background are of traditional art, unique in Tamil Nadu, particularly in Thanjavur. They are a valuable choice of the art connoisseurs all over the world.



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MADRAS-600002



The temple cars are masterpieces of the traditional wood carving work now on revival at Nagercoil. They are massive in girth and great height, consisting of several tiers of panelling with figurnine carving and cornice work, set in with a number of offsets and projects.

### Ceramics :

The Ceramic Artware are produced by continuously evolving new designs and new colour schemes in keeping with the latest trend and taste in the International market. The efforts of infusing new designs and ideas and the judicious application and mixing of colours have enabled the production of a wide variety of pieces in pleasing shades. This craft is mainly concentrated in Madras and Vridhachalam. The College of Arts and Crafts, Madras has contributed a lot in evolving new designs and colour schemes.

### Pith Crafts :

Pith is the stem of a kind of water plant growing in the river banks and the basic material for this fine craft. Miniature models of temples, mosques, churches and imposing buildings and monuments are made out of pith. Left to its natural whiteness they resemble the models made of marble. Flowers resembling natural ones are also made. This craft is mainly concentrated in Thanjavur, Kumbakonam, Thiruthuraipoondi of Thanjavur district, Tiruchirappalli and Madurai.

### Sunhemp Carpets and Druggets :

The carpets and druggets woven with sunhemp fibre with traditional floral motifs and modern designs are available in a variety of fine blended natural and dyed shades. These carpets and druggets, ideal as floor spread for drawing rooms, halls, and lounges are also coming in sizes for use in cars. This craft is mainly concentrated in Gopalaśamudram and Ayikudi of Tirunelveli district. Weaving of utility with beauty in every product is still inborn in the artisans of this area.



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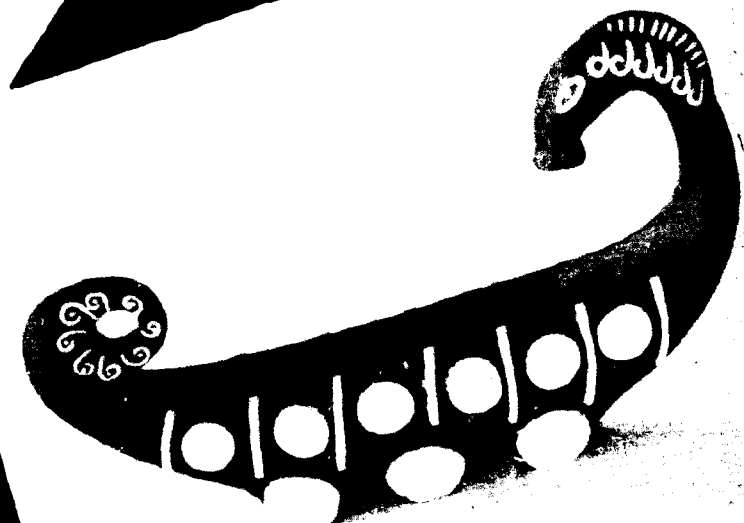
This craft is spread over the entire part of Tamil Nadu as a part time occupation in some places and full time crafts in some places. In Thanjavur, Tiruchirappalli and Tirunelveli districts, this craft is practiced as full time craft. In most of the places like Sirkali, Unniyur, Veeravanallur and Pattamadai it reaches high technical skill. From a mere Cottage Industry, this craft has developed into folk art and at Pattamadai, has reached a level of matchless distinction in decorative art.

### Paper Machie :

This craft is mainly concentrated in Madras, Madurai, Cuddalore and Thanjavur. The artistic expression and the grace of gesture projected in all minute details witnessed in the Bronze Icons, may also be seen in the Papier machie products. Apart from products of high artistic value, small dancing dolls and wall hangings are also produced.

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An extension of fresco tradition, these colourful hand woven fabrics of vigorous designs the traditional artistic expressions applied to the changing times from decorative art to utility items, are the choice of the art minded people. Generally the theme for this craft is taken from the Hindu Mythology. This craft is mainly concentrated in Seeka-naikenpet of Thanjavur district. Thabovanam of South Arcot district and in Madras.



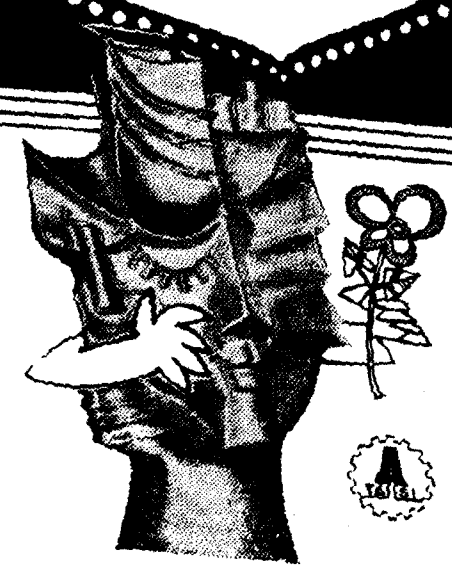
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Batik Art pieces, both in abstract art and traditional Art are widely welcomed as Decorative pieces and as draperies. This craft is practiced in Madras and Cholamandal Artists Colony (beyond Tiruvanmiyur).

Mr. Philip, Chairman, Southern Handicrafts Exporters Association, gives the following Comments :—  
"Are these made by Indians? Unbelievable, how beautiful, how talented your people are?" ex-

claimed a tourist looking at our arts and crafts display. This is a typical remark by foreigners who visit our country. They admit the crafts-manship is almost dead in their lands and if at all anyone made anything artistic by hand, you can guess the price will be something fabulous.

There is a tremendous lot of talent in our people and we can do anything by our hands, given ideas and raw materials. It is most heartening to see that our own countrymen are beginning to appreciate this and encouraging our artists and craftsmen.

By the efforts of the State Governments, public and private emporia and boutiques, our craftsmen and artists are coming forward rapidly, and the foreign tourist can buy quality goods at right prices, in all cities.

It is estimated that Rs. 300 crores worth of the handicrafts are produced and sold in the country, every year of which nearly Rs. 100 crores are in exports. The market is large and the prospects unlimited, but one must be on guard to preserve the purity and standard of workmanship and finish and not be tempted to make easy money but turning out shoddy work, only then will our handicrafts have bright future.

Every tourist and foreign visitor likes to take with them something typical of the country and representing our culture, and therefore our handicrafts, are truly ambassadors and this fact must not be overlooked by either the maker or the seller.





# HOW THE HOTEL INDUSTRY CAN ATTRACT TOURISTS

By  
K. S. UDVADIA  
(General Manager, Hotel Imperial, Madras-8).

Tourism can be best promoted in the spirit of team-work and collaboration between officials and non-official agencies, through public and private sectors coming together in an exclusive council. Through this, we can obtain advice of various segments of travel industry formally and informally and true representation could be given to travel industry on the council.

The most important problem, which confronts us, is that the tourist facilities are not keeping pace with the growth in the tourist traffic in large cities and even the basic facilities have to be developed around tourist centres in the interior of the country.

In recent years, foreign tourists visiting this country are so large that the problem of accommodating them all at a time in good hotels poses the biggest problem. The Government should come to the aid of private sector by giving all possible help towards advances of money for transport, for renovation of hotel buildings and buy up-to-date modern machinery for hotels and Catering Establishments. The Government should allow the private sector to play its role as effectively as possible and only when private enterprise fails or lags behind, then there is no option for the Government, but to take over the initial operation facilities.

The travel agents and hotel industry should not be content with the physical arrangements for the tourists, but they should act as guides and philosophers to enable them to see all the aspects of our country in right perspective and return with balanced view of things. By these means, the hotel industry will be conscious of an educative influence on the minds and hearts of their guests. I would like to deal specially on tourist and holiday publicity which covers two important functions, that of providing information and persuading the public who constitute the market for any product or service. There is a common ground to persuade the

people to travel away from home and to spend their money in the travel services. There is a peculiar complication which lies in the fact that the traveller does not look forward to mere accommodation or transport. But he requires service, because he has been persuaded to make a journey for a particular purpose, for sight-seeing, for business, for education and to see friends and relatives. It is for that reason that the co-operative work is most important. It is very rarely that any business can do without publicity of some kind.

In all the cases of information aspect of publicity, clients must be told where the hotel is and how they can get there. In this case, brochures and sign-posts, information notices and local guide-books, or obvious examples of the methods available to attract the clientele. The most important is that the local residents in town can come forward to give their valuable suggestion, coverage of local press through feelings, for example, obtaining mention of personalities visiting the hotels and events taking place in the hotels and the national press. Regarding the management, they have to make a thorough study of the market (i.e. their clientele). It is rare that the management may not know the tastes of various types of people. Travellers are having their own whims and fancies of food. A study of market and study of what hotel has to offer is a prelude to the planning of publicity operation. The hotel should know what it has to sell, at which times of a year accommodation is not fully used, whether it wishes to develop a restaurant business, banqueting business, a Conference or trade. The hotel industry must bear in mind in order to please its clientele with presenting them with literatures, post cards, X'mas cards, calendar, and they should be persuaded to come more often again with their friends and relatives.

Publicity is an essential factor in marketing and unless you present your hotel in right perspective, it

will be very difficult to get appreciation from them.

## GOOD PUBLICITY AT LOW COSTS

The two most important sources of business for the hotel industry are undoubtedly by way of recommendation and various form of direct advertising. Unless and until you give the visitors and provide them with good service with charm and courtesy, the visitors will not hesitate to suggest the hotel to their friends and business associates. The proprietor of the hotel should come forward to spend just a little effort in keeping the name of his establishment before the public eye in the most effective and attractive manner. His continued effort may also repay him in terms of cash actually saved on publicity materials. I would personally stress my sincere opinion on pictorial advertising which is a powerful selling-media in my personal experience a great success as I found. What we should do is actually this that the picture post cards on your own hotel with good background covering particularly the interior and exterior of views which will no doubt attract the tourist to a great extent. For this, the cost of printing cards may not be so expensive and this will be of great publicity value. Benefits derived by tourist-travellers lead the way to international friendship and world-peace. Where tourist visits a country, they talk with the people there, see how they live, and become acquainted with them. Genuine and true friendship developed by mutual contact and long discussions on social customs, manners, habits, etc. makes an indelible impression on our visitors and on return, he is able to explain by his experience what he has seen to his own people in a true way. Their true friendship and mutual love is there for ever on the minds of the tourist and his reminiscences and impressions will lead definitely to world peace for ever.

# SAFEGUARDING THE AIR

by  
Prof. G. Sidorenko

Director, Institute of General and Municipal Hygiene.

George F. Kennan, the celebrated American columnist and diplomat, in one of his articles had suggested that a group of countries might set up something like a club for nature protection. The idea seemed fantastic to him then but there is no fantasy in the idea now.

There are various forms of the joint efforts of States in nature protection. For example, there is already a club existing of representatives of all COMECON member-countries of Europe. It organises and channels all the activities of the co-ordinating centres established in the U.S.S.R., Czechoslovakia, the G.D.R., Hungary and Poland. Among the problems being tackled are "Hygiene Aspects of Environmental Protection", "Protection of the Atmosphere from Pollution by Harmful Substance", "Disposal and Utilisation of Domestic and Industrial Waste", etc. The problem of protection of water resources is also being solved jointly.

These problems are being tackled by over 100 various research institutes. A centre set up with the facilities of our Institute, has been given to solve the first problem, i.e., the problem of environmental hygiene.

The task of the centre is to summarize and analyse the working programmes of research works in the member-states, to submit proposals on new research projects and to prevent parallelism. It also provides reciprocal consultations for specialists and organises exchanges of know-how.

Joint Research  
As far back as 1963, COMECON adopted a decision to organize joint research to protect the atmosphere

it is a question of stabilizing the level of pollution, in the COMECON countries this is a case of a constant reduction of this level. The scope of the problems of clearing the environment are stupendous and they can be solved only under a system of planned economy.

Here are only a few characteristic illustrations. There are about 20 new towns springing up in the U.S.S.R. every year. Their construction is necessarily done in keeping with hygiene recommendations. What does this mean? The city territory is broken into functional zones—residential, production, service and transport. Besides, a sanitary protective zone stretches between the production and residential areas. More and more enterprises are being fitted with clearing units. The free planning of neighbourhoods helps to air them better, to have a more efficient insulation of flats and to reduce noises. The same are the principles underlying town-building policies in other socialist countries.

## Campaign for Human Health

The Campaign for clean air is a campaign for human health. Here, the COMECON scientists jointly solve this problem. In the course of the co-operation, great attention is paid to the study of possible allergenic, embryotropic, cancerogenic and genetic influences of substances on man. On the basis of the research made, hygiene recommendations were compiled along with the quotas for maximal permissible content of harmful substances. This is particularly important because the hygiene quotas underlie all the practical activities of the sanitary bodies and are the initial data for the planning of industrial and housing construction.

However, the problem of ecology is many-faceted. It includes the questions of protection of soil and water bodies, noise abatement, etc. Take, for instance, the water basins which are common for several countries. In this case, one can do little single-handed. That is precisely why COMECON countries with coast-lines on the Black and the Baltic Seas, as well as the near-Danube countries, have joined their efforts to protect these water resources. A number of measures has been evolved to prevent their pollution.

Before this decision, the activities of the scholars from the socialist countries were dissociated. Questions were solved on the basis of individual experience. There were no experimental facilities in many of these countries and sanitary legislation was just beginning to be evolved.

## Beginning of a New "Chemical" Era

A person living in the second half of the 20th century comes across every day, both in production and at home, an ever growing number of chemical and physical factors whose influence on the organism is either not known at all or insufficiently known.

The pollution of the air, water, and ground and consequently of food by chemical substances has reached such a level in advanced countries that scholars are now talking of the end of the "bacteriological" era (that was how the past century and the first decades of this century were called) and of the beginning of a new, "chemical" era.

There are various ways of fighting pollution in different countries. Whereas in the Western countries

# SPACE PROGRAMME IN INDIA

In order to promote a rapid development of activities connected with the Space Science, Space Technology and Space Applications, the Government of India set up a Space Commission on June 1, 1972, an organisation free from all non-essential restrictions or needlessly into strict rules, to have responsibility in the entire field of Science and Technology of Outer Space and their Applications. The Space Commission with full executive and financial powers, modelled on the lines of the Atomic Energy Commission, is headed by Professor S. Dhawan, Director, Indian Institute of Science, Bangalore.

The objectives of the Space Programmes, according to the Profile for the Decade 1970-80 on Atomic Energy and Space Research, are to develop indigenous competence for designing and building sophisticated hardware involved in space technology including rockets and satellites for scientific research and practical applications of the use of these systems for providing point-to-point communication and a national television built-up through a direct broadcast synchronous satellite and the applications of satellites for meteorology and for remote sensing of earth resources.

The Space programme can be divided subjectwise into three broad areas of Space Sciences, Space Technology and Space Applications.

## SPACE SCIENCES

Space sciences include research programmes in astronomy, X-ray and gamma ray astronomy, plasma physics, cosmic rays, studies of lunar material, meteorites, etc. Research under the broad spectrum

of Space Sciences is mainly carried out at the Physical Research Laboratory, Ahmedabad and at the Vikram Space Centre, Trivandrum.

Space Technology covers all aspects of work related to the development of rockets, satellites, propellants, scientific payloads and ground and space instrumentation.

The Space Science and Technology Centre (S.S.T.C.) at Trivandrum and development laboratory. At present, work is in progress in the satellite launch vehicle. Studies are also under way for developing synchronous satellite launch capability. The Vikram Sarabhai Space Centre includes the Space Science and Technology Centre, Launching Station, the Rocket Propellant Plant, the Rocket Fabrication Facility and the Rocket Propellant Fuel Complex.

The United Nations sponsored Thumba Equatorial Rocket Launching Station (T.E.R.L.S.), which became operational in 1963, offers unique facilities to conduct research in ionospheric physics, geomagnetism, cosmic rays, astrophysics and solar physics.

Speaking at Thumba on February 2, 1968, Thirumathi Gandhi observed that Thumba Rocket Centre was a milestone on the road of progress that India has made during post-independence period. She further said, "This station is a very tiny part of the vast programmes of space exploration which have already carried rockets to the Moon and to Venus".

More than 100 rockets have been launched from the Thumba Equatorial

Rocket Launching Station (T.E.R.L.S.) till now. The rockets launched included those under collaborative experiments with various countries, experiments exclusively for Indian scientists, and flight tests of rockets under development.

## SATELLITE LAUNCH VEHICLE

The Satellite Launch Vehicle Project has been undertaken for the indigenous development of a satellite launch capability for placing a scientific satellite of 40 kilogram in a 400 kilometre near circular orbit around the earth. A team has been constituted to analyse, study and report on an optimum approach to the development of a multistage launch vehicle, capable of placing a satellite of about 800 kilogram weight in synchronous equatorial orbit. Work relating to the detailed mission analysis, vehicle requirements, technological options and optimum choice is in progress.

The Space Applications Centre (S.A.C.) is responsible for various aspects of space application work. Effort is being concentrated on two primary areas, viz. (i) satellite communications and (ii) remote sensing and meteorology.

## City for Sale :

The *Casper Star Tribune* (Wyoming, U.S.A.) recently carried an advertisement on the sale of a town True, Lamont—as it is called—is a teeny-weeny town. The 1970 census put its population at 100. It's located on either side of a highway and makes a living by catering to travellers. It has two filling stations, a hotel, two stores, a bar, a cafe, and a few dwellings. They all belong to one Bobby King who complains that Lamont no longer brings him any profit. And so he has decided to sell it for £150,000. He has had three offers and while the bargaining goes on, the townfolk are wondering what the future has in store for them.

# A FACTORY THAT HELPS IN URBAN SANITATION

By  
N. GULYAEV,

Head of the Urban Sanitation Sector of the Academy of Municipal Economy.

Garbage heaps are growing with threatening speed all over the world. The London "Observer" reports that in the 1920s, the average American family threw out 2.7 lbs. of solid waste a day. In 1970, the figure was 5.3 lbs., and by 1980 it may go as high as 8 lbs. Every year, Americans throw away over 50,000 million tin cans, over 30,000 million glass bottles and jars and over 4,000,000 tons of plastic packaging material.

In short, dumping is by far not the best and, I would say, now an obsolete approach to the problem of waste. But what, in that case, is to be done with it? Specialists have proposed a solution: build refuse burning and refuse processing factories. Burning refuse is hygienic but quite expensive too. It is much more profitable to process garbage and convert it into some useable material like fertiliser.

## Garbage Turned Compost

The refuse problem exists in our country too. With the growth of both industry and the cities, the amount of refuse inevitably increases. The residents of Moscow, for example, produce 6 to 7 million cubic metres of refuse annually, which has to be taken 30 to 40 kilometres beyond the city limits to be dumped. And in a number of big European cities, garbage has to be taken much further, as in Berlin, for instance, where it is shipped by rail to a distance of over 100 kilometres from the city.

Transportation of refuse is, of course, an expensive proposition. But this is not the worst problem. It is becoming increasingly difficult to find suitable places for dumping and the problem of rendering waste material harmless is becoming more acute. Even though the garbage may be carefully buried a dump becomes a large area of useless land, and at the same time a potential source of infection, a favourable environment for harmful microflora.

Two years ago, a new kind of factory began operating in Leningrad. It was an experimental plant for the mechanised processing of community re-use, designed at the Giprokommunistroi Institute, according to specifications worked out by the Urban Sanitation Sector of the Academy of Municipal Economy.

In this plant, garbage is placed into a feed bin, from where it travels by conveyor to a crusher. On the way, magnetic separators remove metal from the garbage. The crushed refuse then moves to the plant's main "shop"—the biothermal drums. These are closed revolving pipes, four metres in diameter and 60 metres long. Air is blown into the drums and conditions are created that stimulate an active biothermal process, converting the garbage into a compost under the influence of thermophilic bacteria.

Composting takes three days. The resulting compost is a high-

grade organic fertiliser containing large amounts of carbon, phosphorus, nitrogen, potassium, calcium for use in suburban culture.

Another garbage processing plant of French design with Soviet improvements was built recently in Moscow. One of Europe's largest plants for handling communal refuse, it is designed to process 200,000 tons of garbage a year. This plant also makes compost but that part of the refuse that is unsuitable for this purpose (large pieces of cardboard, wood, synthetics) is burned. The resulting heat is used to produce steam for nearby manufacturing plants and the residual dross can be used in road building for filling in swamps. This is actually two plants in one: a garbage processing and garbage burning installation. It has been estimated that six or seven such plants in Moscow could supply all the fertiliser needed for greenery in and around Moscow, and also for the market-garden State farms around Moscow.

In Moscow, as in other Soviet cities, about one-third of the city area is given over to greenery. Supplying fertiliser through garbage processing solves two problems once: it rids the cities of refuse, improves their atmosphere greenery.

In the near future, Moscow have several such installations. Garbage processing plants of various types will be built also in Tashkent.

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Kharkov, Minsk, Tbilisi and cities.

### Garbage Domination

would seem, then, that the on to the problem has been 1: convert garbage into a ost. However, scientists work- in the problem of purifying environment continue their ch. But still there is the problem se "waste in the waste", s that part of industrial waste is simply burned. An ever r proportion of this kind of is made of synthetic materials, of which gives off noxious when burned. A better of processing this kind of ial must be found. Scientists ow trying to grow a kind of ia that would eat synthetics. ould be beneficial to find a f increasing the "appetite" e microbes that are used in ising organic waste in order eed up the process of bio- al garbage processing. Bio- at our Academy are presently ng on raising such microflora.

It is possible that new uses will be found for processed refuse in the future. As far back as the 1930s, Soviet scientist A. Gorin proposed a scheme for producing industrial alcohol from organic waste. This method is now practised in our country and in the United States. Patents for the production of building tile made of compressed refuse have been taken out in Japan and the Soviet Union. Experiments are being conducted on processing waste material into fuel oils and American experts even contemplate deriving valuable metals from garbage heaps.

The refuse problem is so urgent that even the nuclear physicists have been working on it. They hope to create a nuclear furnace that will be able to break down refuse into its component elements which will then be suitable for refuse. It is hard to say which approach will save man from "garbage domination" in the future. But many techniques already exist that are able to help solve this important problem.



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# Theft of Cultural Property

by

**M. N. Deshpande**

*Director-General, Archaeological Survey of India.*

### Rich Cultural Heritage

India has a long and hoary antiquity. On her soil flourished one of the most ancient civilisations of the world. Ancient monuments illustrative of her glorious history and culture and other works of art constitute visual landmarks of the high attainments and genius of our ancestors.

We are justly proud of this great heritage. In fact, there is a growing awareness in the world that the cultural heritage belonging to any people whatsoever constitutes a common cultural heritage of all mankind and preservation of this cultural heritage is a common responsibility of all peoples of the world. It is no wonder, therefore, that the monumental and artistic heritage of the country is cherished by the sons of the soil as their special responsibility.

Appreciation of the cultural heritage has given new dimensions to tourism beyond the confines of one's country. In modern times, tourism is being conceived as a global industry. While this development is indeed welcome, there is an attendant factor which has been causing concern to those interested in the preservation of cultural heritage.

In the recent past, we notice that all the world over there is a craze for possession of pieces of art. This craze has so completely overtaken the so-called cultured and elite in the affluent countries that this has set at naught all norms of behaviour. Theft and smuggling of art objects has become a world-wide phenomenon.

India has a rich artistic tradition and objects exemplifying it like sculptures in stone, metal or wood, paintings and manuscripts and a variety of other objects are strewn over the length and breadth of the country. This has attracted the attention of art-lovers and art-dealers and denudation of the country's cultural heritage by theft and smuggling has reached alarming proportions.

This is in sad contrast to the efforts of others dedicated to the cause of protection of cultural heritage of mankind. On the one hand, damage to cultural property even during armed conflicts is considered an act of vandalism leading to impoverishment of world-culture. World opinion is sought to be aroused against this danger through UNESCO Convention (1954) for the protection of cultural property in the event of armed conflict. The 1970 Convention deals with the means of prohibiting and preventing the illicit import, export and transfer of ownership of cultural property, pillage, theft and smuggling of cultural property which go on unabated.

Not a day or a week passes without a news item about the theft or damage to cultural property. Museums are burgled, priceless images under worship are stolen or replaced and sometimes, statues adorning temple walls are detached by chiselling and stolen away. A new and lucrative trade in antiques has developed. This trade knows no ethics and is flourishing in an underworld of its own.

The theft of the bronze Vis image from the Chamba temple which was fortunately recovered Bombay or the smuggling of unique Chola period Nataraja from Sivapuram to U.S.A. may be cited to illustrate the ramifications of this trade not only from one part of the country to the other but also from one country to the other.

### Need For Vigilance

What are we to do in such a situation? Do we expect Government to tackle this menace or do we consider that we citizens, have also a role to play in this national task? We are aware that the Government of India has passed the Antiquities and Treasures Act, 1972 to regulate the export of antiquities and treasures, to provide for the prevention of smuggling of and fraudulent dealings in antiquities and the Act will soon replace the Antiquities (Export Control) Act, 1947.

The new Act envisages licensing of dealers in antiquities so as to regulate the trade and control illicit export in antiquities and see that acquisition of antiquities by fraudulent means is put to an end. It also aims at registration of antiquities in the possession of private persons and institutions. The Act also provides for compulsory acquisition of antiquities for preservation in public museums for severe penalties for offence of contravention of the provisions of the Act.

The Government has taken positive steps in many directions.

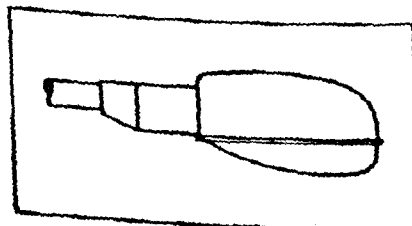


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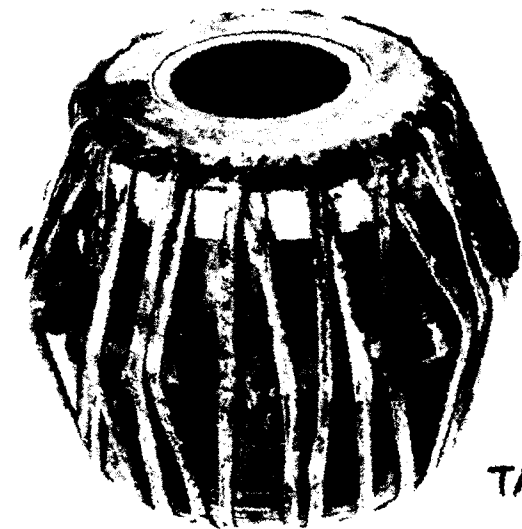
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## **THE PERCUSSION MUSICAL INSTRUMENTS IN THE GOVERNMENT MUSEUM, MADRAS**

By N. Devasahayam

India is noted for dance, music and musical instruments. Out of the commonly accepted types of musical instruments, namely, the stringed, wind and percussion, the last mentioned has the earliest origin. Percussion instruments contribute rhythm and rhythm is man's oldest impulse. Primitive man expressed his emotions in rhythmic forms which resulted in dance and music. In the beginning the primitive man's hands and feet themselves served as musical instruments. Then rattles made out of nut-shells, seeds and stones strung together, began to appear. This thought continued and resulted in producing sound from the hollowed-out materials which culminated in drums and its varieties.

Sanskrit literature contains reference to musical instruments beginning from 3rd century B.C. While depicting the life of Buddha, our early artists have sculptured various types of musical instruments like the veena, the flute, drums, etc., in Bharhut, Sanchi, Gandhara, Amaravathi and Nagarjunakonda (1st century to 7th century A.D.). There were passing references about the varieties of drums like cylindrical, twin and triple types in the sculptures of the Gupta period.



TABLA



DOLAK



moral duty of safeguarding the cultural heritage which has been handed out to it by its forefathers.

I say all this with a definite purpose. Can we have nation-wide movements for saving our artistic heritage? If we are convinced that such a movement alone will effectively save our cultural heritage, we must start action in all earnestness.

Each village and each town is proud of its antiquity. This may be manifested by monuments, perhaps a temple, a mosque, a church or a secular building either a place or a tank. Besides, there must be numerous art objects attached to these monuments or lying in the precincts of these villages or towns.

Should it not be the duty of the villager or the town dweller to protect this heritage from the lust of the antique dealer. It is impossible for any thief to hack a sculpture from a monument or a temple without some active support or connivance by the local residents.

Can we not envisage emergence of local association for the protection of cultural property? The support of the entire population should be enlisted in this noble task. Such village or town associations should function under the general guidance of district associations for the prevention of loot and vandalism of our cultural property.

In the next Five-Year Plan is envisaged the establishment of Nehru Yuvak Kendras at each district level to foster and promote all-round cultural and other related nation building activities. Such centres can play a vital role in safeguarding the

cultural property of the region. These centres can initiate positive action in the form of collection of loose sculptures from unprotected monuments and ruins and help in the formation of museums at each district centre. If such a movement gains momentum, the task of the

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police to enforce the Act will be easy. This will greatly diminish theft of cultural property and police will easily get information about anti-social elements operating in each area. I hope this consciousness among the people can be created by historians, archaeologists, museum directors and by other leaders of the community interested in the preservation of our cultural heritage. This can become a mass movement not only for the purpose of prevention of thefts but can also become a dynamic instrument for informal education in the field of cultural heritage.

### RESPECT FOR CULTURAL HERITAGE

We must teach our students respect for our cultural heritage. We should be able to enlist the support of the teachers at all levels. At each university, college and higher secondary school where history and cultural subjects are taught, History Association must be established and the interest of the students aroused.

These associations must foster the study and collection of coins, and other works of arts and crafts to make history education more interesting and meaningful. Educational trips to monuments must be organised with great imagination so that students visiting monuments would understand the significance of the monuments and act as projectors of monuments. Students, who would be thus educated, would not think of disfiguring our monuments by scribbling their names or remove a piece therefrom as a souvenir.

Thus it will be seen that in this great venture, every citizen has a role to play and I feel that if we can quicken intelligent interest of the students and the general population in the great task of preserving our cultural heritage. We shall have achieved a good deal. Legal measures can protect cultural property to a limited extent but if the entire nation is involved in this task, the problem will be solved in no time.

### Our Sculptures Should Be Retrieved.

I might add a few words about the question of retrieving our sculptures

and other works of art now in foreign countries, some of which are blatantly exhibited in some museums of the country. While Government of our country will certainly take all possible measures at international level to retrieve these objects on the strength of appropriate laws, the cultured population in foreign country to whatever nationality it may belong, should wage a publicity campaign against museum officials and private collectors. Indian nationals in foreign countries must take a lead in mobilising public opinion against the activities of art-collectors and dealers and create a climate for the return of these pieces to the country of origin.

There is yet another threat to our cultural heritage to which I want to attract the attention of the readers. In a developing country like ours, there are so many new schemes formulated for bringing about economic prosperity. New roads, canals, dams and industries are fast coming up.

While all this is very necessary, attention must be paid to the proper protection of our monuments and sites. We should not allow our monuments to be damaged or engulfed in the maze of new buildings. We must ensure their proper environment. Where there are overriding necessities and compulsions for location of a particular dam or an industry at a given place, we must take all possible steps for safeguarding our national monuments. This may necessitate prior excavation or shifting of monuments as we did in respect of Nagarjunkonda. Here when it was felt imperative that the dam must swallow the ancient Buddhist establishment of Nagarjunkonda the site was excavated and imported, remains transferred and transplanted at a suitable place.

It will thus be seen that every situation can be tackled if there is a will and understanding. I take this opportunity to appeal to our administrators and business executives to bear the message of the monuments in mind and help, save our cultural heritage.

(Courtesy: All-India Radio)

loose sculptures in and around protected monuments, which not be adequately safeguarded in are being collected and stored in picture-sheds where they could better looked after. The Watch Ward staff at monuments and ce-guards are being posted at erable museums and monu- ts.

### responsibility of the Citizens

However, everybody knows that and penalties help but a little revention of crime. The legal tions and the stringent penalties

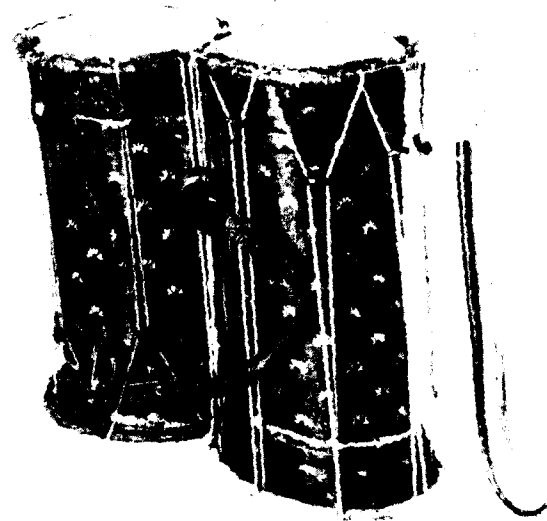
for infringement of the provisions of the Act will be of no avail if the people themselves are callous and unaware of their responsibility.

If this country has to survive and make its mark in the world of its extraordinary cultural, spiritual and ideological heritage and foster values which have been tested over centuries. This cumulative heritage however, takes concrete shape in the from of monuments and works of art.

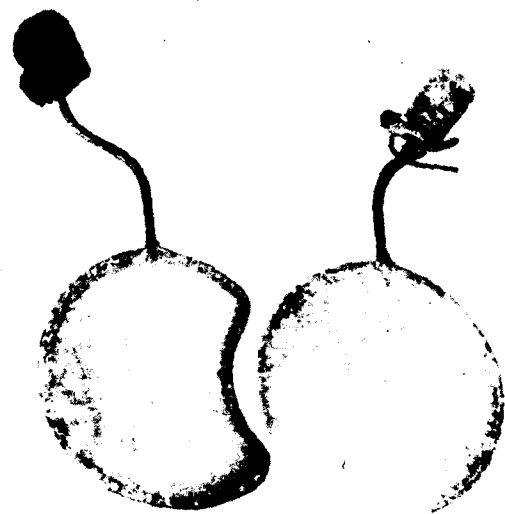
An image is not merely a work of art but something more than that.

An art object is mirror of art, religion, philosophy and cults and culture of a country. It will be a great folly to consider that this rich cultural heritage can be preserved merely by enactments or armed guards.

It is the common will and determination of the people that can save cultural heritage of the country for it symbolises the very soul of a country. To save the soul of a nation, we must put in determination and dedicated efforts. By allowing theft of cultural property, the present generation will be neglecting



PAMBAI



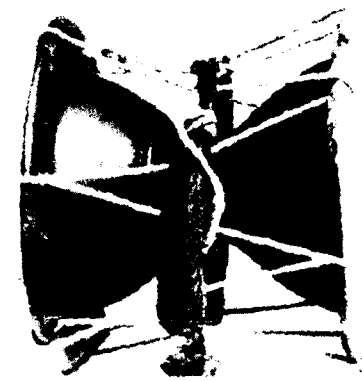
SURIYAPIRAI  
&  
CHANDRAPIRAI

The Madras Government Museum has got a rich collection of about 125 South Indian musical instruments classified under the heads, the autophone, aerophone, membranophone and chordophone and about 50 enlarged photographs of the musical instruments depicted in various Indian sculptures. From among this collection, about 25 concert and temple drums are displayed in the Musical Instruments' galleries of this Museum, chief among them are as follows :

**Mridangam** is the most ancient percussion instrument. In shape it is cylindrical, hollowed out of a block of wood and both openings are covered with skin. The instrument is played with two hands, wrists and finger tips. It is commonly used in South Indian music parties, Kathakalashepams and Bhajanas.

**Belgian Glass Drum** is another interesting exhibit resembling the mridangam in all respects except that the shell is made up of glass instead of wood. The instrument, placed in the lap of a seated individual is played with both hands.

**Dolak** is a simpler drum found all over India and is slightly smaller in length than that of the mridangam. Here the two heads are plain and the instrument is played with the hand and a stick and is used throughout India in folk music, dance, festivals and ceremonies.



UDUKAI

**Tabla and Baya** is nothing but a modified mridangam in the sense that the Tabla's head corresponds to the right head of the mridangam and the Baya's head to the left of the mridangam. This instrument is used in Theatrical music and in the Hindustani music parties of North and South India.

**Damaram** is a pair of conical drums of the same size and is taken on a bullock during temple processions. It is played with two sticks, one curved and the other straight.

**Tavil** or the periamelam, a prominent exhibit in the gallery, is also a cylindrical shell hollowed out of a solid block of wood. It is used in the nageswaram band and the right head is played by the right hand, wrist, and fingers and the left head is struck with a stick in the left hand.

making a jingling sound when instrument is shaken. It is held the left hand and the palm fingers of the right hand are used to strike the skin. It is commonly in concerts and Bhajana parties.

**Kanjira**—is an ancient percussion instrument. It consists of a circular wooden frame of about 10" in diameter and 2 1/2" broad. On one side it is covered by a sheet of thick skin. The frame is provided with three or four pieces of metal or coins for

**Tambattam**—Consists of a frame of wood about six inches and about 3 feet in diameter on one side with skin. It is held in the left hand and played with fingers of the right hand. A stick is also used held by the fingers of the left hand. It is used in festivals and in funerals.



KANJIRA

**Suriyapirai and Chandrapirai** are in shape of the moon and are tied on the foreheads of two persons and played with a stick. These are used in Mariamman temples.

**Udukkai** or Udukku is the hour-glass shaped small drum laced with twine. It is made of brass, wood or clay and is held in the left hand and played upon by the fingers of the right hand. It is used by the street singers and fortune tellers in Tamil Nadu.

**Davandai** is just like udukkai but slightly bigger in size and is played with a stick and is used in Mariamman temples.

**Damarukam** or Damaru is a small drum like an hour-glass of the same shape as the Udukkai but having knot at the end of a string wound round the middle. It is held in the right hand and rolled from side to side. Nataraja is represented with this instrument in one of his four hands. It is used for accompanying devotional and ritualistic folk music and is associated with magic shows, spells and other primitive rites of the common man.

**Timila** is a double-faced drum in the shape of an hour-glass and is suspended vertically near the waist and played on one side by the hand. It is used in the processions of temple deities in Kerala.

**Idakka** has got an hour-glass shaped resonator and is just like Udukkai in other respects. It is slung over the left shoulder and the right side is beaten with a stick in the hand. It is an important accompaniment to the Kathakali dance drama of Kerala.

**Pambai** consists of two cylindrical drums, each about one foot in length being one over the other and tied together. The outer surface is colour painted with flowers. It is held in front of the body and tied at the waist. It is played while singing with two sticks. It is used as accompaniment to folk dramas and ballads in South India.





BELGIAN GLASS DRUM

*dramoo* or *Boomadu Vadyam* hollow cylindrical drum measuring about 7" in length with two facing faces covered with skin. instrument is used by street dicants.

*anchamukha Vadyam* is the most resting exhibit and it is developed from the ancient pot drum. a huge five-faced temple drum mounted on a special stand or in position on a four-wheeled iage. It has five faces as striking faces and they are named after five faces of Siva-Sadyojatam, am, Tatpurusham, Aghoram and iadevam. The sound produced each face is different but the ral quality of the sound is very lar to that produced by the angam. This instrument is id with both hands and is red to as *Kudapanchamukha am* by *Arunagirinathar*. It is in temple music and is found in temples of Tiruvarur and ivanikkaval.

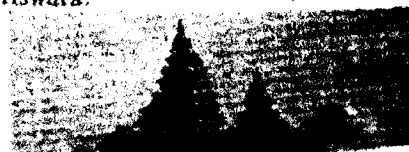
*gara* is one of the oldest per- in temple drums in existence s exhibited prominently in the y. This is a large hemi-spheri- ttle covered with hide. The

shell is of copper, brass or iron. It is used in religious worship in most of the temples and religious institutions in India. The instrument is placed on a two-wheeled carriage or on a decorated elephant and the player beats the drum with two curved sticks.

The Musical Instruments Gallery of the Madras Museum is one of the best and most well maintained galleries, but there is still much to be done. Schemes and plans are ahead to have a series of built-in cases with concealed fluorescent lightings, to accommodate all the musical instruments by modern display techniques. Attempts are being made to record the music of some selected musical instruments exhibited in the gallery, in tape, which can be played as and when the visiting children insist on knowing the actual music produced by each instrument. There is a provision for the physically handicapped children to touch and feel some musical instruments that are in the reserve collection of the Museum. For the benefit of the visiting public and the students of musicology, the Museum has brought out a descriptive catalogue of the Musical

Instruments in the collection by Prof. P. Sambamoorthy, and it is being reprinted to meet the increasing demands. It is also being planned to have, along with the exhibit and its descriptive label, the photograph of that exhibit showing how the instrument is being played. Newly acquired musical instruments are being exhibited in the temporary or special exhibition as a routine educational programme of this Museum.

As a special item of educational service, the Museum had arranged a demonstration of about 25 rare and ancient musical instruments exhibited in the Museum by Thiru M. R. Balakrishna Naidu on 18th January 1973 in the Museum Theatre. Prof. Sambamoorthy and Thiru M. Ananthanarayanan, I.C.S., who were the chief guests on that occasion, felicitated Thiru Balakrishna Naidu, who played on the *Panchamukha Vadyam* in the form of a dancing *Ardhanariswara*.



# MUSICAL INSTRUMENTS IN SCULPTURES

By

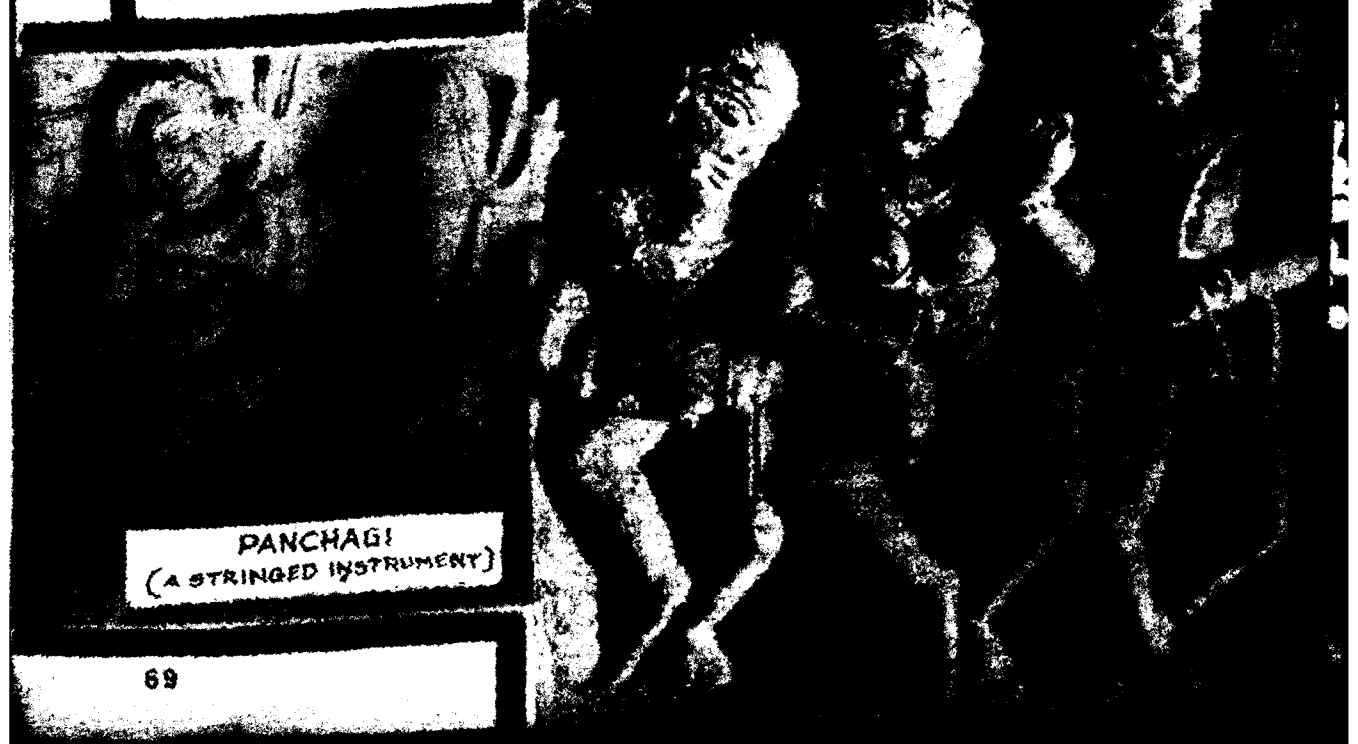
V. Domodaran, Research Artisan of Ancient and Modern Music Instruments).

In India, the art of Music and musical instruments seem to have reached perfections even earlier than Indus Vally Civilisation. This is evident from the findings in the Indus Valley excavations of the 7 holed-flutes the different kinds of highly developed drums (one of them resembling the present day *Miruthangam*), types of stringed instruments artistic dancing poses, etc. Similarly, the development of musical instruments must have gone on for centuries before it reached this refinement.

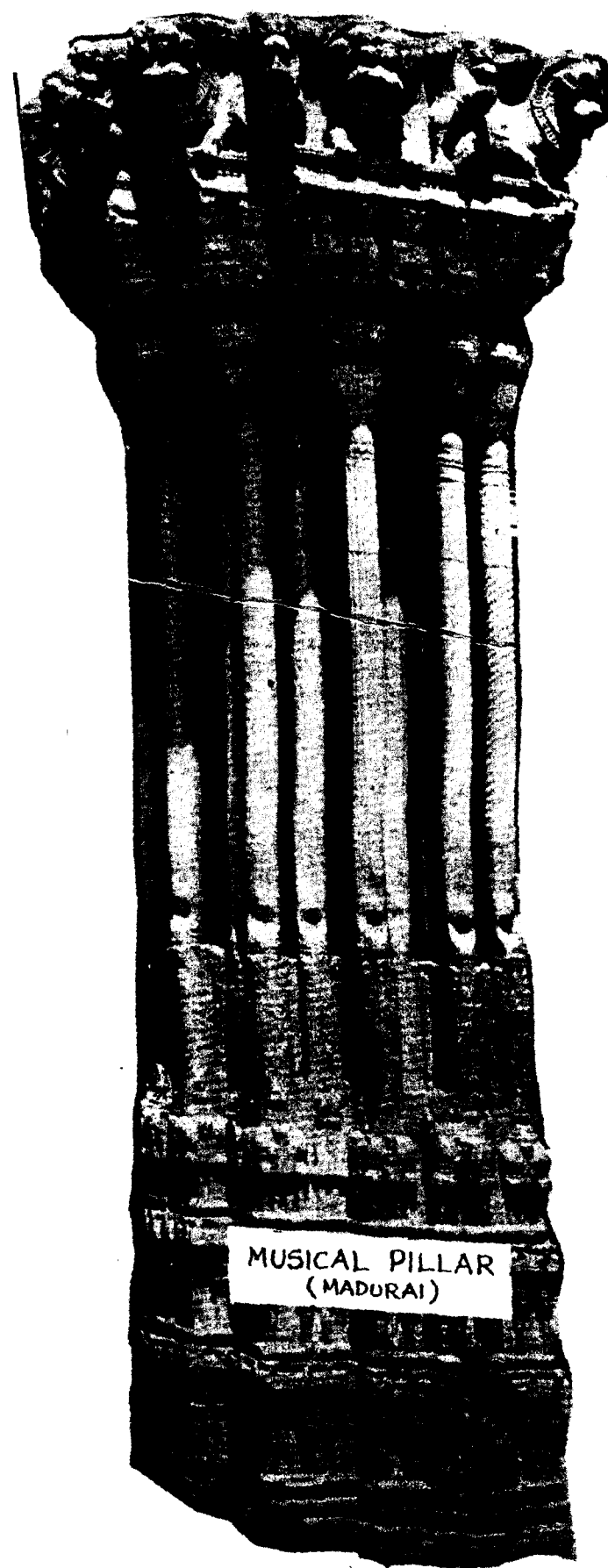
The study of the history of Indian Musical Instrument has a great cultural value. South India is justly famous for her mighty achievements in the realm of music. The earliest example of Raga Sanchara in notation is found in the *Kudimiya-malai* inscription (7th Cen. A.D.) in Pudukottai. This is the first instance of Visual notation in Indian Music. Splendid specimens of musical iconography and dance iconography are enshrined in the

temples of South India. In temple of Tirukkodikaval in Thiruvur district a scene depicting a rious army being greeted by a Musicians, dances and Kolla performances is depicted.

The series of sculptures depicting music parties gives us details relating to the number that constitute concert party, their position, or standing the accompaniment used, the number of strings in



PANCHAGI (A STRINGED INSTRUMENT)



**MUSICAL PILLAR  
(MADURAI)**

stringed instruments, the postures in which the instruments were held and played and many other factors relating to the instrumentation. The Vina having frets for only half of the finger board is depicted in the temples at Halebid and Belur in Mysore State. These sculptures depict one of the stages in the evolution of the Vina and hence is of historical interest. The earliest sculpture with frets for full finger board is seen in the temple of Pattisvaram near Kumbakonam. The sculpture of a lady playing a bowed instrument in the temple at Thirumagudalu in Mysore State (10th cen. A.D.) is alike of very much interest. This is the earliest sculpture depicting a bowed instrument. Curiously enough,



**SAGADA YAZH  
(GWALIOR 6th CENT)**

after a great deal of sophistication abroad, it has come back to our concert platform as the violon. Some aver that it is a much better accompaniment to our type of melody.

A figure performing on the Pancha Mugha Vadyam (Five-face percussion Drum) is sculptured in the base of the northern part of the stone chariot in the Nataraj temple at Chidambaram.

In the absence of auditory records of the music of the ancient times, the sculptures of musical instruments throw a flood of light on



**NAGA VEENA  
(BELUR)**



the sophistication achieved in the field of music.

The great Tamil story poem "Silapathikaram" by Ilango Adigal gives us clear evidence of the high level of dramatics and music prevailing in the Southern part of India during the 4th and 5th Century B.C.

#### Instrumental Music

Instruments are divided into three

groups mainly : 1. Wind instruments 2. Stringed Instruments and 3. Percussion Instruments.

A further classification namely :

1. Folk ; 2. Tribal ; 3. Temple ; 4. Concert and 5. accompaniment is also often made to distinguish the 500 different musical instruments known so far in India. We find several sculptures depicting wind instruments. There are specimens of sculptures playing Bhavalai, Sanghu, Kombu and Konakombu (Shaped Horns).

There is sculpture in Konark



**NAGULA VEENA  
(HALE BID)**



ADITHAMPURA  
(THIRUMAYAM)

depicting playing with Ekkaalam. In elur, Halebid, Somanathpur and anchi we find sculptures depicting several kinds of flutes as mentioned in ancient literature.

#### The Dravidian Yazh

Similarly, among stringed instrument Yazh or harp is an ancient instrument which is considered Dravidian in concept. In Amara-athi and Goli 3rd Cent. there are sculptures depicting different kinds of Yazh. In Tirumayam, Pudukkottai State 8th Cen. we find a rare specimen of Magara Yazh, Narada playing on Magara Yazh and a Rishi playing an Adi Tambura. This is a rare specimen of Yazh.

In Sanchi an unusual Sagoda Yazh with 14 strings capable of different peaking lengths is depicted. This would enable tuning for two kinds of Ragas simultaneously. The Yazh was the principal accompaniment of vocal music in ancient times.

The Yazh was tuned to the fundamental scale. When other scales had to be played, the tunic note was shifted to the particular string of the Yazh and played.

Similarly the evolution of Veena from Nakula Veena, Veda Veena, Naga Veena, Kinari Veena, Mahati Veena, Bhunga Veena Vibranjim Panchagi, are also found on several sculptures in Madurai, Kumbakonam, Belur, Halebid, Pudukkottai, Pattadak, Somanathapur, Pattisvaram, Mahabalipuram, etc., which is of historical value. These sculptures provided valuable materials for studies.

In Silappadigaram, it is stated that during Arangetram of the famous dancer Madavi, 35 percussion instruments were used, most of these instruments are to be found in sculptures and ancient literatures.



NAGAVEENA  
(KAILASANATHA TEMPLE  
KANCHIPURAM)



# T. I. I. C.

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# TRADITIONAL FOLK DANCES AND MUSIC OF TAMIL NADU



Tamilnadu is endowed with a great cultural heritage with rare types of stylised forms of indigenous dances and music which have preserved their pristine purity and grace through several centuries. The Soul of India lies in its villages and the Soul of her Art lies in her ancient Folk Forms of Art. The process of evolution of these Folk Forms owes itself to the vocation of the people. The village folk in Tamil Nadu are mainly engaged in agriculture which involves much physical labour and strain. The various phases of agriculture have their seasons. As the arts of the village folk are inter-twined with their vocation, their forms of art also changes along with the phases of agriculture.

Thus the calm and serene folk music, which predominates from the time of ploughing the fields, gives place to folk dances performed in ecstasy after the harvest.

**Folk Music**—In the villages, music rings alongside with the work of the people. Tunes spring from their toil. Flow of music synchronises with the sowing of seeds. Music at the plough! Music at the fields! Music at the Canal Bunds! Music while rearing the crops! Music while harvesting the produce! Music while thrashing the grains! Thus the whole village life reverberates with music.

One of the popular forms of folk music is *Villuppattu*. Six to eight singers use a long bow-like instrument with tinkling of bells attached to the thick string of the bow. A mud pot gently beaten in the mouth by a leather piece and an *Udukk* are also used. The themes centre round the meritorious deeds of Gods and Goddesses, heroes and heroines. *Katta Bomman* is another favourite theme of this folk song. The leader of the group will narrate the song stage by stage and the rest will punctuate it by repetition.

**Kaichilambu**—*Kaichilambu* is a sort of folk *Katha Kalakshepam* to the tune of music and musically

sounding *silambu*. Group dancing also is done to the tune of this music.

There are other kinds of popular folk music like *Harvest Songs*, etc.

**Folk Dances**—Folk dances can be grouped under three major heads for convenient study: (1) Dances by Professional troupes; (2) Community Dances among all sections of people during social and religious festivities; and (3) tribal dances of the hills and forests.

## Dances By Professional Troupes.

Among the folk dances of professional troupes, *Karagam*, *Kavadi*, *Puravi Attam* or *Dummy Horse Dance*, *Therukoothu* (Folk Play) and *Bommallattam* (Puppetry) are the most prevalent popular varieties.

**Karagam**—*Karagam* or dancing with a decorated pot of vessel on the head to the accompaniment of *Nagaswaram* Music is a Folk Art popular in Tamilnadu. It is danced mostly for propitiating *Mariamman* and other village deities to get rains and to ward off epidemics.

**Kavadi**—The *Kavadi* is a well known type of folk dance. Most of the devotees of Lord *Muruga* take to it as a devotional offering to the Almighty. The *Kavadi* is an arched wood and cloth work. The short wooden base rod held on the neck of the dancer is swung by him round and round according to his dance movements. Some professional experts display amazing feats of skill in it by balancing and moving the *Kavadi* all over the body and in various poses without the support of the hands. The dance is performed according to the varied tunes of the popular tune called '*Kavadi Chindu*'. The orchestra is *Naiyandi Melam* consisting of two *Nagaswarams*, two *Thavils*, *Pambai* and *Thamuku*.

*Naiyandi Melam* is an orchestra of instruments as described above. By itself it can give a concert and it is used as accompaniment also in *Karagam*, *Kavadi*, *Dummy Horse Dance* and other Folk Dances. The peculiarity of it is that the instrumentalists too dance while playing their instruments.

**Puravi Attam or Dummy Horse Dance**—In the *Puravi Attam* the

dummy horse is made with a framework covered over with paper or cardboard. It is lavishly decorated as to resemble a well-bred palace-horse or horse. Through a hole at the top of the horse, the dancer with the upper portion of his body above the waist being visible with his legs fitted up with wooden stilt. In this mode he appears as if riding on the horse. He dances to the tune of the orchestra referred to above.

**Bommallattam** (Puppetry)—The *Bommallattam*, the characters of a drama are represented by decorated dolls and their movements are manipulated by black stilt held by experienced craftsmen standing behind a short wooden base. Scenes from puranic drama like *Harischandra*, *Rukmangada*, etc. are generally depicted. The dance is not only of a high order appealing the classical mode but also appealing. The acting of the dancers appear almost human and are made to dance *Bharatha* items too like *Alarippu*, *Nagaswaram* and *Thullana*. The puppets are sizeable and the music is rich.

**Peacock Dance**—The dancer wears the mask of a peacock and also its feathers and dances to the tune of music, imitative of the peacock's movement and gait of the peacock. This dance is generally performed as an interlude in *Karagam* and *Kavadi* dances.

**Folk Drama**—The folk plays of Tamilnadu, popularly known as '*Therukoothu*' are generally based on Puranic themes and they are presented with music, dance, dialogues. The Dancer-Actor wears antique and sometimes caricature costumes. Good *Therukoothu* troupes may be said to be mobile educational institutions, for they try to inculcate in the minds of the masses a love of God, good conduct, virtues and a capacity to distinguish the good from the bad. Professional *Therukoothu* troupes are present in the various Districts of Tamil Nadu like *Tanjore*, *Madurai*, *Ramanathapuram*, *Tirunelveli*, *North Arcot*, etc. These folk dances are performed generally on occasions of Temple Festivals.



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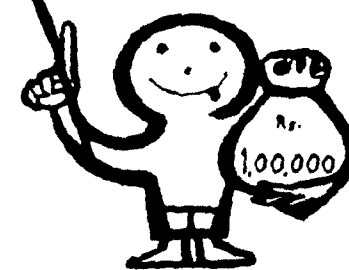
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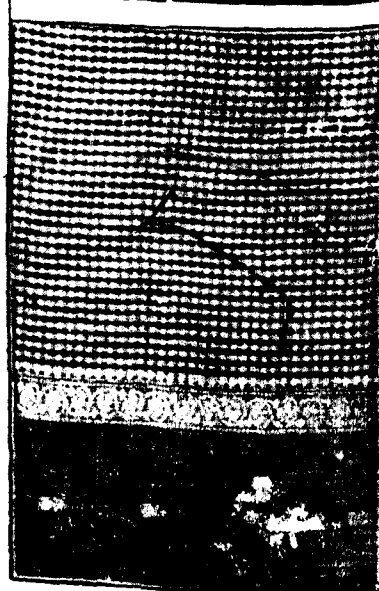
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service of 14 years, he has earned 2 M.S.Es., 47 G.S.Es. and 208 money rewards and maintains a clean defaulters sheet.

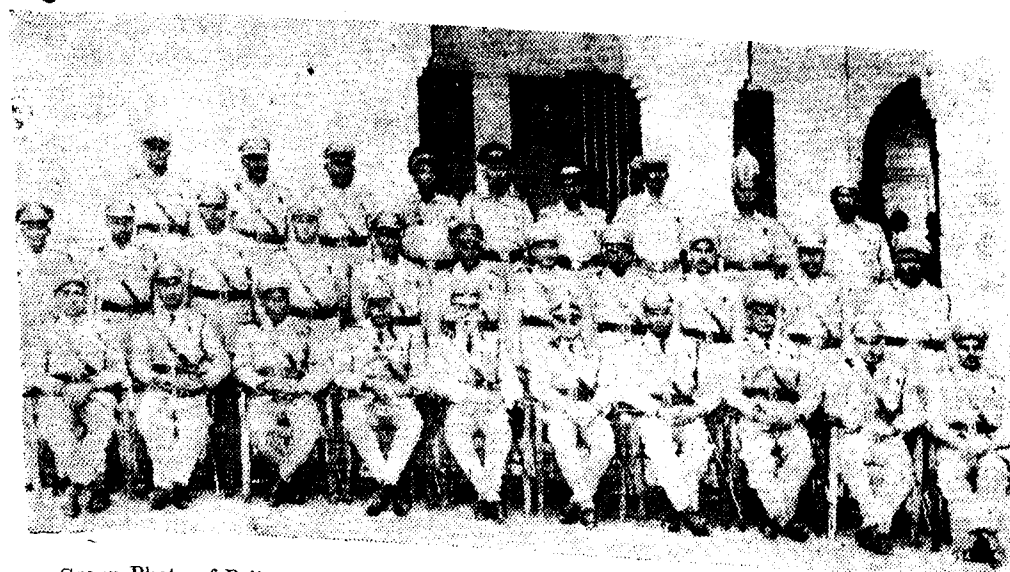
This officer was responsible for tracing and arresting a notorious Naxalite by name, Goa Kandasami, who was involved in lawless activities and had gone underground for a long period.

#### THIRU DEVANAYAGAM RAMASAMY Station Officer (Transport).

Thiru Devanayagam Ramasamy was enlisted as a Fireman Driver in the A.R.P. Organisation on 29th December 1942. As a Driver Mechanic he earned six cash rewards for very good work done during fires and rescue operations. The one given in 1956 was for very valuable services rendered during the Ariyalur train disaster.

In the floods in South Arcot district from 8th to 12th December 1972 a series of rescue operations were carried out under the orders of the Collector in the villages in and around Cuddalore. As Station Officer (Transport) Thiru D. Ramasamy displayed conspicuous gallantry in saving a number of lives and valuable property like cattle and household articles during the rescue operations carried out at Uppalavadi and Sirupalayur villages.

Dr. M. Karunanidhi, Chief Minister, addressing at the function of the Award of the Tamil Nadu Chief Minister's Police Medal for Gallantry and Outstanding service held at Thanjavur on 15th September, 1973 (Left). The Chief Minister is pinning the medal on Thiru Ramanuja Reddy, Reserve Inspector, Madurai North. (Right).



Group Photo of Police Officers who were honoured at the Thanjavur Inauguration on 15-9-73.

## THE AWARD OF THE TAMIL NADU CHIEF MINISTER'S POLICE MEDAL FOR OUTSTANDING SERVICE

#### THIRU J. E. SAMUEL (Deputy Superintendent of Police, Chingleput East.)

Thiru J. E. Samuel entered service in the Madras Police as a Sub-Inspector of Police in 1943. After his practical training, he held charge of heavy stations in Chingleput district and transferred to the Railway Police where he did excellent work in putting down Railway offences. He was placed on special duty in 1952 and he successfully booked a case against Railway Guards who were responsible for the pilferage of goods.

He served in the District Special Branch for three years and developed excellent sources of information. He was specially selected as security officer in 1958 to accompany the Governor of Madras during his tour of Assam State.

In recognition of his efficient service he was promoted to the rank of Inspector of Police in 1959. His work for 4 years as Divisional Detective Inspector in Madras City was equally praiseworthy.

In 1969 he was elevated to the rank of Deputy Superintendent of Police and posted to Thiruthurai-poondi sub-division, where he successfully handled the situation arising from the Land Grab agitation. He is now in Tiruvottiyur Sub-Division where he has shown equal competence in dealing with industrial unrest.

His long service of 30 years is marked by exemplary character, efficiency and integrity of a high order.

#### THIRU H. T. THUKKARAM (Deputy Superintendent of Police and Assistant Commis- sioner of Police, Law and Order, Western Range, Madras City).

Thiru H. T. Thukkaram entered service as Sub-Inspector of Police in 1948. After his training he held charge of various stations in Tiruchirappalli district and carried out his assignments ably and efficiently.

In recognition of his good services he was promoted to the rank of Inspector of Police. He rigorously put down rowdyism, smuggling of liquor, etc. His work during the Anti-Hindi agitation in 1965 was commendable.

He was promoted as Deputy Superintendent of Police in 1969 and posted to Mettur Sub-Division in Salem District where he managed the labour problems with tact and firmness. In handling the very difficult situations at India Pistons in 1972 he showed great competence and leadership.

His long service of over 25 years is characterised by thoroughness, resourcefulness, loyalty and integrity of a high order.

#### THIRU C. A. KUPPUSAMI (Deputy Superintendent of Police, Namakkal, Salem District).

Thiru C. A. Kuppusami entered service as Sub-Inspector in 1943. He served in heavy stations and dealt with law and order problems firmly and tactfully and earned the appreciation of his superiors and the public alike. In 1950-51 he arrested smugglers and seized goods worth Rs. 50,000. In 1953 he detected a grave burglary in a

Given below is the biographical sketches of the recipients of the Chief Minister's Police Medal for Outstanding service during the year 1972-73.

V.I.P.'s house and earned enormous. Later he rounded up a North Indian Gang responsible for house burglaries in and around Chingleput and South Arcot districts.

He was promoted as Inspector of Police in 1960. For his good work in Tiruchirappalli district, he was awarded a Meritorious Service Entry.

In 1969 he was drafted to the Ford Cell, C.I.D. and with the assistance of the Central Excise staff he intercepted a car coming from Bangalore and recovered 7,000 tolas of gold worth Rs. 1,40,000 concealed in the petrol tank. He chased another car in Hosur limits resulting in the recovery of gold threads and Tetron cloth over Rs. 50,000. The contraband seized and the two cars were confiscated to Government.

In December 1970 he was promoted as Deputy Superintendent of Police. He is in charge of Namakkal Sub-division where he continues to work with sincerity.

His service of over 29 years has been marked by sincerity, zeal, and detective ability of a high order.

#### THIRU T. R. RAMANUJAM (Deputy Superintendent of Police, Research Centre, C.I.D., Madras).

Thiru T. R. Ramanujam entered the Police Department as a Sub-Inspector of Police in the year 1949. He did excellent work as a Sub-Inspector in the Special Prohibition Squad of the Madras City Police. As he was found to be a good detective, he was drafted, to the State Crime Branch, C.I.D. in 1955. He was specially chosen to assist in the investigation of the sensational



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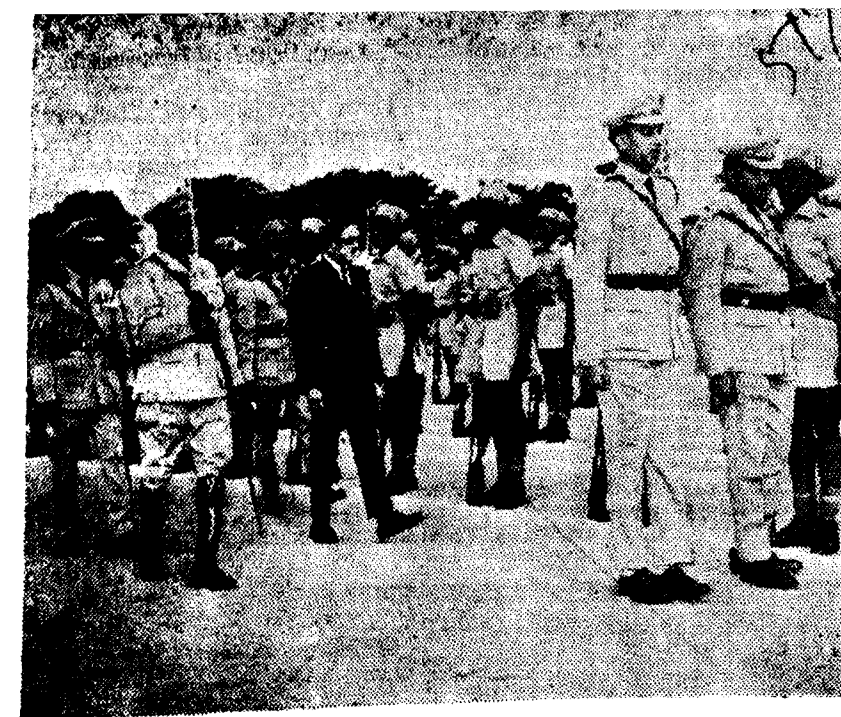
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*a*  
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OF  
THE  
TAMIL  
NADU  
CHIEF  
MINISTER'S  
POLICE  
MEDAL  
FOR  
GALLANTRY

Every year on 15—9—73 the Birthday of late Dr. C. N. Annadurai, awards to members of Police Force for Gallantry and Outstanding service are conferred by the Chief Minister. Biographical sketches of the recipients of the Chief Minister's Police Medal for Gallantry are outlined in the following pages.



The Parade Commanders at Thanjavur Police Parade on 15-9-73 were Thiru A. Ramu, D. S. P. (A.R.) Tiruchi and D. I. G. Tiruchi, Thiru Suvarna. They are seen conducting the Chief Minister at the Ceremonial Parade.

**THIRU C.S. ARUMUGAM.**

*Assistant Commissioner of  
Police, Law and Order,  
Central Range, Madras City.*

Thiru C. S. Arumugam with 29 years of service to his credit, distinguished himself in unearthing the famous Naxalite conspiracy case of Andhra Pradesh by the seizure of secret documents and arrest of several desperate accused at great personal risk.

He has great initiative, perseverance and tact and these qualities brought him distinction.

**THIRU A.V.P.V. RAMANUJA REDDY.**

*Reserve Inspector, Madurai  
North.*

Thiru A. V. P. V. Reddy with 25 years of service to his credit in S. A. P., is a prominent athlete.

From 1967 to 1971, he brought laurels to the State Police by serving as coach in the All-India Police Games Meets held at various States in Jullunder, Lucknow, Tekanpur, Bhopal, Neemuch and credit goes to him for the efforts taken by him in coaching our police athletes who won gold, silver and bronze medals in several events. He has earned 29 rewards during his service.

**THIRU A. RAJAGOPALAN.**  
*Inspector of Police, Excise.*

Thiru A. Rajagopalan with 23 years of service to his credit, has made a mark by his detective ability and flair for crime work right from the beginning. By reason of high merit he was drafted to the Crime Branch, C.I.D. in 1956 where he displayed great skill and diligence in investigating important and complicated cases. He has earned 275 rewards and Good Service Entries including 2 Meritorious Service Entries. He is a considered asset to this department.

He joined the Excise Enforcement Wing on 1st April 1972 and here also he distinguished himself by his collection of intelligence and execution of daring raids.

**THIRU C. S. THRILOKA-CHANDRAN.**

*Inspector of Police, Madras City.*

Thiru C. S. Thrielokachandran joined the Police Department as a Sub-Inspector of Police in 1959. After training he held charge of several police stations where he did exceptionally good work for this reason. He was specially selected for the Madras City Police where he continued to work with conspicuous merit. During his distinguished

1970. He has maintained an excellent drive against smuggling of paddy and rice to Kerala.

He has earned 78 rewards and maintains a clean defaulter sheet.

His service of over 23 years is characterised by efficiency and integrity of a high order.

**THIRU V. N. SREENIVASA RAO**

*Inspector of Police, Madras City.*

Thiru V. N. Srinivasa Rao was appointed directly as a Sub-Inspector of Police in the year 1950. He showed his mettle within a few years and by reason of merit was specially chosen for the Special Branch, C.I.D., where he served from 1953 to 1959. He distinguished himself in this specialised branch.

On promotion as Inspector of Police, he joined the Vigilance and Anti-Corruption Unit at Thanjavur and South Arcot, where he worked from 1964 to 1969. His work in this new sphere was a high order.

He was specially chosen to work in Tamil Nadu Police Commission Office, where he worked from January 1970 to January 1971. He served the Police Commission very efficiently.

He has earned 106 rewards and his service of 23 years is marked by sincerity earnestness and devotion to duty.

**THIRU M. C. PARTHASARATHY,**

*Officiating Inspector of Police, Tamil Nadu Special Police III Battalion, Manimutharu.*

Thiru M. C. Parthasarathy entered service in the Special Armed Police as a Sub-Inspector of Police in the year 1948. After training at Malappuram, he was drafted for duty on the Hyderabad border. He displayed courage and leadership in facing hostile elements from the erstwhile Hyderabad State.

Thereafter, he was drafted to various duties at Nagaland where he took active part in operations. He worked efficiently and earned the appreciation of his superiors and Army Officers. He exhibited great courage in 1963 in saving many civilian lives and properties from destruction by hostile Nagas.

In recognition of his continuous good work, he was promoted to the rank of Inspector of Police in 1963. He held charge of several armed police companies with distinction. He was awarded Special Duty Medal with two bars in the operational area.

He is now working as a Quarter Master since 1969 and he does his work with efficiency.

His 25 years of service is marked by integrity and ability of a high order.

**THIRU PARANUR VEDAGIRI**

*Inspector of Police, Vigilance and Anti-Corruption, North Arcot Detachment.*

Thiru Paranur Vedagiri, a graduate, joined the Police force as Sub-Inspector of Police on 11th October 1949. He served in various heavy stations like Arkonam, Vellore Crime Branch, etc., and handled several notable crimes and serious law and order problems tactfully. He located and got convicted a notorious gang of Ex.-N.T.M. Koravas of Potharai and Sengunam who were responsible for a serious of highway dacoity cases in Kalambur and Polour Police Station limits in 1952. His assistance in detecting an intricate case of murder for gain of Santhaval Station was very valuable and the culprits responsible were convicted. While at Arkonam in 1954, he displayed exemplary and outstanding skill and ability in rounding up a notorious criminal organisation of Stuwartpuram of Andhra Pradesh, headed by one Ramiah, an Ex-Police Constable of Hyderabad, who was responsible for serious of inter-State lorry, car and bandy hold up cases of Tamil Nadu, Andhra and Mysore States. While convicting the accused, the trial court commended his work and the Government rewarded him in appreciation of his good work. The menace of wire thefts at Arkonam and its surrounding areas for a period of over five years from 1949 was put down by him in 1954 by tracking the criminal organisation responsible for them and all the accused were convicted.

In recognition of his good work, he was promoted as Inspector of Police on 1st June 1964. As Inspector of Police, Special Branch, C.I.D., Madras, he acquitted himself

creditably from 1964 to 1966. While at Arni Circle, he detected grave telephone copper wire theft cases and house-breaking cases for which he was rewarded. He joined the North Arcot Detachment, Vigilance and Anti-Corruption in November 1972 and he has been doing good work.

He has earned 207 rewards so far.

His service of 24 years has been marked by earnest devotion to duty, integrity, detective ability and tactfulness.

**THIRU M. VENKATACHALAM**

*Inspector of Police, Madras City.*

Thiru Mariappa Venkatachalam, was appointed as Sub-Inspector of Police in the year 1952. He was drafted to the Madras City Police in 1953, where he made a name by putting down prohibition and cotton betting offences ruthlessly.

He underwent a diploma course in Criminology and Forensic Science in 1962 and came out successfully.

He was promoted to the rank of Inspector in 1966 and was posted to the Directorate of Vigilance and Anti-Corruption, where he made a mark by collection of information and efficient investigation. In 1968, he reverted to the Madras City Police and continues to this day serving the people with efficiency.

He has earned 370 rewards and maintains clean defaulter sheet.

His 21 years of service is marked by efficiency, devotion to duty and integrity of a high order.

**THIRU D. E. CHARLESLEY**

*Inspector of Police, Saint Thomas Mount.*

Thiru D. E. Charlesley entered as a Sub-Inspector of Police in the year 1958. He distinguished himself by unearthing property offences, arresting condemned prisoners, who escaped from the Central Jail, Madurai, and by generally efficient investigation.

By his able investigations and around efficiency, he earned his promotion to the rank of Inspector

of Police in March 1970. He was posted to the Special Branch, C.I.D., Madras, where he earned as many as 11 rewards for his efficiency.

He is now working in Saint Thomas Mount Circle in Chingleput East district, where he has proved to be highly successful against criminals and anti-social elements.

His service of over 13 years has been marked by industry, initiative and devotion to duty. He has earned 163 rewards and a Meritorious Service Entry.

**THIRU ISMAIL KHAN BAILAM,**  
*Sub-Inspector of Police, Thanjavur West.*

Thiru Ismail Khan Bailam was enlisted as a Police Constable in 1942 in Tirunelveli district. By industry and efficiency, he rose to the rank of Head Constable in the year 1949.

He did excellent work in the District Special Branch, Tirunelveli district, by setting up valuable sources of information and was thus able to track the movements of anti-social elements and arrest them which was greatly appreciated by his superior officers.

In recognition of his continuous good work, he was promoted to the rank of Sub-Inspector of Police in 1954. He worked with distinction in heavy police stations.

He has earned 120 rewards and maintains a clean defaulter sheet.

His service of over long 30 years is characterised by efficiency, integrity and devotion to duty of a high order.

**THIRU K. VENUGOPAL,**  
*Sub-Inspector of Police, Tiruchirappalli.*

Thiru K. Venugopal was enlisted as Police Constable in 1941. After his training, he was posted to several stations, where he proved his worth by hard work and efficiency. He was duly promoted as Head Constable and he justified his promotion by good work. He was then promoted to the rank of Sub-Inspector of Police in 1965. He did excellent work in the famous counterfeit currency note case in which a Mill Magistrate was involved. He has, thereafter,

worked in several Police Stations with distinction.

He has a clean defaulter sheet and has 91 rewards to his credit.

His service of over 32 years is marked by ability, integrity and devotion to duty of a high order.

**THIRU V. CHINNA THEVAR,**  
*Sub-Inspector of Police, Madurai North District.*

Thiru V. Chinna Thevar was enlisted as a Police Constable in the year 1939 in Madurai South district. By reason of hard and efficient work he earned his promotion as Head Constable in the year 1946.

He did excellent work in the detection of a number of dacoities in various stations, viz., Andipatti, Keeranur and Veerapandi. His detective ability was fully utilized in the detection of thefts from bungalows of foreigners and tourists. His outstanding work in the arrest of B.C. Gurusami of Nagalapuram, who was terrorising the area with fire arms, was commendable.

He was promoted as Sub-Inspector of Police in the year 1966. He is prompt, reliable and hard working and can be entrusted with important and arduous assignments with confidence.

His long service of the over 31 years has been characterised by resourcefulness, loyalty and devotion to duty.

**THIRU K. THANGAPPAN,**  
*Reserve Sub-Inspector, Ramanathapuram.*

Thiru K. Thangappan was enlisted as a Police Constable in 1956 in Travancore State Police. Consequently, on the reorganization of the States, he was absorbed in Kanyakumari district with effect from 1st November 1956.

He was duly promoted as Head Constable in 1965. By dint of his hard work and ability, he rose to the rank of Reserve Assistant Sub-Inspector in May 1966. He is a good athlete and has taken active part in the State and All-India Police Sports and Games Meet successively for several years.

Due to his outstanding ability he was promoted as a Reserve Sub-Inspector. His conduct and character have been exemplary throughout.

His service of 16 years is marked by sincerity, industry and ability of a high order.

27

**THIRU R. KRISHNASAMY,**  
*H.C. 173, Chingleput East district.*

Thiru R. Krishnasamy was enlisted as Police Constable in the year 1941. On successful completion of training he was posted to the Armed Reserve, Chingleput district.

He has always been a hard and willing worker. He has taken pride in being always neat and clean in his turnout at all times. He has been a fine example to all the other men in the Armed Reserves.

He was later drafted to the Motor Transport Branch where also he has distinguished himself as a good driver.

His service of over 30 years sheet has been marked by efficiency, hard work and devotion to duty. He has earned 56 rewards.

**THIRU RAMALINGAM,**  
*H.C. 1844, Special Branch, C.I.D. Madras.*

Thiru Ramalingam served in the Army for four years during the Second World War before he was enlisted as a Police Constable on 28th March 1947 in the Madras City Police. As a constable in the Madras City Police, he exhibited his skill in apprehending criminals concerned in several property crimes. He also exhibited his ability in assisting his superiors in the field of investigation leading to the recovery of properties from different places in the City. His work in rounding up of several narcotic and prohibition offenders was commendable.

For his good work, he was promoted to the rank of Head Constable on 1st October 1960 and he served in the Madras City Police, Food Cell and Prohibition Intelligence Bureau wings of the C.I.D. and his work was appreciated by his immediate superiors. He is working in the Special Branch, C.I.D. where also his work is commendable.

His long service of 26 years is marked by integrity, sincerity and devotion to duty. He has a clean defaulter sheet.

Coimbatore and Nagapattinam Hundred Rupee Currency Note cases. By diligent enquiries and careful examination of persons connected with these cases, he rendered yeoman service towards the detection of these cases.

He was promoted to the rank of Inspector in 1960 and detained in the Crime Branch, C.I.D. itself as a special case in view of his detective ability and skill.

In 1962, while he was in-charge of the Madurantakam Circle in Chingleput district, a theft of two suit cases containing valuables worth Rs. 75,000 belonging to a Cine actor was reported and he successfully investigated and detected that case.

In 1971, he was promoted to the rank of Deputy Superintendent of Police, Prohibition, Intelligence Bureau C.I.D. He did excellent work in effecting recoveries of smuggled goods and unaccounted currency to the value of about Rs. 4 lakhs. He is currently in-charge of the Police Research Centre in the Crime Branch, C.I.D., Madras.

His distinguished service of over 22 years is marked by industry, integrity and efficiency of a high order.

Thiru H. T. Thukkaram, A. C. Law & Order, Western Range, Madras City, receiving Medal for Outstanding Service.



#### THIRU M. A. RADHAKRISHNAN

Deputy Superintendent of Police,  
Tamil Nadu Special Police  
IV Battalion, Kovaipudur.

Thiru M. A. Radhakrishnan entered service as a Jamadar (now Sub-Inspector of Police) in the Special Armed Police V. Battalion, Palani in 1948. He ably conducted training courses of cadets entrusted to him. He was promoted as Subedar in 1948 and played an effective role during the Police Action in Hyderabad State. During 1949-50 he was posted to quell an outbreak of crime in Tirunelveli district and he carried out this work creditably.

He held the post of Quarter Master in 1958 and took keen interest in the welfare activities of the Police personnel. By dint of his hard and efficient work he was promoted to the post of Deputy Superintendent of Police.

He was on deputation to Orissa State and Nagaland from 1964 to 1971 and his work in the operational area was appreciated by his superior officers as well as Army authorities.

He takes a leading part in conducting Sports Meets, Duty Meets and Welfare and Cultural Exhibitions.

His long service of 25 years has been characterised by a high degree of efficiency, loyalty and devotion to duty.

#### THIRU V. R. GANAPATHI

Inspector of Police, Special  
Branch, C.I.D., Madras.

Thiru V. R. Ganapathi joined the Police Force on 8th October 1949. Even as a probationer he showed competence in the field of Crime detection. He was mainly responsible for arresting notorious K.Ds. concerned in about 25 cases of various circles leading to recovery of a large amount of property and all the cases ended in conviction. He continued to work well and arrested O.V.D.Cs. and inter-State criminals concerned in house-breaking and major thefts in Chingleput and South Arcot districts and in Madras City.

He was then posted to Special Branch, C.I.D. where he did excellent work and was awarded a meritorious service entry. In 1967 he was specially posted to Chingleput district for duty during the General Elections and he earned encomiums for his efficient work. Thereafter he has been working as security officer with quiet distinction.

He has earned 131 rewards including two Meritorious Service Entries. His service of over 23 years of service is marked by integrity, efficiency and devotion to duty of a high order.

A close up of Madurai North Reserve Inspector Thiru Ramaniyam Reddy receiving the Gallantry Medal.



#### THIRU J. R. SREERAMULU,

Inspector of Police, Crime Branch,  
C.I.D., Madras.

Thiru J. R. Sreeramulu entered services as a Sub-Inspector of Police in the year 1949. He made his mark in the detection of a series of burglaries perpetrated by professional criminals of Chingleput, North Arcot and Thanjavur districts. At the risk of his own life he arrested the absconding accused in a triple murder case.

By reason of continuous good work he earned his promotion as Inspector of Police in 1964. He served for a full term of five years in the Directorate of Vigilance and Anti-Corruption. He succeeded in several trap cases and successfully handled important cases against highly placed officials.

He was transferred to the Food Cell, C.I.D., in the year 1969 and subsequently to the Crime Branch, C.I.D. in April 1972. He has maintained his fine record in these two branches also.

He is now working as Senior Executive Officer, Crime Branch, C.I.D., Madras. He has earned 157 rewards and maintains a clean defaulter sheet.

His service of over 21 years is marked by integrity and efficiency of a high order.

#### THIRU C. BRAHMANANDAM,

Inspector of Police, Food Cell, C.I.D.,  
Madras-4.

Thiru C. Brahmanandam entered the Police Department as Sub-Inspector of Police in the year 1949. He did splendid work in detecting a case of robbery followed by murder in the Meenakshi Amman Temple, Madurai. Several cycle and cattle theft cases in Madurai Urban district were located by him.

He was promoted as Inspector of Police during the year 1964. He joined the Directorate of Vigilance and Anti-Corruption and worked in South Arcot and Tirunelveli Units. He successfully investigated several difficult cases of corruption.

He joined the Food Cell, C.I.D. Unit in Kanyakumari on 24th July

Top: Thiru C. S. Arumugam, A. C.,  
Control Range.  
Middle: Thiru Thirulokachandran, City  
Police Inspector and  
Bottom: Thiru A. Rajagopal, City  
Police Inspector receiving

Chief Minister presents Gallantry Medals.





THIRU N. GOPALA PANICKER,  
H.C. 340, The Nilgiris.

Thiru Gopala Panicker was enlisted as a Police Constable on 5th April 1942. By reason of outstanding ability as a detective and by his hard and sincere work, he was promoted to the rank of Head Constable.

His unquestionable integrity and efficiency has made him a natural choice for the investigation of all important cases. He has proved his worth in the field of intelligence as well.

His continuous record of over 30 years of service is marked by selfless devotion to duty and integrity of a high order. He has earned 131 rewards.

THIRU M. MEENAKSHI NAIDU,  
Head Constable No. 561, Vigilance  
Cell, High Court, Madurai  
Detachment.

Thiru M. Meenakshi Naidu joined the Police Department as a Police Constable in the year 1942 and was posted to the Armed Reserve, Madurai. Even as a Probationary constable, he showed outstanding ability and courage in arresting anti-social elements at Kambam during a raid, when they were in unlawful possession of arms under Section 19(i) of the Arms Act and thus earned his first reward. Because of his hard work and devotion to duty, he was promoted as Head Constable on 2nd October 1947 within five years of his enlistment as Constable. He did excellent work in detecting cases of house gambling and took initiative in rounding up several bad characters under the Security Sections and earned as many as 18 rewards. He was of immense assistance to his superiors in solving complicated cases.

As a sequel to his integrity and devotion to duty he was absorbed in the Directorate of Vigilance and Anti-Corruption from its very inception in 1964 to 1969. During this period, he was instrumental in trapping six officers and successfully conducted detailed enquiries including the famous "Jamabandhi Case". He was then taken to the Vigilance Cell (Food), Madurai Unit and served there from 1st June 1969 to 30th June 1970. During this period, he was instrumental in detecting nearly 150 cases and earned a number of rewards.

He joined the Vigilance Cell, High Court, Madurai detachment in 1970 and continues to do good work as before. He has done commendable investigation in certain enquiries relating to corrupt practices of certain Judicial Officers.

His service of 31 years is marked by efficiency, integrity, loyalty and devotion to duty of a high order. During his tenure of office, he has earned as much as 238 cash rewards and four Good Service Entries.

THIRU KUPPUSWAMY RAJU,  
Leading Fireman 19 (Madras City  
Division).

Thiru Kuppuswamy Raju, Leading Fireman 19 was enlisted as Fireman in the Tamil Nadu Fire Service on 24th April 1942. His smartness and sense of discipline attracted the attention of his superiors, who promoted him to the rank of Leading Fireman on 1st May 1943 itself. During the 31 years of service, he has worked in heavy Fire Stations in Madras City. His work throughout has been characterised by ability and keenness. His capacity to enforce discipline and his exemplary sense of duty marked him for selection to the post of Leading Fireman in the Fire Control Room, Madras. He acquitted himself well in this assignment. When there were unprecedented fires in Madras City during June-July 1968 in huddled areas, as Leading Fireman in charge of Fire Unit, he rose to the occasion and relentlessly fought the fires untiringly and with high devotion to duty.

This Leading Fireman has put in 31 years of service and throughout this period, his hard work was characterised by discipline, high sense of duty and integrity and has been an example for others in the department to emulate. Throughout his long service he has maintained an unblemished record, which is no mean achievement, for which he has been granted Long Service Special Pay of Rs. 2 per mensem. He has earned nine rewards in all, eight cash rewards and one Good Service Entry. His long and outstanding service is marked by ability and merit.

THIRU VARADARAJULO  
VEERARAGHAVAN,  
P.C. 105, Government Railway Police,  
Tiruchirappalli.

Thiru Veeraraghavan was enlisted as a Police Constable in Madras City in 1939 and served efficiently in the Armed Reserve till 1947. He joined the Railway Police in 1948.

He is a willing worker and has taken keen interest in sports activities. He took part in several shooting competitions and was awarded prizes. He was always found smart in his turnout and is conscientious.

He has earned 81 rewards and maintains a clean default sheet.

His service of over 34 years has been marked with loyalty, devotion to duty and integrity of high order.

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The Prime Minister inaugurating the Pamban Road Bridge work.

## PAMBAN—THE FIRST

### ROAD BRIDGE TO THE RAMES- WARAM ISLAND

Thousands of pilgrims from all over India visit the Sri Ramanatha-swami Temple at Rameswaram. The pilgrims have to cross the Pamban bridge which lies between Mandapam and Pamban Station, only by train as this Railway bridge has been the only link with the main land. This bridge was constructed in 1914 to connect Mandapam and Rameswaram, and till date it is considered to be a great "engineering feat", because it is one of the longest bridges in the world. The bridge was damaged during the storm of 1964 and in 1965 it was restored much earlier than expected.

#### THE PAMBAN ISLAND

The island of Pamban lies at the tip of Ramanathapuram district on the West and Ceylon in the east, being separated from the former only by a narrow passage or channel which opens in the north into the waters of Palk Strait and on the South into the Gulf of Mannar. The island is about 11 miles long by 6 miles wide. The eastern half is merely a narrow strip of sand running down to join Adam's Bridge, and the remainder is based on rock of coral formation and is chiefly covered by thorny acacias or by swamp, there being little cultivation of any kind. The chief town is Rameswaram.

The town of Pamban, which is said to derive its name from the tortuous, snake-like course of the above-mentioned channel, is situated at the western extremity of the island, and is one of the two largest sea ports in Ramanathapuram district. A light house rises 97 feet above high-water mark, showing a light visible at a distance of 12 or 14 miles. It is one of the chief points of departures for emigrants and other passengers to Ceylon and it also receives the numerous pilgrims who visit the temple at Rameswaram. The number of passengers and pilgrims who arrive at it has increased considerably since the opening of the railway to Mandapam on the mainland opposite the Channel. The climate is considerably cooler than that of the mainland and the town was formerly used as a health resort by European officials. The ruins of a Dutch fort are still to be seen.

Pamban passage or channel is a partly artificial channel which runs between the western extremity of Pamban Island and the mainland of India, connecting Palk Straits and the Gulf of Mannar. It has been deepened by the Government in order to allow sea-going ships to pass along by this quicker and more sheltered route. Geological evidence tends to show that in former

times the gap was bridged by a continuous isthmus; and until it was deepened the passage was quite impracticable for ships being obstructed by two parallel ridges of rock reaching just above the high-water mark and about 140 yards apart, the space between which was occupied by a confused mass of rocks lying for the most part parallel to the ridges in the horizontal strata of sand stone formation. The first proposal to deepen this Channel for traffic was made by Colonel Manuel Martineo who brought the matter to the notice of Mr. Lushington, then Collector of Southern Provinces and afterward Governor of Madras.

A scientific marine survey of the Channel was conducted in 1837. Operations for deepening and widening the Channel were begun in 1838 and continued for many years. It is now about 80 feet wide, 14 feet deep at a minimum, and 4,232 feet in length, and is used to a large extent by coasting vessels. Proposals were under consideration to bridge the Channel and to carry the railway across it to Rameswaram to cut a canal through Pamban Island large enough to take sea-going ships; to establish a ship basin in one part of this canal and connect it with the railway and eventually to continue the railway across Adams Bridge to Ceylon. Most of these grandiose schemes did



Thiru P. U. Shanmugam, Minister for Public Works, is seen garlanding the Prime Minister on arrival at Pamban.

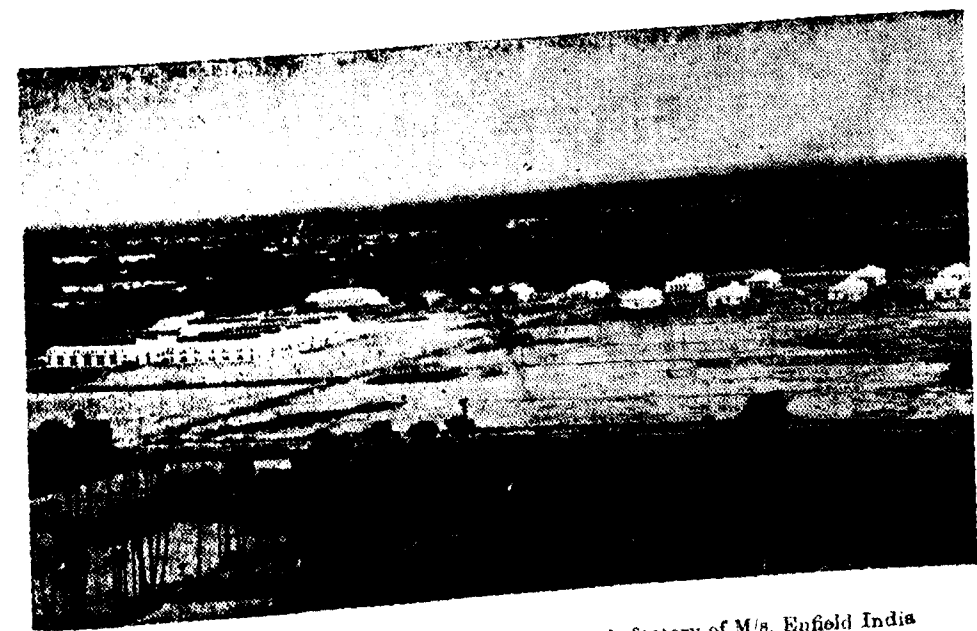
not fructify. The present road-bridges is the first improvement that is taking place.

#### COMPLETING ALL MISSING ROAD LINKS IS AIM OF FIFTH PLAN.

The 7,692-foot-long bridge would have approach links costing Rs. 51.01 lakhs. It would have a prestressed concrete superstructure

with foundations taken down to rock. There would be one navigation span, about 330 feet long with a vertical clearance of 55 feet above the high tide level for an uninterrupted passage of ships underneath. The bridge would have a carriage-way 7.5 metres wide and two foot-paths each 1.5 metres wide. The road over the bridge would slope down from the navigation span towards the shores in a gradient of 1 in 100 on the Mandapam side and 1 in 50 on the Pamban side. The lowest point of the bridge deck would be kept at a minimum height of 20 feet 6 inches above sea level to ensure safety of the superstructure from the tidal waves. The approaches to the bridge would be about 5 km. and 2 km. long on the Mandapam and Pamban sides respectively. The bridge, which would cost in all Rs. 5.3 crores, would take four years to build.

The Pamban Bridge would, besides fulfilling the long cherished desire of the people to have an uninterrupted road communication to the famous pilgrim centres of Dhanushkodi and Rameswaram, would also provide the last missing link in the National Highway System in Tamil Nadu. With the completion of the bridge, there would be no unbridged river crossing left on the National Highway. The bridge was also of paramount importance as it fell on the Asian Highway No. 4 which was ultimately going to link up Sri Lanka with India through a ferry service.



Panoramic view of the Anaiikaraiipatti Motor-cycle factory of M/s. Enfield India

## ENFIELD INDIA'S SECOND MOTOR-CYCLE FACTORY AT

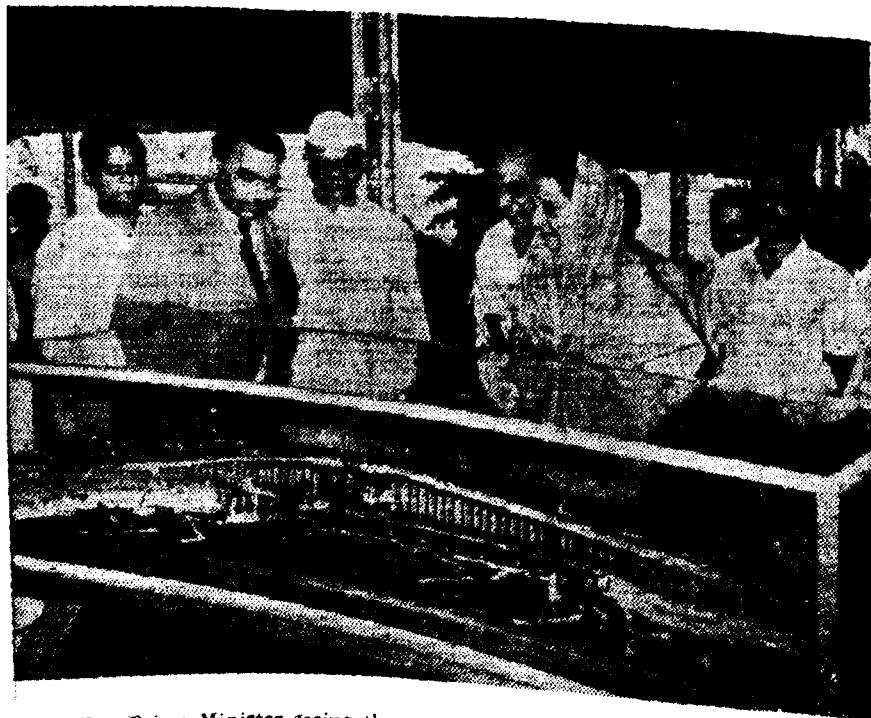
### ANAIKARAI-PATTI IN RAMANATHAPURAM DISTRICT

Inauguration of the Enfield India's second motor-cycle factory at Anaiikaraiipatti in Ramanathapuram district on 17th September, 1973 by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu heralds a significant break with the established and existing custom of setting up of heavy industries in and around the metropolitan cities. It signifies a leap forward in the pace of industrialisation of backward areas in the State. It is the first unit to be set up and going into production in the backward region of the State. And it is also the first vehicle producing unit of its size to spring up in a backward region in the whole country with an annual installed capacity of 14,000 motor cycles. As such, it is a forerunner in this line and augurs well for the future pace and phase of industrial progress in a well-laid out and wide spread manner in the State, thereby providing a timely boost and boon to the spreading of industrial units in rural areas in large measure.

The factory is located in a total area of 46 acres of which the factory premises comprise 32 acres of land, the rest being occupied by 13 ancillary units set up there. The

capital outlay of the factory is Rs. 95 lakhs in addition to the working capital of over Rs. 1 crore. The capital outlay of the eleven small-scale units and two medium scale units works out to Rs. 81 lakhs.

The Enfield is providing a good deal of help and a good number of incentives to the small and medium scale industrial units adjacent to it in the form of technical and management know-how, preparation of project reports, advice in the selection and procurement of plant and machinery, obtainment of term loans for them, and above all, supplying raw materials and getting back the finished components from them in easy and effective terms and condition. All the ancillary units are engaged in production of different components useful to the main factory. As such one unit produces electro-plating while the second one is engaged in the production of sheet metal pressing and fabrication. Another one manufactures flywheel magneto while the fourth one is building frames. Likewise, all the ancillary units are engaged in the specialised production of various components required for the main factory.



The Prime Minister seeing the model of the Pamban Road Bridge.



One of the welfare measures executed by the Company is construction of a workers hostel which gives accommodation to the labour force of the factory as near the factory as possible. The worker's Hostel was declared open by Thiru Madhavan, Minister for Industry.

#### SIPCOT'S.

#### Loan Facilities.

In all, a total capital of Rs. 3 crores has been employed in the main factory as well as the ancillary units. This huge investment in a relatively backward region is likely to confer considerable benefits to the region in a short period. The capital amount has been drawn from many a public financial institutions. Thanks to the policy of the Tamil Nadu Government to encourage setting up of big industrial units in a comparatively backward region in the State so as to give industrial tenor to those areas, the State Industries Promotion Corporation of Tamil Nadu have granted to Enfield an interest free loan to the tune of Rs. 23.18 lakhs repayable after 18 years in three annual instalments. Under the same scheme, the Corporation has also sanctioned an interest-free loan of Rs. 11.90 lakhs to the 2 medium scale units. So also, the Tamil Nadu Industrial Investment Corporation has given in all a sum of Rs. 51 lakhs as loan at 7 per cent interest to the 11 small scale ancillary units as well as the 2 medium scale units.

## THE FIRST UNIT TO BE SET UP IN THE BACKWARD AREA IN THE COUNTRY

Besides this, the Company received a loan assistance of Rs. 50 lakhs from the Industrial Finance Corporation of India at seven per cent interest in addition to a subsidy of Rs. 5 lakhs from the Union Government.

Starting a new factory, especially in a backward region, involves for the sponsor a higher capital cost in view of lack of infra-structural facilities as well as production facilities, apart from considerable amount of additional efforts to make it a going concern. It also involves additional recurring expenditure on items like freight and duplication of certain functions. Notwithstanding these natural obstacles, the Enfield has started its second unit at Anaikaraiipatti because of the abundant availability of ground water in the area in addition to its nearness to the commercial centres such as Madurai and Tiruchirappalli.

This factory and its ancillaries are capable of giving employment for over 1,200 persons including 100 engineers. Precise estimate regarding the employment potentiality indirectly influenced and induced by the sales and service agencies of the Company could not be ascertained now. But it will not be an exaggeration to say that the multiplier effect will be nearly quite large.

Presiding over the inauguration of Enfield India's second motorcycle factory at Anaikaraiipatti, Thiru T. A. Pai, Union Minister

for Steel and Heavy Industries, expressed his mood of happiness over the fact that this part of the country witnessed for the first time in the country the moving of an industry to rural area, creating more potential for employment and development. He added in a warning tone that mere location of industries in backward areas alone would not help. But success, by and large, depended upon the attitude of the entrepreneurs. He emphasised that local capital should be mobilised for these dispersed industries.

#### Regional Markets

He also said that "You may have to think of regional markets" in the light of changing pattern of industrial development in the country in the period ahead. "There will be more units and also more and more competition" he added. He also said the present output of two lakhs of motorcycles, scooters and mopeds would be increased to eight lakhs by the end of the Fifth Plan. He suggested that manufacturers of two-wheelers should aim at bringing down the prices as low as possible so that more and more people could avail of this mode of transport.

#### Tamil Nadu in the Forefront

Inaugurating the factories of Enfield India and ancillaries, Dr. M. Karunanidhi, Chief Minister of



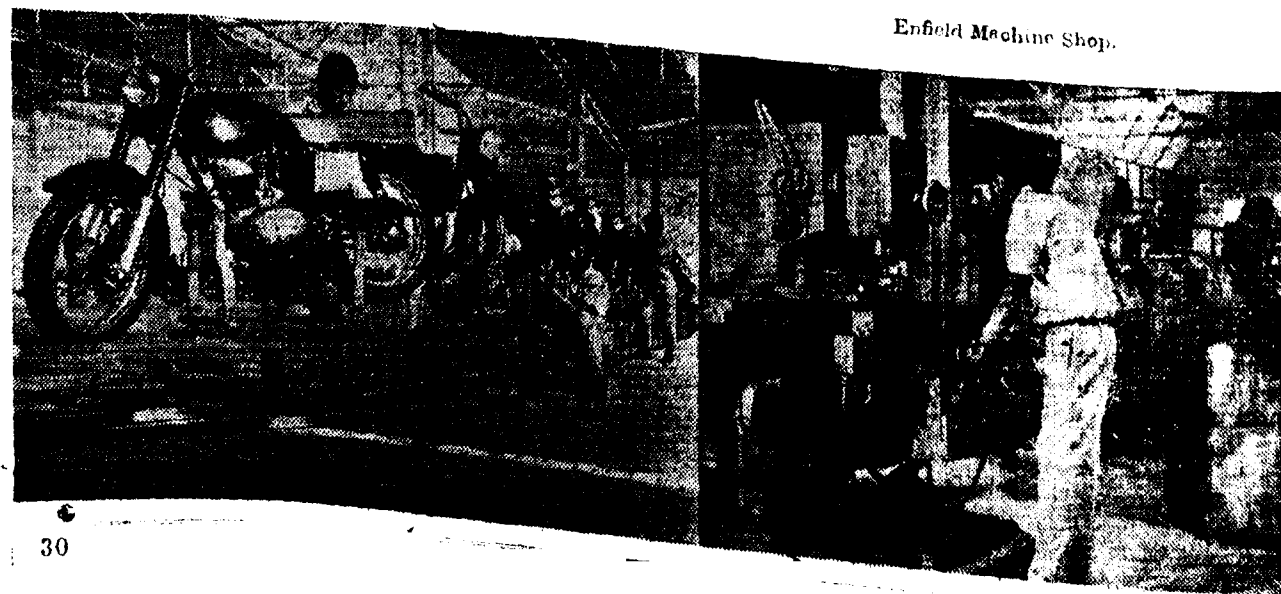
Dr. M. Karunanidhi is seen inaugurating the Enfield India's second motorcycle factory at Anaikaraiipatti.

Tamil Nadu, felt happy that the new units meant job for 1,200 workers. He added starting of industries in rural areas would help to arrest the migration of villagers to towns and cities. The Chief Minister also pointed out in his speech that though Tamil Nadu stood in the forefront in the matter of industrial development, there were backward areas in many districts in the State.

He put an ardent appeal to the Union Minister, Thiru T. A. Pai, to give special attention to the improvement of these areas.

He added that the State Government was keen on starting its own ventures but it was committed to encourage joint sector projects and help private industries to relieve the growing unemployment problem. ☉

Enfield Line Assembly Section.



Enfield Machine Shop.

The Chief Minister and others seeing the assembled motorcycles.



# The Enfield— Origin And Growth



The Chief Minister and others seeing an assembled motorcycle "CRUSAHER".

The Royal Cycle and Motor Company, a partnership firm was first established in the year 1930 to do the business of importing and selling bi-cycles. In 1937, the partners of the firm K.R. Sundaram Iyer and K. Eswaran started a separate department for importing and selling motorcycles. It can be said that the first foundation stone was laid in 1937 for the ultimate birth of Enfield India. Visualising large market potential for motorcycles, Sundaram Iyer and Eswaran started the Madras Motors, Private, Limited, to concentrate in the sales and after-sales-service of motorcycles.

In those years, under Open General Licence, anybody in the country could import any quantity of motorcycles from any country. Against stiff competition, Madras Motors steadily expanded its business, and from 1950, they were selling more motorcycles than at all the others in the country put together. In 1952, Madras Motors commenced making plans for taking up the indigenous production of motorcycles under phased programme of import substitution. Of the various makes of foreign motorcycles in which they were dealing, Royal Enfield of U.K. was chosen for the purpose. Eswaran attended to the important matters of securing the Industrial Licence from the Government of India and negotiating the technical collaboration agreement with Enfield Cycle of

**Enfield—  
A  
Famed  
Byword  
In  
Every  
Nook  
And  
corner  
Of  
The  
Country**

U.K. Madras Motors commenced indigenous production of motorcycles in 1955. Import of motorcycles was continued to be permitted and posed stiff competition. In order to meet this situation, it was considered that Madras Motors should continue to concentrate in marketing and a separate company should be started to concentrate on production and achieving fast progress in increasing indigenous content. Thus, Enfield India was born and incorporated in November 1955 and commenced activities in 1956. With the consent of Government of India and Enfield Cycle of U.K., the Industrial Licence and technical collaboration agreement respectively were transferred to the Enfield India, Limited, by the Madras Motors without any consideration.

Enfield produces two models, namely, 350 cc. Bullet and 173 cc. Crusader.

Enfield supplies the entire requirements of motorcycles of Defence Forces, who have standardised on the 350 cc. Bullet. Police and Border Police forces also use the Bullet.

In fact, Enfield's Bullet and Crusader Motorcycles are used in every nook and corner of the country from Kashmir to Cape Comorin—

(a) by Government departments to facilitate field work pertaining

activities and in implementing measures for the welfare of the people;

(b) by industrial undertaking in the Public and Private Sectors; and

(c) by all categories of persons engaged in productive activities for performing their work and as personnel transport — examples, farmers, entrepreneurs in the small scale sector, engineers, Government employees, etc.

Villiers Agro-Industrial Engines which can be operated either on petrol or kerosene :

Enfield produces, at its factory in Torapakkam, Mahabalipuram Road, Madras, three models of engines, namely, 34 cc. 120 cc. and 256 cc. which are used as prime movers in a variety of agricultural and industrial applications. Over 80 per cent of the production of these engines cater to the needs of Agriculture and Defence. A substantial portion of the knapsack sprayers produced in the country for plant protection are fitted with Villiers 34 cc. engine. The 120 cc. and 256 cc. Villiers engines are fitted as prime movers for portable pumps for irrigation (used by farmers with small and scattered holdings, Grain Threshers and Grain Driers) and in the battery charging sets and generating sets used by Defence and Police. They are also fitted to a number of other equipments like Concrete Vibrators, Concrete Mixers, Portable Compressors, etc.

Agro-Industrial Engine Production is now at the peak level of permitted capacity:

The licenced capacity for Agro-industrial engines is 40,000 Nos. per annum. The Company has now reached a monthly production of 4,000 engines, equivalent to 50,000 engines per annum, up to which the Company can produce as permitted by Government Policy. It is proposed to shortly apply to the Government for a licence for substantial expansion of the Company's undertaking for the manufacture of engines.

## Indigenous Content

The indigenous content of Vehicles and the Agro-Industrial Engines

cally 100 per cent.

## Export Performance

Efforts were commenced only recently, but fast progress has been made. Exports during 1972 was nearly Rs. 30 lakhs and it would be about Rs. 40 lakhs in 1973. It is expected that the value of exports will increase at the rate of about 10 lakhs per year. The bulk of the present Exports is contributed by Agro-Industrial Engines.

## The Enfield plan for Rural Industrialisation

A major problem in rural areas is the seasonal employment of agricultural labour. It is the intention of Enfield India to attempt to play a catalysical role, however, modest, in the above and other similar matters by making available its technical and managerial know-how to facilitate the accelerated development of this and surrounding areas. As a step towards this, studies will soon be initiated to assess the feasibility of promotion of cottage industries preferably with local agricultural wealth, example coconuts, which will enable the economic cycle of persons now on seasonal employment going on a continuing basis and also the promotion of self-employment for rendering service and producing articles which in the normal course will be acquiring from commercial centres such as Madurai and Trichy. If, as it is hoped, the result of the study indicates feasibility, Enfield will endeavour to organise a centre to give training to individuals to enable them to undertake ventures with a small investment which will be of an order the nationalised banks of this area would be prepared to advance as loan.

## Dedication

The Board of Directors dedicate themselves to develop this new factory complex on a sound line to fulfil the aspirations of the people of Tirupattur taluk and surrounding areas for increased employment opportunities and for the over-all development of the area and faithfully discharge their duties for the welfare of workmen, staff, engineers and executives, shareholders and all those connected with the organisation.

**Enfield**

**V  
Suppliers  
Of  
Motor—  
Cycles  
To  
Defence,  
Police  
And  
Border  
Police  
Forces,  
Etc.**

Thiru Madhavan, Minister for Industries, who declared open the Worker's Hostel at Anaikarai, is seen addressing the distinguished audience explaining in detail the pragmatic and practical industrial policy of the State Government.



The Entrepreneurs of 10 small scale units in Enfield Complex in Anaikarai are from Singampuneri and the surrounding areas while the eleventh unit is owned by the Executives of the Enfield India.

None of the owners of the eleven units is associated with the Directors of Enfield India.

One unit will do electro-plating.

There is one unit for sheet metal pressing and fabrication.

There is another unit which will be engaged in the manufacture of flywheel magneto, while the fourth unit will be engaged in the production of frames.

#### Seven Machine Units

The remaining seven are machining units which will produce the following components:—

(i) Two will be engaged in the manufacture of components out of forgings;

(ii) Three units will be manufacturing components out of tubes and bars; and

(iii) Two units will be producing components out of castings.

#### Manufacturing Capacity

The manufacturing capacity of the eleven small scale units have been planned only to meet the Enfield's requirements. However, they are free to undertake work from others either by achieving a higher level of efficiency than what is contemplated and/or by adding to their capacity.

#### Two medium Scale units

One will be engaged in the manufacture of steel forgings and the other in the manufacture of Gravity Die Cast components. The entrepreneurs of these two units (who, incidentally, are associated with some of the Directors of Enfield India) are on their own, as they are running similar industries in Madras and do not require any assistance from Enfield India. They already have plans to supply forgings and die cast components to others also.

## IS KHADI COSTLIER?

There is a common misconception about Khadi that it is costlier, coarse and not durable and does not offer many varieties, etc. This is, however, only a misconception that has to be shed. With the revival of muslin Khadi, an age-old fame of India, it is possible for skilled hands to produce cloth of 200 counts where a seven sophisticated mills find it difficult to produce cloth of 150 counts fineness. As a result of continuous and sustained efforts in evolving new techniques and methods there has been a tremendous improvement in the production of Khadi cloth in recent times.

It is no secret that the silk sarees produced from centres at Kancheepuram, Arni, Salem, Rasi-puram, Kumbakonam, Dharmavaram and Varanasi are of superior quality and more durable than any other comparable variety available in the market. There has been steady increase in the demand for Khadi. The annual turnover which was in the order of a few lakhs in 1960 touched Rs. 1,009.81 lakhs in 1972-73. The production of silk sarees alone is in the order of Rs. 8 to 9 lakhs per month. And the Khadi Board as an air-conditioned silk emporium at Myslapore.

#### Sales Units

Through a network of sales units known as Khadi Krafts numbering about 178 throughout the State, the Khadi and Village Industries products are marketed. The products are marketed in our own emporium housed in perhaps buildings at Kuralagam is perhaps the biggest of its kind in India.

What are the factors that determine the cost of a product? The cloth is produced where labour is available in plenty. As far as raw materials—cotton for cotton Khadi; materials—cotton for cotton Khadi; wool for silk for silk Khadi; wool for woollen Khadi—are concerned, there is absolutely no difference between the Khadi sector and the mill sector. Both will have to buy raw materials in the same market. This being a programme with a socio-economic background, interest-free loans are available for purchase of

raw materials, for paying wages to the spinners and weavers, for organising marketing units, etc.

#### Meagre margin of profit

Further, there is what is known as Cost Chart formulated by the Central Certification Committee of the Khadi and Village Industries Commission. This Cost Chart is prepared taking into consideration the cost of raw materials, the labour content, subject to local variation and a meagre margin of profit and sufficient enough to meet the establishment charges. This Chart is uniformly made applicable to all the State Boards and certified Institutions engaged in Khadi production.

It is here that we differ basically from the mill sector. It is an open secret that the mill sector aims at maximum profit, for no money is available, interest-free; the overhead charges are many and the expenditure on publicity is unimaginable.

#### High Labour Content

Except that the labour content is more in Khadi cloth which is more or less neutralised by the interest-free money that we get

D. GANGAPPA, I.A.S.,  
Chief Executive Officer,  
Tamil Nadu Khadi and Village Industries Board, Madras.

from the Government, there is no other convincing reason to tell that Khadi cloth is costlier. Though the price of mill cloth has gone up several times due to the abnormal increase in yarn prices, during the power cut we had no such problems, thanks to the millions of spinning and weaving hands which required no power to produce cloth.

It is therefore paradoxical that cloth-pure and simple cotton; simple and stimulating readymade garments and pure and fascinating silk sarees are considered beyond the reach of common man. The possible reason that we could see

in this is that there is lack of publicity. But any expenditure on publicity will only add up to the cost of cloth which will have ultimately to be passed on to the consumer.

#### Not costlier

There may also be a feeling that maintenance of Khadi cloth is costlier. But the cost of maintenance is in relation to the degree of cleanliness that one expects.

A glance at the following facts and figures relating to the cotton, khadi, silk and other readymade may help convince to appreciate the view that Khadi cloth is certainly not costlier and that it is any day the best and cheapest.

| Readymade Garments. | Price. |
|---------------------|--------|
|                     | RS. P. |
| White slacks 32"    | 8-40   |
| 26"                 | 9-20   |
| Colour slacks 32"   | 9-00   |
| 36"                 | 9-95   |

#### Children's Garments:

|                            |       |
|----------------------------|-------|
| Baba Suit                  | 6-50  |
| Bell Bottom                | 12-75 |
| Bedsheets 6' x 3'          | 11-25 |
| D.T. Varieties 7' 4"       | 19-80 |
| Furnishing Cloth—per metre | 7-30  |

| Cotton. Cloth— | Count. | Width.   | Per meter. |
|----------------|--------|----------|------------|
|                |        |          | RS. P.     |
| White          | 32     | 127c.m.  | 3-60       |
| Shirting       | 44     | 127c.m.  | 4-25       |
|                | 75     | 127 c.m. | 5-70       |
| Mukil—         |        |          |            |
| Lok Vastra     | 2/32   | 71 c.m.  | 3-00       |
| Dousti—        |        |          |            |
| Drill          | 2/33   | 76 c.m.  | 3-71       |

The price of Village Industries products like soap, honey, oil, etc. too is quite competitive. Moreover, it is a well-known fact that the Tamil Nadu Khadi and Village Industries Board has a programme and philosophy to provide jobs to the weaker sections of the society. The Board being of State undertaking, has got to function within the framework of governmental rules and regulations and as such there is hardly any scope for us aiming at profit.

## ABOUT THE ANAIKARAI-PATTI ANCILLARIES



# Extensive Public Health Programmes In Operation in Tamil Nadu



Youth Service Corps volunteers help in health services.

Health is not merely absence of disease. It is a state of complete physical, mental and social well-being. Every individual should be assured reasonable opportunity to maintain his health at the highest possible level so that he can contribute his best to the society by his productive efforts. Towards this aim, the Government of Tamil Nadu have taken steps to provide various community health services for the promotion of community health care including maternal and child health, the improvement of nutritional status of people, prevention and control of communicable diseases, the registration of vital events and the spread of health education among the people and the promotion of environmental sanitation.

## Primary Health Centres

The Primary Health Centre is an institution which offers a package of services to the people living in its jurisdiction which is usually the area covered by a block (now Panchayat Union). There are 374 blocks in our State. Primary Health Centres have been established in all the blocks except in two blocks in Salem District, namely, Ellichipalayam and Rasipuram blocks. Seven blocks in the State have two Primary Health Centres each. Thus there are 379 Primary Health Centres in our State.

The services rendered by a Primary Health Centre include general medical care, improvement of maternal and child health, family welfare planning, improvement of environmental sanitation with emphasis on sanitary disposal of excreta, safeguarding drinking water sources, control of communicable diseases by immunisation with suitable vaccines, and by surveillance to detect the occurrence of communicable diseases like smallpox, cholera and malaria, nutrition education and control of nutritional diseases, collection of vital statistics and improving the registration of vital events of births and deaths and health care and education of school children.

For the purpose of medical care, every Primary Health Centre has an out-patient department and an in-patient section with 6 beds. At the out-patient department, the patient is examined and given appropriate treatment. In the conventional dispensaries and hospitals, while the service stop sharp at the level of dispensing drugs, at the Primary Health Centre, further services extend from these patients to their contacts who are given appropriate treatment both preventive and curative. The patient and the contacts are educated about the nature of the disease, its mode of spread and about the methods of disinfection of infective materials.

Out of the 379 Primary Health Centres now functioning, 149 Primary Health Centres are now functioning in their own buildings. Buildings for 22 Primary Health complex, i.e., dispensary plus staff quarters and 21 staff quarters are under construction. The other 187 Primary Health Centres are functioning in rented buildings.

## Second Primary Health Centre

The Government of India have recommended that, in order to serve a larger section of the rural people, a second Primary Health Centre may be established in each block. The State Government are examining the question of establishing second Primary Health Centres in the blocks in a phased manner, the blocks having a population of one lakh and more being selected for the establishment of second Primary Health Centres in the first phase.

The total amounts allotted for the Primary Health Centre for the last

two years, the current financial year and for the year 1973-74 are as follows:—

| Year.                    | Amount.<br>(RUPEES<br>IN LAKHS.) |
|--------------------------|----------------------------------|
| 1970-71                  | 127.57                           |
| 1971-72                  | 177.10                           |
| 1972-73 Revised estimate | 176.48                           |
| 1973-74 Budget estimate. | 181.15                           |

## Maternity and Child Health Services

In maternity and child health services, the emphasis is ensuring the birth of a healthy child to a healthy mother and safeguarding the health of mother and child thereafter. For the purpose, at present, mothers, when they are in the 5th month of pregnancy, are enrolled for ante-natal care. The ante-natal registration is done by the Maternity Assistants/Auxiliary Nurse and Midwives of the Primary

Health Centres and the various maternity centres in the Panchayat Union Blocks.

Every ante-natal mother is given a health check-up especially to detect any abnormality in her or in the lie of the foetus. Special emphasis is given to detect anaemia, signs of toxemia and mal-nutrition in the pregnant woman. She is given proper advice on the diet to be taken and on her personal care during pregnancy. She is educated on infant feeding, immunisation schedule and childhood diseases and on family planning methods.

At present, maternity centres are established at the rate of one per ten thousand population. The total number of maternity centres as on 1st January 1972 is 3,801. The centres maintained by the Panchayat Union Councils are in receipt of a Government grant equivalent to two-thirds of the recurring expenditure incurred by them. A sum of Rs. 39,74,766 was given to them as grant during 1971-72.

## LIMBS OF HEALTH SERVICES REACH REMOTE VILLAGES

Vaccination and immunisation injections are routine measures of child care even in villages as seen in picture below.





Routine inspection of healthy babies against preventable malnutrition.



Rehabilitation of polio victim through exercise therapy in Children's Hospital.

There are 68 Maternity Homes and 303 maternity centres functioning in the municipalities. They are in receipt of the Government grant equivalent to 25 per cent of the recurring expenditure incurred by them. During 1971-72, a sum of Rs. 6,59,617 was sanctioned for the purpose of the above grant.

In addition to the maternity centres maintained by the Panchayat Unions, the Government have established at 76 villages Maternity Centres as a part of the post-war reconstruction programme. These centres have been located in remote villages then considered as backward areas. The total expenditure on these maternity centres for 1971-72 was Rs. 5,31,556 and provision made for them in the Budget Estimate for 1972-73 is Rs. 5,27,500.

#### Children Immunisation Programme

The immunisation of pre-school children is being implemented in rural areas in the State from 1st October 1964 through the agency of Primary Health Centres. The children in the age-group 0-5 years are taken up for immunisation with triple vaccine as a prophylactic against diphtheria, tetanus and

whooping cough concentration being made on children under one year of age. Each child is given three doses of D.P.T. at intervals of one month between each dose. The target for immunisation is 900 children per Primary Health Centre per year. The particulars regarding the number of children immunised with all the three doses during the period from 1969-70 are as follows:—

| Year.                          | Number of children immunised. |
|--------------------------------|-------------------------------|
| 1969-70                        | 87,239                        |
| 1970-71                        | 97,358                        |
| 1971-72                        | 103,667                       |
| 1972-73 (up to December 1972). | 71,542                        |

Apart from these effective and efficient measures are in operation in Tamil Nadu to prevent the recurrence of epidemic diseases such as Cholera, Small-pox, Malaria, Urban Malaria, Filariasis, Yaws, etc. For the control of Cholera, besides

the long-term measures like provision of safe water-supply, sanitary latrines, etc., other steps are also being taken to attend to instant cases. To attend to this duty there is a reserve of 64 Health Inspectors, whose main duty is, on information about occurrence of Cholera anywhere in the State, to go to the area of occurrence and help the local Staff engaged in the line in the matter of control measures such as mass anti-cholera inoculations, chlorinating water-supply and disinfection of stools. There are also mobile epidemic units with health staff and ambulance and jeeps in requisite strength. One ambulance van is located in each of the following centres—Poonamallee, Kancheepuram, Cuddalore, Madurai, Tirunelveli, Coimbatore, Salem, Vellore and Ramanathapuram. Jeeps are provided for each district to attend to epidemic control.

The number of anti-cholera inoculation done in the State during the year 1972 was 1,669,731. Thanks to the various preventive measures adopted by the Government, the number of attacks and deaths in 1972 has come down to 3,670 and 205 respectively from 6,508 attacks and 3,298 deaths in 1958. The

entire expenditure on the Cholera Control Programme is reimbursed by the Government of India.

#### Prevention of Small-Pox

Small-pox is a virus disease spread from one person to another. To put an end to this dreadful disease, the National Small-pox Eradication Programme was launched during 1963-64. There are 1,410 Vaccinators, 97 Supervisors, and 35 Selection Grade Health Inspectors in the Public Health Department to attend to the works of the National Small-pox Eradication Programme. The Government have sanctioned in December 1972 an additional strength of staff to the extent of 199 Vaccinators, 50 Supervisors, and 5 Selection Grade Health Inspectors to improve the coverage of vaccination and for greater vigilance.

The expenditure incurred under this programme during 1971-72 was Rs. 20.82 lakhs. The provision made for this in the Budget Estimate for 1973-74 is Rs. 21.28 lakhs.

Thanks to the sincere and serious work of all the staff of this programme coupled with the active co-operation of the public, small-pox has been practically eradicated in Tamil Nadu.

#### Plague Control

Plague, a disease of the rodents transmitted from rats to human beings by the rat fleas, was a major problem in the past. But now it is almost non-existent in our State. In spite of it, routine preventive measures are continued for the control of plague in the plague epidemic areas, namely in the districts of Dharmapuri, the Nilgiris, North Arcot and Coimbatore and in the municipalities of Ootacamund, Coonoor and Vellore.

Since 1958-59, the National Malaria Eradication Programme is being vigorously implemented in Tamil Nadu. A bureau for malaria and mosquito borne diseases exists with a well equipped machinery at the State Headquarters, in addition to two regional Malaria Organisation at Thanjavur and Coimbatore with established laboratories and facilities for training, research and investigation.



A case of severe malnutrition being attended to by means of intravenous fluid therapy.

In the early phase of the programme, D.D.T. spraying was applied to reduce the Vector density and house-to-house surveillance was conducted, to detect malaria-afflicted individuals. By such intensive measures, malaria has been put an end to in 28.75 units and in 3.05 units the problem is in consolidation phase where intensive research for malaria patients is undertaken. Further, in the area which have entered into the maintenance phase of the N.M.E.P., Basic Health Services have been set up from 1st April, 1969. As many as 353 Panchayat Unions out of a total strength of 374 Panchayat Unions, are in the maintenance phase areas.

The scheme of Urban Malaria has been sanctioned by the State Government for the three towns of Salem, Rasipuram and Tuticorin and the question of sanctioning the scheme

for Elampill and Madras City is under the consideration of the Government.

Since 1957-58, four National Filariasis Control Units are functioning in the districts of Chingleput, North Arcot, South Arcot and Thanjavur. Each Unit carries out anti-larval operations by spraying mosquito larvicidal oil, supplemented by minor engineering measures so as to benefit a population of 3.75 lakhs exposed to the risk of filariasis.

Under the reorganised filaria control programme, eight new units have been set up at Kancheepuram, Villupuram, Cuddalore, Thanjavur, Nagapattinam, Srirangam, Pudukkottai and Madras City. Altogether 12 units are now functioning in the State and the total population benefited by them is estimated to be 45 lakhs.

Weather exerts a great influence on crops at all stages of cultivation. Advance warning of the likely weather for the next 2-3 days greatly facilitates economy and timely execution of farm operations. Realising this fact and necessity, the India Meteorological Department was set up. Now it has grown to the status of a Division and is making all round progress in the field of Agricultural Meteorology.

## AGRICULTURAL METEOROLOGY IN INDIA

The influence of weather on crops was realised as early as 1922 when, on the recommendation of the Royal Commission of Agriculture, the Central Government created a unit in the India Meteorological Department to study the influence of environmental factors on all aspects of agriculture. This unit has slowly grown to the status of a Division and is making all round progress in the field of Agricultural Meteorology.

In its early years, the activities of the Division were mainly confined to the study of climatic conditions near the ground, development and instrumental techniques for recording observations, and soil water phenomenon. In 1945, a major step was taken when the Division undertook to render to agricultural institutions all technical assistance for setting up of specialised meteorological observatories, so as to inculcate weather consciousness amongst the research and field workers in agriculture, and to develop a plant environment-climatology. This has resulted in steady growth of such observatories which number about 140 now.

Weather exerts a great influence on crops at all stages of cultivation. Advance warning of the likely weather for the next 2-3 days greatly facilitates economy and timely execution of farm operations. Realising this necessity, the Division prepared and issued to the regional forecasting centres material for framing special farmers' weather bulletins. This useful service was started in July 1945 by the regional forecasting centres of the India Meteorological Department. These bulletins include an outlook of weather for 2 days beyond the forecasting period of about 36 hours and are broadcast by All-India

Radio in regional languages, in dialogue form, in the Farmers' Forum.

The Division commenced issuing crop outlooks based on the week by week progress of weather and its deviations from the normal, in a particular area. These crop outlooks are essentially an objective assessment of the crop prospects in each meteorological sub-division. For the last five years, these are supplied to the Ministry of Food and Agriculture, Government of India and released through press, as well.

In late fifties and the early sixties, the Division laid emphasis on studies relating to the optimum utilisation of irrigation resources. Experiments were conducted to develop techniques for assessing evaporation losses from storage reservoirs and to determine the periodic and total water requirements of crops.

### Drought Study

The wide spread famine in the year 1965-67 aroused deep concern regarding the nature, distribution and recurrence of drought. A special Research Unit was set up to describe and study the climatology of drought and to predict crop yields from meteorological parameters, principally rainfall and temperature. To help agricultural production specialists in planning an effective overall strategy for increasing crop production, supply of data concerning Agromet and weather observatories to selected meteorological and crop data of interest to agriculture have been

mapped for publication as an Agroclimatic Atlas.

In the light of the importance being paid to dry land farming at national level, studies have been commenced for soil moisture availability periods for the different phases of crops of varying growth rhythms and life durations.

During the current Fourth Plan, work is in progress for setting up 35 stations for accurately assessing moisture needs of important crops in each of the major soil climatic regions of the country for installation of pan evaporimeters in regions not covered by the existing network, and to study meteorological conditions favouring the multiplication and migration of desert locust, with a view to predicting their occurrence and to provide assistance in control operations.

### Fifth Plan

During the Fifth Plan period, the Division proposes to undertake studies on the incidence, spread and control of pests and diseases in relation to weather. It would also intensify and expand the weather services for farmers. To that effect weekly quantitative crop yield and acreage outlooks will be issued and consultative exchanges between meteorologist and agronomist, both at State and regional level, will be arranged. This will help properly understand and interpret weather forecasts for issuing farming advisories to cultivators. The Division also proposes to undertake intense experiments on growth and behaviour of plant in controlled environmental chambers and in the field at selected centres. This will help in developing instrumentation for agrometeorological investigations and evolving agrometeorological models to assist irrigation scheduling, plant protection, crop rotations and land use planning.

## CASHEW KERNELS

## ON EXPORT STREAM

Well-known for its delicious taste, pleasing flavour and high nutritive value, the cashew kernels are one of the favourite snack items in sophisticated parties in developed countries. The cashews are consumed raw or fried, salted or sugared and are used as flavouring medium in the confectionery and baking industries.

During 1972-73 cashew kernels worth about Rs. 68.50 crores were exported, setting an all-time high record. Export of cashew kernels amounted to Rs. 61.78 crores in 1971-72, as compared to Rs. 52.06 crores in 1970-71.

### Main Buyers of Cashew Kernels

The main buyers of the cashew kernels are the U.S.A., Canada, G.D.R., Australia, U.K., Japan, Hong Kong, Netherlands, Yugoslavia, Czechoslovakia, France, Poland, Hungary, Iran and Kuwait.

The Cashew Export Promotion Council takes various measures to increase sale of cashew kernels abroad. The measures include participation in international fairs and exhibitions, distribution of samples, sponsoring sales-cum-study teams and market surveys and arranging publicity abroad.

### Production centres

Cashew is cultivated in Kerala, Mysore, Goa, Andhra Pradesh, Tamil Nadu, Maharashtra, Orissa and West Bengal.

Production of cashew-nuts went up from 1,58,000 tonnes in 1965-66 to 2,00,000 tonnes in 1970-71. The target for the Fourth Plan was fixed at around 2,36,000 tonnes.

The raw cashew-nuts are processed in the factories, which include roasting, shelling, peeling and grading. There are nearly 175 cashew-nut processing factories in the country, mostly concentrated in Kerala.

Indigenous production of raw cashew-nuts is not sufficient to meet the needs of the processing units and the demand abroad, and as such India imports of raw cashew-nuts from East African countries. The Cashew Corporation of India, which is the canalising agency for

import of cashew-nuts, is responsible for meeting the demand of the processing units.

### Special Schemes

Various measures for increasing the production of cashewnuts were initiated during the Fourth Five-Year plan. This included production and distribution of cashew-air-layers. The Fourth Plan Programme was to distribute 2,75,000 air-layers at a subsidized rate of 50 per cent.

Introduction of better cultivation techniques included setting up of demonstration plots for the growers. The Fourth Plan aimed at laying out 1,500 demonstration plots for which farmers were to be provided Rs. 300 per plot of .8 hectares.

### Plant Protection Measures

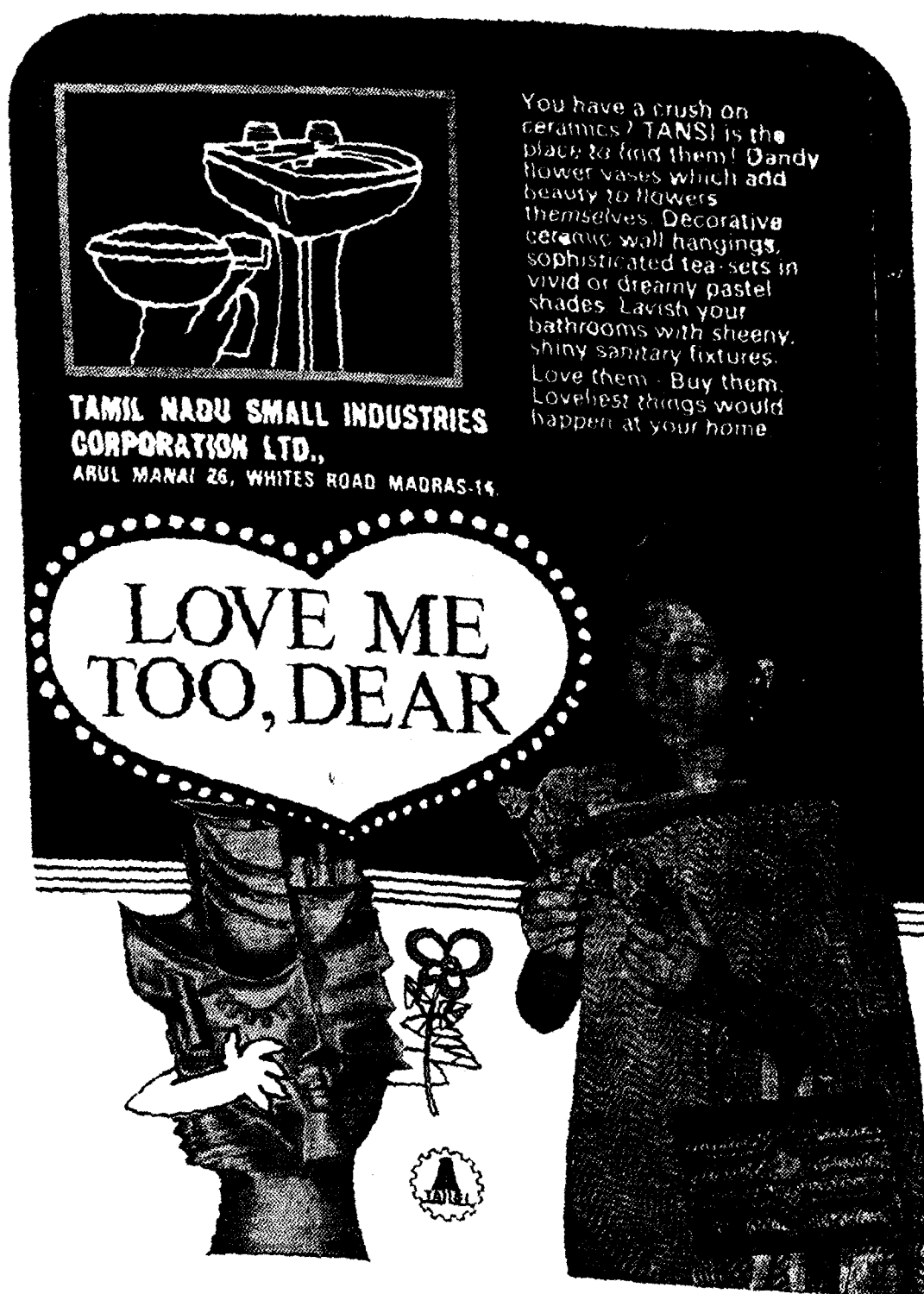
Besides these, prophylactic plant protection measures were also adopted. A target of an average of 40,000 hectares had been fixed for the Fourth Plan, for which a subsidy of Rs. 62.50 per hectare is provided.

A special scheme of area expansion of 5,000 hectares and package programme for another 5,000 hectares is being implemented on a pilot basis. A total outlay provided for the programme is Rs. 100 lakhs for the Fourth Plan.

### Spectra for Glaucoma Patients

Statistics show that every fourth person over forty suffers from glaucoma. This disease is marked by an increase in intra-ocular tension accompanied by severe pain in darkness. Y. Petrov, an engineer from Moscow, has designed spectacles which make it possible for glaucoma patients to work in darkness. These spectacles look very much like ordinary ones, except that the arms are somewhat thicker. Inside them tiny batteries are placed. As soon as the patient puts the spectacles on, the ultra-miniature lamps mounted in the upper part of the frame are automatically switched on. The light from these lamps is directed into the patient's eyes. The intensity of light can be regulated and the patients are relieved of sufferings, while other people are not at all disturbed.





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## TUTICORIN THERMAL PROJECT

V. SAMBANDAN,  
Publicity Officer,  
Tamil Nadu Electricity Board.

The Tamil Nadu Electricity Board propose to establish a Thermal Power Station at Tuticorin, 600 K.M. south of Madras on the east coast. The first stage envisages installation of 2 Nos. 200 MW. units and the power station will be expanded upto 1,500 to 2,000 MW. later in stages.

The present electricity demand in Tamil Nadu is about 1,325 MW. which is expected to go up to 3,500 MW. in 1978-79. A number of power projects is proposed by the T.N.E.B. to meet this growing demand and the Tuticorin Thermal Power Station is one such project.

### Why Tuticorin was chosen

Tuticorin was selected for the thermal project because it is easier to transport coal from Bengal by sea to Tuticorin where a port is under construction. As coal is available only in Bengal-Bihar area and as rail transport of coal is impossible due to shortage of wagons and inadequate rail facilities, coal has to be necessarily transported by sea. The policy of the Government of India in respect of future thermal plants is to locate such large thermal stations on the coast thereby avoiding inland transport of coal by rail. The southern part of Tamil Nadu has at present no large power station and the industrial development in this region is also picking up with establishment of S.P.I.C., Heavy Water Plant, Tuticorin Harbour Project, Expansion of Chemical Works, Cement Plants, etc. It has therefore become necessary that a large power station is built up in this area.

The Tuticorin Harbour Project is expected to be commissioned in 1974 and the main traffic through this harbour will be coal which will be of the order of 1.2 million tonnes per year for the 400 MW. installation. A separate coal berth will be provided in the harbour and coal will be unloaded from the ship and directly transported to the power station by conveyors.

Tuticorin is an ideal place for establishing a 1,000 MW. coal-fired thermal station as coal can be economically transported from Bengal by sea to Tuticorin and the T.N.E.B. are already planning in this direction. It is also proposed to use this station for the future

interconnection with the Ceylon Grid.

### Economy of Sea Transport of Coal

The transport of coal by sea is at present a very costly process because only small capacity ships can enter Calcutta Harbour and because of manual handling. These boost up the cost of transport of coal by sea. The Haldia port coming near Calcutta is expected to receive up to 30,000 D.W.T. ships and the Tuticorin Port will also be able to receive similar capacity ships. Both the ports will be equipped with mechanised coal handling facilities to handle 1,000 to 2,000 tonnes per hour. With this the detention time of ships will be very much reduced and the cost of transport would come down to one third of the present figures.

In fact, with the superior quality of the coal of Bengal-Bihar and with the cost of sea transport of coal coming down, the cost of generation of electricity at the proposed Tuticorin Thermal Station is expected to be 7.25 paise/unit which is almost the same as the cost of electricity being generated at the Ennore Thermal Power Station which uses the inferior grade coal from Singareni Collieries.

### Atomic vs. Coal Fired Station

A question will arise whether an Atomic Power Station cannot be had at Tuticorin instead of the coal fired thermal station. The Kalpakkam Atomic Power Station itself is expected to come up by 1977-78 and the next atomic power station (i.e. fourth in the chain) is to be established in U.P. The Atomic Energy Commission and the Government of India are of the view that the next atomic power station in the south will have to meet the requirement of power in the entire Southern Region and they are already examining various sites for locating the power station. It is not therefore correct to view whether an atomic station is to be had instead of coal-fired thermal station. Actually both will be required to meet the growing demand for power. As stated earlier, demand for power by 1978-79 will be 3,500 M.W. and the available generating

capacity will be lower than this and thus the second atomic power station will always be necessary.

### Estimated Cost of the Plant

The estimated cost of first stage of Tuticorin Thermal Station is Rs. 73 crores and project is expected to offer a return of 12.1 per cent in the third year of operation. Power generated in this station will be stopped up and connected to the existing Grid. The project is awaiting the sanction of the Government of India and is expected to be cleared shortly.

### Programme of Work

The preliminary works have already been started and the first 200 MW unit is expected to be commissioned in 1977-78 and the second in 1978-79. Further additions will be planned in suitable stages.

### Planning Commission Approval

The Planning Commission has informed the Tamil Nadu Government that it will shortly give its clearance to the Tuticorin Thermal Power Project for inclusion in the Fifth Plan.

The Tamil Nadu Government has been asked to prepare the detailed engineering design of the 440 MW project to be put up at a cost of Rs. 75 crores.

### Supply of coal by sea

The cost of coal to be supplied from Raniganj Coalfields by sea to the Tuticorin Project has been worked out at Rs. 105 per tonne as against the State Government's earlier estimate of Rs. 85. The cost of coal at Tuticorin Port will include railway freight from Raniganj Coalfields to Haldia Port, port charges at Haldia and Tuticorin and shipping freight. The Planning

Commission feels that the port charges at Haldia amounting to Rs. 15 per tonne was excessive and should be re-examined by the authorities concerned.

On the basis of the coal cost of Rs. 105 per tonne, the cost of power generation at the Tuticorin Project works out to 10 paise per unit but the State Government feels that even at this rate it would be cheaper than nuclear power. The subsidy on coal transportation is due to expire by the end of March 1974 and Tamil Nadu has agreed to abide by any new decision the Centre might take on subsidy.

### 10 Ships for Coal Transport

The Shipping Ministry has also informed the Planning Commission that it had already ordered 10 ships of 18,000 tonne capacity of which three will be received this year and they are meant for coal transport. The ships will be available to transport coal to Tuticorin when the project takes shape.

### Railway Ministry Expects No Difficulty

The Railway Ministry does not expect any difficulty in effecting the movement of about 1.2 to 1.3 million tonnes of coal from Raniganj to Haldia Port to meet the initial requirements of the Tuticorin Project. The total requirement would be in the region of 6.5 million tonnes and the Railway Ministry is confident of handling this quantity. It has, however, told the Mines and Metals Ministry to inform it in advance of the mines from which coal will have to be loaded so that it could complete the necessary arrangements in time. The Mines and Metals Ministry has also advised the State Government that the boilers for the Tuticorin Project consisting of two 220 MW sets should be designed for Grade I and Grade II coal available from the Raniganj Coalfields.

### Training for

### Poor Harijan Cultivators in Dry Farming

The Government have sanctioned a Pilot Scheme for imparting training in new agricultural techniques of dry farming to selected poor Harijan farmers owning between one and three acres of dry lands as the poor Harijans, who own small extents of dry lands, are not conversant with the modern techniques of dry farming.

The scheme called "Training scheme in Dry farming for Poor Harijan Cultivators" will be tried first in Tirunelveli district as an experimental measure and will be extended to other districts based on the experience gained in the functioning of the scheme. The scheme will be implemented at the Dry Farming Research Station at Koilpatti in Tirunelveli district.

### 40 Farmers to be trained

Under this scheme 40 farmers will be given training in four batches, each batch having ten farmers. The Officer-in-charge of Koilpatti Dry Farming Research Station will be the Training Officer, guiding the trainees in modern methods of dry farming.

The training will be for 6 days at Koilpatti. The trainees will be paid actual bus fare/train fare for their journeys from the places of their residence to the training centre and back. In addition, the trainees will be paid each Rs. 6 (Rupees six only) per day for food charges. The District Welfare Officer, Tirunelveli who is in-charge of implementing the scheme, will make arrangements for the boarding and lodging of the trainees during the period of their training.

## AUTORICKSHAW CO-OPERATIVE

With a fleet strength of 180 autorickshaws, the Madras Autorickshaw Drivers' Co-operative Society is proud of its achievement of the main object of making the poor autorickshaw drivers the owners of the vehicle within a record period of 3 years.

The society was started when the poor autorickshaw drivers were at the mercy of unscrupulous fleet owners and money-lenders. They had no regular duties, and were at the beck and call of the autorickshaw owners. Further the very existence of autorickshaw drivers were at stake, as the previous Government adopted the policy of reducing the strength of autorickshaws in the city. It was at this juncture, the president of the Tamil Nadu Taxi and Auto Workers' Union Thiru A. V. P. Asaithambi represented to our present Chief Minister the need for helping the poor autorickshaw drivers through a Co-operative Society. The Chief Minister, who is a guardian of poor, immediately arranged for the registration of the society. The Chief Minister has also assured the promoters that the present Government will revise the policy of restricting the number of autorickshaws in the city and will gradually increase the strength of autorickshaws in the city. Thiru A. V. P. Asaithambi initiated the formation of the society. He was ably assisted by Thiru S. V. Nalliah and a band of selfless taxi drivers in Madras.

The society started functioning from 18th September 1969. Every year a bulk number of autorickshaws were secured through allotment from the Government and given to autorickshaw driver-members. The present fleet strength of the society is 180. Recently the society has received another allotment of 10 autorickshaws from the State Government and the vehicles are ready to be given to the 10 members by the Chief Minister.

The Society admits only autorickshaw drivers possessing current driving licence with public service badge as members. A member, who is desirous of getting an Autorickshaw, has to pay 1/8th of the

## RUNS ITS OWN PETROL BUNKS

Bunk and supplies products at fair prices and at correct quantity. Out of the profits of the petrol bunks, two sets of uniforms were supplied based on the member's 'off-take'. For the past two years, the society has declared maximum dividend of 6 per cent on shares held by members and dhoties and sarees to members and their wives from common good fund.

75 Autorickshaws were given to the members during the year 1970 and now there are owners of vehicles worth Rs. 10,000 because three years have lapsed and the members have become eligible for the ownership of the vehicle as they have cleared their dues for the purchase of autorickshaws. The society has thus made history by fulfilling the dreams of poor autorickshaw drivers into reality.

### SHARE CAPITAL

The authorised share capital of the society is Rs. 5,00,000 made up of 10,000 shares of Rs. 50 each. There are at present 366 members with a paid-up share capital of Rs. 1,77,050.

### ALLOTMENT OF AUTORICKSHAWS

Government have fixed the strength of autorickshaws to be run in the city of Madras. The limit was 200 at the time of formation of the society. It is only on the representation of the society to increase the strength of autorickshaws in the city to meet needs of middle and poor class public to have a cheap and quick conveyance, the Government have relaxed the limit every time. On all such occasions, the society has got permits nearly 40 per cent to 50 per cent of the total number of permits allowed for issue. It is thus the society has helped the poor drivers and the public in a great way.

The autorickshaws are not supplied to the society from the dealers quota. It takes nearly 3 to 5 years for the dealer to supply autorickshaws if orders are placed to him with necessary advance. Therefore, the society has embarked on getting quotas of allotment of autorickshaws from Centre and State Governments.

The set-up of the Tamil Nadu Films Division is the brain-child of the people-oriented Government in Tamil Nadu. It was started not only to fill up the vacuum created by the non-coverage of Tamil Nadu news in full by the Films Division of the Union Government, but also to keep the public abreast of the every day and latest development schemes executed by the Government in the interest of their welfare and well-being. The Tamil Nadu Films Division during its short span of five years existence, has not belied the hope and expectation of its sponsors. On the other hand, it has added one more feather to its cap by its efficient functioning.



## CREDITABLE ACHIEVEMENT OF THE FILMS DIVISION OF

## TAMIL NADU GOVERN- MENT

The Films Division of Tamil Nadu Government has added one more feather to its cap in its 100th documentary within a short span of five years of its existence. Such spectacular and splendid achievement to its credit has been made possible by the earnest and efficient functioning of the department plus the constructive and contributing initiatives taken by the Government in its affairs.

Started in 1968 as a wing of the Department of Information and Publicity to fill up the vacuum created by the non-coverage of Tamil Nadu news in full by the Films Division of the Central Government, the Tamil Nadu Films Division has served its purpose well and proved beyond an iota of doubt its multi-purpose usefulness and utility to the society in more than one way.

After assuming the reigns of office in Tamil Nadu in 1967 under the able stewardship of Dr. Arignar Anna as Chief Minister, the new Government gave first priority to mass contact so as to keep the public abreast of the every day and latest development schemes executed by the Government in the interest of their welfare and well-being. Hence the set-up of the Films Division

in Tamil Nadu may rightly be called the brain-child of the people-oriented Government in Tamil Nadu.

**To Enthral the Public**

The first documentary film of the Film Division was released on 4th May 1968 at the then Children Theatre (now it is renamed as Kalavanar Arangam) in Madras. Thiru C. A. Ramakrishnan, I.C.S., the then Chief Secretary of Tamil Nadu, in his welcome address, gave term the purpose for which the Films Division was started in this State. His speech runs:—"The Union Government have been releasing documentary films. But the films are not in a position to give

full and complete coverage of all the important goings and happenings in this State. So the State Government releases its own documentary films to put an end to that sorry state of affairs in such a way as to enthral the minds of the people of this State".

Inaugurating the function of the release of the first documentary film of the Films Division of Tamil Nadu, Dr. V. R. Nedunchezhiyan, Minister for Education, in his speech said that "the Department of Information and Public Relations of Tamil Nadu Government has undertaken the responsibility to set up a Films Division and to take and release documentary films. Proper execution of its purpose by this department will ensure goodness to the public at large.

"In the documentary films of the Central Government the news and functions of Tamil Nadu are not even given half a minute's time. Of course it is not easy to give incomplete coverage of all the matters of importance and of news value all over this vast and big country. So the documentary films produced by the Films Division of Tamil Nadu on behalf of this Government will

lead to beneficial result to the people of Tamil Nadu."

"Documentary films of the Films Division of the Department of Information and Public Relations will carry to the people all the achievements and statistics and planning schemes and the implemented schemes of this Government in good taste."

"Releasing the first documentary film of the Films Division, the then Public Works Minister, Kalaignar Karunanidhi said: "The Central Government's Films Division, in view of the vastness of its field for coverage, could not entertain all the matters of importance and interest to us in this State in its documentary films. To remove such grievances in our midst, our Films Division has come forward to release documentary films of its own making. Arrangements have been made to show its films in all the theatres in the State.

"The documentary films of the Films Division will be much useful to carry the good deeds of the Government to the people and to obtain, in turn, the backing of the masses to the Government."

The Film Division, in its short span of service to the society, has not belied the hopes entertained by the ministers at the inaugural function of the release of its first documentary films. It works in a target-oriented way. Accordingly, it releases two documentary films every month and it has hitherto brought



to light 100 documentary and feature films under its auspices. It is not an achievement of mean degree and dimension to any institution of its kind.

Its documentary films include "The Funeral Procession of Anna", "Anna Lives", etc. The documentary film "Anna and After" taken by this Division in English was received well, wherever it was screened. Some documentary films of the Films Division depicting the activities and achievements of the State Government have also been given good reception by the

mass of Tamil population. It stands to its credit that the documentary film on Poompuhar brings out the ancient Tamil culture in all its splendour and glory.

Apart from these documentary films, the Films Division has also embarked upon picturising some important subjects and institutions in this part of the country. The documentary film on the Madras Museum under the title "Don't the stone speak in symphony?" is a pointer to prove the creditworthiness of the Films Division. "On the Deep Sea", "Helping Hand", "Fertiliser alone is Food"



Cine Camera in action.

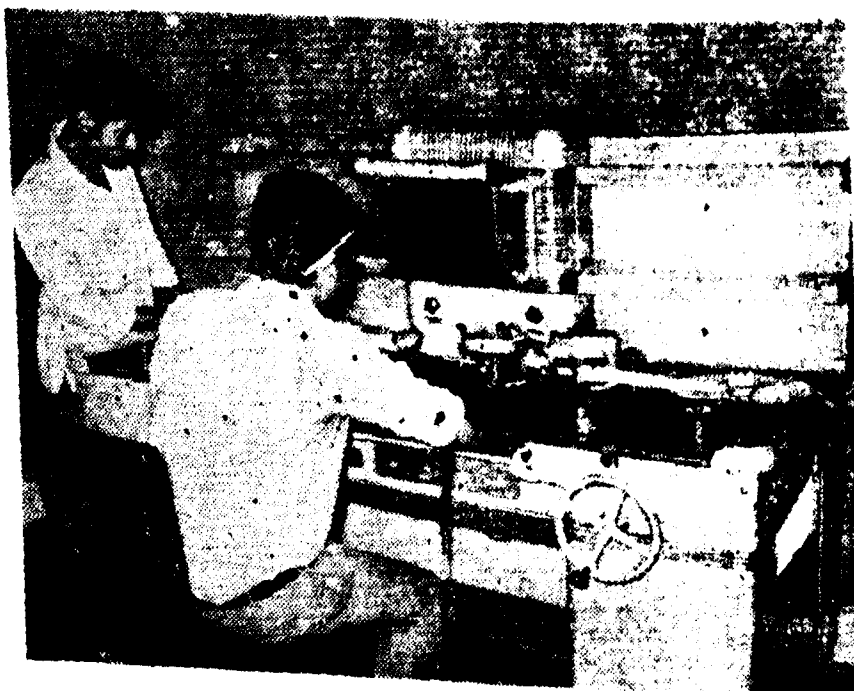
Film Editing.



etc., are some of the documentary films that go to prove the pivotal role played by the Films Division in taking the modern scientific knowledge and technical know-how to the door-steps of the people helping a lot in revolutionising methods of cultivation. The documentary film "Our Duty" of the Films Division brings to light the importance of the Small Saving Scheme thereby giving a fillip to the popularisation of the schemes among the illiterate rural folk as well.

"After Having Got Blindness", "The Dark Home", "Heart is a Monkey", "Cotton Cultivation", "Industrial Development", etc., are some of the documentary films of the Films Division under production.

Popular film stars have also come forward to act in the films of the Film Division and they are also encouraged and afforded chances in good measure. The documentary and feature films of the Films Division are screened in every nook and corner of the State in rural areas as well as urban areas, and in industrial centres and the predominantly agricultural areas, etc.



It is a healthy sign in the administration of the Films Division that the revenue derived from the screening of the films of the Films Division is on the upward trend as years roll by. And every one in Tamil Nadu feels proud of the fact

that as in many other fields, in this line also Tamil Nadu marches ahead of many other States in the Indian Union, bringing laurels to the effective and efficient functioning of the administrative set-up in this State.

R.N.

## the living past

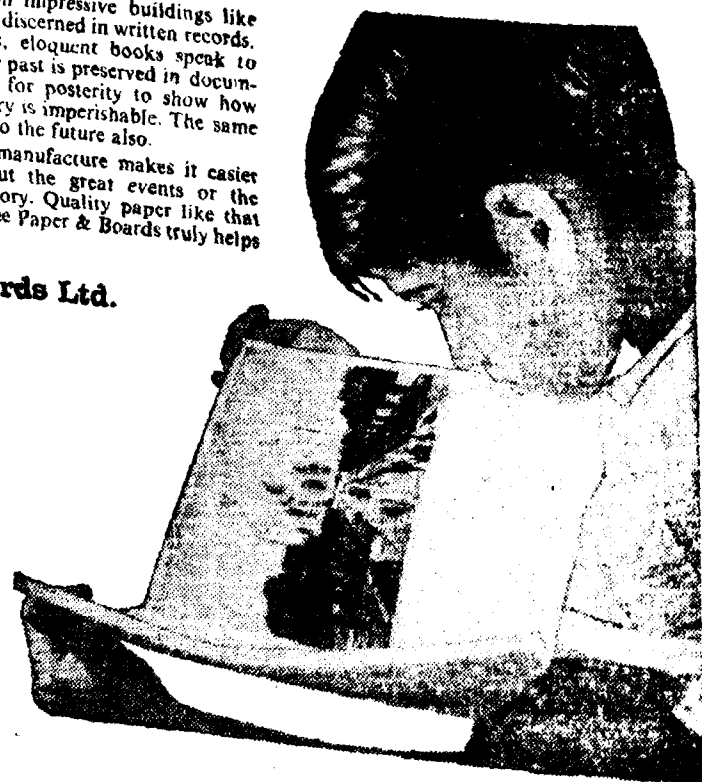
The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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# TAMIL NADU AGRO-INDUSTRIES

## CORPORATION IN THE BLUE REVO- LUTION

In our effort to attain self-sufficiency in food and to substantially improve the nutritional standards of our people, it is of fundamental importance to realise that a mere increase in the output of cereals through "Green Revolution", high yielding varieties and fertilisers are just not enough. A qualitative improvement through a basic change in food habits, taste and attitudes of people is more important. It is in this context that fishing industry, agro-industries, poultry, cattle, piggery, increased production, preservation and optimum consumption of fish, vegetables, fruits, etc. have to be considered. Although fishing and allied industries are not unfamiliar to India, we have yet to go a long way in organizing them scientifically so that the industries would play their role both in improving nutritional standards and as valuable source of foreign exchange.

The Government of India and the State Governments recognised the role of agro-based industries as a vital sector to improve the qualitative side of our diet and a massive development of agro-based industries was envisaged in setting up Agro-Industries Corporations in all the States of India, to form the nucleus for a nationwide effort to augment the output of more and better cattle, poultry, pigs, fish and similar items. This effort is expected to form an essential part of the employment schemes of the Government to vastly increase production of basic necessities of life, their careful conservation and efficient distribution.

The Tamil Nadu Agro-Industries Corporation Limited was incorporated on 5th July 1966. The main objects of the company are—

(i) To promote, establish, administer, own and run industries for manufacturing articles which will help the growth and modernisation of agriculture, animal husbandry, pisciculture and poultry farming;

(ii) To promote, establish, administer, own and run industries and facilities for processing agricultural produce and products of

piscicultural and animal origin for the purpose of increasing the availability of goods and subsidiary food in the country and for export;

(iii) To take over from the Government of Tamil Nadu the industrial units and facilities falling within the ambit of clauses (i) and (ii) above with their rights and liabilities in so far as they relate to such units and facilities and

(iv) To promote the rapid development of the industries of the category mentioned in clauses (i) and (ii) above in the State of Tamil Nadu and for that purpose to operate suitable schemes including the financing of any such industry or facility whether owned by the State Government or Central Government or by any individual, firms, company or association—by way of underwriting the issue of shares, participating in the share capital, grant of loans and offering guarantees.

The authorised share capital of the Tamil Nadu Agro-Industries Corporation Limited is Rs. 4 crores, out of which Rs. 330 lakhs has been subscribed by the State and Central Governments in equal parts. The Board of Directors consists of one non-official Chairman, three non-officials nominated by the State Government, four officers of the Government of Tamil Nadu and three officers of the Central Government. The Corporation is under the administrative control of a Managing Director from the Indian Administrative Service. The Tamil Nadu Agro-Industries Corporation was concerned in the beginning only with agricultural schemes. But towards the end of 1971, fisheries schemes were also proposed to be operated with the appointment of one Project Officer (Fisheries) by taking an officer from the State Department of Fisheries on deputation. Recently, the Corporation has decided to form an autonomous separate unit for "fisheries" as a wing of the Corporation.

The Fisheries Wing of the Tamil Nadu Agro-Industries Corporation

**B. KRISHNAMURTHY,**

Project Officer (Fisheries).

TAMIL NADU AGRO-INDUSTRIES  
CORPORATION LIMITED, MADRAS-32.

The group consists of besides Mr. Banerjee, Thiru Sai Prakash, Joint Director, Planning Commission, Thiru J. Raja Rao, Superintending Engineer, P.W.D., Andhra and Thiru N. Balasubramanian, Deputy Chief Engineer, Irrigation, P.W.D., Tamil Nadu. A naval architect is also assisting the group in design and type of craft with its horse-power, etc., which could be used after carrying out the improvements suggested by the group.

### GRAND SCHEME OF RECLAMATION

With the grand scheme of reclamation at a total cost of Rs. 2.28 crores, the Cooum has lost much of its stench and has become the Thams of Madras City adding to its beauty and elegance. But its sister counterpart—the Buckingham Canal which flows for a total distance of more than 100 miles wending through Tamil Nadu and Andhra Pradesh thereby providing a commercial inland navigable route with ease and effectiveness for country boats which carry salt, lime, shell and firewood to the city from far-off places on its way had been left high and dry in the matter of reclamation and revival to its original status and beauty.

While inaugurating the Pleasure-boating in the Cooum on 4th February 1973, Dr. M. Karunanidhi, Chief Minister of Tamil Nadu spoke thus :

"Of course, we have completed the Cooum reclamation work. But there is another waterway in the city which mars the beauty of the city posing a health hazard in the city. The name of that waterway is Buckingham Canal. The Government is thinking of cleaning that also." As if to prove that he is not only a man of mere words but a man of deeds of public interest, he, as the Finance Minister, allotted a nominal fund for the work in the budget for 1973-74 to convert the canal into an inland navigation channel.

The reclamation work of the Buckingham Canal within the city has already been taken up for execution. Under this Scheme, sanctioned at a cost of Rs. 44 lakhs, formation of roads at wood wharf and shell wharf on the North Buckingham Canal margin, construction of wharf at Chintadripet in the heart of Madras City and

lining the canal in certain reaches were done. Further, excavators for dredging the Buckingham Canal and one sand pump for use at the mouth of the Cooum for Cooum Improvements Scheme were also purchased and installed. In addition to these, proposals for dredging the Buckingham Canal in Tamil Nadu limits, with a view to improve the draft conditions at a cost of Rs. 20 lakhs was sanctioned during 1971-72 under Central Government loan assistance and the works are now in near-completion stages. Apart from these, the State Government is sparing nothing at its disposal to get this scheme included in the ensuing Fifth Five-Year Plan for which the State Government's proposal is lying with the Union Government for necessary approval.

### DOUBLE PURPOSE SERVED

The State Government has become alive and alert to the need of improvement in the Buckingham Canal System in view of its potentiality in the inland water navigable facilities in addition to doing away with the health hazard problem of menacing proportion as far as Madras City is concerned, and has sanctioned the scheme and plunged into action. Further the study by a committee headed by Thiru Vaz, the then Irrigation Chief Engineer, recommended the worthiness of the scheme in favourable terms. Before that, the project had been under study for some years by both the Andhra Pradesh and the Tamil Nadu Governments and the Planning Commission and the Irrigation Transport Directorate. Accordingly, the Andhra Pradesh Government has also taken up the work simultaneously. But the nature of work to be carried out is not so simple as one would tend to think of it. There is full of hurdles and obstacles of various kind and varying degree and dimension in its execution.

First of all, to carry out the work, co-ordination of the railways is to be sought as many bridges such as bridges at Basin Bridge, Korukupet, Park Station, Elephant Gate, Tiruvottiyur, Marshalling Yard and on the Arkonam Line, span the canal. Without the co-operation and co-ordination of the railway department concerned, the work cannot have a smooth and quick sailing.

Tenders for the excavation and lining works of the 10-mile route with

concrete slabs have been called for, for which the Tamil Nadu Government has provided Rs. 5 lakhs in its last budget for 1973-74 expecting a grant from the Union Transport Ministry. The Union Government is expected to provide 50 per cent subsidy for the project.

Work on the northern 34-mile section of the canal has already been taken up on hand by the State Government in view of its traffic potentiality and now it yields an annual revenue of Rs. 1 to 2 lakhs by way of licence fees on boats and rent from 17 godowns built on the banks of the canal. The first stage of the work is expected to be completed by the end of next year. The State Government is expected to sanction soon a revised project costing Rs. 65 lakhs in this connection.

Further the State Government is also keen to take up on hand for execution the work on the 64-mile southern section stretching up to Markanam without further delay.

In this connection cross-hunds have already been put up behind the University and at the Pycrafts Road points for dewatering and lining. The proposal is to cover the stretch up to Raja Annamalaipuram and later up to Tiruvanniyur and Lattice Bridge.

The second hurdle in the execution of the scheme is that there are more than 5,000 huts on the banks of the canal and that sewage is let into the canal at a number of points. The City Corporation has been requested to stop this. The State Government is in expectation of financial assistance in right quantum from the Centre to carry out improvements to the southern section of the canal.

A Rs. 6-crore plan to make the canal navigable throughout its length is before the Centre pending approval.

After improvements to the canal, the Tamil Nadu Government proposes to introduce mechanical boats and tugs that can have a train of boats in the place of country boats now plying. Further the completion of work is expected to facilitate the work to connect the proposed transport of kerosene and other oil products from the Manali Refinery and fertilisers from Madras Fertilisers to the city by boats.

## WHY A BALANCED DIET?

Who doesn't know that good and proper diet is a key to good health? We take food not just to make life possible but to live a healthy life. The question would then be 'What is good diet?' To understand this fully, it will be necessary first to know why food is needed for the body.

Some energy is spent when we do work, and even in sleep some energy is being spent by the body. The energy that is being expended should be made good, and this is done by the food we take. The size of our body is very small at birth and it grows daily till about the age of 21 years, and attains the adult size. This growth of the body is made possible only by the food we take. During the growth as well as after the growth has ceased, many processes go on in the body, and certain nutrients we take from food are essential for these processes to proceed normally. Moreover, we live in an atmosphere full of all types of microbes, and we should have sufficient stamina to withstand the onslaught of these micro-organisms. Food gives us this stamina.

Food contains many nutrients, and it is in fact for the sake of these nutrients which are needed to make the body grow and keep it in a healthy condition that we take food. All foodstuffs contain more or less all the nutrients, but in varying proportions. Some foods give more energy. For example, cereal grains like rice and wheat, tuber vegetables like potato, oilseeds, sugar and jaggery are some of the foods which yield essentially energy. To ensure proper growth of the body we need foods like pulses, milk, curds, flesh foods, fish, eggs, oilseeds, fruits and various types of vegetables. For formation of good bones we need foods like milk and curds, and for the muscles to develop properly, we need foods, like pulses, flesh foods and other foods of animal origin. Leafy vegetables are needed for keeping the eyes, the gums, bones and blood in healthy condition.

The requirements of the body for the various nutrients depends on the age, physical work and other physiological conditions. Because of

the larger size of the body, an adult requires more nutrients than does a small child. The growing child, however, requires, per kilogram body weight, more protein and minerals than an adult does because of the rapid growth that takes place during childhood. A labourer doing heavy work requires more of the energy-giving foods than does a person doing office work sitting in a chair. Because of the physiological changes that take place in the body, pregnant and lactating women require body and building nutrients like proteins and minerals. A good diet is one which yields daily the nutrients in the proper amounts and proportions to satisfy the needs of the body under the various conditions, and it is also called "Balanced diet".

A typical balanced diet required by an adult male doing a sedentary type of work (light work) is given below :—

|                  | GRMS. |
|------------------|-------|
|                  | 400   |
| Cereal grains    | 70    |
| Pulses           | 100   |
| Leafy vegetables | 75    |
| Tuber vegetables | 75    |
| Other vegetables | 30    |
| Fruits           | 200   |
| Milk             | 35    |
| Fats and oils    | 30    |
| Sugar/Jaggery    | 30    |

It is to be noted that the diet suggested above is for a vegetarian. Non-vegetarians can reduce the amounts of milk and take 30 gms. each of flesh foods and eggs. If the person is doing heavy work, some of the ingredients like cereals, fats and sugar foods should be increased to obtain more calories from the diet.

All the foodstuffs, listed above, as ingredients in the balanced diets are being consumed by people, but they are not being taken in the required amounts and proportions, and this may lead to deficiency diseases. Cereal grains constitute the

bulk of the diet for a majority of people, and the other protective foods like milk, eggs and leafy vegetables are not consumed in the amounts needed. One of the reasons for this is the economic status, but even within the existing economic status, there are possibilities of improving the nutritional qualities of the diet with slight changes in the dietary habits and cooking practices.

'Toned milk' is cheaper than fresh milk and except for the somewhat lower content of fat, toned milk is as nutritious as fresh milk. Skimmed milk, i.e., milk from which fat is removed, is being distributed by the Government in schools to school children. Advantage should be taken of this facility by every boy and girl to improve their nutritional status. If milk is in short supply, priority should be given in distributing the milk to children and pregnant and lactating women, and normal adults should take only what remains.

Although not pleasing to the eye, hand-pounded rice and parboiled rice provide essential nutrients to the body. Likewise preparations from whole wheat flour would be more nutritious than those made from refined flour (Maida). Instead of consuming one type of cereal as the staple food, it is better to use a mixture of two or three cereals in the diet.

Leafy vegetables are inexpensive; they provide many nutrients to us. The vitamin C, which is obtained from fruits, can be obtained in the same amounts from leafy vegetables. When whole pulses are used, it is good to use some of them after germination.

By preventing cooking losses also we can considerably improve the nutritional quality of our diets. By following scientific principles in cooking and in planning the diet, one can consume a balanced diet and ensure a healthy life physically and mentally.

National Institute of Nutrition,  
Hyderabad.)

has proposed to take up a few schemes on fisheries, detailed below:—

#### (a) Freezer storage complex in Madras.

This complex will consist of a 100-tonnes freezer store, a 15-tonnes chilled fish store, a 3-tonnes tunnel freezer and a 12-tonnes plate freezer. The Tamil Nadu Agro Industries Corporation has also agreed to put up in the same building a 30 tonnes ice plant with a 50-tonnes ice storage of the State Department of Fisheries. The frozen fish store will consist of 3 cubicles of which two are to maintain—15° to 20° F and three will maintain—5° to 10° F. The tunnel freezer will maintain—40° F and the intake per load is proposed to be 400 Kgs. The chilled fish store is proposed to be maintained at 25° to 28° F. Two plate freezers of 6 tonnes each are proposed to be installed in the building. Sufficient space in the building for receiving and handling fish and for processing has been planned. This important infrastructure for deep sea fishing operations is proposed to be erected in Royapuram in the fishing harbour site. The facilities are proposed to be made available to the public at rental charges. As soon as the site is handed over to the TAI Corporation by the Government, work on this project can be started and completed within 8 months.

#### (b) Deep sea fishing

The major project will be with 8 deep sea fishing vessels to be operated from three bases—Madras, Tuticorin and Mandapam. Four vessels are proposed to be imported of which two will be in the 23—25 metres and two in the 30—35 metre length classes. The balance four vessels will be built in India. All the vessels will be of the stern trawling type and for combination fishing. One of the imported vessels is proposed to be rigged for operating purse-seine nets. Although the project is export-oriented, it is proposed to take up internal marketing in the country also to make available nutritive fish food under hygienic conditions and at reasonable rates to the people in the hinterland and in Madras City.

#### (c) Nylon twine twisting and fishnet making factory

The TAI Corporation has decided to put up a factory in Madras for

twisting nylon monofilament twines and braiding the twines into net webbings for fishing nets. The net making machines will be suitable for single or double knots and for braiding monofilament twines also into webbings. The factory will be capable of handling about 49 tonnes of nylon yarn per year. It is proposed to produce about 18-tonnes of webbings per year. The import licence for the machinery is awaited from the Government of India.

#### (d) Trawl Winches for fishing boats.

The fishing boats require mechanical trawl winches for the smaller vessels and hydraulic winches for the medium and larger boats. A few companies are at present manufacturing winches for the smaller boats, but hydraulic trawl winches for fishing are not generally made in the country. The TAI Corporation has proposed to take up manufacture of mechanical trawl winches to begin with and gradually start manufacturing hydraulic trawl winches. The design of the C.I.F.T. for these winches will be generally adopted and it is proposed to implement the project in technical collaboration with the C. I. F. T., Ernakulam. The terms of collaboration are not yet finalised.

#### A Project for Liquid Nitrogen.

The above projects have been approved to be implemented by the TAI Corporation. Apart from these, the Corporation is having under consideration the effective role that it can play in the regulated marketing of fish for internal consumption. There are many other ancillary fields like manufacture of fishing hooks, fabrication of ready made nets like trawl nets, purse, seines, etc., fabrication of rudder assemblies for mechanised boats anchors, manufacture of fishing boats, insulated boxes for fish transport, plate freezers, life saving appliance, navigational lights, magnetic compasses, echo sounders, etc., which if operated by a single organisation will facilitate the fishermen and boat and ship builders to procure more easily and thereby speed up the construction work or fishing efforts. The TAI Corporation may consider taking up these items of manufacture also gradually. The TAI Corporation is also having under consideration a project for

prawns and fish fillets and for I.Q.F. Products.

#### High percentage of Risk.

No other industry depends so much on nature as does the fishing industry. The element of risk involved is high in this industry especially in deep sea fishing. The data on the availability of fish in deeper waters are practically nil. It will be futile for the industry to wait for Government to collect the data and furnish to them. In their own interest, the private entrepreneurs have to do some survey work also along with their commercial fishing. Financing institutions and commercial Banks have to appreciate this aspect and give encouragement to the industry to stabilise itself. The Tamil Nadu Agro Industries Corporation has for its part come forward to play its role in the raging in of the "BLUE REVOLUTION" in Tamil Nadu by taking up commercial fishing, manufacture of fishing requisites and providing the infrastructure for the processing and marketing of marine products.

## Acupuncture with Laser Rays!

Acupuncture, one of the oldest medical treatments, has been given a new slant by modern technology. Soviet doctors have proposed that steel needles be replaced by a light needle, the laser ray, which guarantees painlessness and absolute sterility. [The new method is already practiced in the treatment of a number of diseases. The initial results are quite encouraging. There is reason to believe that quite soon another revolution will be wrought in the technique of acupuncture, which has progressed over the millennia from stone needles to the laser ray.]

## Reclamation of

# BUCKINGHAM CANAL WORKS TAKEN UP

After the reclamation and revival of the river Cooum to its original beauty and elegance, now much attention is being paid to the improvement work of Buckingham canal. Though various kinds of improvement works in Buckingham canal has already been in operation for the last two years, the Public Works Department's Cooum Improvement Canal Division—now renamed as Buckingham Canal Division has undertaken the works of major improvements to the canal such as deepening the canal by five feet to facilitate plying of mechanised boats and connecting the canal with the Cooum at the Cooum lock near Madras Central Rail to rid the canal of its stink.

History reveals that waterways promoted more trade and commerce as movement of men and materials were made at comparatively cheaper cost by this mode of transport. The modern development of rail and road transport has considerably affected the importance of inland waterways. Mostly for movement of cargo, inland waterways are used now. Inland waterways have their own attractions as a transport moving in natural surroundings with scope for enjoying and appreciating landscape on either side. The time factor in modern days favours fast moving system of transport but still for pleasure trips and sight seeing inland waterways can be primarily important. The two waterways worth mention in Madras City are:

1. Cooum river
2. Buckingham canal

The Cooum river traverses through 41 miles from Sattarai village to the sea (including the distance of 64 miles within the

Madras City); its width within Madras City ranges from 75' to 100'. Its catchment area is 111.6 square miles; the average rainfall in the basin is 41" per year. The maximum flood discharge by the river is 19,111 cusecs. It floods during the north-east monsoon period. In other seasons, water stagnates in the river. The river within the City limits has been improved for navigation, especially pleasure boating at two stages costing Rs. 32 lakhs and Rs. 62 lakhs respectively.

The Buckingham canal is a navigable canal running through the backwaters and parallel to the coromandel coast at an average distance of less than a mile from the sea. It extends to a length of 262 miles from Pedda Ganjam in Krishna district in Andhra Pradesh to Mercanum in South Arcot district in Tamil Nadu. About 100 miles of the canal traverses in Tamil Nadu. Within the city of Madras, its length is 12 miles. The canal is used only for movement of cargo such as firewood, salt, lime and shell, which find chief market in Madras City. Country boats of capacity 5 to 10 tonnes ply in the canal. Several committees were appointed to examine the technical feasibility and financial implication of developing the Buckingham canal so as to augment cheap transportation facilities in the city. The Bhagavathi Committee constituted by Government of India, has recommended an outlay of Rs. 20 lakhs for dredging the canal. The Madras Metropolitan Plan has suggested a mass transportation system being taken alongside of the canal alignment to solve the rapidly growing transport problem within the city and the feasibility of this proposal is being examined by the Railways now by the recently set up special

Metropolitan Cell in Madras. The width of the canal ranges from 90' to 120' and hence it is possible to take suburban rail or an express way within the canal width leaving adequate waterway by deepening and paving the canal to serve as waterway. The one great advantage in this alignment of mass transit system is savings in cost of land and avoiding the delays in acquisition process.

#### WORK ON CANAL.

The first phase of the work on the Buckingham canal is almost complete on the Tamil Nadu side and that on the Andhra side is expected to be over by the middle of next year.

Traffic can be operated up to Rakkirada port through the Krishna-Godavari canals, and in the southern portion of the canal, lying between Madras and Marakanam (in Pondicherry) backwaters country boats can be run for a distance of about 64 miles.

The Tamil Nadu Government has provided a sum of Rs. 50 lakhs this year for the second phase of the scheme. The silt-clearing and dredging operations are almost over. Thanks to Central assistance, there is no paucity of funds as felt during the first phase of the scheme. Dredging by manual labour has resulted in a saving of nearly 50 per cent.

The study group expects to submit its report to the Ministry of Transport by the end of this year. It will also study the possibilities of introducing tugs and other mechanised boats in the canal after widening it and this work will be taken up during the Fifth Plan period.



# NATIVE DOCTOR TURNED INTO SUGARCANE FARMER

Doctor Arjunan is one of the native doctors specialised in orthopaedics in the Telungupalayam of Coimbatore District, who made a mark in the field of sugarcane cultivation.

In 1964, all farmers were afraid to take up sugarcane cultivation. Even those who cultivated had resorted to burn the crop. It was because they were unable to get back the invested money by way of marketing the sugarcane or the finished product jaggery. The price was very low. It was Rs. 17 to 27 per four bags of jaggery.

Undaunted by trend of the price, Dr. Arjunan raised sugarcane in his five acres wet land. He took every care to cultivate the crops as per the guidance of sugarcane specialists. The judicious use of fertiliser and pesticides and adoption of appropriate plant protection measures increased the yield. About 20,000 bags of jaggery he was able to get from the yield. Incidentally towards the end of 1965, the price of jaggery had gone to Rs. 200 to 250 per four bags. A net profit of rupees two lakhs he had in that particular year. He purchased land and built one-storied 50-bedded orthopaedic hospital in the centre of Coimbatore City.

## Growing interest in cane cultivation

Because of this, his interest in cane cultivation grew day-by-day. He also made some interesting studies in sugarcane cultivation in consultation with the centrally sponsored Sugarcane Breeding Institute and the State Agricultural

Department specialists. According to him CO 413 blossoms early and yields less if the application of fertiliser is less; whereas the same yields more with late florescent if the fertilizer input is more. The better quality B 7172 variety will yield less with more sugar content. CO 1295 variety is ideally suited for rainy season. And CO 6304 is the latest released good variety which has the quality to give more jaggery with less fuel due to its heavy sucrose concentration. Contrary to the population notion, he said cane cultivation could be done throughout the year without minimising the sucrose concentration provided the late florescent varieties like CO 1295, CO 658 were selected for monsoon seasons. The narration of his experiences to the progressive farmers on the occasion of Sugarcane Breeding Institute's field day celebration promoted new vistas in the sphere of cane cultivation.

## Spectacular growth

From the small holding of 6 acres wet land, he became the proud owner of 47 acres of land, within a period of 30 years. He also cultivates paddy, maize and fruits. He got the district-level second prize in 1971 for his IR 20 cultivation. He was one of the directors of co-operative land-development bank, and also the counsellor in many organisations.

Now, Dr. Arjunan is 53 years, having 4 daughters and 2 sons. He attends more than 200 patients every day.

—Source: F. P. O. Coimbatore.

# PROGRAMME FOR PROMOTION OF TOURISM

TOURISM in the coming years is expected to yield rich dividends. Both Centre and State Governments are taking several steps to reap this benefit.

The Air India has drawn up a programme for promotion of Tourism abroad by organising exhibitions at important centres in foreign countries through their offices to attract more tourists to India. They have approached this Government for old temple sarees. Toda's costumes and jewellery, ancient musical instruments, etc., and deputed their costume designer to select articles in consultation with the State Government. The Department of Tourism, Government of Tamil Nadu have accepted the proposal of Air India and sanctioned Rs. 7,000 for this project details of which are given in the annexure.

The State Department of Tourism has collected the temple saree specially made by Kalakshetra, Madras and Toda costumes and jewellery and ancient musical instruments like Panchamukha Vadyam (Five face drum) and Mahara Yazh (a string instrument), etc., designed and made by Thiru P. Damodaran of Madras.

The Government of Tamil Nadu have also sanctioned Rs. 10,000 towards hospitality programme of State Tourism Department this year under which foreign experts sponsored by Government of India and connected with travel trade and tourism are treated as State Guests. Besides, it has been now decided to invite Air India Artists to undertake a tour of Tamil Nadu to enable them to study the tourist attractions and ancient art and architecture of our temples so that they can introduce Tamil motifs in the publicity programme, interior decoration, etc. of Air India. For this Government have sanctioned another 10,000 rupees.

# TEMPLE ARCHITECTURE IN SOUTH INDIA

According to Mr. DUBRUEL, a French authority on Architecture, the outstanding characteristics of South Indian architecture are

- (i) it is ancient ;
- (ii) it has remained isolated, and uninfluenced by the development of architecture in other parts of the World and
- (iii) it has involved over the ages without external influence.

The isolation cannot be attributed to the non-availability of communications in the ancient times. During the Chola period, the South Indian architect had opportunities of visiting other parts of the world but even then, he held fast to his own method of architecture. Every chief mason was an institution by himself and he struck to his motifs which he inherited from his ancestors. Thus Dravidian Art presents a rare picture of an architecture which remained in isolation for more than thirteen centuries borrowing nothing from foreign arts. But the art underwent variations continuously on the path of natural evolution in such a manner that one could follow its modifications from one century to the other. In the ancient Dravidian monuments the origin of all motifs of ornamentation, which characterise the modern style, could be traced; but on the whole, Dravidian art has changed by itself rather than through the influence of other styles.

South Indian Architecture can be roughly divided into periods of :

1. Pallava Architecture (600-850 A.D.).
2. Early Chola Architecture (850-1100 A.D.).
3. Later Chola Architecture (1100-1350 A.D.).
4. Vijayanagar Epoch (1350-1600 A.D.).
5. Modern Epoch (1600-A.D. till day).

South India is fortunate in preserving its original form without major devastations that visited other parts of the country during alien invasions. Thanjavur district located in the delta of Cauvery river and traditionally known as the

Granary of the South, was the seat of the famous Chola Empire. The rulers of that empire were noted for grandiose architectural constructions of Hindu temples, both Saivite and Vaishnavite philosophy. This is the reason for concentration of a large number of ancient and interesting Hindu temples in Thanjavur district. There are over ten thousand well known and important temples in the fourteen districts of Tamil Nadu of which 1,809 temples are situated in Thanjavur district alone. The Census Department of Government of India have selected 277 important temples for their surveys study and publication (in Census, 1961) relating to temple in Thanjavur district. Out of the 1,809 important temples of Thanjavur district, 24 belong to the Pallava period; 400 belong to the Chola and Naick periods; Of these not less than 36 are more than two thousand years of age. Most of these temples have richly endowed landed properties and several temples have noteworthy collections of jewellery. Assessment of age of construction of temple have to be based on the style of construction and reference found in the inscriptions in temple, to other events of kings and visits by main saints. The most ancient Tamil classic of Tholkappiam makes the only mention that every type of land is associated with a particular God while referring to religious aspect of ancient Tamil culture. (Murugar is said to be the Lord of the Hilly tracts; Indra is said to be the Lord of fertile deltaic plains); Varuna-God of rains is associated with pastoral lands. The other famous Tamil classic SILAPPATHIKARAM refers to the Indra festival in Kaveripatnam which confirms that Indra was the God of Cauvery delta. Later Sangam Classics refer to Gods as the "Deity under the Banyan tree" or "Deity under the tree", survival of this ancient cult, is even now exhibited in some village shrines under Banyan, Neem Pipal or other big trees. The most ancient temple covered under the survey of temples of Thanjavur district in Tamil Nadu by the Census of India seems to be the one in Kaveripoompattinam, where according to SILAPPATHIKARAM both Kannagi and Madhavi worshipped. This temple is construc-

ted of brick and mortar and on a modest dimension compared with the large temples of the later Cholas. It appears that large temples owe their commencement to the Pallava period; the style got more refined during the Chola period and turned highly ornamental and decorative in the days of Vijayanagar Empire. References to all temple towers, piercing the clouds are found in SILAPPATHIKARAM, indicating that even about two thousand years back, there were huge temples with tall towers (gopuram), but these temples have not remained unaltered all these ages.

History narrates that it is the Pallavas who were the first great temple builders. Remnants of Pallavan architecture can be detected here and there in the temple of Pallaneswaram in Kaveripatnam in Thanjavur district. A bold and impressive style, as is well and distinctly expressed in the famous Bragadheeswarar temple in Thanjavur, emerged during Chola period. It was a mature style with an integrated conception of a temple. Pandyas succeeded Cholas but the same style continued, perhaps with taller gopurams in the later period. In the succeeding period of Vijayanagar rule, large scale construction of temple was again taken up with added ornamentation and exquisite beauty. The temple at Darasuram is considered as a landmark in the transition of style from the Chola to Vijayanagar period. It clearly denotes that there was a change over from the relatively robust and disciplined productions of the Pallavas and Cholas towards richer and more elegant style. The intricacy and rich beauty of the Vijayanagar type of temples lie in the number and prominence of its pillars and spheres and the way of sculptural work to fit into an integrated figurative drama in stones. Pavilions consisting of hundreds of pillars form the chief type of architectural scheme. These impressive pillars form the central theme; often the shaft becomes merely a central core for the attachment of the involved group of statutory, often of heroic size and chiselled entirely in the ground having as its most conspicuous element of a furiously rearing horse rampant hippagraph or an upraised

# ELECTRIC TRACTION FOR HIGH SPEED AND COMFORT

With the progressive industrialisation of different regions, and with the increase in the tempo of life everywhere, there is a demand for faster movement of freight and passenger traffic. Electrification of Railways' major trunk routes is the answer to higher speed and higher level of comforts.

Electric traction requires a higher initial outlay compared to steam and diesel traction but its working expenses are very low.

To reduce the consumption of comparatively scarce sources of energy like coal and crude oil, the Railways have already brought more than 4,000 route kilometres under electric traction. Electric energy used for electric traction is less than 3 per cent of the generation of power in the country for industrial, agricultural and other purposes.

Electric traction is based on electrical energy which is produced from inferior crude coals available more abundantly in the country than petroleum products.

The traffic needs on trunk routes, heavy mineral lines and suburban sections have grown beyond the capacity of steam traction, which has been proved comparatively uneconomical. The alternate of electric traction is modern, efficient and economical. It is superior to steam traction on technical, operational and financial grounds.

As convertor of available heat energy into power for hauling traffic, the steam locomotive is very inefficient. It is also much less powerful than an electric locomotive. This factor is important when heavier trailing loads have to be hauled at faster average speeds to take the maximum advantages of track capacity.

The electric locomotive can also start much heavier loads and haul them at a much higher speed on severely graded sections, thus making this form of traction more attractive, both operationally as well as financially.

Electric traction on Indian Railways was introduced on the Central, Western and Southern Railways between 1925 and 1930. Subsequently, electrification work was undertaken in 1954 on the Eastern Railway on Howrah-Burdwan and Sheoraphuli-Tarakeswar sections. This was completed in December 1958.

It was decided in 1957 to adopt 25 KV AC single phase system as a standard on the Indian Railways because it is economical.

The busy trunk routes connecting the metropolitan cities of Calcutta, Delhi, Bombay and Madras carry 50 per cent traffic although they form only about 14 per cent of the total route kilometrage of the Indian Railways. Railway modernisation has, therefore, been correctly carried out on the most congested routes so as to achieve maximum benefit with minimum expenditure.

Between Delhi and Howrah (Calcutta) a stretch of only 205 kilometres between Tundla and Delhi remains to be electrified. On completion of this project, the direct trunk route of 1,441 kilometres between Delhi and Howrah will be completely electrified.

Of the 1968 rkms. between Bombay and Howrah via Nagpur, 1,303 rkms. have been brought under electric traction. The Virar-Sabarmati section of 441 kilometres on the Bombay-Ahmedabad route is being electrified.

Work on the Madras-Vijayawada section of Delhi-Madras trunk route is in progress.

In this way all the trunk routes connecting Delhi, Madras, Bombay and Howrah would be progressively brought under electric traction to keep the Railways abreast with industrial and economic progress of the country.

By 1976-77, an additional 1,700 route kilometres are expected to be brought under electric traction at a cost of Rs. 113 crores.

The sections to be covered are Virar-Sabarmati (Western Railway), Panskura-Haldia (South Eastern Railway), Waltair-Kirandul (South Central Railway), Tundla-Delhi (Northern Railway), Madras-Vijayawada (Southern and South Central Railway) and Madras-Tiruvallur (Southern Railway).

The 69 rkms. Panskura-Haldia project is expected to be completed by the end of the current year. The Ahmedabad-Baroda section of the Virar-Sabarmati project has already been energised. In case of 471 rkms. Waltair-Kirandul and 259 rkms. Tundla-Delhi sections, foot-by-foot surveys have been completed and preliminary works are in progress. Both these sections are expected to be electrified during 1975-76.

The Madras-Vijayawada project was approved for inclusion in 1971-72 Works Programme on out-of-turn basis, and is expected to be completed during 1976-77.

During the Fifth Plan period, another 2,880 rkms. of railway line are likely to be taken up for electrification on Bhusaval-Nagpur, Durg-Nagpur, Delhi-Harsi, Madras-Guntakal-Hospet, Arkonam-Bangalore and Erode and Baroda-Nagda and Godhra-Anand sections. The surveys for Bhusaval-Nagpur and Durg-Nagpur sections have been completed.

All this would require more power. Keeping in view the present power shortage in the country and its repercussions on the rail movement, the Railway authorities are seriously considering a proposal for setting up Railways' own power houses in the Eastern region.

A high power Technical Committee has recommended that such power houses should be linked with the State Electricity Boards. This step would, on the one hand, provide necessary power for the expanding electrification programme and, on the other, ensure continued and reliable power supply for uninterrupted running of trains.

# VACCINE AGAINST INFLUENZA

E. GORBUNOVA.

Workers of the Institute of Viral Preparation of the Ministry of Health of the USSR have developed a new vaccine against influenza which proved effective during the epidemic last winter. The vaccine reduces the incidence by half and the risk of dangerous complications to a third. The vaccine has already been acknowledged as new in principle by researchers in Yugoslavia, England, U.S.A., France, Bulgaria, G.D.R., Rumania, Greece, Japan and other countries.

The idea of seeking protection from influenza in vaccination was conceived four decades ago, when the virus causing the disease was finally "nailed down". Since then dozens of vaccines have been developed and tried, the number of sceptics increasing in proportion to the attempts to subdue influenza by vaccination.

'Flue' vaccines have little effect —such, essentially, is the view held by the majority of doctors, and they advance some weighty arguments to support their position, such as vaccination protects only a certain proportion of the people who have undergone it, the vaccines themselves cause the 'flue' in a mild form in approximately two persons out of a hundred, and this, in global terms, means thousands of cases of vaccine-provoked influenza.

Naturally, supporters of vaccination advance their own arguments: vaccines can protect every second person, while according to economists, a 10 per cent reduction of incidence already justifies all the expenses entailed by research, and organisational measures involved in fighting this mass infection which annually hits millions of the earth's population.

But why are influenza vaccines less effective and reliable than those used against smallpox, polio-myelitis and many other grave diseases? There are several reasons and the main one is that the influenza virus is highly mutable and appears in a new guise in every new epidemic.

To produce a vaccine, the scientists must isolate the pathogen of the new epidemic and then "tame" it, so

that it should be able to deceive the organism, as it were, causing it to muster its defences, but without actually provoking the disease. Such a weakened virus stimulates the formation of special substances, antibodies, in the organism, which make ready to attack and destroy the real "wild" virus.

The process of "taming" is lengthy and complex, and so scientists used simply to kill the virus and make prophylactic preparations out of it. Soviet researchers preferred to obtain vaccines from live viruses. These were introduced into a chicken embryo, then transferred to another egg, a second, a third and so on. Fifteen, twenty and sometimes thirty changes were needed to deprive the virus of its pathogenicity. The "candidate" for a vaccine was tried out on volunteers (most often workers of the laboratory themselves) and then on a limited group of the population. By the time the vaccine was ready for mass use it often happened that another strain of the virus and not the one against which the vaccine was effective was running amok all over the globe.

How were they to keep up with the virus's metamorphoses? A team of researchers at the Moscow Institute of Viral Preparations headed by the Doctor of Medical Sciences A. Alexeyeva proposed a new method of cultivating the virus—not in a chicken embryo but in a tissue culture medium, in special flasks. The scientists place kidney cells of chicken embryos in this culture medium, infect them with the virus and, once it has multiplied, transfer it to another flask with the same culture medium and chicken cells. Another few transfers, and the virus loses its aggressive properties, and after a few more the scientists have at their disposal a so-called stable strain, a viral variant suitable for making a vaccine.

In point of fact this "tamed virus" is vaccine. To start mass production, it is only necessary to "acculturate" large quantities of the virus. The new method makes it possible to grow thousands of millions of viral particles on four chicken embryos and turn them into vaccine—all within one day.

In tissue culture medium, the virus is "tamed" much more quickly. Two and a half to three months is enough to obtain a vaccine strain. It means that having isolated the new pathogenic strain of the incipient epidemic (this is usually done in summer) the scientists have enough time to prepare for the dangerous winter season.

The new method not only saves time. It has been established that the pathogen grown in tissue culture medium is milder in character than the one cultivated in the chicken embryo. So, the new tissue vaccine causes no side-effects and never provokes the disease it is supposed to protect man against.

The effect of vaccination largely depends on its scope. Formerly vaccination was counterindicative to the most vulnerable section of the population, the children. As for tissue vaccine, it is harmless even for one-year-olds.

The vaccine is produced in the powder form. In special drum-shaped chambers the culture medium, where the viruses multiplied, is dehydrated and turned into a powder. It can be preserved for a year without losing its properties. Before use the powder is dissolved in ordinary water. The vaccine is administered orally which is another distinctive feature. Formerly vaccination was performed either subcutaneously or by inhalation through the nose, which made control over the quantity administered quite difficult. This vaccine is swallowed, and one teaspoonful of the reddish nice-tasting solution is enough to produce immunity in man.

The tissue vaccine can also be used for the treatment of influenza. It causes the organism to produce interferon, a protein which represses multiplication of the virus. This probably accounts for the vaccine's effect of preventing complications, first and foremost the development of pneumonias, which become a grave danger during influenza epidemics and take a toll of many hundreds of human lives.

("Soviet Union" 6/73.)

animal of a supernatural type. Subsequent to 1565, when the Vijayanagar empire abruptly came to an end, the Nayak rulers of Madurai have contributed to the construction and maintenance of temples in Thanjavur district. The excellent expressions of their architecture is in the temple at Thiruvavur. At this period, ornamentation reached its climax, the vimanas, the gopuram and the pillars were all richly decorated; the architect has been able to maintain a theme of integrated aesthetic imagination.

Of the 1,809 temples in Thanjavur district, 1,650 are administered by the Hindu Religious and Charitable Endowments Board of Tamil Nadu, 21 temples by the Dharmapura Adheenam (Mutt), 16 temples by the Thiruvadhuthurai Adheenam (Mutt), and the rest 122 fall outside the administration of the Hindu Religious and Charitable Endowments Board.

These ancient temples are still alive and green exposing the intricate architectural and sculptural art works of the ancient artists carved in stone, bronze and plaster.

There are a number of Hindu Religious Institutions specially intended to promote the ideals and culture of Hinduism in Tamil Nadu, many of them are time old and ancient, rendering valuable service in their respective fields. Hinduism, a most tolerant religion, covers both Saivite and Vaishnavite philosophy. There had been reputed devotees as the 63 Nayanmars and the number of Saints including the Nalvar—Appar, Sundarar, Sambandar and Manickavasagar propagating Saivism through their literary works; similarly there had been reputed devotees as Alvars and Desikar propagating Vaishnavam through their literary talents. There had been numerous Sankarachariars and Madathipathis who had been constantly keeping the religion alive in the past. These religious institutions still continue their noble services for the religion.

History and Archaeology play a very vital role in generating tourist traffic all over the world. Tamil Nadu is specially fortunate in having its ancient and rich heritage and a variety of dedicated living traditions and cultures spread over its jurisdiction. Finest monuments such as Historical Forts, structures

depicting Architecture of different ages, ancient temples (of Chola, Vijayanagar, Pandiya and Naick and Pallava periods) and birth places of famous saints, poets, and patriots adorn the rich and famous heritage of Tamil Nadu. Stone inscriptions still alive in most of the ancient temples of the State are narrative of the various activities of the famous rulers including their numerous gifts and donations both in cash and kind. The ancient Architecture of the then rulers is unique in itself its grand style and picturesque Gopurams in temples. It is observed that more foreign tourists visit India attracted by its historic and architectural value. South Indian rulers had been maintaining calm and peace in the past, in contrast rulers of other parts of the country, which enabled them to concentrate upon temple architecture in their own exclusive style which even to-day is admired by visitors.

The main authorities involved in planning in and around areas of historical and architectural value in India are:

(a) The Archaeological Survey of India and their counterparts in the various States;

(b) The Central Development of Tourism, Indian Tourism Development Corporation and their respective counterparts in the various States;

(c) The departments entrusted with physical planning with various States. (Directorate of Town Planning in the various States).

The Archaeological Survey of India was established during British period in India through the pioneering efforts of Lord Curzon at the beginning of the century and since then the department has been active in identifying our ancient monumental heritage. It is almost exclusively a maintenance department functioning at present under "The Ancient Monuments and Archaeological Sites and Remains Act of 1958" and rules thereof. This Act superseded the "Ancient and Historic Monuments and Archaeological Sites and Remains (Declaration of National Importance) Act, 1951 and section 126 of the States Reorganisation Act, 1956—(which section relates to Ancient Monuments)". The current Act applies

only to existing buildings and sites of at least a hundred years old; it is an effective piece of legislation widely empowering the Director General of Archaeology to declare monuments and/or areas to be protected as being of archaeological importance to enter upon any land, believed to contain ruins or relics; to acquire such land and to remove unauthorised structures from them and impose penalties. Under this Act, the "Ancient Monuments and Archaeological Sites and Remains Rules, 1959" was passed empowering the Directors General to declare (i) to the extent desirable "prohibited areas" around protected monuments where in no construction and mining operations are permitted and (ii) "regulated areas" in addition to and around the prohibited areas, wherein development is permitted only under licence. Most States (including Tamil Nadu) have set up their own Archaeological department with legislation on similar lines to the All India Act. The Department's maintenance and policing of monuments of primary importance and areas around them are satisfactory but they are not adequately equipped to prevent vandalism in the smaller and scattered monuments. The hundred years minimum age prescribed in case of monument in the Act fully covers the great Hindu, Buddhist and Indo-Islamic periods but it excludes a majority of the post mutiny buildings and sites. Even though this may be in order from Archaeologist's prime concern of ancient monuments, for a physical planner, all buildings and sites of historic and architectural importance, irrespective of their age, are significant. A need is felt for effective legislation in the country and States to protect and enhance, where required the value of the surroundings through suitable civic design of all buildings and sites of architectural and historical importance.

The Tamil Nadu Tourist Development Corporation has recently been constituted in 1971 with a view to set up and concentrate on Tourism Development at State level. In cultural-historical tourism, these departments of Tourism have no statutory role; the Archaeologists are responsible for excavation and conservation; the Physical Planner is well-equipped for preparing statutory Tourist Development Plans as part of comprehensive Development Plan Programmes.

## A Note

# ON THE MUSICAL INSTRUMENTS—

## PANCHA MUKHA VADYAM

This is a large instrument and has a big spherical resonator made of panhalokha, brass or copper. There are five projecting tubes on the top, four from four sides and one from the centre which is a bit larger in diameter than the other four tubes and has a circular ring of skin. Four pieces of goat skin are stretched over the four faces on the sides and for the centre face there is an outer ring of skin in addition to that of the playing face as in the case of Mridangam. Delightful rhythmic patterns can be played upon this instrument. Acoustically also, this instrument is of interest.

### Heaviest Instrument of the Drum Class

This instrument is mainly played during temple rituals in Tiruvavur and Tiruthurai in Thanjavur District. In the Sarva Vadyam rituals this instrument is played. This is the heaviest instrument of the drum class.

In the temple at Tiruppur in Thanjavur district is a rare metallic image of Nataraja with a figure in the pedestal as playing on the Panchamukha Vadyam. In Udaiyarpalayam also there is a similar bronze image of Nataraja. In the temples of Chidambaram and Thiruthurai can be seen sculptured figure with eight hands

playing on the Panchamukha Vadyam.

### MAHARA YAZH

This is also an ancient instrument somewhat like a harp. In Europe, Egypt and other countries, it is called harp. In the Bible it is mentioned as lyre. In the temples of India one can see sculptures with various kinds of musical instruments. In Thirumayam, Amaravathi, Sanchi and Goli, for instance there are sculptures with different kinds of Yazh. In Thirumayam (8th Century) there is a rare sculpture of Saint Barada playing on Mahara Yazh.

### Ancient Panar's Musical Instrument

In ancient days, tribals and mendicants called Panars used to play Yazh. The instrument is also a favourite of the Kings and their families. Emperor Samutra Gupta is depicted in his Gold Coins as playing Yazh. One of the Saivait Saints, Thirunelakanta Nayanar is a Master of Yazh. In his Thirupalliyechuchi, Manickavachagar refers (verse 4) to the use of Yazh and Veena which shows that these two instruments were in vogue in those days. But when raga, alapana emerged as an important branch of classical music, Veena came into prominence throwing the Yazh into the background.

## AIR INDIA'S PRICELESS TREASURES OF ART

Air India today is one of the greatest art collectors in the world and enjoys the unique distinction of possessing the priceless treasure of India's rich and varied cultural heritage.

The primary objective was to create an esoteric national image—an image of an all Indian airline. Making a modest beginning 20 years ago, Air India scoured the country to find traditional masterpieces which, notwithstanding the fading of empires, have remained a voice from the past. It searched art galleries and art studios and bought the works of the old and the new artists.

Today Air India's collection is fabulous, and it ranges from old stones and bronzes to delicately chiselled wooden panels, from fine miniatures to folksy wooden figures, of the distant past belonging to South India, Madhya Pradesh, old Central Provinces, Rajasthan and Gujarat, from the relics of the past to the expressive art of today. Each piece is a page from mythology. And Air India is using this priceless treasure of art to provide international exposure of India's inexhaustible wealth of cultural past and contemporary rhythms. Several selected pieces also adorn Air India's hundred offices around the world, telling its patrons the charm and joy that India is, its religious beliefs and mythological stories, expressed exquisitely on canvas and in oil, in wood, in stone and in metals.

The office entrance of Air India's Pairs office is composed of wooden panels engraved with a thousand figures. The panels depict Gajalakshmi, the goddess of wealth, elephant guardians and host of attendants; Ram, Sita and Lakshman in exile from the kingdom of Ayodhya; Lakshmi and Narayan, the celestial pair, astride their vehicle—the Garduda; Lord Krishna as slayer of the demon snake Kali, and as Venugopal—the capricious flute player philandering with the gopis.



# Recommendation of the National Commission on Agri- culture

Four interim reports submitted to Thiru Fakhruddin Ali Ahmed, Union Minister of Agriculture, by Thiru Nathu Ram Mirdha, Chairman, National Commission on Agriculture, deal with :-

(1) Reorientation of Programmes of Small Farmers and Marginal Farmers and Agricultural Labourers Development Agencies ;

(2) Poultry, Sheep and Pig Production through Small and Marginal Farmers and Agricultural Labourers for supplementing their income ;

(3) Sericulture ; and

(4) Social Forestry.

In its Interim Report on Reorientation of Programmes of Small Farmers and Marginal Farmers and Agricultural Labourers Development Agencies, the Commission has recommended that the distinction between S.F.D.A. and M.F.A.L. projects should be given up and in future each Agency should have a compact area approach to cover the small farmers, marginal farmers and agricultural labourers in its area of operation.

The basic approach to the programme of small and marginal farmers should be to improve their crop production. Assistance would have to be directed towards development and utilisation of irrigation facilities, introduction of water harvesting techniques, land development and adoption of improved technology of farming, both in irrigated and rainfed areas. In order to ensure a more equitable distribution of limited groundwater, considerable emphasis has been placed on group-owned well system and community irrigation, wherever possible, for the benefit of small and marginal farmers. Through consolidation, the scattered holdings of small and marginal farmers are to be brought together to form compact blocks to enable preferential irrigation by the State Governments.

The Commission has suggested that State programmes of irrigation development should be undertaken in areas where surface water schemes or large-scale groundwater schemes are possible, so as to benefit substantially the small and marginal farmers. States would also be expected to take up on their

own, programmes of water harvesting, soil conservation, etc., in the rainfed areas on a substantial scale. In order that farmers can take to improved farming practices and necessary technical guidance is available to them, the strengthening by State Governments of their extension network in the selected areas has been proposed. The Report has suggested the formation of as many Farmers' Service Societies as possible to make a beginning towards the development of an integrated credit structure.

## Extension of programmes

The Commission has recommended the extension of the programme to 160 Agencies including the existing Agencies and indicated the distribution of additional Agencies among the States. Each Agency on an average is supposed to cover 70,000 small and marginal farmers preferably in the ratio of 1:3 to conform to the all-India pattern and to ensure that the programme would have the necessary tilt in favour of marginal farmers who are more numerous. As a result of the extension of the programme, about 11 million small and marginal farmers are likely to be covered during the Fifth Plan. In addition, the investment programme and the much more intensive crop production programme, both under irrigated and dry farming conditions would give increased labour opportunities to agricultural labourers. Since crop production alone may not yield incomes sufficient to raise many small and marginal farmers above the minimum need level, the Commission has suggested the superimposition of subsidiary occupation programmes to be undertaken and financed separately on a substantial scale in such of the Agency areas which have been included in the list of districts identified for individual subsidiary occupations in its Interim Reports on Milk Production, Poultry, Sheep and Pig Production and on Sericulture. It has been recommended that the entire programme should be time-bound and target-oriented and implemented with a sense of urgency.

The Commission has estimated that a sum of Rs. 241 crores would be required in the Central Sector of the Fifth Plan for this programme. It has recommended that in future, the State Government should bear the cost of staff subsidy to institutions and the cost of staff of the Agency,

Societies and additional extension staff of the State Governments in the project area costing in all Rs. 40 crores over the Fifth Plan period. The Commission has recommended the continuance of the subsidy of 25 per cent of the cost of investment to small farmers and 33-1/3 per cent to marginal farmers ; at the same time, it has suggested certain modifications in the pattern of risk fund subsidies being given under S.F.D.A./S.F.D.A. schemes.

## Poultry Sheep and Pig Production

The Report on Poultry, Sheep and Pig Production through Small and Marginal Farmers and Agricultural Labourers deals with the need and scope for augmenting the production of eggs and poultry, mutton and wool, and pork and pork products by harnessing and developing the facilities available with the small and marginal farmers and agricultural labourers. It has been observed that livestock rearing has remained mainly as a bye-product industry of the rural areas in the country and it is practised as a mixed farming complement along with crop production.

Most of the people engaged in raising poultry, sheep and pigs in the rural areas belong to the category of small and marginal farmers and agricultural labourers. The Commission feels that improvement in the productivity of livestock such as poultry, sheep and pigs and their raising through weaker section of the population can be relied upon as a major instrument for effecting social change by improving the income of these people. Such a development would also offer great potentiality for providing employment to the producers and their family members and also to a number of village artisans. Increased production of animal products such as eggs, poultry, meat, mutton and pork in the rural areas would also lead to increased home consumption of these products by the producers, thus ensuring better nutrition to these people. It has been recommended that these development programmes should be formulated on a package basis providing for all inputs such as better breeding and feeding, proper management, disease control, credit and services such as extension, remunerative marketing and other facilities.

mended that while formulating the size of the poultry programme in each district not only due consideration should be given to marketing facilities but it should also be ensured that as large a number of families as possible would be benefited. Each selected family should be assisted to start a poultry unit of 50 layers and that in each district at least 3,000 families of small and marginal farmers and agricultural labourers should be identified and enrolled under the programme which should be taken up in 167 districts covering about 5 lakh families.

Programmes have been suggested for sheep development for improving the quality and productivity of sheep in regard to wool and mutton production by the small and marginal farmers and agricultural labourers. This is proposed to be obtained by gradual replacement of indigenous types of sheep with these people by crossbred progenies having exotic inheritance produced by the farmers themselves and/or to a limited extent by supply of crossbred ewes and rams from other sources.

One hundred and forty districts have been recommended to be taken up for the sheep development programme, at least 3,000 families being assisted in each district. This would help over 4 lakh families.

The Commission has drawn attention to the fact that pig keeping is mainly in the hands of the backward communities and with tribals and that such pig breeders deserve special assistance for improving their pig rearing practices. It has recommended that the main plank for improving the economy of pig producers should be the replacement of indigenous pigs by crossbred pigs, produced mainly by the breeders themselves. It has been proposed that about 2,000 families of pig farmers should be assisted in each district and that pig production programmes should be undertaken in about 100 districts which will help about 2 lakh families to improve their economic status.

For the production and supply of crossbred poultry, sheep and pigs to participant farmers and agricultural labourers, the Commission has emphasised that intensive crossbreeding schemes should be implemented in selected areas where such work as already been found popular

ted that the farmers selected for these poultry, sheep and pig development programmes should be extended subsidy to meet the costs of capital expenditure such as purchase of stock, rearing up to production stage, housing, equipments, etc. A total subsidy of Rs. 71.40 crores has been indicated during the Fifth Plan period.

The Commission has laid special emphasis on organising these programmes on co-operative basis mainly consisting of producers belonging to small and marginal farmers and agricultural labourers. In view of their backwardness and low economic status, it has been recommended that Government and the credit agencies should liberalise the terms of financial assistance in the form of loans.

## Sericulture

The Interim Report on Sericulture deals with development of mulberry silk which accounts for about 79 per cent of the total silk production in the country and is concentrated in Mysore, West Bengal, Jammu and Kashmir and Uttar Pradesh. The Commission has suggested a plan of action and identified certain districts for the development of sericulture in these major silk producing States as a first step towards modernising the sericulture industry, particularly keeping in view its beneficial impact on the economy of small and marginal farmers.

The Commission has recommended that instead of relying on the development of sericulture based on local races, a phased programme should be taken up for the introduction of bivoltine hybrids in the irrigated mulberry areas of Mysore, particularly Kolar and Chennapatna, where the method of rearing bivoltine hybrids developed by the Central Sericultural Research and Training Institute could be followed.

## Social Forestry

The Interim Report on Social Forestry deals with farm forestry, extension forestry, reforestation in the graded forests and recreation forestry and has suggested an action programme during the Fifth Plan. The programme is designed to bring social benefits to the population

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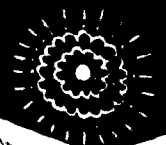
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of fuelwood (thereby releasing cow-dung for manure), small timber and fodder as well as of recreational facilities.

The Commission has recommended extensive plantation on the bunds and boundaries of the fields of the farmers for which the forest extension units would develop the nurseries for the supply of seedling. A pilot scheme for development of farm forestry has been recommended to be taken up in the Central Sector in 100 selected districts—60 districts in areas with advanced agriculture where fuelwood and timber are scarce and 40 in dry and arid zones.

Mixed forestry has been proposed to be taken up on waste lands, panchayat lands and village commons in drought prone areas for which a survey of waste lands and village panchayat lands has been proposed for preparing land-use plans based on a village or a group of village as a unit. Development of fodder and grass is to be an important component of mixed forestry so as to increase their supply and benefit the weaker sections of the population who may be encouraged to take up animal husbandry programmes. Emphasis has, therefore, been placed on the organised production and distribution of seed involving local farmers. The Commission has proposed that an area of one lakh hectares should be covered through pilot projects of mixed forestry in the Central sector.

With a view to preventing damage to agricultural crops, agricultural lands, roads, etc., through wind erosion, the Commission has suggested the establishment of shelter belts in hot and arid areas. The programme is to cover one lakh hectares distributed among the States of Haryana, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Mysore and Maharashtra with 50 per cent central assistance. In addition, the commission has recommended planting of trees on lands on the sides of roads, canal banks and railway lines as a commercial investment with an annual target of not less than 8,000 k.m. of planting. Moreover, three lakh hectares have been proposed to be covered by reforestation programmes in degraded forests with a view to increasing the

timber and preventing unauthorised removal from and easing the pressure on valuable commercial forests. To supply fuelwood and small timber for agricultural implements at fair rates, State subsidy has been proposed for the first 15 to 20 years.

#### Urban Recreational need:

The Commission has advised that the State Government should make a study of the problem of recreational needs of the urban areas and dedicate some forests or establish tree groves near such areas for recreational purposes. Moreover, green belts, around towns and cities, wherever necessary, should also be created.

The Commission has laid considerable emphasis on appropriate training in extension methodology and technology for officers selected for implementing the programme.

to include in their syllabi a course in social forestry for the agricultural graduates. A large number of field demonstrations with the participation of panchayats, co-operatives and village school staff have been suggested for popularising social forestry. Field assistants are proposed to be recruited from the local people in the programme areas to secure involvement of villagers. The Commission also recommends that all social forestry programmes should be executed by engaging local labour and not through contract system.

For implementing the programmes during the Fifth Plan, a total expenditure of Rs. 80 crores is visualised including the cost of extension organisation, research and survey. The share of the Central Government has been estimated at Rs. 34.50 crores.

## EMPLOYMENT TO 10,200 TRAINED TEACHERS SANCTIONED

The Government of Tamil Nadu have accorded sanction for creation of 10,200 teacher posts to provide employment to the unemployed trained teachers. The Government sanction the employment of these teachers in recognised schools under the various managements in Tamil Nadu from September this year till the end of the academic year 1973-74 (31st May 1974). They will draw the pay of the posts and the usual allowances admissible to the State Government employees.

Among the posts to be created under the scheme during 1973-74 are 500 posts of Higher Grade teachers, 6,000 posts of Secondary Grade teachers, 500 posts of Physical Education teachers, 1,200 posts B.T. teachers and 2,000 posts of Craft teachers. It is estimated that an expenditure of Rs. 150 lakhs would be incurred in Tamil Nadu during 1973-74 under this scheme.

It is said that about 1,800 Apprentice Teachers appointed under State Government's Apprentice Teacher Scheme in October, 1970, are yet to be absorbed in regular vacancies. Out of the newly sanctioned posts of 10,200 as many as 1,800 posts shall be earmarked for allotment to the schools in which those apprentice teachers are working.

The object is that a post of the appropriate Grade under this scheme is allotted to benefit each and every apprentice teacher now working, so that he or she can be allowed pay in regular pay scale as also allowances with effect from the date of the Government order issued in this respect. The Director of School Education will distribute the remaining posts among schools under the managements of the Government (Government, Board, Local Body and Aided). These posts may also be allotted to the schools run by the Directorates of Harijan Welfare and Backward Classes.

The Chief Education Officer will distribute the posts in each district and the additional posts for each school will be allowed on the basis of Teacher-Pupil ratio in eligible cases. No fresh appointment of any out-sider as teacher in any regular post should be made in any school in which the teacher appointed under this scheme remains to be absorbed in regular post and the teachers appointed under this scheme are likely to be appointed in regular vacancies during the academic year 1974-75.

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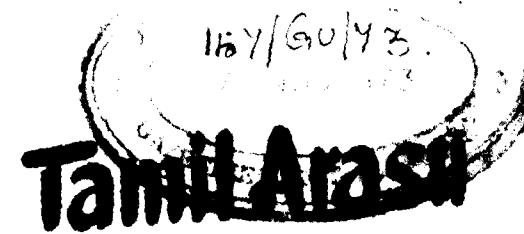
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Nehru will be remembered with Children's rally and Child Art Competitions throughout Tamil Nadu on 14-11-73.

Gandhi Jayanthi Celebration at Raj Bhavan this year created massive response. Thiru Y. B. Chavan, India's Finance Minister, Chief Minister Karunanidhi and Governor K. K. Shah and many other national leaders made the occasion memorable.



# FIFTH PLAN CALLS FOR DRASTIC REVISION IN ADMINISTRATIVE MODES

The inaugural address of Dr. M. Karunanidhi, Chief Minister, at the Seminar on Plan implementation held at Rajaji Hall on 26th and 27th October, 1973.

As you are all aware, the primary concern of my Government is the welfare of the common-man who has remained poor, despite all the Plans made and implemented so far. I consider the distributive mechanism which will raise the common-man above the poverty line more important than planning. The "poverty line", as defined in India, is perhaps the lowest in the world. In the United States of America and Western Europe, people with annual income lower than 7,000 dollars and 3,000 dollars are classified as poor. But in India, those who do not even get an annual income of Rs. 240, is classified as poor. More than 55 per cent of the population of this State is well below the poverty line.

Planning is a means to a goal—securing greater welfare of the people. The implementation is equally important. It is because of our awareness of the importance of implementation that we set up the Administrative Reforms Commission, at the same time as the Planning Commission. Massive Plans do very little, unless we can make them real through implementation.

It would be useful if we think for a moment under what conditions we want to formulate Plans and implement them. We suffer from a serious limitation of natural resources. Even in respect of water, we have reached the limits of exploitation. Our high density of population neutralises all our attempts to raise the per-capita income. At the same time, our administration is a prisoner of its own history. Many vested interests have grown up around the present complex of

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rules and procedures. A small change in some procedure is sometimes resisted, simply because some people may lose their jobs and their position. One main difficulty is that the system of administration which is to be changed, has itself to implement the change. Revenue sharing between the Centre and the State has so far been unhappy and has been indirectly the instrument for curbing the initiative of the State administration. These limitations make any change difficult and slow. I am, however, confident that our Administrative Reforms Commission is fully aware of this problem and it will take into account this "built-in" resistance. As you are all aware, our procedures and rules are designed for slow and careful decisions, that are carried over from a law and order State where decisions can be slow, to a developmental State where the activities have to be very brisk and the progress should be much speedy. To-day the people press for a change—change to have a better education, health and housing, industrial facilities, better transportation and communication systems, better standard of life, etc. A static Government with the outmoded outlook cannot bring these changes. A dynamic approach to development presupposes correspondingly a dynamic attitude to administrative structure.

Plan implementation involves a series of decisions—decisions to start projects, decisions to buy materials, to award contracts, etc. We have to see how far our present approach to policies and administration helps such quick decisions. One aspect of our attitude as a nation is, that we are hypercritical. We expect perfection in all decisions. At any given point, an administrative leader has only certain facts before him. He has to take decisions based on this. If we start criticising him in the light of facts which we know or he knows later, we encourage the

habit of postponing decisions with the hope that better information will come later. Thus the better becomes the enemy of the good. This delay of decision-making affects the nation at all levels. Let me cite an instance. For years the Salem Steel Project was delayed as a result of the arguments about the product-mix and processes. If a decision had been taken in 1960-1963, by now, the plant would have been producing.

Our present system suffers yet from another defect—excessive emphasis on fault-finding. An Administrator, who takes many decisions, cannot be expected to take all of them right. I would rather have my officers to take the majority of the decisions right and quickly than all of their decisions right but slow. A General may concentrate on winning all his battles and yet lose the war. I would prefer the officers to give emphasis to the time element in the decision-making process. This in turn demands that our procedures of audit and evaluation should emphasise this aspect. Audit should shift its emphasis from pursuit of minute "trivia" and move over to overall performances. Here we should emphasise the need for encouraging bold decisions.

Our administration suffers from too many checks and balances. This is a relic of the old colonial era. Even little things have to come up to State Government's notice because they have to go up to the Centre. Multiple clearances are needed for even simple decisions. In a country as large as India, and an economy as complex as ours, this is bound to delay decisions. It is in this context that our request for State autonomy should be viewed. The demand for State autonomy is for enabling the State to perform the legitimate task of eradicating poverty, the platform on which we have been voted to power by the people of the State. I have made a clear stand on this issue elsewhere. I do not propose to dwell further on this, except to say that the greater powers for the State are the pre-conditions for effective and efficient implementation of the Plan.

The autonomous bodies in the Government companies, set up by this Government have to shed their Governmental method of working and adopt styles of management appropriate to their lines of activity to achieve the objects set up for them.

Hence, I would like to touch on the present controversy about the technocrats and general administrators. To my mind, it appears that both these wings are complementary

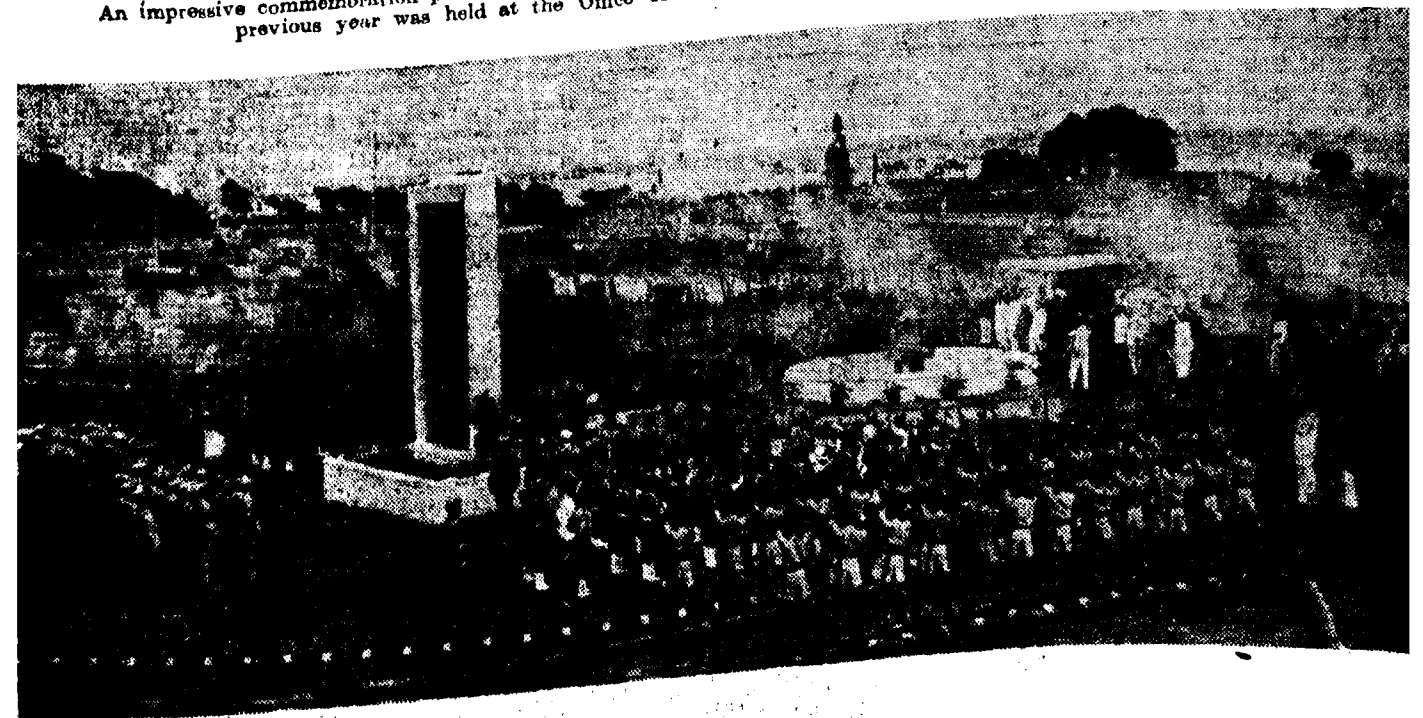
like the convex and concave of one and the same circle. You must train the general administrator also 'in-technical competence and the technocrat should also be conversant with general administration. Thus training is a vital input to gear up administration at all levels.

I have been impressed by the varieties of suggestions put forward by the participants in their papers in this Seminar. I am sure that this Seminar would consider these in depth and make its recommendations to Government. One suggestion, I would like to put forward is that a flexible approach be adopted in the implementation of rural development at district level. We are considering a suggestion for the setting up of District Rural Development Corporations or Authorities in each district. This may be strictly official in composition and be under the Collector. They may also enable the raising of resources in the form of rural deposits and local contributions. If need be, we can also assign specific taxes to these bodies. The Seminar may usefully discuss these suggestions also.

I welcome a Seminar of this kind and a free and meaningful exchange of ideas among the Civil servants, Planning experts and Social Scientists as it is bound to clarify our thinking and generate new ideas on this subject.

## Homage to Policemen killed in action.

An impressive commemoration parade to pay homage to the memory of the Police personnel who fell in action during the previous year was held at the Office of the Inspector-General of Police on 21st October 1973.



# RE-ORIENTATION IN EDUCATION

In the field of education, first we attempted to increase its quantity by making it more than before, then we attempted to improve its quality by making it better than before; now we are engaged in giving it a new orientation by making it newer than before.

During the past several years. Political leaders, Educational Experts and the Special Commissions have declared that our system of education needs a revolutionary change. Their charge is, that in the basic policies and aims no fundamental changes have been effected in the system as formulated by Lord Macaulay in 1835 and modified by the Wood Commission in 1854 and Carter Commission in 1882. Even Swami Vivekananda had severely condemned our system of education. He says, "Getting by heart the thoughts of others, in a foreign language and stuffing your brain with them and taking some University degree are not real education." He further observes that "we have only to do so much for the boys that they may learn to apply their own intellect to proper use of their hands, legs, ears, and eyes."

## The aim of education

Once it was thought that the aim of education was only to acquire the knowledge of the three R-s, namely, reading, writing and arithmetic. Now it has been realised that the correct aim is the development of our capacity to put to proper use the three H-s, namely, the hand, head and

heart. The process of education should be such as to arouse and develop the thinking capacity that lies dormant in every one of use. It should improve our talents. It should discipline our mind. Education kindles and develops the inherent ability of man to think. This, in turn, increases his ability to act. As a result, man is able to convert the natural resources to his benefit and acquire the needs of a comfortable life.

Extracts from the Convocation address at Madurai University by  
**Dr. V. R. Nedunchezian**  
Education Minister.

## Defects in the present-day education

The Present education to-day produces persons with factual knowledge but not with capacity to think. It teaches the details of the past but does not give directions about the future. It makes the student a mere store-house of information but with no capacity to digest them and to get benefit out of them. It trains his power of memory but not his power of understanding. In course of time, the quantity of factual information committed to memory is reduced to one tenth of what was learnt. On the contrary, education should enable a man to increase his capacity ten-fold by using what he has learnt as a student.

## Education of practical value

In recent times, there have been great changes in the politics, evaluations and methods of the social economic and political fields. These changes throw out several challenges; but the present-day education does not help us to meet these challenges. Education should provide us with the necessary means to satisfy our individual and general needs in the social, economic and political fields. What is important is not how much one has learnt, but how he utilises what he has learnt. What is the benefit derived by him and his country from his education? This is the burning question of today in the modern world.

## Raising the standard of Education

Raising the standard of education is a subject commonly discussed and debated. The teacher plays the key-role in any system of education. To raise the standard of education, we should have teachers of high standard. At present there are no definite guide lines in the appointments of fully equipped and trained teachers. There are rules that so far as schools are concerned the graduate teachers should undergo one year training. Perhaps it would be better if similar provision is made for the teachers in the Colleges also. The Universities may examine this and make their recommendation to the Government. The admission to the Teachers' Training Course should be based on the attitude and the suitability of the candidates.

The Chief Minister handing over to the Vice Chancellor of Madras University a cheque for Rs. Ten thousand presented by the students wing of D.M.K. to institute Anna Memorial Lectures in Madras University.

Thiru K. R. Shah, Governor. Presenting a shield to the Chief Minister for having written Drama Dialogue for 'Manohara' at a function held at Centenary Hall on 12-10-78.

After constructing 50,000 tenements and allotting them to 50,000 families comprising 1.5 lakhs erst-while slum dwellers, at a total cost of Rs. 9 crores the Tamil Nadu Slum Clearance Board is now educating these hapless families on how to live in these flats. This imaginative venture has attracted the attention of World Bank experts who want to give this as a model for slum re-housing in other parts of the World.

What is being done in Tamil Nadu under the Slum Clearance Programme does not end with merely the eradication of slums and multi-storeyed flats coming up in their places. The residents are taught to avail the sophisticated modes of living which are built into these flats. In addition, the housewife who moves into the flats is encouraged to go in for labour saving kitchen appliances and utensils.

On top of all these, arises the question whether by sheer negligence the multi-storeyed flats will once again revert to mere slums in concrete.

The Tamil Nadu Slum Clearance Board has demonstrated by word and deed that it is very well aware of these dangers and is also aware of the sociological problems of slum clearance. After rehabilitation of slum dwellers in the modern tenements, the Tamil Nadu Slum Clearance Board was posed with these problems; how to prevent insecurities, frustration and anxieties; how to improve standards of living and contend life. Anticipating the possible problems, the Tamil Nadu Slum Clearance Board decided to set up a Trust to deal with the problems.

Sponsored jointly by the Madras Christian Council of Social Service, the Tamil Nadu Slum Clearance Board and the '77' Society, the New Residents Welfare Trust, Madras was formed on December 30th, 1971. The object of the Trust is to provide expert social service and advice to families newly housed in the Tamil Nadu Slum Clearance Board Housing Projects.

## VISIT OF WORLD BANK TEAM TO SLUM PROJECT

Mr. Kenneth A. Bohr and Mr. Headfort from International Bank for Reconstruction and Development at a Day Care Centre.

## THE MANAGING TRUSTEES OF THE TRUST.

|                |                                                                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chairman       | .. Rt. Rev. L. Newbiggin, Bishop in Madras.                                                                                                                                                                        |
| Vice-Chairman. | .. Thiru Rama Aranganal, M.L.A., Chairman, Slum Clearance Board.                                                                                                                                                   |
| Secretary      | .. Mr. N.I. Khan.                                                                                                                                                                                                  |
| Treasurer      | .. Mrs. D.L. Gopal Ratnam.                                                                                                                                                                                         |
| Trustees       | .. Dr. M. Aantaramman.<br>Mr. K.G. Veeraghavan.<br>Rev. M. Azariah.<br>Mr. K.R. Ramaswamy, Chief Engineer, Slum Clearance Board.<br>Mr. N. Sivanesan, Secretary, Slum Clearance Board.<br>Mr. D. Soundara Pandian. |

# WORLD BANK LOOKS INTO TAMIL NADU SLUM REHABILITATION PROJECT





## NOW THEY'RE TAUGHT WAYS OF BETTER LIFE

In order to finance the trust during the year 1972, a grant of Rs. 60,430 was given to the Trust by Christian Aid, London.

For the years 1973 and 1974, a similar grant of Rs. 2,16,000 was given by the Evangelical Central Agency, Germany.

Beginning with three projects on February 15th, 1972, the work of the Trust has now been extended to 13 Tamil Nadu Slum Clearance Board Housing Projects. One Resident Welfare Officer is appointed to each newly built estate. The Trust now employs one Executive Officer and 14 Residents' Welfare Officers. (R.W. Os.) All the R.W.Os. are M.A. in Social Science.

### Immunisation.

The Residents Welfare Officers arrange small pox vaccination, cholera and typhoid inoculations with the help of the Corporation of Madras and motivate the people of the area and educate people to avail this facility. In women's groups, advice is given regarding family planning and they are referred to suitable centres. With the help of German Leprosy Relief Association, leprosy diagnosis and treatment is done at Nochinagar and Thandavaraya Pillai Chatram.

### Nutrition.

A survey is done of under-nourished babies and the Residents Welfare Officers advise the mothers about nutrition. It is also attempted to ensure that the Government's Bread and Milk distribution scheme is properly used by the mothers to feed only children below 6.



Women living in Slum Terenents assemble at community centre to carry out piece-work handicraft and earn during leisure time.

Young people of the areas are helped by the Residents Welfare Officers to conduct cleanliness campaigns on Sundays.

### Happier Homes.

Kalyani Hospital and Rainy Hospital are running mini-health centres at Nochinagar and Cemetery Road (West) respectively and the Residents Welfare Officers help the people to use these facilities.

An Exhibition on Happier Homes was held to educate the mothers in all aspects of health and it is

proposed to hold such Exhibitions in every area. Every day 10 of the residents, who visit these exhibitions, will be given free gifts by drawing lots, to induce all of them to become aware of the requisites of Happier Homes.

(i). Pre-Schools (Day Care Centres) are run by the Department of Social Welfare for children of working mothers or children deprived in some other way. This is run in 23 centres with 60 children in each. The Department of Social Welfare is employing one Balsevika and 2 Ayahs in each Centre and providing a nutritious mid-day meal

per day. The Residents Welfare Officers maintain cards per child regarding social development, medical aspects, etc. He extends all his assistance to the Department. Toys have been collected from many donors.

(ii) Night Schools are held for children to watch their progress in schools and help them to do their home work.

(iii) Adult education, literacy classes are being held for adult women.

The women are taught skills to utilise their spare time profitably. Tailoring machines are provided from contributions received from Voluntary Agencies. In certain areas tailoring machines are provided with the assistance of SIDCO. Training is given free. After training, they are helped to find employment. For instance, Radha Silk Emporium have recently taken 11 women. In the community halls women, who have acquired skills, are encouraged to assemble and produce handicraft items which are collected and sold at home and abroad. Thus many residents are able to supplement their earnings.

12 women have been trained in leather batik. We have orders from Sweden, Denmark and United Kingdom. There is a move to register this as an industrial co-operative through the Department of Industries and Commerce. 50 women are being trained in Patch work and there are orders for this from Radha Silk Emporium and New Delhi.

The Resident Welfare Officers being post graduates in the Social Service have developed a cadre of local leadership in the young to initiate much needed social changes in each area. The change commences with individuals in the use of sanitary fittings and kitchen-ware and extends to influencing them towards happier home theories. In the ultimate, social cohesion and community life is built around these happier houses in all Slum Rehousing Projects. So why will not World Bank be interested in what Tamil Nadu Slum Clearance Board is doing in Madras City ?



Medical Check up in slum areas and (Top) a view of Happier Home Exhibition which evinced the attention of Chief Minister.

## THE GASTROENTEROLOGY CONFERENCE

The three-day 14th Annual Conference of the Indian Society of Gastroenterologists was inaugurated at Tamizhagam, Ootacamund, on 14th September 1973 by Hon'ble Minister for Public Health and Family Planning, Thiru K. Anbazhagan. The Minister commended the efforts of the members who had worked hard to present the results of their various pieces of research work, epidemiological and other surveys. He was particularly happy to note that arrangements had been made for a Post-Graduate teaching session following the Conference. The Minister made a strong plea to the scientists to concentrate on developing indigenous drugs, using especially the various herbs and plants of medicinal value found ubiquitously throughout India.

Dr. H. K. Chuttani, in his presidential address, gave a masterly account of the epidemiological, clinical, actio-pathological and therapeutic approach to the problem of intestinal tuberculosis in India. Referring to his own surveys, he drew attention to the fact that though tuberculosis is a very common disease in India accounting for nearly five million cases a year, little work has been done in regard to epidemiological and other surveys of the incidence of intestinal tuberculosis. Observing that even less work has been done in regard to publication of observed facts, he asked clinicians to be aware of the variety of problems presented by intestinal tuberculosis, both as regards diagnosis as well as treatment.

The scientific sessions commenced at 9 a.m. on 15th September with a high powered oration by Prof. S. J. Baker who was presented with this year's Warner Award for excellence associated with the most meaningful contribution to Gastroenterology. An Australian by birth but Indian by choice, Dr. Baker, who is more Indian than an Indian both in dress and manners, elaborately presented details of work based on personal observation made on experimental work carried out in his laboratories at the Christian Medical College, Vellore. His work included epidemiological, clinical, histopathological, biochemical and ultrastructural features which captivated the audience.

This was followed by presentation of 84 papers in the preparation of which nearly 200 men and women medical workers had been involved. The papers were spread out over five different sessions each day, held in two different halls simultaneously. Each 10 minute presentation was followed by a discussion during which many scintiling questions and answers were exchanged. In addition, a number of interesting tidbits were also available. The papers related to varied disease conditions of the intestines-small and large bowel, stomach, oesophagus and liver. The honoured Guest lecturer this year

DR. R. SARASA BHARATI,  
Neuropathologist,  
General Hospital.

was Dr. Michael Gracy from Australia who drew attention to the effects of bacterial population on the intestinal mucosa in the aborigines in Australia. An exceedingly interesting symposium especially of current interest and value to a country with a large majority of under-nourished population, was the one on "Nutritional deficiency and the Gastrointestinal tract", which was held on the 16th. This was greatly appreciated by the members.

### The Small Intestine

Nearly all aspects of the various diseases of the small intestine were largely discussed as evidenced by the presentation of 38 papers devoted to these subjects. While actio-pathology was discussed by some, the various diagnostic aids in the forms of fiberoptic-endoscopy, fiberoptic-oesophago-gastroscopy, fiberoptic-ductenoscopes, etc., were also discussed. Nearly 30 papers were presented on various aspects of diseases of the liver and here again newer observation, especially histopathological and biochemical were brought forward to the attention of the members.

The day concluded with a review of surgery for peptic ulcer by J. S. Shah.

### Witty Answers

More scientific papers were gone through on the 17th and each

presentation was followed by many thought provoking questions and witty answers and the Chairman of the various sessions such as H. K. Chuttani, P. N. Chuttani, J. S. Shah, B. D. Pomparkar, F. P. Antia, D. V. Dutta, N. Rangabashyam, B. N. Tandon, A. K. Segha, B. J. Vakil, S. G. P. Moses, N. Vaidyanathan and E. Arthur De Sa had little difficulty in directing the sessions.

Another feature of this year's conference was the separate meeting of various special groups such as the Liver group, Intestinal groups, etc. These were meant for rather detailed discussions, exchange of views and ideas in a more elaborate and informal manner among a smaller number of participants, highly interested in a narrowed field of their speciality. This was arranged to make the discussions more meaningful than would be possible in a larger conference hall. Nearly 15 papers each were discussed in these groups and the success of these groups was largely the result of the spirit of comradeship which was present throughout.

### The side-lights

The scientific sessions were relieved in the evenings with programmes of variety entertainment arranged by the staff and students of the Coimbatore Medical College. Sumptuous lunches and dinners were provided on all days by various philanthropists acting as hosts to the conferring delegates from all over India. Not to be outdone, the Ootacamund Municipal Council staged a reception for the delegates on the 16th.

The ladies had arranged interesting excursions and useful visits to places such as the Sim's Park, The Needle Industries, boating in the lake, etc., in which some of the 'men' were also found to have come over to join the fun.

An interesting as well as highly informative souvenir released on the occasion was treasured by the delegates especially from upcountry and the Conference ended on notes of high optimism and enthusiasm with a decision to meet again next year, with, if possible, answers to questions and problems raised this year.

Top: The Wellington Staff College for Army Officers is the only one of its kind in Asia Training Cadets of all nations in military strategy. Photo taken when Defence Minister and Chief Minister visited the college last month.

Left: King Birendra of Nepal being garlanded by C. M. in Madras.

Bottom: The Ninth Beggar Rehabilitation Home was inaugurated in Deviakurichi in Salem district on 23rd October 1973 by Defence Minister Thiru Jagjivan Ram, who commended the scheme for other States in India.



# KURUVAI—THE HEARTACHE

Agriculture in India is generally a gamble—a gamble with the forces of nature. This gamble is seen in all its most gruesome form in the Kuruvai rice crop of Thanjavur district of Tamil Nadu.

Down the ages, Kings and Chieftains, engineers and architects, all had done their best to ensure a fair chance to the Thanjavur farmer in his gamble against nature. Lately, it is the plant breeder who did his best for the Kuruvai crop farmer.

What is the problem so peculiar to Kuruvai crop in Thanjavur? Before knowing what the problem is, it must most firmly be told and underlined with the conviction born of experience of centuries that the Kuruvai crop of Thanjavur district makes all the difference between surplus and famine in Tamil Nadu. If this crop is successful, there is a year of plenty and if it fails, it spells famine. And how many chances are there for this crop to fail? —the dice is loaded against the farmer all the way, from the sowing to the reaping stage.

The Kuruvai is a term applied to the rice crop of Cauvery basin in Thanjavur district, sown in July and harvested in October. Sowing depends on good rains in the catchment areas of Cauvery and good storage of water in Mettur dam. Incidentally, the Mettur dam itself, though designed primarily to save Thanjavur from floods, the returns from the Kuruvai crop was a powerful argument in favour of the project. The Thanjavur Kuruvai farmer waits till water is let down from the Mettur dam and even if there is a fortnight's delay, most farmers will not sow because the rains of North-East Monsoon will interfere with harvest, threshing, etc. Thus, though the Kings and chieftains, the engineers and architects had done their best, the farmer is given barely 120 days to sow and reap the Kuruvai rice crop. And the rice crop needs 110 days!

And what is so fearsome about the October rains of North-East Monsoon that strikes terror in the minds of Kuruvai farmer? Flow irrigation is practised with a

## HARVEST

vengeance in Thanjavur district. The river Cauvery is made to flow over the entire delta with the result that every bit of land in Thanjavur delta tract is wet—soaking wet—wet with 140 days of flow through a maze of canals, miles and miles of it running through the delta. The October rains induced by North-East Monsoon drips in a constant downpour accompanied by high winds and a pall of cloud. The wet land starts flooding after the least bit of rain, the rain never stops and the sky is overcast for days together. The Kuruvai farmer could not dry his paddy or thresh it; nor could he transport it for de-husking.

At this stage, the plant breeder gave a helping hand to the Kuruvai farmer by means of adaptive research. First, he gave the high-yielding ADT-27. When it was found that the wet conditions tended to "lodging" near harvest time, he gave a mutant plant which was both non-lodging and high-yielding in "Karuna", a mutant of ADT-27 and IR strain coming to harvest in 108 days, leaving him a margin of a fortnight between letting out of water from Mettur Reservoir and the onset of North-East Monsoon.

The Thanjavur Kuruvai crop now runs into 9 lakhs tonnes grown on 6 lakh acres leaving a marketable surplus of 3 lakh tonnes. A large number of mechanical driers have been installed in the district. If the State has turned the corner in its food resource, it is not a little due to the fact that much of the gamble in Kuruvai harvest has been removed by painstaking skill. Much remains yet to be done. For one thing, there is the Rs. 50 crore scheme for modernising the delta channels of Cauvery river. This scheme has attracted World Bank assistance as it has been commended by many visiting Teams of Experts. The State Government is however proceeding with the work pending flow of World Bank assistance.

Procurement of paddy is effected by Food Corporation of India and

the State Civil Supplies Corporation. The F.C.I. has 100 purchase centres in various parts of the district, apart from 15 mobile purchase units while the State Civil Supplies Corporation has 175 centres and 20 mobile purchasing units in the district. The two organisations will mop up most of the marketable surplus each spending Rs. 12 crores roughly. Due to the abolition of levy system, private agencies are also eager to make purchases though the magnitude of the purchase by Governmental agencies coupled with the announcement of a higher procurement price of Rs. 70 per quintal left the private agencies very little strangle hold on the Kuruvai Farmer. In fact, the situation this year is one which ensured a fair deal to the farmer by forcing traders to offer fair remuneration for a produce which has come to the market after so much of anxiety. With three agencies, i.e., the F.C.I., the State Civil Supplies Corporation and private trade making purchases, there is little evidence this year of distress sales so common with Kuruvai paddy because of monsoon conditions, hampering with drying operations.

By systematic policy of rice procurement, the Government of Tamil Nadu has built up a stock of foodgrains, i.e., rice as well as coarse grains and millets which enables the State to flood the market at any time when food prices are seen to be on the increase. This year the State was also in a position to supply foodgrains at pool prices to several States all over India. The chief recipients are:

1. Kerala .. 121,000 tonnes rice.
2. Gujarat .. 6,000 tonnes rice and 16,000 tonnes millets.
3. Mysore .. 5,000 tonnes rice and large quantities of millets.
4. West Bengal. 3,000 tonnes rice.
5. Maharashtra. 11,500 tonnes rice and 5,000 tonnes millets.

Between the years 1967 and 1973, total food grain production in Tamil

Nadu has risen from 54.58 lakh tonnes to 72.02 lakh tonnes; the increase in production has been more striking in rice which during the same period increased from 38 lakh tonnes to 59 lakh tonnes.

The following are some of the letters of thanks received by Tamil Nadu acknowledging foodgrains supply:

**Mysore Chief Minister thanks Tamil Nadu Chief Minister for supply of paddy**

The Chief Minister of Mysore Thiru D. Devaraj Urs has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Chief Minister of Mysore says, "You had been kind enough to release 5,000 tonnes of paddy in Tamil Nadu for conversion and consumption in Mysore State. I am grateful to you for coming to our assistance at a moment of great difficulty. Your help is most timely and will do much to meet the needs of our people in Mysore State".

**Maharashtra Food Minister thanks Tamil Nadu Chief Minister for supply of paddy**

The Food Minister of Maharashtra, Thiru Sharat Pawar has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Food Minister of Maharashtra says, "I am extremely grateful to you and the Government of Tamil Nadu for having kindly agreed to supply 10,000 tonnes of paddy to Maharashtra. I am also thankful for having consented to the purchase of 5,000 tonnes of bajra and maize in the open market by Maharashtra".

Top: Thiru Sharat Pawar, Maharashtra Food Minister called on Chief Minister on 8-10-73.

Middle: Thiru Narendra Singh Zaili, Gujarat Minister for Civil Supplies with Chief Minister on 17-10-73.

Bottom: Dr. Gopal Nagn, West Bengal Minister for Labour with his Tamil Nadu counterpart on 9-10-73.





## The Madurantakam Co-operative Sugar Mills Ltd. PADALAM P.O., CHINGLEPUT DISTRICT.

- (1) Series of failures we encountered  
In developing cane for our survival;  
We surmounted all in a decade  
With a solemn purpose of serving the Nation.
- (2) By fleet of lorries well organised,  
We bring the cane fresh from the field.  
We ensure supply of inputs,  
And prompt in payment of cane price.
- (3) We enforce measures of Plant Protection  
And conduct crop Competition.  
We take our growers on Tour Education  
And teach them to grow quality cane.
- (4) Every succour in hour of need  
We extend to members who really need.  
Working in the Co-operative Sugar, we greet  
To consolidate the gain we already made.

## the living past

The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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TAMIL NADU IS

# IN TUNE WITH GANDHI

## GOVERNOR'S TRIBUTES ON GANDHI JAYANTHI CELEBRATIONS

Every year we are reminded of the charismatic personality of Mahatma Gandhi, his mission and his message, as we celebrate Gandhi Jayanthi through the length and breadth of India. From whatever I have seen and felt in Tamil Nadu, I can say with confidence that Tamil Nadu is entirely in tune with Gandhian philosophy and approach to social, economic and political issues. What strikes me most is that the Government, the public and the leaders of all parties vie with one another in celebrating the occasion in a magnificent manner. This is indicative of their firm faith in the ideals that Gandhiji preached. This massive demonstration of faith in Gandhiji's philosophy will, I am sure, herald a new era in public life, where leadership will depend upon capacity to serve the masses, ability to take work from equals and anxiety to judge issues on merits.

The Gandhi Mandapam is humming with activity because it is in tune with the desire of the people to understand, appreciate and apply Gandhian philosophy and adopt Gandhian approach in the solution of our national problems. The seminar that is proposed to be held in connection with the Gandhi Jayanthi Celebrations at Gandhi Mandapam covers a wide range of subjects pertaining to Gandhiji's views on several matters of public importance and eminent persons will focus attention on the fundamental teaching of Mahatma Gandhi.

### What's Missing ?

What we are missing today is a concerted effort to interpret Gandhiji to younger generation and to put up a fight for norms in public life. Mahatmaji insisted upon not only "ends being pure" but the "means also being pure" because he was aware that unless purity of means was insisted upon, weaknesses inherent in the diversity of India like communal, linguistic, religious and regional differences



Top:—The panorama's view of the procession of JOTHI conducted in connection with the Gandhi Jayanthi Celebration in Madras.  
Bottom:—The scene at the start of JOTHI from Gandhi statue at Marina Beach

would be exploited. Instead of making efforts to seek unity in diversity, they would play upon these inherent differences for their personal ends. He insisted upon being a giant amongst giants because he knew that bossism was likely to prevent growth of personalities of individuals and thereby stunt the growth of India. Under him Jawahar could grow and Rajaji could work, Sardar and Subhash with all their differences in approach could take pride in accepting his leadership.

We have yet to learn the art of seeking solutions within the inherent limitation of diversity, geographical, linguistic, etc., and benefit by the vast opportunities that the size and the climate of the country provide. There is no other country in the world which can be self-sufficient. India can not only be self-sufficient but her diversity can provide enough material to search for solutions for the benefit of the mankind. What is needed is a composite out-look and cosmopolitan approach. The movement we form the habit of judging issues by the same yardstick that we want others to adopt, our problems will be over.

#### What Price Democracy ?

Democracy thrives only when people believe that they cannot grow unless people around them grow that they cannot benefit at the cost of others, that people cannot be fed on slogans, that discussion and compromise are the essence of a co-operative way of living, that the collective will of the people should always prevail over factional calims, that public life is an instrument of service to the common man and not an opportunity for promoting self-interest, that real statesmanship consists in clearing confusion and establishing rule of reason and not in creating confusion and exploiting narrow selfish ends. Gandhiji strived to inculcate these basic virtues of democracy and unless Gandhism again catches the public mind and pervades the length and breadth of India, democracy will flounder. Gandhiji stood for, lived for and died for the welfare of the masses. That which ensured good for a few at the cost of the good of the vast masses created vested interests and eroded the sound basis of a welfare State.



Thiru K. Anbazhagan, Minister for Public Health, receiving the Gandhi Jothi at Gandhi Mandapam on 2nd October 1973.

Let us be clear about the Ram Rajya which Gandhiji expounded throughout his life time. Ram Rajya combines both democracy and welfare State. In Ram Rajya, the people are the masters, because they are the voters. Vote getters can never be masters. They are servants of the people and remain in power till they serve them. Democracy prescribe norms both for the electors and the elected. It is by their mutual understanding and co-operation that democracy is sustained. A serious obligation is cast on the welfare State to look after the lowest in the rung on the priority basis. Unless the common man in the lowest rung is raised and is provided with opportunities for self-expression and self-development, the base of democracy will be eroded by frustration. We have to make it convenient for the vast masses of people to make democracy a way of living. Their social and economic backwardness should not be allowed to be exploited. A perpetual dual between the virtues and weaknesses of democracy provides opportunities for demagogues to make people captives of slogans. The moment people surrender their reasoning the momentary impulses of frustration, weaknesses creep in. We have to guard ourselves against exploitation of any sort, consistent with the spirit of Ram Rajya.

Gandhiji's principle of non-violence needs to be interpreted properly. Why did Gandhiji stick to non-violence to the last? It was intended to prevent dictatorship. Democracy and violence internally cannot go together. Gandhiji's non-violence did not mean cowardice but it instilled courage and wiped out traces of slavery. Gandhiji defined "non-violence" as a "dynamic condition meaning conscious suffering". "It does not mean meek submission to the will of the evil-doer." He went further to say "Non-violence is not a cover for cowardice, but it is the supreme virtue of the brave. Exercise of non-violence requires far greater bravery than that of swordsmanship".

#### Proper Interpretation

The significance of the path of Truth advocated by Gandhiji has to be clearly understood. He insisted upon the right means to be adopted to secure right ends and attached greater importance to the means than to the ends. Truth ensures purity of means. In this age of mass media of communications, extreme care has to be taken to see that they are not converted into instruments to mislead the people. They must be utilised to keep the people well informed so that the people may not be deceived by wily politicians. Newspapers, films,

radio, books, column writers, leaders, politicians and platform speakers have to see that the credibility gap does not widen.

Socialism which ensures equality of opportunity is recognition of the dictum that "collective strength is always superior to individual strength". However powerful, the leadership may be and however rich a few men might be, no country can successfully compete in the world unless it has the widest base and its collective resources expand continually. This calls for hard work on the part of all sections of society. The days of a few rich living a life of luxury with their unearned wealth are gone. Concentration of economic power will be a danger to democracy. It is to avoid this contingency that planning should be from the bottom and the people in the lowest rung of the ladder have to be given top priority. Gandhiji wanted to wipe every tear from every eye.

#### Healthy Leadership

For building up healthy leadership and for sustaining it at all times, we have to remember that Gandhiji pleaded for tolerance at all levels, religious, social and political. He clearly felt that evolution of democracy is not possible if we are not prepared to hear the other side because if intolerance becomes a habit, we run the risk of missing the truth. We have therefore to cultivate tolerance and also an ability to benefit by criticism. These two cardinal principles, which contribute to healthy leadership, strengthen the base of democracy. Equality of opportunity and recognition of talent, irrespective of pulls of patronage or power should be ensured. No society can survive unless it accepts and adheres to a moral base. It is socialism which provides a moral base. What is duty in religion becomes moral in socialism. To Tamil Nadu goes the credit for having created conditions in which Gandhian ideals of Ram Rajya, Truth and Non-violence, Democracy and Socialism can flourish and prosper.

If anybody asks us, "what is Indian Economy?" we give the reply 'It is mixed economy', meaning that it does not belong to any ideology and that it envisages the co-existence of public sector, joint sector, private sector, and so on.

My answer is that Sarvodaya is the real name of our economy and this concept was given by Mahatma Gandhi. This is an all comprehensive term, embracing many sectors and suited to our national genius. This is our distinctive contribution to economic thought.

#### Welfare of all

Sarvodaya means welfare of all. In essence, this consists of making the village the central focus of all planning and developing an industrial pattern which would revolve round the rural economy, rather than the other way round where the villages function as mere satellites of the adjacent urban areas. Sarvodaya ensures social justice, equality of opportunities and all-round development. The core of Sarvodaya is self-reliance and self-confidence.

Mahatma Gandhi's approach to rural economy and rural development, starting from the village as the basic unit, not only shows the path of self-reliance, but also strengthens the democratic fibre of the people. Soon after attaining freedom, we took up democratic decentralisation to strengthen the grass roots of democracy. Panchayat Raj and the Gandhian Sarvodaya present a purposeful and meaningful combination which makes our democracy unique in that the stress is on evolution and not on revolution. It is this combination which gives content to our democratic socialism. This system is backed by the sanction of the people and eliminates violent class struggles.

The people in the highly advanced and civilised countries are tired of their affluence, based on their cut-throat competitive economy and sophisticated ways dictated by a permissive society. India shows a way of life based on sobriety and simplicity, detachment and altruistic values without discarding, at the same time, the benefits of science and technology. Our democratic socialism is an eye-opener for the world, rooted as it is in Sarvodaya.

Gandhiji was a pragmatist. It was to give work and wages to the starving millions that Gandhiji started the Swadeshi movement and adopted khadi, hand-spinning and charka which are the symbols of self-reliance and self-help. It paves the way for economic freedom and equality. This approach of Gandhiji

caused misgivings in the minds of some that Gandhiji was totally opposed to science, but how could he have announced a prize of a lakh of rupees for the invention of a charka based on an improved technology suited to the village conditions in India if he were opposed to total mechanisation.

Gandhiji was unique in devising means and methods calculated to achieve simultaneously a number of objectives. His concept of education was so perfect that at every stage it nurtured the concept of casteless society, emotional integration and self-employment. His constructive programme was a unique instrument of Sarvodaya and public relationship. It enabled him to establish closest links with the people, helped the country to build up the economy of the poorest man and without creating tensions, brought about equality. On the one hand, he preached the ideal of trusteeship and on the other, insisted upon rural reconstruction. He converted weaknesses of wealth into virtues of democracy by simple living, service of the lowest and by exalting dignity of labour.

Let us return to Gandhiji and carry him to the younger generation. That is the only way to peace and prosperity.

#### WELFARE FUND FOR BEEDI WORKERS

The State Labour Ministers met to review the progress made in implementing the decision taken in January that the existing wages be raised to Rs. 3-25/3-50 for rolling 1,000 beedies without prejudice to the higher wages already prevailing in some States or areas.

It was explained at the meeting which was presided over by the Hon. Union Minister Thiru K. V. Raghunatha Reddy, that the decision had been implemented in most of the States including Tamil Nadu. Thiru Reddy told the meeting that he would pursue the matter with the remaining States.

The meeting also discussed the question of setting up a welfare fund for beedi workers to be financed by the levy of a cess on tobacco, and also of providing more stringent penalties under the Minimum Wages Act. The question of fixation of fall back wages was also discussed.

# GANDHI

## A

# WORLD LEADER

In a speech delivered at Gandhi Mandapam, Guindy during a symposium organised there on 5th October 1973, as part of this year's Gandhi Jayanthi Celebrations, Tamil Nadu Governor Thiru K.K. Shah said :

To describe Gandhiji as a world leader is neither an exaggeration nor an epithet chosen by blind followers. It is universally acknowledged and lovingly recognised. The Charter of the United Nations Organisation calls upon people all over the world to promote social justice, ensure better standards of living and secure freedom of action. This World Charter also reaffirms faith in fundamental human rights, in the dignity and human worth of a person, in the equal rights of men and women and of nations, large and small. A world where no country is subject to the tutelage of another is the goal of the Charter. Threat or use of force is to be avoided. Long before the United Nations Organisation came into being and gave its Charter, Mahatmaji asserted the dignity and worth of the human person and started the first passive resistance movement "Satyagraha" in South Africa at the beginning of this century. Gandhi believed that the weapon of truth, if firmly grasped and purposefully used, could lead to peaceful change without resort to violence. This was indeed one of the great ideas of our century which makes Gandhiji a world leader. The eminent British Historian Arnold Toynbee gives his impartial judgment in these words : "Gandhi was as great a benefactor of my country as he was of his own. Gandhi made it impossible for the British to go on ruling India, but at the same time, he made it possible for them to abdicate without rancour and without dishonour.



Thirumathi Madhuben K. Shah, presenting the awards to the winners in the oratorical contest held at Gandhi Mandapam on 7th October 1973 conducted in connection with the Gandhi Jayanthi Celebration.

Gandhi's objective was to raise the spiritual level of life in a spiritual slum—the slough of politics. Gandhi waded into the slough showed how the slough could be purified and remained personally uncontaminated by his immersion in it. This gives the measure both of Gandhi's own spiritual statue and of the magnitude of his service to mankind at a turning-point in human history.

Our plans have not fulfilled our expectations because we have started from the wrong end. Industrialisation on the basis of democratic socialism was exposed to weaknesses inherent in both the systems. Mixed economy made us victims of either concentration of wealth or of poor productivity as neither the employer nor the employees could be persuaded to co-operate for higher productivity resulting in rapid multiplication of resources. Gandhiji's concept of self-sufficiency of village economy based on planning at village level was intended to bridge the gap between the urban area and the rural area and to put local resources to maximum advantage. It would have ensured decentralisation and developed a co-operative base.

The subjects that are being discussed at the seminar are of particular value to a nascent democracy and a developing economy like ours.

I have every hope that this Seminar will succeed in suggesting ways and means which can correct imbalances and lead us to Gandhian path.

### Bold Leadership

Crippled by mounting costs of defence weakened by jealousies and pressures of balance of power and worried by rising frustration, India, even with the dynamic and bold leadership, finds it very difficult to overcome internal pressures, sectional interests and to concentrate available resources for fighting poverty. With his usual wisdom, Gandhiji foresaw the inter-play of these national and international forces and the weaknesses and provided for collective strength being built up by first looking after the weaker sections spread all over the rural area and securing the welfare of the urban area by preventing the exodus and pressures on the urban area.

Gandhiji's concept of Gram Raj and villages being made self-sustained economic units, either singly or in a group, had a sound basis and great political wisdom. He was touched to the quick when Lionel Curtis described our villages as "dung-heaps" and was bent upon turning them into model villages. "India lives in her seven

lakhs of villages. . . . . I would like to go and settle down in some such village. That is real India, my India", he said. Planning must necessarily take care of generating maximum advantage of available resources, both in men and material. Khadi, cottage industries and Ram Raj can be the means of utilising the available local resources to our maximum advantage. This is the clarion call of Mahatmaji—

"The cities have to adopt a pattern of village life and subsist for the villages. . . . . In the case of the Indian villager, an age old culture is hidden under an encrustment of crudeness. Take away the encrustation, remove his chronic poverty and his illiteracy and you will find the finest specimen of what a cultured, cultivated free citizen should be. . . . . If Indian civilisation is to make its full contribution to the building up of a stable world order, it is this vast humanity that has to be made to live again. . . . . When our villages are fully developed, there will be no dearth in them of men with a high degree of skill and artistic talent. . . . . In short, there will be nothing in life worth having which will not be had in the village".

Gandhiji was not against mechanisation. He did not like mechanisation where available man-power could serve the purpose of mechanisation. He did not want mechanisation to make thousands of people jobless. Nor was Gandhiji opposed to science and technology.

### Whole of India in his view

Gandhiji was not content with merely stressing the need of rural development and strengthening rural economy as the base for national economy. He was so practical in his thinking and ideals that he kept the whole of India in his view and expressed his views on all matters of vital interest for the well-being of the people of India. His concept of reconstruction of villages with special reference to environmental hygiene, education, health, etc., was unique.

Doctors who have been educated at the expense of the people and who come from villages are reluctant to go to villages for service. Modern medical health services require enormous resources to

take medical aid to places where there is none. We have to go a long way in providing health services to the rural areas. Gandhiji insisted on nature-cure, not because he was against allopathy but because nature-cure was the only way to inculcate values of personal hygiene. To him personal hygiene and healthy living are of primary importance. He said "If everyone could achieve perfection in this art, there could be no disease. All that can possibly be had from the five agencies of nature must to be taken and used. They are earth, water, ether, fire and wind. This to my mind, is the limit of nature cure. Therefore, my experiment in Uruli Kanchan consists in teaching the villagers, how to live clean and healthy lives and in trying to cure the sick through the proper use of the five agencies. If necessary, curative herbs that grow locally, may be used. Wholesome and balanced diet, of course is an indispensable part of nature cure".

### About Students

The most important topic that causes serious concern to us is students. Gandhiji summed it up by saying that "all education in a country has got to be demonstrably in promotion of the progress of the country in which it is given". He laid down the role of the students when he said that they must become pioneers in conservative reform, conserving all that is good in the nation and fearlessly ridding society of the innumerable abuses that have crept into it. His appeal to the students is still valid and I would like to repeat it—"Put your talents in the service of the country. I claim that the equipment for this service is a large heart and a character above suspicion. Given these two conditions every other needed qualification is bound to follow. The student who has faith, who has cast off all fear, who is absorbed in his work, who finds his right in the performance of his duties, will know that the gloom is transitory and that the light is clear". It was the desire of Mahatmaji that students should devote the whole of their vacation to village service. Tamil Nadu has already set an example in this by sending the student community for doing famine prevention work in the rural areas.

As many speakers are to deal exhaustively with important issues according to Gandhian ideals, I

need not be exhaustive. The enthusiasm and receptive nature of the audience here in Tamil Nadu is demonstrative proof of our capacity to improve our lot by our own hard work and resources and fearlessly tread the path of self-reliance. If we turn to Gandhiji for solving all our national problems, I have no doubt that we will find Gandhiji's solutions to a majority of them. May I express the hope that this will be the forerunner for spreading the gospel of Gandhiji not only throughout India, but the entire world.

### Industrial Physicians and Safety Engineers for each factory urged

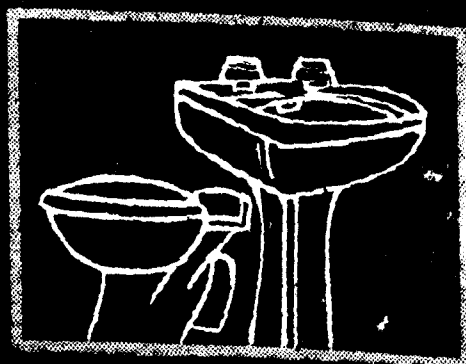
The need for the appointment of a fully qualified industrial physician and safety engineers in each factory as part of a programme for the establishment of comprehensive occupational health and safety services at places of employment was stressed by Thiru. T. Duraiswami, Chief Inspector of Factories.

He was delivering the Dr. Sadagopan's Endowment lecture on "The marriage of Medicine and Engineering in Industry" under the auspices of the Tamil Nadu Branch of the Indian Association for Occupational Health.

Thiru Duraiswami referred to the colossal waste of human resources due to occupational hazards and said the need for the establishment of an occupational health service had been generally accepted and the Indian Medical Associations had urged the State and Central Government to bring in legislation for the establishment of comprehensive occupational health services at places of employment for the promotion of the health of workers in the interests of increased productivity in industry. There was simultaneously a need also for the provision of a complementary safety service at places of employment in conjunction with the health service under the aegis of the factory inspectorate to prevent accidents and occupational illness in industry.

For these services to be established he said they should have specially qualified and trained industrial physicians and safety engineers with supporting staff.





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## POWER CUT IN TAMIL NADU

### MARGINAL POWER CUT IN TAMIL NADU FROM 1st OCTOBER 1973.

The Government have carefully reviewed the availability and requirement of power in the State taking into account the stores position in various hydel reservoirs and the present capability of Thermal stations including relief from Neyveli. It will not be in the interests of the overall economic growth of the State to impose a total ban on new power connections, but putting up with a marginal power cut, it would be desirable to encourage the growth of new industries and agricultural production. It has therefore been decided to connect up new services and impose a marginal power cut with effect from 1st October 1973.

The main features of the proposed power cut will be as follows:—

1. Fifteen per cent cut on all H.T. industrial and commercial services and cinemas.

2. Fifteen per cent in the case of L.T. industrial services except those whose monthly consumption is 200, units and below.

3. In the case of services specified in paragraph 13 below and newspapers, weeklies, fortnightlies and monthlies, the cut will be restricted to 10 per cent.

4. No new connections will be given for the display of lights, neon and other luminous discharges and tube signs for commercial purposes.

5. Agricultural supply will be exempt from the power cut but the loads will be grouped in two batches and supplies will be made to each batch. But there will be no supply between 6 p.m. to 10 p.m. Supply will however be made to both the batches from 10 p.m. to 6 p.m.

6. No cut on domestic consumption up to 150 units per month. Consumption above 150 units per month will be charged at twice the normal tariff.

7. Special permission should be obtained for availing supply to Government functions, functions of educational institutions, political conferences and association meetings.

8. Supply will be made to rice and flour mills in rural areas for 6 hours during day time either in the forenoon or in the afternoon. In addition supply will be made available between 10.00 p.m. and 6.00 a.m.

9. Supply to other L.T. power loads will be subjected to both morning and evening peak hour restrictions. Supply will be made available for a continuous period of 8 hours during day time between the hours 9.00 a.m. to 6.00 p.m. and for a continuous period of 8 hours during night time between 9. p.m.

10. For new industries and additional demands permitted to the existing H.T. industries not engaged in continuous process, supply will be made only between 9.00 p.m. and 5 a.m.

11. The demand for all H.T. supplies shall be frozen at the highest recorded demand since 1st September 1971. In the case of new industries and existing industries for whom additional loads have been sanctioned the maximum demand will be frozen at the total permitted level.

12. There shall be no cut or restriction on public lighting.

13. The following services will be subject to 10 per cent cut:—

- (i) Railways;
- (ii) Hospitals;
- (iii) Water-supply;
- (iv) Sanitary arrangements;

- (v) All India Broadcasting stations;
- (vi) Telephone exchanges;
- (vii) Defence service establishments including factories;
- (viii) Harbour and Port installations;
- (ix) Aerodromes;
- (x) Observatories;
- (xi) Irrigation, power and other projects in the State;
- (xii) Rural Broadcasting Service;
- (xiii) Post and Telegraphs Department;
- (xiv) Government Press;
- (xv) Dairies and chilling centre of State Government or of any co-operative societies.

All categories of consumers are requested to co-operate with the Government in reducing the consumption and demand of electrical energy.

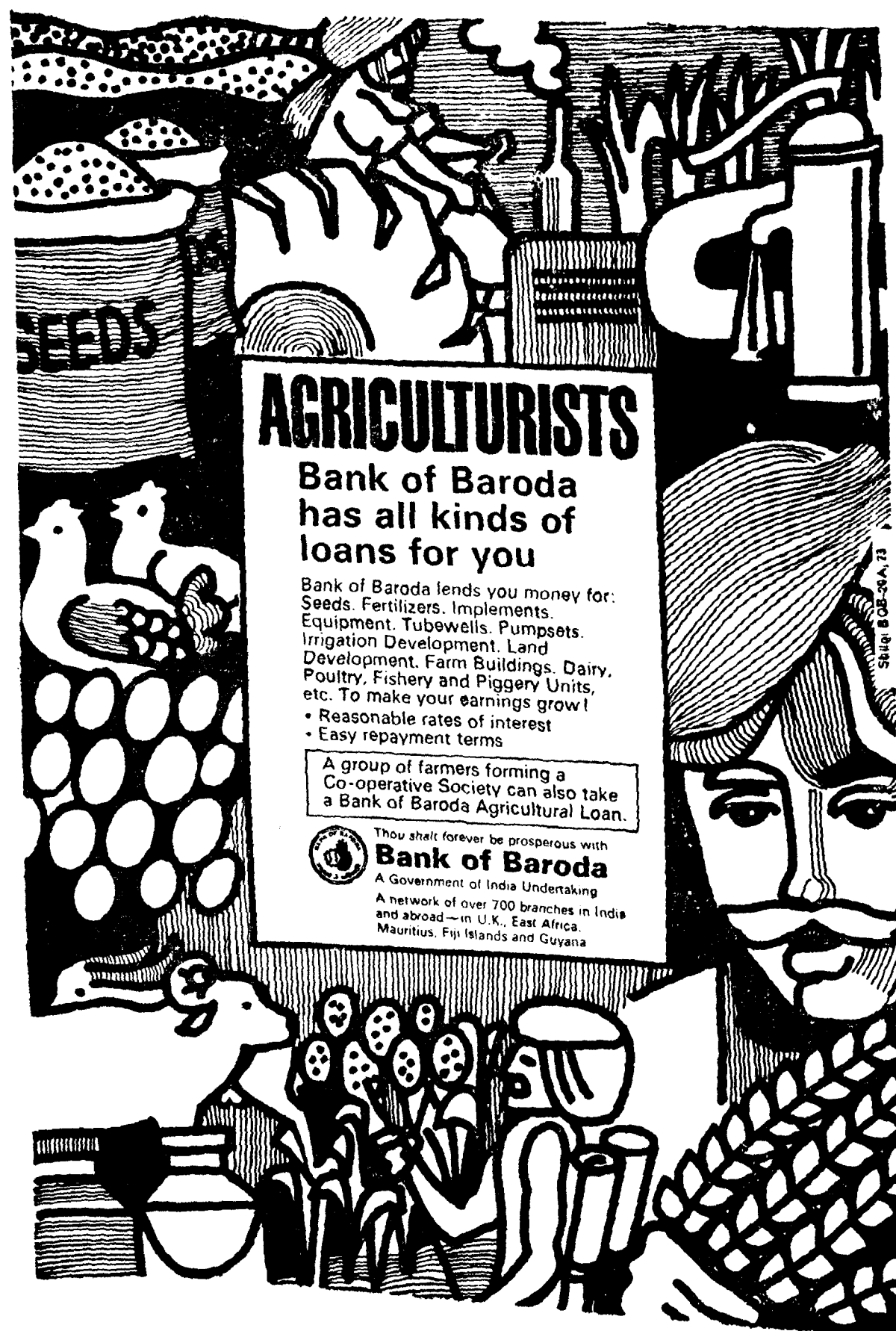
### PROSPERITY BRIGADE IN SALEM DISTRICT.

The Prosperity Brigade Volunteers in Salem district have turned out remarkable work, amounting to Rs. 4,03,620 in terms of value numbering hundred and fifty one works in pieces which includes school buildings, link roads, Radio Listening Room, Reading Rooms, Community Halls, Open Air Theatre, Reclamation of fallow lands, etc.

During the year 1971-72, the Prosperity Brigade Volunteers in Salem district have completed the construction of 28 schools; the construction work valuing to Rs. 92,328. Similarly they have constructed 79 Radio Listening Rooms, valued Rs. 1,30,056, which is a major work done by them, besides they have also constructed 18 open air theatre, value about Rs. 1,01,797.

The Government of Tamil Nadu has allotted Rs. 1 lakh for the cost of construction materials, the labour part being borne by Prosperity Brigade through their Voluntary service to which they are not receiving any remuneration which is the Central idea of Prosperity Brigade.

F.P.O., Salem.



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# POULTRY DEVELOPMENT IN TAMIL NADU

**DR. G. VENKATACHALAM,**  
B.Sc., G.M.V.C., M.S., Ph., D.  
(Michigan), *Director of Animal Husbandry, Madras.*

The development of poultry is one of the easiest and quickest ways of increasing food production in the country and of adding nutritional value to our food at the same time. So the development of poultry is of special significance to our country especially in the context of food shortage and highly unbalanced protein deficiency in the diet of the people.

Poultry-farming is recognised increasingly as an important aspect of agriculture and it has been accorded an important place in making the diet of the people a more balanced one. There are people directly and wholly dependant on poultry for their livelihood while a great many more subsidise their income from poultry.

Poultry industry in Tamil Nadu is developing rapidly. Today from the backyard unit, poultry-farming has become a commercial operation with flock sizes ranging from 500 and even up to 10,000.

There are about 3,000 private poultry units maintaining nearly 40 lakhs of birds. Thus poultry-keeping is made both a big commercial enterprise and many have taken it as a big way. In order to improve the quality and quantity of existing poultry and with the aim of fighting the protein hunger, the department has taken several measures by giving all technical help, the required seed material in the form of eggs, chicks and birds for breeding as well as financial assistance to individuals and co-operative societies.

**Position before and after reorganisation of the department.**

Before the reorganisation of the Animal Husbandry Department (i.e. 1-1-70) there were 75 Poultry

Extension Centres functioning throughout the State to supply the hatching eggs, chicks and adult birds for breeding to individual breeders and to disseminate knowledge of poultry-keeping. The eggs produced and birds raised were of limited quantity. However after reorganisation things have radically changed by development and growth in the poultry industry of the State. After reorganisation the number of Poultry Extension Centres were reduced to 39 from 75 centres including the poultry sections in the District Livestock Farms. These centres have produced about 61.24 lakhs of eggs and raised 5.37 lakhs of birds in the last year as against 37.13 lakhs of eggs and 5.20 lakhs of birds produced by the 75 centres before reorganisation. This shows that there is an increase in the poultry production. Thus the ryots are encouraged to have poultry farming to increase their economic status and increase the food production.

# POULTRY WORK DONE IN THE POULTRY EXTENSION CENTRES AND FARMS.

| Particulars.                         | 1967-68.  | 1968-69   | 1969-70.  | 1970-71.  | 1971-72   | 1972-73.  |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 Number of eggs produced            | 3,097,249 | 3,713,786 | 2,997,026 | 4,179,826 | 5,631,295 | 6,124,118 |
| 2 Number of eggs set for hatch       | 684,142   | 761,096   | 369,166   | 590,994   | 898,244   | 790,885   |
| 3 Number of birds received by hatch. | 410,465   | 520,275   | 206,290   | 399,978   | 537,032   | 537,462   |
| 4 Number of birds Sold for breeding. | 138,600   | 108,412   | 118,549   | 72,953    | 190,533   | 179,578   |

## Hatcheries in Tamil Nadu.

There are three Hatcheries functioning in Tamil Nadu, viz., Kattupakkam, Hosur and Kappalur.

The hatcheries are responsible for supplying the majority of sexed day old chicks, purchased by the breeders. Due to the rapid development in Poultry Industry, more and more farmers are purchasing Day old chicks from the hatcheries instead of incubating themselves through their birds.

In the hatcheries eggs are set for hatch and distributed to different Poultry Extension Centres, Panchayat Union Schemes as well as to public. The production capacity of each hatchery unit per month is 20,000. The each hatchery will be able to produce nearly 2.5 lakhs of chicks per year to cater the immediate needs of the public.

| Hatcheries.         | Number of eggs set. | Chicks produced. |
|---------------------|---------------------|------------------|
| <b>Hosur—</b>       |                     |                  |
| 1970-71             | 2,14,349            | 1,22,936         |
| 1971-72             | 3,01,463            | 2,06,363         |
| <b>Kattupakkam—</b> |                     |                  |
| 1970-71             | 1,19,002            | 64,578           |
| 1971-72             | 1,63,511            | 81,357           |
| <b>Kappalur—</b>    |                     |                  |
| 1970-71             | 1,57,369            | 98,811           |
| 1971-72             | 2,11,341            | 1,47,003         |

## Poultry Breeders' Co-operative Society.

Before reorganisation of the Department (1-1-70) there were only 23 Poultry Breeders Co-operative Societies in the State. In the last two years 139 Societies have been formed by the Animal Husbandry Department.

These societies help to secure necessary financial assistance and other facilities to the farmers through the service Co-operative Societies. Each society consisting of 100 farmers each having at least 100 birds and totally all the Societies would be producing nearly 10 lakhs of eggs per day. The Nationalised Commercial Banks have come forward in a big way to advance loans to the Breeders of Poultry Breeding Co-operative Society. A massive Poultry package scheme at District level has been initiated at Tiruchirappalli and Thanjavur districts with credit facilities from one of the Nationalised Banks, viz., State Bank of India which has proposed a total amount of Rs. 1.28 crores for Tiruchirappalli, Thanjavur and South Arcot districts for the development of poultry. High yielding hybrid birds are reared under the scheme. Follow-up work of these poultry units is being done by Animal Husbandry Department. The was supplying balanced Poultry Feed both to the Government Poultry Units as well as to breeders from the Feed Mixing Units of the Department at no loss no profit basis.

## Marketing.

The success of the Poultry Package Schemes depends mainly on marketing programme. This is fully realised and necessary action is being initiated. The marketing scheme is initiated to give steady market and fair price which is already in existence and to arrange for marketing eggs produced by the above scheme. Since the production has reached to 10 lakhs per day and more by the new units started, marketing has to be tackled with. Hence Government has planned to organise marketing of eggs through Poultry Development Corporation Private Limited. Poultry Development Corporation Private Limited will take over the Commercial and Development activities. The Corporation will assist in production, processing, collections and marketing of Poultry and Poultry Products.

Until the formation of Poultry Development Corporation Private Limited, the following Centres were under the control of Animal Husbandry Department:—

|                                      |    |
|--------------------------------------|----|
| Poultry Extension Centres            | 39 |
| Hatcheries                           | 3  |
| Poultry Production Centre            | 2  |
| Feed Mixing Units                    | 2  |
| Intensive Poultry Development Block. | 9  |



Dr. M. S. Murali, Superintendent, Poultry Farm, Kattupakkam, is seen giving a preventive injection to a chick.

For successful commercial poultry farming, control of communicable diseases is a necessary prerequisite. Even with the best housing under hygienic surroundings and adequate Nutrition with Vitamin and mineral additives, contagious poultry diseases are a threat to successful poultry farming. Backyard poultry farming is of limited utility. Though it has helped many families by supplementing their income it cannot as a rule be adopted for commercial production of Poultry and cannot acquire the proportions of an industry.

Poultry are susceptible to many diseases from the day they are hatched to the day they are either disposed off after laying period or for meat. As is well known the maximum producing capacity of birds depends on the early growth period of the chick. Therefore farmers have necessarily to go in for day old chicks and rear them in their own farm to adulthood for the best results. This means that the responsibility of protecting the birds vests with the farmer who has to rear them from the Chick stage. The following is a list of various diseases the birds are susceptible from the day they begin to produce eggs and the control measures that could be adopted to prevent such diseases.

**Coccidiosis :** Young chicks from a day old to about 8 weeks with the peak at 5 weeks are highly susceptible to coccidiosis. The mortality percentage is very high 80-90 per cent in the chick stage and few that may

survive become carriers of the disease. The disease is manifest by the appearance of blood in the motion and examination of the stools, reveal, oocysts of coccidia. It can be avoided by the administration of coccidiostat drugs in the feed mixtures, like Sulphamezathine, Neftin and Bifuran.

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**Pox** is the next disease which affect birds from the early stage to when they become adults. It has been seen that the mortality rate in chicks is very high up to 100 per cent where as adult birds usually survive the disease. Besides the disease increases the susceptibility of the birds to a great extent to the normal bacterial residents of the respiratory tract and other intestinal flora leading to Coryza and enteritis.

**Prevention :** Chicks from a day old to 1 week are protected by vaccination with pigeon pox vaccination by feather follicular method. This brings about a resistance to fowl pox and birds are immune to pox from 4th day after vaccination to 6 weeks old when they have to be revaccinated with Fowl pox vaccine.

**Ranikhet disease :** This is the most dangerous of all the diseases. Many farmers have been very badly dis-

# DISEASE CONTROL PROGRAMMES IN POULTRY FARMING

couraged by this disease. Folks after flocks have been wipedout by this diseases. It affects birds of all ages which have not been previously protected. It produces severe diarrhoea and death in a short period. In acute diseases the bird may die without showing any specific symptoms. It is not amenable to treatment and possible recourse is to protect the bird.

Birds are protected in two stages (a) young chick about a day to a week are protected by vaccinating them with F1 strain of the Virus by nasal instillation (b) The protection so afforded is reinforced by Ranikhet disease vaccine at the age of 8 weeks when the birds are immune for their productive period. It has been observed that about 20 per cent of the birds are likely to lose their immunity after a period of one year when they have to be revaccinated.

Besides these specific diseases the farmer should be vigilant in preventing parastic diseases as well like round worms and tape worm, which should be eliminated by periodical deworming of birds.

The ecto parastic affections like feather mange and scaly legs though by themselves are not fatal they affect the production, and the food in-take is reduced, which in turn adversely affects the egg production. Periodical dipping and disinfection of sheds should be able to control these affection.

Deficiency diseases also take their toll in a poultryfarm. An ill balanced diet may lead to many deficiency



diseases like Torticollis, Paralysis ruffled feather and reduced resistance. A known complete food mixture to combat all the deficiency diseases should be adopted. (Many companies are now coming forward with such mixed food stuffs for poultry feeding.)

Coryza and Avian Leucosis complex are the diseases which can be effectively controlled by culling. As any attempt to maintain the diseased birds on the farm and treating them may lead to serious repercussions with insidious spread of the infection and, the ultimate elimination of these diseases from the farm will become a great problem.

In short a poultry farmer is advised to adopt the following suggested programme :—

(1) Purchase day old chicks in January, February or March.

(2) Prepare your farm, for receiving them by thorough disinfection of the brooder, feed troughs, water trough, etc., and also keep ready adequate feed and clean water supply throughout the period of their growth.

(3) In the first week after their receipt protect them with F1 strain by nasal instillation.

(4) Second week protect them with P.P.V. by ether follicular method.

(5) Seventh week protect them with R.D.V.K.

(6) Eighth week protect them with F.P.V.

(7) Every month from the day they are brought they should be put on 3—2—3 day treatment with coccidiostats like Sulphamezathine Sol. at 2 per cent level in drinking water.

(8) June, July, August they would start laying and should be maintained on adequate, well balanced nutritive diet with ample supply of water all through.

(9) Deworm at the end of March then in September, November and January.

(10) Birds should be periodically checked for ectoparasites—fleas, louse and ticks. If necessary dusting the birds with equal parts of D.D.T. and Ash will suffice.

(11) Regular and prompt consultation with the nearest Veterinary Surgeons, for vaccination and advice should be undertaken.

#### Deficiencies and how to avoid them.

The important nutritional deficiencies that occur in poultry are :—

**Protein deficiency.**—There is no definite system of protein deficiency except poor growth, egg production and egg size. The lack of aminoacid lysine, cause depigmentation of feathers of young stock. A mixture of animal and vegetable proteins may be used.

**Calcium, Phosphorus and Vitamin D. Deficiency.**—These nutrients are necessary for bone formation. Young stock are unable to walk. Lameness and retarded growth are common symptoms of these deficiencies. Layers assume a frequent squatting position, egg production and shell thickness decreases. The Leg bones and wings become fragile and hatchability becomes lowered.

To overcome these deficiencies, the stocks should be provided with adequate amounts of Limestone (shell grit), Oyster shell, vitamin D, and bonemeal. The ratio of Calcium : Phosphorus should be about 2 : 1.

**Manganese.**—The deficiency of manganese causes perosis characterised by swollen and twisted Leg bones, flattened back joints, slipped tendons and shortened and bent or twisted bones. In adult birds egg shell, egg production and hatchability are lowered and embryos are deformed.

When excessive amounts of calcium and phosphorus are present in feed, usually the manganese deficiency is exaggerated. Wheat bran is rich in manganese and it may be added in the feed. Usually it is added as manganese sulphate.

**Salt :** Deficiency of salt results in retarded growth, and poor feed efficiency in young chicks, and lowered egg production and hatchability in adults. Salt is added either by itself or along iodine and manganese in salt mixtures. Fishmeal and meatmeal usually supply the salt needs for poultry.

**Vitamin A :** The deficiency causes droopiness, emaciation, staggering, nervousness, ruffled feathers and sub-normal growth. The eyes become swollen and inflamed and eye lids become sticky. The mortality rate is high, egg production and hatchability also decreased.

Vitamin A deficiency is best prevented by addition of synthetic, stabilised Vit. A.

**Riboflavin :** The deficiency causes retarded growth, Diarrhoea, nerve degeneration and curled toe paralysis. In breeding birds the egg production and hatchability is reduced. The deficiency can be overcome by providing fish and meat products, brewers dried grains, lucerne meal, fermentation products, milk products or synthetic riboflavin.

**Vitamin K :** This deficiency increases the clotting time of blood and young chicks may bleed to death, spontaneously or from injury.

Lucerne meal at a level of 2 per cent protects birds from this disease. Menadione helps to correct Vitamin K deficiency.

**Vitamin E :** This deficiency causes nutritional encephalomalacia, crazy chick disease, the head is retarded and twisted. The bird is unable to walk. Tremours of head and legs and oedema of subcutaneous fatty tissues and enlargement of hock may be observed.

Wheat grain, green forage, vegetable oils, whole grain, lucerne meal and synthetic vitamin E products are added to feed to prevent this deficiency.

**Vit. B<sub>12</sub> (Cyanocobalamin) :** In this deficiency there is a depression in growth rate, hatchability and feed efficiency.

Animal proteins such as meat meal, liver meal, fish meal and cow dung are used besides pure vitamin B<sub>12</sub> to supply this Vitamin.

**Choline :** The deficiency causes perosis, depression in growth, egg production and hatchability. The liver becomes fatty and mortality rate increased.

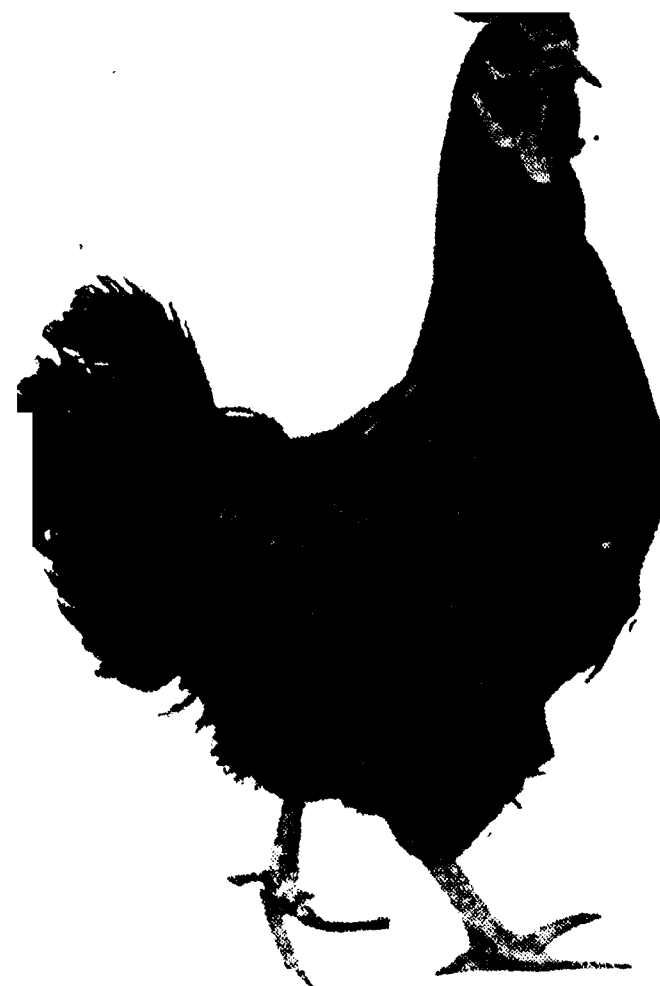
The sources for choline are Soya bean meal, fish-meal, liver meal, fermentation products and yeast.

**Niacin :** This deficiency causes inflammation of mouth and tongue, retarded growth, perosis and scaly leg in chicks. The egg production and hatchability is reduced.

Yeast, fishmeal, bran, wheat barely and lucerne meal are good sources but synthetic Vitamin is quiet economical for supplementation.

**Pantothenic Acid :** This deficiency is manifested by retarded growth, rugged plumage, crusty scales around beak and eyes, eye lids sticking together and thickened and hardened skin.

For supplementation of rations, synthetic Vitamin, yeast, lucerne meal, milk products and Molasses are used.



Australorp breed is being developed for wide distribution as its eggs are brown in colour.

## EVOLVING SUPERIOR STRAINS FOR HIGH EGG PRODUCTION

Hy-line, Rani Shaver, Arbor Acre are the talk of the day among the Poultry farmers of India. In the farmers' language they are high yielding strains with a productivity of 250 to 280 eggs during the first year of lay. Besides they mature early by 20 weeks and have a layer house livability 90 to 95 per cent.

These high yielding strains are in fact 'hybrids', i.e., cross between two pure strains or lines which by themselves are high yielding. The hybrid progeny have a superior performance than their best parent stocks. But they do not breed true. When the males and females of those hybrids are mated they produce offspring which are worse than their parent and even the grand parent stock.

**Strains.**—The pre-requisite for producing hybrids is high yielding strains and lines which breed true. When the females and males of a strain are mated the progeny very closely resemble their parents in their performance traits such as livability, egg yield, efficiency of feed conversion, egg size, etc. According to the definition of the American Poultry Breeders Association a

'strain' is a closed flock of birds with inbreeding and selection for particular trait or traits for a period of five generations and given a name. A strain is always qualified by the degree of performance in respect of the economic traits. Why do strains breed true? The answer to this question is not very simple.

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**Gene the determinant of character.**  
—A new individual develops from a single cell, 'zygote', formed by the union of the 'sperm' the male sex cell and the 'egg' the female sex cell at the time conjugation. This single microscopic cell has in it concealed the latent potentialities of the future grown up adult, whether it is going to be large or small, black or white, high or low yielding. Microscopic examination of the cell reveals thread like structures in it known as 'chromosomes'. The number of chromosomes is constant for a

given species 23 pairs for men and 39 pairs for poultry. Chromosomes are in pairs. The members of the pair are identical in shape and size. In poultry, therefore, there are 39 pairs or 2 sets of 39 each. One set is the contribution of the father through the sperm and the other set that of the mother through the egg. The father and mother contribute equally to the heredity of the off spring.

Further studies reveal that each chromosome has in it a number of factors, "genes", arranged in a linear order. The corresponding member pair has the same number of genes arranged in the similar order. A pair of genes, of which one the contribution of the father and other contribution of the mother, determine a particular character.

**Causes of variation in a character.**  
The pair of genes which determine a character may be identical or one of them might be slightly different in its chemical structure, when it is called a mutant gene. When they are identical in an individual we call it homozygous (AA) for the character when dissimilar we call it heterozygous (Aa).

One of the special and natural phenomenon that laid the foundation for the science of heredity is that these two factors (genes) functioning together throughout the life of the individual, segregate in a pure form at the time of gamete (sex cell) formation and one each is assorted to any of the gametes. The gametes contain one half the number of chromosomes found in the body cell.

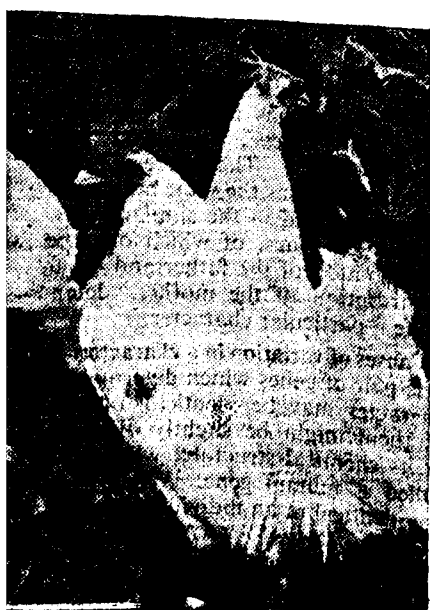
A homozygous individual will produce only one sort of gametes, but a heterozygous individual two sorts of gametes. Let us take a male and a female both homozygous for the same character, the gametes from them will be all alike and the offspring born of their matings will be similar to those of parents.

Suppose the parents are heterozygous for the character, there will be 2 kinds of gametes in the male and 2 kinds of gametes in the female. During fertilisation there is the possibility of 4 kinds of zygotic combinations and three kinds of individual AA; Aa; aa;

Thus heterozygosity leads to variation in character in the offspring and homozygosity leads to uniformity and predictability of character in the offspring. Homozygous individuals breed true. Heterozygous individuals do not breed true.

A high degree of homozygosity in these loci in the parents leads to a greater uniformity and high degree of heterozygosity in parents leads to variability in the offspring. Strains are highly homozygous for the traits under selection and this is the cause for their breeding true.

Victoria breed cock and hen.



Heat is essential for growing chicks and it is provided by means of electric lamp.

#### Breeding for high homozygosity—

High homozygosity means a large number of loci have similar genes at each locus. This is attained by mating individuals which have similar genes, i.e., mating related individuals. Full sibs (brother and sister) have similar genes since they had their inheritance from the same parents. It can be mathematically stated that 50 per cent of the total number of genes in their body are similar. If we mate these full sibs there is the probability that half of the fifty per cent of the genes at least will become identical, i.e., 25 per cent of loci will become homozygous. Continued full sib matings will lead to further increase in homozygosity in each successive generation and the 10th generation 88.6 per cent of the loci become homozygous. This we call as highly inbred line.

Mating of less closed related individuals e.g., half sibs, second cousins or distant relatives, leads to slower rate of inbreeding. It takes a longer time to attain a high degree of homozygosity.

Close inbreeding leads to homozygosity of both good and bad genes that exist in the foundation flock. The precaution to be observed in such mating system to develop high yielding strains to have the foundation flock with merit about average of the population and make rigorous selection for the traits.

The situation can be compared to a bag containing a mixture of silver and gold coins. When it contains 70, gold and 30 per cent silver coins, suppose you start blindly picking up two at a time. The chances of picking 2 gold coins are greater now than when the bag contains 30 per cent gold and 70 per cent silver coin.

**Hybridisation.**—When we cross two lines which are highly homozygous each for different sets of genes

say BB and bb, the resultant offspring will be heterozygous Bb and this is called a hybrid. Sometimes this has a better performance than either of the parents. This phenomenon is called 'hybrid vigour'. The more the lines are inbred, the greater will be the heterozygosity of the hybrid and larger the hybrid vigour. Before we could understand the reasons for this 'hybrid vigour' we have to have a knowledge of the kinds of gene action.

**Kinds of gene action.**—There is a strain of mice called the 'pygmy'. The trait is due to a pair of genes pp. The pure strain of normal mice is PP. The pygmy weighs 19 grams at birth and the normal variety 20 grams. A cross between the two, which is heterozygous (Pp) weighs 15 grams. This may be graphically represented as follows:

| Normal Cross Pygmy   |    |    |
|----------------------|----|----|
| PP                   | Pp | pp |
| 20                   | 15 | 10 |
| +5      0      -5    |    |    |
| Actual weight (in g) |    |    |
| Gene value.          |    |    |

Here the gene, 'P' adds a value of 5 g. 'p' takes away a value of 5 g., a combination Pp results in the addition of this kind of gene action is called 'dominance' 'P' is dominant over 'p'.

Imagine a situation where the heterozygous individual weighs 25 grams the positions of the three individuals will be:

|    |    |    |
|----|----|----|
| Pp | Pp | Pp |
| 25 | 20 | 10 |
| 10 | 5  | -6 |

Here the heterozygote is much superior to the best homozygote. This kind of gene action is called 'over dominance'.

Just as genes at one locus interact to produce an additive action, dominance or over dominance, genes at one locus can interact with genes at another locus to produce similar results. There can be two loci interaction, three loci interaction and much complicated interaction of genes at many loci.

The economic traits like egg yield, egg size, etc., are controlled by genes at many loci. The kind of gene action is mostly additive and to a small extent dominance and overdominance also play a part.

Hybrid vigour is mainly due to the phenomenon of 'over dominance' a kind of gene action where heterozygote is superior to either of the homozygotes. It may also be due to a lucky combination of genes at one or more loci which occurs in specific crosses.

**Producing hybrids.**—The prerequisite for producing hybrids, as has already been stated is highly inbred lines with high degree of homozygosity. Lines are developed from high yielding strains. Strains are less inbred than the lines, but more inbred than the individuals in the population of the breed.

A high yielding strain is developed from a foundation flock of a large number of birds say in hundreds, which have a higher average merit than the average of the breed. Usually it has a reasonable degree of variability. To illustrate let us say the average of the White Leghorn breed in Madras City is 140 eggs per annum. The foundation flock for developing the strain should have an average of, say, 180 eggs with a range from 140 to 230.

Closing of the flock for breeding purposes, standardisation of management and rigorous selection of breeding stock for high production in each generation, will result in a strain in a period of five generations or 7 to 8 years.

When a strain is well established further selection yields less and less response. Further improvement can be achieved only by a genetic analysis of the population, measurement of the kind of gene action, additive and dominance available and adoption of suitable breeding procedures.

The next step in this direction is development of highly inbred lines.

The strain birds may be divided into small families say of one cock and 10 hens and each is closely inbred by continued full or half sib mating until a high degree of inbreeding is attained. The greater the inbreeding the more advantageous would it be for investigation and progress.

There is no mixing of families; We need to have 50 to 100 lines. Many of the lines may die out during this process due to the phenomenon of 'inbreeding depression' which is the opposite of 'hybrid vigour'. When several lines are established, we resort to crossing between the lines and record of performance of the line crosses or hybrids.

For easy illustration let us begin with five lines and name them numerically as 1, 2, 3, 4 and 5. All possible crosses should be made among these lines, such as 1×2; 1×3; 1×4; 1×5; 2×3; 2×4; 2×5; 3×4; 3×5; and 4×5. The performance of each cross, the egg yield etc., is measured and tabulated as follows:—

| Performance of the cross (Annual egg yield) |   |   |   |   |     |
|---------------------------------------------|---|---|---|---|-----|
|                                             | 1 | 2 | 3 | 4 | 5   |
| 1                                           |   | × | × | × | ×   |
| 2                                           |   |   | × | × | ×   |
| 3                                           |   |   |   | × | ×   |
| 4                                           |   |   |   |   | ×   |
| Total                                       |   |   |   |   | 965 |
| Average of a single cross                   |   |   |   |   | 193 |

The amount of additive gene action is measured by the general combining ability of the lines. The general combining ability of line 1 is indicated by the average performance of line 1 in its crosses with the rest of the lines. Similarly the general combining ability of line 2 is measured from the average of line 2 in its crosses with the rest and so on. This is illustrated in Table-1.

TABLE-1  
General combining ability of the lines.

| Line | Average no. of eggs per annum in all crosses. | Rank |
|------|-----------------------------------------------|------|
| 1    | 200                                           | 3    |
| 2    | 205                                           | 2    |
| 3    | 210                                           | 1    |
| 4    | 180                                           | 4    |
| 5    | 170                                           | 5    |

Grand average 193

We find from the table that line 3 has the best combining ability with the rest; Next in order lie lines 2, 1, 4 and 5. If it is desired to improve the strain further lines 3, 2 and 1 can be pooled and bred together to form the improved strain. 4 and 5 may be discarded for this purpose.

#### Choosing lines for hybridisation.—

In this experiment, suppose lines 3 and 5 have given an average of 250 eggs per annum and it is the highest in all the crosses; Then there is something in this cross which results in a specific combination of genes leading to high yields. This is the specific combining ability of the two lines 3 and 5. This is capable of repeatability of performance as long as lines 3 and 5 are kept pure.

|                                                                                   |                                  |
|-----------------------------------------------------------------------------------|----------------------------------|
| Line 3 × Line 5                                                                   |                                  |
| (230)/(235)                                                                       |                                  |
| Hybrid                                                                            |                                  |
| (250)                                                                             |                                  |
| Similarly we can have a 4 way cross based on the experimental results as follows. |                                  |
| A × B                                                                             | C × D                            |
| lines (230) / (235)                                                               | Grand parent lines (240) / (245) |
| H1 × H2                                                                           | Parent lines.                    |
| (250) / (255)                                                                     |                                  |
| Hybrid                                                                            | Hybrid.                          |
| (280)                                                                             |                                  |

**Conclusion.**—From the foregoing account one can understand how tedious and costly will it be before we can strike at the valuable hybrid chicken. It is a team work of scientists and it involves costly computer analysis of data. Arbor Acre, Hy-line, Rani Shaver are the results of hard work of entrepreneurs with lot of capital sunk in the business. Can our farmers afford to do the job? What the farmers are not able to do the Government should come for the assistance as in case of many other costly public undertakings. It may be questioned whether we cannot take advantage of the work already done by such big business concerns as the Unichick, Hy-line, etc? Yes, we can, provided we can afford to pay heavy prices for the chicken, permit the flow of capital to foreign companies and be perpetually dependent on foreign firms for our poultry business. If we can make it cheaper and competitive why not we make a try right now and immediately. I am fully confident that we can produce the hybrids for India by employing our capital and scientists.

Layers need airy, well ventilated and cool houses for efficient production. Each fowl should be provided a minimum of 3-4 square feet of floor space. The comfort zone for maximum production is from 60° F to 70° F. (15.5° C to 21° C).

**Location.**—The house should be located in an elevated ground with well drained soil, which will prevent stagnation of water and dampness.

(ii) Shady trees and green turf around the house will keep the house cool, and avoid the radiation heat.

(iii) The house should be at a reasonable distance from operators residence for all day efficient management.

**Design of construction.**—Poultry houses should be simple in design and cheap in construction, using the locally available materials. The long axis of the building should be oriented towards north-south, to remove much of the adversities of sun's rays in the morning and afternoon. It must be rat proof.

**Foundation.**—The foundation trench should be 1.5' in depth and 1.5' in width. Over 6" depth of brick and mortar or brick and cement foundation, a 9" foundation wall should be constructed to a height of 1.5', i.e. 6" above the ground level. Over this 4½" wall to a height of 1½" should be constructed all round. The height of the eave from the ground level is 6' and at the ridge it is 8'.

**Wall.**—The space between the wall and the eaves should be covered with ½" to 1" chicken wire mesh.

**Roof.**—The roof should be made out of light roofing material, asbestos or aluminium sheet. The height of the roof at the eaves and at the ridge can respectively be 6' and 8'.

**Flooring.**—A good concrete flooring is essential for the poultry house. Deep litter should be 6" thickness and it should be dry by periodical racking. Saw dust, wood shavings, paddy hulls, groundnut husk and chopped sugar cane tops can be used as littering materials. In general 3 to 4 square feet floor space can be provided for each layer.

## POULTRY HOUSING

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Accommodation facilities are more important than anything else to get the best of results from Poultry Farming. Simple in design and cheap in construction, the long axis of poultry houses should be oriented towards north-south so as to remove much of the adversities of the sun's rays in the morning and afternoon. Above all, it must be rat-proof.

**Lighting.** A 40 watts electric bulb for every 200 square feet floor space fixed at a height of 6' will provide the needed light for the night feeding.

### Equipments :

(a) **Feeder.**—The feeder may be of the linear or circular type. It can be made out of wood or metal. The space requirement are as follows :

| Adult birds.     |                                         |
|------------------|-----------------------------------------|
| Linear feeder.   | 3" - 4" / bird.                         |
| Circular feeder. | 1 to 1½" dia.<br>1" for every 20 birds. |

(b) **Waterer.**—Automatic water trough either a linear or circular type can be used. It can be made out of metal, polythene or cement-concrete. Each bird must be given 1" watering space (linear type) or one 18" diameter waterer for every 50 birds. The waterers, feeders should be protected by grills.

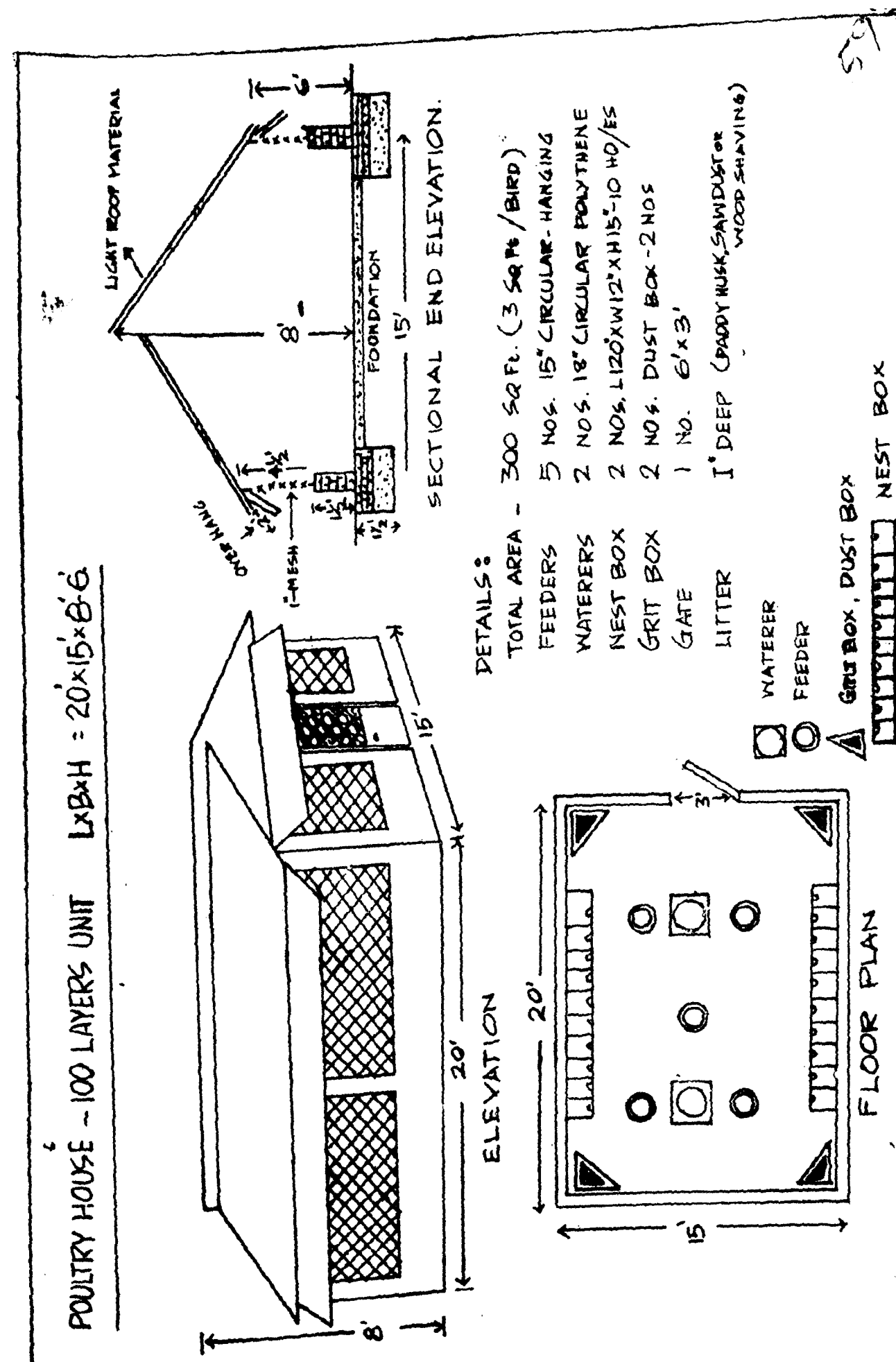
(c) **Nest boxes.**—These have to be used for collecting clean eggs without damage. Every five birds must be given one individual nest box or one community nest box for every fifty birds. It can be made out of wood or metal. Individual box is of 15" x 12" x 15" and community nest box is of 1' x W x H — 5' x 2' x 15".

(d) **Perches.**—These are fitted for giving comfort and roosting facility for the birds. Each perch should be made of hard strong wood of 2" x 1½", with edges rounded off and fixed at a height of 10" from the floor. Each bird must be given 6" - 9" of perching space.

(e) **Grit box.**—A small wooden or metal box containing shell grit should be provided at the rate of 1 for every fifty layers.

(f) **Dust bath.**—It is preferable to avoid ectoparasites by providing dust bath made out of wood or metal, filled with ash or sawdust suitably medicated with D.D.T. or Gamexane.

Suitable layer house plans for 10 back-yard layers, 50 and 100 layers unit in deep litter houses are given separately.





# BACKYARD POULTRY KEEPING

Of late, thanks to the scientific method followed in poultry-keeping, it has become a paying hobby to those who are interested in it. But backyard poultry keeping demands from those engaged in the line extra amount of delicate and diligent care in the matter of collection of eggs from poultry homes in time and storing them in proper place, etc.

By

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Poultry-keeping in backyard is an useful and interesting hobby. It pays to keep a few fowls in the house, whether one is in the town or in the village. It involves a little cash investment and the home can make use of the products. The hens may be sheltered in a house of 6' x 3'. This small house can be located in any place in the open near the house or in the garden. One can even rear small sized flocks on the terrace of the house. Eggs in excess of the household requirements can be sold and this could provide the petty cash needed for the day-to-day expenses. It is at the same time educational and very much absorbing to care and manage your own birds and reap the harvest of the labour at home. Children will find it a pleasure to tend to the fowls.

## Materials needed for the construction of house

The house can be of 6' x 3' dimensions. About 3' to 4' height from the flooring the house must be covered by wooden planks. Deep litter system of rearing can be followed. The planks needed for the house can be got from old unserviceable dealwood boxes. Flooring can be covered either by wooden planks or with 16 gauge wire mesh. If the flooring is covered by wire gauge the house can be kept in the garden. The droppings can form good manure. Just below the house a pit of 6' x 3' should be dug so that the droppings fall in it. The droppings should be covered with ash or saw dust periodically to prevent fly nuisance. Round the poultry house keeping of ornamental floor pots gives an added attraction. If one keeps the poultry house in the verandah the flooring material should be of wooden plank. Saw dust or paddy husk to about 6" can be laid to form the deep litter.

## Materials —

- Wooden reapers—
- 6' x 3' x 3' — 4.
- 6' x 3' x 2' — 4.
- 3' x 3' x 2' — 4.
- Light roofing — 6.
- 3/4" gauge wire netting — 20.
- Nails, hinges, padlock, etc.

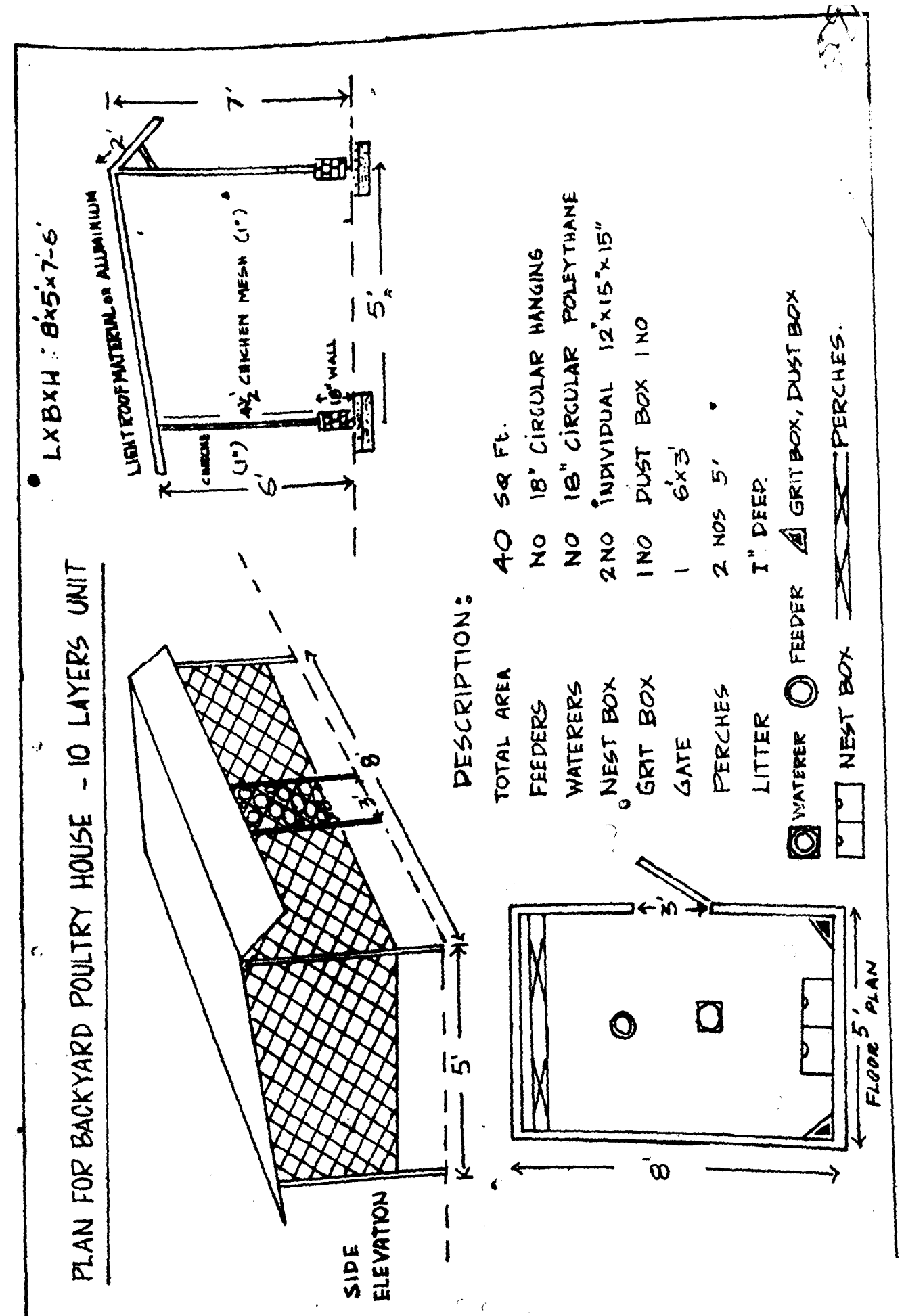
It is advisable to get 8-12 week old birds to start the farm of this

nature. These birds obtained from a Government farm or from recognized and reliable private farms are protected against all contagious poultry diseases and as such there may not be any difficulty in rearing them.

The pullets come to lay from about 20-22 weeks of age. It is profitable to maintain them for one year of laying. Usually the performance in the second year falls by 15-20 per cent compared to the initial year of lay. Normally, white leghorns lay about 15-18 eggs in a month. The receipts from the eggs thus, at 30 P. egg works to Rs. 4-50. The birds ordinarily consume about 3.3.3 kg. feed in a month. The cost of feeding a hen at Re. 0.75/kg. of feed will come to Rs. 2.47. The feed requirements can be obtained from the Government feed mixing units if near by. Shell grit in a box of 6" x 6" x 6" must be made available to the birds to avoid thin shelled eggs. To improve the quality of the yolk and egg greens at the rate of 50 gm. per bird need to be given. Ordinary kitchen garden greens can be made use of. Raddish leaves and leaves from the drum-strick trees form excellent substitutes.

The eggs laid during the day must be frequently collected from the poultry house, to avoid breakage and soiling of the eggs. Eggs are to be stored in a cool airy dark place. Eggs stored properly keep well for more than 5-6 days. Excess eggs above the household requirements may be disposed of then and there.

If those who are maintaining small poultry flocks will handle them more carefully and efficiently and thus increase their contribution to the food supply and those who do not now have poultry will obtain and properly care for small flocks, the total effect will be substantial.



# MEYER STRAIN HYBRIDS

Poultry breeding has of recent times become a specialised industry. Years of research and labour has made it possible to produce fowls of superior productive capacity in regard to the number and size of eggs, as well as a better return from the investment. Under reasonably favourable conditions and with proper management, care and attention, it is possible to attain excellent return in proportion to the outlay. Commercial hybrids are being extensively used for their superior performance than the pure breeds. The results have been achieved after years of toil by adopting the correct genetic approach and proper breeding methods. Such attempts in the past have yielded valuable strain crosses like the Rani shavers, Babcocks, Dekalb, Hyline, Arbor acre, etc. These highly developed hybrids are capable of laying on an average of 200-250 eggs annually.

These hybrids are the results of extensive research in foreign countries and are available only from these sources. To get these birds into our country, we have to spend a lot of foreign exchange. Added to this, each of these hybrids sexed chicks cost more than Rs. 3-50. Further, these birds can be profitably reared for the first year of laying only. Another draw back in rearing these chicks is that they won't breed true. The performance of progeny is most unpredictable. This fact is well understood by the research workers. One is obliged to get his replacement stock every year

from the source from which he obtained it. The strain itself is kept as a trade secret for obvious reasons, by the commercial agencies. It is also noticed that many of these hybrids are more prone to Avian Lucosis Complex, a disease in the legs which throws a challenging proposition to the poultryman.

Considering these facts and with a view to be in a position to help the farmers who need pultry which can be obtained at reasonable rates and also be propagated, the Department of Genetics and Poultry Science at the Madras Veterinary College, started research in evolving our own strain of white leghorn breeds. White leghorn breed of fowls are known for their egg production. By proper selection and in breeding different strains and lines can be developed. Two such strains when crossed give the progeny which are the hybrids. The singular achievement of Madras Veterinary College in evolving a pure strain of white leghorn birds gives a great opportunity to propagate this strain at a comparatively low cost to the poultry breeders. A sexed day-old chick in the Government farms cost only Rs 1-50. Added, this strain being a pure strain unlike the commercial hybrids, can be

bred and propagated by the breeder. Thus, the breeder is in a position to meet his replacement stock at his farm itself. The performance of this strain of Mayer compared to many commercial hybrids have shown very favourable results and throws up vast scope for utilisation. The average performance of the 'Meyer' strain birds under various private breeders and Government farms is given in the Table below.

Certain important characteristics of the 'Meyer' strain are

|                                 |              |
|---------------------------------|--------------|
| (1) Age at first egg            | 155 days     |
| (2) 50 per cent egg production. | 183 days     |
| (3) Annual egg production.      | 200          |
| (4) Mortality rate 0-20 weeks.  | 12 percent   |
| (5) Mortality rate 20-72 weeks. | 11-9 percent |

The achievement in developing a strain of our own, which can compare well with any other strain in this breed needs to be widely made us of to reap the benefits of the efforts over the years. The Government of Tamil Nadu is taking the necessary steps in this direction. Further, development and improvement of various strains of birds in the poultry farms are also going on simultaneously. Attempts are being made to evolve a strain cross hybrid of our own for the State.

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## COMPARISON BETWEEN MEYER STRAIN AND OTHER HYBRIDS.

| Strain.                            | Flock number. | Number of birds. | 0-20 weeks liability. (per cent) |       | Age at first egg. (per cent) |       |
|------------------------------------|---------------|------------------|----------------------------------|-------|------------------------------|-------|
| (1)                                | (2)           | (3)              | Range.                           | Mean. | Range.                       | Mean. |
| Meyer                              | 5             | 514              | (4)                              | (5)   | (6)                          | (7)   |
| Hybrids A                          | 6             | 2,054            | 91-99                            | 96.2  | 145-169                      | 155   |
| Hybrids B                          | 2             | 260              | 77-99                            | 94.4  | 140-152                      | 147   |
| Hybrids C                          | 2             | 1,060            | 75-81                            | 78.8  | 134-142                      | 138   |
| Hybrids D                          | 1             | 638              | 90-92                            | 91.6  | 132-149                      | 141   |
|                                    |               |                  |                                  | 83.5  |                              | 134   |
| Age at 30 per cent lay. (per cent) |               |                  | 20-36 weeks production of eggs.  |       |                              |       |
| Range.                             | Mean.         |                  | Hen day basis. (per cent)        |       | Hen housed basis. (per cent) |       |
| (8)                                | (9)           |                  | Range.                           | Mean. | Range.                       | Mean. |
| Meyer                              | 170-176       | 174              | (10)                             | (11)  | (12)                         | (13)  |
| Hybrids A                          | 158-190       | 175              | 56-100                           | 75    | 54-89                        | 69    |
| Hybrids B                          | 152-168       | 160              | 50-77                            | 64    | 49-77                        | 63    |
| Hybrids C                          | 174-185       | 180              | 62-65                            | 63    | 57-63                        | 60    |
| Hybrids D                          | ..            | 162              | ..                               | 71    | ..                           | 70    |

# POULTRY KEEPING

From time immemorial Poultry keeping has been a practice among farmers in our State. Many people keep a small flock of chickens for the pleasure or as a source of steady income. Many others, though having an interest to venture on this subsidiary industry, hesitate to do so for lack of proper knowledge on the know-how of rearing poultry. The cost of initial investment, tackling the managerial problems, etc., tend to puzzle a beginner.

It is advisable to start on a small scale. A start can be made by maintaining 100 layers.

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These 100 birds can be accommodated and reared in an area of 300 square feet. The land selected must be preferable on an elevated place where there can be no stagnation of water. A house for 100 birds can be easily be constructed using mostly the locally available material. The details of the materials that may be needed has been furnished below.

'Meyer' strain chicks from the Madras Veterinary College, or any of the commercial hybrids can be selected for the flock. It is economical to go in for the sexed female chicks, so that unnecessary rearing of the male stock can be avoided. Birds can be reared on the 'Deep litter' system of management, which is one of the best systems. Deep litter system reduces the labour cost. Chicks come to the lay after 5 months of age. Hens lay best in the first year of lay. The economics of rearing 100 layers is given in detail. A profit of nearly Rs. 12 per bird per year is expected under average farming conditions.

The materials used in erecting a house for 100 layers in Madras.

|               |               |                          |                  |
|---------------|---------------|--------------------------|------------------|
| Bricks        | 2,500.        | Rafters                  | 12' x 4' x 3"—6. |
| Cement        | 10 bags.      |                          | 12' x 3' x 2"—8. |
| Sand          | 3 cart loads. | Reapers                  | 2' x 1/2"—250.   |
| Earth         | 3 cart loads. | Light roofing            | —68.             |
| 3/4" wire net | 180 feet.     | Light roofing for ridges | —10.             |

## ECONOMICS OF A 10 LAYER UNIT.

Strain of birds : White Laghorn Meyer.  
System of Management : Deep litter system.  
Stock : 1 to 2 day old sexed female chicks.

| I. Cost upto point of lay—                               |       | Cost.  |
|----------------------------------------------------------|-------|--------|
| 1. House (5' x 6') at Rs. 6 per sq. ft.                  | .. .. | 180-00 |
| 2. Equipment—                                            |       |        |
| Hover, 1 number                                          | .. .. | 10-00  |
| Feeder, small 1                                          | .. .. | 12-00  |
| Feeder, big 1                                            | .. .. | 25-00  |
| Water Troughs, small 1                                   | .. .. | 10-00  |
| Water Trough big 1                                       | .. .. | 15-00  |
|                                                          |       | 72-00  |
| 3 Chicks 12 numbers at Rs. 2 each                        | .. .. | 24-00  |
| 4 Feed at 9 kg. per chick up to 20 weeks at Re. 0-90/kg. | .. .. | 97-20  |
| 5 Medicines                                              | .. .. | 2-50   |
| 6 Litter materials— 1 bag of paddy husk                  | .. .. | 2-00   |
| 7 Miscellaneous expenditure                              | .. .. | 5-00   |
|                                                          |       | 382-70 |

| II. Cost for Layers—                           |        | Maintenance |
|------------------------------------------------|--------|-------------|
| 1 Equipment—Nil.                               |        |             |
| 2 Feed 40 kg/bird per year at Re. 0-90/kg.     | 360-00 |             |
| Greens at Re. 0-02 per day                     | 7-20   |             |
| Shell Grit 2 kg./bird/year at Re. 0-30 per kg. | 6-00   |             |
|                                                | 373-20 | 373-20      |
| 3 Miscellaneous                                | 5-00   |             |
|                                                |        | 378-20      |

# CO-OPERATIVE MARKETING AND PROCESSING IN TAMIL NADU



The Minister for Food and Co-operation, Thiru M. N. Narayanaswamy, is seen going round the Exhibition conducted by the Kancheepuram Taluk Co-operative Society, Thiru Shanmugam, District Public Relation Officer, standing behind the Minister, is seen explaining the exhibits to the Minister.

The Co-operative marketing in this State is a two tier one, with the Tamil Nadu Co-operative Marketing Federation at the State level and 132 Primary Co-operative Marketing Societies at the taluk level. The Thanjavur Co-operative Marketing Federation at Tiruvarur is the only district level Co-operative Marketing Society.

In order to augment the working capital of the Co-operative Marketing Societies, the State Government have participated in the share capital of Co-operative Marketing Societies up to a maximum of Rs. 1 lakh each in the case of Primary Co-operative Marketing Societies and without limit in the case of higher level societies. So far, they have participated in the share capital of 121 societies to the extent of Rs. 96.80 lakhs. A sum of Rs. 13.00 lakhs is expected to be contributed during the year 1972-73.

The Co-operative Marketing Societies are also provided with managerial subsidy towards employment of the staff for a period of 3 years on a sliding scale. To encourage quality grading activities, financial assistance is given by way of subsidy to the extent of Rs. 7,500 (i.e. Rs. 2,500 towards the cost of trading equipment and Rs. 5,000

towards the cost of grading staff) spread over a period of three years.

With a view to encourage the Co-operative Marketing Societies to undertake outright purchase of produce on a large scale, Government contribute to the Special Price Fluctuation Fund of the societies at 2 per cent or 5 per cent. So far, a total sum of Rs. 1.75 lakhs has been contributed by Government to the Special Price Fluctuation Fund of the marketing societies. A sum of Rs. 1.67 lakhs is expected to be given in 1972-73.

Under the scheme of assistance for technical and promotional cell, Government are subsidising the cost of a Chief Accounts Officer, Civil Engineer, Marketing Officer, Chief Fertiliser Officer and a Processing Engineer employed by the Tamil Nadu Co-operative Marketing Federation on a tapering scale. The Tamil Nadu Co-operative Marketing Federation has also created a common cadre of personnel for being lent to the affiliated Co-operative Marketing Societies to work as secretaries or managers.

A value of agricultural produce handled by co-operatives which stood at Rs. 5 crores during 1965-66 rose to Rs. 20.70 crores in 1971-72.

Assistance has also been given by way of share capital contribution and loan for the setting up of processing units such as decorticators, rice hullers, oil mills, tapioca and pineapple processing units as adjuncts to Co-operative Marketing Societies. The following table indicates the processing units owned by Marketing Societies and under installation :-

| Serial number and type of units. | Number of units. |
|----------------------------------|------------------|
| 1 Cotton ginning units           | 18               |
| 2 Groundnut decorticators.       | 25               |
| 3 Oil expeller .. ..             | 7                |
| 4 Rice hullers .. ..             | 31               |
| 5 Coffee curing plant.           | 1                |
| 6 Solvent extraction plant.      | 1                |
| 7 Fruit processing unit.         | 1                |
| 8 Tapioca processing unit.       | 1                |
| 9 Cardamom oil extraction unit.  | 1                |
| 10 Pineapple processing unit.    | 1                |

under installation.

## Civil Supplies Corporation

The Civil Supplies Corporation is taking over all the Modern Rice mills run by Co-operative Marketing Societies and Thanjavur Co-operative Marketing Federation. The Tamil Nadu Co-operative Marketing Federation has prepared project reports for the establishment of a cotton seed oil mill and a groundnut oil refinery complex. It has also obtained the feasibility report for the setting up of sun flower seed oil extraction plants. The Government have also entrusted to Messrs. Development Consultants, the preparation of a feasibility report in connection with the establishment of a Farmers Co-operative Paper Mills. The Tamil Nadu Co-operative Marketing Federation has installed a granular fertilizer plant at Manargudi at a cost of about Rs. 25 lakhs. During 1972-73, it produced 18,476 tonnes of granulated fertilizers up to 31st December 1972 valued at Rs. 147.97 lakhs. The Tamil Nadu Co-operative Marketing Federation is also making arrangements for the early completion of a cold storage plant at an estimated cost of Rs. 9.00 lakhs with assistance from the National Co-operative Development Corporation.

## Rice Bran Oil mill.

In order to make profitable use of the bran obtained from the Rice Mills in Thanjavur district in the

manufacture of rice bran oil which is a by-product capable of fetching foreign exchange, the Thanjavur Co-operative Marketing Federation has established a Rice Bran Oil Mill at a cost of Rs. 19.75 lakhs with the Government assistance of Rs. 14.81 lakhs.

## Construction of Godowns

The National Co-operative Development Corporation has formulated a scheme for the construction of godowns under the Central Sector Scheme. Under this scheme, the National Co-operative Development Corporation provides financial assistance to the extent of 62½ per cent of the cost of loan to the State Government outside the "State Plan". The State Government have to meet the balance of 37½ per cent of the cost as subsidy under the State Plan Scheme. During the year 1972-73, financial assistance is proposed to be given under this scheme for construction of 360 village level godowns of 150 tonnes capacity each and three marketing godowns by the Tamil Nadu Co-operative Marketing Federation Limited, the capacity of the godowns ranging from 500 to 1,500 tonnes each. The scheme will be continued in 1973-74 also and when completed will add to 1.17 lakhs tonnes of storage capacity.

The Tamil Nadu Co-operative Marketing Federation in all the districts except Thanjavur and the Thanjavur Co-operative Marketing Federation in Thanjavur district purchase and distribute non-pool fertilizers through the co-operative marketing societies and the village credit societies. The co-operatives distributed pool and non-pool fertilizers to the value of Rs. 14.28 crores in 1970-71, Rs. 17.17 crores in 1971-72 and Rs. 11.12 crores (up to 30th September 1972) in 1972-73. Now they have been entrusted with the distribution of fertilizers to farmers in toto.

In order to provide the Tamil Nadu Co-operative Marketing Federation and the Thanjavur Co-operative Marketing Federation with necessary margin money for under-taking procurement and distribution of fertilizers, Government have given financial assistance by way of share capital contribution to the two institutions to the extent of Rs. 79 lakhs up to 1971-72. A further sum of Rs. 15 lakhs is likely to be given during 1972-73.

## Promotion of Industrial Peace— Government Policy

Inaugurating the 11th Annual Conference of the Officers of the Tamil Nadu Labour Department, the Hon'ble Labour Minister Thiru K. Rajaram said that the Tamil Nadu Government had taken steps for the welfare of the working class outside their places of work and providing amenities to them apart from those they were entitled to under statutory regulations.

The Minister said that the Government's policy was to preserve and promote industrial peace and create a congenial climate in which industry can flourish and labour prosper. Government also wanted to secure the effective implementation of labour laws without distinctions between the private sector and the public sector.

He hoped that the new Labour Welfare scheme would improve the health and living conditions of the working class. The Tamil Nadu Labour Welfare Fund Act, which came into force from January 1, 1973 was enacted with a view to achieving the objective.

Regarding the difficulty experienced by conciliation officers in contacting the concerned officials in public sector undertakings for the settlement of industrial disputes in those undertakings, Thiru Rajaram said that to tackle this problem it was agreed at a recent meeting of heads of public sector undertakings that an officer of sufficiently high status, who could either take decisions or could obtain and convey immediately the decisions of the heads of these undertakings, should be deputed to attend the conciliation talks before the Officers of the Labour Department.

Government had sanctioned the creation of three Labour Legal Advisory cells in Madras, Coimbatore and Madurai to advise workers and small trade unions on the procedure to be followed for redress of their grievances and for securing relief. Each cell was to be manned by a retired judicial officer with experience of adjudication of industrial disputes and a retired Labour Officer.



| Receipt—                                                                 |               |
|--------------------------------------------------------------------------|---------------|
| By sale of .. .. .                                                       | 640.00        |
| 1 Eggs at 200 average hen boused prodn. (10×200=2000;<br>at 32 Ps. each. |               |
| 2 Birds at Rs. 5 each for 9 birds .. .. .                                | 45.00         |
| 3 Manure .. .. .                                                         | 2.50          |
| 4 Gunnies at 0.75 each .. .. .                                           | 9.30          |
|                                                                          | <u>696.80</u> |

## Net Cash income

| Expenditure—                                  |        |
|-----------------------------------------------|--------|
| 1 Cost of chicks .. .. .                      | 24.00  |
| 2 Cost of feed for chicks .. .. .             | 97.20  |
| 3 Medicines .. .. .                           | 2.50   |
| 4 Cost of Litter .. .. .                      | 2.00   |
| 5 Miscellaneous .. .. .                       | 5.00   |
| 6 Cost of layer feed .. .. .                  | 373.20 |
| 7 Miscellaneous exp. .. .. .                  | 5.00   |
| 8 Depreciation at 20 per cent in buildings..  | 36.00  |
| 9 Depreciation at 20 per cent in equipments.  | 14.40  |
| 10 Interest on investment at 7 per cent rate. | 26.80  |

Total expenditure .. 586.10

## Labour Income.

|                                   |        |
|-----------------------------------|--------|
| For 10 layers .. .. .             | 110.70 |
| Income per layer per year .. .. . | 11.07  |

## ECONOMICS OF A 100 LAYER UNIT

Strain of birds :—Commercial Hybrids  
System of Management :—Deep litter system.  
Stock :—1 to 2 days old sexed female chicks.

Cost.

## Cost upto point of lay—

|                                                                |          |
|----------------------------------------------------------------|----------|
| 1 House 300 sq. ft. (30'×10') (light roofing) at 6 Rs./sq. ft. | 1,800.00 |
|----------------------------------------------------------------|----------|

## 2 Equipments :

|                        |       |
|------------------------|-------|
| 0-4 weeks—             |       |
| Hover 1 .. .. .        | 30.00 |
| Feeders 4 .. .. .      | 48.00 |
| Water Trough 2 .. .. . | 20.00 |

## 5-10 weeks—

|                         |       |
|-------------------------|-------|
| Feeders 4 .. .. .       | 72.00 |
| Water Troughs 2 .. .. . | 30.00 |

## 11-72 weeks—

|                            |        |
|----------------------------|--------|
| Feeders 4 .. .. .          | 100.00 |
| Shall grit boxes 2 .. .. . | 10.00  |

310.00 310.00

|                                                                   |                 |
|-------------------------------------------------------------------|-----------------|
| 3 Chicks at Rs. 3.50 each 112 numbers .. .. .                     | 392.00          |
| 4 Feed at 9 kg. per chick upto 20 weeks at 90 per/kg. (112×9×90). | 907.20          |
| 5 Medicines .. .. .                                               | 25.00           |
| 6 Litter materials 10 bags paddy husk .. .. .                     | 20.00           |
| 7 Miscellaneous Expenses .. .. .                                  | 50.00           |
|                                                                   | <u>3,504.20</u> |

## 21-72 Weeks expenses—

|                                                      |                 |
|------------------------------------------------------|-----------------|
| Feed 40 kg./bird/year at 0.90 kg. .. .. .            | 3,600.00        |
| Shell grit at 2 kg./bird/year at Rs. 0.30 P./kilo .. | 60.00           |
| Miscellaneous expenses .. .. .                       | 50.00           |
|                                                      | <u>3,710.00</u> |

## 5 Receipts—

## By sale of

|                                                         |                 |
|---------------------------------------------------------|-----------------|
| Eggs (at 200 eggs per bird and at) 0.32 per egg ..      | 6,400.00        |
| Birds after laying year at Rs. 5 each for 85 pullets .. | 425.00          |
| Manure .. .. .                                          | 30.00           |
| Cost of gunnies 60×1.50 .. .. .                         | 90.00           |
|                                                         | <u>6,945.00</u> |

## Net Cash Income

## Expenditure—

|                                                         |                  |
|---------------------------------------------------------|------------------|
| 1 Cost of chicks and cost in rearing up to 20 weeks ..  | 1,394.20         |
| 2 Maintenance of layers .. .. .                         | 3,710.00         |
| 3 Depreciation on Building at 20 per cent (1800×2=360). | 360.00           |
| 4 Depreciation in equipments at 20 per cent Rs. 310. .. | 62.00            |
| 5 Interest on investment at 7 per cent .. .. .          | 205.28           |
|                                                         | <u>Rs. 3,504</u> |
|                                                         | <u>5,731.48</u>  |

Net income=Rs. 1,213.52.

The New Bridge across Adyar named Thiru V. Ka. Bridge was declared open 20-10-73. This forms a fast link to Mahabalipuram Tourist Traffic.



The role of Co-operative Banks in the operation of kindling economic progress has now a days increased in Tamil Nadu. One among the chief example to be illustrated in this context is Ramanathapuram Co-operative Central Bank which took an active participation in financing for the prosperity of agriculture and hand-looms in its area. The bank has paid its attention in the fields of expanding production, control of prices and equal distribution of money among the public.

To cite an example of its efficiency, during 1920s, the bank was started in the name of Sri Villiputhur Co-operative Bank and extended financial help to Sri Villiputhur and Sathur Taluk Co-operatives alone. Gradually it has surrounded all the taluks within the jurisdiction of Ramanathapuram. Its golden jubilee in 1971 and the inauguration of its new office building were held on a grand scale.

Apart from other activities of the bank, the banks regular functions like operation of Fixed Deposits, Recurring Deposits and Savings Deposits, the bank attracts the customers by offering higher interest rates. The deposits position has been trebled during the past one decade; the assets of the bank itself is a proof to show the growing confidence of the public with the

Thiru N. V. Natarajan, Minister for Backward Community, is seen inaugurating the City cleaning campaign near Anna Statue on 21 October 1973.



## THE SERVICE OF CO-OPERATIVE BANKS

bank. The deposits now have mounted to Rs. 315.12 lakhs which itself is authentic proof of the efficiency of the bank.

The villager receive the loans through Co-operative Societies as short-term and medium term loans for conducting agricultural activities. The amount of loan to be given is decided according to the size of the land and the method of cultivation. Not only that, these banks go in for a detailed estimate regarding the quality and variety of crops. To illustrate with an example if suppose a farmer owning four acres of land and if he wants to cultivate paddy he will be given Rs. 1,200 i.e. Rs. 300 per acre.

The bank, in this current financial year has decided to lend out Rs. 380 lakhs as short-term loan and Rs. 5 lakhs as medium term loans and in this respect the bank has so far lend out Rs. 33.93 lakhs and steps were taken seriously to distribute the loans as quickly as possible.

Through this process the bank facilitates small scale and large scale

farmers with finance. Not only that, it also extends its warm helping hands to the already indebted farmers and they receive their loans at a lower rate of interest compared to some other financial institution.

The bank's activity never ceases with agriculture alone but also premeated through handlooms sector also. The bank uses Co-operative Societies as an instrument through which the loans are distributed to the weavers. This operation leads not only to the expansion of production but also giving employment opportunity to the weavers.

There are about 68 weaver's Co-operative Societies functioning throughout the district. The bank took a special interest in weavers welfare and so it keeps a vigil on the master weavers to see that they pay normal wages to the weavers. In some cases it encourages the weavers by giving wages direct.

The bank lends money to the Co-operative Milk Societies and facilitates the individual man to join the Co-operative Societies and helps to buy milch cows. Every Co-operative Milk Society helps at least 100 individuals to buy cows for themselves and provide a permanent income of Rs. 50 every month. Through this operation the bank indirectly provides part-time job for the rural folks.

A simple illustration can explain how the bank's operation is successful and efficient in triggering the economic activity. Virudunagar Co-operative Milk Society earned a huge profit and through that receipts it has started one Boarding house which provides sumptuous food and tiffin to the public and it is also running in profit.

This bank, like any other bank provides its customers a quick transaction of bills, cheques and drafts and at a lesser commission compared with other banks. Now it has nearly 28 branches working all over the district.

## Agricultural Growth In Area Development

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areas from the standardised socio-economic scores. It is nothing but the arithmetic mean of the standardised income, education and occupation scores.

Lorenz Curve.

The areas can be arranged in ascending order of average per capita household expenditure. The number of households and the average per capita household expenditure can be cumulated and plotted in a graph.

The strategy of growth in most of the backward areas is essentially linked with the development of agriculture. Agriculture in the backward areas is handicapped by natural and location disadvantages. The prosperity in the agricultural sector will undoubtedly generate capital which is so essential for the overall development of an area in question. Agriculture provides raw materials to industries which find a market among cultivators who form the core of the population in a peasant economy. It is evident that priority for agriculture in development projects will be justifiable for many years to come.

Before projects are formulated it is necessary to undertake detailed surveys of each area in regard to its development potential. These surveys should be followed up by preparation of more detailed technically and economically viable projects. The question of the choice of approach to the development of backward areas arises mainly because of constraints of financial and administrative resources.

The selection of a project to the rejection of alternate plans for development can be based on benefit-cost ratio. Development projects in backward areas will start a chain reaction of development with far-reaching multiplier effects.

In the course of development, it is observed that countries inevitably face regional inequality. A study by the United Nations Economic Commission for Europe observed: "The regional inequalities have been diminishing in the richer countries of Western Europe and the tendency has been the opposite in the poorer ones". Our own experience here in India is in no way different. We find developed areas to co-exist with pockets of poverty. Fruits of planned progress have not been equally shared by all the regions of the country.

Even within a State and a district, we find areas of progressive and less progressive development. Continuously growing disparity in the levels of living and size of income between different areas of the same country is a cause for concern. Deliberate economic policy and concrete expression of the same in the governmental activities can help removal of these inequalities. A progressively greater geographical dispersal of economic activity must be pushed as hard as possible.

It is in this context that the approach of 'Area Development' and the concept of growth centres have assumed significance. In this approach of Area Development, regional disparities can be easily identified and suitable localised development planning can be encouraged to remove the same. In this paper an attempt is made to list out the factors that generally contribute to regional inequalities and to develop a working tool to measure the same. Identifying and measuring the regional inequalities, is the first requisite for any concrete planning in this direction and this paper is just the first step in this direction.

The disparity in the living standards of the population in various areas of the nation stems from different economic and climatic factors:

### Economic Factors

(a) Proportion between growth rates of industrial and agricultural production.

(b) Proportions between productive and non-productive spheres of the population.

(c) Development of a network of infrastructure facilities and social amenities within an area.

### Natural Factors

(a) Differences in the natural resources between areas.

(b) Differences in the human resources between areas.

Identification of a backward area is a prerequisite for planning area development. There are many indices that can be used to measure regional prosperity. An obvious regional prosperity is one is per capita income which is a favoured measure in developing countries. The other indicators are standard of living and economic and social overheads. The level of economic development of an area can be measured by certain specific indicators.

### Socio-Economic Ranking Of Areas.

There are also some multiple criteria methods of socio-economic ranking for identifying socio-economic disparities among rural areas. The application of criteria in aggregate is more advantageous over single criterion method.

Three sets of data are to be collected from the areas by surveys. The indicators of (a) average household income (b) literacy percentage of the population and (c) percentage of population employed in various walks of life constitute the raw socio-economic scores for a particular area.

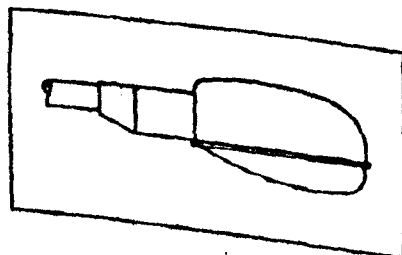
The overall socio-economic rank score can be calculated for the

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## Polio Can Be Prevented

Oral polio vaccine is most valuable as a prophylactic agent, though it has no curative value. Breast-feeding and taking hot drinks should be avoided for certain hours after the administration of oral polio vaccine.

**POLIOMYELITIS** is an acute infectious disease primarily of children, which affects the central nervous system and occurs both sporadically and epidemically. The virus causing the disease has been identified as an enterovirus, commonly known as the poliovirus, with three distinct types. This virus is rendered inactive by heat, drying up, formaline, chlorine and ultra-violet rays.

It is primarily an infection of alimentary tract with the virus multiplying in the regional lymph nodes. The incubation period is about 17 days. The infection does not manifest itself until the virus passes into the blood system and gets localised in the central nervous system. The laboratory investigations suggest that comparatively a small percentage of the infected persons suffer from a clinical disease and a smaller number of these have paralysis of meningo-encephalitis.

The laboratory diagnosis of poliomyelitis can be established by isolation of virus from stool and presence of an increasing antibody level in acute and convalescent phase sera. There is no specific treatment for the paralysis produced by poliovirus. Besides the general supportive measures that are recommended in any acute infectious disease, physiotherapy must be initiated in the affected limbs immediately. During the infection surgical measures like ear, nose, throat operations should be postponed. Personal hygiene, avoiding overcrowded places, sudden chilliness of the body etc. will reduce the chances of developing clinical disease. It goes without saying that physiotherapy is of vital importance in acute and convalescent phases and must not be ignored under any circumstances.

The oral polio vaccine is most valuable as a prophylactic agent. It has no curative value. The vaccine may be administered to anyone including infants of 3-6 months of age. The administration of the vaccine has to be avoided during acute infectious disease, high fever, vomiting and dysentery. Also, patients suffering from acute leukaemia and lymphoma, generalised malignancy and receiving corticosteroids and antimetabolites may not be given the oral polio vaccines. One should avoid breast-

feeding at least 3-4 hours before and after the administration of the vaccine. It is also advisable to avoid administration of other immunizing agents the day oral vaccine is given. Hot drinks should not be taken within half-an-hour after the administration of the vaccine.

Oral polio vaccine comprises the three serotypes of polioviruses. This is a living vaccine and its efficacy depends entirely on the administration of live viruses to the individual. If, somehow or the other, any proportion of the live viruses of any of the serotypes is inactivated, the vaccine ceases to be an effective immunizing agent. With the use of such vaccine, the proportion of children, who have been successfully immunized against poliomyelitis, will be very small.

### Stored at Sub-Zero Temperature

To prevent the inactivation of the vaccine before administration to the children, it is recommended that the vaccine should be stored at sub-zero temperature. It is imperative that the suppliers, distributors and the polio vaccine clinics store this vaccine at 20° C in a deep-freeze. In case a deep-freeze is not available, it might be stored in the freezing chamber of the refrigerator. During transport the vaccine must be kept either on dry ice (solid carbon dioxide) or a freezing mixture.

At the polio-vaccination clinic, the bottle containing the vaccine should not be frozen and thawed repeatedly since repeated freezing and thawing has deleterious effect on the potency of oral polio vaccines. Better still keep the vials of the vaccine in ice during its administration to children. Every child must be vaccinated with the appropriate volume of the vaccine. The person responsible for the distribution of vaccine in a clinic must ensure that the nurse is familiar with the quantity that has to be given to every child. In case the vaccine is being administered by spoons, disinfectants like dettol or lysol may not be used for the cleaning of spoons. The ideal way is to boil the spoons in water and then cool in ice water before it is used for administering polio vaccine.

By  
DR. (MRS.) V. V. GUJRAL,  
New Delhi.



A sizeable proportion of our population suffers from varying degrees of anaemia which is caused by poverty and the consequent inability to afford nutritious food plus the malaria and hookworm infestation. In this article the symptoms of anaemia and the simple method of treatment are put forth.

## Anaemia Need Special Attention

All body cells are undergoing degeneration and building up uninterrupted. So also the cells in blood. The life span of red blood cells is about 120 days which means that every four months new red cells are built up and the earlier ones degenerate. Building up of red cells and their subsequent maintenance require some nutrients, deficiency of which causes anaemia. A sizeable proportion of our population suffers from varying degrees of anaemia. Apart from nutritional deficiency, malaria and hookworm infestation also can lead to anaemia. Poverty and consequent inability to afford nutritious food are the main causes for anaemia in our country. Some people are ignorant in their choice of good foods and anaemia might result from this as well. Excessive bleeding during accidents may cause anaemia. Closely spaced pregnancies and prolonged breastfeeding may also result in anaemia.

Every 100 millilitres of blood normally contain 14—15 grams of haemoglobin. Haemoglobin present in the red blood cells supplies oxygen to the body. Adult women with less than 12 g. of haemoglobin are considered anaemic. Women especially when pregnant, are often likely to become anaemic.

### Symptoms of Anaemia

Feeling of exhaustion, headache, sleeplessness, loss of appetite, changes in nails and general weakness are the symptoms of anaemia. While they may not pose danger to life, the working efficiency does suffer.

Nutritional requirements of pregnant women are rather high. If there is not enough blood, oxygen supply for the body cells will not be

sufficient, which may cause a premature delivery. If the delivery is earlier than expected, the infant's life is in danger. Moreover, the mother's life may also be at risk as a result of the excessive strain on her.

If the mother is anaemic, she cannot provide enough blood to the body in her womb. Infants live on breast-milk alone for the first six months. But iron content of milk is rather low. With no iron stores in the body and only little of it in milk, infants are more exposed to getting anaemia.

### Prevention of Anaemia

What are the nutrients which can prevent anaemia? Proteins, iron, vitamin-B and vitamin-C are essential for the formation of blood. Deficiency of any of these can lead to anaemia.

Milk, pulses, liver and eggs are rich in proteins and the body can have good quality proteins through a mixture of cereals and pulses. Next to proteins, iron is important. This mineral nutrient is available in leafy vegetables and liver.

### Vitamins B and C Needed

Body needs some vitamins to absorb iron from food. To cite an example; unless vitamin C is present, iron cannot be absorbed properly. Generally, all fruits contain vitamin-C. It is also found in leafy vegetables.

B-vitamins are needed to maintain good blood. Whole grains, pulses, liver and milk give us these vitamins.

About half the number of pregnant women in our country are anaemic. One out of every four maternal deaths is due to anaemia. To avoid anaemia, the daily diet should contain milk, whole grains, leafy vegetables and liver. Vegetarians must eat a lot of leafy vegetables.

### "MALARIA" DECLARED AS INFECTIOUS DISEASE.

Section 52 in Part I of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) deals with the infectious diseases and section 62 in Part II of the said chapter deals with the notified diseases. During the last decade or more, the incidence of Malaria has considerably decreased in the city of Madras, though it cannot be said that it has been eradicated once for all. But recently there has been a noticeable increase in the incidence of Malaria in the City, which is due to various factors. With a view to have an effective control over the spread of the disease, the Government considered it necessary to include "Malaria" in the list of infectious diseases as well as notified diseases, so that effective control measures could be undertaken. Accordingly, it was declared in the notifications issued with G.O. (Ms.) No. 2797, Health, dated 1st December 1972 that "Malaria" shall be an infectious disease and notified disease throughout the State for the purposes of Parts I and II respectively of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) the notifications having been published in Part II—Section I of the Tamil Nadu Government Gazette, dated 25th February 1973.

## Company Meeting

# CHERAN TRANSPORT CORPORATION LIMITED

Regd. Office : 37, Mettupalayam Road,  
Coimbatore-641011.

Statement made by Thiru M. S. Ram, I.A.S., Chairman, Cheran Transport Corporation Limited at the Second Annual General Meeting of the shareholders of the Corporation held on the 29th September 1973.

Gentlemen,

I have much pleasure in welcoming you to the Second Annual General Meeting. The Report of the Directors and the Audited Accounts for the year ended 31st March 1973 have been circulated to you and with your permission I shall take them as read.

### Working Results for the Year

In 1972-73, the turnover was Rs. 2.03 crores and after charging all expenses including a depreciation of Rs. 25.66 lakhs, your Company made a net profit of slightly over Rs. 7.50 lakhs. After wiping out the previous year's loss of Rs. 7.50 lakhs completely, the company will carry forward a small surplus of Rs. 1.695.

Your company commenced its commercial operations on 1st March 1972 and therefore the First Annual Report for the period ending 31st March 1972 was only for one month's operation. The Audited Accounts now before you are for the first year of 12 months' operations of your company.

The Government of Tamil Nadu when it authorised the setting up of your company in January 1972 required that the company should take necessary steps to ensure that it is able to meet its requirements on fleet replacement from time to time from internally generated cash resources and should earn a minimum return of 6 per cent on capital invested after meeting the interest charges and earmarking

necessary funds for depreciation. I am pleased to inform you that your company has earned over three times the minimum return of 6 per cent on capital prescribed by the Government. During the year 1972-73, the paid up capital of the company was Rs. 2,100. But we received an amount of Rs. 15 lakhs from the Government of Tamil Nadu as advance towards the issue of shares. If we notionally treat this amount as equity, out of the pre-tax profit of Rs. 7.5 lakhs we would have been able to declare a dividend of 20 per cent after payment of taxes.

In a Government-owned company like ours, as the company could borrow funds to meet most of its requirements, the proper measure of financial performance may perhaps be return on capital employed. As the Audited Accounts before you would show the capital employed by your company during the financial year 1972-73 is just over Rs. 54 lakhs. The return on this has been Rs. 10.80 lakhs (net profit of Rs. 7.50 lakhs provided for in the accounts). This works out to a return of 20 per cent on the capital employed.

You would agree with me that this financial performance is outstanding for a public utility company like Transport measured by any standards. More so, as this was possible in a period of inflation when our costs escalated and our charges for use of our facilities remained constant. Instead of leaving it to the last, let me at the outset, on behalf of the Board of Directors, congratulate the

employees of the Corporation and its Managing Director Thiru N. Thiruganasambandam, under whose dynamic leadership this excellent financial performance has been made possible.

### Satisfaction to the community

While it is easy to measure financial performance, it is difficult to measure the amount of satisfaction we have given to the community at large in the area in which we operate. While laying down the financial performance expected of the Corporation in January 1972, the Government of Tamil Nadu also charged the Corporation "with the responsibility for maintaining an efficient, adequate, economical and viable system of road transport services in its area of operation". The services expected from the Corporation include elements such as capacity, frequency, reliability, speed, safety and financial viability. The broad aim of the Corporation would be to provide a comprehensive net work of services including certain routes that may individually not be economic propositions. The Government expect the company to function in accordance with the sound commercial principles as far as practicable consistent with its responsibility as a public utility concern dealing with a vital sector of great importance to the community as a whole.

As your Corporation is responsible only for about 25 per cent of the total number of buses operating in the districts of Coimbatore and the Nilgiris, there have been difficulties.

in its discharging some of the responsibilities entrusted to it. But even within the parameters the Corporation operates, there is plenty of scope for improving the Corporation's service to the community from the point of view of increasing capacity, frequency, reliability and speed. I want to assure you and through you the people of Tamil Nadu who are the real owners of the Corporation that the Management are fully conscious of the need for improvement of its services and would rededicate itself during the current financial year to the challenging task of providing better service to the community.

### Bringing Rural Areas within Transportation Net Work

Apart from providing a letter service, we are at present preparing plans for connecting every village with motorable roads in our area of operation to our transportation net work. We know in the early years these routes would not be viable. We are prepared to treat part of the cost in running buses in the newly constructed rural roads as social costs or developmental costs.

All these measures are bound to affect our financial performance for the current year and for the coming years. It is for this reason that while reviewing the Company's financial performance for the year 1972-73, I did not indulge in the usual platitude and give you the hope that there is scope for improvement in the financial performance of the company. I want to take you into confidence and tell you that as we improve our services and connect hitherto unconnected villages within the net work of our transportation system and subside such operations the percentage of return on the capital employed is likely to come down. But we hope to continue to maintain reasonable and satisfactory financial performance even after incurring the social costs proposed. I believe that creation of surplus, whatever be its form 'for future investment' is a basic obligation of a company like ours. While a public sector company may plead incurring of social costs as a reason for creating less surplus from out of its investments, it would be a sad day for our overall economic development, if any of our public sector companies

plead incurring of social costs as an alibi for creating no surplus at all.

### Corporation's Growth

The Directors have reported to you about a growth of nearly 200 per cent, both in the fleet strength and monthly average collections during the financial year ending 1972-73. During the year 203 vehicles were added to the fleet strength. This was made up of 124 acquired in the Nilgiris district as a result of nationalisation, 32 acquired from the Co-operative Societies which were taken over by your company, 24 bought from private operators who volunteered to sell their buses to the company and 23 directly purchased by the company for augmentation. You would appreciate that while this growth rate was possible for the first year on a lower base, it cannot be sustained during the current financial year or in future years. During the current year, the company has so far added 43 more vehicles. Before the end of March 1974, we hope to add 100 more vehicles thereby achieving a growth rate of approximately 50 per cent. A similar growth rate of 50 per cent is also expected in the monthly average collections.

With an increase in fleet of 50 per cent, the Corporation hopes to increase the total kilometrage run by about 75 to 80 per cent.

Your company has taken a number of steps to prepare themselves for the eventual take over of the passenger bus services in its area of operation. It has a massive programme of construction of depots in a number of places involving an outlay of Rs. 20 lakhs during 1973-74. Proposals are also under consideration for installation of modern machinery for ensuring proper maintenance of vehicles.

The company has also undertaken a scheme for training employees at various levels including training of III qualified technicians as drivers.

### EMPLOYEES' PARTICIPATION IN THE EQUITY CAPITAL OF PUBLIC SECTOR UNDERTAKINGS.

As you are aware, employees' participation in equity capital and management of companies, both in public and private sectors, has

been discussed in our country for a number of years. The public sector have experimented with association of workers in management. The private sector in some cases have also experimented with reservation of certain number of shares to be exclusively sold to their employees. But, once such shares are purchased by an employee, he has no obligation to hold on to the shares.

The scheme of the "Employees Participation in the Equity Capital and Management in the State Owned Transport Corporations" announced by the Tamil Nadu Government is a unique one in many respects. Under the scheme the employees are issued with convertible debentures bearing 8 per cent interest. Convertible debentures do not give the ownership to the employee immediately. He is a lender to the Corporation; but a lender with an option to acquire ownership. The debentures are convertible into ordinary shares of the Corporation during a period of ten years. The employee would continue to get interest at 8 per cent on his investment as long as he keeps his debentures, even if the company works on loss. If there is profit and a dividend of more than 8 per cent is declared, the employees has the option to convert his debentures into shares and get better returns on his investment.

The scheme permits employees who get a salary up to Rs. 500 p.m., to purchase debentures worth Rs. 500 and those who get a salary of Rs. 500 and more, to purchase debentures up to Rs. 1,000. The purchase money can be paid in small monthly instalments. The scheme is optional in the case of existing employees, but in the case of new recruits, it is compulsory. The employee will not be permitted to transfer the convertible debentures during the period of service with the Corporation.

The scheme has been hailed as a bold socialistic experiment. The hope is that conditions would be created under which an industrial worker will look upon ownership of a piece of industry and develop attachment to that industry in the same manner in which he or his forefathers have been attached to the piece of land which they cultivated.

In introducing this scheme, the Tamil Nadu Government hoped that "the least it would do, would be to unleash latent forces that would be responsible ultimately for a new kind of revolution in our public sector industry, a revolution in terms of increased productivity, profitability and harmonious labour relation". They also hoped that "this would set a chain reaction and would inspire others to launch similar or modified schemes of worker participation in ownership of industry".

Your Company had the good fortune of being selected as the first public sector undertaking in Tamil Nadu to introduce this scheme. The scheme is in operation in your Company from May 1973. It is a tribute to the social responsibility and farsightedness of the employees of your Company that out of 1,500 regular employees, 1,300 have voluntarily joined the scheme. The Board of Directors have nominated two employee debenture holders as Directors of the Company. These Directors are serving bus drivers who are the king pins of any transport organisations. There are very few parallels either in the public or private sector in our country where employees at the so-called working level have been nominated and asked to take their seats along with the management in the Board of the Corporation.

### PROFIT SHARING

Your Board also recently introduced a "Profit Sharing Scheme" to cover all employees of the Corporation except the Managing Director. The drivers and conductors in most of the transport organisations in the private sector and some of the transport organisations in the public sector were getting what is known as 'collection batta'. This batta usually is a percentage of the daily collections and provided an incentive for the driver and conductor to increase the collections by picking up passengers at the appropriate places and maintaining regularity of services. The drivers and conductors in your company were also getting this collection batta. We found from experience that practically every one in a transport organisation will have to pull his weight to enable the organisation to earn profits. Therefore, we have

devised a 'Profit Sharing Scheme' to cover all employees of your Corporation excepting the drivers and conductors who are governed by the existing incentive scheme. The basic element in the new scheme is there will be no sharing without profits being made. The standard profit the Corporation expects to make after meeting all its expenses including interest charges, depreciation, etc., is 10 paise per kilometer. If during any month, the profit goes down below 10 paise per kilometer, there would be no profit sharing. During the months the profits are 10 paise or more per kilometer, 0.5 per cent of the collections for the month will be shared equally by all the employees.

We are conscious that this is not a very refined profit sharing scheme. But, we are making a beginning and we hope this measure along with the employees participation in equity capital and management, which we have introduced, would give a stake to the employees in the profitable operations of the Corporation.

With your permission, I would like to refer also to some of the particular problems of passenger transportation industry. The industry now comprises of 47 Nationalised Undertakings which include 16 State Road Transport Corporations, 12 Departmental enterprises, 14 Municipal Services and 5 companies under the Companies Act of 1956.

The pace of nationalisation of the bus transportation industry in our country has been slow. After 25 years of efforts at Nationalisation we have succeeded in nationalising only 37 per cent of the existing only 37 per cent of the industry. Though the total number of passenger buses in the country have increased from 34,000 in 1950-51 to 95,000 in 1969-70, the number of houses under Public Sector in 1969-70, is only 35,193. An important reason for the slow progress of Nationalisation has been lack of an appropriation instrument for speedy and progressive nationalisation.

The Motor Vehicles Act of 1939, inspite of important subsequent modifications, remains basically a 'Magna Carta' of free enterprise. Some sections of the Act, no doubt, vest discretion in the State Trans-

port Undertakings to nationalise routes and areas. Interpretations of these sections, the manner in which route nationalisation and area nationalisation can be resorted to under these sections continue to be the subject of vexatious litigation between the Bus Operators and the various State Transport Undertakings. Private Operators have invariably succeeded in getting stay orders on the operation of particular sections of the Act and got temporary permits to ply on the routes nationalised under the provisions of the Act. The legal battle is on still. While it would be for the historian of the future to record the frustrations of the nationalised transportation industry in detail in the history of nationalisation in our country, I know of no parallel where nationalisation has been as slow and cumbersome process as nationalisation under the provisions of the Motor Vehicles Act of 1939.

The permits i.e., licences to ply buses on roads constructed at public cost is still treated as sacrosanct private property even after the expiry of the period of the permit. The operator has a right to renew the permit. The State Transport Undertaking has no preference as against the private operator either in getting permit for a new route or in getting an expired permit allocated to itself. It would look paradoxical, but nevertheless it is true that a newly formed State Transport Undertaking is at disadvantage in getting a new permit as against a private operator under the provisions of the Act, because the State Transport Undertaking has no experience in running a transport industry!

It is in recognition of these problems the Government of Tamil Nadu promulgated The Stage Carriages and Contract Carriages (Acquisition) Ordinance 1973. The Ordinance later became an act. The Ordinance/Act authorised Government to notify and take over all buses with employees and routes and to pay compensation in accordance with the Schedule prescribed in the Ordinance/Act. The High Court of Madras held the Ordinance and the Act as void. An appeal on this has been filed with the Supreme Court by the Government of Tamil Nadu and is still pending with that Court. I am glad to inform you that some of the bus

operators in the Nilgiris District have voluntarily given up their right to challenge the Tamil Nadu Act except in respect of the compensation prescribed in that Act and have settled their claims with the Government.

### ELIMINATION OF WASTEFUL COMPETITION AND SAVING OF FOREIGN EXCHANGE

Apart from ideology, there are some important practical reasons for a total nationalisation of bus transportation industry at this stage. An empty passenger seat is one of the most perishable commodities in economic terms. Unlike in any other industry, a passenger seat not occupied in a trip is a wasted asset. In theory, the regulations under the Motor Vehicles Act are expected to ensure the operation of an efficient and economic system by eliminating wasteful competition. But in practice, wasteful competition arising out of running a larger number of buses in routes where a smaller number would adequately cater to the needs for passenger transportation is common. It is also common wherever a route is nationalised for the private operator as well as for the nationalised undertaking to run parallel operations in that route, till the need and the legality of the nationalisation is established invariably in the highest Courts of the land.

I want to pose this question with all earnestness at my command. Can a country with the availability of limited investment capital which imports most of its petroleum products by paying scarce foreign exchange afford the luxury of this competition in passenger transportation? Organisation of the entire transportation system under the auspices of the State may not completely eliminate this wastage but there are reasonable prospects of most of the wastage being eliminated.

I hope the Government of India who are now concerned with increase in crude oil prices in an effort to save the import bill on petroleum products would soon take the initiative to set in motion a study on the prospects of saving diesel oil by eliminating wasteful competition in passenger transport.

### CONCLUSION

Gentlemen, let me now hasten to perform the happy task of expressing my deep gratitude to the Hon'ble Minister for Transport, Government of Tamil Nadu and his colleagues for this whole-hearted and continued support and the freedom with which they permitted the Management of your Company to operate within the parameters of Government's policies and directions. If the Corporation has been able to live up to the expectations of the Government, this has been mainly due to the auto-

nomy it enjoyed in its day-to-day operations.

I would also like to record my thanks for the co-operation of the Officers and Staff of the Comptroller and Auditor-General of India and the Statutory Auditors, Thiruvallur C. S. Sathapathy and Krishnamurthy for the completion of their audit and for their valuable comments.

I would like to end this statement with a personal note. Your Company, by standards of Transport Companies in this country, is a small one with a fleet of over 300 buses. Nevertheless, I consider it to have been my privilege to be associated with your Company as its Chairman during the last 18 months. It has given me great personal satisfaction to have participated in evolving implementing some of the new schemes such as Employees' Participation in Equity Capital and Management and the Employees Profit Sharing in your Company. I am grateful for the co-operation I have received from all the employees of the Company and my colleagues in the Board.

Gentlemen, I now move that the Directors' Report, Audited Balance Sheet and the Profit and Loss Account be approved and adopted.

Note.—This does not purport to be a record of the proceedings of the Annual General Meeting.

When two drivers of Cheran Transport Corporation were nominated Directors of the Corporation, they were taken in procession along with Transport Minister.



## DEPARTMENT OF TECHNICAL EDUCATION, TAMILNADU.

### GOVERNMENT TECHNICAL EXAMINATIONS

MAY 1973

Following is the provisional list of register numbers of successful candidates in the Government Technical Examinations in Accountancy, Commercial Practice, Banking, Commercial Geography, Shorthand, English and Tamil Typewriting—English and Tamil Lower and Higher Grades, including Intermediate Grade in Shorthand—English, Shorthand—English and Tamil—High Speed Tests, Typewriting—English and Tamil High Speed Tests held in May 1973.

The certificates of the successful candidates in the above examinations will be despatched to them shortly. Discrepancies, if any, in the publication of results in the different Dailies may be got clarified by addressing this office.

Necessary notification inviting application from eligible candidates for admission to the Government Technical Examinations in Commerce subjects to be held in November 1973 will be published shortly.

### TYPEWRITING—ENGLISH (LOWER)

#### FIRST CLASS

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20, 59, 22953, 23253, 23470, 75, 23573, 23676, 23756, 57, 23884, 23986, 24198, 24242, 24311, 38, 24400, 24561, 24700, 40, 24807, 37, 39, 25097, 25103, 25383, 25494, 25609, 14, 66, 25774, 25802, 25900, 39, 64, 26060, 26279, 81, 26338, 26451, 52, 55, 82, 97, 26522, 44, 48, 86, 26643, 84, 26724, 26, 83, 26861, 72, 94, 26906, 26, 27014, 38, 27186, 27217, 27365, 76, 77, 88, 27431, 27508, 27644, 61, 84, 85, 27702, 06, 27862, 27969, 28012, 28135, 28306, 93, 28400, 1, 12, 14, 28527, 28, 28636, 84, 28705, 16, 61, 29149, 29292, 29303, 29465, 71, 29519, 29703, 11, 25, 29971, 30148, 79, 30364, 30605, 69, 30763, 72, 75, 30983, 31028, 29, 31133, 74, 31266, 31406, 31608, 31993, 32251, 32419, 72, 32506, 32690, 34022, 31, 34159, 97, 34505, 20, 34600, 34751, 53, 34905, 49, 35074, 35149, 91, 35302, 37, 88, 35473, 35617, 35824, 35996, 36035, 36177, 36277, 89, 36320, 36944, 74, 37437, 37504, 34, 37688, 37847, 38539, 44, 57, 38697, 38720, 21, 39789, 96, 39995, 40047, 40164, 40481, 82, 40533, 40831, 41057, 41336, 92, 41408, 55, 41784, 41871, 41908, 42057, 42188, 42329, 56, 42403, 42557, 74, 42709, 42868, 43051, 43169, 43395, 43472, 43561, 93, 43804, 57, 44920, 45198, 45637, 54, 45910, 46123, 46483, 90, 46554, 46749, 46823, 65, 68, 47161, and 84.

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35, 44, 95, 105, 8, 13, 15, 36, 51, 216, 21, 23, 25, 30, 39, 53, 55, 57, 60, 73, 319, 34, 38, 47, 51, 55, 57, 90, 406, 25, 46, 80, 81, 94, 501, 20, 46, 49, 54, 57, 75, 76, 99, 687, 723, 24, 39, 96, 825, 28, 61, 66, 84, 90, 91, 98, 900, 5, 13, 43, 63, 1003, 14, 20, 78, 1126, 1221, 31, 45, 48, 53, 84, 87, 1320, 27, 46, 58, 59, 66, 67, 83, 99, 1400, 1, 9, 11, 17, 19, 22, 30, 40, 48, 63, 1503, 27, 28, 36, 40, 41, 51, 53, 59, 60, 62, 68, 99, 1614, 45, 62, 77, 97, 1711, 13, 50, 61, 65, 81, 90, 95, 1803 to 5, 11, 12, 22, 24, 25, 36, 45, 49, 66, 68, 72, 90, 96, 1929, 35, 36, 43, 47, 51, 52, 54, 60, 64, 70, 71, 84, 91, 2009, 17, 25, 61, 66, 71, 72, 73, 91, 2104, 18, 44, 60, 66, 71, 79, 94, 96, 99, 2208, 9, 11, 12, 61, 2330, 39, 40, 43, 51, 55, 59, 63, 65, 70, 72, 80, 82, 89, 90, 2402, 4, 15, 25, 29, 31, 32, 38, 41, 45, 46, 93, 2507, 8, 9, 26, 43, 44, 54, 55, 59, 72, 81, 90, 94, 96, 2601, 5, 13, 20, 63, 65, 77, 94, 96, 99, 2704, 6, 19, 20, 21, 24, 29, 34, 36, 42, 80, 82, 88, 2800, 3, 9, 16, 31, 37, 47, 53, 56, 60, 65, 67, 77, 93, 94, 2923, 35, 39, 56, 57, 59, 62, 64, 69, 75, 83, 87, 3020, 25, 26, 32, 41, 45, 49, 68, 79, 83, 91, 3106, 14, 37, 72, 80, 83, 87, 91, 94, 98, 99, 3202, 15, 16, 54, 55, 70, 86, 90, 92, 3312, 20, 29, 36, 42, 46, 79, 81, 86, 95, 96, 3405, 9, 10, 21, 42, 45, 46, 49, 53, 54, 68, 71, 75, 76, 77, 81, 85, 87, 89, 94, 3501, 7, 9, 19, 28, 29, 32, 46, 49, 3613, 29, 42, 46, 47, 81, 86, 91, 97, 3701, 7, 30, 31, 39, 44, 46, 48, 54, 58, 59, 64, 67, 84, 3810, 19, 20, 29, 33, 46, 48, 52, 56, 67, 74, 89, 91, 95, 97, 98, 3942, 49, 4006, 7, 18, 25, 28, 67, 91, 4115, 23, 48, 60, 80, 4203, 19, 22, 23, 42, 50, 59, 88, 89, 4307, 4405, 4533, 40, 4669, 88, 4705, 12, 34, 4930, 59, 94, 5014, 51, 52, 64, 90, 5104, 25, 26, 41, 68, 69, 5204, 39, 44, 46, 51, 95, 5309, 14, 5449, 50, 70, 76, 95, 5517, 46, 50, 60, 86, 93, 5614, 18, 52, 81, 5705, 24, 25, 33, 39, 40, 55, 71, 76, 80, 89, 91, 96, 97, 5802, 17, 25, 26, 49, 82, 5946, 6002, 4, 7, 32, 79, 82, 95, 6137, 79, 89, 6203, 21, 23, 24, 27, 71, 6303, 47, 59, 63, 81, 86, 88, 90, 6400, 9, 61, 71, 72, 6503, 4, 12, 24, 26, 31, 34, 38, 53, 69, 98, 6624, 48, 50, 54, 64, 65, 66, 86, 92, 94, 6702, 25, 6826, 56, 6932, 36, 39, 42, 76, 93, 7006, 10, 12, 19, 41, 49, 56, 63, 74, 85, 89, 92, 7106, 54, 91, 7209, 16, 17, 31, 36, 37, 54, 87, 97, 7322, 48, 60, 7408, 49, 65, 69, 86, 88, 94, 7527, 52, 54, 55, 62, 88, 7727, 69, 7862, 64, 74, 81, 7901, 87, 8027, 34, 55, 65, 66, 88, 8109, 14, 17, 23, 36, 8331, 77, 85, 93, 8400, 3, 26, 72, 8506, 24, 50, 8623, 38, 39, 57, 63, 70, 79, 81, 83, 87, 89, 8763, 8834, 39, 45, 46, 91, 8916, 75, 89, 9003, 23, 29, 34, 57, 68, 87, 9100, 75, 77, 84, 9270, 9338, 41, 95, 9451, 67, 76, 88, 9514, 16, 22, 27, 39, 61, 85, 98, 9616, 35, 37, 48, 55, 81, 82, 9867, 96, 97, 9972, 10101, 12, 20, 23, 35, 40, 41, 56, 76, 86, 95, 10205, 8, 15, 51, 57, 60, 10317, 27, 37, 52, 10424, 51, 10521, 53, 10710, 12, 20, 22, 54, 64, 10808, 19, 51, 53, 83, 10943, 47, 70, 75, 82, 97, 11005, 20, 34, 45, 53, 65, 68, 69, 11115, 26, 64, 75, 96, 11258, 85, 11310, 16, 17, 28, 34, 49, 68, 83, 88, 89, 11405, 11, 12, 15, 27, 40, 59, 73, 91, 11504, 59, 71, 80, 90, 11601, 7, 18, 32, 53, 56, 57, 67, 68, 70, 84, 11701, 14, 17, 21, 22, 25, 35, 73, 84, 11816, 18, 32, 36, 51, 58, 84, 87, 11922, 41, 43, 65, 69, 70, 71, 73, 87, 12008, 25, 37, 40, 52, 56, 59, 95, 97, 98, 12100, 11, 12, 14, 20, 44, 57, 60, 71, 79, 85, 90, 94, 12200, 3, 42, 50, 58, 76, 12401, 5, 12, 28, 37, 41, 60, 64, 81, 84, 90, 93, 97, 98, 12512, 18, 20, 62, 81, 12601, 2, 48, 58, 84, 12704, 21, 26, 33, 40, 59, 63, 77, 12803, 5, 29, 69, 73, 92, 96, 12917, 27, 38, 49, 50, 52, 64, 76, 77, 82, 86, 89, 13013, 16, 66, 91, 13106, 48, 55, 58, 81, 82, 99, 13206, 8, 10, 28, 29, 34, 39, 41, 78, 83, 13302, 9, 18, 30, 33, 43, 45, 51, 58, 65, 78, 13409, 20, 27, 28, 30, 31, 35, 39, 40, 45, 49, 54, 55, 76, 82, 84, 88, 91, 99, 13522, 32, 35, 51, 56, 65, 84, 88, 99, 13609, 18, 20, 26, 27, 43, 45, 53, 66, 87, 13792, 13871, 75, 79, 82, 84, 89, 90, 13902, 3, 23, 31, 47, 60, 63, 86, 90, 92, 96, 14004, 8, 13, 14, 28, 43, 51, 52, 64, 77, 85, 14102, 38, 50, 51, 72, 75, 76, 84, 94, 95, 97, 14247, 52, 60, 76, 86, 87, 14303, 42, 89, 93, 14411, 19, 21, 24, 31, 33, 39, 40, 52, 56, 63, 78, 83, 88, 95, 96, 14509, 20, 38, 46, 51, 85, 87, 93, 99, 14602, 4, 6, 7, 21, 52, 14749, 14823, 41, 57, 61, 94, 14904, 19, 26, 28, 49, 54, 62, 76, 80, 81, 82, 91, 92, 15049, 53, 66, 86, 98, 15102, 16, 41, 45, 59, 15204, 18, 32, 38, 43, 50, 66, 81, 93, 15315, 20, 22, 24, 43, 44, 46, 48, 61, 64, 95, 15463, 88, 94, 15508, 85, 92, 93, 15630, 41, 43, 15788, 15813, 41, 48, 15908, 13, 28, 39, 45, 47, 58, 59, 61, 70, 92, 94, 95, 96, 97, 98, 16031, 63, 64, 84, 16111, 23, 29, 36, 39, 74, 85, 16200, 14, 79, 89, 92, 93, 16303, 5, 40, 41, 16419, 51, 52, 59, 62, 94, 16903, 13, 19, 93, 17014, 18, 25, 33, 40, 43, 51, 55, 61, 63, 82, 17103, 52, 64, 70, 90, 92, 17201, 10, 18, 19, 27, 30, 79, 17352, 57, 60, 17407, 31, 60, 17511, 12, 14, 51, 55, 68, 75, 17603, 14, 17703, 12, 22, 79, 17817, 35, 52, 62, 64, 70, 90, 95, 98, 17900, 11, 20, 58, 18003, 70, 76, 98, 18149, 50, 57, 18294, 18310, 18530, 54, 80, 18610, 25, 27, 32, 39, 42, 78, 91, 18705, 8, 23, 26, 32, 61, 63, 18818, 23, 48, 82, 18900, 1, 3, 14, 47, 65, 74, 88, 89, 19038, 67, 75, 83, 84, 95, 97, 98, 19100, 20, 71, 82, 19227, 28, 45, 55, 64, 82, 90, 19300, 5, 6, 13, 55, 82, 86, 94, 19433, 36, 40, 44, 64, 74, 81, 84, 88, 98, 19636, 58, 78, 19723, 26, 48, 19806, 65, 19923, 20073, 76, 77, 98, 20119, 24, 25, 32, 38, 52, 91, 20206, 40, 42, 51, 57, 60, 64, 83, 89, 20326, 27, 37, 61, 77, 20409, 10, 13, 24, 60, 85, 96, 20541, 72, 79, 20608, 16, 27, 32, 75, 80, 86, 20703, 5.

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20818, 30, 31, 49, 57, 59, 74, 75, 79, 20954, 21004, 6, 13, 23, 40, 42, 80, 21108, 36, 75, 21206, 18, 50, 61, 63, 76, 83, 98, 21308, 15, 25, 38, 53, 54, 21508, 16, 23, 44, 47, 48, 56, 71, 86, 90, 21603, 21, 45, 72, 79, 21704, 73, 21811, 25, 44, 49, 52, 58, 79, 81, 87, 96, 21909, 31, 34, 35, 82, 22017, 31, 41, 69, 76, 96, 22104, 6, 12, 34, 81, 90, 93, 22244, 45, 51, 65, 80, 22307, 61, 62, 65, 22412, 41, 97, 99, 22503, 10, 13, 46, 56, 72, 89, 22600, 11, 17, 23, 32, 33, 36, 39, 58, 98, 22734, 22935, 46, 47, 83, 85, 92, 23008, 30, 31, 79, 85, 88, 98, 23110, 53, 23206, 20, 56, 58, 66, 68, 94, 23300, 6, 15, 42, 45, 76, 92, 23454, 90, 23504, 23, 30, 36, 39, 44, 49, 77, 95, 23606, 8, 42, 44, 49, 51, 23701, 44, 52, 77, 92, 95, 23888, 90, 92, 93, 23917, 18, 30, 39, 48, 60, 73, 24005, 8, 23, 32, 38, 56, 24120, 42, 46, 51, 63, 75, 76, 82, 24243, 49, 51, 58, 73, 76, 85, 91, 99, 24303, 28, 29, 49, 81, 24434, 35, 63, 66, 24523, 35, 37, 45, 46, 58, 75, 91, 24606, 17, 23, 24, 40, 24728, 37, 39, 52, 78, 79, 86, 95, 24840, 47, 51, 56, 88, 98, 24900, 25021, 22, 84, 93, 94, 21538, 50, 86, 94, 25201, 24, 30, 45, 50, 53, 64, 92, 25325, 37, 39, 44, 60, 25421, 26, 31, 44, 45, 54, 71, 25531, 88, 89, 96, 25624, 39, 57, 60, 61, 68, 81, 26041, 64, 81, 26149, 89, 90, 92, 26203, 16, 34, 35, 50, 52, 64, 26935, 40, 63, 70, 83, 95, 99, 25918, 35, 51, 78, 26041, 64, 81, 26149, 89, 90, 92, 26203, 16, 34, 35, 50, 52, 64, 26935, 40, 58, 61, 26454, 61, 71, 77, 26506, 49, 71, 26626, 31, 42, 50, 57, 86, 26702, 25, 31, 26821, 38, 51, 62, 64, 26935, 40, 43, 50, 63, 74, 81, 87, 90, 27050, 68, 69, 87, 27103, 45, 27207, 71, 83, 27307, 57, 58, 59, 71, 72, 27402, 18, 19, 26, 40, 65, 71, 73, 77, 78, 95, 27512, 26, 49, 75, 76, 80, 82, 83, 27619, 20, 49, 50, 95, 27709, 26, 36, 45, 48, 27805, 6, 65, 78, 27905, 6, 20, 35, 36, 37, 66, 67, 28024, 44, 51, 60, 28107, 13, 39, 41, 44, 97, 28252, 618, 28308, 42, 52, 28403, 37, 44, 28520, 23, 33, 37, 50, 54, 75, 77, 94, 99, 28654, 55, 71, 85, 93, 94, 95, 98, 28710, 19, 33, 34, 39, 52, 63, 74, 28831, 39, 47, 82, 96, 98, 99, 28921, 31, 32, 40, 49, 59, 60, 29002, 3, 19, 66, 79, 29127, 30, 41, 47, 52, 78, 97, 29276, 79, 85, 98, 29453, 68, 75, 29508, 16, 29616, 21, 60, 91, 29789, 29804, 23, 48, 78, 29907, 9, 12, 63, 74, 77, 84, 30045, 52, 53, 77, 30116, 35, 36, 41, 53, 61, 62, 72, 30202, 8, 12, 16, 23, 40, 45, 46, 80, 81, 30320, 34, 42, 53, 92, 30403, 64, 67, 83, 87, 30516, 19, 30644, 64, 70, 30705, 54, 61, 70, 71, 73, 30814, 17, 31, 39, 61, 64, 71, 73, 79, 30911, 15, 37, 42, 76, 93, 31003, 4, 14, 33, 42, 54, 68, 70, 81, 83, 84, 85, 87, 89, 90, 91, 31107, 21, 29, 68, 85, 98, 31200, 9, 12, 20, 24, 25, 82, 92, 31309, 35, 50, 93, 31451, 96, 31515, 66, 68, 75, 80, 84, 85, 99, 31622, 25, 27, 35, 40, 43, 62, 71, 82, 88, 95, 31713, 14, 84, 98, 31817, 27, 31930, 43, 47, 60, 63, 64, 85, 91, 32012, 14, 40, 43, 44, 58, 59, 65, 90, 32136, 38, 54, 63, 32224, 27, 39, 44, 48, 70, 87, 89, 94, 95, 32300, 6, 28, 51, 57, 59, 32452, 55, 70, 73, 74, 79, 87, 88, 89, 32504, 5, 28, 31, 77, 32656, 57, 73, 32713, 22, 36, 85, 88, 32884, 32942, 64, 73, 33012, 47, 75, 79, 34056, 57, 34122, 34250, 34308, 12, 34406, 34552, 57, 80, 34733, 67, 72, 95, 34803, 7, 90, 98, 34907, 14, 93, 35073, 35132, 39, 43, 63, 96, 35212, 24, 35308, 10, 34, 35413, 25, 38, 70, 80, 96, 35554, 35616, 20, 43, 35754, 35838, 49, 58, 35911, 93, 36003, 13, 37, 45, 95, 96, 36105, 8, 26, 65, 36202, 28, 90, 36319, 36520, 46, 99, 36727, 62, 94, 36828, 53, 59, 67, 36916, 17, 30, 83, 37073, 22, 30, 89, 37811, 24, 50, 84, 37910, 35, 65, 87, 37286, 37453, 64, 84, 37536, 38, 43, 96, 37601, 87, 98, 37707, 22, 30, 89, 37811, 24, 50, 84, 37910, 35, 65, 87, 38031, 58, 85, 86, 38122, 38319, 62, 38402, 25, 51, 92, 38536, 47, 38608, 14, 43, 68, 96, 38740, 52, 38869, 38996, 39029, 31, 33, 39218, 74, 39342, 91, 39425, 50, 39534, 35, 54, 67, 39726, 53, 83, 39845, 39988, 40095, 40122, 37, 40225, 40, 71, 40379, 40414, 64, 40502, 47, 88, 95, 40622, 38, 54, 93, 40726, 45, 46, 40841, 72, 73, 40903, 32, 68, 84, 92, 41013, 58, 41120, 33, 54, 41261, 70, 41310, 60, 41436, 41501, 5, 13, 66, 69, 72, 73, 75, 41696, 41714, 41, 73, 96, 41802, 9, 62, 42003, 42189, 42209, 42323, 99, 42408, 11, 32, 45, 90, 42522, 27, 42623, 42738, 68, 42842, 45, 65, 83, 42925, 75, 43025, 53, 73, 90, 43141, 43238, 43417, 27, 31, 86, 43526, 33, 54, 63, 43633, 37, 40, 43793, 43844, 52, 63, 43938, 44, 53, 82, 44020, 55, 61, 81, 86, 98, 45419, 26, 65, 76, 45620, 22, 44631, 44857, 73, 44922, 69, 70, 80, 45042, 45332, 40, 55, 61, 81, 86, 98, 45419, 26, 65, 76, 45620, 22, 49, 58, 45900, 15, 46031, 46110, 30, 86, 46228, 86, 46315, 30, 46457, 67, 68, 46527, 57, 46623, 46710, 11, 16, 36, 46, 59, 71, 78, 85, 46992, 96, 47013, 47167, 47234, 39, 76, 98.

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## Second Class—cont.

24, 31, 35, 38, 43, 49, 51, 53, 56, 67, 71, 76, 82, 83, 84, 87, 89, 90, 91, 96, 27209, 14, 19, 21, 28, 36, 38, 42, 43, 56, 58, 75, 27332, 33, 54, 55, 58, 59, 60, 62, 63, 65, 66, 68, 73, 74, 76, 78, 83, 27400, 13, 29, 30, 32, 35, 38, 46, 50, 52, 55, 56, 73, 91, 27506, 23, 43, 63, 65, 73, 85, 27602, 4, 11, 16, 27, 40, 43, 48, 51, 52, 69, 81, 86, 88, 27708, 18, 20, 21, 23, 29, 31, 33, 41, 44, 47, 52, 55, 62, 64, 66, 67, 72, 73, 77, 84, 27856, 60, 66, 72, 82, 84, 27905, 22, 27, 29, 31, 33, 41, 48, 50, 52, 55, 64, 70, 74, 80, 91, 94, 99, 28011, 12, 21, 22, 23, 24, 31, 32, 50, 56, 62, 93, 95, 96, 28108, 9, 41, 69, 97, 99, 28200, 11, 36, 43, 52, 54, 55, 95, 28310, 21, 30, 44, 50, 54, 59, 64, 66, 69, 75, 76, 88, 90, 98, 28413, 17, 18, 20, 24, 26, 31, 37, 38, 42, 44, 55, 61, 68, 70, 72, 75, 78, 84, 98, 28500, 6, 10, 14, 23, 35, 39, 41, 61, 64, 65, 68, 73, 78, 79, 80, 88, 95, 98, 28601, 10, 37, 44, 49, 57, 58, 60, 62, 63, 66, 70, 72, 75, 86, 87, 93, 28700, 6, 18, 34, 35, 38, 46, 49, 28839, 42, 44, 53, 54, 56, 57, 65, 79, 84, 92, 28906, 8, 11, 12, 17, 26, 31, 57, 61, 64, 65, 66, 68, 84, 87, 29013, 33, 39, 41, 46, 48, 53, 56, 67, 68, 82, 84, 90, 93, 98, 29100, 2, 3, 8, 9, 11, 12, 14, 31, 41, 44, 54, 65, 91, 29204, 9, 10, 28, 29, 30, 71, 73, 77, 92, 93, 29312, 24, 27, 39, 41, 42, 45, 63, 63, 72, 29401, 7, 14, 19, 23, 24, 31, 34, 41, 44, 45, 48, 49, 52, 53, 55, 69, 73, 77, 86, 88, 90, 94, 29518, 21, 34, 37, 42, 52, 55, 57, 60, 72, 29627, 29, 33, 48, 53, 76, 79, 80, 85, 87, 92, 93, 97, 99, 29700, 5, 6, 15, 18, 20, 22, 23, 24, 61, 62, 75, 92, 93, 29809, 14, 28, 33, 43, 44, 51, 56, 57, 59, 68, 70, 81, 83, 90, 29900, 12, 19, 26, 31, 42, 45, 48, 49, 56, 58, 64, 66, 78, 85, 97, 98, 30008, 9, 11, 35, 55, 56, 57, 59, 60, 63, 65, 67, 71, 91, 92, 94, 30302, 6, to 8, 10, 15, 17, 28, 61, 66, 72, 76, 83, 30404, 9, 10, 17, 27, 48, 8, 52, 54, 57, 61, 68, 70, 77, 80, 82, 99, 30804, 6, 9, 10, 11, 17, 24, 30, 31, 41, 43, 45, 64, 71, 72, 75, 80, 81, 82, 30972, 73, 79, 81, 85, 94, 31011, 32, 78, 83, 84, 31103, 16, 21, 33, 37, 58, 74, 82, 86, 94, 31200, 4, 12, 25, 28, 55, 56, 63, 31306, 11, 14, 27, 28, 30, 32, 33, 44, 58, 65, 66, 69, 77, 80, 92, 97, 31401, 5, 10, 11, 13, 16, 31, 33, 38, 41, 42, 44, 45, 49, 50, 52, 56, 58, 62, 64, 67, 68, 72, 75, 83, 95, 31515, 68, 74, 78, 89, 91, 96, 31606, 11, 14, 15, 17, 26, 28, 30, 32, 36, 51, 53, 57, 60, 61, 68, 73, 75, 80, 83, 97, 31703, 4, 10, 12, 13, 24, 30, 34, 42, 51, 53, 65, 66, 69, 75, 76, 79, 83, 89, 31800, 6, 12, 21, 33, 39, 55, 68, 78, 83, 85, 99, 31921, 29, 32, 33, 70, 76, 77, 78, 92, 32001, 4, 7, 25, 26, 28, 31, 36, 48, 55, 66 to 68, 71, 72, 74, 89, 32100, 11, 16, 22, 36, 37, 42, 43, 46, 61, 75, 76, 77, 88, 96, 98, 32203, 5, 8 to 11, 16, 18, 20, 21, 23, 36, 37, 38, 39, 48, 50, 51, 54, 68, 72, 74, 78, 90, 92, 93, 97, 32310, 14, 15, 26, 27, 34, 40, 47, 49, 61, 70, 89, 94, 32432, 59, 62, 67, 69, 76, 78, 82, 97, 32500, 1, 3, 7, 9, 31, 32, 44, 72, 74, 81, 86, 90, 97, 98, 32600, 3, 12, 15, 16, 17, 22, 30, 32, 63, 64, 70, 73, 83, 84, 85, 95, 32710, 24, 38, 42, 44, 51, 55, 56, 63, 64, 66, 91, 92, 98, 32802, 13, 40, 43, 48, 52, 54, 55, 62, 67, 88, 91, 93, 95, 97, 32900, 5, 9, 11, 16, 17, 20, 22, 23, 25, 28, 31, 32, 46, 96, 97, 33010, 37, 53, 54, 57, 58, 61, 76, 84011, 17, 20, 21, 24, 26, 30, 32, 35, 45, 89, 92, 99, 34100, 9, 10, 16, 19, 21, 33, 34, 43, 49, 64, 65, 67, 93, 94, 99, 34287, 38, 43, 45, 46, 47, 54, 76, 78, 81, 96, 34302, 22, 30, 31, 32, 33, 37, 39, 46, 56, 72, 73, 81, 83, 92, 34426, 29, 31, 33, 42, 45, 49, 51, 52, 55, 85, 86, 87, 90, 99, 34504, 9, 12, 18, 23, 24, 27, 32, 34, 36, 44, 45, 49, 51, 53, 69, 71, 74, 75, 79, 81, 87, 88, 89, 95, 98, 34625, 31, 43, 48, 49, 53, 68, 69, 70, 76, 80, 90, 94, 96, 99, 34703, 13, 16, 24, 27, 37, 38, 40, 47, 49, 60, 34800, 21, 23, 28, 31, 33, 35, 40, 47, 49, 50, 56, 58, 59, 69, 72, 77, 84, 88, 34911, 12, 15, 25, 26, 27, 35, 39, 45, 50, 51, 53, 60, 64, 65, 83, 97, 98, 35009, 11, 13, 16, 36, 39, 49, 93, 35127, 34, 42, 55, 35210, 34, 81, 86, 35335, 36, 48, 53, 54, 55, 63, 64, 67, 73, 83, 91, 35410, 32, 34, 45, 52, 58, 62, 66, 67, 68, 81, 83, 85, 88, 91, 35502, 4 to 6, 11, 13, 29, 33, 37, 57, 59, 61, 62, 66, 71, 81, 83, 90, 35605, 13, 21, 33, 37, 39, 50, 55, 57, 59, 60, 63, 65, 67, 73, 76, 77, 80, 82, 83, 86, 97, 99, 35703, 13, 16, 21, 25, 37, 59, 61, 62, 69, 70, 71, 76, 78, 79, 84, 87, 95, 96, 35809, 30, 35, 45, 52, 55, 60, 63, 64, 65, 69, 70, 81, 89, 90, 35903, 43, 45, 46, 55, 63, 68, 71, 78, 90, 36011, 19, 20, 24, 25, 42, 47, 59, 60, 71, 89, 91, 92, 93, 36145, 56, 57, 90, 36203, 10, 17, 21, 26, 29, 30, 41, 52, 55, 56, 64, 73, 82, 36304, 5, 11, 12, 13, 22, 25, 31, 33, 37, 42, 46, 52, 57, 74, 75, 92, 36435, 37, 47, 67, 70, 74, 76, 82, 36635, 37, 38, 50, 55, 70, 79, 81, 85, 87, 88, 99, 36702, 8, 9, 13, 33, 38, 46, 53, 57, 59, 70, 85, 87, 92, 95, 99, 36801, 25, 26, 32, 56, 87, 91, 96, 36912, 47, 52, 91, 95, 37001, 7, 8, 16, 18, 22, 34, 40, 44, 49, 53, 64, 94, 95, 98, 37105, 9, 11, 15, 21, 22, 30, 31, 40, 41, 44, 45, 52, 66, 76, 80, 82, 83, 84, 99, 37201, 6, 85, 88, 89, 90, 91, 92, 37401, 8, 16, 23, 28, 37524, 28, 31, 35, 37, 39, 40, 41, 45, 55, 58, 59, 63, 65, 70, 80, 81, 83, 37603, 4, 6, 10, 13, 15, 23, 25, 31, 37, 39, 46, 51, 54, 55, 57, 75, 79, 86, 37706, 8, 9, 11, 14, 17, 22, 23, 32, 41, 56, 69, 70, 71, 77, 83, 98, 99, 37830, 38, 41, 56, 57, 59, 66, 73, 76, 78, 83, 90, 92, 37903, 60, 62, 69, 74, 91, 93, 94, 98, 99, 38007, 8, 15, 22, 23, 35, 36, 38, 54, 60, 61, 66, 71, 80, 81, 88, 94, 38111, 14, 16, 17, 20, 27, 39, 51, 58, 59, 65, 69, 73, 82, 86, 87, 94, 97, 38221, 30, 35, 42, 50, 66, 67, 74, 83, 90, 93, 95, 38304, 6, 8, 10, 13, 86, 90, 91, 38500, 10, 11, 13, 15, 16, 25, 27, 30, 34, 37, 39, 45, 50, 53, 66, 74, 92, 94, 97, 38601, 4, 5, 7, 11, 16, 22, 24, 27, 29, 30, 37, 40, 44, 38714, 64, 65, 85, 91, 38822, 28, 37, 38, 39, 40, 53, 68, 73, 84, 85, 89, 95, 99, 38911, 19, 58, 63, 69, 77, 80, 83, 85, 97, 99, 39301, 7, 9, 11, 13, 16, 22, 28, 29, 36, 39, 45, 57, 59, 63, 65, 71, 73, 95, 96, 99, 39408, 13, 15, 20, 24, 26, 32, 35, 36, 41, 51, 58, 60, 61, 68, 70, 72, 73, 82, 84, 86, 95, 96, 39501, 2, 7, 10, 39, 41, 46, 60, 63, 64, 85, 39706, 12, 21, 25, 29, 31, 33, 38, 39900, 3, 11, 14, 17, 29, 41, 43, 44, 46, 58, 68, 78, 86, 93, 98, 40000, 3, 14, 15, 28, 29, 62, 71, 40128, 70, 79, 90, 92, 98, 40207, 19, 23, 29, 34, 52, 65, 40305, 21, 25, 71, 96, 40427, 29, 39, 55, 72, 92, 99, 40506, 15, 28, 33, 37, 44, 57, 66, 67, 68, 89, 40609, 14, 17, 32, 33, 40, 42, 52, 58, 62, 67, 68, 70, 78, 82, 83, 84, 87, 91, 40706, 10, 12, 18, 28, 40820, 43, 50, 56, 62, 63, 77, 40901, 4, 34, 39, 43, 46, 48, 53, 56, 64, 91, 94, 41008, 9, 21, 24, 30, 35, 36, 41, 51, 61, 62, 66, 72, 80, 91, 93, 98, 99, 41111, 12, 30, 52, 56, 72, 75, 79, 80, 97, 99, 41207, 9, 13, 14, 18, 30, 31, 33, 35, 68, 72, 75, 79, 94, 97

# TYPEWRITING—ENGLISH (LOWER)—cont.

## Second Class—cont.

41302, 3, 10, 12, 34, 35, 43, 50, 53, 71, 73, 74, 41401, 9, 11, 13, 16, 24, 25, 26, 29, 33, 37, 38, 39, 50, 52, 56, 58, 62, 63, 78, 80, 88, 89, 41509, 11, 15, 19, 24, 35, 46, 68, 70, 93, 98, 99, 41601, 2, 7, 22, 27, 46, 53, 55, 63, 65, 68, 97, 41701, 5, 7, 12, 31, 44, 48, 50, 51, 54, 57, 59, 74, 76, 81, 82, 88, 97, 41800, 1, 19, 25, 54, 41961, 72, 74, 78, 87, 89, 93, 94, 96, 42000, 2, 12, 19, 22, 25, 37, 39, 42, 44, 51, 55, 58, 61, 77, 78, 79, 89, 90, 95, 97, 42102, 6, 18, 36, 39, 42, 74, 78, 81, 86, 91, 42203, 16, 18, 20, 26, 37, 39, 41, 46, 47, 54, 56, 59, 70, 75, 78, 79, 84, 88, 97, 99, 42301, 17, 25, 26, 30, 37, 39, 41, 42, 46, 48, 51, 58, 61, 69, 86, 87, 90, 97, 42405, 7, 25, 27, 36, 43, 49, 50, 52, 53, 56, 57, 63, 69, 76, 84, 89, 95, 99, 42500, 5, 9, 13, 14, 24, 26, 34, 37, 42, 50, 51, 54, 56, 58, 59, 64, 65, 76, 78, 82, 90, 97, 42608, 10, 76, 84, 89, 95, 99, 42703, 5, 10, 16, 24, 40, 42, 47, 49, 54, 55, 58, 62, 71, 73, 77, 79, 42812, 15, 15, 32, 42, 50, 67, 75, 76, 77, 80, 81, 91, 42902, 3, 6, 7, 13, 20, 23, 24, 38, 40, 51, 72, 81, 86, 88, 89, 91, 94, 98, 16, 24, 26, 30, 46, 59, 69, 75, 82, 90, 91, 98, 99, 43002, 11, 14, 31, 42, 70, 98, 43106, 10, 15, 16, 20, 22, 32, 37, 43, 44, 49, 66, 79, 43200, 1 to 5, 39, 41, 99, 43310, 28, 41, 76, 43403, 4, 10, 14, 16, 21, 22, 24, 29, 30, 41, 44, 45, 46, 51, 68, 71, 80, 84, 85, 92, 93, 94, 95, 96, 97, 99, 43500, 1, 5, 6, 9, 10, 15, 28, 31, 36, 44, 62, 63, 84, 86, 89, 91, 98, 43605, 6, 12, 15, 19, 35, 41, 46, 50, 54, 58, 65, 67, 69, 76, 77, 79, 89, 43712, 21, 22, 24, XX, 29, 34, 36, 42, 50, 51, 53, 58, 63, 66, 71, 83, 96, 98, 43802, 9, 18, 53, 56, 64, 70, 71, 79, 43907, 8, 42, 71, 73, 81, 91, 92, 97, 44004, 10, 15, 16, 29, 33, 37, 52, 54, 66, 85, 89, 44118, 39, 42, 57, 60, 69, 77, 81, 83, 86, 44200, 8, 38, 42, 44, 48, 61, 67, 71, 74, 81, 83, 97, 44310, 12, 18, 45, 57, 44438, 42, 45, 46, 53, 70, 74, 95, 98, 44503, 10, 12, 14, 15, 17, 19, 22, 26, 30, 32, 44700, 6, 13, 15, 24, 29, 34, 36, 40, 41, 45, 50, 53, 66, 67, 76, 78, 81, 82, 84, 86, 91, 92, 44800, 7, 17, 21, 22, 25, 41, 42, 44, 45, 46, 48, 49, 55, 58, 62, 63, 80, 81, 85, 88, 89, 91, 92, 93, 95, 44901, 10, 12, 14, 15, 17, 19, 22, 26, 30, 32, 34, 39, 47, 49, 60, 62, 64, 65, 67, 75, 77, 84, 87, 92, 95, 98, 45002, 12, 13, 16, 17, 23, 26, 28, 41, 45, 61, 66, 75, 76, 83, 84, 86, 92, 45102, 4, 7, 8, 11, 12, 15, 18, 24, 36, 48, 51, 52, 57, 71, 75, 86, 87, 95, 96, 45212, 14, 16, 19, 23, 39, 47, 45336, 37, 46, 49, 61, 68, 76, 79, 80, 92, 96, 45402, 04, 11, 13, 20, 27, 29, 30, 39, 53, 57, 60, 64, 67, 75, 82, 85, 89, 95, 45502, 04, 10, 11, 13, 17, 23, 37, 38, 42, 49, 53, 64, 68, 90, 93, 95, 97, 45612, 14, 30, 34, 41, 42, 43, 45, 51, 65, 71, 78, 84, 85, 86, 89, 90, 96, 97, 45701, 14, 35, 41, 60, 69, 71, 82, 92, 96, 97, 45806, 19, 23, 29, 35, 40, 44, 46, 68, 73, 79, 82, 91, 95, 98, 45901, 18, 30, 50, 56, 59, 61, 62, 65, 70, 71, 88, 89, 94, 98, 46003, 05, 10, 18, 19, 31, 32, 40, 42, 47, 50, 68, 82, 95, 99, 46105, 13, 14, 38, 44, 45, 55, 76, 46201, 05, 09, 29, 36, 40, 42, 47, 53, 61, 73, 76, 46307, 22, 23, 34, 36, 41, 43, 45, 50, 52, 70, 73, 74, 84, 88, 93, 99, 46422, 30, 34, 48, 53, 56, 66, 80, 82, 85, 92, 93, 94, 99, 46504, 06, 12, 33, 38, 39, 48, 49, 52, 62, 79, 89, 46610, 41, 44, 45, 50, 54, 56, 57, 59, 63, 70, 80, 85, 88, 89, 46705, 20, 24, 33, 52, 53, 60, 64, 65, 67, 68, 69, 74, 75, 88, 97, 46817, 19, 20, 22, 29, 30, 31, 40, 47, 54, 56, 57, 58, 69, 75, 76, 77, 78, 86, 89, 91, 94, 97, 46917, 18, 26, 36, 38, 49, 50, 59, 69, 80, 47002, 08, 15, 18, 21, 24, 26, 27, 34, 44, 50, 54, 57, 59, 62, 65, 70, 73, 77, 80, 87, 95, 96, 98, 47100, 08, 13, 14, 34, 43, 46, 55, 58, 60, 64, 65, 68, 79.

The results of the candidates with register numbers 21351 and 24480 are withheld.

# TYPEWRITING—ENGLISH (HIGHER.)

## First Class.

671, 1513, 2050, 2599, 2734, 3027, 3858, 4784, 4797, 5282, 5287, 5327, 5512, 5736, 5931, 6428, 6475, 6497, 9200, 10138, 10823, 10827, 10857, 10869, 10872, 11101, 11132, 11807, 11816, 12807, 13542, 13558, 13723, 13988, 14497, 15640, 15791, 16353, 16880, 17363, 18515, 18704, 19008, 19314, 20129, 20408, 20858, 20899, 20978, 21034, 21126, 21569, 22373, 22578, 22917, 23171, 23482, 24149, 24876, 24919, 25223, 25374, 25525, 26449, 27241, 27361, 27406, 27489, 27851, 28423, 28509, 28720, 29021, 29420, 29939, 30024, 30036, 30091, 32703, 34052, 34101, 34327, 34434, 34570, 34629, 34714, 34875, 34885, 34954, 35398, 35403, 35494, 35664, 35678, 36234, 36254, 36752, 36950, 36997, 37339, 38180, 38254, 38528, 39204, 39273, 39312, 39448, 39652, 39985, 40765, 40999, 41079, 41400, 42060, 42222, 42579, 43187, 43258, 43640, 43720, 44224, 44694, 44808, 44979, 44986, 45851, 46111, 46243, 46667, 46823, 46874.

## Second Class.

36, 50, 82, 83, 87, 95, 120, 21, 25, 27, 66, 89, 225, 33, 39, 85, 307, 95, 460, 82, 554, 76, 91, 616, 45, 733, 50, 78, 813, 27, 33, 36, 42, 51, 66, 80, 91, 94, 923, 34, 54, 62, 1140, 70, x 1228, 55, 59, 60, 70, 71, 1306, 12, 17, 23, 37, 46, 87, 1410, 29, 45, 47, 52, 1510, 43, 50, 62, 73, 82, 85, 88, 1604, 06, 10, 17, 20, 32, 40, 45, 46, 53, 70, 71, 87, 1709, 10, 13, 17, 21, 23, 54, 63, 73, 90, 1808, 10, 41, 52, 59, 62, 65, 71, 90, 93, 1936, 40, 44, 83, 90, 96, 2010, 19, 26, 38, 40, 49, 52, 54, 89, 94, 99, 2101, 05, 11, 31, 61, 66, 78, 220



# TYPEWRITING—TAMIL (HIGHER)—cont.

## Second Class—cont.

741, 745, 746, 754, 758, 764, 784, 799, 2801, 806, 812, 830, 833, 839, 841, 866, 869, 884 to 86, 2906, 907, 967, 968, 974, 3023, 57, 64, 67, 88, 3136, 3260, 3309, 323, 334, 338, 370, 387, 3401, 402, 424, 432, 448, 463, 464, 474, 3537, 3602, 605, 607, 609, 617, 648, 3753, 768, 3853, 4010, 77, 4137, 4249, 4331, 380, 4408, 499, 4509, 523, 538, 566, 578, 4810, 819, 828, 4944, 946, 972, 981, 5003, 16, 20, 5120, 129, 135, 167, 5267, 297, 5307, 310, 317, 354, 363, 5435, 458, 469, 474, 475, 483, 494, 5503, 521, 522, 530, 537, 551, 582, 5602, 603, 654, 660, 662, 667, 672, 677, 691, 5719, 736, 754, 768, 778, 784, 798, 5810, 830, 848, 850, 854, 891, 6073, 89, 6222, 229, 234, 237, 254, 257, 268, 6314, 319, 325, 330, 6415, 421, 425, 467, 475, 478, 6506, 515, 522, 528, 576, 6609, 674, 699, 6768, 779, 6838, 849, 879, 883, 888, 6925, 7025, 33, 35, 36, 47, 72, 76, 83, 7164, 7205, 240, 277, 296, 7320, 340, 384, 7406, 409, 443, 456, 461, 7528, 556, 557, 567, 7621, 625, 662, 674, 7709, 728, 7939, 945, 8051, 93, 8108, 145, 8298, 8327, 338, 387, 392, 8415, 8511, 521, 537, 8701, 707, 777, 8878, 9026, 35, 44, 53, 55, 62, 84, 9115, 156, 9294, 9314, 327, 368, 378, 9480, 491, 9513, 529, 560, 595, 9692, 9720, 723, 9949, 959, 10070, 79, 80, 99, 10116, 10247, 285, 291, 10360, 366, 385, 10416, 430, 10527, 10655, 10738, 772, 774, 10834, 840, 856, 10989, 11038, 93, 11133, 40, 182, 187, 188, 11248, 54, 89, 11307, 08, 45, 80, 91, 11423, 61, 66, 11530, 87, 11603, 610, 611, 15, 21, 23, 26, 38, 43, 90, 97, 11711, 95, 11800, 42, 68, 11921, 72, 12092, 12136, 12210, 13, 19, 12319, 20, 74, 81, 12427, 31, 42, 47, 56, 57, 72, 74, 91, 12600, 656, 88, 99, 12708, 34, 66, 72, 93, 12841, 863, 66, 91, 97, 12966, 79, 13004, 55, 83, 13219, 21, 25, 66, 79, 86, 13312, 14, 35, 40, 13474, 79, 13567, 569, 13608, 11, 21, 29, 37, 52, 13744, 13850, 83, 87, 98, 13951, 53, 58, 68, 72, 73, 98, 99, 14006, 37, 44, 70, 73, 88, 98, 14115, 17, 22, 30, 33, 39, 89, 14208, 17, 40, 41, 46, 69, 79, 91, 97, 14300, 04, 39, 73, 87, 14417, 23, 35, 43, 59, 67, 80, 86, 93, 14508, 10, 16, 25, 27, 30, 32, 36, 41, 43, 45, 47, 48, 76, 79, 88, 90, 98, 14616, 17, 22, 48, 60, 90, 14712, 41, 43, 45, 59, 71, 75, 14826, 62, 65, 76, 83, 84, 15008, 36, 38, 51, 58, 15106, 12, 58, 60, 80, 83, 84, 99, 15211, 40, 55, 60, 70, 15317, 40, 41, 75, 89, 15407, 10, 13, 17, 19, 26, 50, 96, 15509, 22, 63, 71, 15610, 58, 73, 15712, 70, 15824, 25, 58, 15923, 31, 91, 16023, 16101, 43, 50, 69, 87, 16221, 22, 16302, 17, 54, 77, 16422, 39, 43, 62, 16516, 39, 40, 61, 82, 16605, 28, 65, 98, 16716, 21, 33, 37, 43, 60, 63, 16858, 72, 79, 16926, 47, 52, 17068, 92, 96, 17120, 39, 43, 53, 54, 59, 65, 88, 98, 17206, 17435, 39, 98, 17526, 48, 60, 17612, 36, 50, 17715, 19, 20, 53, 65, 17845, 17962, 18127, 37, 82, 18259, 18430, 18587, 18609, 69, 96, 18734, 36, 18814, 34, 39, 55, 58, 61, 65, 76, 83, 18909, 21, 60, 19053, 87, 19104, 12, 18, 19259, 78, 19325, 29, 59, 68, 76, 84, 20309, 11, 50, 69, 20427, 466, 20527, 31, 59, 85, 20666, 81, 20730, 37, 20819, 60, 65, 70, 93, 20955, 21059, 86, 21148, 21260, 75, 21301, 12, 47, 52, 75, 81, 82, 91, 21418, 40, 21506, 7, 20, 31, 84, 21609, 17, 25, 21893, 21924, 22056, 59, 66, 71, 91, 22124, 46, 52, 62, 65, 89, 22202, 38, 61, 82, 97, 22311, 12, 95, 98, 22400, 29, 39, 22588, 22607, 16, 30, 31, 37, 40, 57, 22842, 22911, 28, 36, 43, 94, 97, 23020, 37, 39, 62, 23112, 52, 59, 63, 23233, 81, 23328, 37, 53, 81, 89, 23426, 23455, 76, 23524, 27, 69, 72, 76, 23646, 58, 23726, 42, 23816, 80, 23901, 4, 12, 14, 21, 77, 88, 24041, 67, 81, 24166, 70, 73, 93, 24217, 25, 36, 74, 24315, 21, 47, 96, 24404, 51, 75, 24541, 47, 71, 89, 24615, 82, 98, 24841, 73, 24906, 13, 27, 25037, 79, 25117, 26, 63, 25225, 36, 25324, 77, 25446, 58, 62, 75, 76, 25503, 42, 80, 81, 25672, 25709, 25, 52, 60, 94, 25843, 77, 79, 80, 90, 97, 26034, 43, 45, 51, 73, 80, 26144, 26215, 25, 30, 32, 36, 87, 26344, 46, 83, 26439, 93, 98, 26546, 87, 88, 26602, 44, 59, 60, 80, 81, 82, 97, 26714, 29, 34, 26800, 42, 58, 70, 79, 26925, 28, 33, 51, 27060, 66, 27117, 41, 27259, 78, 98, 27304, 52, 27437, 48, 67, 72, 27510, 35, 40, 48, 81, 27614, 15, 73, 27700, 7, 27801, 3, 51, 87, 90, 99, 27925, 26, 44, 97, 28059, 83, 91, 28111, 20, 23, 59, 68, 71, 91, 28246, 85, 28347, 28402, 10, 28529, 72, 73, 78, 80, 28616, 24, 35, 28714, 28810, 52, 77, 85, 89, 28915, 22, 27, 29030, 73, 29170, 71, 29245, 86, 99, 29371, 89, 29485, 93, 29556, 29650, 57, 78, 29745, 60, 91, 29853, 29921, 28, 37, 53, 72, 30122, 80, 98, 30221, 37, 87, 30305, 47, 68, 69, 81, 30419, 38, 46, 50, 73, 94, 95, 30508, 12, 26, 34, 43, 95, 96, 30631, 34, 61, 79, 96, 30706, 30821, 35, 51, 53, 59, 68, 69, 70, 91, 94, 30904, 14, 74, 77, 86, 88, 90, 91, 92, 31024, 67, 77, 99, 31123, 39, 70, 73, 79, 31208, 52, 61, 63, 68, 70, 83, 84, 86, 96, 31301, 4, 5, 61, 63, 78, 31518, 48, 62, 81, 98, 31638, 66, 79, 31719, 21, 90, 96, 31831, 48, 31945, 49, 54, 32011, 13, 45, 56, 80, 32129, 49, 91, 95, 32217, 45, 32333, 69, 32430, 54, 81, 86, 32512, 17, 19, 50, 32636, 32786, 32829, 33, 32933, 36, 39, 48, 54, 59, 33085, 91, 34040, 79, 34182, 91, 34286, 34326, 77, 34400, 8, 21, 50, 58, 34500, 7, 13, 30, 34662, 34712, 15, 18, 20, 76, 34825, 34937, 44, 35002, 35177, 35211, 19, 22, 28, 35371, 75, 79, 81, 35407, 35545, 35658, 66, 35798, 35818, 25, 28, 56, 36292, 36321, 36518, 44, 45, 47, 36720, 21, 83, 36931, 42, 51, 70, 77, 78, 37308, 23, 39, 63, 71, 37719, 47, 51, 37809, 15, 97, 37901, 64, 88, 38020, 50, 38161, 38251, 38303, 56, 75, 38426, 38660, 64, 38707, 33, 50, 75, 92, 94, 39112, 54, 39213, 39378, 39405, 29, 39542, 57, 92, 39743, 40259, 64, 40359, 40494, 40517, 51, 82, 40612, 40750, 59, 40914, 41019, 22, 90, 41108, 50, 55, 41224, 83, 89, 41361, 84, 93, 41453, 41522, 41605, 32, 41, 64, 41718, 92, 41842, 42081, 42150, 59, 42424, 42770, 42878, 43026, 43228, 43377, 80, 93, 43556, 43876, 93, 43984, 44047, 44113, 44241, 60, 44401, 18, 44728, 35, 44, 44834, 76, 44906, 8, 45003, 5, 6, 9, 52, 67, 45100, 41, 44, 45291, 45335, 53, 45410, 47, 45623, 25, 45953, 46108, 27, 84, 46235, 46379, 82, 46416, 47, 63, 79, 96, 46510, 31, 63, 75, 82, 46613, 15, 46729, 47, 50, 73, 99, 46984, 47235, 59, 71.

## SHORTHAND—ENGLISH (LOWER).

### First Class.

548, 3076, 13789, 18057, 21923, 22662, 23259, 24227, 28423, 35244, 88, 36878, 37405, 37705, 38127, 38917, 40185, 42043, 42372, 44215, 44979, 45938, 46233, 46426, 46893,

# TYPEWRITING—ENGLISH (LOWER)—cont.

## Second Class—cont.

14900, 3, 21, 23, 27, 31, 34, 50, 53, 58, 64, 65, 71, 72, 74, 77, 94, 95, 15002, 28, 34, 44, 48, 52, 65, 84, 92, 94, 15109, 13, 23, 32, 35, 42, 43, 47, 55, 57, 68, 70, 71, 74, 75, 79, 95, 97, 15202, 5, 9, 12, 15, 16, 19, 27, 38, 43, 44, 50, 52, 64, 78, 82, 86, 88, 92, 93, 96, 15302, 5, 6, 12, 14, 25, 29, 32, 33, 45, 53, 55, 59, 66, 70, 72, 80, 81, 87, 93, 96, 98, 15403, 14, 15, 16, 18, 20, 24, 30, 33, 36, 37, 38, 41, 44, 46, 59, 81, 85, 15505, 6, 12, 16 to 18, 20, 24, 25, 32, 37, 44 to 46, 48 to 50, 57, 59, 68, 76, 77, 79, 15607, 8, 12, 13, 14, 19, 21, 31, 33, 44, 59, 64, 68, 77, 80, 83, 86, 88, 90, 91, 93, 96, 15702, 9, 11, 26, 34, 36, 38, 45, 52, 53, 65, 67, 68, 74, 76, 84, 87, 94, 99, 15800, 7, 10, 11, 20, 21, 23, 27, 28, 31, 34, 35, 42, 44, 68, 71, 77, 78, 83, 84, 85, 86, 89, 96, 15900, 45, 56, 58, 61, 63, 67, 70, 93, 96, 16000, 27, 37, 38, 44, 53, 54, 57, 58, 65, 67, 68, 70, 73, 78, 16116, 24, 28, 33, 34, 41, 42, 53, 57, 58, 61, 76, 79, 82, 89, 16203, 10, 12, 13, 16, 19, 23, 26, 28, 34, 35, 38, 39, 40, 44, 48, 49, 74, 88, 97, 99, 16307, 11, 16, 18, 20, 26, 33, 37, 38, 52, 58, 61, 70, 74, 83, 84, 86, 93, 94, 97, 99, 16404, 9, 11 to 13, 17, 24, 27, 28, 34, 35, 42, 46, 58, 61, 64, 67, 70, 73, 79, 93, 98, 16504, 7, 8, 10, 18, 25, 31, 36, 37, 45, 47, 49, 57, 64, 76, 79, 84, 85, 99, 16600, 16, 17, 21, 30, 33, 37, 62, 70, 74, 77, 78, 79, 81, 90, 95, 16701, 7, 12, 24, 40, 46, 49, 50, 56, 95, 97, 16800, 1, 3, 12, 15, 18, 25, 27, 31, 32, 39, 42, 77, 85, 16901, 14, 17, 20, 49, 57, 63, 69, 85, 92, 98, 17000, 1, 6 to 8, 10, 18, 30, 39, 42, 50, 55, 56, 61, 72, 74, 82, 88, 90, 91, 93, 94, 97, 17101, 3, 21, 24, 35, 40, 44, 48, 50, 74, 78, 92, 17201, 3, 9, 10, 11, 20, 23, 29, 32, 34, 38, 40, 45, 47, 53, 57, 59, 60, 63, 71, 73, 77, 83, 87, 89, 91, 96, 17303, 5, 6, 8, 14, 17, 21, 23, 26, 27, 67, 68, 75, 80, 82, 86, 87, 17400, 2, 3, 10, 15, 27, 30, 36, 53, 54, 56, 63, 67, 77, 78, 82, 84, 87, 90, 17502, 3, 5, 22, 24, 27, 29, 52, 55, 62, 63, 80, 58, 61, 63, 71, 74, 76, 80, 23, 30, 32, 37, 38, 42, 45, 56, 60, 68, 70, 75, 82, 17705, 10, 13, 14, 22, 24, 36, 37, 39, 50, 58, 61, 63, 71, 74, 76, 80, 81, 85 to 88, 93, 94, 17805, 7, 13, 36, 63, 67, 69, 76, 78, 82, 93, 94, 17902, 3, 18, 21, 22, 24, 33, 43, 44, 45, 46, 84, 85, 88, 96, 98, 99, 18004, 7, 10, 23, 28, 42, 51, 58, 64, 67, 73 to 75, 78, 80, 81, 89, 91, 96, 18102, 3 to 5, 13, 25, 50, 63, 71, 73, 76, 78, 80, 88, 95, 18205, 25, 32, 38, 49, 63, 67, 68, 69, 75, 79, 87, 92, 93, 95, 18307 to 10, 19, 22, 25 to 30, 34, 39, 40, 47, 51, 54, 69, 88, 18415, 82, 18525, 56, 81, 85, 90, 18602, 11, 18, 22, 24, 28, 33, 40, 45, 55, 70, 74, 79, 85, 92, 18711, 16, 17, 19, 25, 42, 43, 50, 52, 53, 63, 70, 80, 82, 85, 90, 18801, 2, 7, 11, 13, 45, 55, 70, 74, 79, 85, 92, 18914, 15, 34, 37, 67, 77, 82, 84, 87, 92, 99, 19005, 11, 15, 17, 25, 30, 37, 39, 21, 22, 30, 45, 48, 70, 79, 93, 18914, 15, 34, 37, 67, 77, 82, 84, 87, 92, 99, 19110, 74, 75, 78, 84, 86, 97, 99, 19202, 5, 42, 44, 52, 54, 57, 60 to 62, 73, 76, 79, 80, 83, 84, 88, 91, 97, 98, 19110, 74, 75, 78, 84, 86, 97, 99, 19303, 4, 8, 16, 17 to 21, 28, 33, 42, 9, 32, 33, 35, 39, 51, 55, 60, 62, 65, 66, 69, 77, 82, 83, 85, 89, 94, 97, 98, 19400, 7, 10, 14, 17, 24, 29, 33, 35, 37, 40, 45, 46, 48, 49, 50 to 53, 60, 62, 69, 73, 77, 78, 82, 85, 92, 97, 98, 19400, 7, 10, 14, 17, 24, 29, 33, 35, 37, 40, 48, 80, 87, 88, 19501, 7, 12, 21, 26, 33, 39, 50, 53, 94, 19656, 58, 65, 68, 69, 70, 74, 81, 83, 84, 19701, 8, 44, 49, 57, 58, 66, 67, 70, 79, 19802, 4, 27, 36, 51, 58, 59, 68, 77, 86, 89, 90, 95, 19900, 3, 13, 18, 44, 45, 46, 49, 52, 53, 59, 61, 63, 66, 71, 75, 78, 81, 82, 92, 20002, 5, 12, 38, 39, 45, 48, 79, 20102, 4, 6, 12, 30, 35, 40, 59, 60, 66, 80, 83, 88, 89, 20203, 6, 15, 19, 26, 27, 40, 41, 55, 80, 82, 83, 85, 94, 95, 20306, 13, 17, 22, 30, 31, 32, 34, 35, 45, 47, 49, 52, 53, 54, 56, 64, 65, 66, 84, 93, 97, 20411, 16, 52, 53, 54, 59, 69, 70, 77, 79, 81, 92, 95, 20501, 5, 17, 18, 19, 20 to 22, 24, 28, 49, 51, 54, 64, 72, 74, 75, 86, 20600, 1, 9, 17, 25, 29, 32, 33, 34, 41, 54, 56, 57, 58, 64, 65, 73, 75, 78, 85, 88, 97, 20715, 24, 52, 53, 57, 61, 64, 74, 86, 89, 98, 99, 20810, 11, 13, 14, 32, 33, 35, 37, 43, 47, 54, 63, 67, 77, 82, 83, 87, 89, 91, 92, 96, 97, 20907, 9, 19, 40, 41, 49, 60, 66, 68, 74, 86, 88, 91, 92, 93, 99, 21018, 20, 29, 30, 39, 44, 46, 61, 68, 73, 82, 92, 97, 21134, 39, 41, 42, 43, 47, 51, 54, 62, 76, 82, 83, 87, 88, 91, 92, 94, 95, 96, 22201, 7, 10, 22004, 9, 19, 23, 24, 37, 51, 53, 54, 58, 61, 62, 70, 74, 78, 80, 81, 82, 85, 88, 91, 92, 94, 95, 96, 22201, 7, 10, 22, 27, 28, 31, 32, 34, 37, 42, 43 to 45, 53, 56, 59, 60, 70, 76, 77, 83, 87, 88, 91, 92, 94, 95, 96, 22300, 17, 28, 31, 32, 34, 36, 38, 45 to 47, 51, 14, 17, 18, 19, 20, 29, 31, 33, 34, 35, 37, 40, 53, 74, 81, 95, 99, 22300, 17, 28, 31, 32, 34, 36, 38, 45 to 47, 51, 56, 57, 59, 22403, 9, 13, 18, 30, 45, 61, 76, 79, 86, 87, 96, 22500, 6, 9, 10, 19, 22, 33, 34, 41, 42, 44, 57, 65, 71, 76, 83, 86, 90, 96, 22611, 13, 26, 29, 36, 45, 49, 53, 54, 22727, 36, 64, 65, 22832, 52, 53, 61, 86, 88, 93, 99, 22901, 6, 7, 12, 13, 19, 21, 30, 33, 37, 39, 41, 49, 51, 69, 71 to 73, 78, 79, 81, 82, 91, 95, 23001, 7, 16, 18, 19, 24, 25, 42, 43, 48, 49, 55, 57, 58, 64, 66, 77, 83, 86, 90, 23100, 6, 17, 19, 36, 45, 51, 58, 62, 76, 82, 84, 98, 23201, 3, 21, 28, 30, 37, 39, 42, 48, 63, 76, 82, 83, 84, 94, 95, 99, 23302, 5, 10, 13, 20, 21, 30, 38, 49, 54, 82, 86, 91, 94, 23402, 13, 19, 22, 25, 31, 33, 34, 60, 73, 81, 86, 23509, 10, 18, 19, 46, 48, 82, 91, 97, 23600, 19, 24, 40, 54, 57, 80, 82, 83, 89, 95, 97, 23704, 6, 20, 28, 47, 50, 73, 75, 85, 88, 23807, 54, 59, 61, 64, 65, 74, 89, 23908, 19, 24, 28, 35, 49, 50, 54, 72, 75, 76, 24000, 2, 13, 31, 35, 36, 40, 44, 46, 64, 69, 82, 84, 95, 24103, 4, 13, 28, 41,

**SHORTHAND—TAMIL—(HIGHER).**

First Class—*Nil.*

Second Class.

647, 1193, 1665, 1912, 46, 55, 69, 78, 2148, 51, 53, 79, 3207, 13, 4071, 4111, 16, 9791, 99, 9980, 10749, 13303, 35, 13427, 13561, 13656, 57, 61, 67, 14673, 18454, 19616, 22662, 22704, 13, 42, 67, 80, 92, 94, 22841, 42, 25513, 28154, 29554, 30429, 30722, 23, 32408, 31, 32725, 33091, 35255, 35307, 36539, 98, 37485, 98, 38948, 40087, 41224, 41848, 55, 84, 90, 43309, 44278, 44404, 44633, 45277, 46129, 47336.

**ACCOUNTANCY—(LOWER).**

First Class.

7236, 9739, 56, 31538, 34726, 41, 36185, 37012, 37209, 40897, 44705, 45824, 41.

Second Class.

7, 132, 52, 493, 548, 51, 52, 77, 86, 603, 4, 6, 14, 18, 48, 815, 16, 23, 26, 27, 42, 49, 54, 63, 1027, 29, 31, 33, 1116, 37, 61, 90, 2258, 72, 4021, 36, 4141, 47, 67, 70, 4274, 4482, 4502, 10, 28, 33, 54, 69, 4605, 34, 76, 4750, 55, 79, 80, 90, 4828, 4913, 28, 35, 87, 88, 95, 5001, 8, 11, 18, 5623, 6021, 6401, 17, 6775, 7118, 20, 21, 28, 37, 43, 45, 49, 7610, 16, 25, 32, 36, 37, 43, 8131, 38, 39, 8308, 8471, 8507, 31, 8930, 47, 9105, 68, 9603, 11, 70, 9709, 24, 26, 37, 38, 44, 9905, 15, 22, 52, 62, 84, 88, 10029, 83, 89, 96, 10314, 10752, 10801, 70, 11036, 38, 43, 57, 11163, 11275, 93, 11564, 72, 11783, 11877, 12283, 84, 315, 815, 13152, 13836, 45, 14244, 14618, 27, 41, 69, 79, 14731, 82, 15038, 41, 42, 54, 60, 97, 15140, 73, 301, 20, 15887, 16760, 17400, 20, 18073, 18101, 18365, 81, 18425, 47, 18511, 630, 852, 95, 19141, 77, 19303, 19351, 19515, 16, 17, 19, 84, 85, 95, 19610, 13, 26, 33, 20705, 7, 10, 71, 20815, 95, 20989, 98, 21066, 21101, 21268, 21447, 48, 94, 21631, 21973, 85, 22007, 25, 69, 22104, 30, 22204, 22453, 62, 69, 82, 87, 22691, 99, 22747, 63, 81, 22802, 23594, 23671, 23724, 27, 24195, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, 24223, 95, 24309, 23, 57, 61, 64, 75, 24452, 64, 82, 24928, 51, 25119, 24, 59, 60, 69, 25271, 78, 25333, 83, 25495, 25616, 87, 26007, 20, 26303, 21, 51, 59, 26545, 26722, 27391, 27726, 28, 28190, 28302, 6, 28, 28645, 28790, 28904, 29183, 29234, 44, XXXX, XXXX XXXX 29352, 29449, 77, 29576, 92, 29657, 29734, 30247, 76, 77, 30341, 91, 30444, 30714, 19, 24, 85, 30907, 31501, 3, 11, 14, 31, 32, 31706, 78, 81, 87, 88, 31804, 27, 40, 60, 92, 32147, 32392, 32719, 75, 77, 33074, 84, 92, 34110, 66, 34384, 34405, 69, 34529, 34636, 38, 48, 73, 34701, 1, 5, 23, 28, 34827, 97, 34902, 9, 16, 19, 28, 34, 55, 59, 96, 35004, 27, 35206, 53, 67, 94, 35739, 36101, 44, 63, 84, 92, 36255, 36334, 36509, 42, 67, 36633, 51, 53, 60, 63, 65, 72, 74, 82, 88, 89, 99, 36837, 36908, 37031, 43, 52, 75, 77, 79, 85, 87, 37116, 31, 58, 77, 87, 37210, 11, 37434, 38, 40, 47, 50, 52, 55, 71, 81, 37689, 37741, 45, 67, 85, 37807, 46, 49, 37963, 79, 90, 38003, 8, 21, 53, 38196, 38228, 45, 75, 38316, 38543, 81, 38626, 58, 94, 38722, 30, 41, 38857, 76, 83, 92, 94, 38929, 84, 39307, 10, 14, 35, 39667, 69, 75, 80, 83, 93, 94, 39820, 73, 91, 39905, 11, 40007, 8, 15, 22, 31, 42, 49, XXXXX, 63, 40102, 29, 31, 67, 40225, 32, 38, 50, 51, 77, 283, 86, 89, 91, 93, 95, 96, 40310, 12, 27, 30, 49, 57, 60, 65, 66, 67, 74, 77, 84, 85, 93, 98, 40402, 4, 11, 17, 40630, 78, 40735, 67, 81, 40876, 40912, 18, 33, 41002, 93, 41100, 3, 15, 38, 41257, 98, 41309, 26, 41704, 68, 77, 83, 86, 41834, 40, 78, 96, 41912, 20, 22, 63, 42036, 62, 83, 97, 42105, 38, 42301, 82, 42439, 42544, 42611, 17, 56, 57, 66, 42701, 3, 42805, 8, 42906, 10, 13, 49, 65, 74, 80, 43018, 43104, 13, 53, 54, 59, 43229, 32, 45, 68, 88, 97, 43312, 23, 24, 43529, 43682, 87, 92, 95, 97, 99, 43701, 2, 4, 43941, 45, 48, 49, 67, 75, 85, 44023, 34, 35, 37, 38, 44, 51, 44348, 65, 70, 84, 85, 44409, 14, 21, 59, 65, 75, 44528, 36, 51, 55, 44625, 92, 44700, 3, 4, 6, 8, 9, 48, 44838, 46, 47, 44983, 45034, 43, 53, 96, 45135, 82, 45287, 92, 96, 45301, 13, 45607, 10, 45743, 57, 45818, 50, 61, 64, 67, 86, 46028, 70, 72, 73, 46134, 59, 61, 71, 78, 46205, 7, 16, 30, 91, 46460, 46503, 25, 44, 60, 46651, 71, 81, 91, 46707, 47119, 47233, 38, 56, 65, 96

**ACCOUNTANCY—(HIGHER).**

First Class.

656, 9694, 29262.

Second Class.

539, 628, 1125, 41, 69, 2240, 77, 4413, 93, 5026, 5367, 6771, 8144, 8226, 27, 32, 39, 53, 9573, 9696, 9713, 14, 53, 74, 10527, 11167, 11772, 13846, 14110, 42, 52, 14738, 18361, 82, 18465, 67, 68, 69, 18519, 19558, 74, 76, 90, 96, 19605, 64, 21422, 22040, 22314, 22671, 75, 22839, 23809, 25528, 28217, 48, 29752, 30428, 30504, 30896, 30900, 10, 17, 19, 25, 28, 35, 31484, 89, 31516, 39, 46, 47, 31808, 59, 32381, 32401, 27, 34692, 35174, 79, 35214, 35300, 35907, 36137, 64, 66, 74, 37061, 66, 37179, 38686, 38856, 40016, 97, 40161, 97, 40320, 23, 44, 90, 40755, 58, 64, 40881, 41274, 96, 41770, 41891, 41929, 42763, 42884, 43183, 43231, 44043, 44130, 44351, 44403, 44571, 44743, 44811, 39, 45302, 45566, 45815, 46426, 46863, 47189, 47243, 47329.

**COMMERCIAL PRACTICE—(LOWER).**

First Class—*Nil.*

Second Class.

633, 8230, 11160, 18555, 25528, 38, 29261, 31485, 36225, 39886, 87, 90, 91, 96, 98, 99, 39900, 05, 16, 40000, 13, 54, 43047, 43223, 44619, 47200.

**BANKING—(LOWER).**

First Class—*Nil.*

Second Class.

6791, 8230, 13136, 18505, 20022, 20713, 53, 20807, 21416, 25379, 25528, 38, 27727, 29253, 30457, 32399, 36192, 36225, 36500, 37438, 40, 37502, 38876, 39869, 90, 96, 39911, 14, 40054, 43223, 51, 43534, 43949, 67, 44594, 45853, 45994.

**COMMERCIAL GEOGRAPHY—(LOWER).**

First Class—*Nil.*

Second Class.

6788, 10870, 13136, 20744, 64, 73, 82, 25375, 79, 25495, 25538, 29253, 31485, 36192, 40110, 47200.

**COMMERCIAL PRACTICE—(HIGHER).**

First Class—*Nil.*

Second Class.

6781, 9745, 54, 13156, 19664, 20430, 20808, 22487, 25463, 95, 36523, 37904, 38665, 38787, 40070, 72, 43972, 44419, 44613, 40, 45040, 47325.

**BANKING—(HIGHER).**

First Class—*Nil.*

Second Class.

539, 633, 1116, 60, 4996, 99, 5002, 13, 5631, 6767, 85, 9754, 55, 80, 13156, 14108, 18375, 18498, 19139, 20703, 21, 23, 20801, 08, 22481, 82, 87, 22703, 08, 76, 24389, 25470, 86, 27791, 29580, 92, 29742, 44, 30425, 79, 99, 30531, 31501, 31826, 33072, 90, 34641, 36219, 36523, 37904, 38164, 38669, 76, 40070, 93, 41923, 38, 42789, 43956, 78, 44125, 31, 44419, 44508, 91, 44640, 98, 44708, 45040, 45264, 46118, 47196, 47278, 47325.

**COMMERCIAL GEOGRAPHY—(HIGHER).**

First Class—*Nil.*

Second Class.

2277, 5013, 7372, 8230, 9754, 15320, 20808, 22481, 22708, 59, 22805, 25463, 86, 29742, 30785, 36523, 37904, 38669, 76, 46175.

**TYPEWRITING—ENGLISH—(HIGH SPEED TEST).**

First Class.

1179, 4147, 5888, 13152, 21458, 31890, 35205, 43337.

Second Class.

1606, 1913, 25, 41, 2135, 39, 48, 59, 2629, 3743, 4500, 9, 49, 62, 70, 75, 5282, 5483, 5885, 99, 6802, 7087, 8297, 8461, 8515, 8769, 9064, 9130, 44, 81, 9650, 9721, 27, 10157, 10237, 80, 10484, 10611, 11827, 67, 12456, 12929, 13402, 13535, 49, 58, 62, 13718, 23, 13849, 14312, 14545, 14670, 14753, 58, 65, 84, 14998, 15146, 15504, 87, 16879, 92, 16919, 26, 37, 17376, 17470, 17702, 17899, 18341, 18411, 18603, 30, 48, 18713, 19511, 93, 19688, 19788, 20111, 21785, 21986, 22016, 60, 22154, 67, 97, 22208, 22, 23212, 23725, 24372, 24725, 37, 93, 25047, 25282, 25520, 26150, 94, 26218, 26357, 26809, 26993, 27008, 19, 91, 27115, 27486, 28066, 28123, 28768, 29813, 30709, 31263, 99, 31302, 31905, 32679, 32700, 2, 31, 71, 34145, 60, 34244, 66, 34464, 34561, 83, 34633, 77, 34704, 14, 34844, 52, 34932, 35208, 54, 87, 35377, 35520, 35706, 35910, 36112, 92, 99, 36215, 36366, 91, 36477, 36527, 37, 96, 36656, 68, 36706, 29, 36819, 89, 90, 36944, 37434, 38, 37598, 37600, 3, 37821, 37907, 38213, 74, 91, 38542, 51, 61, 63, 78, 38695, 38747, 51, 83, 39123, 39250, 39378, 83, 39412, 37, 39762, 39891, 39901, 74, 40173, 75, 40439, 40536, 41205, 41332, 41460, 97, 41677, 41850, 76, 41901, 28, 86, 42013, 21, 63, 42115, 31, 42703, 7, 43072, 79, 81, 43316, 85, 43476, 43644, 57, 90, 92, 43703, 7, 43823, 40, 44056, 44124, 44225, 44, 44335, 83, 88, 97, 44560, 44622, 44757, 62, 89, 98, 44820, 28, 44927, 44, 66, 45125, 40, 45217, 45368, 45567, 71, 91, 92, 45855, 56, 45903, 10, 46036, 46120, 57, 46269, 46324, 46852, 47083, 47222, 47321.

SHORTHAND—ENGLISH (INTERMEDIATE GRADE).

First Class.

5625, 26376, 30720, 33093, 35517, 69, 37072, 38736, 40459, 43277, 43302, 36, 43.

Second Class.

1808, 1911, 38, 44, 4521, 4989, 5025, 5875, 92, 94, 97, 6320, 28, 6792, 8772, 8941, 9159, 9706, 90, 9803, 10136, 10558, 10678, 82, 85, 11420, 12616, 13138, 13640, 13833, 14635, 14747, 15135, 16088, 16641, 53, 17252, 17322, 18203, 17, 23, 18323, 91, 18413, 27, 43, 18509, 28, 19664, 20432, 20644, 47, 22087, 22152, 85, 22227, 22457, 59, 74, 22707, 20, 92, 22826, 23351, 55, 25491, 98, 25512, 26338, 48, 27280, 95, 27302, 27548, 27780, 92, 28160, 29237, 29591, 29733, 30500, 31253, 67, 95, 31849, 72, 32149, 32383, 32627, 32722, 76, 33073, 86, 34052, 34135, 34425, 34954, 35215, 40, 41, 35519, 21, 27, 36514, 36766, 36970, 37448, 37579, 37913, 14, 38541, 79, 38675, 38749, 57, 39082, 39450, 39759, 76, 39910, 16, 40070, 40615, 53, 40905, 41540, 41808, 42306, 8, 42434, 42501, 7, 42789, 91, 42941, 46, 43296, 43313, 17, 21, 50, 43460, 44106, 44332, 44796, 44972, 46161, 46216, 46912, 47201.

SHORTHAND—ENGLISH (HIGHER.)

First Class.

42571 only

Second Class.

2283, 5017, 5659, 5881, 89, 5902, 7997, 8762, 9160, 9785, 10577, 13628, 55, 14647, 17269, 19666, 22801, 25484, 25516, 30, 27822, 28195, 28215, 25, 29742, 30726, 31206, 32421, 32703, 50, 84, 34058, 34124, 36, 34863, 35193, 35270, 37432, 38685, 40079, 40132, 40512, 40771, 41708, 41810, 42384, 42549, 91, 42894, 42925, 43247, 43344, 44070, 44341, 59, 44402, 44572, 44813, 45011, 20, 45339, 45412, 45631, 36, 45940, 46305, 47292.

SHORTHAND—TAMIL (LOWER).

First Class.

1387, 1885, 88, 1967, 7920, 9762, 88, 13253, 88, 13329, 14549, 18440, 20390, 22676, 22761, 22827, 23984, 24395, 25483, 25537, 35209, 35308, 36065, 37308, 20, 37458, 40088, 41881, 42433, 43214, 26, 44583, 89, 44604, 41, 48, 44835.

Second Class.

1100, 1873, 1965, 66, 2135, 50, 55, 2280, 3211, 4078, 4416, 5366, 9710, 16, 9801, 11781, 13256, 86, 13300, 13419, 13636, 63, 68, 14626, 18373, 19254, 19813, 20420, 22690, 95, 22702, 95, 99, 22803, 23159, 23225, 23983, 26337, 26734, 26809, 27737, 93, 27824, 27951, 30452, 31872, 32424, 32548, 32707, 13, 45, 46, 33082, 94, 35190, 35226, 35, 36068, 81, 36557, 81, 37316, 37470, 38046, 47, 38413, 38727, 68, 39163, 39388, 39403, 46, 40061, 40103, 09, 40434, 40786, 40992, 41201, 16, 41837, 41, 45, 41907, 30, 32, 42274, 43282, 43305, 15, 44564, 77, 88, 93, 44605, 24, 43, 45412, 45625, 46122, 46467, 47315.

TYPEWRITING—ENGLISH (HIGHER)—cont.

Second Class—cont.

21, 28, 29, 32, 39, 48, 53, 60, 67, 74, 82, 92, 5804, 25, 29, 39, 40, 45, 47, 49, 53, 54, 66, 80, 91, 5929, 32, 43, 76, 81, 89, 90, 6066, 73, 83, 87, 6119, 76, 6200, 26, 35, 40, 61, 76, 86, 6343, 63, 81, 87, 89, 6409, 15, 34, 66, 84, 89, 91, 92, 99, 6532, 48, 52, 81, 97, 98, 6631, 95, 6725, 37, 6830, 80, 6911, 36, 39, 50, 63, 85, 7004, 6, 24, 25, 32, 37, 41, 46, 59, 80, 87, 7154, 88, 99, 7201, 3, 23, 25, 37, 38, 48, 63, 72, 73, 75, 7308, 14, 30, 60, 79, 83, 7406, 9, 60, 62, 97, 7563, 86, 7634, 7729, 32, 33, 41, 71, 86, 87, 7832, 51, 74, 7938, 41, 47, 49, 79, 89, 8033, 34, 60, 66, 77, 93, 8109, 19, 8293, 8300, 37, 54, 79, 92, 8413, 21, 24, 26, 31, 35, 48, 88, 90, 8502, 15, 72, 8603, 9, 54, 75, 80, 86, 8736, 54, 61, 71, 74, 81, 8811, 31, 70, 71, 91, 8911, 9002, 29, 54, 55, 99, 9118, 42, 74, 78, 94, 98, 9202, 7, 38, 70, 72, 89, 9366, 70, 9413, 51, 61, 67, 74, 80, 94, 98, 9510, 13, 15, 55, 9607, 11, 16, 17, 47, 50, 9748, 9874, 75, 81, 84, 85, 9917, 70, 10004, 19, 27, 55, 81, 95, 10125, 89, 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TYPEWRITING ENGLISH (HIGH SPEED TEST)—cont.

Second Class.

4420, 7423, 9693, 10600, 994, 11142, 808, 33, 12508, 13650, 57, 14686, 772, 117765, 18784, 19988, 22665  
762, 23357, 24178, 459, 27618, 28242, 29105, 32412, 36526, 40751, 42789, 43298, 728, 44056, 46524.

TYPEWRITING—TAMIL (HIGH SPEED TEST).

First Class.

4147 only.

Second Class.

7423, 11142, 906, 13166, 650, 57, 14638, 772, 18956, 19612, 988, 22762, 24459, 25466, 551, 29105  
460, 47220.

SHORTHAND ENGLISH (HIGH SPEED TEST).

150 words per minute.

First Class—Nil.

Second Class.

47191, 98, 47219, 52, 47330.

180 words per minute.

None Passed.

SHORTHAND—TAMIL (HIGH SPEED TEST).

100 words per minute.

First Class—Nil.

Second Class.

47215, 41, 51, 58, 77, 47313, 22, 46, 48, 49, 50.

120 words per minute.

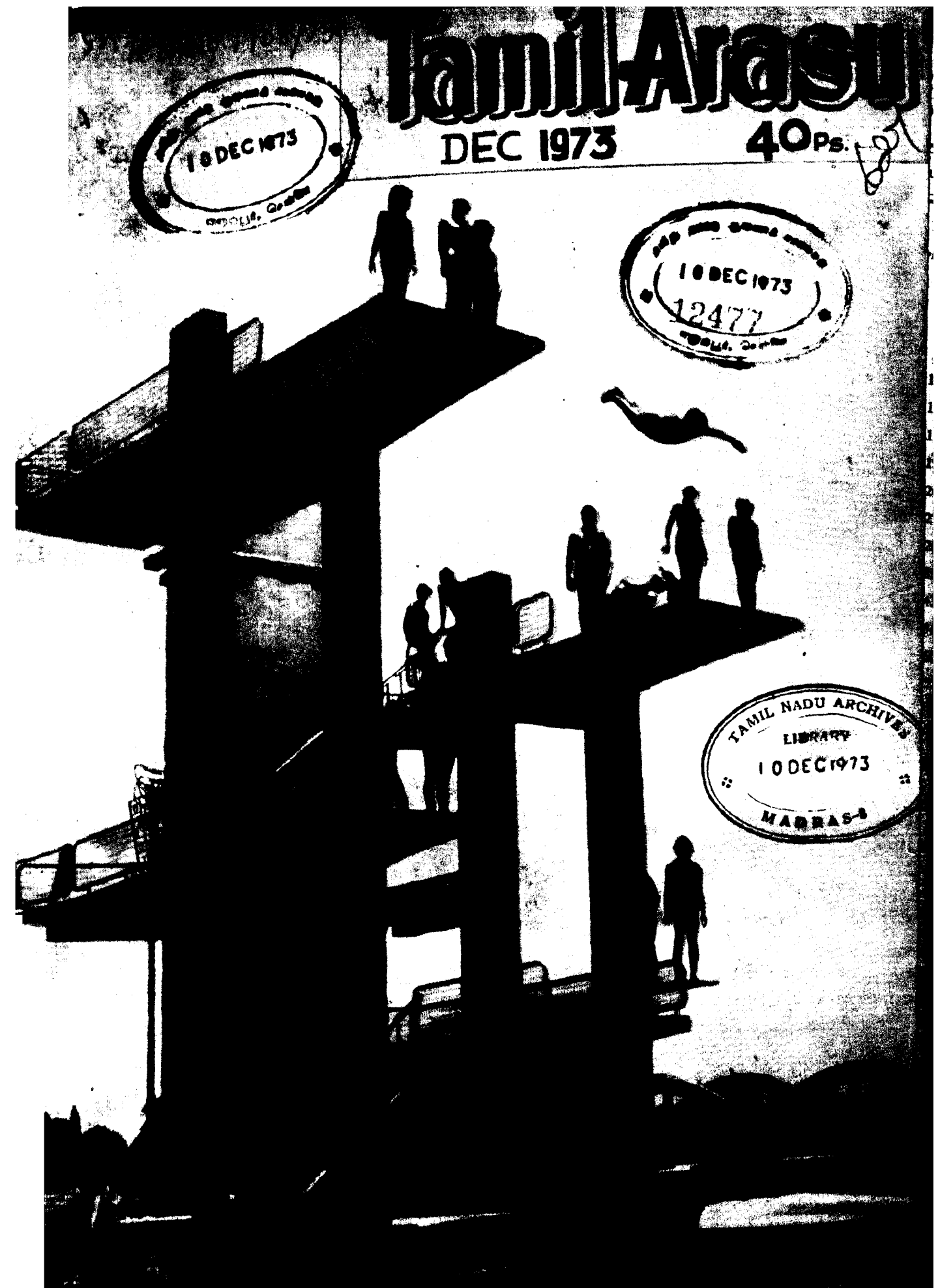
First Class—Nil.

Second Class.

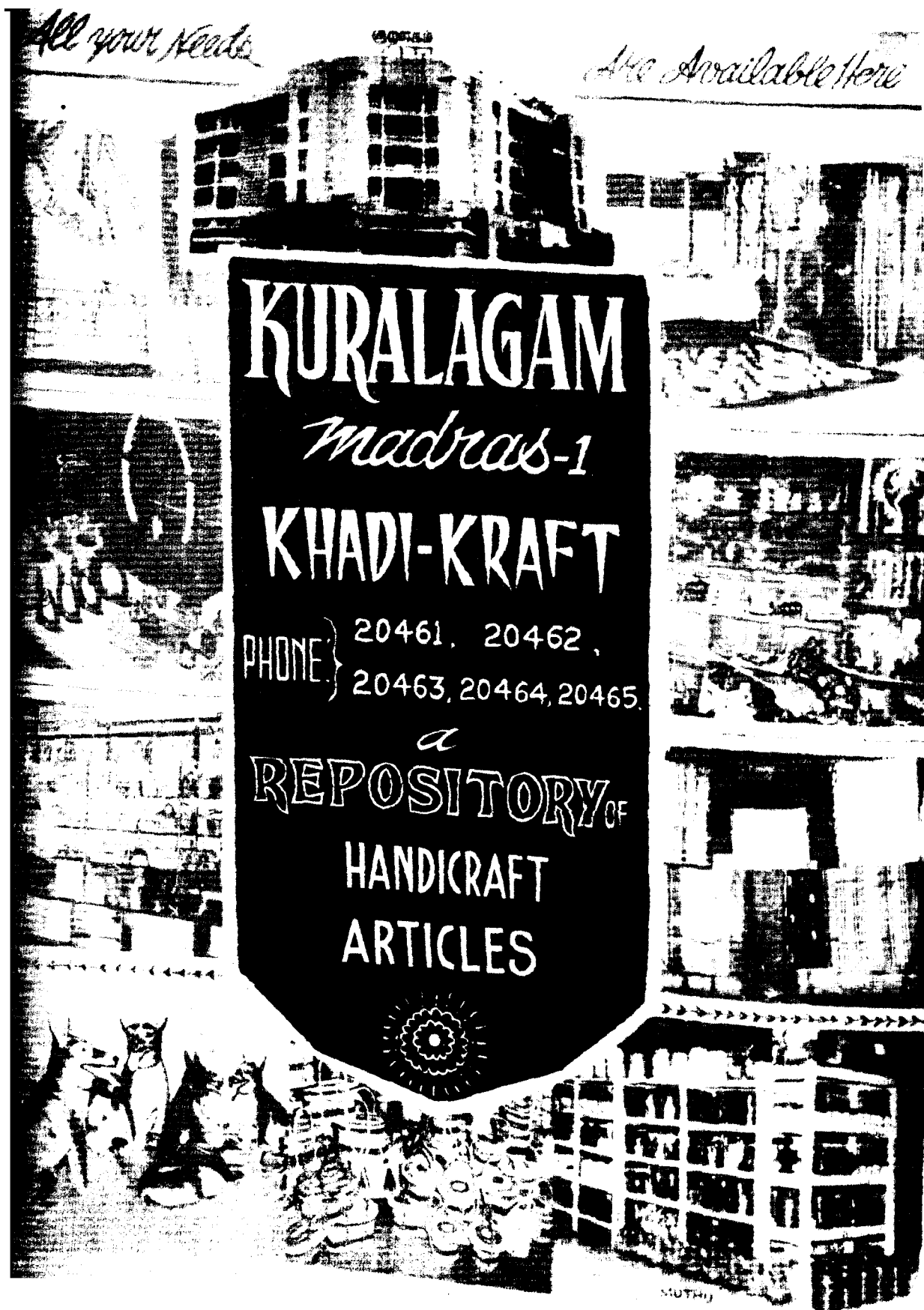
47194, 95, 47308, 10.

P. SIVALINGAM,  
Director of Technical Education,  
and  
Chairman Board of Examinations,  
Madras-25.

AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU AND  
GOVERNMENT PRINTING, GOVERNMENT PRESS, MADRAS-1.



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# Tamil Arasu

Vol. IV DECEMBER 1973 Issue

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## MORE APPLES FOR MADRAS

A Cold Storage Plant costing Rs. 9.25 lakhs has been established at the goods terminal in Madras by Tamil Nadu Co-operative Marketing Federation, with financial assistance from State Government and National Co-operative Development Corporation for storing fruits, vegetables, etc. The capacity of the plant is 625 tonnes consisting of 2 chambers of 312.5 tonnes each with rack arrangements in four tiers giving 393 bays. Agreements have been entered into with the Kashmir Apple Growers Co-operative Federation for the supply of apples for export from our State. Outsiders can also utilise these cold storage facilities.

This Cold Storage Plant was declared by the Chief Minister during Co-operation Day celebrations. The main objectives of the Federation are the supply of agricultural inputs and marketing of surplus agricultural produce, starting of processing plants, construction of storages, etc. It has drawn up plans and schemes for establishing sun-flower oil and nut oil extraction plants at Vriddhachalam and Tiruvannamalai.



The week-long 'Plan Week' celebrations in Tamil Nadu concluded on 21-11-1973 with a symposium in which students of all Colleges participated. College students all over the State and elite of cities throughout Tamil Nadu thronged the large variety of ideas adopted to focus attention on the Plan. The City, however, went a step further and arranged a 'Poets Meet' to discuss the Plan in poetry. The former Minister Thiru K. Mahavendan and two other top poets of Tamil Nadu giving the lead, as many as 48 college students read out their poetic eulogies of the Plan. The Rajaji Centre, the venue of this interesting event, possible only in Tamil Nadu, because of her poetic tradition, was well attended by an appreciative audience.

Moreover, the City had the additional benefit of the Members of the State Planning Commission and its Deputy Chairman giving the discussions a purposive lead. The media units of the Government of India publicity wing gave powerful support to the efforts of the State

Planning Commission and the Information Department to generate the Plan consciousness among the intelligentsia.

#### FIFTH PLAN-A MAJOR STEP

Calling the Fifth Plan (1974-79) as a major step in the country's determination to march towards definite progress, Dr. Malcom Adiseshiah, Member, State Planning Commission, described the grounds covered by the four previous plans as the foundation for future progress.

Detailing the process of planning as one of striking a clear balance sheet of achievements and set backs, and going ahead after identifying the constraints the well known Educator-Economist described the Plan as a potent instrument for improving the wellbeing of the people.

#### ACHIEVEMENTS

Dr. Adiseshiah listed the following as the major achievements of Indian Planning :

1. Achievement of a remarkable breakthrough in food-grains production ;

2. Development of a sturdy infrastructure for Industry, Agriculture, etc. The achievements in the sphere of rural roads, Minor Irrigation, etc., have been really worth-while ;

3. Development of Education and Health facilities. We have performed some qualitative achievements in these social service spheres.

As against these, we have to face the following difficulties also :

1. Hyper inflation,
2. Power shortage throughout the country,
3. Massive unemployment and
4. The ever widening poverty line.

#### CONSTRAINTS

One of our major constraints against progress has been our traditional social structure. Another constraint is that our technologies in agriculture and industry lead to unemployment and underemployment. Low savings is yet another serious constraint and coupled with the population explosion the situation seems to be disheartening.

But with proper planning and implementation, we are bound to go ahead and succeed. Failure of any plan is always rightly traced to failure in proper implementation.

#### ROLE OF COLLEGES

Characterising the approach document as a serious and salient study of the objectives and major thrusts of the Vth Plan, Dr. Malcom S. Adiseshiah detailed the definite role of the colleges in helping the plan to succeed.

1. The college students should form study circles to study the 5th Plan carefully and analyse the approach paper which contains many remarkable ideas.

2. The college students can definitely fill up the gaps of knowledge and information. Whole areas on which investigations and surveys that would help the planners greatly, are there to be exploited usefully by the College Planning Forums. Each

college can undertake scientific studies and supply vital information to the Planning Commission.

3. By sustained social service action and community service the college students can make the villagers plan-minded and can explain to the people at large, the various benefits of social service legislation and the major objectives of the Plan.

Dr. Adiseshiah concluded his address by congratulating the organisers of the symposium and calling on the participants to participate on an 'Equal Footing' as the symposium is a meeting of equals.

There was a very interesting and lively discussion in which students and professors took an active part.

The major goal of Vth Plan "Eradication of Poverty" was acclaimed and various college delegates detailed the ways of implementing these ideas.

#### SUMMING UP

At the end Thiru M. G. Raja Ram summed up the discussions and stated that "the Fifth Plan is much more than a mere mathematical exercise. It is conceived as the rallying point for a supreme national effort in a decisive phase of our march towards a self reliant economy and for fuller social justice. It is another war—so to say—this is a war against poverty and stagnation and this has to be won at all costs."

Thiru M. G. Rajaram, Deputy Chairman, State Planning Commission and Thiru V. Namadeven, Deputy Director, Information Department of Tamil Nadu Government, gave the State-wide celebrations their personal attention and goaded the enthusiasm of students as also guided them to a realistic appraisal of the Plan for removing regional imbalances.

## GOVERNOR AT POOMPUHAR ART GALLERY



"Intelligently planned, exquisitely executed and made universally acceptable as a true mirror of SILAPPATHIKARAM, a unique epic" said Thiru K. K. Shah, Governor, during his visit to the Poompuhar Art Gallery on 29th October, 1973. The Reception Officer, S. Nallarasu is seen explaining the exhibits of the Art Gallery to the Governor while V. Namadevan, Deputy Director, is seen getting the Visitor's Book signed.



FLAG  
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The Flag Day will be observed on 7th December, 1973 when tokens and car flags will be distributed to the public in return for donation throughout the State. The Flag Day is celebrated to honour the valiant dead, to salute the veteran brave and to renew their pledge with the active service personnel. The Flag Day is thus an old and honoured annual feature of our national life.

It reminds us of the debt we owe to the men who guard our land, sea and air frontiers. We are proud of our armed forces, whose arduous

feel neglected or forgotten. Many have laid down their lives, heroically, in the battle field. It is hoped that their concern for our safety and happiness will be fully reciprocated by every citizen by showing their gratitude by subscribing generously on the ensuing Armed Forces Flag Day.

#### AWARDS

The yearly retirement and release of personnel from the Armed Forces is considerably adding to the number of Ex. Servicemen in the country, and this results in corresponding increase in the problems relating to their welfare and rehabilitation. With a view to look after the welfare of Ex. Servicemen and their families and to provide more amenities to the serving soldiers, who guard our land, sea and air frontiers, the Madras City Standing Flag Day Organisation which met on 3-11-73 under the Chairmanship of His Excellency the Governor of Tamil Nadu has fixed a target of Rs. 7 lakhs for the Flag Day 1973 in the various districts.

The officials/non-officials who are responsible for raising collections of Rs. 3,000/- and above but below Rs. 5,000/- and Rs. 5001/- and above will be awarded Sanads and Medals respectively.

#### PRIZES FOR CHILDRENS' BOOKS

Under the scheme of award of prizes for the best books in Children's Literature the Regional Committee for scrutiny of Children Literature in Tamil has selected the following four books for the award of Cash

Prizes of Rs. 500/- to each of the books under the State Prize Competition for Children's Books. This is the eleventh competition—award in the State.

| Sl. No. | Category            | Name of the Prize winning book | Author                     |
|---------|---------------------|--------------------------------|----------------------------|
| 1.      | Biography           | சென்னை சிலைகளின் கதை           | Thiru N. K. Velan          |
| 2.      | Novelettes          | நடேசன் என் நண்பன்              | Thiru Puvanai Kalachezhian |
| 3.      | Poems               | பாட்டுத் தேரட்டம்              | Poovannan                  |
| 4.      | Science and fiction | எரி கற்கள்                     | Thiru K. Rajaram           |

#### THE GOVERNMENT'S INCENTIVES TO ENCOURAGE INTERCASTE MARRIAGES

At present a gold medal worth about 1.5 sovereign along with an appreciation certificate is presented to the intercaste married couples by the Government of Tamil Nadu. Besides this, the Harijan spouse of the inter-caste married couple is eligible for interest free loans under the Petty Trade Loan Scheme and in the same way the Harijan spouse of the inter-caste married couple is eligible for assignment of the house site in the land already acquired for provision of house sites for Harijans. The Government has now decided to award a cash grant of Rs. 200 (Two hundred rupees only) to each intercaste married couple in addition to the concessions mentioned above. The cash grant will be awarded by the Collectors (including Collector of Madras) to the eligible couples along with the award of gold medals to them.

## THE TWO-TIER OVERBRIDGE AT

TIRUNELVELI

NAMED

TIRUVALLUVAR

OVERBRIDGE

Tirunelveli, an ancient town, is a historical place and is the head quarters of the Tirunelveli District. It is densely populated and is a major Municipal Town. Palayamkottai and Melapalayam are its neighbouring Municipal Towns within a reach of 3-4 kilometres. All these three towns depend on the main road locally well known as "Swami Nellaiyappar Salai." This road serves as a key road to reach Courtallam, the famous tourist centre on the West and Madurai, the second biggest city in Tamil Nadu on the North and Cape Comorin, the Southern most land of India on the South and Tuticorin, the fast growing industrial complex in the East.

The road forms the main artery of the town and a majority of big shops, lodging houses, entertainment centres, hospitals, Post Office, Police Station, Railway Junction, Banks and Offices are situated on this road. This road is cut by railway tracks connecting Tirunelveli, Shencottah and Trichendur. The crossing is at mile 1/4 of Tirunelveli-Shencottah Road at K.M. 29/774 of Tirunelveli—Tenkasi Section of Southern Railway. This railway level crossing is located in a busy bazaar area, being the heart of the Tirunelveli Town and it falls within the shunting limits of Tirunelveli Railway Junction. The overbridge is constructed over this railway level crossing.

#### TYPE OF BRIDGE

This two tier overbridge, being the first of its kind in India, comprises a 24 ft. road way at the top for fast moving traffic and a road way of 16 ft. 6 in. at bottom tier for slow moving traffic. The construction of two tier bridge at this junction was due to the following aspects.

The road is a State Highways and interstate road connecting Kerala on its West. The carriage way required as per traffic survey is a minimum of 44 feet in width. The existing width of the road available on either side of the crossing is only 46 feet to 74 feet. Hence it is not possible to have a carriage way of

44 feet in a single tier bridge as it will affect the heavily built up area on either side of the road and also the adjoining business houses will experience difficulties.

The overbridge is so designed as to cause minimum obstructions at the ground level as far as possible and to provide for maximum inter-communication between two rows of business houses on either side. The bridge piers occupy only an area of 7 ft. into 4 ft. at the ground level and is placed at a maximum distance from each other. The vertical clearance at the level crossing is 19 ft. 3 in. to facilitate easy passage of trains. The total length of the bridge is 2,315 feet.

#### DESCRIPTION OF BRIDGE

The overbridge consists of the following distinct portions on either side of the railway line :

- (1) Retaining wall portion (for fast moving traffic).
- (2) Slab bridge portion (for fast moving traffic).
- (3) Trestle bridge portion (for fast moving traffic).
- (4) Bowstring girder portion (for both fast and slow moving traffic).
- (5) Retaining wall portions (for slow moving traffic under trestle bridge).

(1) The Retaining wall portion is constructed to have a length of 214 ft. and 9 in. on Shencottai side and 161 ft. and 3 in. on Palayamcottai side starting at ground level and rising with a gradient of 1 in 30.

(2) The slab bridges have 3 spans of 20 feet each on either end.

(3) The trestle bridge portion have 6 spans on Shencottai side and 7 spans on Palayamcottai side of 40 feet each.

(4) Continuing from slab bridge the central main bridge of bowstring girder type (which carries the two deck) consisting of 12 spans of 102 ft. and 6 in. each (centre to centre). Two bowstring girder, one on either side, are provided for each span. The upper deck for fast moving vehicles is connected to the arch rib through V shaped cross beams. The lower deck for slow moving vehicles, spans between the tie beams of the bowstring girder. Since the steel for the construction not readily available then, the tie beams of the bowstring girder were prestressed (excepting the railway span) with ten cables of 12/8 m.m. H.T. cables.

(5) The solid masonry ramps for slow moving traffic is given connection from ground level to the bottom deck of the main bridge. Apart from this, service road to a width of 12 ft. black topped on either side of the bridge is provided for movement of pedestrians and vehicular traffic for the shops and residential place on both sides of the bridge and it is proposed to construct a foot overbridge to cross the railway track, as the existing level crossing will be closed permanently.

#### CONSTRUCTION

The construction of the bridge was started on 8-12-1970. It is noteworthy that this overbridge, which is one of a complicated technical nature, was constructed within a short period, even though many difficulties were experienced, such as diversion of traffic and non-availability of working space due to the heavily built up business area and converting the overhead electric line into underground cable for the entire length of the bridge and shifting of telephone and telegraph posts to the further end.

#### PROVISION OF FOUR LANES & FREE LEFT TURN

In the light of the conditions discussed above, it has been proposed to have four lane carriage way on both the approaches of the Over-bridge upto the Government Veterinary Hospital on Shencottah side

and upto Sulochana Mudaliar Bridge on Palayamcottai side to provide a free flow of traffic. This is absolutely necessary in view of the quantum of traffic expected from Goods Shed Road on Shencottah side and due to the presence of the N.H. on Palayamcottah side. Providing a standard round about to obtain an uninterrupted flow of traffic on either side is prohibitively costly due to the existence of the heavily built up area. A non-standard round about will impede the flow and only result in creating an unnecessary obstruction to the through traffic flow. Therefore it was recommended to provide only a channelising island on Palayamcottah side enclosing the existing Anna Statue to provide for the left turning fast moving traffic from the bridge to the National Highways. The N.H. on Palayamcottah side has to be slightly shifted to accommodate the left turning traffic from the Over-bridge. To minimise land acquisition, a bare minimum turning radius of 32 M is adopted at the take-off point. The take-off for the left turning traffic could not be provided at the foot of the bridge as it will involve acquisition and dismantling of the building housing the office of the Tirunelveli Electricity System. To avoid this it was proposed to take-off (4 into 7.3 M) i.e., 29.2 Metres ahead, dismantling the hand rails for providing take-off for 7.5 M width of road as shown in the plan and connect it to the N.H. by means of a ramp with a gradient not exceeding 1 in 30. The existing gradient of the Overbridge is to be kept up undisturbed.

#### PROVISION OF 'U' TURNS

To minimise the conflicts, it is proposed to prohibit right turn near the Overbridge and all the right turning vehicles are advised to move further away from the Over-bridge and take a 'U' turn at the appropriate points where the road width is increased to 22 M.

All vehicles coming from the bus stand side in the N.H. bound towards the Over-bridge shall not be allowed to take an immediate right turn at the foot of the bridge. But they have to go further up towards Sulochana Mudaliar Bridge

and then take a 'U' turn at the place designated. Similarly on Shencottah side no vehicle shall be allowed to take a right turn immediately after the bridge and the vehicles bound for goods shed etc., have to go further upto the Veterinary Hospital and take a 'U' turn and proceed. Extra road width is required to allow vehicles to take 'U' turn and lands for these were proposed to be got alienated from the Veterinary Hospital Compound on Shencottah side and the river poramboke near Sulochana Mudaliar Bridge. A small portion of land was also recommended to be acquired on Palayamcottai side for this purpose.

#### TRAFFIC AIDS

The bridge as well as the junction on Palayamcottai side were proposed to be well lit during night time by means of adequate number of overhead cut off lights. One illuminated informatory sign board has to be put up over the hand rails of the bridge just before the take-off point. Plastic delineators are to be fixed at the three corners of the channelising island as a cautionary measure. Road marking shall be carried out before allowing traffic over the bridge to channelise the flow.

Apart from the above improvements, the erection of all other cautionary and mandatory signs were also proposed. A Police beat was suggested to be posted close to the entry gate of T.T.E.S. Co., to control the traffic from the Over-bridge N.H. and also from Kailasapuram.

#### A COMPLICATED

#### CONSTRUCTION

#### COMPLETED IN

#### RECORD TIME

"Do you remember how fascinated you were when you first read the story of Jeanne d' Arc, and how your ambition was to be something like her? Ordinary men and women are not usually heroic. They think of their daily bread and butter, of their children, of their household worries and the like. But a time comes when a whole people become full of faith for a great cause, and then even simple ordinary men and women become heroes, and history becomes stirring and epoch-making. Great leaders have something in them which inspires a whole people and makes them do great deeds."

#### EDUCATION

—This is what Pandit Jawaharlal Nehru wrote to his dear young daughter Indira Priyadarshini from Naini prison on October 26, 1930, so as to reach her on her 13th birthday. It is refreshing to remind ourselves of these prophetic words of the father which have proved true, as we celebrate his daughter's 56th birthday.

Her education in Tagore's Santiniketan, though interrupted due to the stresses and strains of the difficult times, opened her eyes to the immortal glory of India, and her studies and travels abroad threw upon the window of Western civilisation. Like her illustrious father and grandfather, she absorbed the scientific approach of the West and the basic values of life of the East. In the company of her father, she fell under the magnetic spell of the dynamic leadership of Mahatma Gandhi. Her close association with her father during the grim days of our Freedom struggle and thereafter during his stewardship as Prime Minister provided immense opportunities for closer look at men and matters and prepared her for rough and tumble of public life. Neither affluence in early childhood nor rigours of public life diminished her burning zeal to serve the teeming millions in India. No wonder her rise to top leadership was hailed by all at home and abroad.

She enjoys immense confidence of the people who have given their massive mandate to her to transform the face of poor India into a prosperous Welfare State. She carries a very heavy burden but it is lightened by the love of the people. She has created a new mood in the

# THE PRIME MINISTERS BIRTHDAY

TRIBUTES  
BY  
K. K. SHAH  
GOVERNOR OF  
TAMIL NADU

country for a big leap forward, and her slogan 'Garibi Hatao' is as meaningful today as the 'Quit India' slogan was thirty years ago. A bird's eye view of the period of her emergence as an undisputed leader is inspiring, instructive and educative.

In the formative period of any country's development, the test of leadership lies in the ability to assess handicaps, evaluate advantages, appreciate the psychology of the people, calculate the actions and re-actions of neighbours—friends and foes—and hammer out ways and means for maximising the benefit of helpful factors and accelerating the tempo of progress consistent with the security and unity of the country. It is rarely that positive leadership with enough dynamism is available to match the demands of the times. It is fortunate that in the most critical period in the history of India, a dynamic wise and vigilant leader like Thirumati Indira Gandhi is at the helm of affairs.

#### HURDLE

The biggest hurdle and the greatest challenge that India had to face after Independence, the after-math of Partition. Many then did not realise how wily politicians and jealous neighbours create situations, the burdens which can not only cripple the economy, reduce our strength, disturb our unity but also create conditions of chaos and utter helplessness. Any effective measure that India could think of, can be exploited and condemned on religious grounds. Extreme caution and utmost prudence alone can shape the events in a way that would completely remove such an impression and create international opinion in our favour.

There were occasions in the past when the handicaps of Partition could have been offset by appropriate measures. When I say 'handicaps', I do not, for a moment mean either to undo the geographical division that has taken place or annex any part of either East Bengal or West Punjab. When I say 'handicaps', I refer to the quieting factors which are the natural concomitant of a religious State coming into existence on our border.

and exploiting the religious sentiments both in Pakistan and in India. Even a constructive attitude was exploited and is being exploited. It was then hoped that if democracy became pervasive and also a mode of living in Pakistan, since India was wedded to democracy, the barriers, prejudices and predilections based on religion, caste, community, would disappear and a healthy relationship would grow between India and Pakistan in the common interests of both.

Unluckily, the last 20 years have witnessed situations in which not only religious bigotry has been extolled but every attempt has been made to disturb the emotional integration of India by appeals to religious, ideological differences and group interests. It was thought that lovers of democracy could be dissuaded from working against a democratic India. As it happened, however, people wedded to an ideology which did not believe in allowing religion to interfere, did side with dictators, depending upon religion as their base. Neither ideological contradictions nor humanitarian values could prevent alignment intended to erode not only the democratic fibre of India but the very unity of India.

The resultant stresses and strains created a situation where frustration was increasing, hope for a better future was receding and extremism was gaining ground. Different forces acting in different ways and for different purposes had created a situation where confidence in leadership was sagging and reliance on the ability of the country to preserve its unity and maintain its progress was questioned.

It was in these circumstances that Thirumati Indira Gandhi was called upon to shoulder the responsibility of guiding the destinies of India. The sheer weight of internal squabbles, uncertain conditions and internal pressures would have persuaded the mightiest not to invite trouble on all sides and undertake a task which looked like Herculean. But true to the traditions of her family, Indira Gandhi refused to succumb either to the threat or troubles or to the pressure of events. She knew that unless a new line was adopted and a bold programme was undertaken, it was impossible to

change the psychology of the masses. She was aware that the country's interests demanded a fight on all fronts and she did not hesitate to do so.

The history of the last two years and more will be regarded as the history of future India, and this period will be known as Indira Gandhi epoch. The courage with which she advised the dissolution of the Lok Sabha at a critical time, the dynamism with which she fought the mid-term poll and the overwhelming majority with which she was entrusted with power are indicative of her maturity, wisdom, statesmanship and far-sightedness as a leader of destiny. The prognostications of the wisest, the prophecies of the prophets of doom not only went away but were completely destroyed by a massive majority, unknown so far in the history of India. This demonstrated that she could feel the pulse of the people, she knew them, had faith in them and was sure that her faith would be rewarded.

Hardly had the din and dust of the elections settled down when East Bengal erupted as a volcano and put her abilities to the severest test. Any other leadership would have either succumbed to the immediate needs or would have played into the hands of scheming politicians and propagandists. The cool, collected and resolute manner in which she handled the problem and the gradual change that she brought about in the thinking of the international community will redound to her credit and inspire future statesmen to draw inspiration from her handling of the situation, when all facts will be available. The greatness of leadership is tested when enormous dangers confront it. It is to the credit of Indira Gandhi that she is able to convert an enormous danger to an extreme advantage. Neither the impatience of friends for quick results nor the temporary jubilation of opponents can disturb the equanimity of Indira Gandhi. Her faith in the future of India is disclosed by her calmness, composure and confidence. Undaunted by difficulties and impervious to personal inconvenience, her diligent, devoted and intrepid leadership is slowly and steadily turning the tide in favour of India.

The Indo-Soviet treaty will be hailed as a master stroke of her consummate statesmanship and wisdom. When others were scheming, it will be said to her credit that Indira Gandhi had been acting.

Thanks to the solidarity of the people of India and to the magnificent performance of our gallant defence forces, Bangla Desh was born. The self-respect of the insulted people of this sub-continent is asserted; the shackles of balance of power are broken; and the emergence of India as a security of peace and prosperity is assured. By making President Bhutto to agree to abjure resort to force in future and to resolve all differences by negotiation without intervention of an outsider, Thirumati Indira Gandhi had added another dimension of glory to the formidable array of her achievements.

We have to give every possible help for the reconstruction of Bangla Desh. We have to produce more for making up the cost of war imposed on us and we will have to find additional resources to meet the rising expectations of the masses, besides maintaining vigilance against treacherous moves on our borders and against international pulls and pressures. We have to be vigilant against the scheming forces of communalism, casteism and religious bigotry. We have gradually to overcome the weaknesses of democracy and make democracy a way of life. This is a testing time; but I have no doubt that with the maturity that the masses have attained, with the resilience that the economy has achieved, with the growth that the future is promising and with the strong and valuable leadership of Indira Gandhi, the future is safe.

On the 56th birthday of this great leader of destiny of India, millions of her countrymen and equally millions of her admirers all over the world, will vie with each other in sending their warmest greetings and best wishes. For the grateful people of India, the only significant way to greet her on this happy and memorable occasion is to assure her of their dedication and readiness to follow her lead under all circumstances and to strengthen her hands with the utmost loyalty and co-operation.

—oOo—

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To mark the Birthday of Pundit Jawaharlal Nehru this year on November 14th, the younger generation from tiny tots of nursery schools to the adolescents in colleges pooled all their budding talents to make it abundantly clear that his memory is cherished. All organisations and Government agencies responsible for the youth welfare and education lent their lusty co-operation, while the Information and Public Relations Department of the Government of Tamil Nadu co-ordinated all this enthusiasm. The most colourful event was the massive children's rally organised by the Indian Council for Child Welfare at the vast Nehru Stadium on 14-11-1973.

#### BOOK EXHIBITION

Children's Book Exhibition was inaugurated for three days from 14th November, 1973 at Rajaji Hall by Pulavar K. Govindan, Speaker, Tamil Nadu Legislative Assembly. The function was presided over by the Minister for Education and Tourism, Thiru V. R. Nedunchezian. About 20 publishers participated in the display of their publications. Paintings of good standard by children were also displayed at the exhibition. Books were sold at a sizeable concession, while the more costly sets were sold

on the instalment payment basis. Scientific instruments were also exhibited for the benefit of teachers. To give incentive to the publishers, 3 prizes were distributed for the best display. The Book Exhibition was kept open from 9 A.M. to 9 P.M. The Director of Social Welfare and Director of Public Libraries made necessary arrangements to display the educational aids at the exhibition for the benefit of the children, who thronged in large numbers in a constant stream.

#### PAINTING EXHIBITION

A painting competition was held for the school children. Children below 15 years grouped in 3 categories such as 2.5 to 5 years, 6 to 10 years and 11 to 15 years were enlisted. The competition for children in the age group of 2.5 to 5 years was organised by the State Social Welfare Board at 10 A.M. on 10-11-1973 and 300 children sat for competition at Children's Garden School at Mylapore, Avvai Kalvi Nilayam at Ritherdon Road, Madras-7 and Jawahar Vidyalaya at Ashok Nagar. The competition for other age groups was organised by the Director of School Education in different centres. About 700 children took part in the competition in the other two age groups. Three prizes were given to each

age-group. The Central Social Welfare Board had arranged 100 prizes with the help of some private institutions and companies. These prizes were distributed on 21st of this month.

#### POETRY COMPETITION

A poetry competition was organised by the Directorate of College Education held for both girls and boys on Sunday 11th November, 1973 at Rajaji Hall. Thiru K. Vezhavendan, M.L.A., Thiru Ponnivalavan and Thirumathi Krishna Sanjeevi were the judges for the competition which attracted 36 students from City colleges. The consolation prize went to a blind student of Vivekananda College.

#### FILM SHOWS

Film shows were screened free of charge on the morning of 14th November, 1973. The South Indian Film Chamber of Commerce selected about 11 theatres in the City for the screening of the film shows. Necessary exemptions like entertainment tax and show tax were given for the theatres. The Madras Film Society took the responsibility for supplying the films. Apart from this Children's Film produced by Tamil Nadu Films Divisions, and Films Division, Government of India were also supplied to the children's film shows.



The children of the various Consulate personnel appeared on the stage in their respective national costumes and gave a colourful variation this year. All these functions were held under the auspices of South Indian Film Chamber of Commerce, the Madras Film Society, Director of School Education and the Director of Information and Public Relations.

A Children's Rally held at the Nehru Stadium and inaugurated by

Thiru V.R. Nedunchezian was arranged under the joint auspices of the State Government, the Corporation of Madras and the Indian Council for Child Welfare. Led by elephants, tigers and other animals, the mass rally was a great success from the start. The Police Department arranged for a display by the mounted police, and the Police Band was in attendance throughout the rally. About 10,000 children from Corporation Elementary and Secondary Schools took part in the

function. The horse-parade was the most interesting item of the rally. Children of Police personnel played Karagan and Kavadi on the occasion.

The prizes to the winners of the painting competition, the poetry competition and those who participated in the rally were distributed by Thirumathi Visalakshi Nedunchezian at the end of the function

—S.S



Top: March Past NCC and Scouts of Schools.

Middle: Prize Winners included college students and Nursery students in age appropriate competitions.

Bottom: Nursery School kids engaged in on spot art competition





The floods in December '72 caused widespread and considerable damage in Tamilnadu, especially to cultivable lands in the districts of South Arcot, Coimbatore, Salem, Dharmapuri, Tiruchi and Thanjavur. Not only the standing crops in the fields were damaged, but the lands were also covered with sand to depths ranging from 6" to 4' making the lands unfit for further cultivation. Due to this natural calamity, the lands of about 6,088 farmers were rendered unfit for cultivation. Among the areas affected by these floods, rapid reconnaissance survey revealed that an area of about 10,000 acres required the employment of bulldozers for reclamation as they had been heavily sand cast or badly eroded.

Taking into account the poverty of the agriculturists who were stricken by this natural calamity and in order to get the job of reclamation completed quickly and before the commencement of the main agricultural season, the Government also took the very human and benevolent decision to clear the lands free of cost. The task of clearing the heavily sand-cast lands was given to the Agricultural Department. Very appropriately within just a few days after the calamity the reclamation work was inaugurated on 23rd December '72 at THIRUVAMUR

VILLAGE, South Arcot district, by the Chief Minister.

#### DETAILED SURVEY

A detailed survey on the flood affected area was carried out by the Soil Conservation wing of Agriculture Department with the cooperation of the Revenue and Village officials who gave a clear picture of the damages viz. depth of sand deposited eroded areas and probable time required for reclamation, with the shortest possible 'leads'.

To accomplish the clearance of the sand cast lands in the shortest possible time, the Department diverted a fleet of 101 Bulldozers to the 5 districts of South Arcot, Coimbatore, Salem, Dharmapuri and Tiruchy. As the worst affected area was South Arcot district, a fleet of more than 80 Bulldozers were pressed into service for reclamation work in this district. Departmental bulldozers were made to work for more than 12 hours a day and the bulldozers were working continuously for more than 25 days in a month. The bulldozers were pressed for the reclamation work as per the priority fixed by the Collectors of the districts concerned. Particularly in South Arcot district, apart from equipment, almost the entire agricultural engineering staff was diverted for this work.

#### PROGRESS OF WORK

The tempo of progress was kept up until the entire area sand cast was cleared in all the districts in order to bring back the land fit for cultivation at a shortest period.

The following particulars will show the pace of progress of work right from the beginning till the end of the work :

|                                | Acres.    |
|--------------------------------|-----------|
| From 23-12-72 to 31-1-73       | 830.75    |
| Upto the end of February '73   | 3,108.72  |
| Upto the end of March '73      | 4,952.27  |
| Upto the end of April, '73     | 6,068.65  |
| Upto the end of May, '73       | 6,939.58  |
| Upto the end of June, '73      | 8,042.64  |
| Upto the end of July, '73      | 9,228.04  |
| Upto the end of August, '73    | 10,206.04 |
| Upto the end of September, '73 | 10,541.00 |
| Upto the end of 12-10-73       | 10,602.73 |

The 101 bulldozers have worked for 1,42,445 bulldozer hours to clear the sand cast and eroded lands in an area of 10,602.72 acres. It may be noted that the major part of the work was completed by the end of August itself i.e. within eight months of the commencement of work.

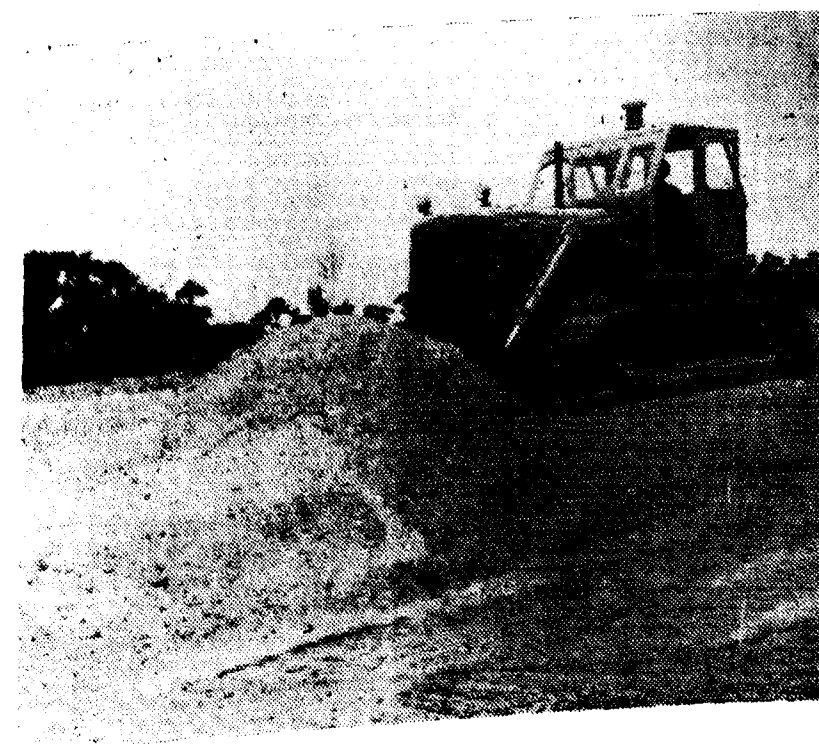
#### COST OF RECLAMATION

It was originally anticipated that the cost of clearance of sand by bulldozer would be about Rs. 1,200/- per acre on an average. But by the judicious and efficient working of the units, the actual average cost for the work was brought down to about Rs. 850/- per acre (not inclusive of addition spares and staff). It is safe to assume that one acre of land reclaimed on which groundnut, paddy, sugarcane or a number of crops can be raised, can produce atleast a gross average yield of Rs. 1,000 per annum. Therefore, gross yield out of 10,602.72 acres reclaimed would certainly exceed Rs. 1 crore per annum. If the reclamation works had not been undertaken by the Government, the loss of production in the State would have been of the order of at least Rs. one crore per annum.

It may be mentioned that 6,088 farmers have been benefited by this work. But for this reclamation work done by Government, it can be stated without doubt that the poorer farmers would have become effectually landless labourers with no lands of their own fit for cultivation. The number of farmers benefited by the reclamation work are detailed below. As can be seen, the largest number roughly 85 per cent were in the one acre to three acres category.

1. Number of farmers in whose lands clearance was done upto the extent of :

|                      | No. of farmers |
|----------------------|----------------|
| One                  | 2,642          |
| One to two acres     | 1,797          |
| Two to three acres   | 764            |
| Three to four acres  | 330            |
| Four to five acres   | 232            |
| More than five acres | 323            |
|                      | 6,088          |



A bulldozer at work.

#### BUDGET PROVISION AND STAFF

The annual average budget provision for Agricultural Engineering Schemes is about Rs. 4.5 crores. The reclamation of lands taken up by the Agriculture Department was practically completed in about 8 months time at a cost of over Rs. 1 crore in addition to its regular programme of work and with an additional staff of just two sub-divisions. This will give some idea of the magnitude of the operations taken up on an emergency basis by this Department.

About 300 members of the operating crew and 50 Supervisory and Maintenance staff were engaged in this work. They came from all districts of the State leaving their families, worked in South Arcot on a 'Camp' basis even round the clock to ensure that the agricultural lands could be brought to cultivation before the commencement of the main cultivation season.

#### MAGNITUDE OF WORK

Assuming that the average depth of sand as 1.25 feet, the quantity of sand removed from the cultivable lands over an area of 10,602.72 acres works out to approximately 577 million cubic feet. The lead was

on an average of about 200 feet. The biggest Earthen Dam constructed in Tamilnadu is the Bhavanisagar Dam in Coimbatore district. This dam has about 14 million C.ft. of Masonry structure and 160 Mcft. of earth work. The sand removed over a distance of about 200 feet, therefore, exceeded three times the total earth-work of the Bhavanisagar Dam.

#### COMPLETION OF THE WORK

The reclamation work by bulldozers in the districts of Tiruchy, Dharmapuri, Coimbatore and Salem was completed by May, 1973. In respect of Thanjavur, the area affected being small, the work was commenced and completed in July '73. On completion of work in these districts, the bulldozers, which were operating in these districts, were also diverted to South Arcot for completion of the entire reclamation work as programmed. The reclamation work in South Arcot district was almost completed by the end of August, '73.

The remaining areas, which were in small patches in different villages, were also taken up and the entire affected area in South Arcot district was completed on 12-10-73.

Q signals also save time. When sending code, hams often omit vowels from many words as another time saver.

A typical message may be like this "TNX (Thanks) for the call. UR (your) RST is 589. Name JOE QTH (Location) SINGAPORE. WX Fine 25 C. RX AR88 TX Homebrew (Home made), Dipole (antenna) Input 50 watts. PSE (Please) QSL. 73 N. The number 73 stands for 'Regards.' The abbreviations and the words used in the above message are internationally recognised and hence no difficulty is experienced in exchanging important information required for filling the QSL Card. Some of the Q Codes and Ham abbreviations are given elsewhere in this page.

Amateurs, after they contact each other on the air, exchange what is called a "QSL" card. This is a written confirmation of the contact established by the concerned amateurs on the air. It is something like the written message delivered by our P & T Department or a phonogram confirmation. It contains essential details like the date and time of contact, mode AM, CW, SSB, quality of the signal, besides the name and address of the operator. Only these cards are admitted as evidence for awards in contests.

#### MORE ABOUT THE HOBBY

For purposes of identification, every radio amateur is allotted by the appropriate Government agency of his country what is known as a "CALL SIGN." It is analogous to the number plate of a motor car. The call sign is a mixture of alphabets and numerals. The call sign has two significant parts. The first part is known as 'prefix' indicates the country to which the amateur belongs. These prefixes are internationally recognised. The second part identifies the individual amateur. For example, call sign VU2JS stands for VU2 India and "JS" for the individual.

The usefulness of amateur radio internationally recognised. Its interests are represented by International Amateur Radio Union

#### SOME OF THE Q CODES AND AMATEUR ABBREVIATIONS

|       |                                  |
|-------|----------------------------------|
| QRG   | .. Frequency                     |
| QRK   | .. Audibility                    |
| QRM   | .. Interference                  |
| QRN   | .. Atmospherics                  |
| QRT   | .. Closing down                  |
| QRX   | .. Please wait                   |
| QSB   | .. Fading                        |
| QSL   | .. Confirmation                  |
| QSO   | .. Radio contact                 |
| QTH   | .. Location                      |
| BA    | .. Buffer amplifier              |
| CANS  | .. Headphones                    |
| DE    | .. From                          |
| HI    | .. Laughter                      |
| K     | .. Invitation to transmit        |
| MOD   | .. Modulation                    |
| OM    | .. Old Man                       |
| PA    | .. Power amplifier               |
| ROGER | .. Received and understood       |
| RPT   | .. Report                        |
| VFO   | .. Variable frequency oscillator |
| XYL   | .. Wife                          |
| YL    | .. Young lady                    |
| 73    | .. Kindest regards               |
| 88    | .. Love and kisses               |

(IARU) on the administrative conferences held by the United National specialised agency for telecommunications Union (ITU). IARU is the representative body of International Amateur Radio Organisations. The frequency allocations in the various segments of electromagnetic spectrum are internationally recognised (subject to national Government's concurrence).

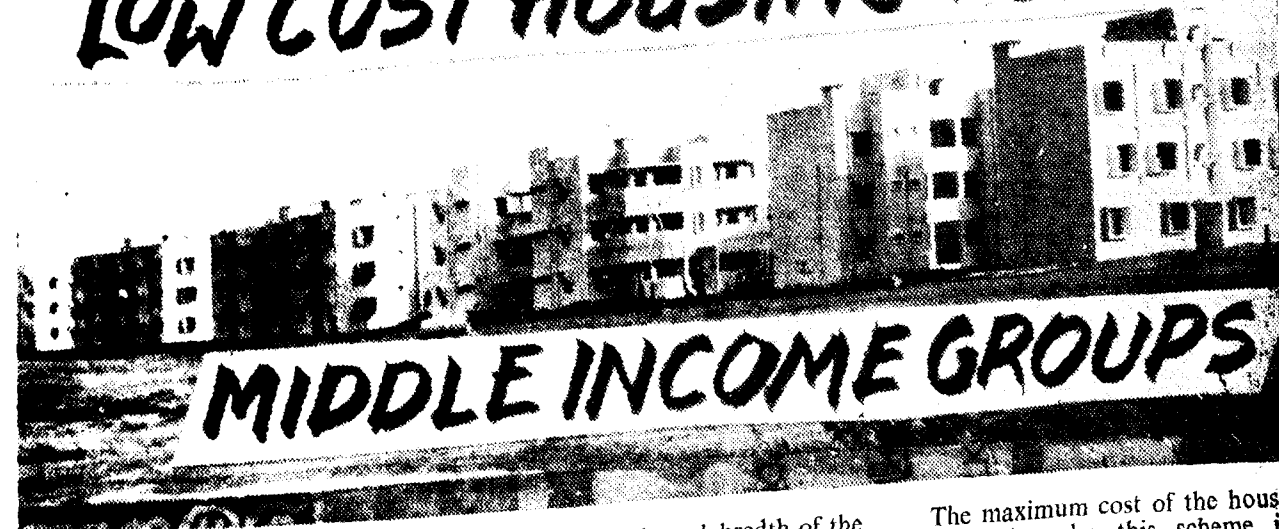
#### THE HAM AND THE SATELLITE

In 1971 the World Administrative Conference for Space Telecommunications recognised the value of participation of amateur radio operators in space research by officially defining amateur satellite service. The conference also allotted additional frequencies for use by amateurs when using space techniques.

At present, the sixth satellite in the series called "OSCAR-6" is in orbit. This is solarpowered with a design life expectancy of about one year. This satellite accepts signals in the frequency range of 145.9 to 146 MHZ from the ground amateur radio station and retransmits them in the range of 29.550 to 29.450 MHZ. It will accept CW and SSB signals. To have effective contact with the satellite, about 100 watts of effective radiated power is necessary.

Just like the Territorial Army, the Hams provide a readily available second line of communication in a crisis. During a P. & T. strike the Government of India utilised the services of Hams to handle the State Telegraphic traffic. The Army, Navy and Air Force of every country recognise the value of amateur radio operators as persons capable of coming to their rescue in crisis. To see the amateur radio operator with earphone clamped on his ears and fingers fiddling the transmitter knobs presents a picture of peace and contentment. Just like an angler calmly waiting for a "bite" he will wait for signals from far and from near. It is an interesting and absorbing hobby.

## LOW COST HOUSING FOR



## MIDDLE INCOME GROUPS

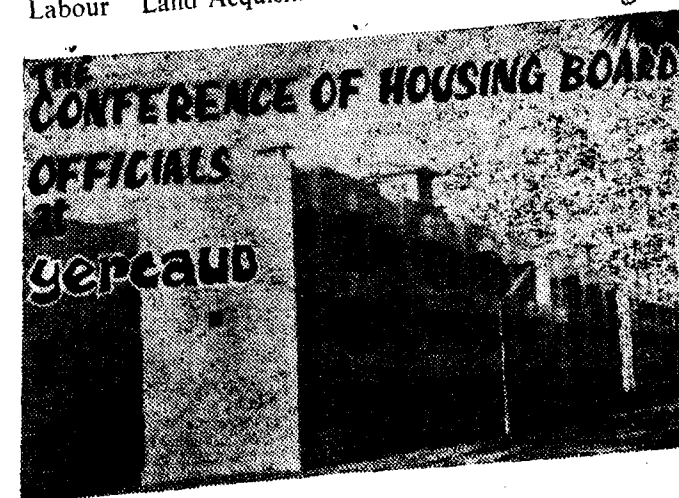
The Tamil Nadu Housing Board is a Statutory body which undertakes large scale housing projects for the various categories of people and also land development schemes for allotment of developed plots to public on sale as well as hire purchase system. Formerly only single storeyed independent houses were used to be put up by the Board, but now flats and tenements are constructed and allotted.

A conference of the Housing Board Officers and Engineers with the Special Secretary to the Government, Housing Department and representatives of Finance, Revenue, Law and Rural Development and Local Administration Department of the Government was held at Yercaud on 19th and 20th of October 1973. Thiru K. Rajaram, Minister for Housing and Labour presided over the Conference. The Slum Clearance Board was represented by its Chairman, Thiru Rama Aranganannal and its Chief Engineer.

The conference was convened mainly for the purpose of taking stock of the Board's progress in its housing activities and to find out ways and means of stepping up the progress, not only in the City of Madras but to make itself felt throu-

ghout the length and breadth of the State. It was also the intention to discuss the various new techniques to be adopted in the Low Cost Housing Scheme to bring down the cost and also to have discipline in the use of scarce materials, such as Steel and Cement.

Special Low Cost Housing Scheme has been framed by the State Government for the benefit of the economically weaker sections whose annual income does not exceed Rs. 4,200. The scheme is intended to be operated throughout Tamil Nadu. For the present, work will be taken up wherever a group of persons have already acquired sites. Suitable Government lands, if available, will be made use of for this purpose. In other places, lands will be acquired under the Land Acquisition Act.



The maximum cost of the house constructed under this scheme is Rs. 10,000. The construction of house will be done by the Housing Board employing its own technical staff without resorting to the contract system. Thereby saving expected to be effected to the tune of 15% of the cost of the building.

#### MODE OF PAYMENT

Initially only 10% of the cost of the building is to be paid as deposit by the beneficiaries. The remaining 90% is to be paid over 20 years in monthly instalments of Rs. 63. The plinth area of the building will be about 420 sq. ft. It will have a living, bed, kitchen in addition to bath and toilet.

It is proposed to obtain finance for this scheme from the HUDCO during the short period of 3 months that this scheme has been in operation. The Housing Board has approved schemes for the construction of 2974 houses at a cost of Rs. 308.7 lakhs. HUDCO has been received the tune of Rs. 66.2 lakhs for the construction of 602 houses. Work on 1196 houses has been started. Before the end of the year all these buildings will be handed over for occupation.



The areas, which required reclamation in the above districts, are as follows. These areas have been claimed in full now at a cost of out Rs.1.05 crores, including the cost of additional spares for bulldozers and staff.

| District    | Area Reclaimed in Acres |
|-------------|-------------------------|
| South Arcot | 8,793.18                |
| Coimbatore  | 519.25                  |
| Salem       | 680.93                  |
| Dharmapuri  | 272.12                  |
| Tiruchy     | 282.78                  |
| Thanjavur   | 54.46                   |
| Total       | 10,602.72               |

The farmers in the districts of South Arcot, Coimbatore, Salem Dharmapuri, Tiruchy and Thanjavur districts have raised crops as soon as their lands were reclaimed.

In South Arcot district, in most of the reclaimed areas, the ryots have raised their second crop with Hybrid varieties of paddy viz. 'Jaya', 'IR-20' etc. besides kambu, cholam, groundnut and sugarcane.

In some of the villages in South Arcot district reclaimed in January-February, even a third crop of paddy is being raised now.

Thus the ryots of the affected districts were given timely assistance to raise their crops.

The reclamation work taken up by the Government has helped several thousand farmers and given the farming public the confidence that in a time of real emergency the Government of Tamilnadu will always come to their assistance effectually and promptly.

By  
T.V. ANTONY I.A.S.,  
(Then) Director of Agriculture.

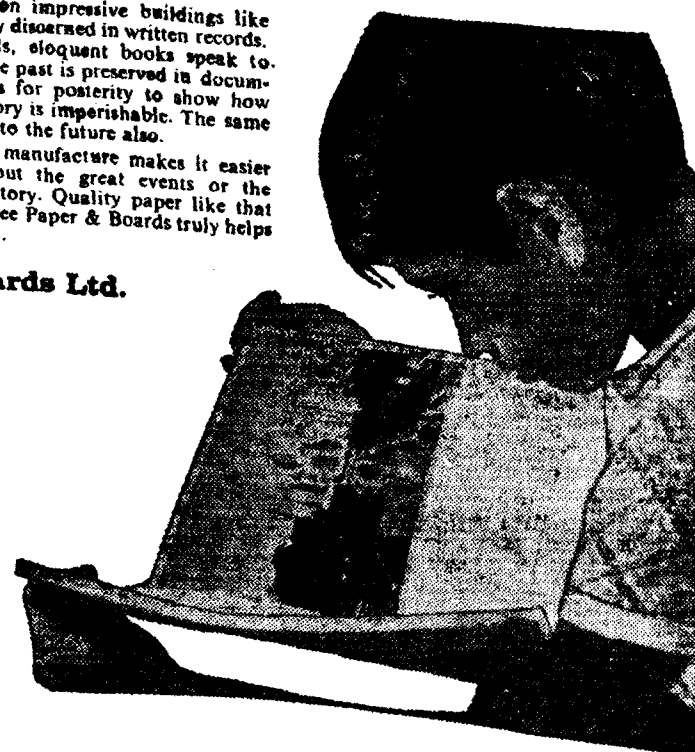
## the living past

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Operating an amateur radio station from one's home is a hobby for many in the affluent countries all over the world. Though this hobby is encouraged in every way by Governments of all countries and regulated by the United Nations agencies, all Governments insist on the amateurs taking out a license for operating a transmitting radio station. The amateurs who transmit and receive messages by means of their own radio stations and receivers are called Hams. The Government of India is equally anxious to secure wider acceptance of this hobby and some of the public sector undertakings like the Indian Telephone Industries have come forward to help amateurs in this respect. In our country, there is a minimum age, viz., 14, for issue of such licences.

### HOW TO BE A HAM ?

The process of obtaining a licence is simple. The enthusiast has to pass a test in radio theory and should have the ability to send and receive the international Morse Code. There are two grades—I and II. In grade II the enthusiast is required to know very simple theory, operating procedure and ability to send and receive Morse Code at five words per minute. For grade I, the requirement is slightly advanced in theory and in the ability to send and receive Morse Code at 13 words per minutes. The minimum age is 14 years. The licence fee is fifteen rupees per annum. All that the Ham needs is a suitable receiver and a reasonable aerial. To transmit they need a frequency measuring device.

Initially, the amateur is allowed to operate on CW (radio telegraphy) only and that too on the high frequency bands. After he completes 200 contacts, he is allowed to go on phone (AM) on these bands. This initial restriction serves two purposes. First, he becomes familiar with the operating procedures without which there will be utter confusion. Secondly, it compels him to attain a certain proficiency in CW, which is considered desirable. But for this restriction, he is likely to ignore CW. As the amateur gains experience he can get endorsements for SSB (Single Side Band Suppressed Carrier), phone operation, VHF, UHF and teletype operations. At this stage only the amateur's financial resources and the capacity to procure components and equipments are the limiting factors.

### NOT EXPENSIVE

If the amateur really wants to come on the air, it is neither difficult nor very expensive. For example, a 25 watt phone (AM) transmitter in kit form costs about Rupees 350. Self-assembled, it costs much less. Even if this amount is considered costly a 10-watt CW transmitter can be assembled for less than half the above cost. These low power transmitters use receiving types of valves manufactured by BEL and a few other components purchased from the "disposal" market. Though one cannot win contests with such a transmitter, it provides enough fun. With a good antenna, contacts all over India and even across a few thousand

The fascinating hobby of Amateur Radio described in these pages has been made possible to a large extent by material found in an article on the subject written by Thiru V. S. Rajagopalan in the I.T.I. Magazines' Annual Number, and supplemented by Standard Literature on the subject.

miles are possible, given the proper propagation conditions. The ideal propagation condition is achieved when the ground-wave and the waves reflected from the ionosphere are received together reinforcing each other. With better experience and resources a 150-watt transmitter can be obtained. The 150-watt input to the final stage is the legal limit in India on the high frequency bands.

As for receivers, good ones from disposals of World War II vintage are available for between Rupees 600 300 and. It is possible to construct a good receiver using a crystal filter available from BEL and indigenously manufactured broadcast receiver components. Such receivers have already been built by enterprising Indian radio amateurs. In fact, complete SSB transmitters have been built by Indian amateurs using indigenous transistors in receiver and low power stages and valves in the high power stages.

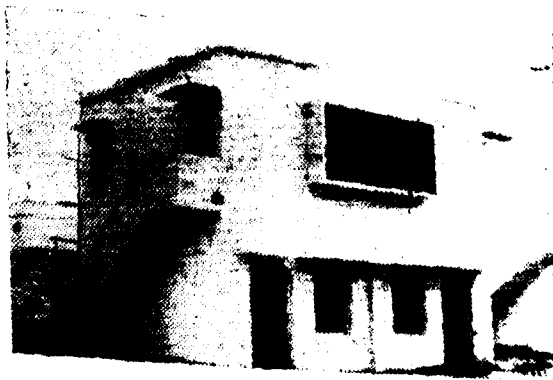
### SENDING MESSAGES

Amateurs send messages either by voice or in International Code. Hams use a language that the untrained listener cannot understand. Part of this special language consists of three-letter groups starting with the letter Q. Hams call these groups Q signals. For example, the signal QRA means "What is the name of your station?" The Q signals have been agreed upon internationally, and enable hams who do not speak a common language to understand each other. The

be filled up by allotment to Last Grade Government Servants at 10% of their pay.

With the increase in the number of housing schemes in southern Districts, especially with the heavy demand for special low cost housing, it has been proposed to set up two Units at Tirunelveli and Tanjavur.

The deliberations concluded with the Hon'ble Minister's



exhortation to the Board Officials to dedicate themselves to the task of finding shelter to the teeming millions and thus to fulfill the long cherished dreams of the leaders of the country.

A view of a 4 in 1 block of tenements constructed for slum dwellers. 391 such tenements have been constructed at Peccaankulam Tiruchirappalli at a cost of Rs. 19.5 lakhs.

## PROVISION OF HOUSE-SITES TO LANDLESS RURAL WORKERS

The Government of India have formulated a scheme for provision of house-sites to landless workers in rural areas as a Central Sector Scheme under which 100 per cent grant is made available to State Governments outside the State Plan Scheme. The salient features of the scheme are as follows:—

(a) The scheme aims at assisting the State Government to provide house-sites free of cost to families of landless workers in the rural areas who do not already own house-sites or a built-up house or plot on land of their own;

(b) The Government of India will give 100 per cent grant for acquisition and development of lands outside the State Plan Ceiling;

(c) Financial assistance under the scheme will be admissible only if the State Governments have enacted legislation conferring home-stead rights on which their houses/huts stand at present and provided the State Government should have utilised the available lands owned by it in the Districts proposed to be taken up under the scheme for providing house-sites, free of cost to families of landless workers;

(d) All administrative expenditure connected with the implementation of the scheme will have to be borne by the State Governments;

(e) The size of the house-sites should not exceed 100 square yards (The question of enhancing the extent is under correspondence with the Government of India);

(f) The average cost of development of house-site should not exceed Rs. 150 per house-site;

(g) The term 'development' will cover clearing and levelling of land and provision of paved streets and storm water drains on the lands proposed to be utilised for giving house-sites to eligible families;

(h) In case where an adequate supply of potable drinking water is not already available, a covered masonry well may also be provided to serve a cluster of, say, 40-50 house-sites; and

(i) Priority should be given only to those districts having sizeable concentration of landless rural

labourers, particularly of those belonging to Scheduled Castes and Scheduled Tribes.

Since the Government of Tamil Nadu have enacted the Tamil Nadu Occupants of Kudiyiruppu (Conferment of Ownership) Act, 1971, and have introduced it in Thanjavur district, and the assignment of all the available lands in Thanjavur district to landless people have almost been completed, the Government have introduced the scheme in Thanjavur district in the first instance. The scheme is being implemented through the State Housing Board, with the help of the Collector and the other district Revenue Officials. The implementation of the scheme is in progress in this district. Under this scheme 1.15 lakhs families will be benefited in Thanjavur district. A sum of Rs. 75.51 lakhs has been sanctioned by the Government of India out of which a sum of Rs. 18.87 lakhs has been released. The Kudiyiruppu Act has since been extended by Government to the districts of Chingleput, North Arcot, South Arcot, Tiruchirappalli, Dharmapuri; Salem (excluding Yercaud Sub-Taluk) and Ramanathapuram (excluding Rajapalayam Sub-Taluk).

# Save rupee-a-day for a house HOUSE-SITE OR A FLAT

The Tamil Nadu Housing Board in collaboration with the Syndicate Bank have made arrangements for the collection of regular deposits from every intending depositor who joins the Rupee-a-day saving scheme. The aim of the scheme is to provide houses/flats/house sites to the masses all over Tamil Nadu.

The Scheme will be applicable to those who do not own a house/flat/house site anywhere in the State of Tamil Nadu and who are 18 years of age.

## EASY MODE OF PAYMENT

Every applicant should deposit a minimum of one rupee-a-day or in multiple for a period of five years. The deposits shall be made daily, weekly or monthly at the nearest branch of the Syndicate Bank where the applicant is authorised to open an account. On completion of five years period the Board will construct and provide the depositor a house/flat/house site of value which will normally be four times the amount of the depositor's five years savings. The excess cost for the house/flat/house site will have to be paid by the prospective allottees in easy equal monthly instalments spread over a period of 5/10/15/20 years with interest.

On realisation of the 1/4th cost of the house/flat/house sites from the applicants in a period of 5 years

the Syndicate Bank will help the Board by investing 3/4th of the entire balance amount towards construction purpose.

About 5,000 persons have made enquiries about the scheme for getting particulars. Nearly 1,200 persons have given their applications. So far 1,108 applicants have been admitted and are paying money under this scheme in its branches.

The rupee-a-day savings scheme in collaboration with the Syndicate Bank has since been closed as sufficient number of applicants have been enrolled and the minimum financial assistance of Rs. 1 crore will be given by the Syndicate Bank for processing this scheme.

## THE SCHEME EXTENDED TO DISTRICTS

The Executive Engineer and Administrative Officers of Madurai and Salem Housing Units have convened a meeting of the members enrolled under the scheme within their districts and have explained the position and salient features to the members. They have stated that the members are convinced with the implementation of the scheme. The Executive Engineer and Administrative Officer of Salem

Housing Unit has set apart 25% of land out of 169 acres under acquisition for Salem Neighbourhood Scheme Phase. I, solely for implementation of the scheme. The Executive Engineer and Administrative Officer, Madurai Housing Unit has proposed to acquire 900 acres of land for various schemes and the acquisition proposals have been sent to Government and a portion of lands will be set apart for the implementation of the scheme.

## INDIAN BANK ALSO

The Executive Engineer and Administrative Officers of other Housing Units have been instructed to convene similar meetings to explain the features of this scheme. A meeting of the members admitted to the scheme in the city of Madras will also be convened shortly. The lands under acquisition in West of Kalaingar Karunanidhi Nagar, Vyasarpadi and Tiruvannamur will be utilised for this scheme.

The Indian Bank have now come forward with a similar scheme and the Board in its resolution No. 376, dt. 28-12-1972 has approved the proposal and application forms etc. are being supplied to the members of the public. So far 84 persons have opened accounts and are making deposits. The last date is proposed to be extended upto 31-12-1973.

Read

# Tamil Arasu

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The Districtwise breakup is as follows :—

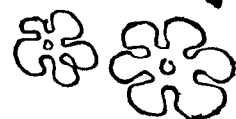
|                  |     | Rs. in lakhs. |
|------------------|-----|---------------|
| Madurai District | 405 | 41.68         |
| Tirunelveli      | 214 | 22.92         |
| Tamnad           | 390 | 40.75         |
| Tanyakumari      | 64  | 8.60          |
| Coimbatore       | 534 | 50.53         |
| South Arcot      | 189 | 19.54         |
| Thanjavur        | 122 | 14.99         |
| Salem            | 287 | 27.53         |
| Dharmapuri       | 267 | 29.28         |
| North Arcot      | 262 | 22.50         |
| Chingleput       | 240 | 30.14         |

In the Chingleput District there has been very encouraging demand from the industrial workers at Thiruthani, Ennore, Sriperumbudur, Athipattu, Tambaram and Thiruvannamiyur. It is hoped to cater to the needs of these industrial workers during this year itself.

### PIONEER IN COST REDUCTION

The various methods adopted by the Housing Board for the reduction of the cost of the buildings were discussed. The use of funicular shells as a substitute for the traditional R.C.C. saves the cost of roofing upto 40%.

# HOUSING BOARD GEARS UP FOR STATE-WIDE PROGRAMME



The catenary type of houses eliminating the use of steel and concrete to a large extent is one of the solution found by the Housing Board for the reduction of the cost.

The integrated type of construction whereby R.C. frames and bricks work are adopted even for the single-storied building is an innovation which has proved economical in clayey soils.

The Housing Board is one of the earliest users of the secondary species of timber with the object of better utilisation of the timber wealth of the country and to conserve teak wood which is scarce.

### Various Construction Processes In Offing

A system of prefabricated houses to cater to the needs of the lowest income group has been evolved. The cost of this type is only a third of the traditional type of buildings. It saves steel to the extent of 30% and cuts down construction time by 75%.

Another technique which the Board is proposing to popularise, is the guniting process of pre-fabricated houses. Upto four storeys could be constructed by this method. 25% of the cost of construction could be saved, besides conserving cement and steel to the extent of 20 to 30%.

The Housing Board has been extensively using flyash as a partial substitute for cement. This has the effect of cost reduction to the extent of 2 to 5%.

The execution of works by departmental staff directly without employing contractors is another pioneering step taken by the Housing Board towards reduction of cost. The Board has launched on this bold experiment with its limited staff with a view to save for the allottees the margin of profit the contractors are likely to make if work is got done through them.

### DESIGNS TO SHOW ECONOMY

Besides the above measures of cost reduction in the fields, the Housing Board has always laid stress on economic designs, both architectural and structural, with a view to achieve maximum economy.

Through bulk purchase of building materials by open competition well in advance of the actual requirement, the Board secures competitive prices for the building materials purchased.

The Board has set up a wood working unit for the supply of doors and windows for its works. It is proposed to set up a semi-mechanised brick plant in the City. The Board has a programme of establishing building industries such as manufacture of Stoneware pipes, mosaic tiles, etc.

### CELLULAR CONCRETE PLANTS

A plant for the manufacture of Cellular Concrete, first of its kind in the South East Asia, has been



117 tenements for slum dwellers constructed at a cost of Rs. 3 lakhs at Gundusalai road, Cuddalore.

erected with Polish Collaboration at a cost of Rs. 3.65 crores. The products of this plant will replace bricks and R.C.C. in all the works of the Housing Board within a short time.

The Conference recommended that the accounting work relating to the deposits from the public may be entrusted to any of the Nationalised Banks.

### IN-SERVICE TRAINING

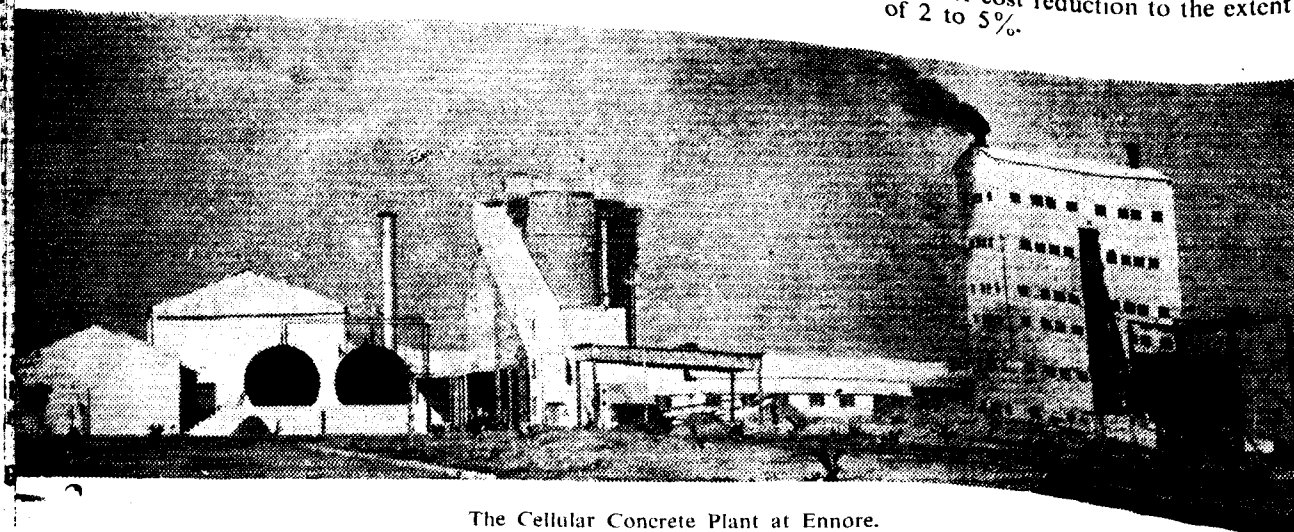
It was proposed to impart in-service training in accounts and office management to the Board staff. The measures to be taken for early realisation of the amounts due to the Housing Board was discussed.

In regard to land acquisition it was considered necessary to enact special legislation with a view to cut down the delays and to minimise the amount of compensation.

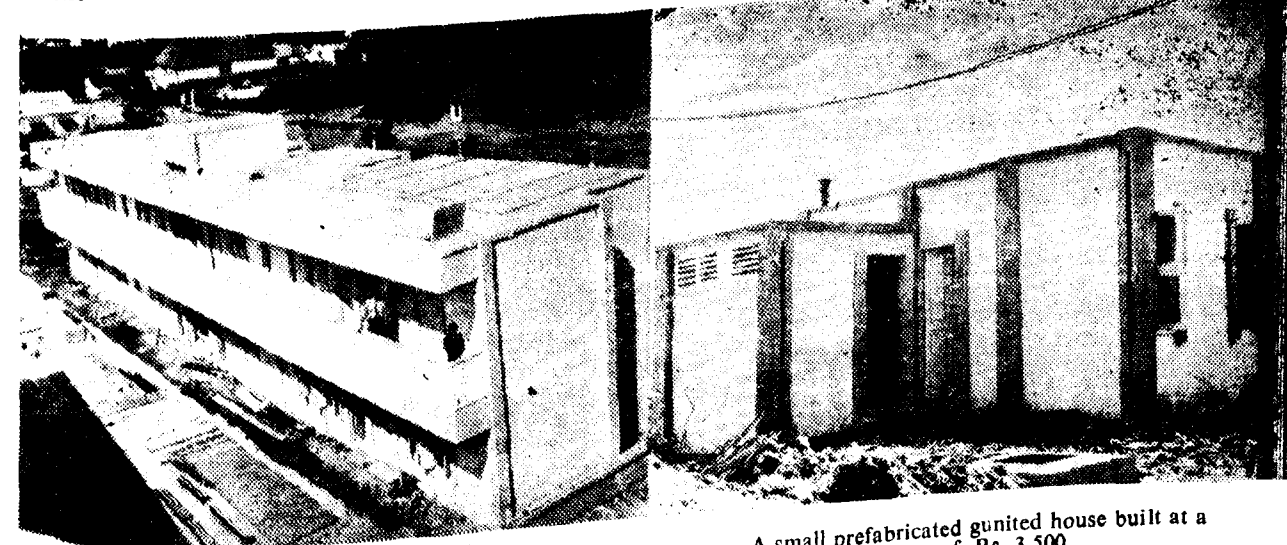
### CONCESSIONS

Government have agreed to allow certain concession in fixing the value of building and plots transferred to the Housing Board to the allottees for the purpose of stamp duty. The request of the Housing Board for the grant of 50% subsidy in respect of water supply scheme executed in par with the Corporation of Madras will be examined by the Government.

The vacancies arising in tenements constructed under Slum Improvement Scheme are proposed



The Cellular Concrete Plant at Ennore.



A small prefabricated gunited house built at a cost of Rs. 3,500.

A view of 12 in 1 block of tenements completed recently adopting GUNITING PROCESS of Prefabrication resulting in a cost reduction by 25 per cent construction time is only a sixth.



The automobile industry is a major engineering industry with a wide scope for employment. A person who begins his career as a learner or an apprentice under a mechanic in an automobile workshop, rises to the level of a full-fledged mechanic or automotive specialist after a course of time and can even aspire to become a Shop-Foreman, Service Manager or Parts-Manager ultimately. With the experience in automotive servicing and an aptitude for selling, there are bright prospects of rising to positions such as Sales Manager.

To become an automotive specialist, one must start by learning how to work in an automobile workshop. Today's automobiles are precision-engineered machines that must be properly serviced if they are to operate in an efficient and safe manner. The automotive service industry needs specialists who understand the basic science of operation and the various units. Not only is this knowledge necessary to detect troubles in an automobile but with this background it will be easier for one to keep abreast of technological changes in the industry.

All these pre-suppose suitable training in the various automobiles, such as Auto-Electrical work, Auto Machining, Transmission, Power plant and servicing, etc. In connection it is worth mentioning that current thinking on training stresses on giving greater importance to a sound and broad-based basic training for the first year to serve as a foundation for the further development of the unit of specialised skills later on.

Relevant to this is the institutional training imparted in the Industrial Training Institute in the field of Mechanic (Motor Vehicle). This is a comprehensive training and



serves as the basis for further training within the industry. The basic training includes fitting, turning, sheet metal work, blacksmithy and welding, besides automobile work consisting of power unit, transmission, ignition, electrical systems and chassis work. The basic training so provided forms a firm base for further specialisation in 4 or 5 units like Auto Electrician, Auto Machinist, Auto transmission, power plant and servicing and Mechanic (Scooter/Motor Cycle). Such units of specialisation will provide greater self-employment opportunities. The same is illustrated in the diagram below :

#### STRUCTURE OF UNIT SPECIALISATION.

| STAGE I. | STAGE II.         |
|----------|-------------------|
| One year | Auto Electrician  |
| Broad    | 6 months.         |
| Based    | Auto machinist    |
| Basic    | 1 year.           |
| Training | Auto Transmission |
| in       | 1 year.           |
| Mechanic | Power Plant and   |
| (Motor   | Servicing 1 year. |
| veh.cle) | Mechanic (Scooter |
|          | Motor Cycle)      |
|          | 6 months.         |

It will be seen from the above diagram that specialisation in a particular unit is preceded by a broad-based basic training which will equip the craftsmen with adequate skill, not only in the diversified branches of the trade, but also in the unit to be specialised later. Specialisation in the different unit has its own relative merits when compared to generalisation, from the point of view of employability. An individual, who has specialised in any one of the units may also

specialise in another unit, or units according to the needs of the industry and that of the individual.

The unitwise specialisation of skills is explained below :

#### Auto-Electrician :

The maintenance of electrical system as applied in automobile has relevance to diagnosis of electrical faults, Dynamo and Starter, Motor Overhaul, battery maintenance, electric circuit wiring, etc. In fact, an electrician or a wireman, who has got basic knowledge about electrical engineering, can also attend to auto electrical work. But it would be more appropriate if a Mechanic (Motor Vehicle) specialises himself in auto electrical works. Any field of specialisation calls for sufficient background of the basic principles and its applicability to the related field. As far as Mechanic (Motor Vehicle) is concerned, such basic knowledge about the mechanism of motor vehicles is imparted during the basic training which is a broad based one. The electrician and wireman are not taught about the mechanism of motor vehicles, but they are taught more with reference to general electrical equipments used in industries. So, a further training for a period of at least 6 months in industry specialising in the electrical system of automobile would be of immense help to the Mechanic



I. T. I. trainees with the Principal, Thiru Ponnambalam.

(Motor Vehicle). It may also be mentioned here that in almost all automobile workshops auto-electricians are employed, besides mechanics. Specialisation as to electrician has wide possibilities for self-employment as well.

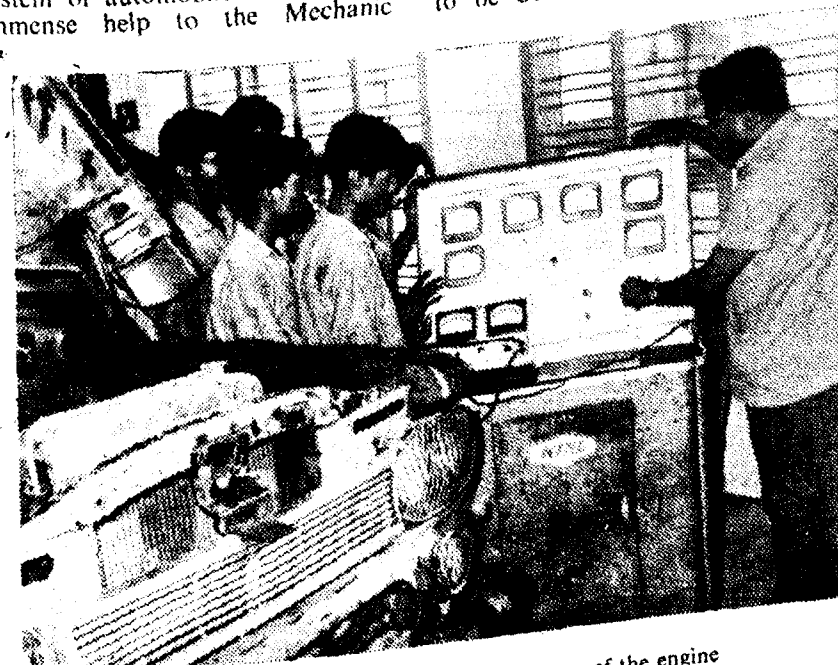
#### Auto Machinist :

This is another field of specialisation for a basic motor mechanic. Crank shaft grinding, cylinder boring and honing, valve grinding, etc., are to be done with greater accuracy

and care so that repair works on power units will be more effective and economical. Only those who have got sound knowledge of automobile mechanism will be able to judge exactly the accuracy required so as to bring the engine to perfect working condition. Though a Machinist (Grinder) can also carry out such types of grinding, he may not have much scope to further improve his skill in his trade. Automobile workshops are not equipped with all types of grinders which are available in engineering industries. Again full time work for a machinist (grinder) in an automobile workshop will be rare and hence employing a Machinist (Grinder) exclusively for machining work, will not be economical to the establishment. A motor mechanic, who is also specialised in reconditioning work, will be ideal for establishments as his services can be utilised to the maximum, both as a motor mechanic and also as an auto machinist. In view of these advantages, specialisation in this unit will provide greater employment opportunities for these trainees in automobile workshops. A further training in industry for a period of 1 year in this unit will be sufficient to impart the specialised skill.

#### Auto-Transmission :

Power transmission work, standard and automatic transmission in automobile, involve adjustment of clutch, overhauling of gear



Demonstration of testing the performance of the engine with the aid of "KING ANALYSER"



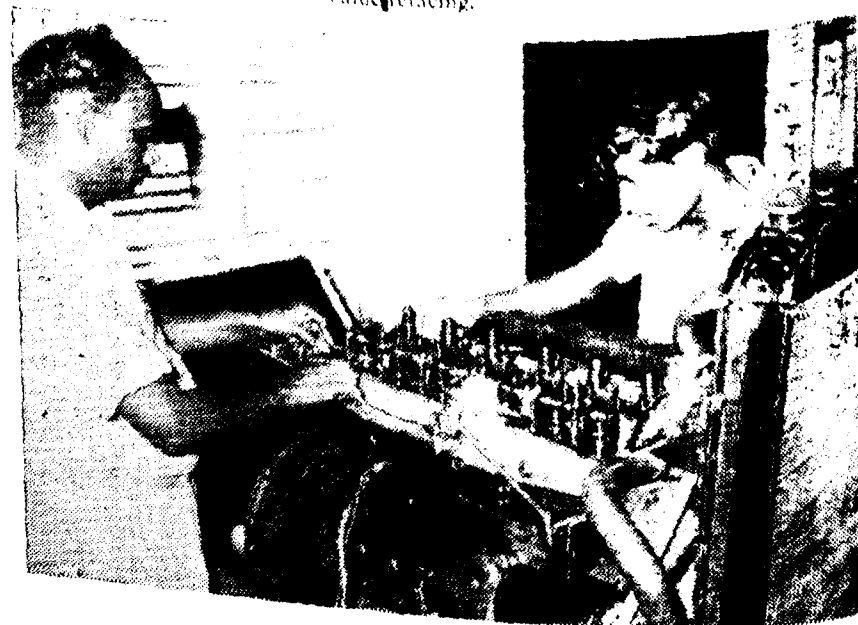
**Power-Plant and Servicing :**

**Mechanic (Scooter-Motor Cycle):**

To sum up, we shall now list the main advantages of the unit system of training in the light of the above digression :—

A high-contrast, black and white photograph showing a person in a light-colored shirt working on a piece of machinery, possibly a lathe or drill press, in a dark industrial setting. The person is positioned on the right side of the frame, leaning over the machine. The machine has various components, including a large cylindrical part and a smaller tool or bit. The background is dark and indistinct, emphasizing the worker and the machine. The image has a grainy, high-contrast quality, typical of older industrial photography.

### Value refacing.



### Tuning up of the engine

3. The services of personnel trained in the specialised units of skills can also be utilised for general repair work, wherever required.

5. More seats can be located for apprenticeship training by fully utilising the facilities existing in service stations and re-conditioning workshops which could not otherwise be tapped for apprenticeship training in Mechanic (Motor Vehicle) trade.

# MINIMUM WAGES FOR FARM LABOUR

## REVISED AND REFIXED MINIMUM WAGES

Ploughing with employees' bullocks and plough - Rs. 5.50 ;  
without bullocks - Rs. 3.00 (Rs. 1.25)  
The duration of working time is five hours a day.

Sowing, plucking of seedlings and transplanting operations—Rs. 3.00 for men (Rs. one) Rs. 1.75 for women (Rs. 0.85) and Rs. 1.25 for non-adults (Rs.0.62).

Harvesting and reaping—Rs. 5.25 for man, Rs. 2.25 for women and Rs. 1.50 for non-adults. No rates were fixed for this category in 1959.

**MINIMUM WAGES  
RECOMMENDED**

As per the decision of the Government a substantial increase in the minimum rates of wages for the various grades of agricultural employees and numerous categories of agricultural operations has been given effect to resulting in overall upward revision of minimum wages for agricultural workers all over the State except East Thanjavur development district.

1st August, 1973. After going into all aspects of the problem, contacting all men of note and institutions in the State relating to agricultural operations and operations ancillary to agriculture, the Committee has in its unanimous report, advanced many a suggestion and recommendation covering the whole range of agricultural operation such as the wage structure and working conditions of the agricultural labour force, set-up of a proper institution to implement the decisions of the Government at the grass root level

# FARM LABOUR COURTS AT GRASS ROOT LEVEL

Formation of a large number of labour contract societies comprising agricultural labourers to execute Government and local body works setting-up of agricultural farmer on waste lands and establishment of small-scale industries in rural areas are some of the other suggestions made by the committee to combat the problems of seasonal unemployment and under-employment of agricultural employees.

## Lay-Off Compensation for non-strikers : State Plea

The Tamil Nadu Government have requested the Government of India to amend the Industrial Disputes Act to enable such of the workers as do not participate in a strike in an industrial establishment to claim lay-off compensation in appropriate cases by taking the claims to labour courts.



Persons with deformities of body or mental retardation are called the "Handicapped." Such people can be trained to lead a happy, normal and useful life. This is what goes by the name of "rehabilitation." Such training is one of the greatest triumphs of modern medicine and education. Because these modern medicines and training methods are costly and time consuming, organised effort is called for in rehabilitation of the Handicapped.

Governmental interest in promoting such an organisation became pronounced after 1967 and as a result, the Tamil Nadu Association for the Rehabilitation of the Handicapped was formed and registered on 23-4-1971. As per the constitution, Ministers of the Government of Tamil Nadu holding certain portfolios have been named as Hon'y. patrons and certain Government representatives and certain Officials are made Ex-Officio Members of the Governing Body. The Government have also permitted the Assistant Director, Special Employment Office for the Physically Handicapped to serve as one of the Secretaries of the Association. Moreover, the Governor of Tamil Nadu is the Patron-in-Chief of the Association.

#### STATE BOARD FOR HANDICAPPED

Not content with this, the Government of Tamil Nadu went a step further and organised a State Board for Handicapped. This is the first Board of its kind to be formed by any Government in the Indian Union. The Board will be able to study the problems of the handicapped from all aspects and render suitable assistance to all those already engaged in this cause and also give direct help in all deserving cases.

The Handicapped include four main classes of people. These are the blind, the deaf and deaf-mutes, the crippled and lastly the mentally retarded.

Pictures show how the deaf (top) retarded (middle) and blind (bottom) are taught.

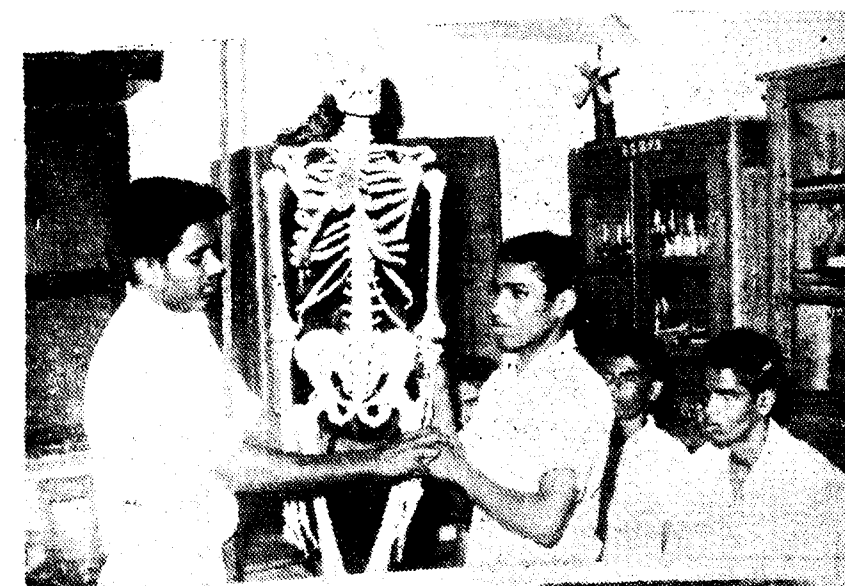
The blind are taught how to read. They are made able to walk about by themselves and to do certain work. The deaf have been taught how to understand speech. Deaf-mutes have been trained to talk. Men with missing arms or legs have been given new ones, and have been taught to use them. Many children with intelligence below normal have been trained to work and to live happily with people of normal intelligence. Society in general has gained from their talents and skills which would otherwise have been lost.

#### FIRST BLIND SCHOOL OF TAMIL NADU IN 1890

It was in France, as far back as 1784, that the first school for the blind was opened in Paris by Valentin Haüy. He was convinced that people who lose one sense often develop their other senses to a degree above normal. He found that in the blind the sense of touch is often highly developed. He used the sense of touch to teach the blind to read, and invented books with raised letters. Haüy's idea caught on quickly in Europe. Schools for the blind were opened in many countries in the early 1800's and there are eleven such schools today in Tamil Nadu. The first school for the blind was opened in 1890 at Palayamkottai.

Valentin Haüy's system of raised line letters was imitated widely, but it was not entirely satisfactory. Only about half the blind students could learn to read by this system. In 1829 another Frenchman, Louis Braille, invented a system of writing for the blind. This system uses raised dots which can be read much more easily and quickly than raised lines. Braille is now the standard system of reading and writing for the blind.

The teaching of various subjects to the blind varies considerably from methods adopted in other schools. Models, stuffed birds and relief maps are used for teaching history, geography and science. In colleges, however, (bottom picture) the blind students take notes in classes along with the sighted. Teaching the blind in schools requires special training and a good deal of patience.







## THE DEAF

For many centuries persons, who were born deaf, were thought to be hopelessly handicapped. They were considered to be incapable of speech although they possessed normal vocal organs. These organs were not used by deaf children because speech comes as a result of imitation. For this reason, the deaf child must be taught artificially to do that which comes so naturally to the hearing child.

The pupil watches the speaker's lips, and, by feeling vibrations, learns to understand the spoken word. This method is also used

to teach the deaf to speak. The pupil watches the lips, tongue, and other organs used in speech. By touching the teacher's throat, he attempts to imitate the vibrations of throat muscles as used in speech.

## RESIDUAL HEARING

There is considerable study being given today to the development and training of what is called residual hearing. It has been found by scientific tests that many deaf persons have a very small amount of hearing ability which is often overlooked. If this residual hearing is properly trained and developed, deaf children can be taught to speak by sound.

It is a silent word for the deaf. Top left (1) shows an interpreter for the deaf. He can translate a speech into gestures which the deaf can understand. But this is not enough. Hearing aids and the speech pathologist (top right) (2) shows how a deaf child is made to imitate speech with the help of hearing aids and a mirror. Picture (3) shows that speech is an act of imitation and that the mere sound of her voice brings happiness to this deaf child. But meticulous testing is resorted to as shown at (4) before a hearing aid is prescribed. Schools for the deaf determine use of gestures as a means of communication by their wards.

**Artificial Limbs :** The most important development in aid to the crippled is the use of artificial limbs. The making and fitting of artificial hands, legs, arms and eyes has become a separate branch of medicine called prosthetics. This has come to be included in Tamil Nadu Industrial Training Institute as one of the form of the training.

Schools for the feeble-minded emphasize social growth. The students are taught how to behave in the home and the community. They are taught good manners, a neat appearance and hygiene. They are also taught simple trades by which they can make a living.

## Rehabilitation of Handicapped in Tamil Nadu

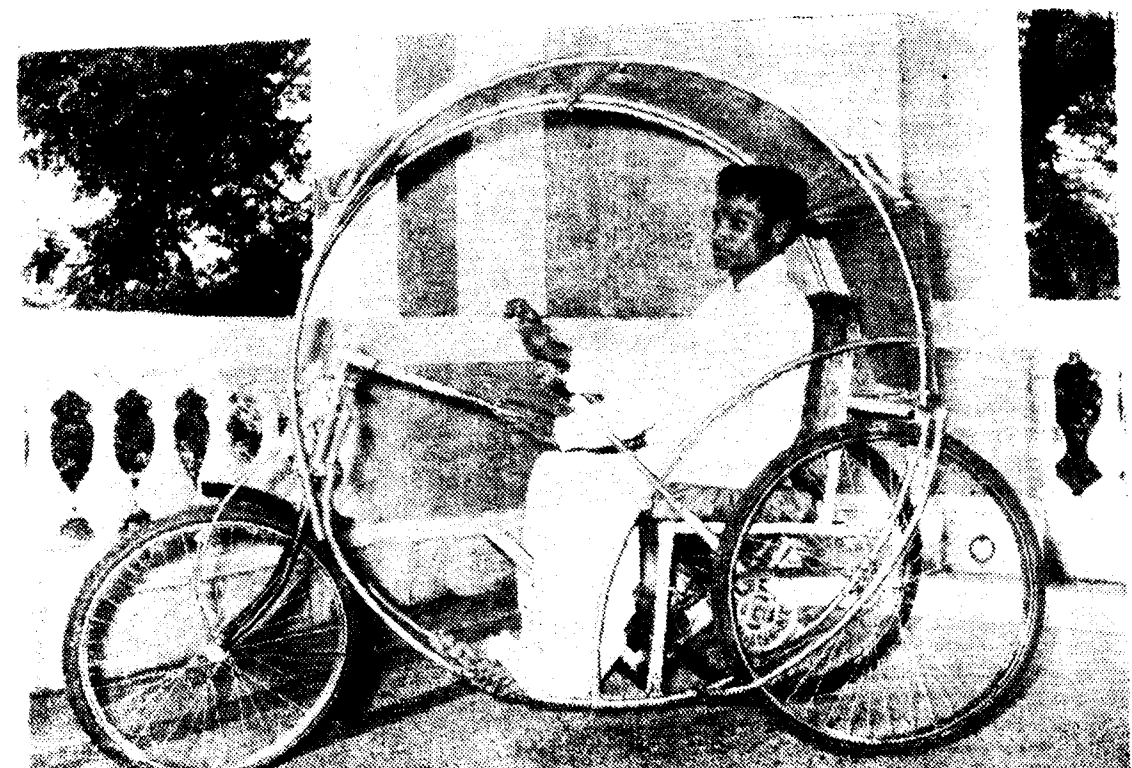
According to the census taken in the year 1961, the estimated handicapped population was in the region of 4.8 lakhs in Tamil Nadu, of which the orthopaedically handicapped formed about 1.1 lakhs. This was more than a decade ago. There is reason to presume that the size of the handicapped may have gone up.

This State Board for the Handicapped is currently engaged in the task of bringing out a compendium of information about the institutions,

training centres, etc., connected with the handicapped. A recent compilation of information on institutions for the handicapped in Tamil Nadu made by the State Board reveals that the institutions for the blind are the largest in number followed by the institutions for the deaf-mute with other categories trailing behind. A break-up of the institutions categorywise and sector-wise is given below, showing that there are only 38 of these specialised institutions with a total intake of 3,246.

The school for the Blind at Palayamkottai, the oldest institution of its kind in Tamil Nadu for the blind, started functioning

| Category of Institution     | Educational Institutions |      | Intake Capacity | Training Centres |      | Intake Capacity |
|-----------------------------|--------------------------|------|-----------------|------------------|------|-----------------|
|                             | Govt.                    | Pvt. |                 | Govt.            | Pvt. |                 |
| Blind                       | 6                        | 4    | 1000            | 1                | 3    | 81              |
| Deaf-mute                   | 1                        | 10   | 1600            | —                | 1    | 37              |
| Orthopaedically Handicapped | —                        | 1    | 80              | —                | 3    | 132             |
| Mentally Retarded           | —                        | 4    | 220             | —                | —    | —               |
| Leprosy cured               | 1                        | —    | —               | —                | 1    | 50              |
| Common                      | —                        | —    | —               | 1                | 1    | 46              |



The Government of Tamil Nadu have taken special steps to promote speedy placement of the physically handicapped in employment. In regard to recruitment to State Government Vacancies, priority III has been accorded to the physically handicapped. Apart from this, a provision to pay wages for the first fortnight of trial by employers, for conveyance charges to go to an employer and back and for refreshment charges to the deserving physically handicapped applicants when they have to wait for prolonged periods for interviews with employers or at the Special Employment Exchange or at the place of medical examination, has also been made.

### Awards for Employers

Just as the National Awards instituted by the Government of India, the Government of Tamil Nadu have also instituted State Awards for the best employees and the employers of the handicapped. These awards have been introduced for the first time in 1971 and continued from then on. One award (Merit Certificate) each is given to the outstanding employers of the blind, deaf, orthopaedically handicapped, mentally retarded and leprosy cured. Rs. 150 is given to the most efficient handicapped employee falling under the categories of blind, deaf, orthopaedically handicapped, mentally retarded and leprosy cured. The Government of Tamil Nadu have instituted an annual award of Rs. 200/- to the best teacher of a Vocational Rehabilitation Centre. A silver rolling trophy is also proposed to be presented to an institution which trains a large number of physically handicapped persons. The cardinal objective underlying the institution of these awards is to focus and foster the attention of the community at large and the industry in particular, on the multiple problems associated with the rehabilitation of the handicapped and to help animate the public awareness and constructive community consciousness, which have been lying dormant, towards the onerous and urgent need to meet the problem of the handicapped.

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### A FEW SPECIMENS OF THE ART OF THE DEAF-MUTES



INITIATING THE DISCUSSIONS ON THE ANNUAL FINANCIAL STATEMENT FOR 1973-74 OF THE TAMIL NADU ELECTRICITY BOARD IN THE TAMIL NADU LEGISLATURE. ON 19.11.73, ELECTRICITY MINISTER THIRU O.P. RAMAN SAID:

Electricity has become the basic infrastructure and a most facile tool in the hands of the society for development and economic growth. This State was, therefore, very much concerned about continued power development to support a sustained growth, especially in the Industrial and Agricultural Sectors.

### Power shortage despite manifold increase in production

The installed capacity of Tamil Nadu Grid today stands at 2254 M.W. comprising 1224 M.W. from 17 Hydro Stations, 600 M.W. from Neyveli Thermal Station and 430 M.W. from the two Thermal Stations at Ennore and Basin Bridge. This is about 14.45 times the installed capacity in 1951. During summer months when irrigation-tied stations are closed, the effective generating capacity would be about 1371 M.W. against the requirements of nearly 2010 M.W. including reserves for meeting an anticipated unrestricted peak demand of 1675 M.W. The deficits in generating capacity during the current year for meeting the peak demand would, therefore, be 639 M.W.

Last year in November 1972 when the Financial Statement was presented in the House, a 25 per cent. power cut was in force which was followed by a deepening power crisis later necessitating imposition of a 75% power cut. The Hon'ble Members might remember the main causes for the crippling power shortage—failure of S.W. monsoon in Tamil Nadu as well as in the neighbouring States of Kerala, Karnataka and Andhra Pradesh, reduced output in Neyveli and absence of any significant reliefs from outside, in the face of continued increase in power demand. Members may also recall that the serious power shortage was not confined to Tamil Nadu alone but it engulfed the whole country barring the State of Madhya Pradesh.

### Barter deal for power

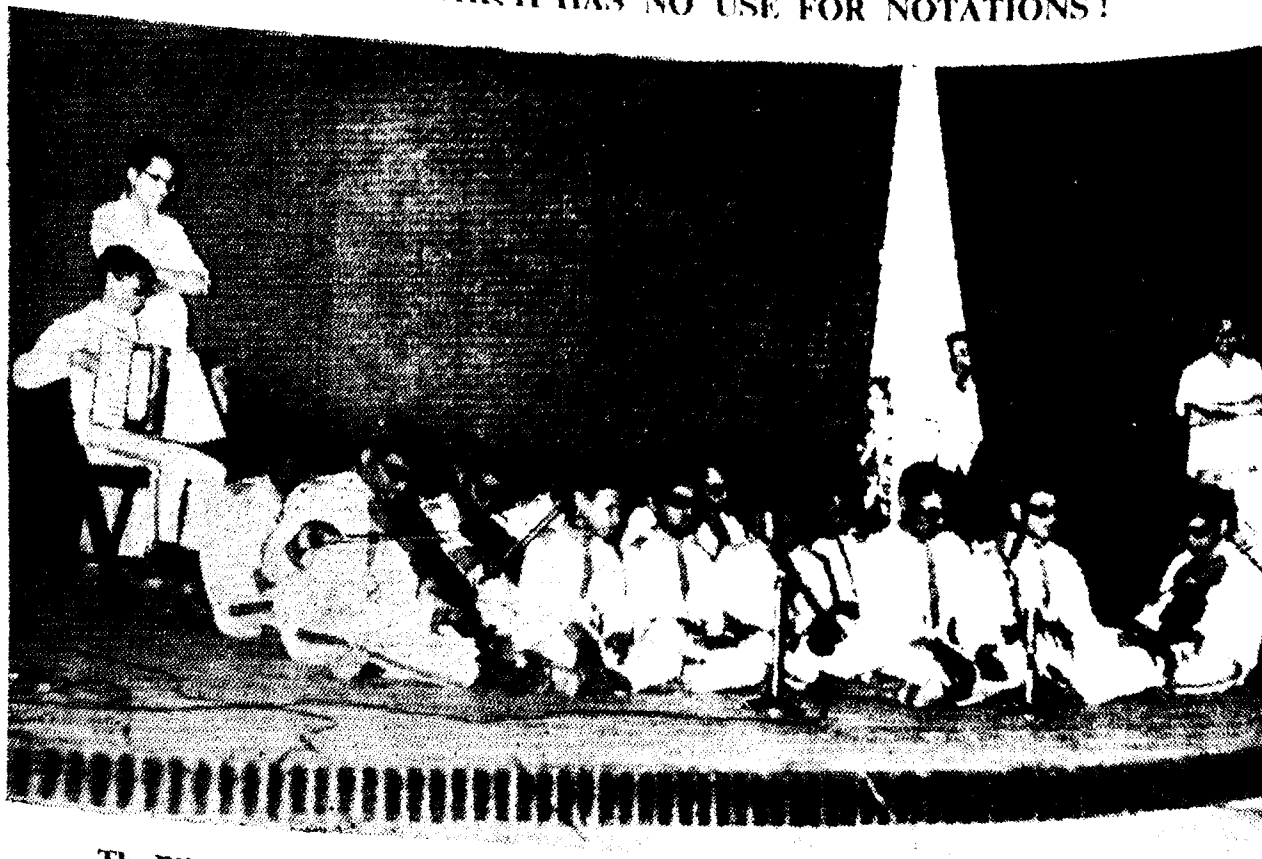
During the critical period of power cut, the Board and the Government took all possible steps to maximise generation at Board's Thermal Stations. Generation at Neyveli Thermal Station was also stepped up considerably in the crucial summer months of 1973. At the instance of Board/Government, Neyveli Lignite Corporation afforded higher power relief by shutting down their briquetting and fertilizer plants at Neyveli. Neyveli Lignite Corporation have also agreed to go in for oil firing for 2 Units at Neyveli resulting in additional energy availability in 1st/2nd quarter of 1974. Tamil Nadu Electricity Board would bear the incremental cost of generation due to the con-

version. Opportunities were availed of for obtaining energy reliefs from other States on barter deals i.e., power in exchange for cement, yarn and tyres to Kerala, textiles to Karnataka and cement, tyres and chassis to Maharashtra. These special reliefs accounted for nearly 5 lakhs units day from March 1973 and continued till April 1973 and continued till May 1973, though Maharashtra stopped supply by May 1973. The actual consumption of energy in the State in 1972-73 came to 6964 M. units against an unrestricted requirement of 7,500 M. units.

With a satisfactory South-West Monsoon this year, the hydel reservoirs received good inflows. We were able to reduce the cut from 75 per cent to 50 per cent in respect of small-scale industries in July 1973 besides giving substantial reliefs to selected major and important industries like cement, textiles, defence oriented industries, oil mills, and flour mills, etc. In view of improved generation at Board's thermal stations and at Neyveli and comfortable storage position in the reservoirs, the power cut imposed on all consumers was completely lifted with effect from 17th July, 1973.

Though the impact of South-West Monsoon had been favorable when the power position was reviewed for the period June 1973 to May 1974, it indicated an energy shortage. However, no restrictions were contemplated for the period up to September 1973 as irrigation hydro stations were operating.

## AN ORCHESTRA WHICH HAS NO USE FOR NOTATIONS!



The Blind have very acute capacity for hearing; so schools for the blind include music in their curriculum

from 1890. Similarly, the Florence Swainson Deaf School at Palayamkottai is the earliest school for the deaf, having been established in 1897. The C.S.I. School for the Deaf in Mylapore came into existence in 1912.

### Remarkable Strides After 1970

Five institutions for the blind and deaf came into being between 1920 and 1930. During the years between 1950 and 1960, six more institutions were started while 14 institutions came up between 1960 and 1970. After the year 1970, ten more institutions started functioning.

The first regular course for teachers for the Blind on an All-India basis was a 1-year programme that was grounded in 1960 at Palayamkottai by the National Academy of Teachers of the Blind established under the auspices of the National Association for the Blind in the National Christian Council.

A regional training centre for the Teachers of the Blind has been functioning at the Government School for the Blind, Poonamallee.

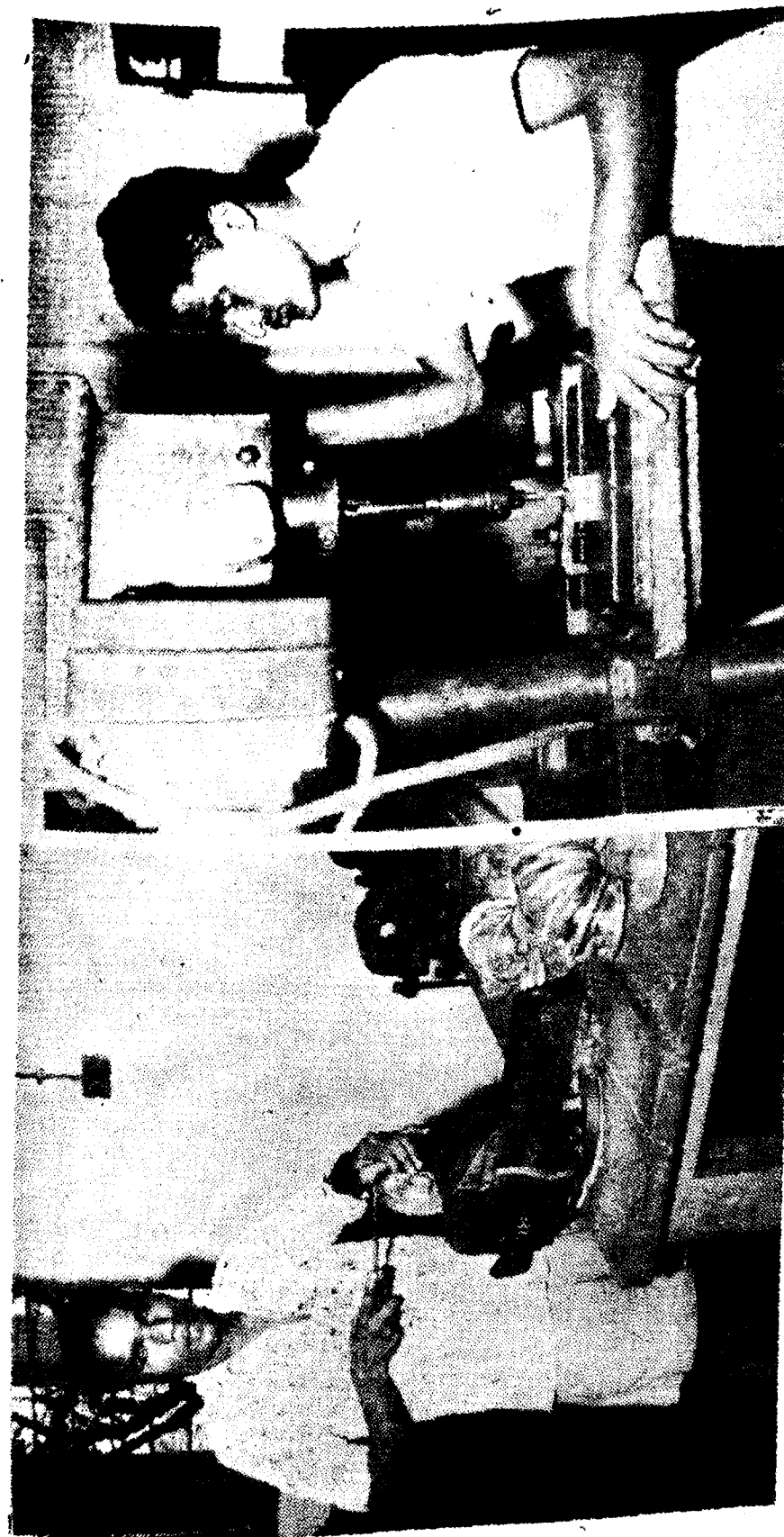
A majority of the institutions in Tamil Nadu provides elementary education, vocational training and instruction in music. A few blind students are prepared for Matriculation or equivalent examination at the Government School for the Blind in Poonamallee near Madras.

The Artificial Limb Centre of the Department of Orthopaedic Surgery, Government General Hospital and Madras Medical College, is a notable landmark in the history of rehabilitation of the handicapped in Tamil Nadu. Rehabilitation of the orthopaedically disabled persons has been a great problem in this part of the country due to lack of facilities for prosthetic and orthotic fitting. With the founding of this Artificial Limb Centre in 1964, a void for the orthopaedics ceased to exist in the areas of limb fitting and brace fitting.

The Vellore Association for the rehabilitation of the physically handicapped is running an Agricultural and Poultry Unit at Sevoor near Katpadi where ten leprosy cured and burnt out persons are resettled.

### Training for the Handicapped

The concept that the handicapped are practically a separate species is slowly but perceptibly giving way to the awareness that, if given the opportunity, they can develop their residual capacities to the point of assuming their responsibilities as non-handicapped citizens leading a full and independent life. It is increasingly recognised that the community owes the handicapped the responsibility of providing this opportunity and that the process of rehabilitation is not complete until they obtain a job and become at least partially self-supporting. Job placement involves many factors; the handicapped individual must have the skill and physical



abilities necessary for handling a particular job; he must be able to meet the standards of work performance set up for that job; he must not be a safety hazard to himself or to his co-workers and the job must not fatigue him unduly or enhance his disability.

Eleven training-cum-production centres, of which two are Government and the rest private Training Centres are functioning in Tamil Nadu. Details of the categories of the handicapped, the institutions and the trades in which training is offered are given in the last pages in this issue.

### Employment for Handicapped

In July, 1954 the Government of India established in Madras a Special Employment Office for the ex-trainees of the Training Centre for the Adult Blind, Dehra Dun. This Office was the forerunner of a more comprehensive scheme for the establishment of the Special Employment Office for the Physically Handicapped. The Employment Office for the blind established at Madras in 1954 was converted into a Special Employment Office for the Physically Handicapped and this office started functioning with effect from 1-4-73. The Special Employment Office for the Physically Handicapped in Madras has so far placed 1519 applicants in jobs, of whom 127 are blind, 253 deaf-mutes and 113 orthopaedically handicapped. These 1519 placed handicapped, were found, through follow up, have satisfactorily adjusted themselves to their job situations. There were 1368 applicants on the rolls of this Special Employment Office for Physically Handicapped as on September 30, 1973, of which 161 were blind, 144 deaf and 1063 orthopaedically handicapped.



full swing, and in fact we were able to bank some energy during night with Karnataka. It was observed that the inflows in September were less than the average of last 5 years and the need for conserving available water till the next South-West Monsoon was also kept in view, especially with reference to the reduced relief indicated by Neyveli Ignite Corporation and the outage at Ennore where the IV unit of 110 M.W. was incapacitated due to fire incident on 31st July 1973. Also, the Government deemed it necessary to take the overall interest of the economy of the State to permit supply to prospective consumers waiting till last October 1972.

### New connections are given

A marginal power cut of 15 per cent was, therefore, imposed with effect from 1st October 1973, mainly to provide for continued industrial and agricultural growth. The hydel storage position, when the power cut was imposed, was nearly the same as in 1971. But the anticipated requirements for power this year are nearly 21 per cent more than in 1971. For the first time, it can be said that new connections are being given even during the period of power cut. The need for 15 per cent power cut is fully justified as a deficit of 536 m.u. has been indicated for the period October 1973 to May 1974 even after assuming a normal North-East Monsoon with resultant hydro storage as good as in 1971, early recommissioning of Ennore IV unit and a total 300 m.u. relief from Kerala, besides the thermal plants at Ennore and Basin Bridge operating at satisfactorily load factors. The Government have also decided to consult with the Tamil Nadu Electricity Board to review the power position by middle of December 1973 and if conditions found more favourable than anticipated, the restrictions may be relaxed.

Special efforts are also being taken to get power from Kerala, Andhra Pradesh and other States. Karnataka has expressed its inability to afford and relief as it continues to be in power cut with 20 per cent. We are also trying to get maximum relief from Andhra Pradesh when their Kothagudem stage 110 M.W. unit gets stabilised. We have reached an under-

## MARCH OF RURAL ELECTRIFICATION

Electricity was extended to 7,782 villages and hamlets during 1972-73 bringing the total number of towns, villages and hamlets electrified to 60,325 as on 31st March, 1973. Tamil Nadu tops the list in India in the matter of extending supply to agricultural pumpsets. During 1972-73 as many as 55,072 agricultural pumpsets were energised, making the total number of pumpsets energised as on 31st March, 1973 to 6,49,241. As on 1st October, 1973, the number is 6,64,906 pumpsets. Top priority has been given for electrification of Harijan colonies adjoining the villages. During 1972-73 alone 4,582 Harijan colonies have been electrified.

In spite of the unremunerative nature, the rural electrification schemes continue to be executed in an attempt to extend the basic amenities of street lights and domestic services to the villages and hamlets. It is hoped that by the end of the year 1974, the electrification of all villages would be complete.

standing with Kerala in November 1973 to ensure 300 m.u. relief for the period up to May 1974. Energy assistance has also been promised to Tamil Nadu on barter deals, by Andhra Pradesh and Kerala that is, the former giving 45,000 units for tyres and the latter, indicating to give in full power needed for (additional) production of cement, yarn, tyres and chassis required for Kerala this season. Details are being worked out by the two States' Electricity

The special programme for electrification of villages was launched in October, 1969 at the instance of the Chief Minister. This programme has paved the way for the starting of a number of new rural industries and connecting up of additional pumpsets which would add to the prosperity of the State.

We have achieved notable progress in this field. As against 24,867 towns, villages and hamlets provided with street lights when the special rural electrification programme was launched, we have as on 1st October, 1973, taken electricity to 35,999 more villages and hamlets and connected with street lights pushing the total number to 60,866. Measures are being taken to have the remaining villages and hamlets provided with street lights very early.

The total number of Harijan colonies electrified as on 1st October, 1973 is 23,695. The remaining 806 Harijan colonies will be electrified in the near future.

### Board's officials.

The unfortunate fire accident at Ennore on 31st July 1973 damaged the power transformers of the IV unit which could not be used for generation. The third unit also could not be recommissioned immediately as the bushings of the transformers had to be tested. Government appointed a Committee headed by Thiru N. Mahalingam and consisting of two experts to

investigate the accident and suggest remedial measures. The report of the Committee has been received and the Electricity Board has been requested to implement the suggestions of the committee besides fixing responsibility on the persons responsible for the defects pointed out. The damaged transformer units have been arranged for repairs with Messrs Heavy Electricals (I) Limited, Bhopal and the power transformers can reasonably be expected to be ready during the first quarter of 1974. The Hon'ble Members may perhaps remember that I had mentioned in my last budget speech about the difficulties caused by the formation of a sand bar at the mouth of the leading channel feeding coolant water to the Ennore Thermal Station. Arrangements have already been made to carry out certain engineering modifications to the two sand pumps installed to remove sand accretion due to littoral drift. I would also like to mention that the Chairman and the concerned Chief Engineer of the Electricity Board were sent abroad to Europe and U.K. in August '73 for exploring possibilities of procuring a suitable

dredger for solving the sand bar problem. In pursuance of these efforts, negotiations are being finalised to procure a dredger from Holland at a cost of about Rs. 70 lakhs. This is expected to eliminate successfully the sand bar problem at Ennore.

### What Have We Done About The Generation Gap?

At an average of 12.5 per cent increase every year in peak demand our requirement will be of the order of 3,620 M.W. by the end of the Fifth Plan period (1978-79). The gap between generation and requirement by the end of the Fifth Plan would be 2,189 M.W. As against this, the projects which have been included and suggested by the Ministry of Irrigation and Power are the following. (Table at the bottom)

|                                                                                       |    |    |                               |
|---------------------------------------------------------------------------------------|----|----|-------------------------------|
| (i) Ennore V Unit                                                                     | .. | .. | 110 M.W.                      |
| (ii) Kundah IV Stage                                                                  | .. | .. | 110 M.W.                      |
| (iii) Kalpakkam Nuclear Plant                                                         | .. | .. | 300 M.W.<br>(Out of 400 M.W.) |
| (iv) Suruliyar                                                                        | .. | .. | 35 M.W.                       |
| (v) Kadamparai Pumped Storage Plant                                                   | .. | .. | 100 M.W.                      |
| (vi) Tuticorin Thermal Scheme                                                         | .. | .. | 400 M.W.                      |
| (vii) Additional benefit at Neyveli consequent to conversion of 2 units to oil firing | .. | .. | 100 M.W.                      |
| Total                                                                                 | .. | .. | 1,155 M.W.                    |

## INSTITUTIONAL FINANCE FOR POWER SCHEMES

The Board's capital receipts in 1973-74 are estimated at Rs. 47.86 crores. This includes Rs. 22.03 crores of loan from sources like open Market, L.I.C. of India, Banks and other financial institutions like R.E.C. The internal sources of the Board such as depreciation and other reserves are estimated to be the order of Rs. 23.26 crores. The increase in deposits is expected to provide Rs. 2.47 crores. The Government have so far sanctioned a loan of Rs. 3.65 crores.

The Rural Electrification Corporation, Ltd, New Delhi, approved in 1972-73 two schemes for electrification of Harijan colonies costing Rs. 10 lakhs and 9 other schemes for extension of supply to pumpsets and domestic services costing Rs. 509.874 lakhs. They have sanctioned from the inception of the programme up to the period ended 30th June, 1973 schemes costing in all to the tune of Rs. 11.21 crores against which they have disbursed Rs. 6.23 crores. The Rural Electrification Corporation have come forward to give loans for two new types of schemes, namely sub-station improvement scheme and special transmission scheme. Under the first category they have sanctioned two schemes costing Rs. 52 lakhs and disbursed Rs. 35 lakhs. Under the second category schemes have been evolved by the Tamil Nadu Electricity Board and they are under the consideration of the Rural Electrification Corporation.

Assuming an average annual growth rate of 12.8 per cent for purposes of planning, the energy requirements have been assessed at 15,490 m.u. by 1978-79 and 27,926 m.u. by 1983-84. The net deficit, taking into account schemes under construction and sanctioned would be about 2,715 m.u. by 1978-79 and 14,645 m.u. by 1983-84.

### Power Deficit Inflicts Heavy Damage on Economy

It would be, therefore, clear that the power deficits both in respect of peak demand and energy requirements are quite sizeable and therefore very serious. The unprecedented power cut last year should be a reminder to us as to the extent of damage a power shortage can inflict on the overall economy of the State. During the last 4th Conference of State Ministers of Irrigation and Power held at Kozhikode in July 1973 and on subsequent occasions during discussions with the Union Minister of Irrigation and Power, Dr. K. L. Rao and the Planning Commission at the Centre was impressed by the State Government and the Electricity Board chairman that all pending Hydro Electric Schemes should be cleared forthwith so that expeditious execution can be initiated without delay. Three projects, namely, Suraliyar Hydro Electric Scheme of 35 M.W., Kadampara Pumped Storage Scheme of 400 M.W. and Tuticorin Thermal Scheme with 400 M.W. have been sanctioned by the Government of India.

### Capital programme for the year

I would like to narrate briefly the capital programme for the year 1973-74. The work on the third 300 M.W. set at Ennore is progressing and this set is expected to be commissioned in early 1975-76.

I am glad to state that in agreement with the Central Government for the supply of generating machinery for the Kudalali Fourth State has been signed in July 1973.

The work on Suraliyar Hydro Electric Scheme is expected to be completed by March 1974.

The preliminary work for the 100 M.W. Kadampara Pumped Storage is already in progress. The first set under the project is expected to be commissioned in 1975-76.

The preliminary work for the Suraliyar 35 M.W. has been taken up.

The preliminary work on the Suraliyar and Nellithoor Hydro Electric Schemes have been taken up in anticipation of clearance of the Schemes by the Government of India.

The Schemes pending with the Centre are given below:

| Serial number and name of scheme    | Installed capacity M.W. | Estimated cost of scheme (Rs. in lakhs) | Energy benefits m.u. |
|-------------------------------------|-------------------------|-----------------------------------------|----------------------|
| 1 Chidambaram                       | 60                      | 139                                     | 112                  |
| 2 Coimbatore Kallar                 | 30                      | 1,345                                   | 144                  |
| 3 Lower Moyar                       | 30                      | 1,336                                   | 102                  |
| 4 Nellithoor                        | 30                      | 158                                     | 134                  |
| 5 Paravayal                         | 35                      | 810                                     | 150                  |
| 6 Servalar                          | 20                      | 681                                     | 75                   |
| 7 Shannungamadu                     | 30                      | 902                                     | 131                  |
| 8 Upper Anathavathi                 | 20                      | 352                                     | 69                   |
| 9 Upper Thambacuram (other 5 units) | 165                     | 4,392                                   | 557                  |
| 10 Mettur Thermal Scheme            | 330                     | 6,553                                   | 1,160                |

Inter-State Scheme.

## COST OF POWER PURCHASES

The cost of power purchased from Neyyveli, Kerala and Karnataka has been provided with reference to the rates that prevailed at the beginning of the year 1973-74 (i.e., 8.1 paise/min for Neyyveli and in respect of Kerala at 7.4 paise/min for the first 150 m.u. and at 6 paise for the supply excess over 150 m.u.). The rates for power from Kerala have been enhanced to 7.8 paise/min for the first 100 m.u. and 8 paise for excess over 100 m.u. up to 200 m.u. during this year. This will entail additional expenditure to the Electricity Board.

The Schemes already sanctioned and are in various stages of progress, and expected to be commissioned in the years to come are as follows:

- 1976 - Ennore V Unit (1st stage) 110 M.W.
- 1977 - Kudalali IV stage 110 M.W.
- 1977 - Kalpakkam Atomic Station 1 Unit 235 M.W.
- 1978 - Suraliyar H.E. Scheme 35 M.W.
- 1978 - Kalpakkam Atomic Station 2nd stage 235 M.W.
- 1979 - Kadampara Pumped Storage 1 Unit 100 M.W. (Total 400 M.W.)
- 1979 - Servalar H.E. Scheme 20 M.W.
- 1979 - Nellithoor H.E. Scheme 30 M.W.
- 1979 - Tuticorin Thermal Scheme 400 M.W.

### GENERATION CORPORATION

With a view to concentrate on major power schemes and to get as much institutional finance as possible so as to bring the benefits earlier, the formation of a Power Generation Corporation has been decided.

In line with the policy of the State to take over the private electricity supply undertakings in the public interest, this Government have enacted a new legislation called "The Tamil Nadu Private Electricity Supply Undertakings (Acquisition) Act, 1973." There are seven Private Electricity Supply Undertakings as indicated below which remain to be taken over by the Government:

1. Kumbakonam Electrical undertaking.
2. Nagapattinam Electrical undertaking.
3. Shencottah Electrical undertaking.
4. Vellore Electrical undertaking.
5. Salem-Erode Electrical undertaking.
6. Tinnevely-Tuticorin Electrical undertaking.
7. Trichinopoly - Srirangam Electrical undertaking.

Under the provisions of the new Act, the Government have directed that the above undertakings shall vest in the Government on 1st December, 1973.

upon by the State Government. A special officer has been appointed and entrusted with the task of formation of the corporation.

In view of our commitment to the big industrial complex at Mettur and the Salem Plant and in the light of Mettur Thermal Scheme not being agreed to by the Centre yet, the 2nd mine cut at Neyyveli will have to be not sanctioned under Central Sector at once for initiating follow-up action on 2nd thermal station of 1,000 M.W. capacity. As per the feasibility report prepared by the N.E.C., the phasing of commissioning the S Nos. 200 M.W. units (plus 1X200 M.W. unit later) is envisaged as follows:

- 1st Unit in service - By October 1978.
- 2nd Unit in service - July 1979.
- 3rd Unit in service - February 1980.
- 4th Unit in service - July 1980.
- 5th Unit in service - February 1981.

If the project is cleared straightaway now, we may expect one or two units to come in service during V Plan, i.e., 200 to 400 M.W. installed capacity with an additional net relief of 180 to 300 m.u. to Tamil Nadu. It would not be out of place to recall the draft IV Plan proposals of the State Government in 1968 when the Government suggested initiation of action on the 2nd unit at Kalpakkam Atomic Power Station, 2nd Atomic power station preferably around Tuticorin region and 2nd mine cut and a 2nd thermal station at Neyyveli. The Site Selection Committee of the Department of Atomic Energy, Bombay is currently examining data furnished by the Electricity Board and the State officials to identify a promising site at Kudalali in Nanguneri taluk of Tirunelveli District. The Government of India have since replied that considering the resources position as a whole and the resources available for the establishment of Atomic Power Station in the Southern States, it may not be possible to consider any new nuclear power schemes during the Fifth Plan period. This Government would however urge the Government of India again to take a favourable decision for locating the 2nd Atomic Station in the southern districts of the State.

This is quite essential in addition to an early decision and implementation of the 2nd mine cut at Neyyveli referred to earlier. The State is not happily placed as regards potential

## OUR HUGE TRANSMISSION NETWORK

The State Electricity Board owns a huge network of transmission and distribution system comprising 63,328 Kms. of H.V. and H.T. lines and 1,78,605 Kms. of L.T. lines as on 31st March, 1973. Out of this, 3,442 Kms. of EHT and H.T. lines and 17,451 Kms. of L.T. lines were added in 1972-73. There are 262 numbers of H.V. and H.T. substations in the grid at the end of 1972-73.

The Transmission and Distribution Projects at a cost of Rs. 11.00 crores for the year 1973-74 will result in construction of more 230 KV, 110 KV and 11 KV transmission lines, substations and distribution lines. Installation of higher capacity transformers at substations and provision of additional carrier and VHF equipments for communication are also envisaged under this head. A length of 2,600 Kms. of EHT/H.T. lines is proposed to be added during 1973-74.

While the extent of line losses compare favourably with many other States in the country with reference to its own extensive lines and huge network of pumpsets, the Board has decided to go in for corrective measures to reduce the losses nearer the optimum level.

for augmentation by generating capacity. The only fossil fuel available is lignite at Neyyveli and this has to be utilised fully and completely to meet the energy needs of the State and future power requirements. The State has to depend only on nuclear and new thermal schemes preferable super thermal stations. I would also like to mention that the Tamil Nadu Electricity Board has proposed under consideration for installation gas turbines to the extent of 300 M.W. by way of short-term measure while the Centre needs to examine and approve necessary imports as a special case.

# PROGRESSIVE LABOUR POLICY OF TAMIL NADU ELECTRICITY BOARD

The various concessions extended by the T.N.E.B. to its employees during last year (1972-73) are listed below :

The absorption of Temporary Casual labour workmen with 4 years of service under the Board as on 31st December, 1972 to Regular Establishment was ordered by Board in January 1973 and about 9,000 T.C.L. workmen got the benefit of absorption Regular Establishment from 1st January, 1973. The number of Casual Labourers under Board as on 31st March, 1973 is about 923 and the Board will take up the question of their absorption in a phased programme depending on need.

T.C.L. workmen were given an increase in wages of 25 paise in 1972 after one year of service from the date of last increase in 1971 and they are given a further increase of 25 paise in wages after a further one year service from the date of last increase in 1972.

The posts of Lascars, Grade II and Pezdoors, who were on pay scale of Rs. 65-3-5-4-115-5-125 in all places under the Board were upgraded as Helpers and Cleaners, Grade II as Grade I Cleaners in the scale of Rs. 84-4-125-5-150 from 1st January, 1973.

The employees of the Board were requested for grant of House Rent Allowance to them, based on the Government rates. The Board considered the above request and granted enhanced House Rent Allowance with effect from 1st January, 1973 and further enhanced it from 1st April, 1973. The employees residing at a distance not exceeding 16 Kms. around the Madras City limits and those within 16 Kms. around Madurai and Coimbatore City limits were granted House Rent Allowance at the same rates applicable to State Government Employees at Madras, Madurai and Coimbatore cities respectively.

Dearness Allowance was increased by Rs. 4.50 per mensem from 1st April, 1972 to

all employees drawing pay up to Rs. 750 per mensem and it has been further increased by Rs. 9 from 1st April, 1973.

BONUS was given to the employees of the Board in November, 1972 for the year 1971-72 at 8.33 per cent of their pay and Dearness Allowances subject to a maximum of Rs. 750.

The Junior Engineers under the Board were elevated to Class II status (Gazetted) in November, 1972 and on a par with them. Supervisors Grade I (Electrical, Mechanical and Civil) were also conferred Class II status in March, 1973.

From 14th August, 1972 a marriage advance of Rs. 2,000 to Board's employees is being sanctioned.

The concession of interest-free advance of Rs. 100 was extended to the employees whose basic pay does not exceed Rs. 500 per mensem and who have rendered two years of service, to meet expense like payment of special fees, purchase of text books, etc., for their children studying in Higher Elementary, High Schools and Colleges.

The cycle allowance given to the linemen and wiremen in-charge of distribution was enhanced from Rs. 4 per mensem to Rs. 6 per mensem. This concession has since been extended to Helpers employed in distribution systems.

The workload for the stores staff in Sub-Stores was decided and an agreement was reached with the Union regarding sanction of additional staff which will create chances for more promotions than now.

The sports activities of the employees are encouraged by the Board by liberalised recurring and non-recurring grants to the recreation clubs of the employees.

The Board is continuing to take interest in the promotion of education of workers under the Workers' Education Scheme and has won the first prize and shield for the largest number of worker-teacher trainees and education of workmen in unit level classes.

All over India, the 24th October was celebrated as UN Day, to bring into a sharper focus the need to construct the "defence of peace" in the minds of men, as stressed by the preamble to the UNESCO constitution. This is because, as it says, wars begin in the minds of men. The Indian National Commission for Cooperation with UNESCO joined its parent organisation in 1949 in quest for strengthening the defence of peace. It is one of the 125 national commissions in the world so engaged today.

Headed by the Minister of Education, the Indian National Commission set its sights clearly from the beginning. It is primarily an advisory and consultative body. One of its main objectives is to promote understanding of the aims and policies of UNESCO. It is a link between UNESCO and the institutions working in this country in the fields of education, science, culture and mass communication. Non-Government institutions can participate in the activities of the Commission. 41 of them are currently functioning as its institutional members. In Madras, an impressive celebration was gone through at Museum Theatre, Egmore on 24th October, 1973 as U.N. DAY.

**Indian  
National  
Commission  
for  
Cooperation  
with  
Unesco**

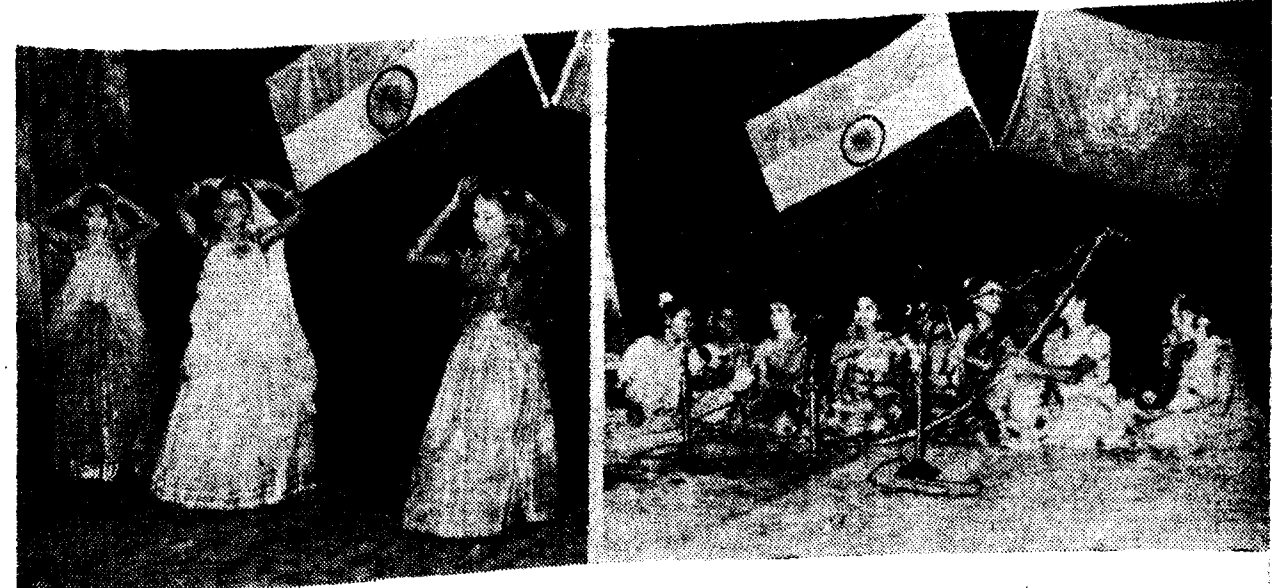
One of the aims of the Commission is being met through the creation of UNESCO Clubs with the help of voluntary organisations, educational institutions and universities. 109 of them are now working in the various parts of the country. Apart from disseminating information about UNESCO, the Clubs have been asked to take up action programmes of use to

their local communities with local financial support. It is essential that to be useful they must be community-based.

During the last five years, the Commission has made successful efforts to systematise its liaison, clearing houses and information services in respect of UNESCO. About 3,600 institutions throughout India are on the Commission's mailing list. Several international exhibitions have so far been arranged in different parts of the country. One of them brought to view the drawings of Leonardo da Vinci. All the while, the Commission has been carrying on its many-sided operations to build the mental bulwarks of peace. A major programme developed for this purpose is the Associated Schools Project of Education for "International Understanding." About 1,000 schools and "Teachers Training Institutions" in India are functioning under this programme to enable the younger generation develop appreciation for the culture of other countries. They are also taught to respect Human Rights and Fundamental Freedoms.

This programme has been found to have immense possibilities for creating a new ideology and world view among the youth. It has

## The U. N. Day in Madras





in certain industries, due to the nature of the product, they are bound to lose during the long gestation period, regardless of ownership and regardless of who manages it, how we level criticism at such public sector units that they are unprofitable. This is an inevitable price of nation has to pay for industrial development.

Even looking at the performance of the public sector, more than 60 public sector units out of the 102 earned a profit exceeding Rs. 1 crore in the year ending March 31, 1973, the net profits being Rs. 90 crores. A number of enterprises, including Hindustan Steel, reduced its losses. On the other hand, the bulk of losses are accounted by 16 enterprises, each losing over Rs. 50 lakhs. Their total losses in 1972-73 contribute about Rs. 82 crores. Out of these, three units—Hindustan Steel, Heavy Engineering Corporation and Neyveli Lignite Corporation—alone accounted for as much as Rs. 55 crores. In other words, it is rather unfair to brand the public sector as a non-profitable entity, purely because of the negative performance of a few such units.

There are a few other aspects we have to consider, when we evaluate the profitability of the public sector. First, the social costs, which the public sector bears, are 16% of the operating costs in 1970-71 amounting to Rs. 30 crores. This may be quite relevant, when we compare this to the private sector in India, which has to go a long way in this direction. This, however, cannot be a valid argument, as it is becoming increasingly recognised throughout the progressive world that the corporate sector has to assume responsibility to provide social welfare for its employees, such as housing, medical services, recreation, opportunities for cultural development and job training and yet run the industry on an efficient and profitable basis.

Another reference is made to over-employment in the public sector. Some say, this is socially necessary in order to provide relief to the unemployment situation in the country. This is a debatable point, as you may lose much more by undermining the industrial morale of the labour. However,

the fact that salaries and wages formed only 9.5% of the total cost structure in the public sector in 1970-71 does not make this anything abnormal.

### Questions in need of Answers

In the private sector, by and large, profit is considered to be the primary objective with as much return as possible on the investments, but this concept is rapidly changing due to the increasing recognition of the social responsibility of business. In the public sector, this role is reversed, as we have so far been highlighting only the social benefits, whereas we now recognise the need for economic benefits and a fair return on investment. It is, therefore, essential that we strike a balance as to the extent to which the public sector can achieve the corporate objectives of return on investment and profitability under social constraints. Can the public sector control its social overheads or should it seek Government subsidy on this count? How can it reduce operating costs and generate internal funds for modernization and expansion? How can it operate and grow without being a social burden? Can the public sector adopt a pricing policy, as in the private sector? Why not the public sector issue shares to the public, as a basis of evaluation of its performance? These are all the questions for which we need answers.

When once we recognise profitability as a criterion for judging its performance, we have to set clear guidelines for each unit and each industry. We have to gear the structure and have a managerial group competent to achieve the objective. Profitability cannot be viewed in isolation, without creating an environment conducive to such profits.

All management positions must be manned not by civil servants, but by those recruited from amongst the best managerial talent available in the country. They have to be remunerated on terms which are reasonable and sufficient to motivate them to do an efficient and honest job. What you lose this way is so infinitesimal, compared to what you gain by plugging the losses of

several tens of crores and making profits by efficient management. This is the practice adopted in France, Italy and Britain, when the public sector started playing a significant role in their economies. Even the socialistic countries found their own answer, as to how to motivate their managers entrusted with the challenging task of running the industrial sector. The super-structure of Indian attitudes, codes and culture and heterogeneity of the Indian people are so unique, that it must find its own path in all its detailed ramifications.

Seniority cannot be a criterion for progress at executive levels. Rewards and punishment in the public sector have to be related purely to competence criteria. The present slow and agonising process of clearing the dead wood must go.

The present stronghold of the bureaucratic machinery can be used as a major resource, with the same system consciousness, by designing systems which are not policing and audit-oriented, but decision and action oriented. But, one thing is clear that profitability is an achievable objective in the public sector, regardless of the many constraints, if we leave aside units, which are compelled to lose due to the long gestation period and huge investments and special circumstances.

### Profitability is alone not a criterion for efficiency

Now, I come to a more fundamental question. Is profitability the only criterion of judging the efficiency of the public sector? If you ask a question what the basic objective of the private enterprise is, an obvious reply will be to make a profit. Profit is essential for healthy business, but profit itself can be cut off at source, if the management does not recognise other objectives and goals and has not the foresight to know how the profit is made and even more important, sustained. The steady profits over the years give a far better gross return than peak profits in one year and depressions in the other. In the present non-competitive economy, it is indeed difficult to resist the temptation of adhering to any

objective other than make the largest profit in the shortest time. While private ownership should not be allowed to exploit the consumer, the reverse side of the coin—the danger of the public sector exploiting the consumer should not also be tacitly ignored. For example, the objective of nationalisation is to be achieved.

In a trading economy, such a thing as 'profit only' can exist. In an industrial economy, you have investment in buildings, machinery, personnel, research, advertising and promotion. You have tangible and intangible resources.

The industrial resources are primarily represented by management, research, goodwill and reputation. The question is, can all these be bought and sold? All such resources have a value only as long as they are productive. It takes time enough to make them productive, but longer still to recover the original cost. It is, therefore, not right to say that the sole objective of an enterprise in an industrial economy is all to make profit. It is rather to provide for the present and future protection of the assets of the enterprise and improve them further and we need to set multiple and integrated objectives in every area of responsibility and every resource. Viewing the public sector in this context, we need marketing objectives to keep up and increase the customer goodwill. We need technological and innovation objectives, to keep abreast of new techniques and new skills with such yardsticks as utilisation of the capacity, technological self-reliance and product leadership. We need financial objectives to ensure enough liquid assets to cover changing business cycles and markets. We need productivity objectives to increase standard of living and grow better. We need personal objectives for management development and better human relations. Above all, we need objectives for the enterprise to integrate with the overall goals of the community and contribute to the common good, improve the standard of living and the level and stability of employment.

Thus, it is quite clear, regardless of the type of industry, whether in the private sector or the public sector, that we have to also pay attention to objectives, other than profitability.

### Panel for clear-cut Objectives and Obligations

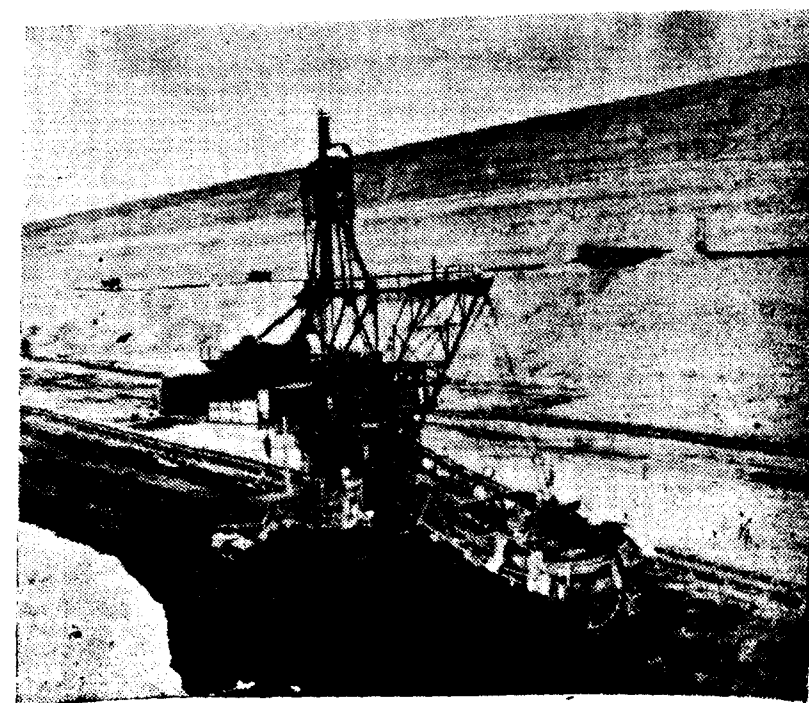
Excellence in management consists of setting great goals and achieving them. The two parts of the process are essential in achieving excellence. Without goals and objectives chosen in advance, the final results cannot be measured. Great goals without matching achievement will be the sign of idle dreams. In this context, it is heartening to note that the Government of India has recently appointed a high level panel to set up the objectives and obligations of the public sector, which would provide a proper yardstick for their appraisal.

To sum up, by all counts, with the rationalisation of the structure in the public sector, a clear definition of objectives and policies, improvement of labour-management relations, technological leadership and utilisation of all the advanced techniques of management, there is no reason why the public sector with all its resources at its disposal cannot make sustained progress in the years ahead.

### Leadership in many fronts to be ensured.

Everyone of us is involved in the public sector, as citizens of India. It is the tax payers' money we have invested in these enter-

prises. In the private sector, perhaps it is the prerogative of a few to do what they want to do, with their money, manage or mismanage their affairs. In the public sector, it is the people's money with which we are dealing. As trustees, we have not only to make the right type of investment, but also manage our enterprise well, even better than any. Or, in other words, we have to make a success regardless of what it costs, regardless of what sacrifices the country may have to make or regardless of what hardship we may have to put up with. The public sector has to maintain its leadership in technology, in Research and Development, in sales and distribution, in industrial relations, in management development and in exports. It has to make its men and women to be energetic, technologically sound and imbibe them with a proper attitude toward their work, their enterprises and the society at large. It must strive to constantly improve its operational efficiency. It has to create a good public image, maintaining sustained growth. With the large finance made available by the Government with the goodwill of the people of India and with good management there is no reason why the public sector, in the next few years, cannot stand on its own merits and outpace the private sector.



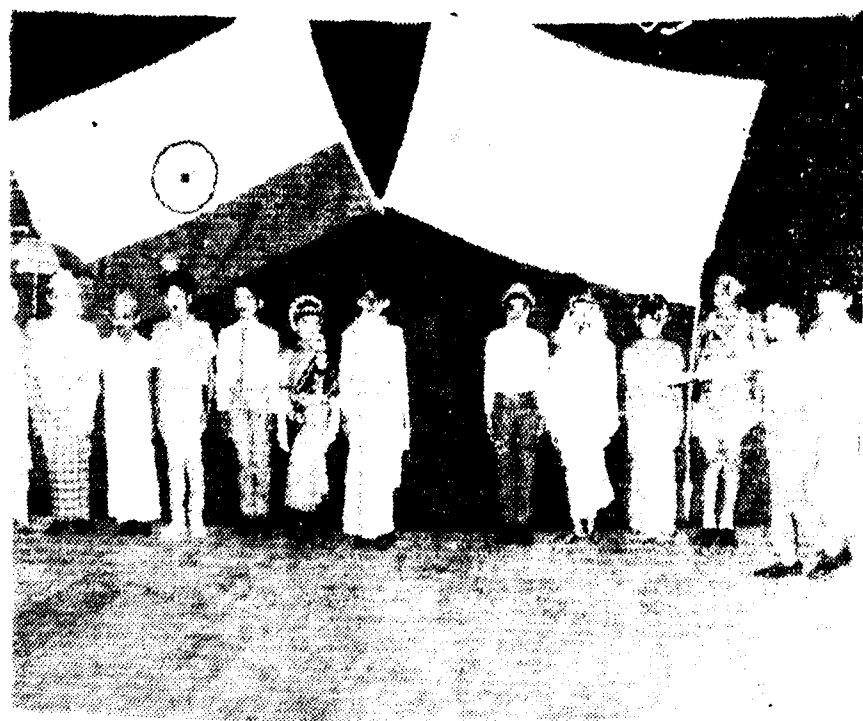
already brought about closer relations between the Indian National Commission and its counterpart in other countries through the exchange of material and participation of school children in art exhibitions and contests.

### Promotion of International understanding

To promote international understanding and intellectual co-operation, UNESCO has already completed a significant project on mutual appreciation of Eastern and Western cultural values.

The project adopted at UNESCO's New Delhi Conference in 1956 led to a variety of activities involving many sections of intelligentsia in this country. A seminar on the role of universities and East West Relations followed in 1963. A Round Table Conference on Jawaharlal Nehru's Role in the modern world, which was held in Delhi three years later, made a number of proposals to promote cultural understanding between different countries. From this emerged the project "Design for Living," which was accepted by the 14th General Conference of UNESCO in October-November 1966.

After completing its major project on mutual appreciation of Eastern and Western Cultural values, UNESCO initiated programmes for study in depth of different cultures and their impact on the world civilisation. The Commission has been collaborating with UNESCO in the study of Central Asian civilisation. Several studies have been taken up in the fields of archaeology and History of Central Asia during the Kushan period, History of Literacy currents in Central Asia, development of sciences, and the History of Ideas and Philosophy. A preliminary study report on the History of Ideas and Philosophy in Central Asia has been forwarded to UNESCO. The Indian Council for Cultural Relations in collaboration with the National Commission held an International Conference on Central Asia in New Delhi in February 1969 to promote closer cultural relations between the Central Asian countries.



Research in social and human sciences is a necessary corollary to the objectives sought by UNESCO. With the cooperation of the Indian National Commission, it has completed the first part of study dealing with certain disciplines like psychology, linguistics, social and cultural anthropology, sociology, demography, political science and economics.

### Research in Social and Human Sciences

One significant project, which is now under execution with assistance from the Commission, is the "Auroville" project of the Sri Aurobindo Society, Pondicherry. The aim of Auroville is to bring together in close juxtaposition the values and ideals of different civilisations and cultures. After its foundation stone was laid on February 28, 1967, Auroville has made considerable progress. While the entire responsibility for "Auroville" rests with its sponsors, the Sri Aurobindo Society, the Commission has given grants to the extent of Rs. 9.5 lakhs for one educational building project of Auroville.

### Study on Group Tension

An interesting study carried out under the auspices of the Commission has been on Group Tensions.

As the result of the studies in India and elsewhere, UNESCO came to the conclusion that the concept of "tension" is too rigid and narrow and that the real problem is not so much to remove tensions as to direct them into useful channels and turn them to constructive social ends.

Gandhiji's Humanism and Philosophy has been a "natural" subject for UNESCO'S studies. His ideas and techniques for the solution of human problems, both at the national and international levels formed the theme of a seminar organised by the Indian National Commission in 1953. Gandhiji's Birth Centenary Celebrations in 1968-69 throughout the world were another landmark in the activities of UNESCO and the Indian National Commission. In fact, the World Body at its 1968 Conference adopted with acclaim a Resolution for worldwide observance introduced by India.

As part of this U. N. Day Celebrations on 22-10-73 School Children donned garb of all nations to demonstrate world integrity, as seen in the picture above.



## NOT BY PROFIT ALONE SHOULD OUR PUBLIC SECTOR UNITS BE JUDGED

Today, the public sector in India is in the spotlight. It has an investment of over Rs. 5,000 crores. It comprises 102 units with a wide variety of products, ranging from aircraft, aluminium, atomic energy, automobiles, coal, cement, electronics, hotels, machine tools, oil, power, steel, television and a host of other items. It employs over 7,00,000 persons. It has a 35% share in the total fixed assets of the entire corporate sector, a five-fold rise from 7.6% a decade ago. Amongst the top ten companies in India, 9 belong to the public sector and amongst the top 25, as many as 16 belong to the public sector. From the time Tata Iron and Steel Company dominated the industrial scene as a giant in the private sector, we have today a glaring transformation. Tatas are pushed to the tenth place by nine other public sector units.

Thus, from the point of view of investment, range of products, number of personnel employed, turnover and the part played in the national economy, public sector has undoubtedly made big strides within a short time.

Then, why all this criticism of the public sector, partly justified and partly unjustified? Public sector is wholly owned by the State and it has a corporate legal identity. There is no reason why public ownership in principle cannot achieve an efficiency and growth

rate better than private ownership. If there is a conflict between the public sector and private sector, by and large, it can only be attributed to ill-defined objectives, rather than the efficacy of each sector.

### How to evaluate?

Then, how do we evaluate the efficiency of the public sector?

Profitability is universally accepted as an important yardstick at our disposal in evaluating corporate performance, even though we have to admit that it is not the only criterion. However, let us first examine the performance of the public sector on this front.

M. K. RAJU,  
Chairman,  
Hindustan Photo Films.

We are generally inclined to make a collective evaluation of the performance of the public sector. This, however, is an unrealistic assessment, for, the encouraging performance of many may be marred by the discouraging performance of a few. Also units, which turned the corner once, may again go into loss without maintaining sustained profits. It was reported that the public sector projects made a collective profit of Rs. 9 crores in the

year ending 31st March 1973, against a loss of Rs. 14.5 crores in 1972. During the three years 1967 to 1969 it lost an average per year of Rs. 3 crores, whereas during the three preceding years from 1964 to 1967 it made an average profit per year of Rs. 15 crores. In the final evaluation, it is probably true that the public sector, rightly or wrongly built a poor image for itself, as a perennially non-profitable sector. This is somewhat uncharitable, when we take into consideration what they manufacture, what their problems are and why they incur losses.

It entered all fields when Private Sector was scared

To start with, the public sector had to enter fields in which the capital and resources required are too large to muster and the gestation period too long and the return on investment too unattractive for the private sector. It had to enter fields in which the private sector is not growing at the required pace. It had to enter trading to correct distortions in the economy and also keep down the prices. It had to enter fields on politico-economic considerations of restraining monopolistic tendencies. It had to enter defence production where cost had never been a consideration. The country has no alternative, but make such investments for national security and for national development.

The Hindustan Teleprinters turnover for 1972-73 at Rs. 422 lakhs reflects an increase of 28 per cent over the previous year. The net profits during the year are estimated at Rs. 68 lakhs as against Rs. 54 lakhs last year.

## HINDUSTAN TELEPRINTERS MARCHES AHEAD

Viewed in the context of a late power shortage in the State of Tamil Nadu, the achievement assumes special significance. The power cut was 25 per cent in October last and 75 per cent from February, this year. It was possible for this public sector project, situated at Guindy near Madras, to achieve these results by applying strict economy in the use of power available from normal sources. It also had recourse to alternative sources of power.

The performance of Hindustan teleprinters during 1972-73 registered an all-time high in all spheres. Production and despatches of machines and spares exceeded the targets set for the year. The number of main machines produced stood at 1,042 against the target of 6,000. Spares worth Rs. 61.68 lakhs were produced against the target of Rs. 60 lakhs. During the period under review a total of 6,154 machines and spares worth Rs. 66.92 lakhs were despatched over a target of 6,000 machines and Rs. 60 lakhs value of spares.

### PRICE REDUCTION

Hindustan Teleprinters is perhaps one among the few public sector, or for that matter private sector, projects which has maintained

a record of price reduction of its manufactures. The price of a unit teleprinter, which was about Rs. 7,000 in 1968, is Rs. 5,300 since September, 1970. This represents a reduction of 25 per cent in the price. The company has been able to bring about this against the rising price of raw materials, labour and other inputs. The current price per unit machine is less than half the price of an imported machine.

Another side of its achievement is the company's capacity to pay for its development programmes under the Fourth Plan from out of its own earnings and also provide for its growth under the Fifth Plan. The entire capital outlay of Rs. 120.33 lakhs for the Fourth Plan period is being met from its internal sources. Similarly, the outlay of Rs. 277 lakhs during the Fifth Plan is proposed to be met from internal sources.

### EXPORT AND PRODUCTION DESIGN

The company's performance on the export front has also been commendable. Manufactures valued at Rs. 7.42 lakhs were exported during the year. The main destinations were Nepal, Mauritius, Lebanon,

Jordan, Singapore, Belgium and Ceylon.

Among the new products on the company's assembly lines are electric typewriters of its own design and 25 and 50 Amps—power cubicles for the telephone and telex exchanges. The first lot of these power cubicles were delivered in February-March last, and the typewriters will soon be in the market.

### PROGRESS ON FINANCIAL FRONT

The paid-up share capital of the company is Rs. 82 lakhs and this is fully subscribed by the Government of India. The company has also taken deferred credit from its collaborators, Messrs. Olivetti, which is being progressively repaid. The balance of credit stood at Rs. 118 lakhs at the beginning of the year. This has been reduced to Rs. 88 lakhs at the end of the year. As against the Government's investment of Rs. 82 lakhs, the company's total contribution to the exchequer at the end of 1972-73 was Rs. 61 lakhs by way of dividend and Rs. 468 lakhs by way of Income-tax. The company has been regularly declaring dividends from the year 1965-66, which have progressively risen from 2 per cent. to 12½ per cent in the last two years.

The company is waiting for the consent of the Controller of Capital Issues to issue bonus shares in the ratio of one bonus share for every two existing shares for a total value of Rs. 41 lakhs.



# MANAGEMENT

## BY EXCEPTION

By

C. S. PARTHASARATHY,

DIRECTOR,

PLANNING COMMISSION.

The management task is becoming more and more complex in the modern age of rapidly advancing technology and in an area of rapid and harassing economic change. Apart from technological complexity, complexity can stem from wide geographical dispersion of operations, and the number of people to handle may be much too large. The number of activities a manager is called upon to manage, has multiplied; however he would like to bring them under close and effective control. There is, of course, a limit to human ability to deal with complexity. Without an organised and systematic approach to the task of managing, the managers can easily become swamped with a mass of detail which might grow beyond his capacity to handle irrespective of the many working hours he might put in each day. It is in situations like this that Management by Exception could serve as an aid to management.

### SIX KEY ELEMENTS IN MANAGEMENT BY EXCEPTION

Management by Exception in its simplest form is a system of identification and communication that signals a manager when and where his attention is primarily needed. The system remains silent when his attention is not required. The primary objective of such a system is to simplify the management process itself, that is, to enable a manager to identify and isolate problems that call for decision and action on his part, and to ignore or avoid dealing with those less critical problems which can better be handled by those at a lower level in the organisational hierarchy. Management by Exception has the following six key elements :

(i) **Measurement** : Assigns values often quantitative or numerical to past and current performance. Without measurement of some sort, it would be difficult to identify an exception.

(ii) **Projection** : Analyses those measurements that are meaningful to the organisation objectives and extends them into future outlook or expectations.

(iii) **Selection** : Pinpoints the criteria management would use to follow performance or progress towards pre-established objectives.

(iv) **Observation** : Is that phase of measurement that informs management of current status of performance.

(v) **Comparison** : Of actual performance or progress with planned or expected performance would identify the exceptions that require priority of attention and would report the variances or deviations to management.

(vi) **Decision-Making** : Prescribes the action that needs to be taken with a view to :

(a) Bringing performance or progress back to normal, or

(b) Adjusting anticipations to reflect changing conditions and circumstances, or

(c) Exploiting superior performance or opportunity.

In many respects, the concept of Management by Exception is inseparable from other management essentials. The philosophy of management by exception is also deeply rooted in the underlying principles of division of labour, delegation of authority and responsibility and span of control.

A major advantage of adopting the principle of management by exception lies in making management more efficient and effective and in preventing management from over-managing. In an area of phenomenal growth in technology, Management by Exception would stimulate a manager to actively search for or identify exceptions that would permit him to apply his creative faculty. Management by Exception is, therefore, not only a technique of monitoring but also a method of seeking out opportunities. The practice of Management by Exception would :

(i) Save a manager's personal time. He would be able to apply himself to fewer problems which really count at a given point in time.

(ii) Concentrate executive effort. Instead of spreading managerial talent thinly across all sorts of problems managerial effort would be brought to bear selectively on where and when it is needed.

(iii) Reduce distractions. It would only flag attention to critical areas of work effort. It would remain silent on matters that are proceeding normally and are under control, or that are delegated automatically to those lower down in the organisational hierarchy.

(iv) Facilitate broader managerial coverage. Concentrated, more effective management effort would enable the manager to increase the scope



of managerial activities and span of control. This would free the manager to tackle promising areas of operations that otherwise might remain unattended or undone.

(v) Lessen frequency of decision making. The system would be designed to make most of the minor decisions for a manager who would not have to check on every item of work under his jurisdiction or supervision every day to see if it is okay or not. The system would transmit to the manager only those few important or critical problems for him to rule on or act upon.

(vi) Make fuller use of knowledge of trends, historical and available progress data. Management by Exception, when applied systematically, would force a manager to review past history and related data of relevance, for these are the foundations upon which standards would be derived and from which exceptions could be noted.

(vii) More fully utilise highly paid managers on high return work. Because delegation is planned, it would more carefully relate and assign the more complex problems to the more talented and highly paid officials.

(viii) Identify crises and critical problems. It would assist a manager to ignore or avoid uninformed, impulsive pushing of the panic button. A crisis would almost always be recognised because seemingly unusual variations or deviations can be reliably and quickly compared with anticipated conditions.

(ix) Provide qualitative and quantitative yardsticks for judging the current situation or status. It would take away much of the subjective element out of the performance or progress appraisals by making the objectives, goals and standards of measurement tangible and specific.

(x) Enable inexperienced managers to handle new assignments with minimum of related experience and training. A new manager would benefit from measurements and projections that have been esta-

blished as standard for his functions in the past. He can depend upon the system to alert him to problems rather than having to rely solely upon his own knowledge and experience.

(xi) Alert management to bottlenecks and difficulties as well as to opportunities. It would help to counter balance purely negative, control-minded (i.e., policing) management. Attention could also be focussed on "break-through" variations or deviations as well as on omissions or shortcomings.

(xii) Encourage more comprehensive knowledge of all phases of operation. Management by exception cannot be practised systematically without continually gathering and updating actual and relevant facts about the various operations.

(xiii) Stimulate communication between various segments of the organisation. With its principal focus on results, management by exception would seek to relate casual factors, regardless of their place or role in the organisation with the overall organisational results. As such, it would encourage exchange of measurements between function and the cost centre in relation to which it reports.

## ADVANTAGES OF MANAGEMENT BY EXCEPTION

Thus much of the time-consuming process of thinking and decision-making can be performed in advance. A progressive system of action can be prescribed beforehand, much as a trouble shooter's manual may give an instrument repairman step-by-step directions to isolate a fault. As a result, only radical exceptions, either good or bad, need be interpreted and acted upon under pressure of circumstances and of time.

## A MANAGER'S PROBLEM

The manager's problem may, therefore, be summed up as follows. Firstly, he needs to convert his instinctive, unconscious approach to management by exception to a positive, systematic way of handling every kind of management problem — men, money, materials, machines, etc. Secondly, freed from the demands of routine work, he can fill his time with creative effort directed towards improving plans, organisations, staff, decisions, etc.

One of the key values of pursuit of management by exception is that it would facilitate selection, from a mountain of trivial data, of the essential and vital information needed to manage better. Management by exception can make management life simpler and more effective and prevent management from over managing. Exceptions are not only danger signals. In selected instances they also display a green light for opportunity. Practice of management by exception involves the possibility of establishing standards that may demand much conformity. Yet the underlying principle of management by exception is almost wholly dependent on conformance to standards. The management process may be looked upon as a continual cycle of "break through" and "control." If an organisation were to keep alive and healthy, it should be prepared to break through its current set of standards to new levels of performance. The exceptional approach consciously practiced would assist and abet each phase of the cycle.

Management by exception is, however, not a panacea for all management problems. It has its limitations as well as its values; and it is especially limited by the vagaries and intractability of human beings at work.

It is often said that countries have only interests, no friends. I consider this a highly cynical notion. I hold friendship between countries can be established and nurtured only on the basis of common bonds that unite them and common principles that basically govern them. The ties between India and Russia can be traced to the historical past, but what has united them in our times are the identity of views and aspirations they hold. The same humanism, the same love of peace on earth, ending of exploitation of man by man and establishment of equality of all mankind that underlie their ideologies animate the peoples and governments of both the countries.

Both Mahatma Gandhi and Jawaharlal Nehru have held USSR in high esteem. Jawaharlal Nehru, as Prime Minister of India, laid the foundation of Indo-Soviet friendship. As the architect of India's policy of planning and industrialisation, he derived his inspiration undoubtedly from the achievement of the Soviet Union. His dreams are now being fulfilled with the increasing assistance that is being given by the Soviet Union and her Socialist allies of the COMECON countries.

## DECISIVE AID FACTOR

Soviet aid is of lasting value, both in content and purpose. It is aimed at building and strengthening the infrastructure of the Indian economy, its sinews and muscles. Today, Soviet-aided projects are responsible for India's production of 85% heavy engineering goods, 60% of turbo-generators and heavy electrical equipments, 30% of oil products, 30% of steel and 20% of electric power.

The building of Bhilai Steel Plant was a turning point in the history of India's economic development. It is a fact that it was only after the Soviet Union came forward to establish this steel plant, Western countries rushed with offers of assistance for the construction of Rourkela and Durgapur Steel Plants.

Oil is of vital importance, both in war and peace. The oil needs of India are increasing year after year. But it was said that India had no oil. Soviet cooperation not only

# THE INDOSOVIET TREATY OF FRIENDSHIP

helped to disprove this but also to set up a full-fledged national oil industry. Barauni and Koyali Oil Refineries, which were established with Soviet assistance, are now producing 35% of India's oil output.

The Mathura refinery, with a capacity of six million tons of oil products, is a major Indo-Soviet project, which is expected to be of considerable economic significance to northern India. When it goes into production in 1978, it is expected to meet the demand for various middle distillates.

DR. B. NATARAJAN,  
Member,  
Tamil Nadu Planning Commission.

## NEW FORMS OF ASSISTANCE

The Soviet Union at the request of India has also started constructing ships for the Shipping Corporation of India and the first ship made its maiden voyage to Madras recently. This trend is expected to be progressive in the future years. The Soviet help in this field can be measured from the fact that

India now spends about Rs. 170-180 crores in foreign exchange on freight charges alone.

Scientific co-operation with Soviet Union has resulted in the establishment of a rocket-launching station at Thumba. The scientists of both the countries are conducting joint studies on the nature of monsoons and the Monex-73 Programme is an outcome of this fruitful co-operation.

The growth of trade between India and USSR has been phenomenal. From Rs. 13 million in 1953, it rose to Rs. 396 crores in 1972 and is expected to reach Rs. 410 crores in 1973. With the setting up of the Indo-Soviet Commission on Economic, Scientific and Technical Co-operation in 1972, a new stage has emerged in the relations between the two countries. At its first session in February this year plans for extensive co-operation in many fields, such as ferrous and non-ferrous metallurgy, oil extracting, oil refining, etc. were formulated. This will give a new momentum to both economic cooperation and mutual trade.

Soviet Union has always been a true friend of India. She has always given a helping hand to India in times of need, and had supported her independent policies. How can India ever forget the innumerable times when Soviet Union supported India's case at the United Nations Security Council—over Kashmir, Goa, the Indo-Pak. conflicts in 1965 and 1971? The latest act of supplying 2 million tons of food grains to India as an unconditional, unasked for loan has been cited as a tribute to the friendly relations between countries.

## MAJOR LANDMARK

The friendship and co-operation between India and Soviet Union are growing year after year. The signing of the historic Soviet-Indian Treaty of Peace, Friendship and Co-operation was a major landmark. It has provided both countries a new framework for mutual relations based on complete trust and confidence. The forthcoming visit of L. I. Brezhnev to India will bind this friendship with "hoops of steel."

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## PETROLEUM CRISIS: WHY?

It may be asked why there is shortage of petrol after 23 years of economic planning. Shortage has to be considered in relation to demand. India was so underdeveloped at the time of independence, and our standard of living was so low, that in 1948 the demand for petroleum products was only 2.6 million tonnes. Almost all of it was imported, domestic production of petroleum products being only 185,000 tonnes.

By 1972 the demand rose to some 23 million tonnes of petroleum products. The vast increase in demand reflected the rapid development of industries and of modern means of transport in our country. And nearly 90 per cent of the demand was met through internal production.

### INDIGENOUS REFINING SAVED FOREIGN EXCHANGE

This became possible because we took steps immediately after freedom to establish oil refineries, first in the private sector and then, under the Five Year Plans, in the public sector. It is much cheaper to import crude oil and refine it into petrol, kerosene, diesel, naphtha, bitumen, cooking gas and lubricants than to import these petroleum products. The foreign exchange saved through indigenous refining is presently at least Rs. 100 per tonne.

Side by side with the development of refining capacity, we have successfully developed oil exploration and extraction. At the time of independence there was only one small oil production centre, in the Digboi Oil Field, in Assam, and the level of production was a quarter million tonnes per year. Today, with discovery and exploitation of oil in the north-eastern region and in Gujarat, domestic production of crude oil—the greater part of it in the public sector—has gone up to seven million tonnes or 28 times the 1948 level.

This is, however, not enough to meet the demand for petroleum products. As in the case of electric power, steel fertilizers, where too indigenous production has increased

by leaps and bounds but still falls short of demand, domestic oil production is insufficient. Indeed the gap in the case of crude oil is large: indigenous crude oil production meets only 30 per cent of the requirement of refineries, and the balance is imported at heavy cost in foreign exchange.

### CUT IN PETROL CONSUMPTION HELPS NAPHTHA PRODUCTION

International prices of crude oil have trebled during the last three years. Hence the need to restrain the demand for less essential petroleum products like petrol, and to conserve the available crude oil for essential uses such as naphtha on which the bulk of our present production of fertilizers is based. Import of naphtha is an alternative but it has not only become forbiddingly costly (its international price has gone up by nearly six times), its very availability has shrunk drastically, one reason being higher off-take by the affluent countries who have become conscious of environmental pollution and are turning to distillates like naphtha which have a lower sulphur content and are less pollutant.

A 25% cut in the consumption of petrol will enable us to produce additional 425,000 tonnes of naphtha in place of petrol. With this supply of naphtha our fertilizer plants will be able to produce 850,000 tonnes of urea. Normally every tonne of urea helps to produce 6 to 10 tonnes of additional wheat. Therefore, we would be bringing about an additional production of 5 to 8 million tonnes of foodgrains merely by curbing the consumption of petrol by 25%. Every litre of petrol saved is thus virtually equal to 10 Kg. of foodgrains.

Incidentally, there is a world-wide shortage of urea too, and despite sharp price hikes, it is becoming increasingly difficult to import it.

We have therefore to conserve every ounce of crude oil for making essential products like naphtha to increase the production of fertilizers and of diesel oil to run our road transport system as well as agricultural pump sets and tractors. This

can be done only by discouraging and minimizing the demand for a less essential product like petrol.

### A WORD TO THE CAR OWNER

You know only too well that the Government has raised the price of your petrol substantially. Do you equally appreciate why this had to be done?

You are among the lucky few Indians who own a motor car: only one family in a thousand has a car. Yet private motoring accounts for almost half the petrol consumption.

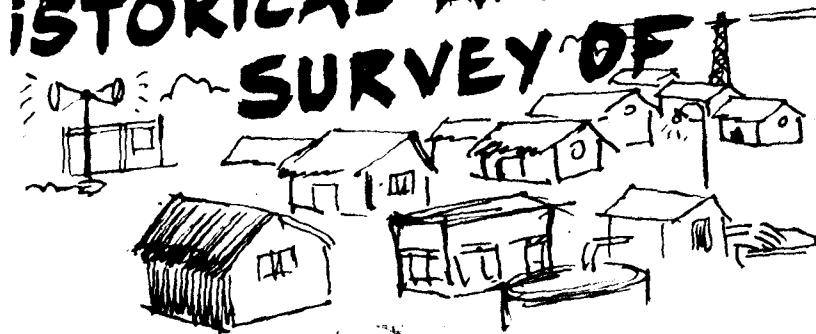
Petrol is one, and not the most essential, of the products distilled in our refineries from crude oil—for which we are dependent to the extent of 70% on imports whose price has more than trebled during the last three years. Consequently the foreign exchange requirement has increased from Rs. 200 crores last year to Rs. 500 crores this year.

There are other petroleum products which are more essential, such as naphtha for making fertilizers diesel for public transport and for agricultural pump sets and tractors, and furnace oil for power generation, steel production, etc. Every litre of petrol saved will enable production of naphtha which can be turned by our fertilizer factories into urea, enough to grow 10 Kg. of foodgrains.

The hike in the price of petrol is intended to restrain its consumption as well as to generate resources for investment in economic growth, including the exploration and extraction of more oil within the country so as to produce enough petrol, among other things, to meet all needs.

## SAVE PETROL FOR SAKE OF MORE FERTILISERS

## A HISTORICAL AND ANALYTICAL SURVEY OF



## THE VILLAGE IN TAMILNADU

Tamil Nadu comprises 17043 Revenue Villages linked to the Taluk and District units of the Revenue Administration of the State. In terms of the Panchayat Raj set up there are 12628 Village Panchayats as on 31-3-1972. The Revenue village is an administrative unit whereas the Panchayat village is a Statutory unit related to the 374 Panchayat Unions encompassing the State. Then there are also 600 Town Panchayats and 11 Townships. Each Panchayat will comprise some contiguous hamlets. Such hamlets total 43228.

In the matter of rural electrification, however, the Harijan settlements forming part of each hamlet is treated as a distinctive unit. Therefore readers are often baffled by different numbers appearing as the total number of villages in Tamil Nadu.

In this article the large variety of administrative measures attempted for the resuscitation of village autonomy over the last 150 years are discussed while in the succeeding two articles the changes in village structure recommended by the State Administrative Reforms Commission and the proposals of the State Planning Commission's Task Force are furnished.

## CONCEPTUAL DISTINCTIONS BETWEEN REVENUE & PANCHAYAT VILLAGES

A revenue village is the smallest unit recognised in revenue administration having definite boundaries which are not statutorily fixed in Tamil Nadu, but are fixed by the administrative orders issued by the Government from time to time. The administrative division is as follows: Each district is divided into taluks to be in the charge of a Thasildar. It is further sub-divided into firkas under the control of the Revenue Inspector. Next come the Revenue Villages which function under the control of the Village Munsiff assisted by the Village Karnam as his accountant. The revenue village is a definite area which has been treated as a convenient unit for administration by the ordinary staff of village officers, consisting of the Headman, Munsiff, Accountant and certain number of menials.

### Nature of Panchayats

In Tamil Nadu, revenue village has never been treated as a single collection of villages, but a term denoting a certain well defined area. The extent of the area depends on past history based on administrative convenience at the time of resettlement of a district. It is usual to amalgamate contiguous villages which are too small to have separate village officers and again to sub-divide those which are too large for

the set of officers to manage gently. It may sometimes happen the constitution of the villages be recharged even when any enrichment is considered by the Government as a general policy. Sometimes two villages will be in charge of one set of village officers. The revenue village consists of several detached hamlets, one of which gives its name to the whole revenue village. The number of hamlets attached to a village has never been taken account. The size of the revenue village can vary from district to district both in area and population. In a particular district a single Headman is sufficient for over 1,000 persons, a Headman need not be provided for a village with lesser population in another district. The general tendency in the case of various tracts is towards a village of large size, but this is modified by the existence in some districts, especially in Chingleput and Thanjavur, of rasi or joint villages, the amalgamation of which with others will be administratively inconvenient. In some areas, villages would necessarily be larger than in wet areas. The Village Accountant has extra items of work in wet areas like irrigation, regulation of water rate, imposition of cesses. More crops will be raised in wet areas. Sometimes reclamation has been undertaken in some districts to remove these liabilities. Lastly in Zamindari areas which previously formed a proportion of area of the size of the village depended on long-standing custom, unaffected by changes relating to the revision of the establishment. The tendency in such tracts is to form smaller villages. With the abolition of the Zamindari system, a large scale amalgamation of villages has been undertaken with the result that some of the Zamindari and Estate villages have disappeared.

### Evolution of Institution of Panchayats

In view of the importance of the institution of panchayats, it is useful to take an historical retrospect on the evolution of panchayats of Tamil Nadu. They are not only important as the building grounds of democracy, but also as units, which will in due course assume statistical importance. It is generally assumed that in ancient

times village panchayats formed an integral part in the national life of our country. They are deemed to be self-contained, economical administrative units functioning like a small republic, enjoying a good deal of local autonomy with powers of taxation for local purposes. To what extent this idealistic conception is true to reality, cannot be vouched for, but it is likely that a high degree of self-contained village life has existed in the past. Further till the advent of the British rule in India, the impact felt by the villages of the Central authority was comparatively little except during times of war. The first tendency of the British rule in India was to have a centralised system of administration and a gradual decay of the role of village panchayat was inevitable. Administration of justice was taken over by Civil and Criminal Courts controlled from the Centre and the Police function of the villages was undertaken by a specially created department called Police. Again, administration of the land revenue was vested in a separate department of Government. It also accelerated the movement of people from villages to towns with the result that self-reliance which the villagers had, gradually disappeared and the village panchayat as a useful rural institution sunk into insignificance. In their wisdom, the British administrators did realise in due course the significant role of village panchayats in India. Montague Chelmsford observed in 1820 that village panchayat would prove an excellent remedy for the imperfection of a bad form of Government. They felt that the State should take definite steps to promote among the people the habit of voluntary co-operation in public work.

### Lord Ripon Initiated Enactment

The credit for realising the importance of initiating new measures in that direction goes to Lord Ripon whose resolution of 1882 regarding the association of non-officials in administration of local institutions led to the passing of the Madras Local Boards Act of 1884. It provided for the constitution of unions in small towns and large villages, mainly for looking after village roads, sanitation and lighting. About 400 unions were established,

the members of which were all nominated. After the visit of the Royal Commission on Decentralisation, the then Tamil Nadu Government decided to increase the number of these unions and introduced the principle of election. They also decided to constitute informal panchayats under the control of Collectors with the Local Village Headman as ex-officio Chairman. About a thousand of these informal panchayats were accordingly constituted, but they had no statutory basis.

The next step was taken in 1918 when the Government of India in their review of the working of self-governing institutions pointed out the desirability of keeping panchayats as far as possible under the control of district staff and away from other administrative bodies. They also suggested the association of village officers with panchayats and advocated simple and elastic legislation to bring the panchayats into existence. The Madras Panchayat Act, 1920 was accordingly passed and enforced. It enfranchised men over 25 years of age and provided for election of all members of the panchayat. A post of Registrar-General of Panchayats was created to supervise the panchayats and he was aided by the non-official organisers. Side by side with these panchayats, the unions constituted under the Local Boards Act of 1884 and its successor, Madras Local Boards Act of 1920 also continued to function. The principle that the panchayat should be placed under the control of the district staff was not accepted at that stage.

### Panchayats Placed on Par with the Panchayat Unions

By 1928 the number of panchayats increased to 3,000. The Government realising the difficulty experienced by Registrar-General to supervise so many village bodies transferred the well established panchayats to the control of the Collectors. Before the effect of this change could be gauged, Madras Village Panchayats Act of 1920 was repealed by the Madras Local Boards Amendment Act of 1930. That Act amended the Madras Local Boards Act, which was then in force, so as to bring within its scope the panchayats

constituted under the Village Panchayat Act. The panchayats were thus placed on the same footing as the unions which were already governed by the Local Boards Act and they acquired also considerably enlarged powers.

It was found that the condition of panchayats under the dual administration of District Boards on the one hand, and on the other of the Inspector of Municipal Councils and Local Boards, was generally unsatisfactory. The Madras Village Panchayat Act, 1946 (Act No. XII of 1946) was accordingly enacted by the Governor-General during the Advisers' Regime.

The aim was to exclude panchayats from the scope of Madras Local Boards Act, 1920 by framing a separate enactment and to place them under the District Collectors. The Ministry was, however, of the view that in order to make the panchayats really democratic institutions, control and supervision should be vested in Inspector of Local Boards and the control of District Collectors over the panchayat should be limited to certain emergency powers and panchayats should be vested with more powers. The Madras Panchayat Act, 1946 was therefore allowed to lapse in 1948.

The next step was the enactment of the Madras Village Panchayat Act, 1950 enforced with effect from 1st April, 1951. This is in implementation of the Article 40 of the Constitution which has enjoined that the State shall take steps to organise panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government. Under this Act, every village or hamlet with a population of 500 and above will have a panchayat. Villages with a population of less than 500 will be included within the jurisdiction of an adjoining panchayat or grouped with other contiguous villages to form a panchayat. The Act enjoins on panchayats certain obligatory functions such as construction and maintenance of public roads, lighting of street lights and public place, construction of drains, cleansing of streets, removal of rubbish, provision of protected water supply.

The main revenue for the panchayat was derived from the share of

the land cess realised in the village. Government also made ex-gratia grants. Government had supervision and control over village panchayats through the Inspector of Local Boards. The District Boards had no control over panchayats. They performed village panchayat function in non-panchayat areas until panchayats were constituted. The District Collectors did not have any control over panchayats except for certain emergency powers in ensuring safety of life and property and for breach of peace.

With the impact of the Community Development Programme, the Government of Tamil Nadu embarked on a new programme of development of panchayat administration. For this purpose a new Act—Madras Panchayat Act, 1958—was enacted. Accordingly a three year programme of the introduction of new Madras Panchayat Act was drawn up for every district. The entire rural area has been divided into development blocks for operating National Extension Service Scheme. These blocks were grouped in three batches. The Act was introduced in each batch of blocks during each of the next three years—1959—60, 1960—61 and 1961—62. With the introduction of the new Act in each development block, it became a distinct development block under the new Act with new set-up of panchayat administration installed therein. The old Panchayat Act and District Boards Act which provided statutory basis for the present set-up of local administration in rural areas ceased to be in force.

A special provision has been made in the Act for classification of a locality as a township under the Panchayat Act. This provision is intended for use when there is industrial labour or institutional colony or a health resort for which normal financial arrangements of either a panchayat town or a panchayat village will be unsuitable.

### Delimitation of Panchayats with Local People's Consent

As a matter of administrative policy, no panchayat village can be delimited with a smaller population than 1,000 unless it can be shown to the satisfaction of the Government that such delimitation cannot

be avoided. Subject to this limit, the convenience and wishes of the local people have been respected in delimiting panchayat villages. For every panchayat village, a village panchayat has been set up and for every panchayat town, a town town panchayat has been set up.

These village panchayats and town panchayats are the local units of federal structure of organisation of panchayat administration while the panchayat union is to be the apex of this organisation. This set-up is somewhat different from that of the normal administrative machinery with taluks, municipalities and villages forming the administrative units. One essential difference between the two set-up as far as Tamil Nadu is concerned is that the panchayat is formed on a statutory basis.

Till the Act of 1958, panchayats and revenue villages have functioned in separate compartments. Some co-ordination now exists between the villages and the panchayats which is indicated below :

Under the Panchayat Act of 1958, Karnams (Village Accountants) have been designated as Secretaries of Panchayats. The Panchayats and Panchayat Unions have a number of statutory and discretionary development functions under Sections 64 to 66 of the Madras Panchayat Act, 1958. The Act has provided for the provision of adequate finance for discharging their responsibility. The main sources of income the panchayats are—local cess, local cess surcharge, house-tax, profession-tax, vehicle-tax and land revenue assignment (vide Section 115 to 124 of the Madras Panchayat Act, 1958). Under Section 126 of the Act, it is the duty of the village officers to collect taxes on behalf of the panchayat. Village Accountants help the President to arrive at the total demand of the panchayat. On the basis of the account furnished by the President, the Village Munsiff collects taxes. Thus a co-ordinated effort of the Village Accountant, Village Munsiff and the President is necessary for the provision of adequate finance to the Panchayat. The village officers are also paid additional remuneration for the work.



The Report of the Task Force on Rural Development (including Rural Housing) seeks to formulate a Perspective Plan for a progressive Rural Development Programme as co-ordinated measures for an accelerated Rural Development Programme assume exceptional significance. This is in view of the importance of the agricultural sector in supplying food and nutrition to the people and materials to industry. It is also due to the fact that nearly 70 per cent of the population of the State live in rural areas; and the benefits of development should be spread in these areas on as wide a scale as possible, especially to the poorer and weaker sections, who constitute the large and vulnerable segment of the rural population.

#### TOP PRIORITY FOR RURAL WELFARE

Even if all the wants of the rural population cannot be met immediately due to limitation of resources, the criteria of social and economic justice necessitate that at least their minimum needs of life and labour are adequately met. The success of all plans designed for the socio-economic development of the State and the country would depend to a large measure on the initial creation of conditions favourable to progress, especially in the country-side. The improvement of rural life in all directions should, therefore, be the first and foremost step in any plan designed to promote the well-being and prosperity of the people.

#### MINIMUM NEEDS TO BE MET

The improvement of the general conditions of the country-side calls for detailed plans for protected water-supply, proper approach roads to villages and hamlets, educational facilities including those of social education, sanitation, health services, good houses, etc. To achieve these objectives, the basic assumption of Rural Development Planning is that all aspects of rural life are inter-related and that no lasting results can be achieved if individual aspects of it are dealt with in isolation. Accordingly, this Plan for Rural development embraces the work of every department of the Government which is engaged in rural welfare and development activities and has been conceived

## VILLAGE CENTRED TOTAL DEVELOPMENT APPROACH

AS  
RECOMMENDED  
BY  
THE  
TASK  
FORCE  
ON  
RURAL  
DEVELOPMENT  
OF  
TAMIL NADU  
PLANNING  
COMMISSION

The socio-economic development of the State as well as the country depends to a large extent on the initial creation of conditions favourable to progress and prosperity, especially in the country-side. In this light of past experience, the Task Force on Rural Development of Tamil Nadu Planning Commission, has in its report, stressed that the all-round improvement of rural life should be the first and foremost step in any plan designed to promote the well-being and prosperity of the people.

from a total perspective, avoiding lop-sided growth by departmental or fragmental approach.

As a general approach to Rural Development-cum-Panchayat—it is imperative that the Community Development-cum-Panchayat Raj institutions should be more effectively involved in rural development. These institutions are meant for securing the fullest development of the material and human resources of the rural areas. To-day, the Panchayat organization has become the pivot of Area, District and Regional Planning and Development, and practically all development activities at the block-level are executed through the Panchayat Unions.

#### THE MAJOR OBJECTIVES OF THE PLAN

The major objectives of the pragmatic plan for rural development presented in this report are the provision of the basic minimum needs which will ensure 'the quality of life' for the rural poor and the provision of vastly expanded employment opportunities in the rural areas. This Plan anticipates the enthusiastic participation of the people in the development programmes, which is a necessary condition for their success. Therefore, the Community Development-cum-Panchayat Raj institutions are proposed to be further galvanized in the Perspective Plan period to become the Effective Instruments of Social and Economic Change.

#### A BRIEF ACCOUNT OF THE PROGRAMMES PROPOSED

##### SOCIAL EDUCATION

The Programmes contemplated include Community Recreation Centres, Radio Forums, Youth Clubs, Functional Literacy Schemes, Seminars, Award of Prizes, etc. The programmes relating to the organization of Youth Clubs, Radio Rural Forums, Recreation Centres, etc., have been treated as voluntary activities to be sustained by local efforts. A Block Circulat-

ing Library with branch libraries and a "Quarterly Digest on Panchayat Administration and Extension Work" are also proposed. It is felt that such measures are necessary to inculcate a sense of literary consciousness and proper citizenship among the masses. The Digest will go a long way in increasing the knowledge and efficiency in work of the officials and non-officials connected with Panchayat Administration.

It is recognized that there should be a higher priority for the school buildings programme so as to utilise these fixed assets to the full use for the common, social and economic needs of the people, as besides formal education, the success of functional literacy programme and vocational bias to education depends on these social assets. Taking into consideration the paucity of resources available, a total outlay of Rs. 51 crores has been provided for the construction of buildings for Elementary Schools and Higher Elementary Schools in the rural areas.

##### AGRICULTURE

The programmes contemplated include schemes for providing infrastructural facilities like construction of agricultural sub-depots and additional godowns, schemes of agricultural extension work like adoptive trials, demonstrations, exhibitions, etc., schemes for the creation of common facilities for the benefit of the village community as a whole like purchase of implements and machinery for hiring out to farmers and construction of Community Threshing Floors, schemes for the benefit of groups of farmers like soil conservation, community irrigation wells and reclamation of alkaline lands and other schemes like village afforestation, panchayat plantations and planting of avenue trees and schemes for the benefit of the individual farmers like supply of plant protection chemicals, supply of fertilisers and supply of power-driven equipments.

##### ANIMAL HUSBANDRY

The programmes contemplated include schemes for provision of infrastructural facilities like service centres, construction of additional veterinary dispensaries, sub-centres

and quarters for veterinary staff, animal husbandry extension schemes like exhibitions, printing of publicity materials and training in poultry, schemes benefitting the village community as a whole like creation of common facilities like supply of breeding bulls, construction of cattle sheds, organization of sewage forms, raising of fodder grasses in Panchayat porambokes and schemes to benefit individuals like encouragement of mixed farming by supply of poultry at subsidised rates and growing of fodder and grain required for cattle and poultry.

The schemes for the development of fisheries in the Panchayat Union areas are broadly the introduction of fingerlings, operation of fish nurseries and maintenance and renovation of tanks.

##### MINOR IRRIGATION

During the Third Plan period, under the Tamil Nadu Panchayats Act of 1958 all the Minor Irrigation Sources with an ayacut of less than 200 acres were transferred to the Panchayat Union Councils. Similarly, the ex-zamin tanks after standardisation were also transferred from time to time. There are now about 25,246 sources with an ayacut of 9.85 lakhs of acres under the control of the Panchayat Unions. They are in different state of repairs. Hence the future direction of development lies in standardizing and improving these Minor Irrigation Sources. Necessary programmes have been evolved to bring these Minor Irrigation Tanks to standards and to increase the M.I.L., in order to increase the ayacut.

##### WELFARE OF WOMEN AND CHILDREN

The programmes relating to the organization of Mahalir Mandrams under the Minimum Programme consist of organisation of local women through discussions and demonstrations on subjects like Child Care, Home Science, Kitchen Garden, etc. Adult literacy classes are conducted and crafts such as sewing and embroidery are also taught.

Staff quarters have been provided in Block headquarters out of the Community Development funds

only in 194 Blocks. It has been proposed to cover the remaining 180 Blocks during the Fifth Plan period itself. Similarly, additional units of houses have been proposed for the Government staff in each Block head quarters. Necessary schemes have also been proposed for office buildings wherever necessary and garages for jeeps.

##### RURAL WATER SUPPLY

It is strongly felt that the pattern of programming and financing the rural water supply schemes hitherto done separately under various categories like 'simple wells', 'pipe water supply' and 'wells in scarcity areas' may give place to an Integrated Scheme of Rural Water Supply which will make it possible for each area to take up such schemes that are suitable to it. Therefore, it has been proposed to earmark specific provision for disadvantaged areas under a new "Disadvantaged Area Water Supply Grant". There will also be a new "General Purpose Water Supply Grant", the funds of which are to be distributed on a per capita basis to cater to the requirements of all areas. Needless to add, the Rural Water Supply Programme has been assigned a very high priority in the Rural Development Plan envisaged in this report.

##### DRAINAGE IN RURAL AREAS

The problem of drainage in rural areas is a long neglected one. In villages where narrow lanes and alleys separate the houses facing each other with no backyards, the sewage water stagnates in pools in the undulating road surfaces making the entire surrounding insanitary. Hence, it has been proposed to construct side-drains on each side, which will serve as a revetment to fill up the uneven lane surface and pave them.

##### RURAL ROADS

As provision of link roads alone will provide the quality of life to the rural population, a high priority is given for the Rural Roads Programme. The schemes contemplated also provide for metalling and blacktopping of roads in hill areas.

## RURAL HOUSING

The Task Force has made important recommendations as regards Rural Housing. It is strongly felt that the house sites allotted must have adequate space for a homestead and enough land to raise a kitchen garden, to maintain a backyard poultry or some milch animals. Therefore, it is felt that a house site should be at least about 10 to 15 cents in extent. It is also felt that the allotment of house sites here and there, irrespective of the principles of Town and Country Planning, may aggravate the cost and make the net social benefit uncertain. Therefore, it has been recommended that elevated grounds, as far as possible near the workspots may be acquired and proper lay-outs with streets, parks, etc., prepared so as to ensure the provision of common services and amenities.

The concepts of urban architecture should be substantially modified to suit the rural land use and building material choice. A Rural Housing Scheme on the Kerala pattern has also been proposed.

The Village Housing Project Scheme is found to be a good scheme in operation. Therefore, the Task Force has recommended a wider extension of the scheme.

It is recognized that to tackle the problem of Rural Housing, huge outlays are required. It is also noted that the State and the Union Governments have to allocate their limited resources among various priority programmes. Therefore, it may be difficult to earmark very huge outlays for Rural Housing Programmes alone. In the circumstances, it is considered that it would be useful to form a State Rural Housing Corporation with an initial seed capital. This Corporation will then be able to mobilise resources for its programmes through institutional finance and other available means. The Task Force has therefore strongly recommended the early establishment of a Tamil Nadu Rural Housing Corporation.

## RURAL ARTS, CRAFTS AND OTHER INDUSTRIES

It is recognized that Rural Industries have to be accorded an important place in the development of

the rural economy in view of their capacity to generate employment opportunities in the rural areas at a low capital cost. Tamil Nadu, the seat of the ancient Dravidian culture, has a global reputation for its handicrafts, which are of rare excellence and design both from the points of view of utility and decoration. There is a great future for the economy of Tamil Nadu if skill formation and use in handicrafts are made consistent with the popular demand created for the products. Keeping this in mind, the Task Force has formulated a number of programmes for the promotion of handicrafts. Of these programmes, special mention may be made of the scheme for opening Raw Material Depots and the scheme for the establishment of a Price Fluctuation Cess Fund to protect the interests of the weaker sections of the handicrafts units.

## COIR

The Task Force has also formulated schemes for developing the Coir Industry in the State. Though there is great scope for the development of this industry, still it is in an infant stage. Hence, the Task Force has formulated schemes for its promotion with financial assistance from the Coir Board or from the Government of India.

## RURAL WORK CENTRES

Besides the extension of the Rural Industries Project Programme to more areas, the Task Force has also recommended the establishment of a number of Rural Work Centres.

## OTHER SPECIAL PROGRAMMES OF RURAL DEVELOPMENT

The Task Force has recommended the wider extension of the Rural Man-power Programme, the Applied Nutrition Programme and the Crash Scheme for Rural Employment. With regard to Nutrition Programmes, the Task Force has made the following recommendations.

## NUTRITION

The Nutrition Programmes in the Block areas were financed under a variety of schemes such as the Pre-school Feeding Programme, the CARE-assisted Feeding Program-

gramme, the Demonstration Feeding Programme and the Applied Nutrition Programme. A multiplicity of feeding programmes with differing patterns of financial assistance results in difficulties. The implementation of the Pre-School Feeding Programme in isolation without the participation of *Mahalir Mandrams* does not tend to create a visible impact on local women. Therefore, the strategy contemplated by the Task Force is the operation of a Composite Unit consisting of a *Mahalir Mandram*, a Pre-School and a Creche, in order to benefit the working women belonging to the weaker sections of the community. Such a Composite Unit and Programme may bring about a greater and intensive participation of the working women in the *Mahalir Mandrams*.

## RESEARCH AND DEVELOPMENT PROGRAMMES

The Rural Development aspects of a planning have to be subject to a fundamental thinking as to their uniqueness in contrast to urban development aspects of planning. Otherwise the economic logic of operating a separate rural development programme will be open to question. The Task Force has therefore formulated Research and Development Programmes like 'Studies in Socio-Economic planning for Rural Development', 'the Research and Development Scheme for Handicrafts' and 'Research in Rural Housing'. With regard to 'Research in Rural Housing', the Task Force has recommended the early establishment of a *Research Wing in the Rural Housing Cess*.

## TOTAL OUTLAY CONTEMPLATED FOR RURAL DEVELOPMENT

A total financial outlay of Rs. 65,799.84 lakhs or about Rs. 658.00 crores is contemplated in the Perspective Plan period for the various Rural Development Programmes. The programmes provide for an investment of Rs. 28,312.57 lakhs or about Rs. 283.13 crores in the Fifth Plan period and Rs. 37,487.27 lakhs or about Rs. 374.87 crores in the Sixth Plan period.

—oOo—

The Directorate of Rural Development runs the following Training Centres in which elected representatives of the Panchayat Raj Institutions, District Officers of different development departments and Officers of the Panchayat Raj Institutions are trained :

1. State Institute of Community Development.

2. Rural Extension Training Centres with Workshop Wings attached.

## STATE INSTITUTE FOR COMMUNITY DEVELOPMENT, BHAVANISAGAR

The following courses are organised in this Centre :

## (a) COURSE FOR PANCHAYAT UNION CHAIRMAN AND VICE-CHAIRMEN

Three courses with 40 Chairmen of Panchayat Unions and Vice-Chairmen in each Course are run for a period of 10 days each. These courses are intended to give the elected representatives a knowledge and background about the working of the Panchayat Raj institutions and rules.

## (b) ORIENTATION COURSE FOR DISTRICT OFFICERS OF DIFFERENT DEVELOPMENT DEPARTMENTS AND EXTENSION OFFICERS

Six courses of a fortnight's duration each are run with 50 District Officers and Extension Officers in each course with a view to orient them to the Panchayat Raj concept and to imbibe them with the idea of co-ordinated approach to development.

## (c) JOB COURSE FOR BLOCK DEVELOPMENT OFFICERS

This course is for a period of 2 months and is given to the Block Development Officers to train them in their work.

## (d) AD-HOC COURSES

Other courses like the Applied Nutrition Programme, Training for District Officers, etc., are also organised in this Centre.

# TRAINING FOR LOCAL LEADERSHIP AND RURAL WORK

## RURAL EXTENSION TRAINING CENTRES

The following training programmes are conducted in the Rural Extension Training Centres :

(a) **Pre-Service Training** : Before appointment as Gramsevak, the selected candidates are given two years training in Agriculture, Animal Husbandry, Co-operation, Public Health, Panchayats, etc., with a view to equip them for the job. To facilitate teaching of Scientific Farming, a Farm Dairy Unit is attached to each Training Centre. During 1972-73, 400 candidates have been selected for appointment as Gramsevak and they have been sent for the pre-service training.

(b) **One-Year intensive training in Agriculture for selected Gramasevak** : To improve the competence of Gramsevak, particularly in the field of agriculture, a one-year training leading to the Diploma in Agriculture Extension is conducted. The Gramasevak with experience in the field are selected for this course. So far 959 Gramasevak have been trained.

(c) **Workshop Wings** : At present, Workshop Wings are attached to all the Rural Extension Training Centres. In each Workshop Wing, 10 trainees in Carpentry and 10 trainees in Blacksmithy are given training for one year. So far 961 candidates have undergone this training.

The three Workshop Wings at the Rural Extension Training Centres at Pattukkottai, T. Kallupatti and Bhavanisagar have been upgraded as Production-cum-Training Centres during 1970-71 and are now taking up repair and maintenance of agricultural machinery in the neighbouring Blocks.

These training programmes have gone a long way in equipping the Block officials at different levels and the non-officials connected with the Community Development and Panchayat Development Programme to carry out their duties and responsibilities effectively.

The State Administrative Reforms Commission, in its report on the District Revenue and General Administration has recommended material changes in the structure and the style of working of the department, to make it more responsive to the needs of the rural population.

One of the major problems identified by the Commission, as calling for urgent solution, is the unsuitability of the present village establishment to cater to the needs of the rural society. The system was evolved by former rulers, primarily to use the local chieftains, to keep a watchful eye on a sullen people. The concept behind it was essentially feudal, and not one of service to the people. The ill-paid, part-time Village officials, not fully amenable to the governmental discipline, are behind most of the village controversies, neutralising the effectiveness of the elected village panchayats. Their feudal traditions and their inaccessibility to the poorer and weaker sections in the village have convinced the Commission, that they must be replaced by a set of regular transferable government servants forming part of the Revenue Department who will be disciplined in the tradition of the Department, and who will be motivated for better performance by the opportunities for career advancement available in that Department. It has also suggested in the context of engaging full-time government servants, the enlargement of the size of the revenue villages by 3 or 4 times and the establishment in each such village, a public village office, from where the new Village Officers will function (unlike the present ones who function from their own residence), where public revenue records will be kept and to which all villagers will have free access. The Commission envisages that the number of villages will come down from the present level of 12,000 to 4,000 and that these new villages will be coterminous with the enlarged village Panchayats and the jurisdictions of Gramasevaks.

Between the Villagers and the District Collector there are now 5 levels of administrators, located in different places, causing people considerable inconvenience. The Commission recommends the elimination of two of these levels with the objectives of providing the Department greater cohesion, better lines of control and effectiveness in deal-

# BIGGER VILLAGES AND SMALLER DISTRICTS

## VIEWS OF STATE ADMINISTRATIVE REFORMS COMMISSION

ing with people. The Commission envisages a system in which there will be no revenue inspectors, and no Revenue Divisional Officers and in which the Deputy Collectors will be shifted to preside over Taluk Officers which will deal with the new village officers directly. All the work relating to general administration, land revenue administration, law and order, development and welfare administrations will be directed and co-ordinated at the Taluk Level by the Deputy Collector. Reduction in his jurisdiction and the concentration of all government functions at his level, are expected to make the Deputy Collector more effective in handling rural problems.

### Formation of New Districts Advocated

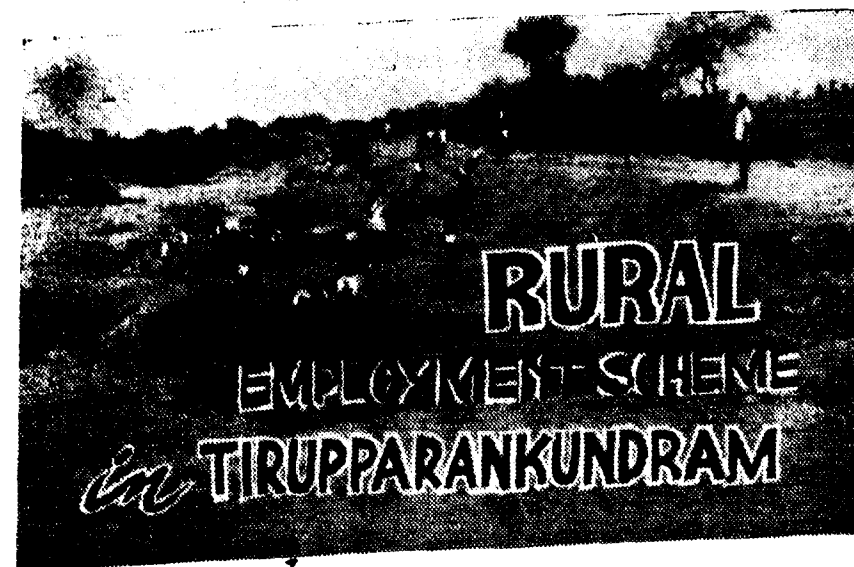
The Commission also envisages the formation of 6 or 7 more new districts, in the course of the next 7 to 10 years, to make the size of the Districts more manageable. It has identified the towns with the best potential for development as District Headquarters and has recommended their accelerated development under the Plan Schemes. It has also recommended that the new districts be formed one after the other in a phased manner over 7 to 10 years, to avoid bunching of non-productive expenditure, and to neutralise possible state-wide political controversies over the boundaries and choice of headquarters. The Commission has suggested the immediate enlargement of the Madras District, by the addition to it, of Saidapet and

Ponneri Taluks from Chingleput District as these contiguous areas with a metropolitan character, have similar needs and problems calling for the integration of the administrations catering to them. The transfer of Arkonam Taluk from North Arcot District to Chingleput has been recommended as a consequential step.

The Commission has reviewed the land revenue system, as it evolved during the British regime and the changes which have taken place in it since 1937. It has shown that the decision taken in 1937 to discontinue periodic resettlements, and the more recent decisions to waive assessments on all dry lands and some wet lands have not only not resulted in any substantial benefits to the people, but also have led to serious difficulties in the land revenue administration. The resettlements, apart from enabling the Government to revise the land revenue rates to be in line with the changing prices and incomes, served the more important purpose of updating the survey and land ownership records, in a thorough and systematic manner, once in 20 years. The loss of this facility for the revision of land revenue rates can at least be acquiesced in, since the levy of local cesses and surcharges to the extent of 45% to 250% has achieved more or less the same results. But failure to resort to resettlement for systematic registry revision has resulted in the land records becoming appallingly out of date. Land revenue representing now only 3% of the State's receipts, may have ceased to be significant to the Government, but land values have gone up steeply and the maintenance of records indicating their correct ownership must be of much greater concern to the State than before. The Commission has therefore recommended the restoration of the waived assessments and the revival of the re-settlement practices with an accent on registry-updating. Incidentally, resettlements can also enable the Government to integrate the existing ad hoc levies and to gradually eliminate the existing disparities in rates among the various districts.

One of the most important recommendations of the Commission is to transfer bulk of the scriptory work of the Village Officers to the Taluk Office, where it could be mechanised with advantage. \*

Tirupparankundram Panchayat Union in Madurai district has set shining example for all other unions of its kind in the manners and methods of implementation of a score of welfare-oriented social service schemes to the well-being of the multitude of mass of people in the rural area without distinction or discrimination. Comprising as many as 44 Village Panchayats, in addition to 5 Town Panchayats and one cantonment, and an area of 36,373 acres of fertile land useful and usable for cultivation of crops, the Union has heaped success upon success in the execution of many a welfare scheme such as extending facilities to the farmers in the modernisation and mechanisation of agricultural operation thereby helping the acceleration of the process of Green Revolution, enlarging educational facilities and benefits to the rural folk in a wider circle and larger scale, raising the standard of public health service in its jurisdictional area, etc., and in all its actions and activities the Union has attained immense and immeasurable results in catering to the fundamental needs of the common folk. In addition to these, the notable and noteworthy scheme it has implemented with exemplary success is the Rural Employment Scheme



brought into vogue in 1971-72 to provide more and more employment opportunity for the rural folk.

The Rural Employment Scheme was originated to relieve to the extent possible the rural mass from the burden of unemployment. This scheme as in the case of other unions all over India, was put in operation in this Union in 1971-72. To give effect to this scheme in proper perspective and proportion, the Union has been compartmentalised into five major divisions, each division comprising 10 Panchayats. And in each division, 80 to 90 persons

have been selected for work, each paid Rs. 4 per day or Rs. 100 per month on an average.

Works are being executed separately in each division and they are entrusted with the works of reclamation of barren lands of Panchayat Unions, raising bunds in the fields, construction of irrigation tanks and desilting of existing tanks, etc. During the years 1971-72 and 1972-73 alone, a sum of Rs. 2,24,497 has been paid towards wages for the workers engaged on permanent and regular basis. Under this scheme, new roads to the extent of 27.60 km. have been laid in the Union area. Irrigation canals benefiting an irrigated area of 24.90 hectares have been reformed and reclaimed for better use.

In 1971-72, a total sum of Rs. 293.05 lakhs was earmarked to the Rural Employment Scheme in Tamil Nadu. Apart from Kanyakumari and the Nilgiris districts for which a lump sum grant of Rs. 12.50 lakhs was allotted for each district, in all other districts in Tamil Nadu, each development block was provided with a fund of Rs. 1.25 lakhs under this scheme.

After looking into the implementation of this scheme in the districts of Madurai, Ramanathapuram, Coimbatore and the Nilgiris in person, the Director-General of the Rural Employment Scheme of the Union Government, Thiru T.C. Pande was all praise for the manners and methods adopted in the execution of this scheme in Tamil Nadu.





## A WORLD STANDARD SWIMMING POOL.

With the recent conduct of an All India Level Aquatic Competitions, the Anna Swimming Pool has put Madras on the swimming map of the world. For, it is said, that nowhere else in India is there a competition swimming pool which has the under-water glass cabin for observing the competition swimmers by judges and referees for stroke faults etc. This is an essential equipment in competition swimming pools all over the world. Combining as it does, both swimming and diving pools, adjacent to each other, the Anna Swimming Pool caters to the swimming and diving enthusiast full scope without coming in the way of each other.

This pool was completed by January, 1973 and conforms to all the International standards. The swimming pool is 25 metres long 15 metres wide and 5 metres deep. In the underground observation room 3 glass panes have been fitted, facing the waterside so as to enable Judges to see the swimmer's accuracy in strokes and type of swimming during competition swimming. To the South of this pool is situated the 4-tier diving pool. High diving boards are fixed up in varying heights like 3, 5, 7, 50, 100 metres and so on. All the diving boards are made of fibre glass, coated with teak wood planks so that the diver could get easy spring from off the board. This pool has been constructed at a cost of Rs. 20 lakhs and is completely illuminated with flood-lights. Swimming is allowed here on all days from 6 a.m. in the morning upto 9 p.m. in the evening. The safety of beginners is assured by vigilant attendants.

The swimming pool water is perpetually under automatic circulation for aeration and chemical cleaning. When swimmers enter the pool water overflows into a surflow collecting channel in the sides of pool and then flows into a circular balance tank 20 feet diameter 15 feet deep situated at a suitable position in front of the main entrance platform. From this balance tank the water is drawn through two 10 inches suction mains by circulating pumps and then passed through Candy Horizontal Pressure Filters and returned to the pool. At a point on the pump suction, alumina sulphate is added for the purpose of coagulat-



ing the impurities and suspended matter in the water, thus enabling these impurities to be retained in the sand during the process of filtration. Soda ash is added in the form of solution at a suitable point in the suction mains for maintaining the pH value of the water in the pool. At a point on the outlet mains, Chlorine solution is added to the water for sterilization purpose. Water entering the pool from the filtration plant flows through P.V.C. pipes with nozzles embeded on the bottom sides of the main pool as

also the diving pool. When there is no bather in the pool and the pool is upto the Cill level the balance tank should be very nearly empty. As bathers enter the pool the displacement of water which occurs is then taken up by the balance tank and not by a rise in the level of the pool. With the maximum number of bathers in the pool, the balance tank will be almost full and there will still be a freeflow of water over the Cill around the pool, to continue the process of cleaning. —S. S.



## TAMIL NADU WINS ALL INDIA

### CIVIL SERVICES VOLLEY BALL TOURNAMENT

\*

The Tamil Nadu Civil Services Volley Ball team led by Thiru M. Satyanarayana, Chief Secretariat, won the All India Civil Services Volley Ball Tournament held at Hyderabad and won the Trophy for the Tamil Nadu. The winning of the Trophy by Tamil Nadu Civil Services is a landmark in the achievement of the Tamil Nadu Civil Services, not only because of the All India character of the fight but because of the fact, it is the first time that the trophy is won to Tamil Nadu. Twentyone State teams from all over India have participated in the fight for the Trophy. The Tamil Nadu Civil Services Team has earlier defeated Punjab, Indian Audit and trophy is won to Tamil Nadu. Twentyone State teams from all over India have participated in the fight for the Trophy. The Tamil Nadu Civil Services Team has earlier defeated Punjab, Indian Audit and Uttar Pradesh teams and entered into the finals. In the final match, it met Andhra Pradesh who had been keeping the Trophy for the last four years and won. The

Captain and Members of the Team paid a courtesy call on the Education Minister Thiru V.R. Nedunchezhiyan and Dr. Kalaingar, with the Trophy and conveyed their deep gratitude for their help and encouragement. They were warmly congratulated by the Education Minister and the Chief Minister. The Members of the team consisted of the following persons :

1. M. Satyanarayana—Assistant, Chief Secretariat—CAPTAIN.
2. S. Ramamurthy—Pallava Transport Corporation.
3. C. Mohan—Pallava Transport Corporation.

4. P. Alexander—Pallava Transport Corporation.

5. M. Shanmugham—Pallava Transport Corporation.

6. A. Koil Chitra Pandiyan—Pallava Transport Corporation.

7. T. M. Rajaseelan—Pallava Transport Corporation.

8. Deenadayalan—King Institute, Guindy.

9. M. S. Ramachandra, King Institute, Guindy.

10. K. Dharmarajan—Public Works Department.

11. V. Mathivanan, Legislative Assembly Department.

12. M. Punuguraj—Industries Department.

## INSTITUTIONS FOR THE BLIND

(For Boys & Girls except where otherwise stated)

| Serial No. | Name and Address                                                                             | Admission age range | Edu. Voc. | Hostel facility and fees. |
|------------|----------------------------------------------------------------------------------------------|---------------------|-----------|---------------------------|
| 1          | School for the Blind, Teynampet, Madras-6 (For Girls, Boys upto 5th Std.)*                   | 3 to 9              | Edu./Voc. | Yes.                      |
| 2          | St. Louis Institute for the Blind, Adyar, Madras-20.                                         | 10 & above          | Edu./Voc. | Yes.                      |
| 3          | Govt. School for the Blind, Bungalow Street, Salem-2.                                        | 6 to 10             | Edu.      | Yes                       |
| 4          | School for the Blind, Swedish Mission Hospital Post Office, Tirupattur, Ramanathapuram Dist. | 3 to 30             | Edu./Voc. | Yes                       |
| 5          | T.E.L.C. School for the Blind, Podanur, Coimbatore (Boys only)                               | 5 to 20             | Edu./Voc. | Free                      |
| 6          | School for the Blind, Fort Round, Vellore                                                    | 5                   | Edu.      | Yes                       |
| 7          | Govt. School for the Blind, Nellikuppam Road, Cuddalore-1                                    | 10                  | Edu.      | Rs. 20 p.m.               |
| 8          | School for the Blind, Palayamkottai, Tirunelveli-2.                                          | 6 to 10             | Edu./Voc. | Yes                       |
| 9          | Govt. School for the Blind, Puthur, Trichy-17                                                | 7 to 10             | Edu.      | Free                      |
| 10         | Govt. School for the Blind, Poona-mallee, Madras-56                                          | 8 to 35             | Edu./Voc. | Yes                       |
| 11         | School for the Blind, Madurai.                                                               | —                   | Edu./Voc. | Free                      |

Tamil medium in all except No. 1 above. Tuition Free in all.

### FOR THE MENTALLY RETARDED (BOTH BOYS & GIRLS)

|   |                                                                                              |         |           |                        |
|---|----------------------------------------------------------------------------------------------|---------|-----------|------------------------|
| 1 | BalaVihar, Halls Road, Kilpauk, Madras-10 (Free Tuition)                                     | 8 to 14 | Edu./Voc. | Rs. 60—100             |
| 2 | Institution for the Mentally Handicapped, Race Couse, Madurai-7 (Tuition Fees by means Test) | 6 to 18 | Edu.      | No. hostel             |
| 3 | Balar Kalvi Nilayam, 2 Ritherdon Road, Madras-7.                                             | —       | Edu.      | —                      |
| 4 | Dr Boaz Memorial School for Retarded Children, No. 29, II Main Road, Gandhinagar, Madras-20. | —       | Edu.      | —                      |
| 5 | School for the Mentally Retarded, 35/A, Chamiers Road, Madras-28.                            | —       | Edu.      | Rs. 50 p.m. No hostel. |

(Tamil Medium in all. English Medium in 4 & 5. Telugu Medium in 4.)

## VOCATIONAL AND REHABILITATION CENTRES

| Sl. No.                                    | Name and Address                                                                                        | Admission Age range | Details and types of training offered.                                                                                         | Duration of the course   | Stipend                                                                              | others                                                                                   |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>DEAF (For both Males &amp; Females)</b> |                                                                                                         |                     |                                                                                                                                |                          |                                                                                      |                                                                                          |
| 1.                                         | Training Centre for the Adult Deaf, 37, Santhome High Road, Madras-28.                                  | 14 to 28            | Fitter, tailoring<br>Needle work                                                                                               | 2 yrs                    | Nil                                                                                  |                                                                                          |
| 2.                                         | Society for aiding the Handicapped, 35/A, Chamiers Rd., Mds-28                                          | Any age             | Cane work, tailoring, knitting, embroidery                                                                                     | no specific period       | Rs. 30 p m                                                                           | limited hostel facility available.                                                       |
| <b>ORTHOPAEDIC (Males only)</b>            |                                                                                                         |                     |                                                                                                                                |                          |                                                                                      |                                                                                          |
| 1.                                         | Gabriel Rehabilitation Centre, Manappakkam, Madras-89. (For disabled by Leprosy too)                    | 15 to 30            | Note books making, Birmopolishing and petty carpentry work                                                                     | 6 months to 1 year.      | Rs. 65 p m                                                                           | Hostel facility for 20 is available-Rs. 55 p. m.                                         |
| 2.                                         | SALVATION ARMY, C.B.M. Vocational Training Centre for the Physically handicapped, Aramboly Kanyakumari. | 18 to 24            | Handloom weaving, clock-repair, welding (Arc & Gas), turning spray painting, poultry farming.                                  | 2 to 3 yrs. (in service) | Nil<br>Nil                                                                           | free boarding and lodging. Admissions through Catherine Booth Hospital, Nagercoil.       |
| 3.                                         | Book Binding Unit, Industrial Training Institute compound, Guindy, Madras-32.                           | 18 to 36            | Book binding.                                                                                                                  | 6 months                 | Rs. 50 p.m.                                                                          |                                                                                          |
| 4.                                         | Red Cross Vocational Rehabilitation Centre for the Adult Amputees, Egmore, Madras-8.                    | 15 to 30            | Printing and book-binding                                                                                                      | 6 months to 1 year       | Rs. 65 p.m.                                                                          | This is a training centre-cum - production centre. Hostel facility for 20 at Rs. 65 p.m. |
| 5.                                         | Bishopinna Ages Diehl Rehabilitation Centre, T.E.L.C. Compound, Nagalnagar, P.O. Dindigul.              | below 40            | Fitting, Turning, Welding, CARPENTRY, Cloth weaving, mat-weaving                                                               | 3 to 5 yrs               | Rs. 60 p.m.                                                                          | Hostel for 25 at Rs. 60 p.m. (number limited by the church).                             |
| <b>LEPROSY (Males only)</b>                |                                                                                                         |                     |                                                                                                                                |                          |                                                                                      |                                                                                          |
| 1.                                         | Swedish Red Cross rehabilitation Industries, B5&B6 Industrial Colony, Katpadi Extension (N.A. Dt.)      | 18 to 28            | General workshop practice in drilling, tapping, grinding, lathe work, milling, welding, sheet metal work, fabrication of steel | 3 yrs.                   | Rs. 60 p.m.<br>I yr<br>Rs. 75 p m.<br>II yr<br>Rs. 80 p.m.<br>III yr &<br>free lunch | Lodging facility for 36 persons share in rent and electricity.                           |

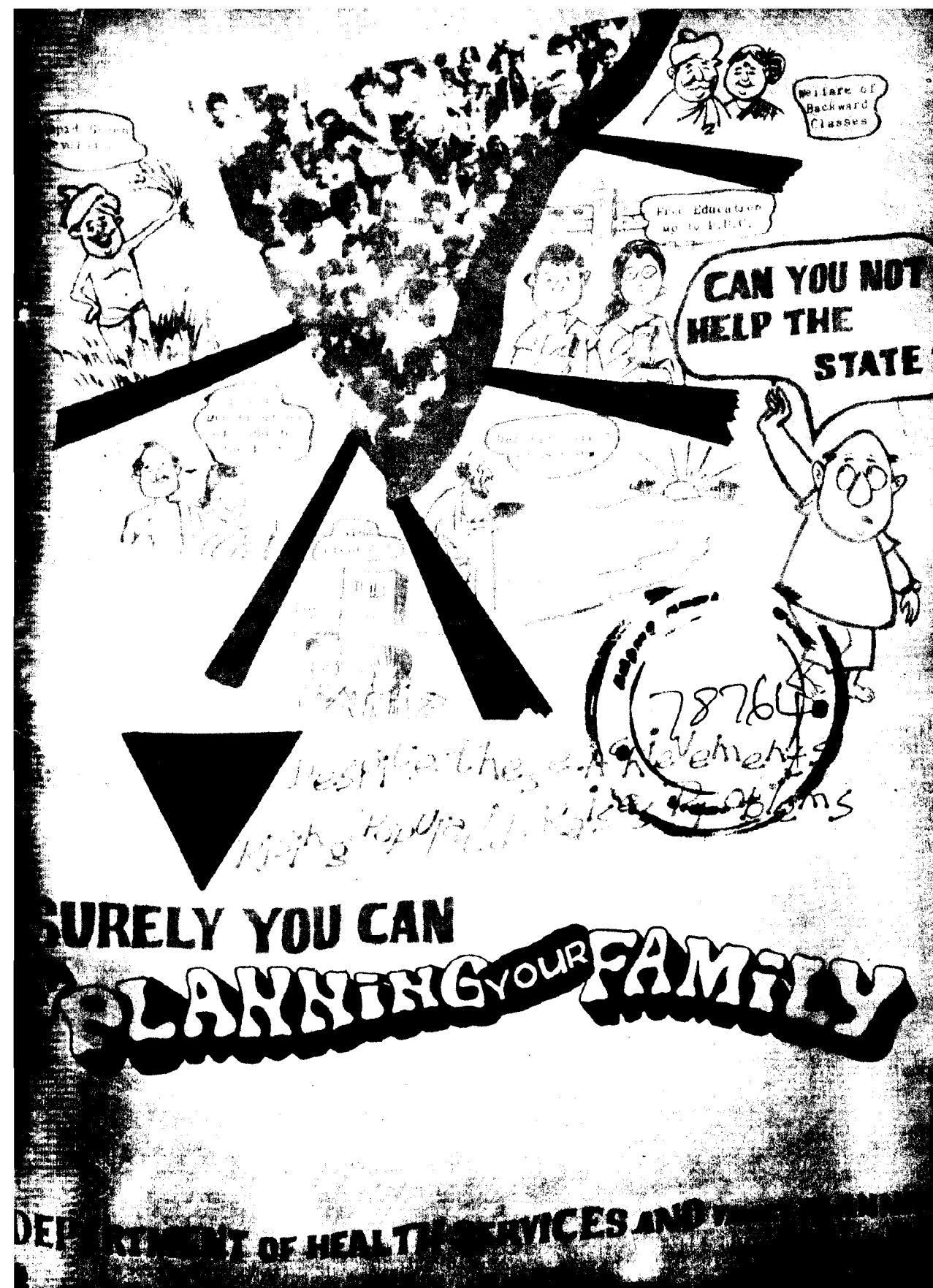
VOCATIONAL AND REHABILITATION CENTRES FOR BLIND

| Sl. No. | Name of Institution<br>Address                                                                                                              | Admission Age<br>range | Details of Training<br>type OFFERED                                                                                                           | Duration of<br>course | Stipend                      | Other Remarks.                     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------|------------------------------------|
| 1.      | Light Engineering Project C-22, Industrial Estate, Guindy,                                                                                  | 18 to 40               | Basic Engineering Work shop-Filing, cutting, hack sawing, drilling punching, tapping, turning and revolving press operations & assembly work. | 6 months              | Pocket money Rs. 2 per weeks | Free hostel facility available     |
| 2.      | Book binding Unit, Industrial Training Institute Compound, Guindy, Madras-32                                                                | 18 to 36               | Book Binding                                                                                                                                  | 6 months              | Rs. 50 p.m.                  |                                    |
| 3.      | Bishop Diehl Rehabilitation Home for the Blind, Tranquebar house, Tiruchirapalli                                                            | Any age                | Handicrafts                                                                                                                                   | No specific period    | Pocket money provided        |                                    |
| 4.      | Tamil Nadu Rehabilitation Centre for the Blind, Madurai-20.                                                                                 | 18 to 40               | Mobility & Orientation perpetual motor skill training programme, psychological services, counselling, tailoring, canework and weaving.        | 6 months              | Rs. 40 p.m.                  |                                    |
| 5.      | SOCIETY FOR AID-ING the Handicapped 35/A, Chamiers Rd., Madras-28                                                                           | 15 to 50               | Cane work, Tailoring, Knitting, Embroidery,                                                                                                   | No specific period.   | Rs. 30 p.m.                  | limited hostel facility available. |
| 6.      | Society for the welfare of the Handicapped, 24, Halls Rd., Egmore, Madras-8. Conducting sheltered workshop for Blind women at Thiruvanniyur | Middle Aged            | Chairs Re-caning, Knitting, Basket Making, Mat weaving, Cloth weaving.                                                                        |                       |                              |                                    |

FOR THE ORTHOPAEDIC

|   |                                                                                                                      |   |      |     |
|---|----------------------------------------------------------------------------------------------------------------------|---|------|-----|
| 1 | Iswari Prasad Dattatreya, Orthopaedic Centre Andhra Mahila Sabha, No. 3, Adyar Bridge Road, Madras-28. (Tution Free) | — | Edu. | Yes |
|---|----------------------------------------------------------------------------------------------------------------------|---|------|-----|

EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU  
AND PRINTED AT THE TAMIL ARASU PRESS, GOVT. ESTATE, MADRAS-2.





TAMIL ARASU



| 姓名  | 性别 | 年龄 | 籍贯  | 职业 | 文化程度 | 健康状况 | 婚姻状况 | 子女情况 | 其他 |
|-----|----|----|-----|----|------|------|------|------|----|
| 王德胜 | 男  | 45 | 山东  | 工人 | 小学   | 良好   | 已婚   | 2子1女 |    |
| 李秀英 | 女  | 38 | 河北  | 农民 | 初中   | 良好   | 已婚   | 1子1女 |    |
| 张国强 | 男  | 52 | 河南  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 刘小红 | 女  | 28 | 江苏  | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 陈为民 | 男  | 40 | 浙江  | 商人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 赵大刚 | 男  | 35 | 湖北  | 工人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 孙丽娟 | 女  | 32 | 湖南  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 周建民 | 男  | 48 | 四川  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 吴小芳 | 女  | 25 | 广东  | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 郑为民 | 男  | 55 | 广西  | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 冯大刚 | 男  | 30 | 福建  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 李秀英 | 女  | 35 | 江西  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 张国强 | 男  | 42 | 山西  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 刘小红 | 女  | 22 | 陕西  | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 陈为民 | 男  | 50 | 甘肃  | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 赵大刚 | 男  | 38 | 宁夏  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 孙丽娟 | 女  | 30 | 青海  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 周建民 | 男  | 45 | 新疆  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 吴小芳 | 女  | 28 | 内蒙古 | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 郑为民 | 男  | 58 | 黑龙江 | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 冯大刚 | 男  | 32 | 吉林  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 李秀英 | 女  | 38 | 辽宁  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 张国强 | 男  | 45 | 吉林  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 刘小红 | 女  | 25 | 黑龙江 | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 陈为民 | 男  | 52 | 内蒙古 | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 赵大刚 | 男  | 40 | 辽宁  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 孙丽娟 | 女  | 32 | 吉林  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 周建民 | 男  | 48 | 黑龙江 | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 吴小芳 | 女  | 28 | 内蒙古 | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 郑为民 | 男  | 55 | 辽宁  | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 冯大刚 | 男  | 35 | 吉林  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 李秀英 | 女  | 38 | 黑龙江 | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 张国强 | 男  | 45 | 内蒙古 | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 刘小红 | 女  | 25 | 辽宁  | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 陈为民 | 男  | 52 | 吉林  | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 赵大刚 | 男  | 40 | 黑龙江 | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 孙丽娟 | 女  | 32 | 内蒙古 | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 周建民 | 男  | 48 | 辽宁  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 吴小芳 | 女  | 28 | 吉林  | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 郑为民 | 男  | 55 | 黑龙江 | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 冯大刚 | 男  | 35 | 内蒙古 | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 李秀英 | 女  | 38 | 辽宁  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 张国强 | 男  | 45 | 吉林  | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 刘小红 | 女  | 25 | 黑龙江 | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 陈为民 | 男  | 52 | 内蒙古 | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 赵大刚 | 男  | 40 | 辽宁  | 商人 | 初中   | 良好   | 已婚   | 2子1女 |    |
| 孙丽娟 | 女  | 32 | 吉林  | 农民 | 小学   | 良好   | 已婚   | 1子1女 |    |
| 周建民 | 男  | 48 | 黑龙江 | 干部 | 高中   | 良好   | 已婚   | 2子1女 |    |
| 吴小芳 | 女  | 28 | 内蒙古 | 教师 | 大学   | 良好   | 未婚   | 无子女  |    |
| 郑为民 | 男  | 55 | 辽宁  | 工人 | 小学   | 良好   | 已婚   | 1子1女 |    |

# 100000

**First Prize:**  
**Rs. 100000**

**Consolation Prizes to Preceding and Succeeding Prize Winning Numbers to First Prize & Second Prizes and many other attractive prizes.**

**6 2nd DRAW DATE:**  
**12-12-73**

**Cost Per Ticket Re. 1/- only.**

Issued by Director of Information & Public Relations,  
Government of Tamil Nadu, Madras-600009  
All correspondence should be addressed only to the  
Director of Raffle, Tamil Nadu, Madras-600002



For my dear  
Mother

## VOCATIONAL TRAINING INSTITUTES FOR HANDICAPPED

| Category<br>(1)             | Name of the Centre<br>(2)                                                                                                           | Trades in which training is imparted<br>(3)                                                                                                                                         |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blind                       | 1. Light Engineering Project for the Adult Blind, Guindy, Madras-32.                                                                | Basic Engineering, Work-shop, Filing, Cutting, Hacksawing, Drilling, Punching, and Tapping (hand), Plain turning, and revolving, Press operation (hand operated) and Assembly work. |
|                             | 2. Tamil Nadu Rehabilitation Centre for the Blind, Madurai-20.                                                                      | Weaving, Tailoring and Caning.                                                                                                                                                      |
|                             | 3. Bishop Diehl Rehabilitation Home for the Blind, Tiruchirappalli.                                                                 | Handicrafts.                                                                                                                                                                        |
|                             | 4. Sheltered Workshop and Training Centre for Blind Girls, Madras.                                                                  | Basket-making and mat-weaving.                                                                                                                                                      |
| Deaf                        | 1. Training Centre for the Adult Deaf, Santhome, Madras-28.                                                                         | Fitting, Tailoring and Needle-work.                                                                                                                                                 |
| Orthopaedically Handicapped | 1. Swedish Red Cross Rehabilitation Industries, Katpadi, N.A. Dt.                                                                   | General Workshop Practice in Drilling, Tapping, Grinding, Lathe Work, Milling, Welding, Sheet-metal Work, Fabrication of Steel Furniture.                                           |
|                             | 2. Bishopinna Agnes Diehl Rehabilitation Centre, Dindigul.                                                                          | Fitting, Turning, Welding, Carpentry, cloth-weaving, Mat-weaving.                                                                                                                   |
|                             | 3. Indian Red Cross Society Vocational Rehabilitation Centre for Adult Amputee, Egmore, Madras-8.                                   | Printing, Book-binding.                                                                                                                                                             |
| Mentally Retarded           |                                                                                                                                     |                                                                                                                                                                                     |
| Leprosy Cured               | 1. Gabriel Rehabilitation Centre, Manappakkam, Madras-16.                                                                           | Note-book making, Firn-polishing and petty carpentry work.                                                                                                                          |
| Common                      | 1. Book Binding Training Unit, Department of Employment & Training, Guindy, Madras-32.                                              | Book Binding.                                                                                                                                                                       |
|                             | 2. The Salvation Army Catherin Booth Hospital, Vocational Training Centre for the Physically Handicapped, Aramboly, Kanyakumari Dt. | Handloom weaving, Clock-repairing, Welding (Arc & Gas), Turning, Spray painting, poultry farming.                                                                                   |

## INSTITUTIONS FOR THE DEAF

(For Both Boys & Girls, except where stated otherwise)

| Serial No. | Name and Address                                                                         | Admission age range | Edu./Voc. | Hostel facility and fees                                       |
|------------|------------------------------------------------------------------------------------------|---------------------|-----------|----------------------------------------------------------------|
| 1          | School for the Deaf, Cathedral Post, Madras-6 (For Girls, Boys only up to 5th Std. *)    | 3 to 5              | Edu./Voc. | Available                                                      |
| 2          | Louis Institute for the Deaf, Adyar, Madras-20 (for boys only)*                          | 10 & above          | Edu./Voc. | Yes                                                            |
| 3          | Municipal Deaf and Dumb School, R.S. Puram, Coimbatore-2.                                | 5 to 15             | Edu./Voc. | Free boarding for Boys only.                                   |
| 4          | Municipal Deaf and Dumb School, Karaikudi-1, Ramnad District (for boys only)             | 5 & above           | Edu.      | Free boarding                                                  |
| 5          | The Clarke School for the Deaf, 35/A Chamiers Road, Madras-28.                           | 2 to 10             | Edu.      | Available Rs. 100 p.m. (Some Scholarships available)           |
| 6          | Santhi Samarasa Deaf & Dumb School, Kalyanapuram, Sivasailam P.O., Tirunelveli District. | 6 to 12             | Edu./Voc. | Free boarding.                                                 |
| 7          | Y.M.C.A. School for the Deaf and Dumb, Ellianagar, Madurai-10                            | 5 & above           | Edu.      | Not available                                                  |
| 8          | C.S.I. School for the Deaf, Kottaram, Kanyakumari.                                       |                     | Edu.      | Yes                                                            |
| 9          | C.S.I. School for the Deaf, Manamadurai, Ramnad Dt.                                      | 6 & above           | Edu.      | Available                                                      |
| 10         | Flowerence Swainson Deaf School, Palayamkottai, Tirunelveli-2                            | 5 & above           | Edu./Voc. | Available (Hostel fees collected according to parent's income) |
| 11         | Govt School for the Deaf, No. 1, Sivaji Nagar, Thanjavur.                                | 6 to 12             | Edu./Voc. | Free Boarding & Lodging                                        |
| 12         | C.S.I. School for the Deaf, 148, Santhome High Road, Madras-4.                           | 4 to 5              | Edu./Voc. | Free Boarding & Lodging.                                       |
| 13         | I.E.L.C. School for the Deaf, Ambur, North Arcot Dist.                                   | 6 to 12             | Edu.      | Not available                                                  |
| 14         | Little Woodford, (English Medium only) Mowbray's Road, Madras-4.                         |                     | Edu.      | Not available                                                  |

\*Indicates institutions where both English & Tamil are medium of instruction. Tamil is the medium of instruction in the rest, Tuition free in all except in Sl. No. 5 where the fee is Rs. 50 p.m.