

JL  
V216m N73  
N73  
99018

51  
2008

TAMIL ARASU

1973

Accn. No: 99028

Bounded as 2 Parts

P. 1

1973 Jan-June

No. of Pages: 366

QUN  
9.4.88



# Tamil Arasu

1st JAN 1973

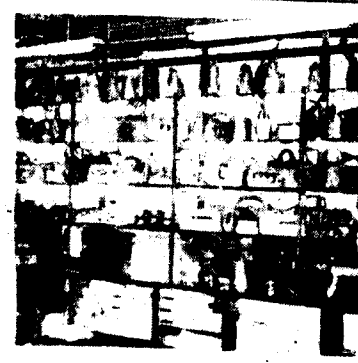
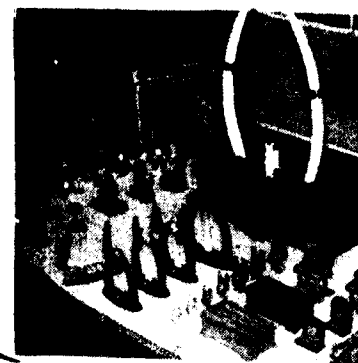
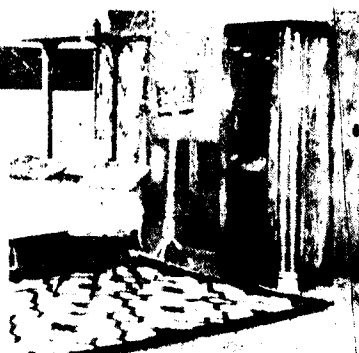
40 PAISE

5/6u/73  
10 JAN 1973  
OFFICE OF THE  
POSTMASTER  
GENERAL  
CHENNAI



*All your Needs*

*Are Available Here*



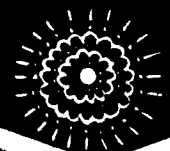
**KURALAGAM**

*Madras-1*

**KHADI-KRAFT**

PHONE } 20461, 20462,  
20463, 20464, 20465

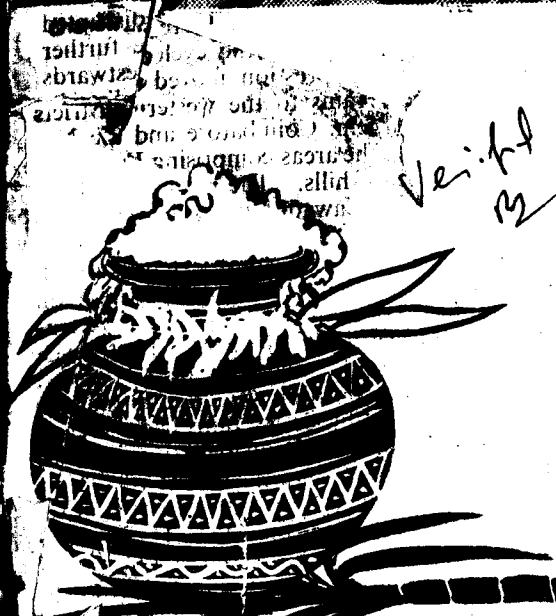
*a*  
**REPOSITORY OF  
HANDICRAFT  
ARTICLES**



*V211 m, N71 MUTHU  
N73.3.84*

**Tamil Arasu**

*Wishes*  
**PROSPERITY**  
*to*  
**all**



Vol. III 1st January 1973 Issue 9

**CONTENTS.**

|                                                                 | PAGES |
|-----------------------------------------------------------------|-------|
| Flood havoc in Tamil Nadu .. ..                                 | 4-7   |
| Know your Heart .. ..                                           | 9     |
| Chamundi of Charapallam .. ..                                   | 10-11 |
| Socialism at any price—C.M. .. ..                               | 12-14 |
| Special features on Madras Government Museum. .. ..             | 19-40 |
| Goals of Education, Science and Technology in Tamil Nadu. .. .. | 41-43 |
| Perspective Plan for Family Planning in Tamil Nadu. .. ..       | 51-53 |
| Rehabilitation of repatriates .. ..                             | 54-56 |



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

Warned of the impending cyclone, the authorities had taken necessary precautionary steps in all districts, particularly in South Arcot, Thanjavur and Madras City. People in low-lying areas had been evacuated well in advance of the cyclone. A large number of trees and electrical and telegraph posts had been uprooted by the cyclone, particularly in South Arcot District. The heavy local rains had resulted in a breach of a number of tanks, resulting in a 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 flood rains, the river and lake system overflooded and formed new courses, breached bunds, cut roads, scoured bridges and inundated lakhs of acres of land till they emotie

## 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 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 against the full level of 119 feet. Thus, 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 reservoir level, endangering the reservoir itself. Executive Engineer, Tivuvannamalai, who was camping at the Dam site, opened all its shutters and the discharge increased to 2,56,747 cusecs

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, Paravandar, 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 Yercaud 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 Panrutti 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.

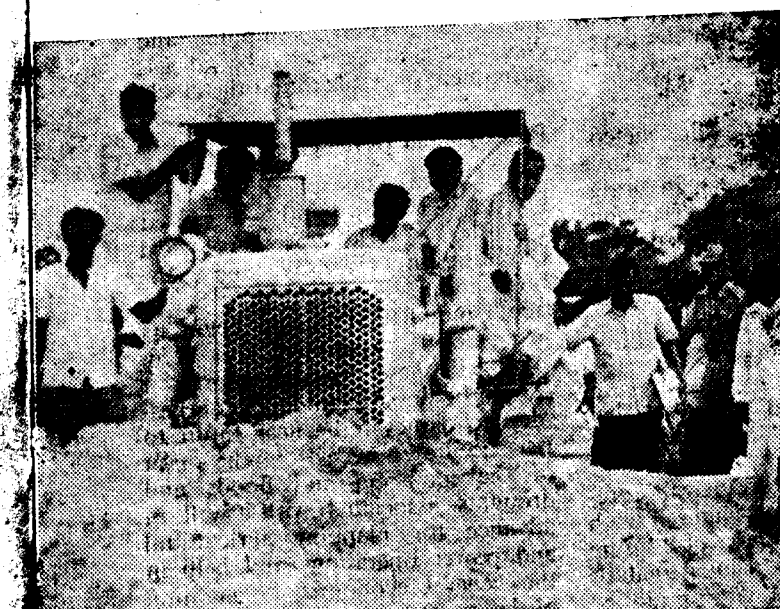
#### The Relief Programme.

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 crop 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 Bank. 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 land will be given as subsidy by the Government.

Most of the people who lost their houses as 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 flood 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. 244 crores.

## 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 a 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, enigmatic 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.

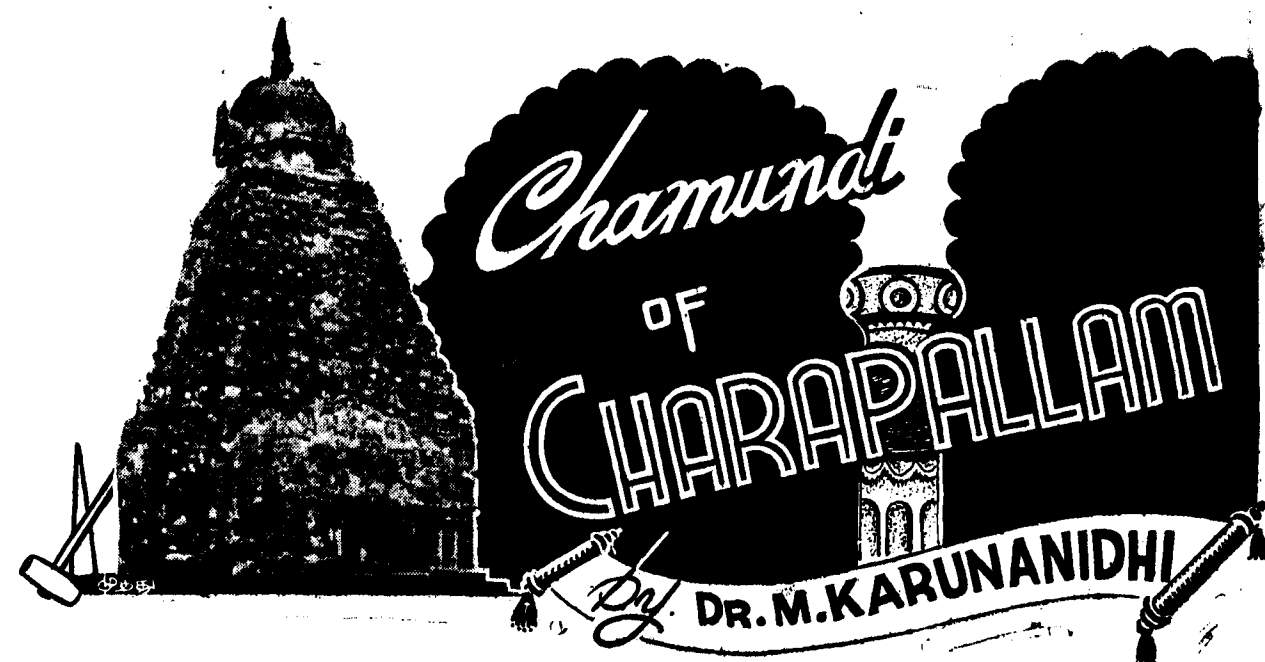
### Preventably managed.

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.





"After all she is only on a visit to Mummudi Cholapuram 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,

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 to Thanjavur. Rocks were fetched 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, shamed.

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.

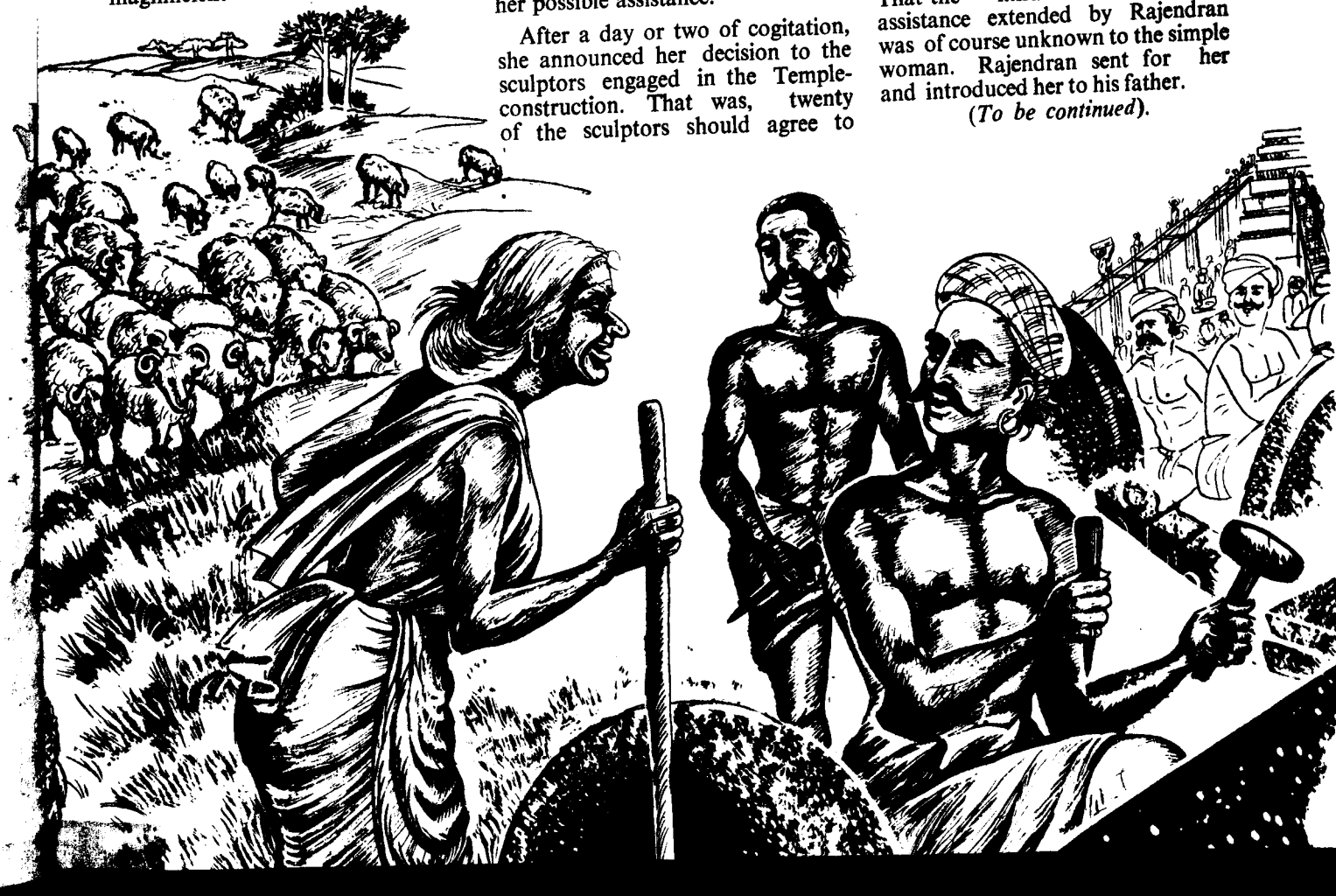
After a day or two of cogitation, she announced her decision to the sculptors engaged in the Temple-construction. That was, twenty of the sculptors should agree to

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).



"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 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 11 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 percent and for the Backward classes it has been raised from 25 to 31 percent.

"What great revolutionary change has been effected in the social sphere can be realised only with reference to the previous state of 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 (Manuncethi Thittam) is effectively carried on throughout Tamil Nadu."

Subscribe to

TAMIL ARASU

It costs only

Rs. 5.

for a year.

## 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. |



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. | Achievement. | Percentage. |
|-----------------------------|---------|--------------|-------------|
| Chingleput district ..      | 16,000  | 32,420       | 202.7       |
| Coimbatore district ..      | 18,000  | 21,702       | 120.5       |
| Tiruchirappalli district .. | 25,000  | 25,008       | 100.0       |
| Tirunelveli district ..     | 25,000  | 21,878       | 87.5        |
| Ramanathapuram district ..  | 15,000  | 10,682       | 71.2        |
| North Arcot district ..     | 21,000  | 15,677       | 74.7        |
|                             |         | 127,367      |             |

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:—

#### 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 year 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 ..         | 2,25,000            | 1,200              |
| March (approx.) | (approx.)           | (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 of the problems

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 "fictitious roll numbers" adds a new dimension to ensuring secrecy. This process involves assigning fictitious roll numbers to the candidates instead of their real roll numbers before the examination. This prevents the candidates from knowing their marks and results.

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.

### TAMIL NADU GOVERNMENT S. S. L. C. PUBLIC EXAMINATION, OCTOBER 1972

| DISTRICT No. AND NAME |                       | CENTRE No. AND NAME      |     | SCHOOL No. AND NAME |                  | TYPE OF CANDIDATE     |                             |
|-----------------------|-----------------------|--------------------------|-----|---------------------|------------------|-----------------------|-----------------------------|
| LAY                   |                       | 0001 GOVT H.S. THUCKALAY |     | 9999                |                  | 3 REGULAR PRIVATE     |                             |
| BOOK NUMBER           | NAME OF CANDIDATE     | NATIONALITY              | SEX | DATE OF BIRTH       | GROUP A LANGUAGE | GROUP B CORE SUBJECTS | GROUP C ELECTIVES SECTION I |
| (1)                   | (2)                   | (3)                      | (4) | (5)                 | PART A (7)       | PART B (8)            | (9) (10) (11) (12)          |
| 000290561U            | SALEEM.M              | 095                      | I   | 01-12-53            | M                | E                     | M                           |
| 000244081U            | RESHU RAM.A           | 100                      | I   | 06-05-54            | M                | E                     | M                           |
| 000290560U            | ROY JOSE POOVATYIL    | 103                      | I   | 31-03-56            | M                | E                     | M                           |
| 000244091U            | VENUGOPALAN.S         | 099                      | I   | 04-05-55            | M                | E                     | M                           |
| 000202180Q            | RAMACHANDRAMAS.P      | 067                      | I   | 05-05-56            | M                | E                     | M                           |
| 000205860J            | YADVE.V               | 019                      | SC  | 20-04-41            | M                | E                     | M                           |
| 00020335060           | N.SREEKUMARAN NAIR    | 046                      | I   | 04-04-51            | M                | E                     | M                           |
| 03 044231U            | KARTHIAYINI ANNA.D.   | 234                      | I   | 25-05-56            | M                | E                     | M                           |
| 284 083717M           | S.SULOCHANA           | 256                      | I   | 20-05-55            | M                | E                     | M                           |
| 285 083836M           | N.PADMAJA ANNA        | 253                      | I   | 22-05-55            | M                | E                     | M                           |
| 0286 083711M          | C.C.SARANNA           | 255                      | BC  | 10-08-54            | M                | E                     | M                           |
| 0287 040314V          | NIRMALAKUMARI.S       | 288                      | I   | 28-05-54            | M                | E                     | M                           |
| 0288 083603M          | K.BHASKARA PILLAI     | 138                      | I   | 17-05-51            | M                | E                     | M                           |
| 0289 083753M          | P.NOMANAKUNAR         | 140                      | I   | 21-05-53            | M                | E                     | M                           |
| 0290 083754M          | D. SUBANANDA DAS MANY | 155                      | SC  | 29-01-51            | M                | E                     | M                           |
| 00291 083755M         | V.KRISHNANKUTTI       | 121                      | I   |                     | M                | E                     | M                           |
| 00292 083610M         | K.SUDHARSANAN         |                          |     |                     | M                | E                     | M                           |

The Madras Government Museum 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, rehistory 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 taking



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

V

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 magazzanine 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 bays 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

Museum is justly famous all Apart from those on show, as Namasa and the Kumbha lamps.

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. Consequently,

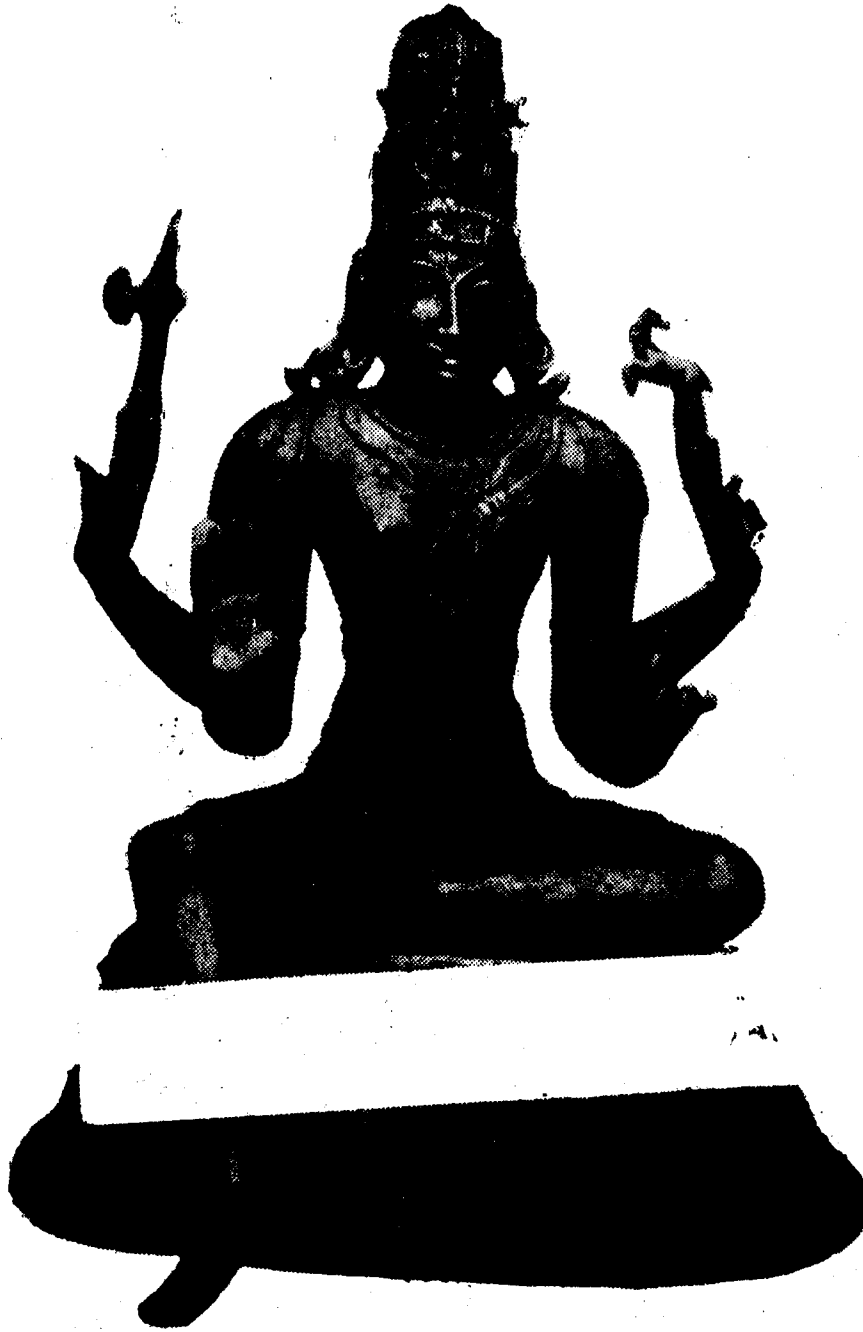


quently, the sculptures of this period are finer and the portrait sculptures are depicted in a variety of beautiful postures.

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 propriety than for artistic excellence, with the result the sculptures of this period attained momental proportions and possessed vigour and excessive embellishment only. The sculptures shown in the Vijayanagar bay bear out these remarks clearly. It is evident in the Bhikshatana 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 architecture 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 (*Punyasaala*) 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 bronzes are the two groups of images representing Rama, Sita, Lakshmana and Hanuman and Vishnu with Sridevi and Bhudevi. Recently an excellent Ardhanaresvara 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 Tippayan Uttama Chola, during the period of Rajadhiraja I (1047 A.D.). Another graceful figure of Chandresvara (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 Ayudhapurushas representing Kaumodaki and Sudharsana, the gada and chakra respectively of Vishnu, and the group of Tripurantaka 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 Sigankuppam 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 sthapatins 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

namasa and the kinuati 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 worship 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 atibhargas, slimness 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 fan-shaped 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 are special.

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

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.

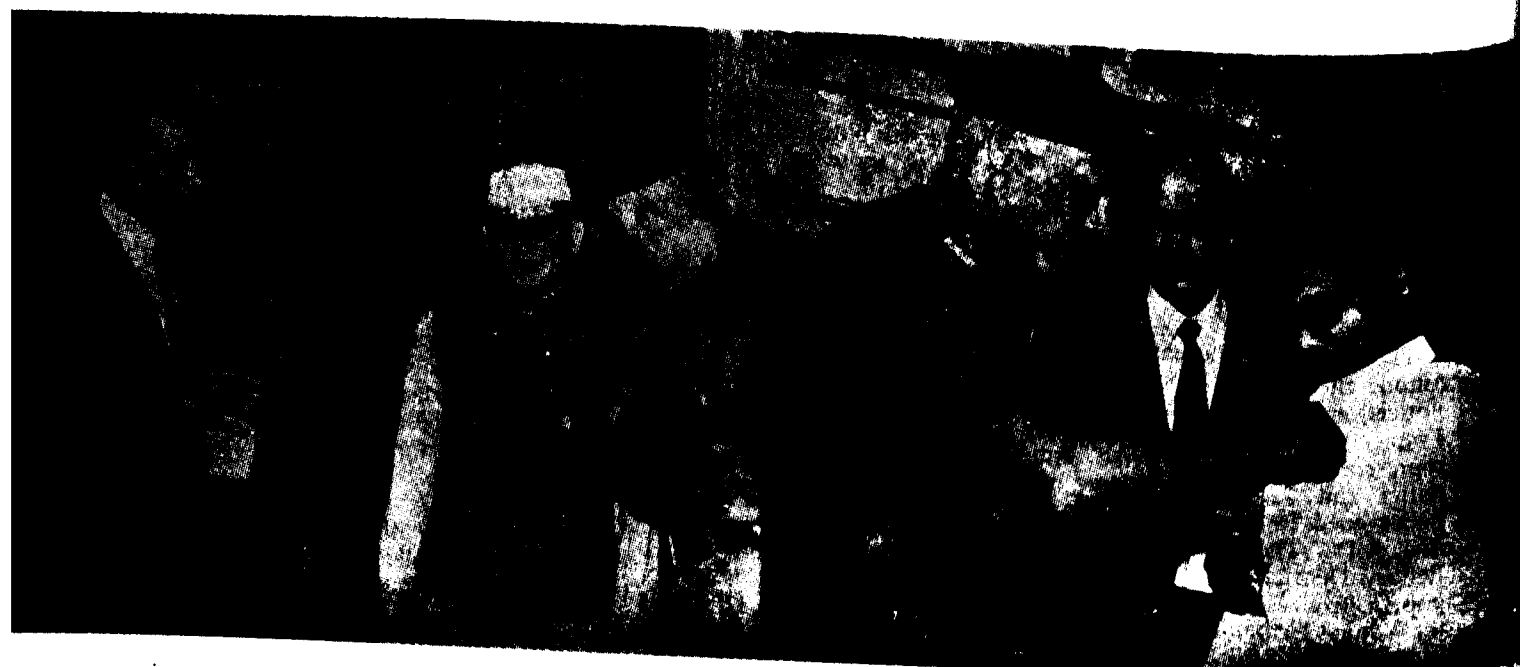
The making of Belan bangles from spirally-coiled glass rods, and of Tarapore bangles from twisted glass rods, is explained in detail. Actual samples and photographs depict the making of bottles, Chimneys, and scientific apparatuses, as well as the stages in the manufacture of lenses from pebbles of rock-crystal.

Raw-materials for making saltpetre and sulphuric acid, abrasives and pigments, building cement and refractories, form 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 these may be added another small group

## 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

## 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.

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

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

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.

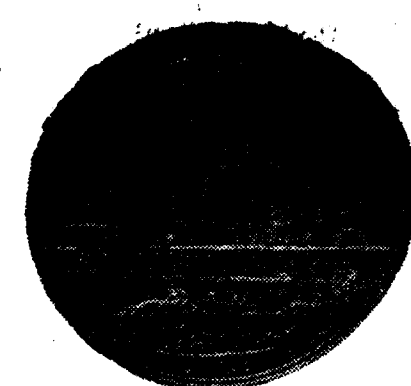
Coins are one of the important sources for the study of History and Archaeology. The Puranas or punch marked coins are the earliest coins in India. The Madras Government Museum has in its collection over three thousand punch marked coins. The main source for building up the collection are the treasure 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-Batiran 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

BY  
N. SANKARANARAYANA,  
Curator,  
Numismatic Section



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 chantians 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 in the North on distribution of gratis basis.



### 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, Indo-sessanian, Kakaharntas, Wister satraps and tribos 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 narayen. 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, Achyuka 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 Udupi 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.

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 over 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.

### 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 become 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.

"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

## 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. Mahendravarma 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 paint-

ings 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 repre-

senting 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 stipplings 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



# THE NATIONAL ART GALLERY

V. N. SRINIVASA DESIKAN.

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 a 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, Huldar 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. Srinivasalu, 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.

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 Bhanuagar, 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, Sandalwood 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 viii, Churgtai, K. C. S. Paniker, K. Srinivasalu, P. L. Narasimhamurthi, Kodur Ramamurthi, S. Danapal, L. Munuswami, N. S. Berdre 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 Kadars), 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 Manilla, 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 as striking surfaces from Tiruvarur 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 Stipens) 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 Rabbit 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 the

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

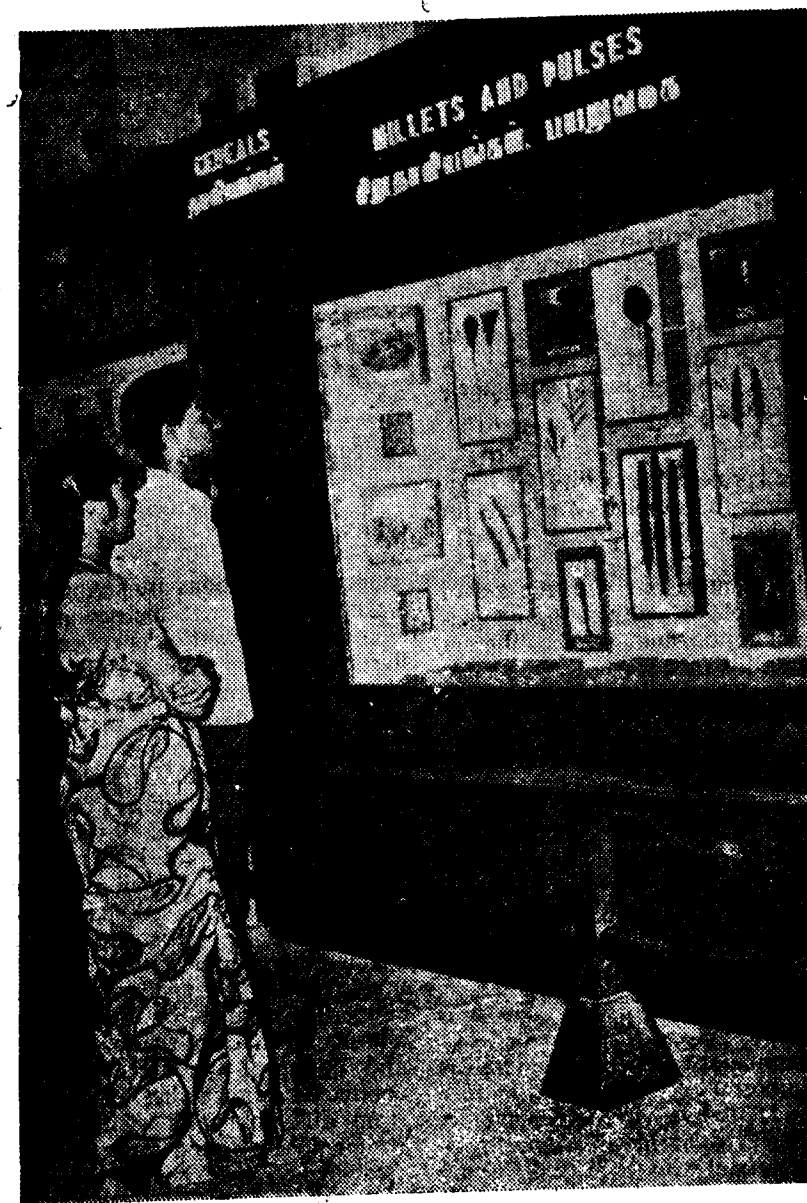
subject for study. The soil of the mangroves is loose and muddy without any air-space, and in the form of marshy islands in shallow, stagnant sheets of brackish water. The exhibits illustrate many of the special devices with which the mangroves keep their centre of gravity as low as possible, by not 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. Staring 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 rouse 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 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.

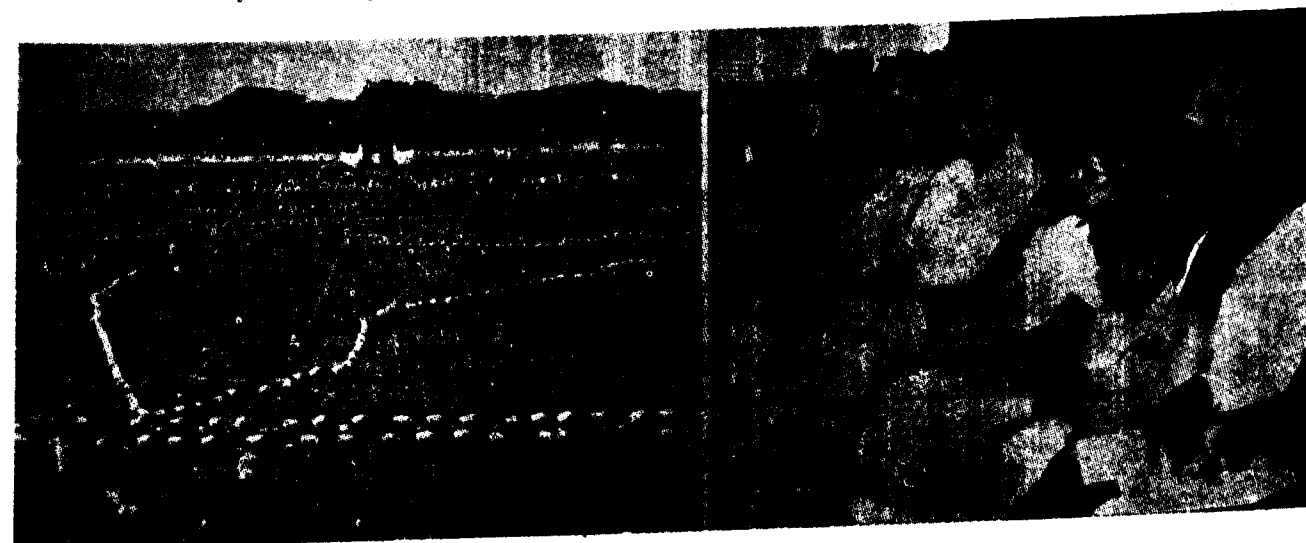
That the Universities of Madras, Annamalai and Madurai be developed into centres of excellence in post-graduate teaching and research.

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. Nedunchezian, 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 IN ENGINEERING EDUCATION

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



## TANSI's

### *Contribution to the Country's Progress*

#### TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.

with its net work of well equipped Modern  
Workshops contribute substantially for the  
progress of the Industry and the Nation.  
The fields of activities at a glance.

|                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INDUSTRY</b><br>• DESIGN AND MANUFACTURE OF DIES, JIGS AND FIXTURES • PRES-SURE DIE CAST COMPONENTS • STEEL AND BRASS FORGED COMPONENTS • SUPER ENAMEL WIRE AND D.C.C. WIRE • STRUCTURAL FABRICATIONS • QUALITY C.I. CASTINGS • RADIAL AND PILLAR DRILLING MACHINES • GRADED QUARTZ POWDER • ELECTRICAL INSULATORS • SCIENTIFIC GLASS APPARATUS. | <b>AGRICULTURE</b><br>• IMPROVED AGRICULTURAL IMPLEMENTS • PLANT PROTECTION EQUIPMENTS • TILLERS AND TRACTOR TRAILERS • PUMPSETS • SUGAR-CANE CRUSHERS ETC • BRIDGE TYPE FILTER POINTS.                                         |
| <b>EXPORTS</b><br>• PLAIN FINISHED LEATHER IN DIFFERENT SHADES • WET BLUE CHROME LEATHER • STRUCTURAL AND TRANSMISSION TOWERS.                                                                                                                                                                                                                      | <b>UTILITY PRODUCTS</b><br>• STEEL AND WOODEN FURNITURE • STEEL WINDOWS, VENTILATORS ETC • HOSPITAL EQUIPMENTS • BRASS OXIDISED DOOR FURNITURE • LATCHES & LOCKS • SANITARY WARE & CROCKERY • STONEWARE PIPES • LEATHER GOODS • |

*Enquiries Solicited*

THE MANAGING DIRECTOR

**TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.,**  
 (An Undertaking of the Government of Tamil Nadu)  
 35/2, WOODS ROAD, MADRAS.2

"TANSI" stands for Reliable Products at Reasonable Cost.

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 ;

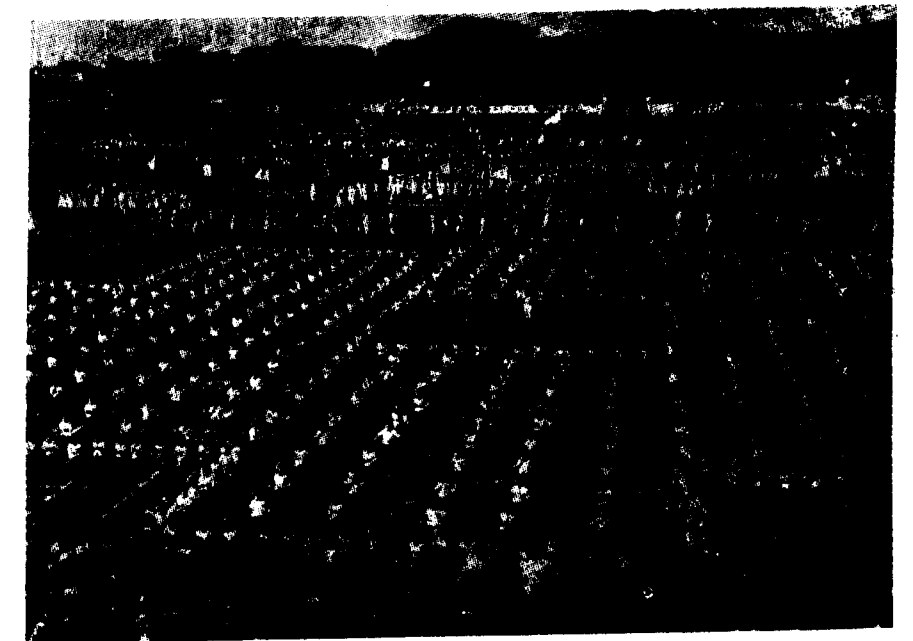
(b) All the students in a given discipline are handled and evaluated by a group of teachers belonging to a single institution ;

(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.

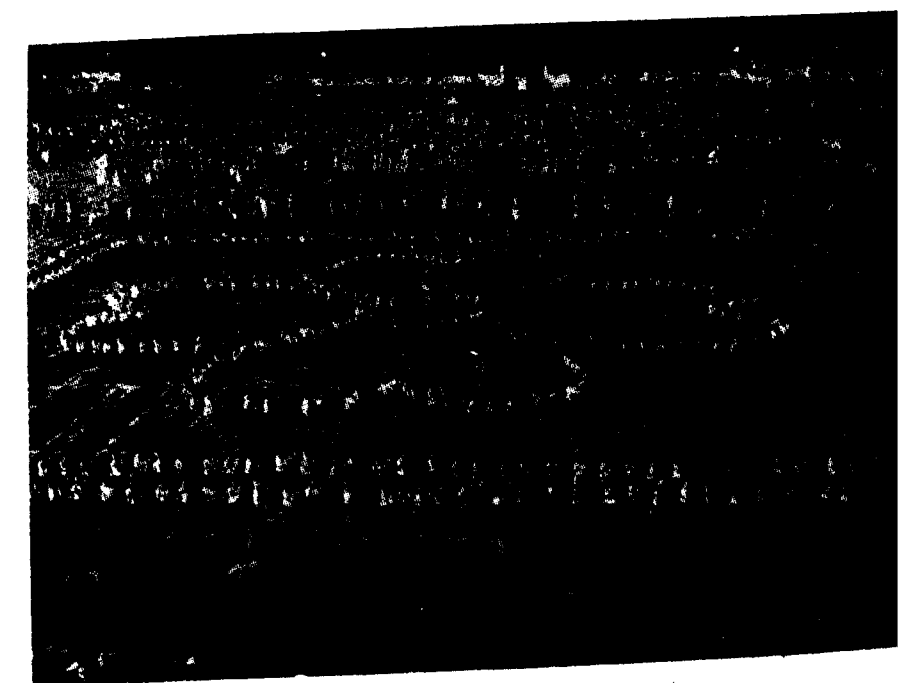
The assessment of students' performance, when they belong to a number of institutions/colleges that are physically separated from one another though affiliated to a single University, is beset with greater complexities and difficulties in actual implementation. Several safeguards and special steps to 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 in Nehru Stadium are pictured in the Photos above and below.





# 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.

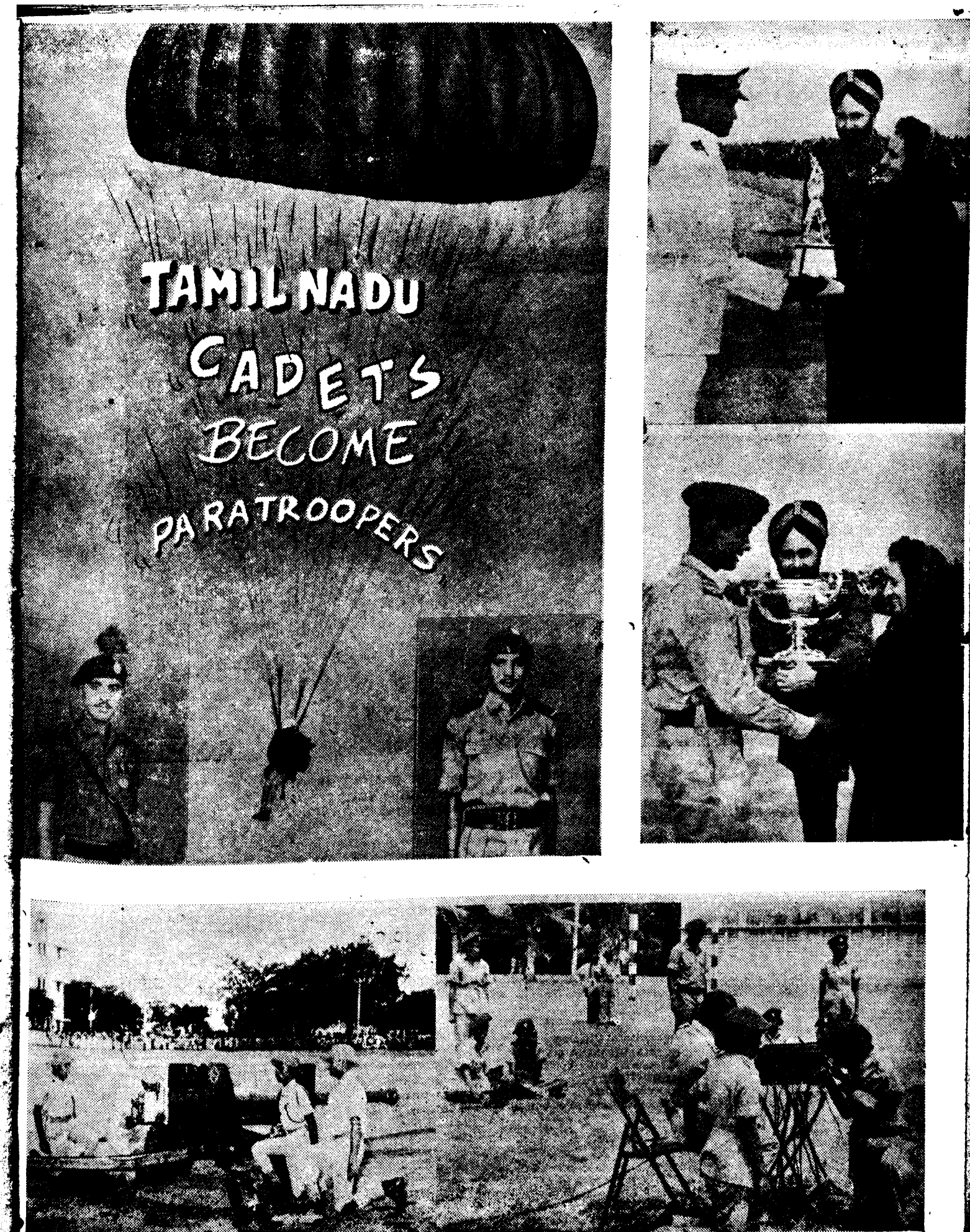
The contingent from this Directorate which went to the Vayu Sena Camp held at Poona from 28th May 1972 to 10th June 1972 won the Vayu Sena Trophy for the Best Air Contingent. In addition, the contingent from (T.N.) Air Sqn. N.C.C. won third place in the competition for the Subrato Art Trophy for Flying,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

# 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.

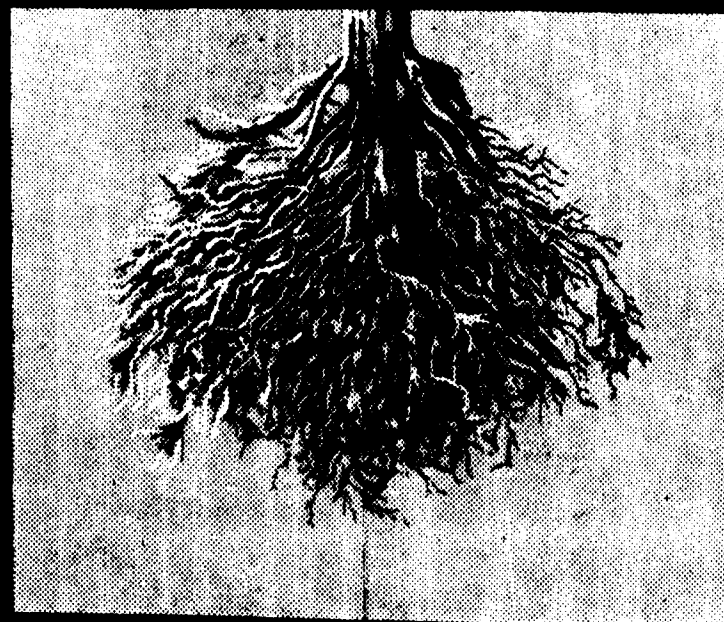
## Extension Education.

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.

## THIMET 10-G



gets to the root of the matter

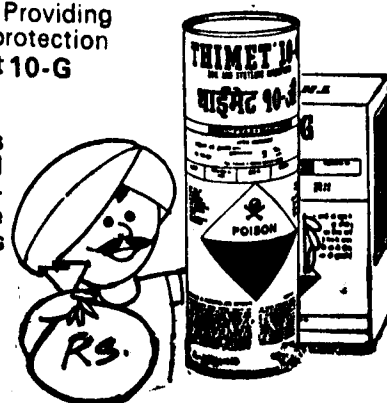
Because Thimet 10-G believes in getting down to the basic essentials of protecting your crops from untold damage even before pests and insects can attack.

Thimet 10-G gives your crops a unique combination of plant systemic, contact and fumigant action. Providing long-term, continuously powerful 3-way protection. So much so that one application of Thimet 10-G does the work of several applications of conventional insecticides.

Because of its systemic action, Thimet 10-G is unaffected by weather and leaves no harmful residues in the fully matured plants. Established in over 60 countries, Thimet 10-G is the economical answer to every crop grower's pest problems.

Agricultural Division  
CYANAMID INDIA LIMITED  
P.O. Box No. 9109, Bombay-26.

**THIMET 10-G**  
SERVES AGRICULTURE AROUND THE WORLD  
© Registered Trademark of American Cyanamid Company.



BSA'S-GR-88



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 house-sites 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 he 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.

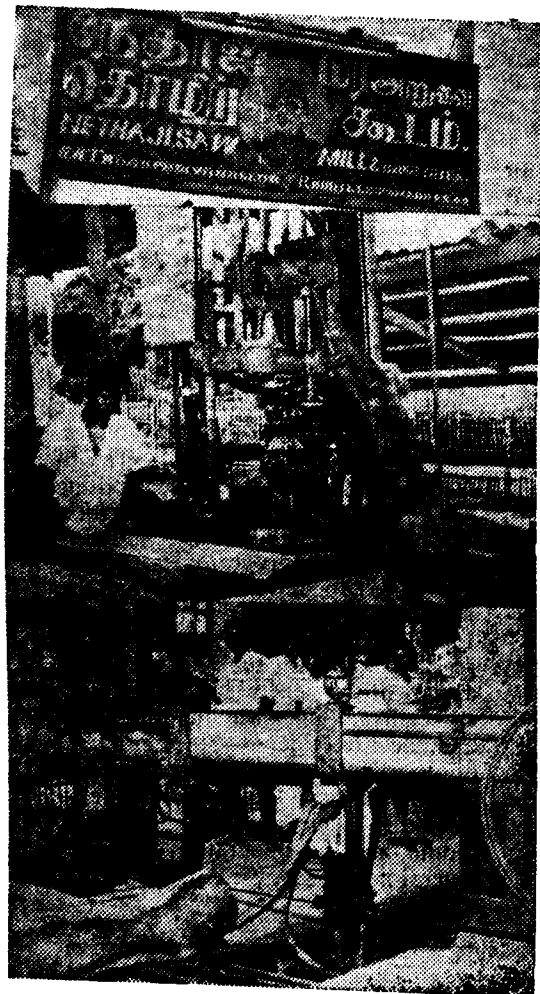
About 40 per cent of total deaths occur among children below five years. A vicious cycle-large family size malnutrition-poor maternal care-high child-mortality motivation for larger families resulting in the aggravation of malnutrition is established. Family planning and Nutrition programmes should, 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.



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.

## 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

-55

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

1. 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

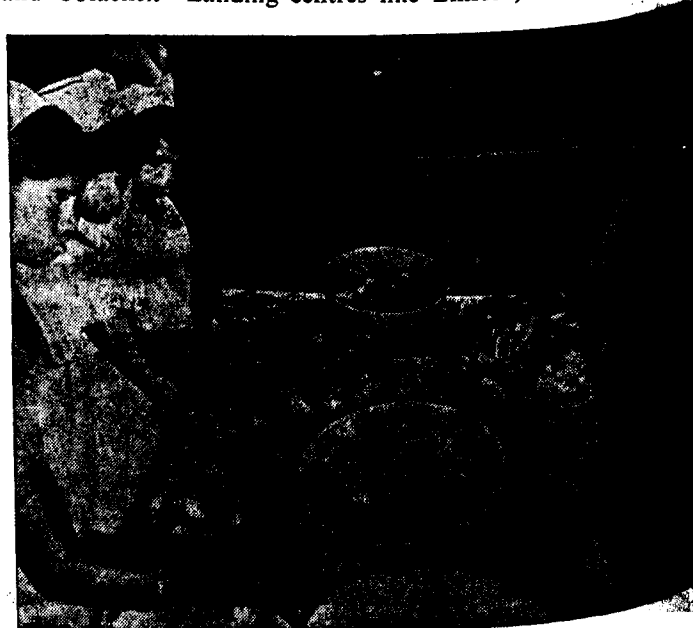
This Department has distributed nylon yarn for improved gear on a large scale to the traditional fishermen and to the mechanised vessels during the last 10 years.

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.\*

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.

**Seshasayee Paper and Boards Ltd.**  
Pallipalayam, Salem District, S. India



The Watermark  
of Quality



WSPB 777 A



# MARICULTURE OFFERS PROMISES FOR INCREASED FISH PRODUCTION

*Address delivered by Thirumathi, M. Sathyavanimuthu, 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, Marakanam, 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 Peraied 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 scare 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 in 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. ●

Read

# Tamil Arasu

MONTHLY

For authentic and accurate news of Tamil Nadu.

Annual subscription Rs. 5.00.  
Per copy Re. 0.40.

## 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 amounts 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 3,154. 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

In the last three years ending 30th September 1972, the Cinchona Department of the Tamil Nadu Government earned a foreign exchange of Rs. 85.95 lakhs by the export of Quinine and Quinidine. Quinine, as is well known, is a sovereign remedy for Malaria, and it has been established recently that while most of the strains of parasites that cause malaria have developed stubborn resistance to many synthetic anti-malarials, they continue to react of Quinine. As a result, there is increasing demand from many countries of the world for Quinine.

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.

### 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

**TIIIC**  
THE FINANCIAL  
INSTITUTION  
WITH A HEART

**TAMIL NADU INDUSTRIAL INVESTMENT  
CORPORATION, LTD.**

(Sponsored by the Government)

LLA Buildings, III Floor, 150-A, Mount Road, Madras-2.

### Branches :

1231, SOUTH MAIN STREET, THANJAVUR.  
247, NAICKER NEW STREET, MADURAI.  
6/37, RACE COURSE ROAD, COIMBATORE-18.

## 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 Industrial Statistics Wing, 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 the manufacture 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 Nangal in the district of Amritsar. Fifteen small farmers of Udho Nangal 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 Nangal 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 Nangal which appeared to be uneconomical so far, are proving viable now. They produce "char" a for the buffaloes and the farmers can go on expending 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 in 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 irretrievably adverse effect on both.

## IN INDIA? AND WHY?

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 close'y 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.

*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.

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.

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 invariably 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 complications 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 disadvantages.\*

EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU AND  
PRINTED BY THE DIRECTOR OF STATIONERY AND PRINTING, GOVERNMENT PRESS, MADRAS-1.

67

Despite these achievements  
Rising Population Raises Problems

**SURELY YOU CAN  
BY PLANNING YOUR FAMILY**

**DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING**

# BEST BUY FOR FESTIVE PONGAL BUY TAMILNADU RAFFLE TICKETS

First Prize:

Rs. **1,00,000**

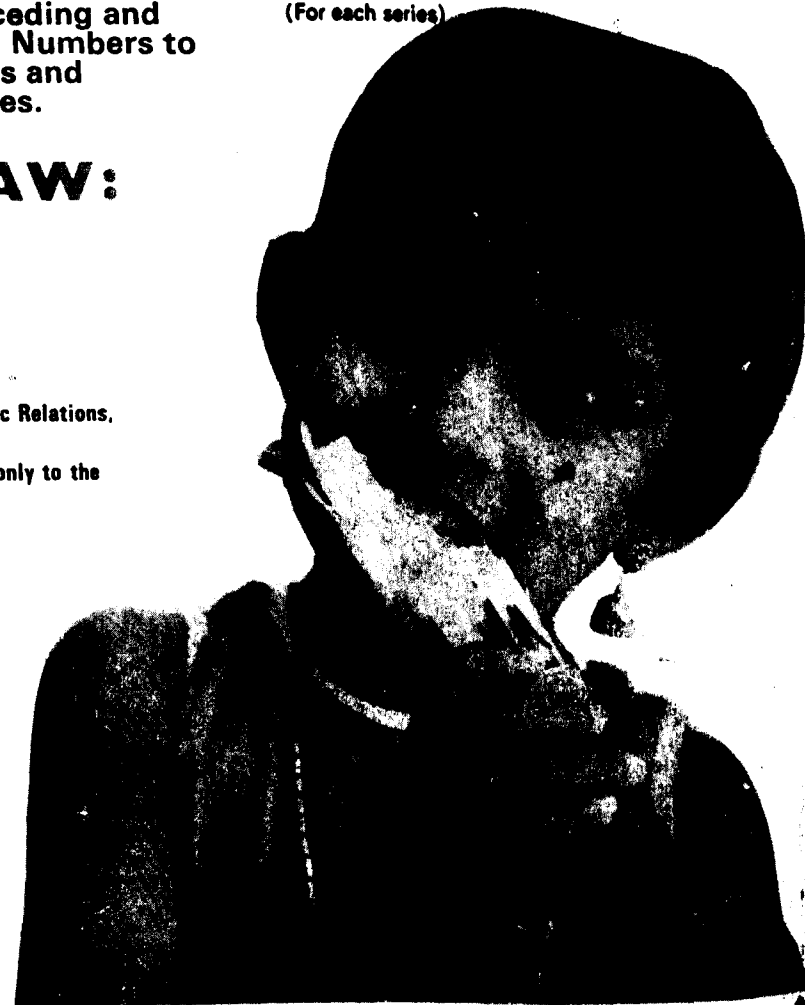
Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

(For each series)

**DATE OF DRAW:  
10-1-1973**

**Cost Per Ticket  
Re. 1/- only.**

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



*All your Needs*

*Are Available Here*

**KURALAGAM**

*Madras-1*

**KHADI-KRAFT**

PHONE: 20461, 20462,  
20463, 20464, 20465

**REPOSITORY OF  
HANDICRAFT  
ARTICLES**

MUTHU

# Tamil Arasu

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

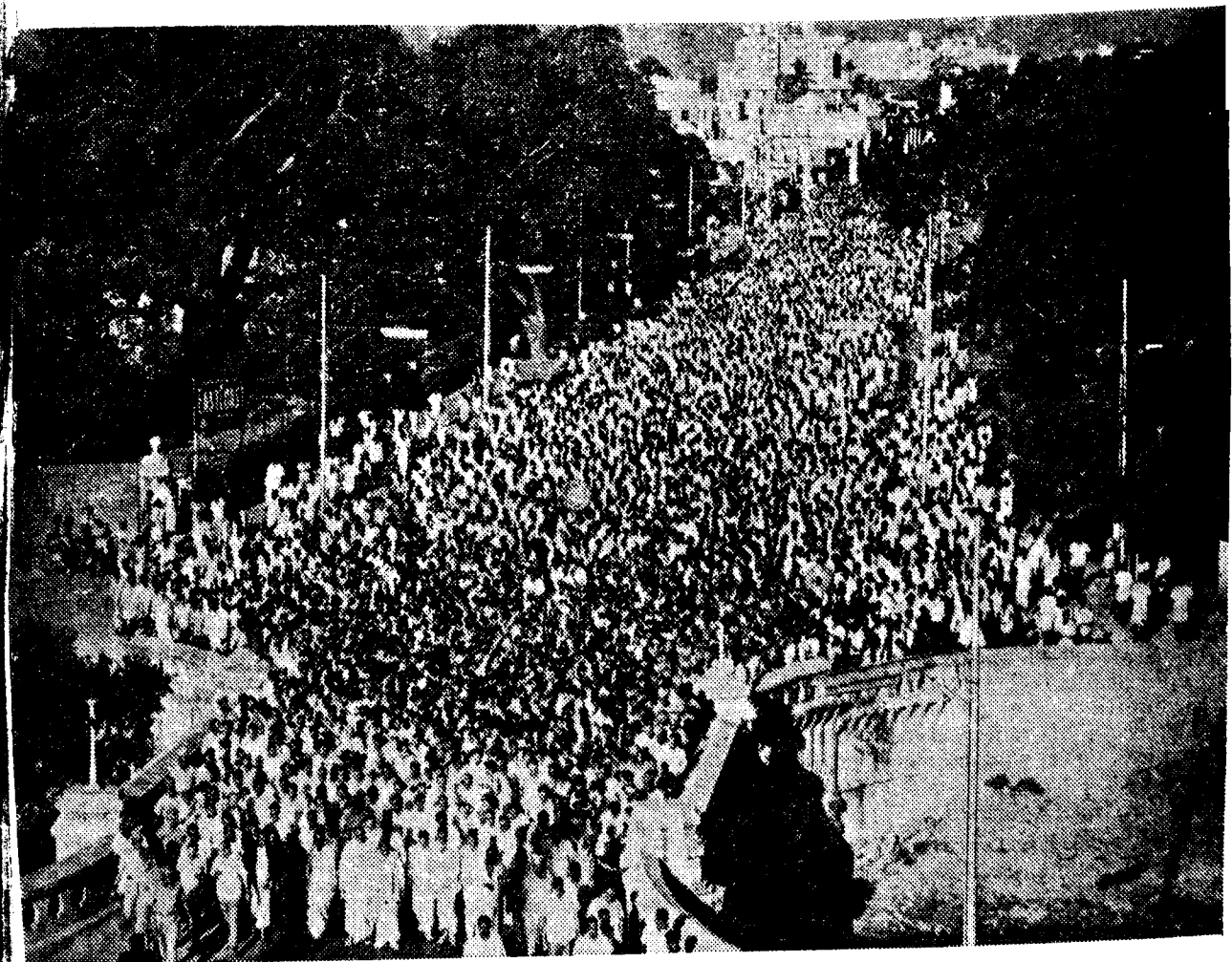
## CONTENTS

|                                                     | PAGES. |
|-----------------------------------------------------|--------|
| Governor's address in the Assembly                  | 6-8    |
| Republic Day addresses by the Governor and the C.M. | 15-17  |
| Features on tourist Festival in Tamil Nadu          | 19-21  |
| C.M.'s address at N.D.C. . . . .                    | 23-25  |
| Dr. M. Karunanidhi on taxation . . . .              | 28-29  |
| Celoreto Plant . . . . .                            | 35-36  |
| Institute of Catering Technology . . . .            | 37-38  |
| The new role of District Collectors . . . .         | 39-42  |
| Perspective Plan for Nutrition for 1972-84.         | 43-46  |
| Mineral exploration . . . . .                       | 50-58  |
| Chamundi of Charapallam . . . . .                   |        |

—0—



Flag unfurled for Republic Day.



Thousands of Madras and from all over Tamil Nadu rallied behind Chief Minister to pay their Homage to Anna on 3-2-1973.



# 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 corps scheme at a cost of Rs. 61 lakhs and the drought prone areas programme 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 five years' truce is a must. In fact, at least for two decades we will have to forget party politics after the elections are over and utilise our collective wisdom, ability and energy for building the base of our stability and prosperity. "At a time when indiscriminate violence all over the world adds to restlessness and calls for sober counsels, extra effort will have to be made to maintain balanced attitude, 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.

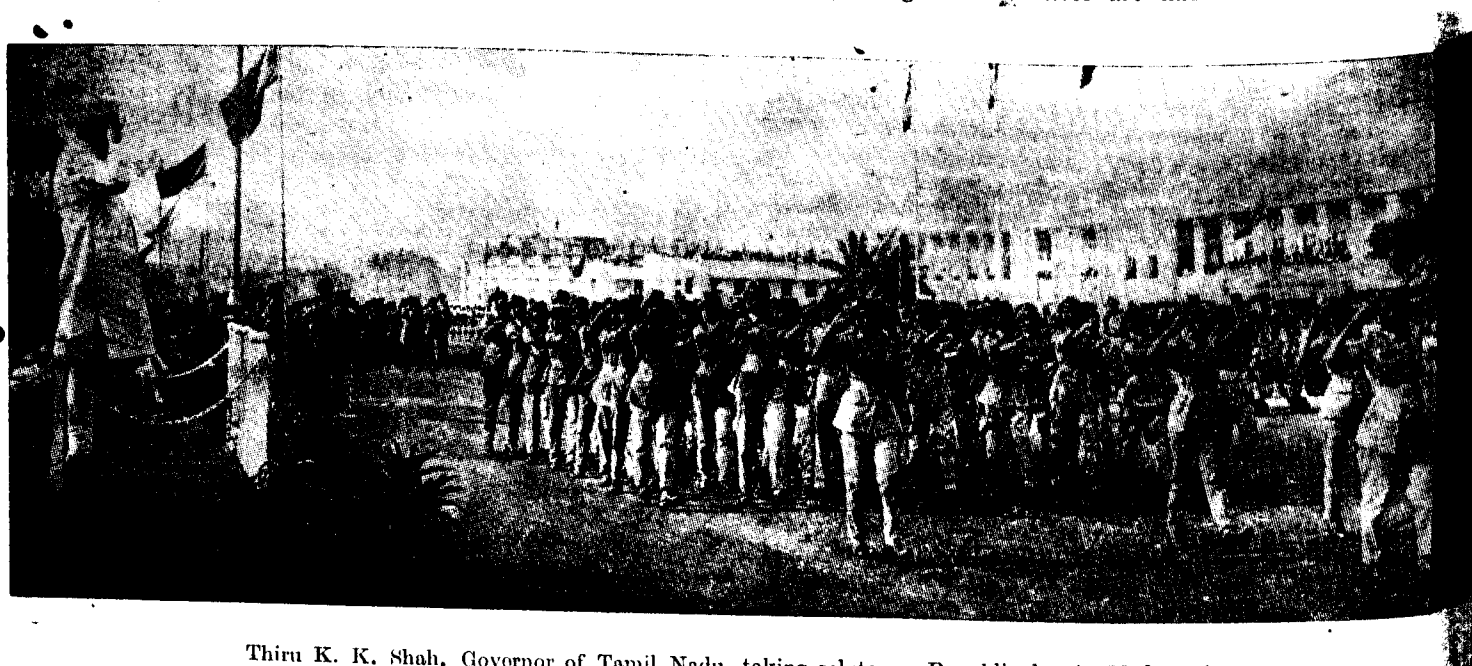
The Administrative Reforms Commission and the State Planning Commission have commenced work. The Administrative Reforms Commission has set up a number of groups to examine the procedures of the Government. The Planning Commission has set up a number of task forces to look into various aspects of the 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".



Thiru K. K. Shah, Governor of Tamil Nadu, taking salute on Republic day in Madras City.

# 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, Kummil, 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 agitation. 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

# 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                                       |

|                                      | Million<br>Units. |
|--------------------------------------|-------------------|
| Reduction in line losses             | 15                |
| Total reduction per month            | 90                |
| Total reduction for eight<br>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  |
| July              | ..   | 874  | 1067 |
| August            | ..   | 329  | 556  |
| September         | ..   | 139  | 251  |
|                   |      | 1867 | 2081 |
|                   |      | —    | 1471 |

|                   | 1970 | 1971 | 1972 |
|-------------------|------|------|------|
| In Million Units. |      |      |      |
| June              | ..   | 261  | 701  |
| July              | ..   | 435  | 502  |
| August            | ..   | 597  | 439  |
| September         | ..   | 202  | 323  |
|                   |      | 1495 | 1965 |
|                   |      | —    | 1366 |



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

1971

MU increase per cent.

|           |    |          |
|-----------|----|----------|
| June      | .. | 557 7.8  |
| July      | .. | 563 9.3  |
| August    | .. | 542 10.4 |
| September | .. | 552 8.5  |

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 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

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, 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 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 last homage to him. But it was his wish, repeatedly expressed, that no such things should happen, that this should not be done, that he was entirely opposed to any embalming of his body, and so we

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.

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”

## 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.

12

### 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. Uthamarayan, 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 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

13

from 1st April 1964 in all cases to 5 years) in G. O. Ms. No. 950, Finance, dated 29th July 1964) and still 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 paydrawn 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 the 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.

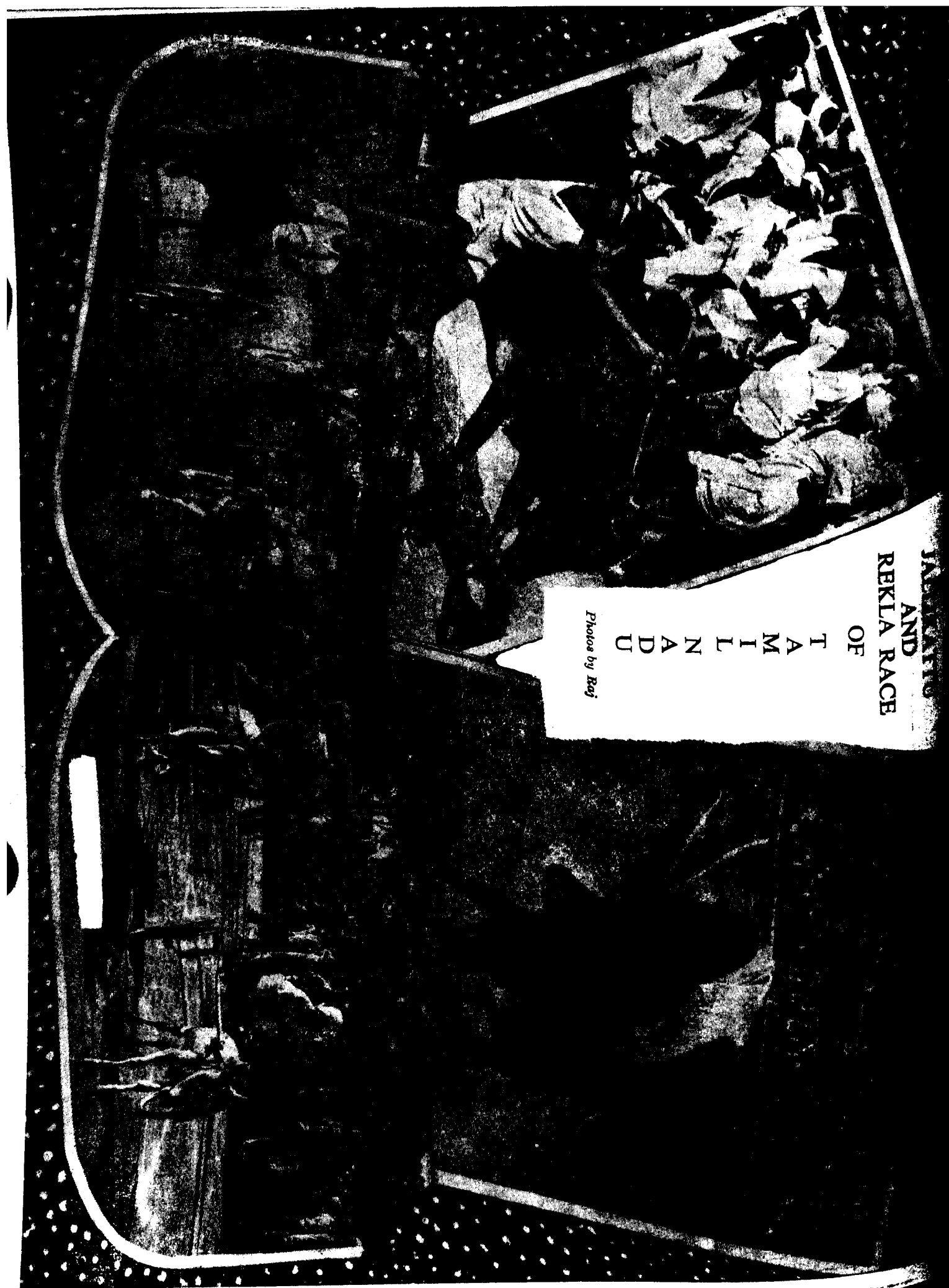
#### Pongal Becomes a Tourist Festival

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, Geography

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.



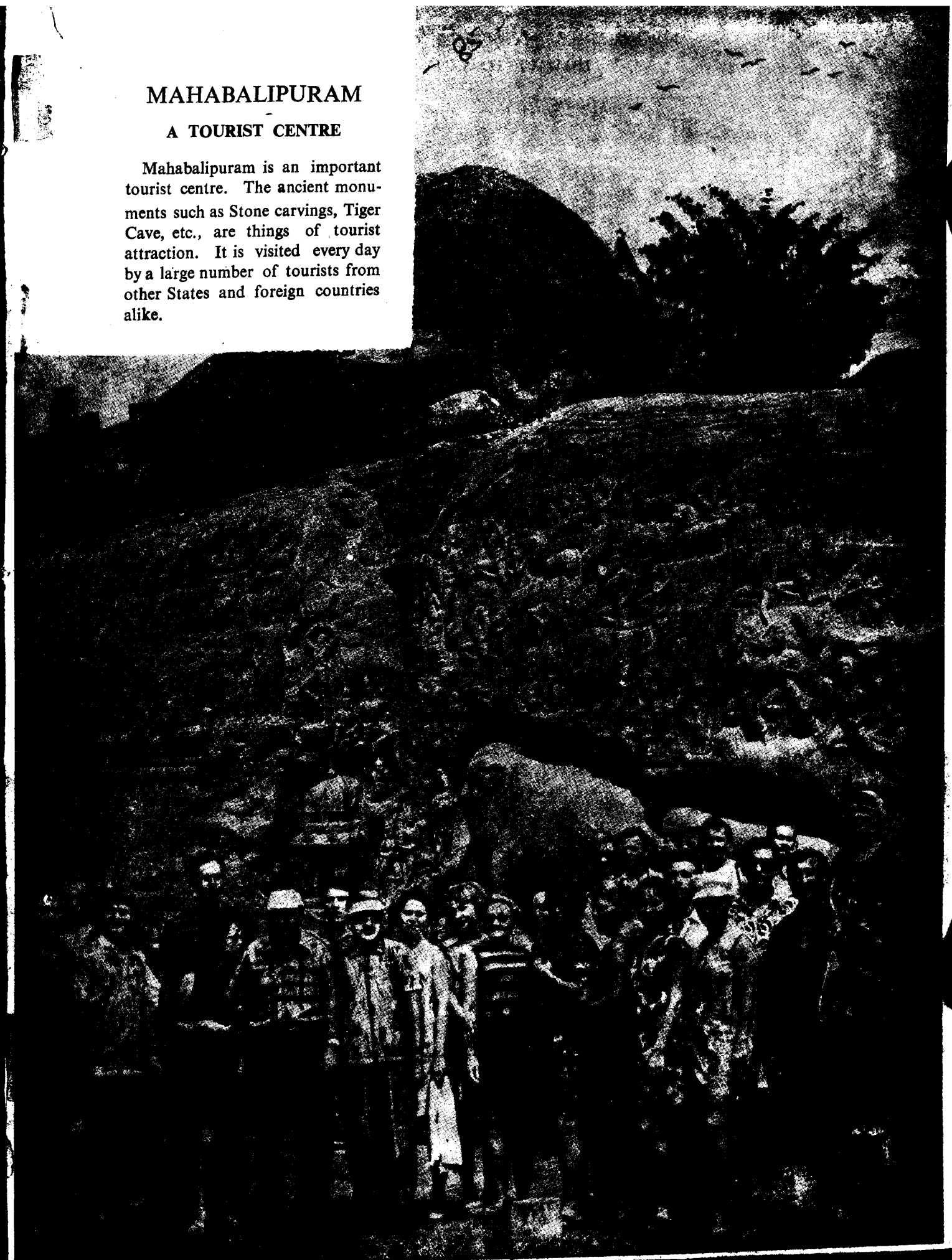


MAHABALIPURAM  
AND  
REKLA RACE  
OF  
TAMILNADU  
Photos by Ray

## MAHABALIPURAM

### A TOURIST CENTRE

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.



## 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.



## 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 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 lower 30 per cent of our people will be only Rs. 37 at 1971-72 prices. This large mass 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 to States. Only this arrangement 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

## 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.

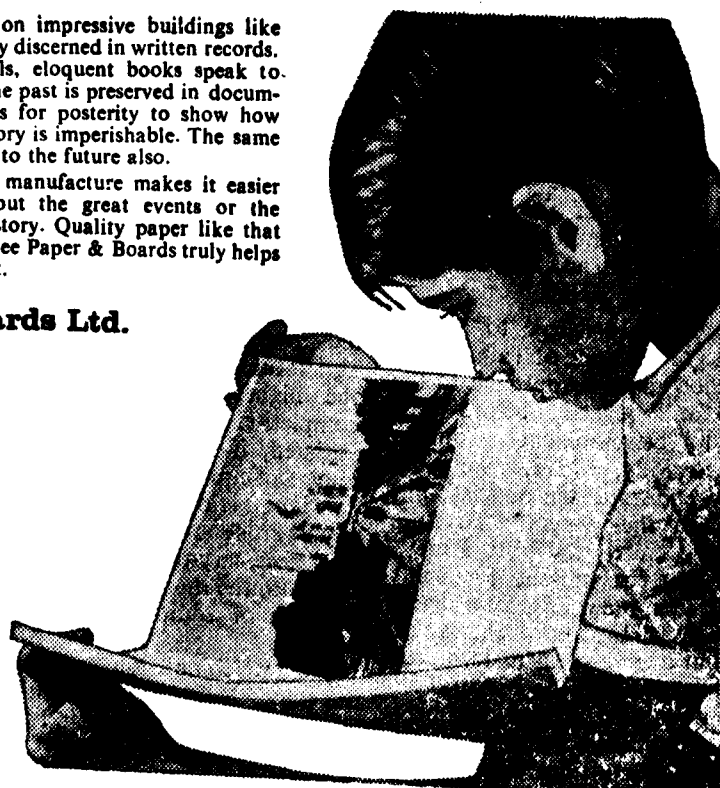
**Seshasayee Paper and Boards Ltd.**  
Pallipalayam, Salem District, S. India



The Watermark of Quality



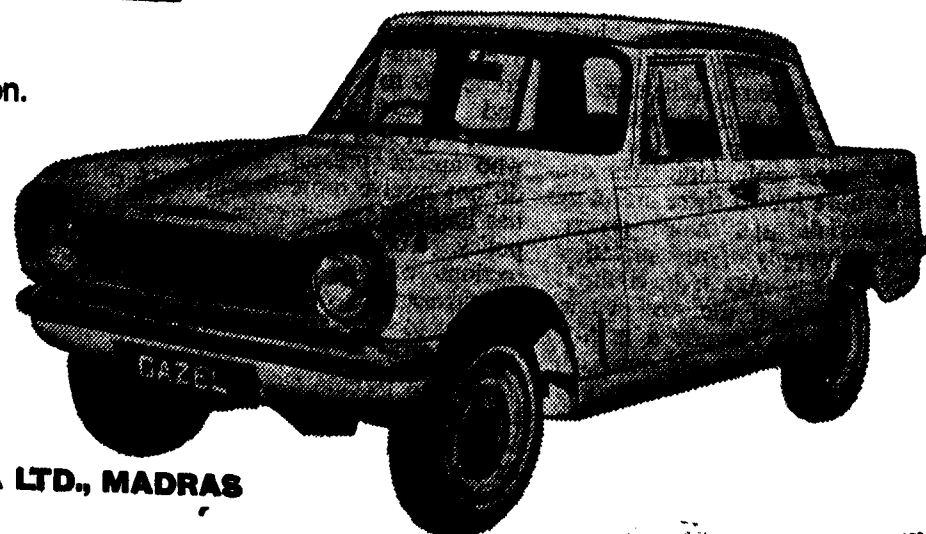
PDS/PSB 777 A



## STANDARD GAZEL

5 to 6 seater with improved rear suspension.

—'THE SMALL BIG CAR' with more space, more beauty.



**STANDARD MOTOR PRODUCTS OF INDIA LTD., MADRAS**

Dealers :

THE UNION COMPANY (MOTORS) PRIVATE LIMITED, MADRAS-2  
UNICORN (BANGALORE) PRIVATE LIMITED, BANGALORE-1.

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.

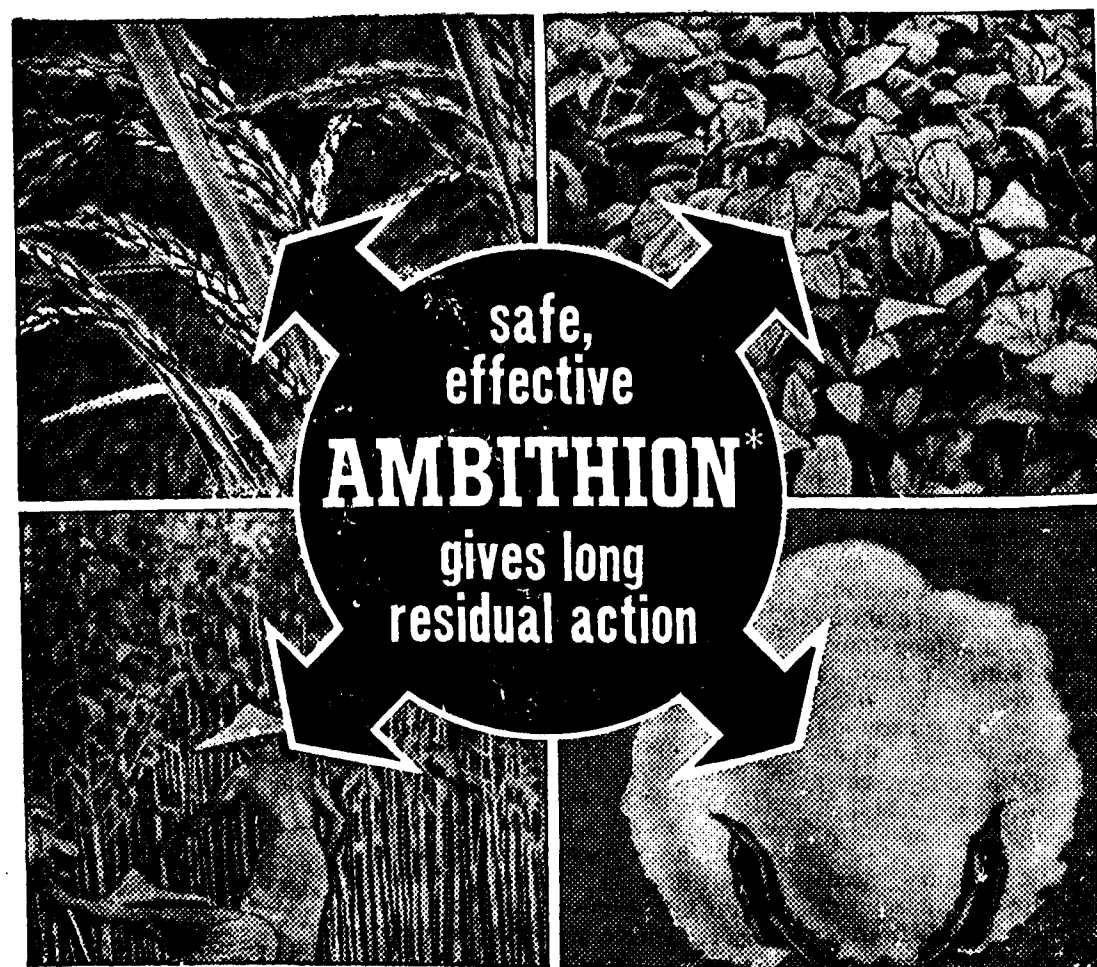
The approach paper makes a number of calculations on how to get at the resources needed for the plan. Much reliance has been placed in the paper on additional mobilisation of resources. While as a Chief Minister in charge of Finance, I have initiated a number of taxation proposals, as a layman, I am 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.





**Ambithion gives your crops total broad spectrum pest protection that combines safety with long residual action.**

**Ambithion... the most efficient broad spectrum insecticide available... has a powerful synergistic effect that kills the most stubborn, hard-to-kill pests.**

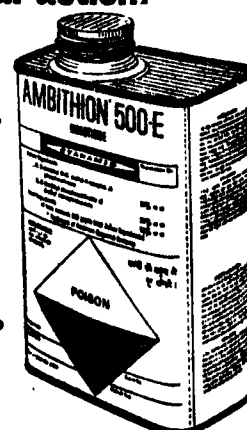
**Because it's a low hazard insecticide, Ambithion poses hardly any problem to operators and it's long residual action makes continuous applications unnecessary.**

**Saving on money, time and energy.**

**Tested in many countries... Ambithion is the tested and proved insecticide for healthy, profitable crop growth.**

**CYANAMID SERVES AGRICULTURE AROUND THE WORLD**

AGRICULTURAL DIVISION  
CYANAMID INDIA LIMITED  
P. O. Box No. 9109 BOMBAY 25.  
\* Registered Trademark of American Cyanamid Company



SISTA'S-CIL-390

## 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.

According to him, the other equal important task that should be entrusted to the Commission will be to remove the self-defeating characteristic which is present in some of the taxes. Taxation of commodities such as fertilisers go a long way to add to the cost of agricultural production and finally to increase in prices. Similarly, a considerable part of goods such as cement and steel which are used in Government outlays, if subject to the payment of Duties, will add to the prices of commodities. It may be that the Government is paying all the excises from out of its own resources. Besides, the increase in price of these commodities raises the cost of production of goods in general and this has a serious impact on general prices which in turn impinge the wage levels and Central and State resources.

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.

## FIXED DEPOSITS ACCEPTED

\* We offer 7 per cent interest for one year and  
7½ per cent interest for 15, 18, 21 and 24 months.

\*\* Minimum Deposit : Rs. 1,000.

\*\*\* Interest payable monthly, quarterly, half-yearly or annually at your option.

\*\*\*\* Interest earned up to Rs. 3,000 exempt from Income-tax.



### CONTACT :

Tamil Nadu Co-operative  
State Land Development Bank Ltd.,  
32, LUZ CHURCH ROAD,  
MADRAS-4.

Ist Branches, or the nearest  
Primary Land Development Bank.

**M. SHANMUGHAM, M.L.A.,**  
Chairman.

**P. S. MUTHU SELVAN, M.L.A.,**  
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

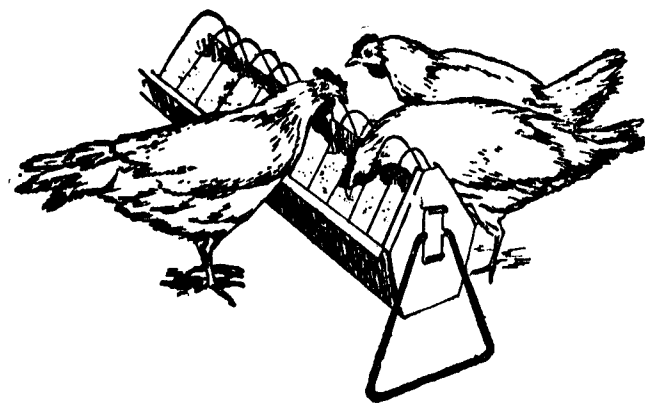
The rate of tax burden on the middle income group will provide an incentive for saving. People having an income up to Rs. 15,000 have a very high propensity to save and the only method of exploiting this propensity would be to provide them with the necessary tax incentives. The granting of allowance 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.

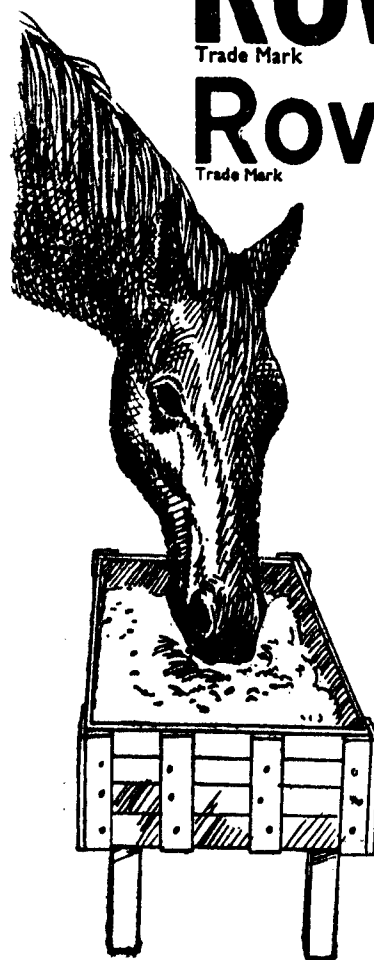
The Chief Minister  
always finds time  
to discuss ways  
of  
Improving State's  
Economic Pattern  
with visitors.





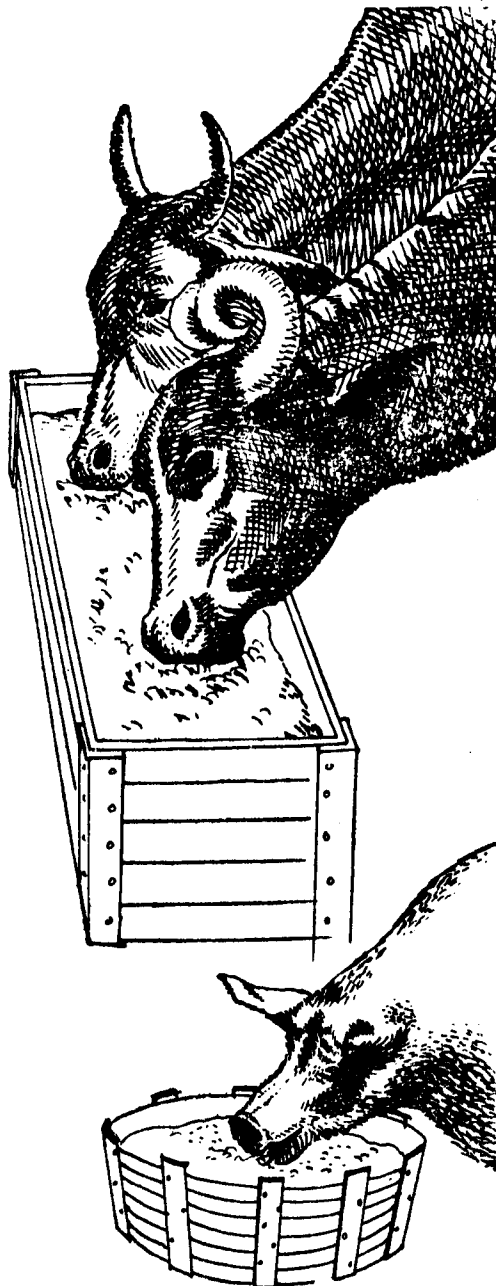
HIGHER GROWTH RATE—  
IMPROVED PERFORMANCE  
WITH

**ROVIMIX** and  
**Rovisol Oral**



**ROVIMIX FOR ALL NORMAL  
VITAMIN REQUIREMENTS**  
The normal vitamin requirements  
are easily and economically met by  
fortifying the feed with a suitable  
product from the Rovimix range of  
mineral-stable vitamin powders.

**ROVISOL ORAL FOR ADDITIONAL  
VITAMIN REQUIREMENTS**  
During stresses such as parasitic and  
infectious diseases, medication, heat,  
cold, damp or draught, moulting, rapid  
growth and even transportation,  
the vitamin requirements are considerably  
increased and may be even more than  
twice the normal. The vitamin levels  
can best be increased by administering  
ROVISOL ORAL as and when necessary.



Manufactured by:



**ROCHE PRODUCTS LIMITED**  
28, Tardeo Road, Bombay-34 WB

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 feel of the hand-woven cloth is irresistible to the sophisticated.

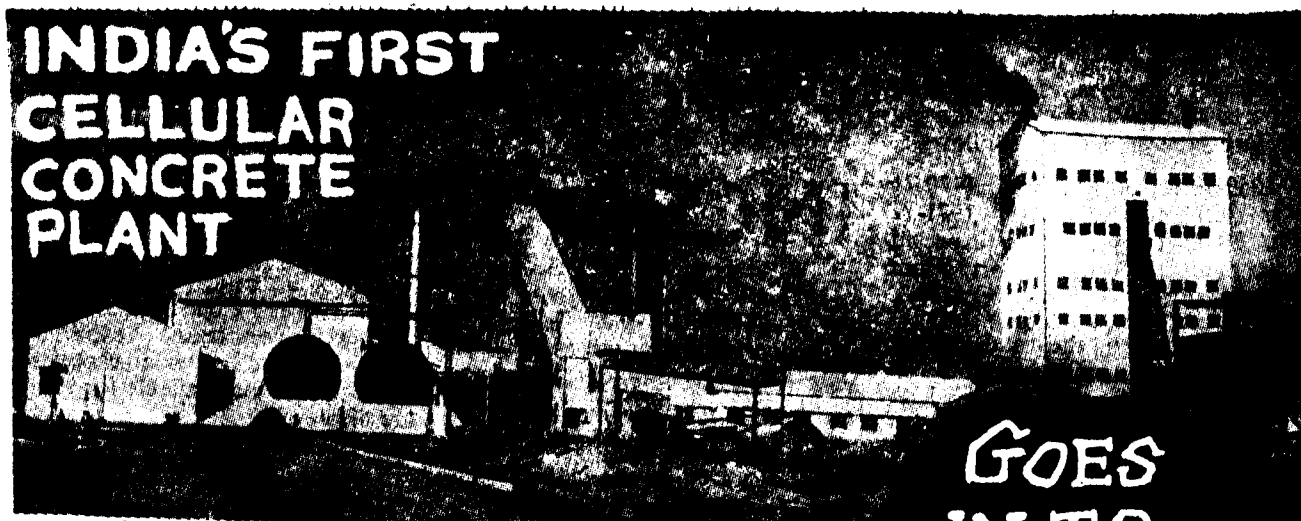


### The Scope

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 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.



## INDIA'S FIRST CELLULAR CONCRETE PLANT



**GOES  
IN TO  
PRODUCTION**

### 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.

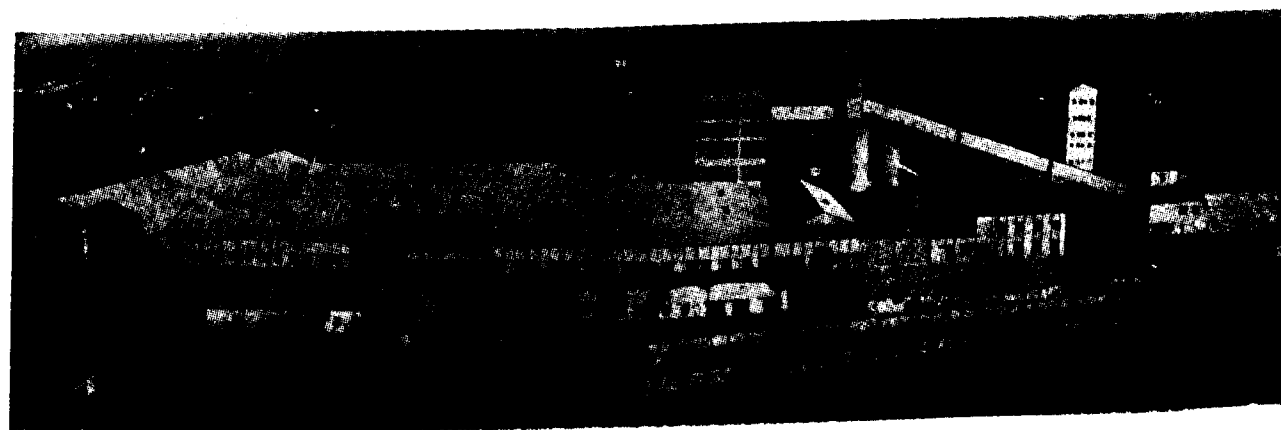
Fly ash is usable for the following purposes : Pozzalona, part replacement of cement in mortar, pozzalona Cement, Insulating

Cement, Oil well cement, Fire 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.





We make better things for better living. And better living goes with Parryware. For Parryware puts a whole range of bathroom beauty within your reach. Planning a new home or modernising an old one? Let Parryware show you how beautiful your bathroom can be.

Sleek, stylish, striking, strong, purposeful Parryware is available in Pearl-White and pleasing pastel shades: Pink, Primrose, Turquoise, Skyblue, Mellow-Green and Mist-Grey.

- Vitreous • Non-porous
- Non-crazing
- Completely hygienic

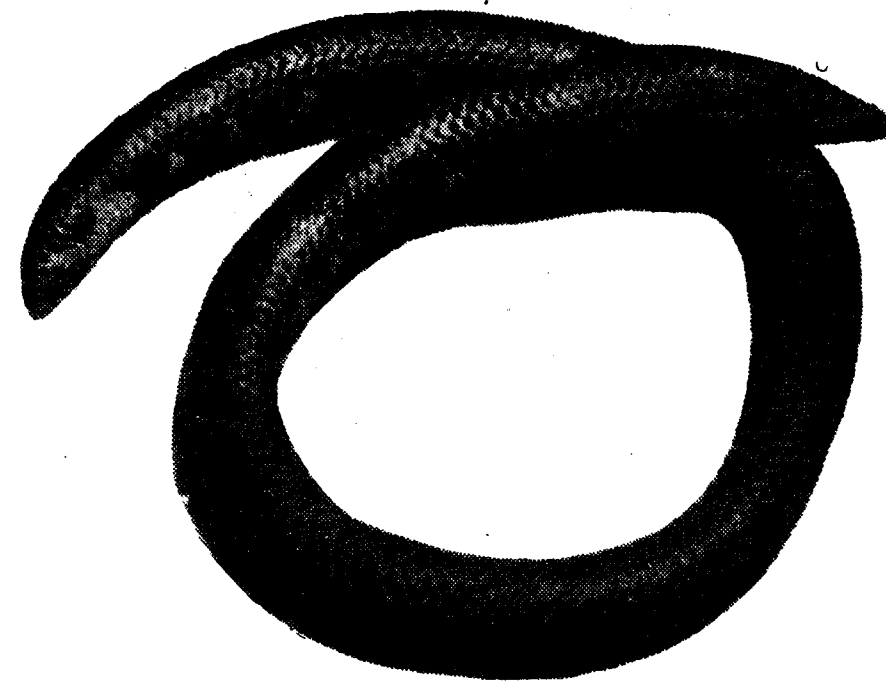
On ISI and DGS & D Lists  
 • On UK Council of Industrial Design for Design Index • Made with technical advice from Royal Doultons, UK

**E.I.D.-PARRY LIMITED**  
 Dare House, Madras-1

*Parryware*  
**VITREOUS**

**PARRYWARE VITREOUS FOR GRACIOUS LIVING**

FROM INDIA'S LARGEST CERAMIC FACTORY AND WITH AN INTERNATIONAL REPUTATION



## THE PRETTY SNAKES OF TAMIL NADU FORESTS

It is commonly believed that snakes are generally found hiding underneath big stones or logs in forsaken places and people are often so ignorant that if a big stone is lifted/turned a deadly Cobra with its raised hood or a hissing Viper will instantly make the scene. Few of us are quite aware of the existence of beautiful and harmless snakes also under stones in the hills and forests of the wooded districts of Tamil Nadu, Mysore, and Kerala.

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 foot-hills 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.



By  
**T. S. N. MURTHY.**

## 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

**TIFIC**  
THE FINANCIAL  
INSTITUTION  
WITH A HEART

**TAMIL NADU INDUSTRIAL INVESTMENT  
CORPORATION, LTD.**

(Sponsored by the Government)

LLA Buildings, III Floor, 150-A, Mount Road, Madras-2.

### Branches :

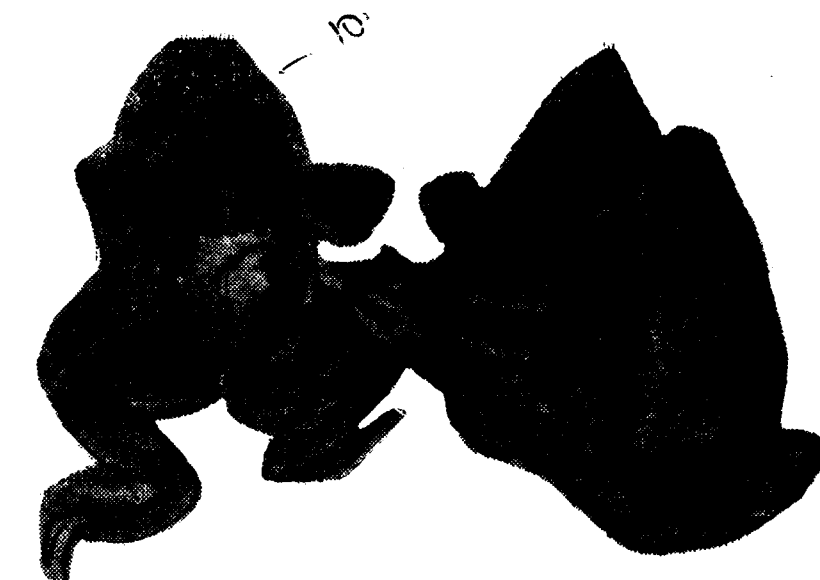
1231, SOUTH MAIN STREET, THANJAVUR.  
247, NAICKER NEW STREET, MADURAI.  
6/37, RACE COURSE ROAD, COIMBATORE-18.

## 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

large numbers for breeding purposes. It is easily caught at night in surprise by means of flash light as it is dazzled by light and stops moving in a frightened motion 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 in their habitat. Their main diet appears to be the insects of various kinds chiefly beetles and large worm miscellaneous crustaceans, fishes and above all small frogs.

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

At present, the edible species are captured, 'treated', and exported. For the purposes of freezing and canning later, the method employed early was chop off the hind legs of the 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 the mutilated bodies. Thanks to fair play and justice, a more humane technique has been evolved where the frogs are subjected first to narcotization on scientific lines and immersing them in 10 per cent bromine 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.





# GOVERNMENT OF TAMIL NADU PUBLICATIONS.

The following publications are available for sale at Government Publications Depot, 166, Annasalai, Madras-2.

| Serial number and name of Publications.                                                              | Price. | Serial number and name of Publications.                                                            | Price. |
|------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------|--------|
|                                                                                                      | RS. P. |                                                                                                    | RS. P. |
| 1 Biennial Civil Medical List of Gazetted Officers of Tamil Nadu (Corrected up to 1st January 1968). | 8 75   | 20 Classified Catalogue of Tamil Printed Books with Introductory Notices—Compiled by John Murdoch. | 11 50  |
| 2 தாய்மையும் குழந்தை நலமும் ..                                                                       | 1 65   | 21 Silver Jubilee Commemoration Seminar Papers—Tamil Nadu Statistics.                              | 9 70   |
| 3 Revised Syllabuses on Commercial Subjects Lower and Higher Grade Examinations.                     | 0 65   | 22 A Hand Book of Some South Indian Weeds.                                                         | 7 00   |
| 4 Reply to Memoranda presented to the President of India.                                            | 3 00   | 23 Noi Illa Neri—Siddha Text Book Series (Tamil).                                                  | 6 62   |
| 5 இந்தியக் குடியரசுத் தலைவரிடம் அளிக்கப்பட்ட மகஜர்களுக்கு பதில்.                                     | 3 00   | 24 Glossary of Administrative Terms (English-Tamil).                                               | 5 10   |
| 6 State Rules to Regulate the grant of Advances to Government Servants for Buildings, etc., Houses.  | 0 40   | 25 Season and Crop Report of Tamil Nadu (1968-69).                                                 | 3 35   |
| 7 அண்ணா மலர்—பிப்ரவரி 1969 ..                                                                        | 1 00   | 26 Statistical Hand Book of Tamil Nadu, 1970.                                                      | 2 00   |
| 8 ANNA MALAR February 1969 (English).                                                                | 1 00   | 27 Hygiene and Preventive Medicine—Tamil.                                                          | 0 87   |
| 9 கிராமங்களின் அகர வரிசைப்பட்டி.                                                                     | 11 10  | 28 Midwifery for Village Vaidya—Tamil.                                                             | 0 87   |
| 10 Portrait of present Chief Minister ..                                                             | 1 00   | 29 Centre—State Relations Inquiry Committee by P.V. Rajamannar—English.                            | 5 00   |
| 11 List of Recognised High and other Special Schools (corrected up to 31st March 1970).              | 5 30   | 30 மைய மாநில உறவு ஆய்வுக்குழு அறிக்கை—தமிழ்.                                                       | 5 00   |
| 12 Law Lexicon A to Z .. .. .                                                                        | 9 00   | 31 Teachers Service Register for Aided Secondary Schools.                                          | 1 90   |
| 13 Quarterly List of Gazetted Officers (corrected up to 1st April 1970).                             | 2 00   | 32 Grant-in-Aid Code .. .. .                                                                       | 1 45   |
| 14 Tamil Nadu An Economic Appraisal Part I and II, 1972.                                             | 15 00  | 33 Irrigation Manual—by Ellis .. ..                                                                | 5 60   |
| 15 Tamil Nadu Co-operative Manual ..                                                                 | 17 50  | <b>REDUCED PRICE PUBLICATIONS.</b>                                                                 |        |
| 16 Tamil Nadu Loans (Takkavi) Manual.                                                                | 9 10   | 1 A Monograph on Madras Bananas                                                                    | 2 46   |
| 17 Tamil Nadu Market Committee's Accounts Manual, Volume I.                                          | 25 90  | 2 A Monograph on South Indian Mangoes.                                                             | 1 96   |
| 18 தொழிலாளர் வருங்கால வைப்பு நிதிச் சட்டம், 1952.                                                    | 2 90   | 3 Techno-Economic Survey of Madras.                                                                | 2 50   |
| 19 Hand Book of Economic Entomology for South India.                                                 | 13 75  | 4 Food and Agriculture in Madras State.                                                            | 0 50   |
|                                                                                                      |        | 5 Practical Botany .. .. .                                                                         | 0 50   |

Bonafide Book sellers of standing may apply for Agency for selling Government Books in Municipal Towns. 25 per cent discount is allowed for agents. Packing and Postage extra.

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 the diploma the candidates appear for an 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.

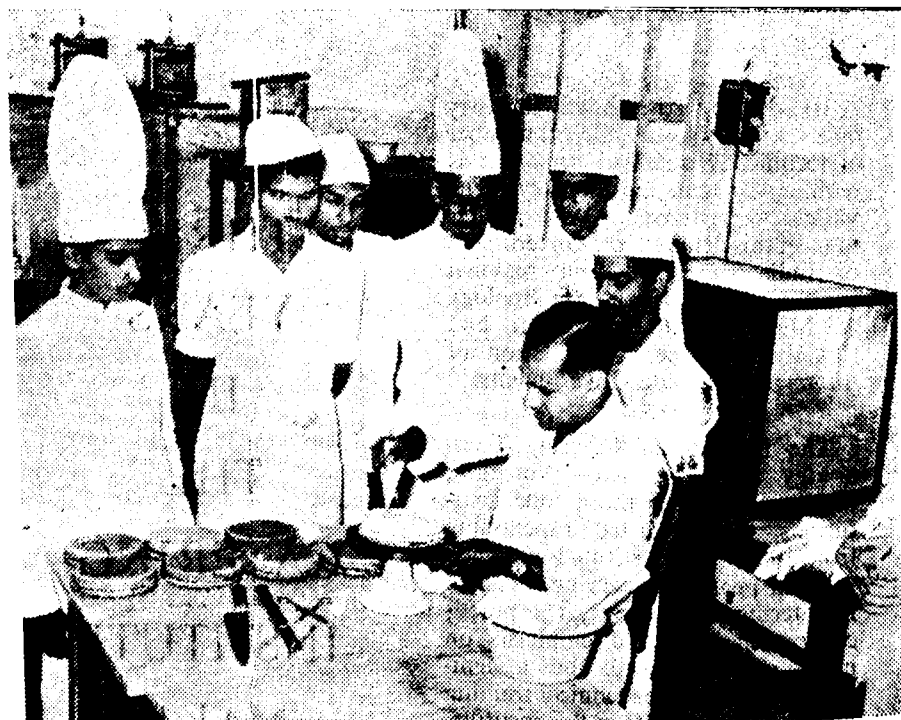
In respect of S.S.L.C. passed candidates from Kerala, Mysore States, etc., after ten years schooling, a pass in the final Pre-Degree University Examination in one sitting or Pre-University Examination is necessary.

#### (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 and Counter Service—*

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 is English.

## THE NEW ROLE OF THE DISTRICT COLLECTOR



By

B. L. MAHESHWARI,  
Director of Research,  
Administrative Staff  
College of India,  
Hyderabad.

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

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 it 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 advancements made in electronics, trade, radio television, refrigeration and industrial and domestic equipments.

## MINERAL EXPLO- RATION 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.

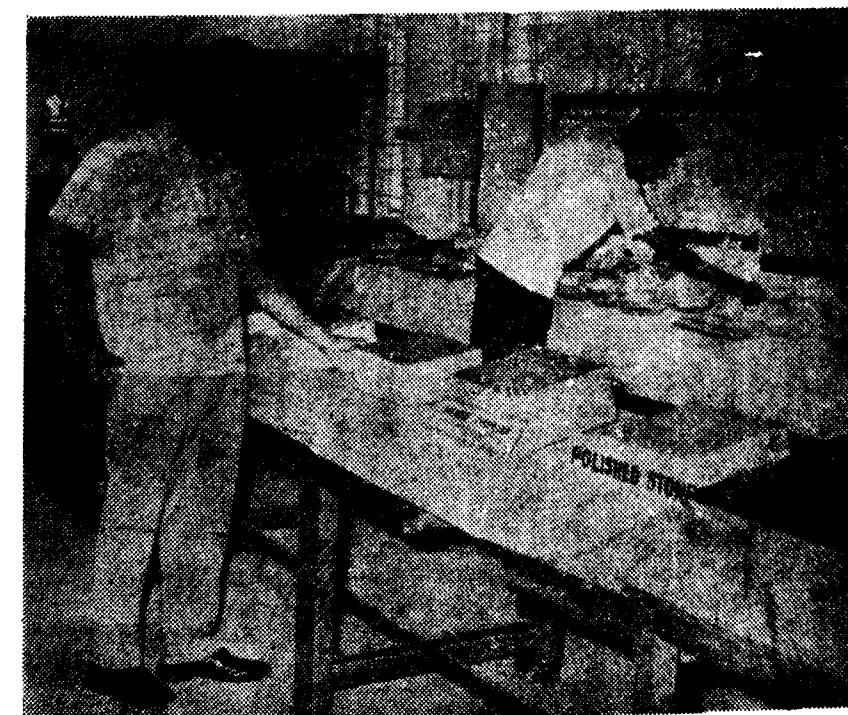
The deficiency of minerals in the State was even more striking during this period in the case of metallic ores and industrial fuels. The bulk of mineral production consisted of 50 per cent salt, 20 per cent of limestone, 11 per cent of magnesite, 9 per cent of ilmenite and 6 per cent of gypsum. The lack 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.



## A RECORD OF ACHIEVE- MENTS



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.

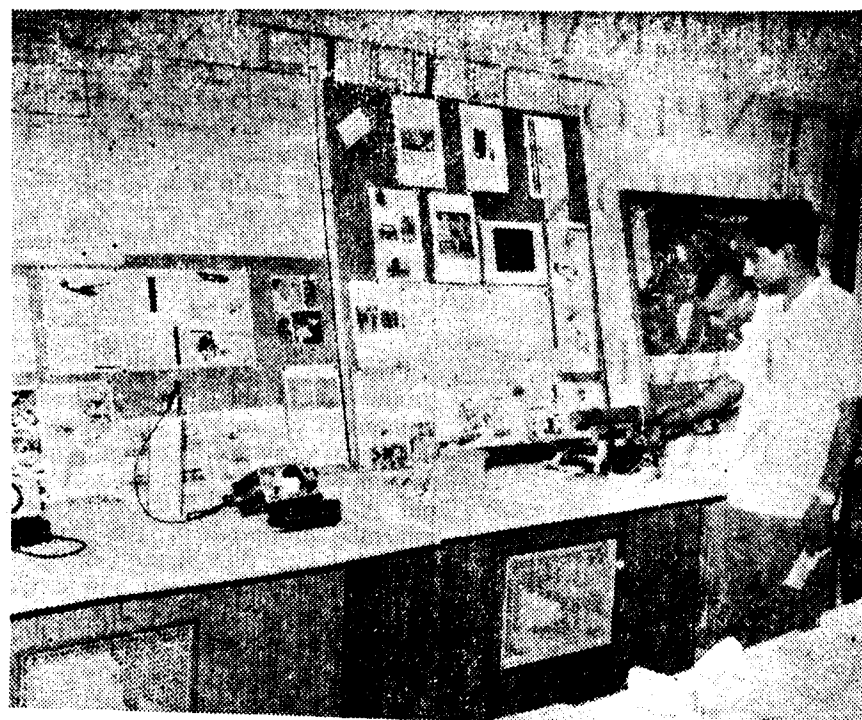
#### EXPLORATIVE ACTIVITIES OF GSI, AEC AND ONGC.

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 shot up 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. |
|--------|--------|
| 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 Kulithalai taluk of Tiruchirappalli district and is now being exploited by Thiruvalargal 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 Sankarankou 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



Mineral Exhibition of keen interest to visitors.

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.

#### 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.

#### 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.

- President, Kanchipuram Handloom Weavers' Union. Member.
- The Vice-President, Kudanthai Pattu Nesavu Thozhilalar Sangam. Member.

The Committee which consists of dependent 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.

6. The President, Madurai Mahalakshmi Weavers' Co-operative Products and Sales Society Limited, Kanpalayam, Madurai. Member.

1. Paramathi Thiru K. Shammugam, 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, Emaneswaram, 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.



## 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*s, 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 services 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 scrappers, 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 turnover 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,

IN GOVERNMENT MUSEUM

## THE CHILDREN'S SECTION

A CYNOSURE OF  
Younger Generation

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.

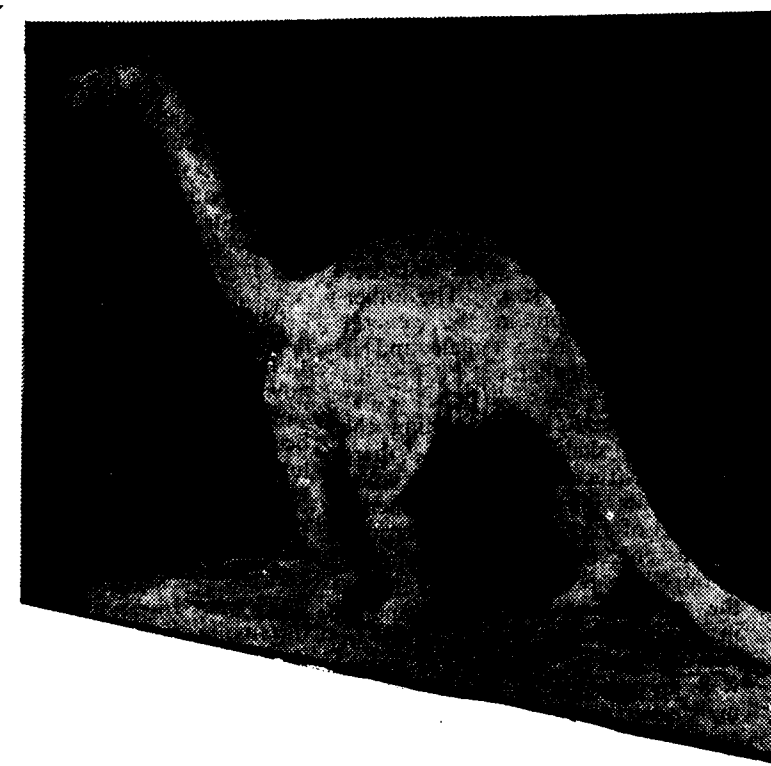
A few scale models of well-known foreign ships and native craft of India which are also available at

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. It is hoped in course of time it will form one of the liveliest and most attractive sections in the museum.

## 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 hundred years of patient and determined effort on the part of a devoted staff, guided by the expert supervision of a succession of able rectors whose powerful initiative and unflagging industry have contributed largely to the high standard of the vast array of material exhibited in these galleries. The last few decades have witnessed 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 in 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 valuable serious 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 *Exocoetus* 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 of the most primitive of living mammals, laying eggs and well adapted for an aquatic habitat. The Australian spiny Anteater (*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 Kaleegee 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 its tusks 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, (*Ailuurs 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 pentaradiate symmetry, a large series of insects representing the various important orders of insects, brightly coloured specimens of crabs and lobsters including the enormous cocoanut 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 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



RAJA RAJAN:—  
"Mother, if you have any desire to be fulfilled, do let me know—I would do the needful straight away".

AZHAGI: "Oh, Emperor, what more would I have to seek now that you have addressed me as 'Mother'".

"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 damsel 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".

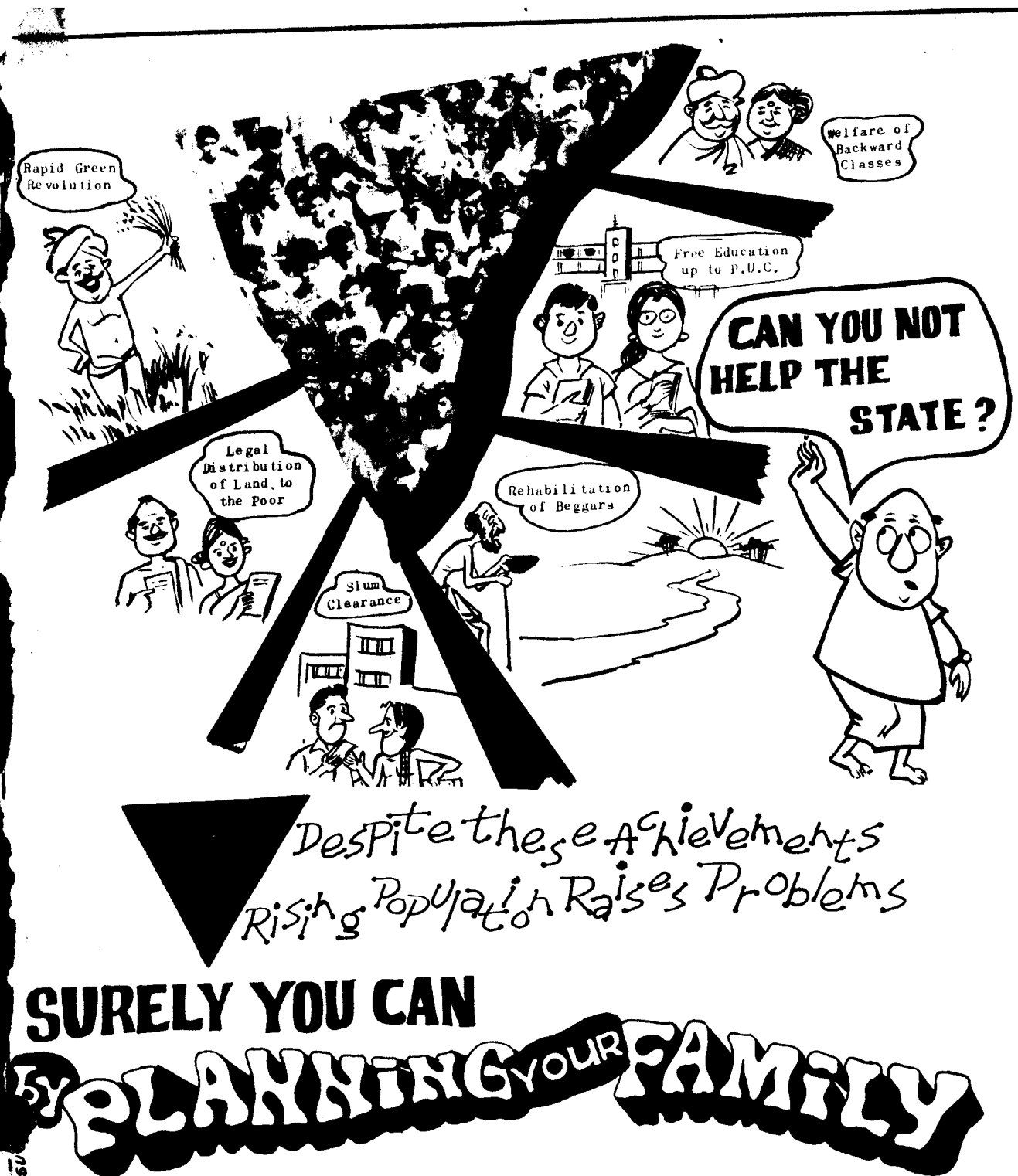
## "HAS ART WITHERED"?

"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 extin guished 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.)



DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

**HIT THE JACKPOT!**

**BUY TAMILNADU  
RAFFLE TICKETS**

**First Prize:**

**Rs. 1,00,000**

(For each series)

Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

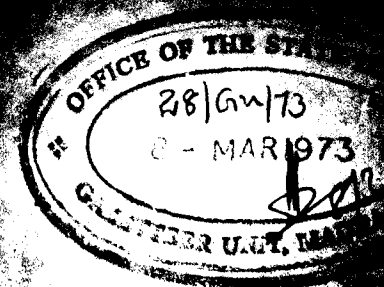
**DATE OF DRAW:**  
**12-2-1973**

**Cost Per Ticket**  
**Re. 1/- only.**



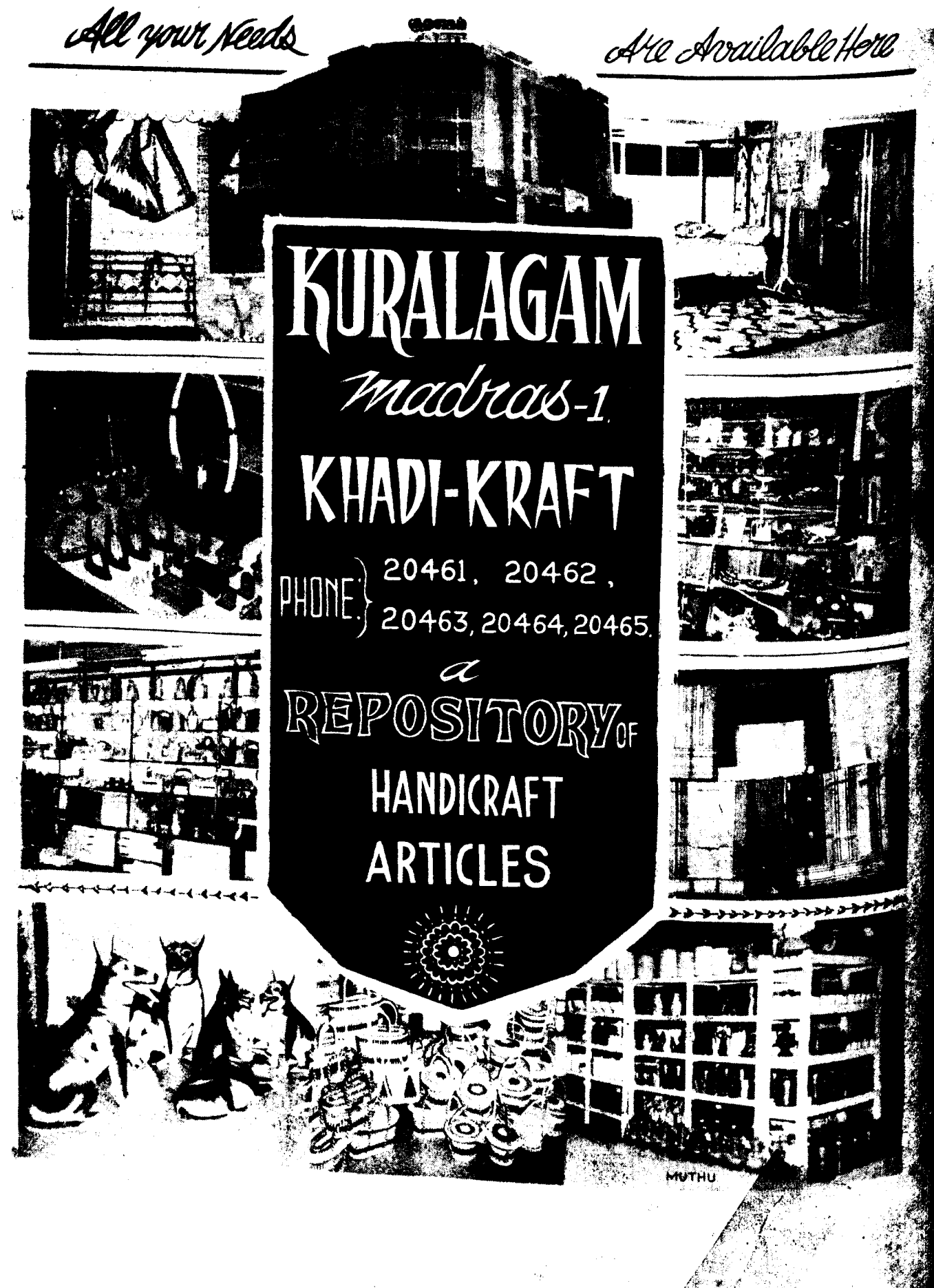
Issued by Director of Information & Public Relations,  
Government of Tamil Nadu, Madras-9.  
All Correspondence should be addressed only to the  
Director of Raffle, Tamil Nadu, Madras-2  
Subject to issue of 2 Series

DU AND





*All your Needs* *Are Available Here*



**KURALAGAM**  
*Madras-1*  
**KHADI-KRAFT**  
PHONE } 20461, 20462,  
20463, 20464, 20465.  
*a*  
**REPOSITORY OF**  
**HANDICRAFT**  
**ARTICLES**

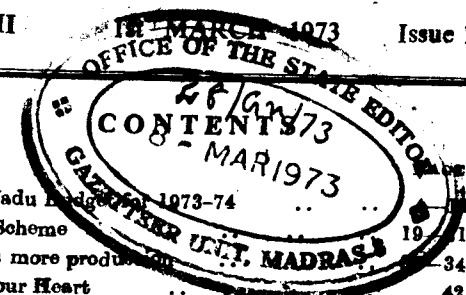
MUTHU

# Tamil Arasu

Vol. III

Issue 11

Tamil Nadu Gazette 1973-74  
Cozum Scheme  
Towards more production  
Know your Heart  
How to get over the smoking habit  
Ceramic products in Tamil Nadu  
Charaundi of Charapallam

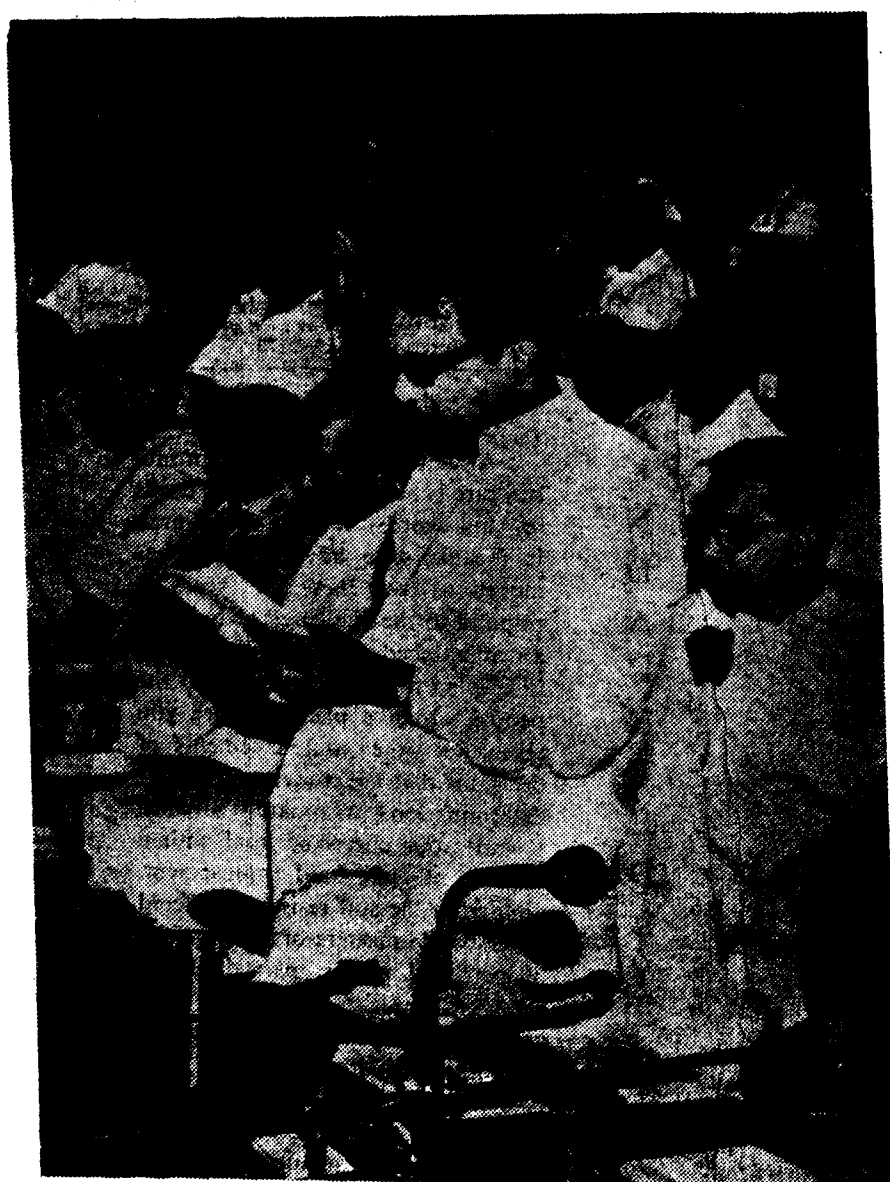


The President's Awards to TamilNadu Police Officers were presented by Governor at a ceremonial function on 10-2-73.

U  
N  
D  
A  
U  
N  
T  
E  
D  
L  
Y  
  
W  
E  
  
M  
A  
R  
C  
H

"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 House."

# 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. 1.80 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 Government. 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 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. If 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 leprosy 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 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 1971 has been cleared recently 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 dhooties, 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, takes 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.         |        |                                    |             |                      |
| Backward 1973-74 | 5.56   | 1.76                               | 3.50        | 0.30                 |
| Classes.         |        |                                    |             |                      |

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 Kudiyiruppu 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 Kudiyiruppu land from the beneficiaries and to bear from the State Funds the entire compensation for the house-sites payable to the owners of Kudiyiruppu. 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 licencees 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 preceeding 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.

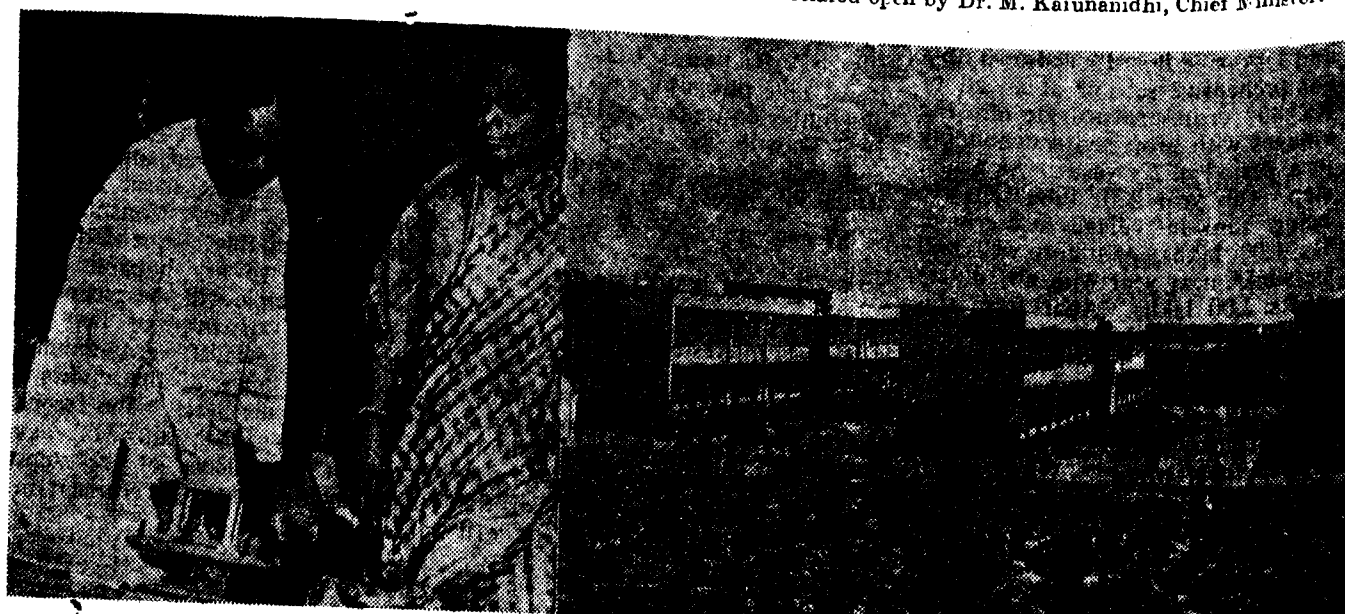
(d) The maximum quota for domestic consumers shall be fixed at 150 units per month, the consumption over and above it being charge at double the normal rates.

(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. Karunanidhi, Chief Minister.



# PRESIDENT GIRI LAYS FOUN- DATION 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,

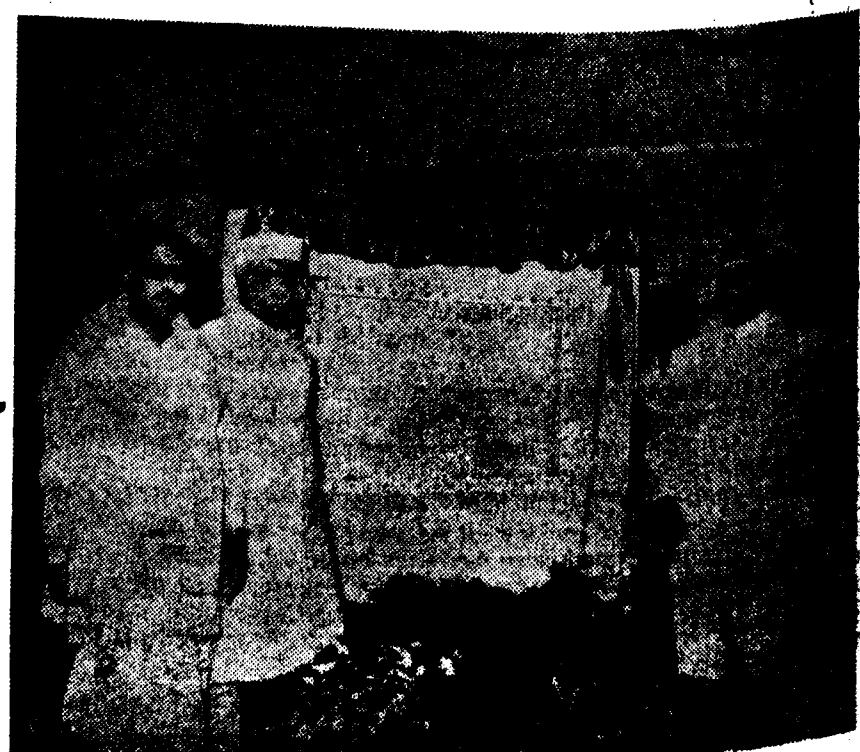
champion of individual and civil liberties, parliamentarian and administrator who had left an indelible mark on the country's history. His was a life of unequalled brilliance, unswerving patriotism, unquestioned integrity, moral strength and courage.

## 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 SUO VJAYANALENDRAN 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. Janarthnam, Standing Cpl. Stanley Francis, Cpl. Geoffery 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 Krishnas 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.

From Left to Right Cadet K. Govindan; Sgt. M. Akthaf; Sgt. R. Anandarej and Sgt. M. Rama Sundar.

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 attaining capacity for deep and hard

## SEMI-PERMANENT THEATRES IN TAMIL NADU

### KADAMPARAI PUMPED STORAGE HYDRO-ELECTRIC PROJECT

The project derives its name from Kadampariar (a tributary of Aliyar) across which the head race pond is proposed. The scheme basin lies between latitudes 10° 20' and 10° 25' North and longitudes 77° 0' and 77° 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 Kadampariar at E.L. × 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° 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 × 20.5 m. wide × 36.5 m. high with two separate transformer caverns 13.4 m. × 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 × 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, Rebendranath 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.

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.

### Six Miles of walkway!

A walkway of 10 feet in width on either side of the river has been provided. The encroachments on river margins have been removed. Sewers getting into Cooum have been diverted by the City Corporation. These measures have now made Cooum a tidal river free from stench and fit for pleasure boating. To facilitate boating at different points the river has been divided into seven reaches with a boat jetty at each. The first jetty is near the Belgian consulate and the last one below the Wellington Bridge. Rowing boats, powered boats and paddle boats—sleek and modern fibreglass boats—are available for reasonable charge. Snack bars at a few select jetties are proposed to be opened to give added facility.

### Tourist Attractions.

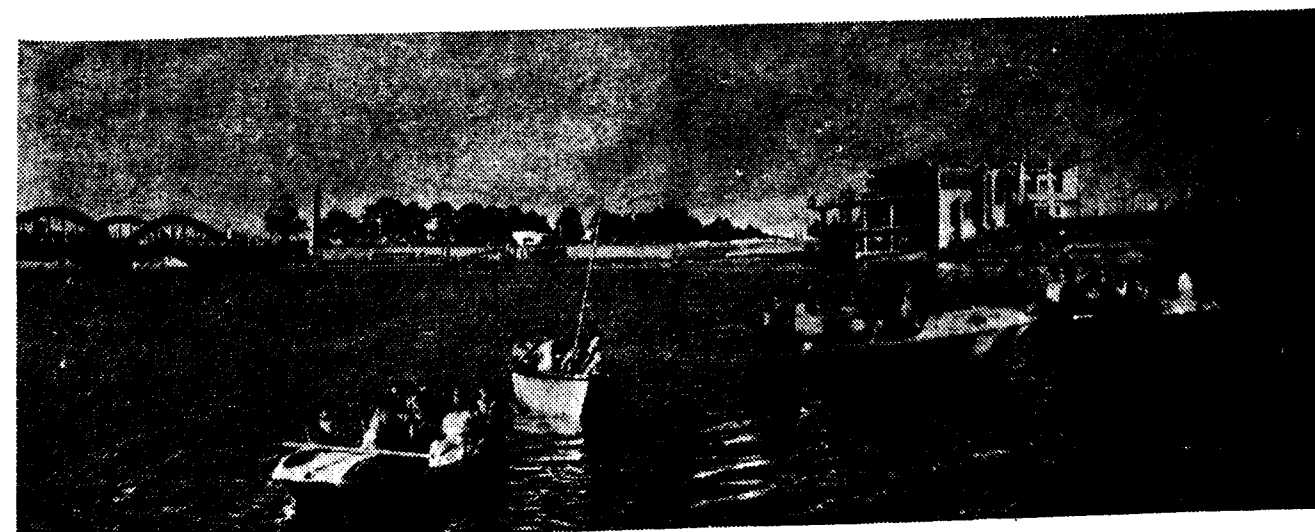
Other attractions, particularly for tourists, are the parks and lawns that are being developed on the river margins, the Swimming and Diving Pools set to international standards where the National aquatic sports were conducted recently and the beautiful Boat

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.



Sig.—2





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. Nedunchezian, 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.

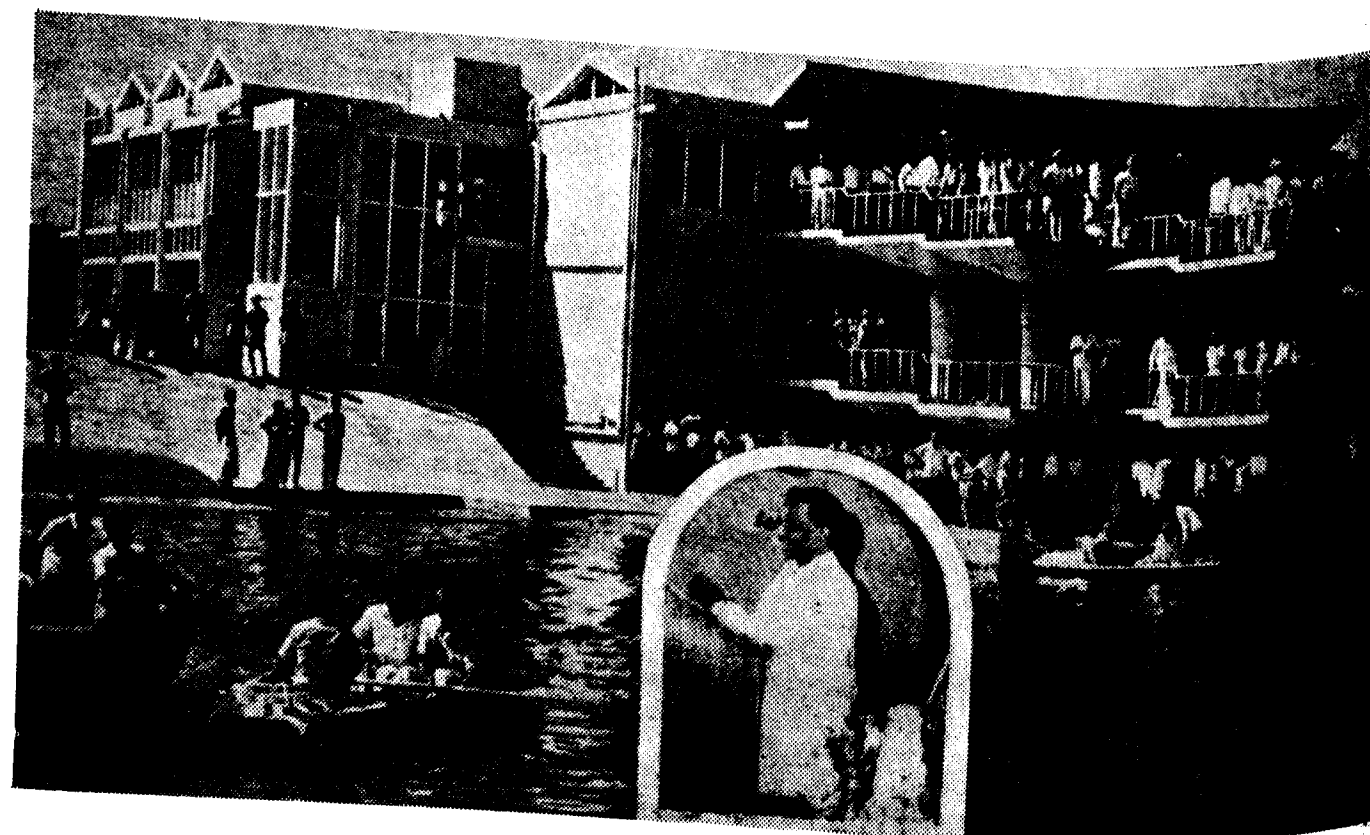
**Buckingham Canal too.**

"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 147

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 bolard pull ranging from 7.5 tonnes to 36 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.

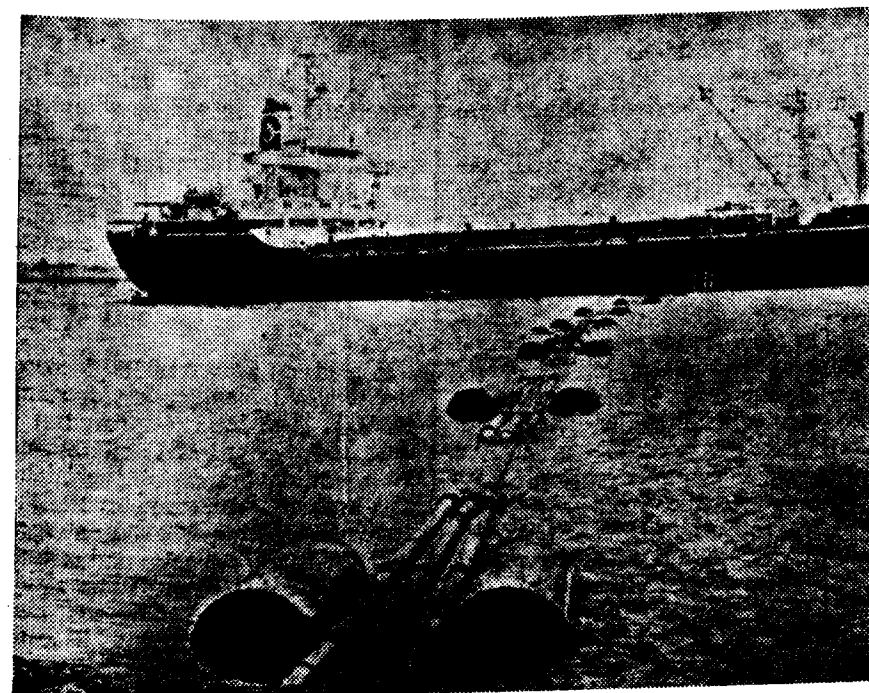
The port has a new workshop consisting of modern machines to undertake manufacture of spare parts and other machinery items required for its use. It houses the diesel loco shop, mobile crane shop, I.C. engine shop, forklift truck shop, electrical shop, sheet metal shop, foundry and forge shop, etc.

### 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 curde 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 Meenambakkam Airport has been estimated to cost Rs. 18 crores, the figures for the other major airports are as follows; Santa Cruz Rs. 38 crores; Palam Rs. 29 crores; and Dum Dum Rs. 6 crores.

The new complex at Meenambakkam 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 Meenambakkam 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. Meenambakkam 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 naar, 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 employment to the 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 climber. They are beaten and thrashed by wooden mallets to remove the pulp and outer skins. The unclean and rough fibre thus obtained is called crude or kora 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 inches at a time and tying into hanks, careful 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 trimmed 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 among 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 Hatoe' 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 :—

|                                        |    |    |    |    |    |    |    | (Rs. in 1,000.) |          |          |          |
|----------------------------------------|----|----|----|----|----|----|----|-----------------|----------|----------|----------|
| Serial number and name of the country. |    |    |    |    |    |    |    | 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   | 170.59   | 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 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 all 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 notifications 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 and dry-cleaning machines, etc. 9. Dyes—(i) Azo Dyes (Direct and Acids and) (ii) Basic Dyes. 10. (a) Electrical Wiring Accessories. (b) Electric Light fittings (such as chokes, starters, reflectors, etc.). 11. Expanded Metal. 12. Fireworks. 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 Dusters 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 Transmisson 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 food 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 Lifers; 97. Condensers and Resistance testers; 98. Fender spones 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; (2) 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 "வேளாண்மைச் செம்மல்" 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 "Krishi Pandit" is being awarded to the first prize winner in each these crops at all-India level.

The title "வேளாண்மைச் செம்மல்" is being conferred on the first prize winners in the State Level Competitions in paddy, cholam, cumbu and ragi.

The Government of Tamil Nadu have issued orders that the title "வேளாண்மைச் செம்மல்" 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 prize 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 3.5 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

Prof. C. S. MAHADEVAN,

Secretary, Large Industries Task Force, State Planning Commission.

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

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:—

| Year.   | Demand for steel (in million tonnes). |                 | Foundry grade pig iron. | Alloy and special steels (rolled). | Ferro-alloys. |
|---------|---------------------------------------|-----------------|-------------------------|------------------------------------|---------------|
|         | Mild steel. Ingots.                   | Finished steel. |                         |                                    |               |
| (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

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-continuous casting plants. The Group also emphasised upon the

need for new integrated steel plant in 5th Plant 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 net-work 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

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

## PLANS COMPLETED FOR ALL NEEDS

tion 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

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

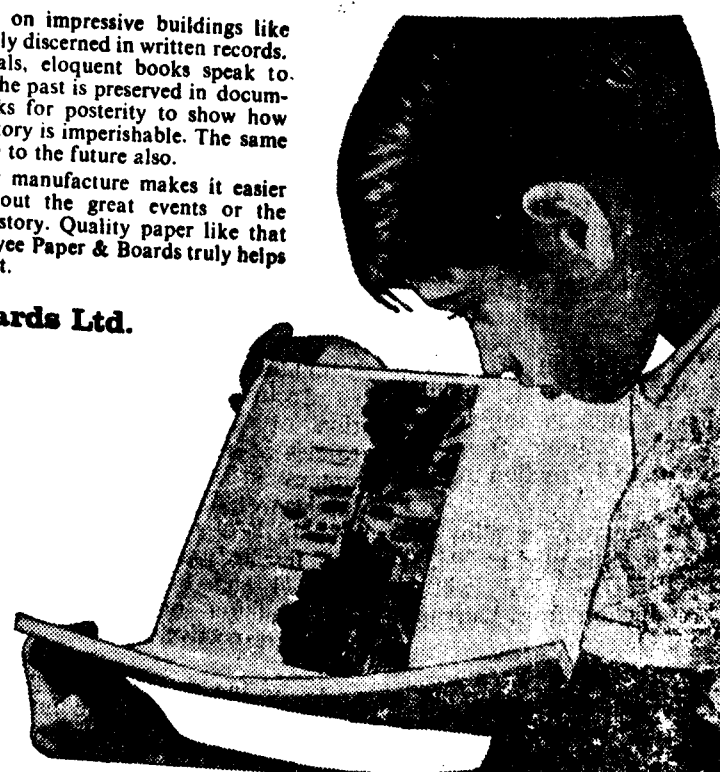
The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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.

**Seshasayee Paper and Boards Ltd.**  
Pallipalayam, Salem District, S. India



The Watermark  
of Quality



705596 777 A

# 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.

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 Thiruchirappalli, 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 Nattyam is the most important of the classical dances because of its religious associations, its intrgate 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 went 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 lakh 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 the State. He declared that the Tamil Nadu Tourism Development Corporation would establish top class hotels in each district headquarter 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 separated 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 x 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 palm-leaf 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, health, 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 over ride 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 waterlogged 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; 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

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.

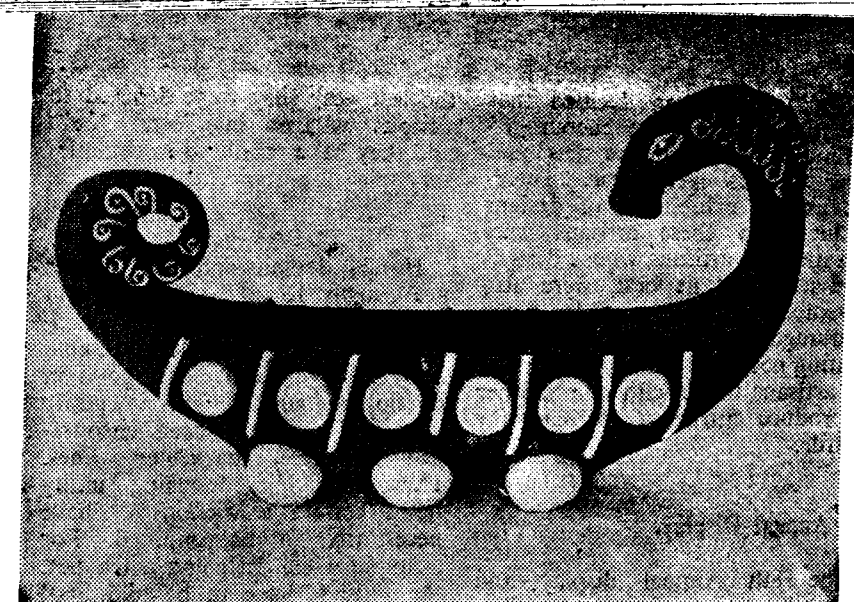
Rehabilitation of heart patients, specially those who live in rural areas is a major problem. However, satisfactory facilities for the treatment of heart diseases exist in almost all. A major urban centres of India. Departments of Cardiology exist in most of the hospitals attached to medical colleges. 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.

## TAMIL NADU MARCHES AHEAD IN CERAMIC PRODUCTS



A fine jasper tablo-war.

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

By  
**P. S. MENON,**  
Joint Director of Industries  
and Commerce.



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. Thiruvalargal 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. Thiruvalargal 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—

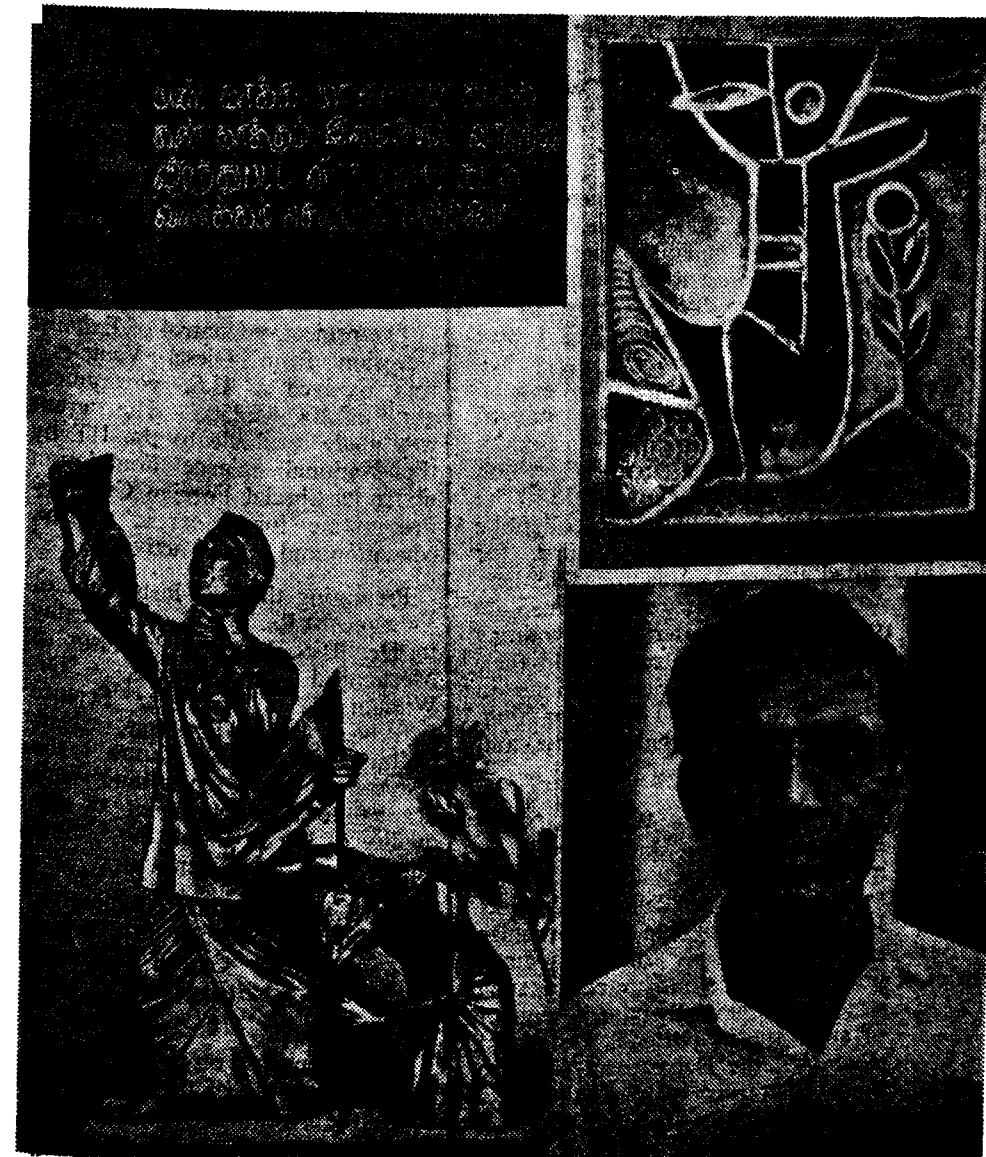
The display contains a number of pieces which are reproductions of village folk art. Some of the items are in glazed teracotta and fired to about 900° C. Some pieces have been made in procelain and in similar sizes to fit in large drawing rooms. Even smaller sizes have been made in procelain as table 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.

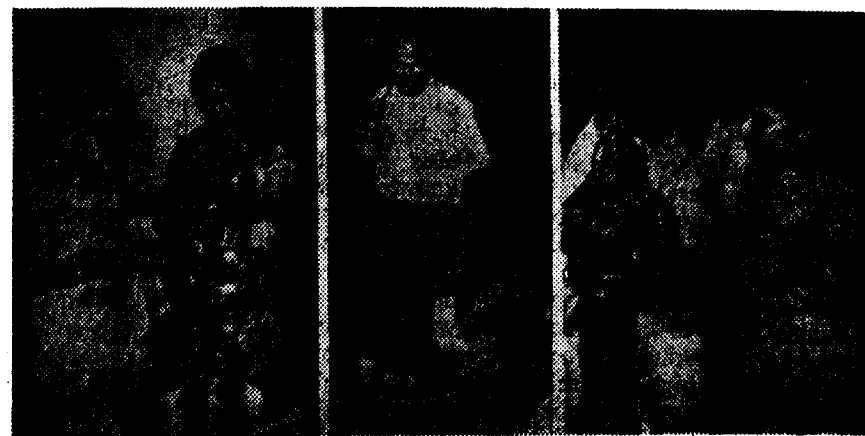
#### (d) Jasper wares—

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.



They all spare a second look of fondness for fine craftsmanship in Ceramics.



A Jasper ware light stand.

A classic piece of sculpture becomes a fine Ceramic Table decoration.

The traditional motif still draws admiring looks.

169  
CERAMICS  
CARRY  
CONVICTION

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 cracked 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-cum-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 clean 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 foresight and 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. Gopalakrishnan, 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 ghanis 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



Dye Screen Printing.

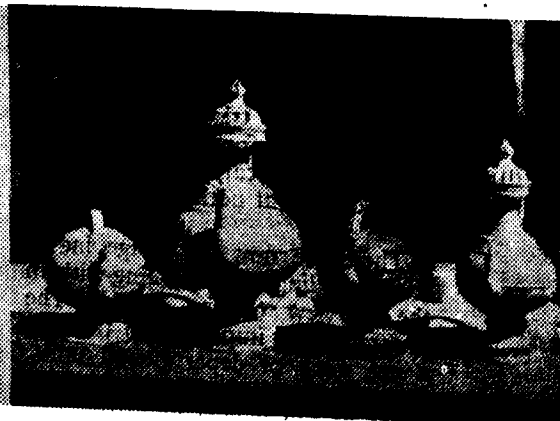


Craftsman Potter at wheel.

Girl weaving alone fibre mat.



House-wives buying fruit juices.



Pottery items.

**Master Craftsmen  
Produce Quality  
Products under  
Village Industries  
Programme.**



C. M. inaugurating Village Industries Products Fair at Government Estate on 13-2-'73.

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

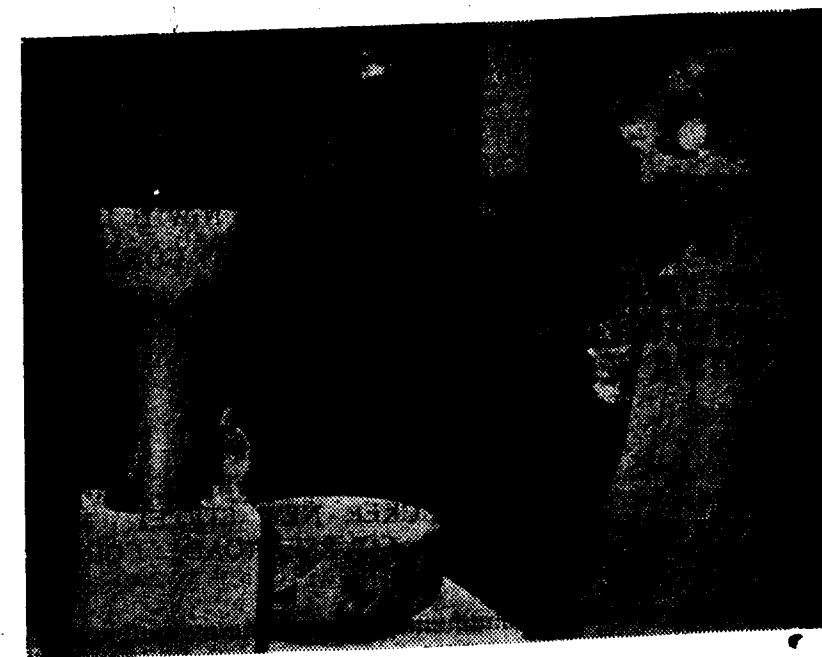
known as 'KARPAGAVIRUK-SHAM' in Tamil Nadu is put to many uses with the financial assistance and technical guidance extended to them through the co-operatives. It is estimated that there are as many as 40 million palmyrah trees. There are about 2.55 lakhs artisans employed directly or indirectly in this 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 Palmgur Training Centre at Cuddalore, Regional Pottery Training Centre at Sevvapet and the Industrial Workers Training Centre at Madras.



A long and loving look for superb craftsmanship.



## 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

**TIIC**  
THE FINANCIAL  
INSTITUTION  
WITH A HEART

**TAMIL NADU INDUSTRIAL INVESTMENT  
CORPORATION, LTD.**

(Sponsored by the Government)

LLA Buildings, III Floor, 150-A, Mount Road, Madras-2.

### Branches:

1231, SOUTH MAIN STREET, THANJAVUR.  
247, NAICKER NEW STREET, MADURAI.  
6/37, RACE COURSE ROAD, COIMBATORE-18.

## 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 utilisation 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 clay, 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.

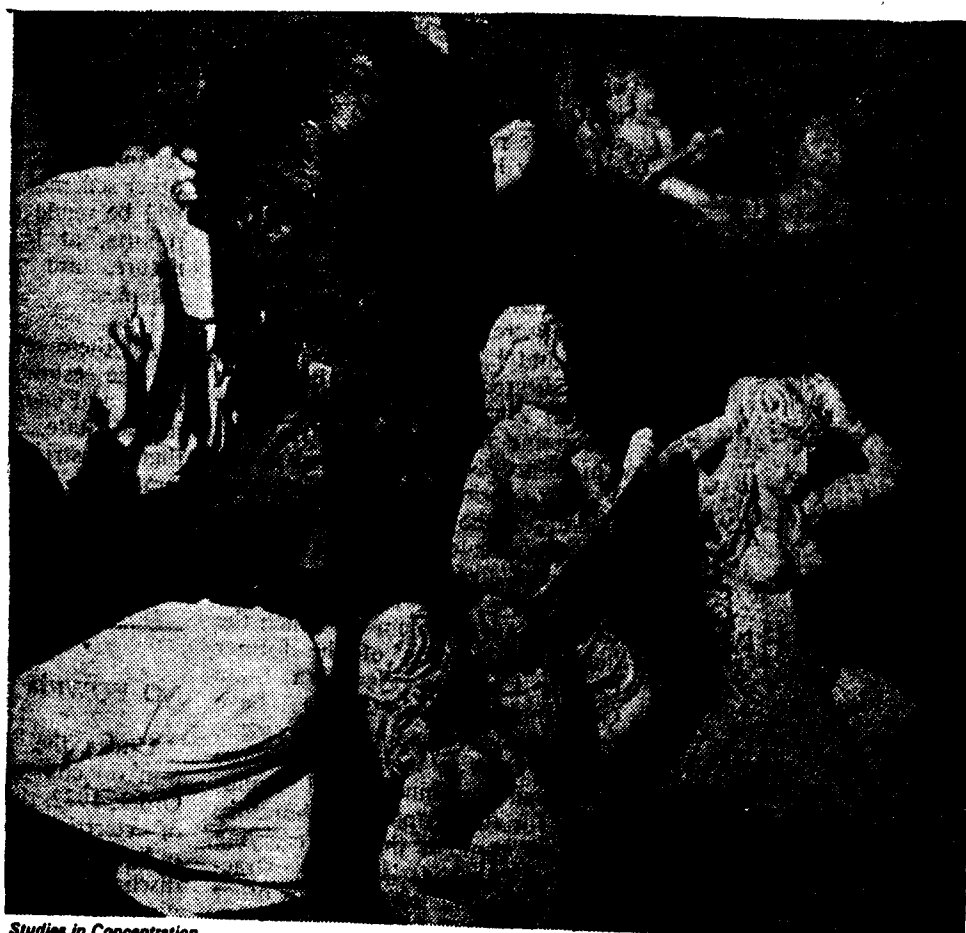
A total outlay of 50 lakhs is suggested in the V Plan for this purpose. Of this, an outlay of Rs. 24 lakhs is earmarked for the establishment of the Graphite Crucible Plant at Sivagangai in the Ramanathapuram District, and the balance of Rs. 26 lakhs is for the other schemes. The final allocation will 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.



Studies in Concentration

## THE ARTISAN

*To create objects of lasting beauty, the artisan works patiently—chipping, filing, engraving, and polishing—and ultimately puts life into the finished masterpiece..... a product of single-minded concentration.*

Parry's, too, is a long, entrancing story of concentrated effort. Started as a trading concern over 180 years ago, Parry's has, over the years, gradually widened its interests. Its record of expansion has given it new dimensions as a progressive industrial force.

E.I.D.-Parry is an industrial complex, covering Fertilisers, Pesticides,

Hybrid seeds, Sugar, Confectionery, Chemicals, Engineering goods, Ceramics and Petrochemicals. E.I.D.-Parry, with its specialised knowledge, technical know-how and long experience, is geared to play a leading role in national growth. E.I.D.-Parry's marketing organisation, with its after-sales service, is far-flung and dynamic.

Parry's—pioneers in planned progress

**E.I.D.-PARRY LIMITED**

(Incorporated in England. Liability of members is limited.)  
Dare House, Madras-1

## 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 Presidentship 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 the 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.

# WHY BLOOD DONATION?

"Blood can't be manufactured; it has to come from a human being".

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.

Iniyana 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 Iniyana 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, Iniyana 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. Iniyana 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 Iniyana 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 Iniyana'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, Iniyana'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—Iniyana 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, Iniyana 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!" Iniyana 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

For accurate and authentic news of Tamil Nadu.

Single copy Re. 0-40.  
Annual subscription Rs. 5.00.

EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU.  
PRINTED BY THE DIRECTOR OF STATIONERY AND PRINTING, GOVERNMENT PRESS, MADRAS-1.

-181-

Despite these Achievements  
Rising Population Raises Problems

**SURELY YOU CAN  
BY PLANNING YOUR FAMILY**

DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

Registered No. M. 8676 — A

TAMIL ARASU

# INVEST FOR HIS FUTURE

AND ENSURE  
A WELFARE STATE



**BUY TAMILNADU  
RAFFLE TICKETS**

**First Prize: Rs. 1,00,000**

Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

**DATE OF DRAW: 12-3-1973**

**Cost Per Ticket Re. 1/- only.**

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.

(For each series)

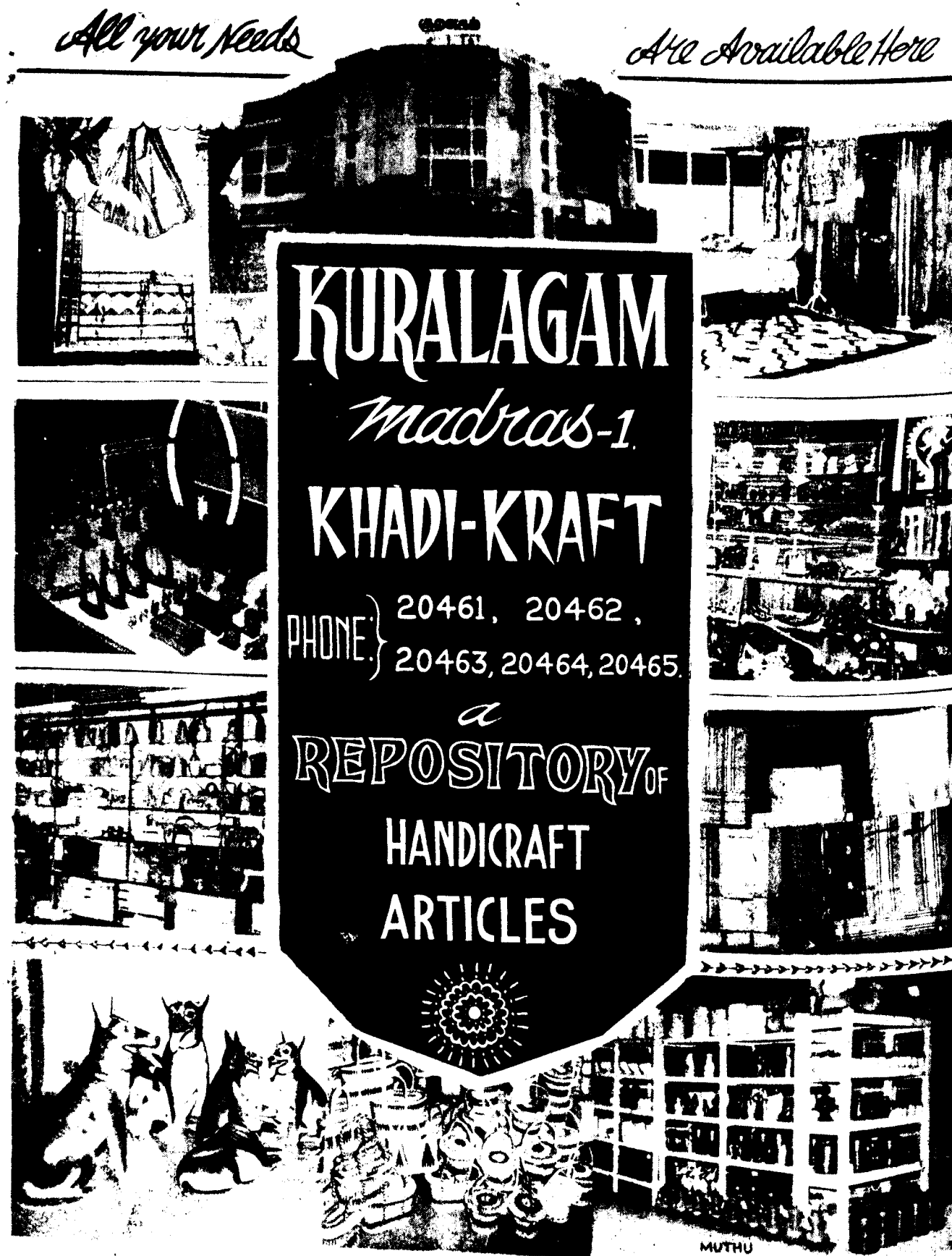


Subject to issue of 2 Series

# Tamil Arasu



*All your Needs* *Are Available Here*



**KURALAGAM**  
*Madras-1*  
**KHADI-KRAFT**  
PHONE } 20461, 20462,  
20463, 20464, 20465.  
*a*  
**REPOSITORY OF**  
**HANDICRAFT**  
**ARTICLES**

MUTHU

## 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.

## Tamil Arasu

Vol. III 1st APRIL 1973 Issue 12

### CONTENTS

|                                                                | PAGES. |
|----------------------------------------------------------------|--------|
| Chief Minister's reply on budget debate ..                     | 4-6    |
| Bharathidasan—a revolutionary Poet ..                          | 7-8    |
| Purposeful and effective implementation of land reforms. 11-18 |        |
| Housing and Slum clearance schemes in Tamil Nadu. 19-28        |        |
| Vegetables are rich food .. ..                                 | 29-30  |
| More Milk for Tamil Nadu .. ..                                 | 40-41  |
| Inside story of a Leprosy Beggar Rehabilitation Home. 48-49    |        |
| Ponnaniar Scheme .. ..                                         | 55-57  |
| Chamundi of Cherapallam .. ..                                  | 58-61  |

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.

R.R. No 1170/73 - 187  
P. 2657-55



# 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.

The following are some highlights

# NO STAND-STILL IN POWER PRODUCTION IN TAMIL NADU

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

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 Shannuga Nadhi Scheme, (7) The Coonoor-Kallaru Scheme, (8) The Lower Melaru 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 than Times which runs Tamil (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".



A throb I felt to write a Verse  
"Write of me!" the Welkin said  
The leaping stream, the lotuses  
Beggd 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).

# BHARATHY DASAN THE RATIONALIST POET OF TAMIL NADU

A facsimile of the Poet's  
hand is given below:

என் கவிதைகள்

(பாரதியாசன்)

கோதை யவன் என் தொடர்வைக்  
தோரவில்லு என் புகைத்தால்  
விதியில்லு என்னைக் கண்டு சிரித்தான்?  
காதலில்லு அன்பின் மேல்  
கட்டித் திக் கொன்றுகொத்தால்,  
எதுக் கெடுதல் துடித்துக் கொண்டு போனான்?

பாடுமொழி யாங் ளும் என்  
பங்கிலில்லு என் புகைத்தால்  
யோக்கையிலே என் திருமயில் பார்த்தான்?  
நீ திகட்டாய்' என் னொரு யோ  
நீத்த விட்டான் என் புகைத்தால்  
தோகை, எவ்வுன் காணும் என் னொட்டான்?

மின்னு தவான் நெஞ்சம் என் னுன்  
மீதில் தவல் என் புகைத்தால்,  
என் னொரு யோக்கை நெஞ்சம் நெஞ்சம்?  
தின்னல் மொழி யாதுக் கெண் மேல்  
காதலில்லு என் புகைத்தால்  
என் நினைவு என் நினைவு துடித்தான்?

## 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 bana-  
lity.

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 conventionalities, 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 15 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 and Mettur, Upper Anicut, Ramnathapuram, 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.

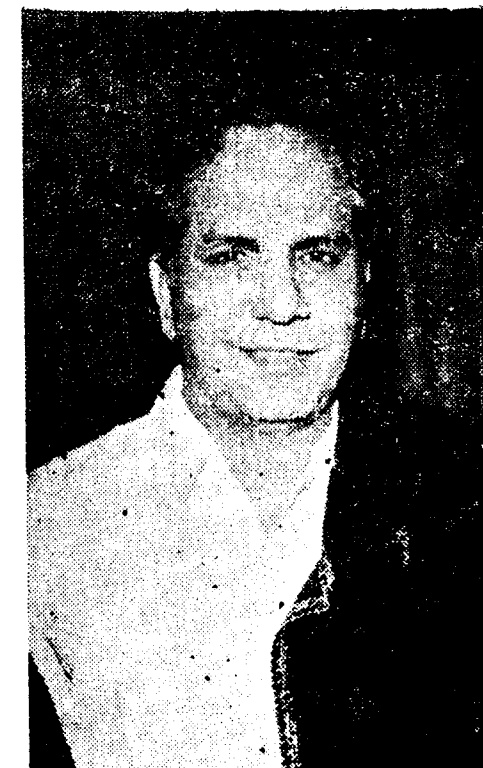
#### KEROSENE IN BREAD FOR HIGH ALTITUDE.

Kerosene is in easy medium of cooking and heating at high altitudes. The Defence Research Laboratory, Kanpur, has developed a process of microemulsionulating 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.

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.

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.

## PURPOSEFUL AND EFFECTIVE IMPLEMENTATION OF LAND REFORMS IN TAMIL NADU

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

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

|         |                                              | 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.                                           |

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         |

Telegrams: PIONEER

Telex: 042/231

Telephone: 24141, 24142, 24143

## THE COIMBATORE PIONEER MILLS LIMITED

Post Box 829

PEELAMEDU, COIMBATORE-641004

*Spinners of*

SUPERIOR QUALITY COTTON  
AND STAPLEFIBRE YARNS &  
LARGE SCALE EXPORTERS

### AN OPINION.....

WE WERE VERY THRILLED AND IMPRESSED  
TO VISIT SUCH A HIGH QUALITY AND  
BEAUTIFULLY MAINTAINED FINE YARN  
SPINNING MILL!

24-10-1972

Henry H. Richardson,  
*Vice-President,  
Leesona, U.S.A.*

Dennis R. White,  
*Export Sales Manager.*

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 for 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 achievement 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.

|                        | 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)                       |
| Area in acres          | 11,352                                                                | 9,060                                                 | 737                       |
| Number of<br>families. | 7,902                                                                 | 5,573                                                 | 806                       |



# 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 in 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.

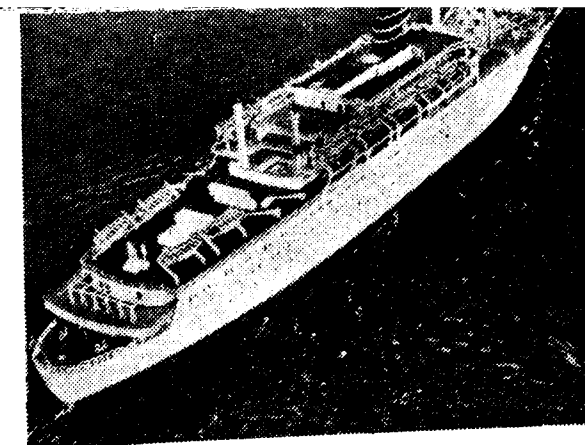
(viii) Government have undertaken to reclaim the lands which have become either sand-cast or eroded due to the floods, so as to make them fit for cultivation. The entire cost of reclamation will be borne by the Government.

(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 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              |
| Takkavai 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.

## MADRAS OXYGEN

breathes new life  
into industry...in the South

Geared for a production of 1 million cubic metres oxygen and 0.20 million cubic metres of acetylene per year MOL is poised well to meet the requirements of oxygen and acetylene for industrial units in the South.

Oxygen finds wide industrial applications (along with acetylene) principally, in welding, metal cutting, scarfing and hardening.

Another important use of oxygen is in therapeutics.

MADRAS OXYGEN & ACETYLENE COMPANY LIMITED

6, Saradambal Street, Gokulam Colony, Madras-17

Plant: Perianaickenpalayam, Coimbatore-20

Grams: 'TEXVEL'

Phone: 31156

## VELUMANI ENGINEERING INDUSTRY

TUDIYALUR P.O., COIMBATORE-641034

Manufacturers of STARTERS, SWITCHES AND OIL ENGINES

### OUR PRODUCTS

Starters : 1 H.P. to 15 H.P.

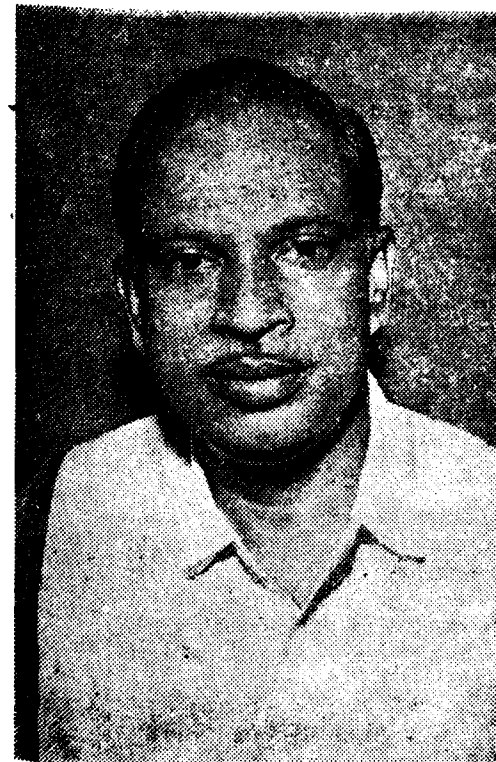
Switch Ranges : 15 AMPS, 30 AMPS, 60 AMPS and 100 AMPS.

Oil Engines : 3 H.P., 5 H.P. and 6.5 H.P.  
1500 RPM four strokes, single cylinder vertical engines  
6 H.P. 650 RPM four strokes, single cylinder vertical engines

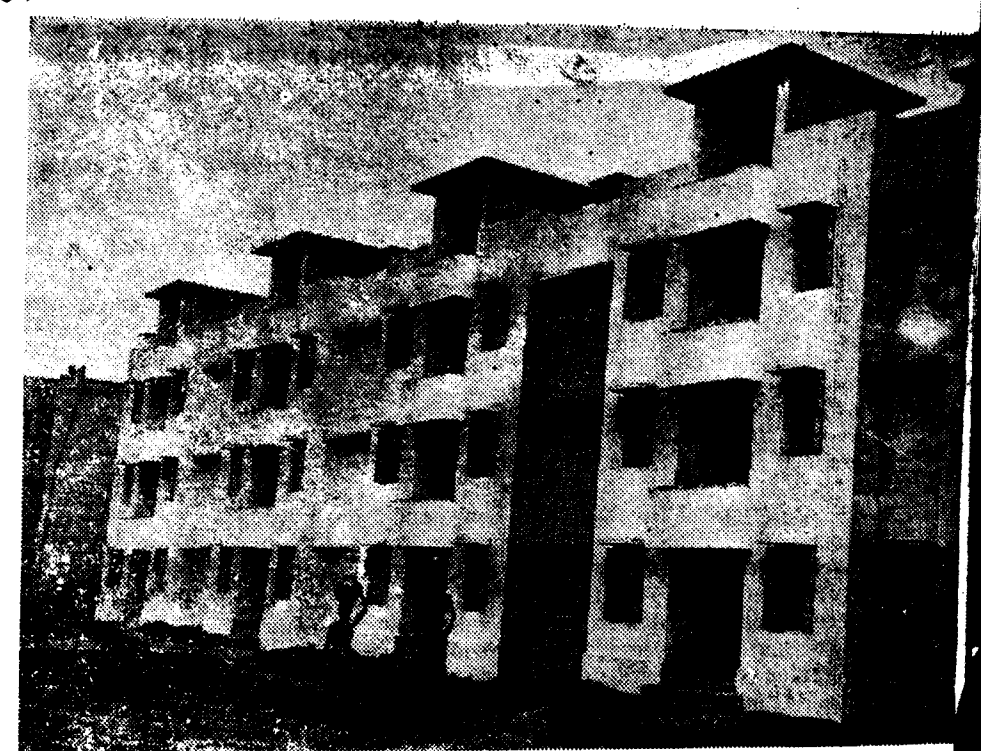
Radiator cooling attachment will be supplied on extra cost if needed by the party for 5 H.P. and 6.5 H.P. Engines

Our Sales Branches at

MADRAS, MADURAI, SALEM, TIRUCHIRAPPALLI, VIJAYAWADA, SECUNDERABAD.



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, visit to some of its schemes and make the acquaintance of 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 1½ 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 under XV Phases, covering over 162 slums in the City of 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 social service. However, it had drawn up schemes for 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 borrowal 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) Ellisapuram.
- (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 percent 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, crochet.
- (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. 29.72 lakhs.

Allocation for Fourth Plan—Rs. 50 lakhs.

Physical target for Fourth Plan—1,500 houses.

Number of houses constructed during 1969-70—410 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—50 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 houses 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 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" shall 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 Kudiyruppu (Conferment of Ownership) Act, 1971, and have introduced it in Thanjavur district, and the assignment of all the available lands in Thanjavur district to landless people have almost been completed, the Government have introduced the scheme in Thanjavur district in the first instance. The scheme is being implemented through the State Housing Board, with the help of the Collector and the other district Revenue Officials. The implementation of the scheme is in progress in this district. Under this scheme 1.15 lakhs families will be 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 Kudiyruppu 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.

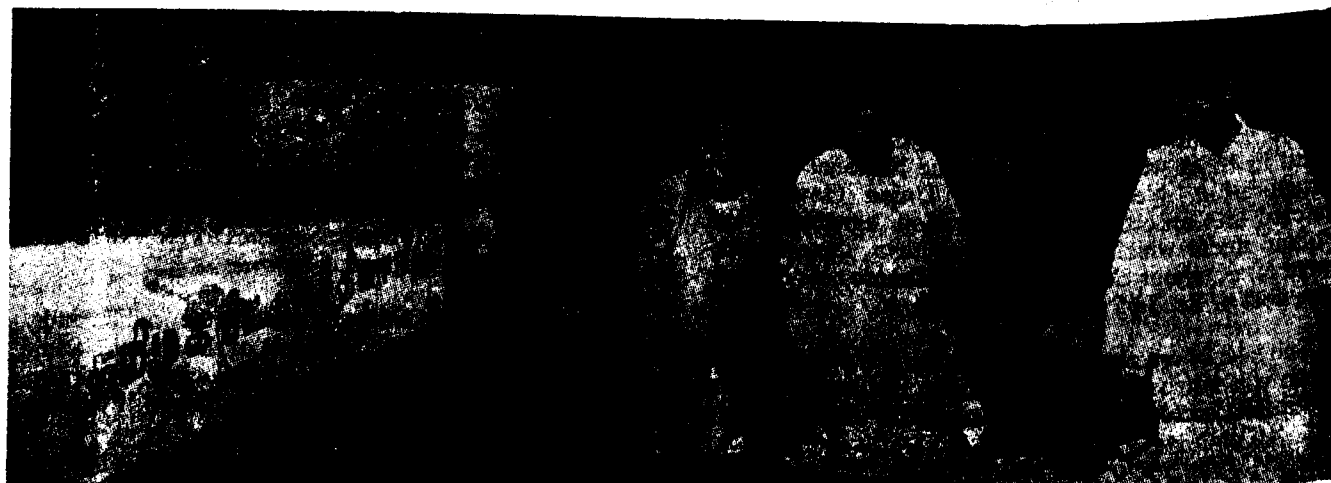
**HOUSING AND URBAN DEVELOPMENT CORPORATION.**—The Tamil Nadu Housing Board forwarded schemes costing Rs. 984 lakhs to Housing and Urban Development Corporation for approval and sanction of loan assistance from its Revolving Fund. Against this, the Housing and Urban Development Corporation approved one 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 Celorette 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. 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 beans 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.

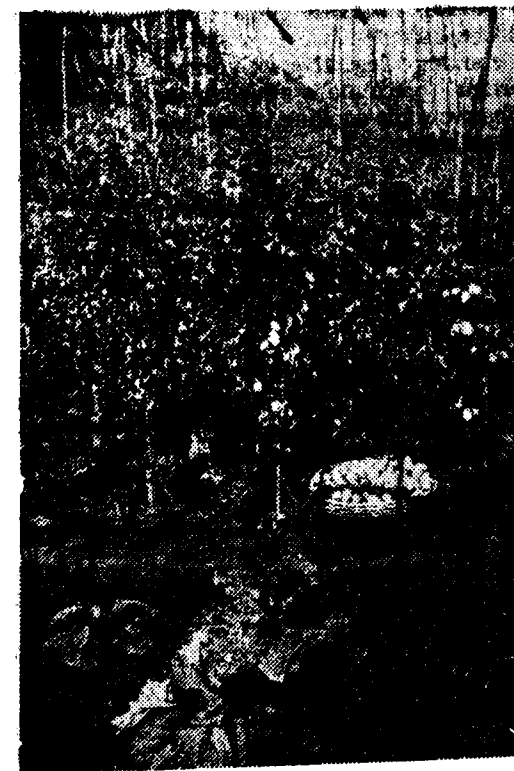
Green beans, green peas, potato and matured onions are rich sources of phosphorus. Phosphorus is necessary for the working of muscles as it helps in maintaining normal acid-base balance in the body. It is also essential in building healthy teeth and strong bones.

**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 cersan (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.

With best compliments from

### M/S. RAMU FOUNDRY

Manufacturers of

CENTRIFUGAL PUMPS,

ELECTRIC MOTORS,

SINGLE PHASE ELECTRIC MOTORS &

DOMESTIC PUMPS

Post Box No. 1415

Avanashi Road,

Pappanaickenpalayam,

COIMBATORE-18

Pincode : 641018

Phone : 24212

Grams : IMPELLER

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 ashly 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

Millets 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. Barring cumbu 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 (Thai 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.



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 Cholan, 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 Kudu-mianmalai. 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 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.

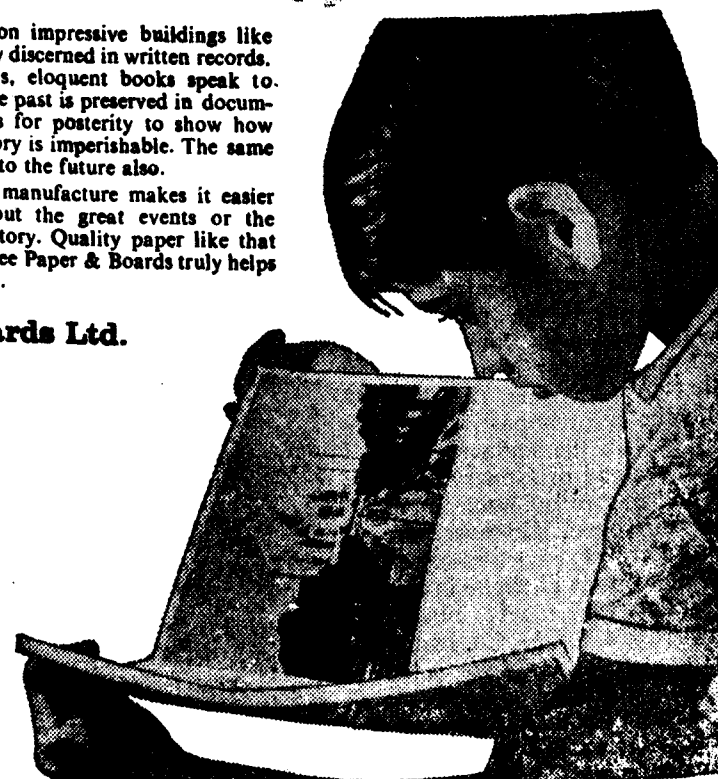
Modern paper manufacture makes it easier to write or read about the great events or the mighty makers of history. Quality paper like that produced now by Seshasayee Paper & Boards truly helps the study of the living past.

**Seshasayee Paper and Boards Ltd.**

Pallipalayam, Salem District, S. India



The Watermark of Quality



POS 598 777 A



## 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 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

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 middle-man 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<sup>221</sup> 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.       | SNF.      |
|----------------------------------|------------|-----------|
|                                  | PER CENT.  | PER 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 to 5.5 | 8.5       |
| 6 Ongole                         | 5.0 to 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 chloestrol 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.      | SNF       | Price          |
|----------------------|-----------|-----------|----------------|
|                      | PER CENT. | PER CENT. | PER LITRE. 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.*

Parry's too, is a long, entrancing story of concentrated effort. Started as a trading concern over 180 years ago, Parry's has, over the years, gradually widened its interests. Its record of expansion has given it new dimensions as a progressive industrial force.

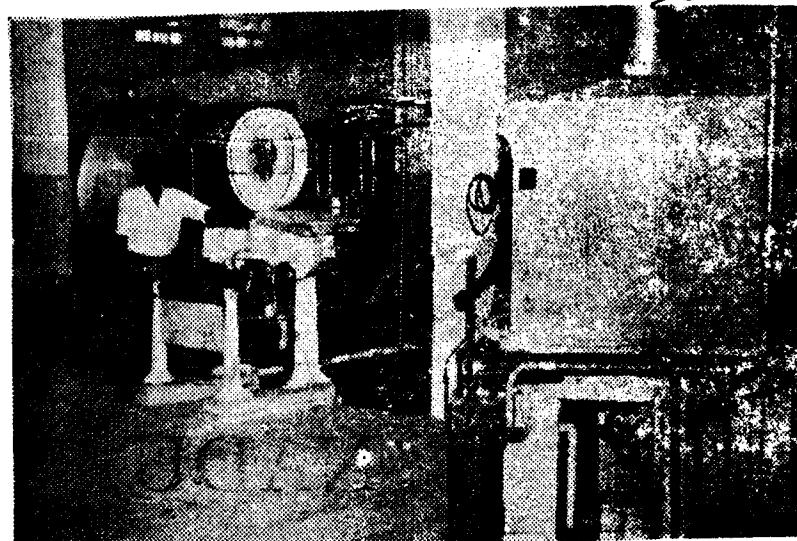
E.I.D.-Parry is an industrial complex, covering Fertilisers, Pesticides,

Hybrid seeds, Sugar, Confectionery, Chemicals, Engineering goods, Ceramics and Petrochemicals. E.I.D.-Parry, with its specialised knowledge, technical know-how and long experience, is geared to play a leading role in national growth. E.I.D.-Parry's marketing organisation, with its after-sales service, is far-flung and dynamic.

**Parry's—pioneers in planned progress**

**E.I.D.-PARRY LIMITED**

(Incorporated in England. Liability of members is limited)  
Dare House, Madras-1



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 Louis 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, sultans, 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 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.

## MORE MILK FOR TAMIL NADU

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

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-I programme has to be geared up to the requirements namely to get 22 lakh cows successfully in semi-nated 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 he will be 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 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-bred 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 shrotrly 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 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.

## 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

**T I I C**  
THE FINANCIAL  
INSTITUTION  
WITH A HEART

**TAMIL NADU INDUSTRIAL INVESTMENT  
CORPORATION, LTD.**

(Sponsored by the Government)

LLA Buildings, III Floor, 150-A, Mount Road, Madras-2

### Branches :

1231, SOUTH MAIN STREET, THANJAVUR.  
247, NAICKER NEW STREET, MADURAI  
6/37, RACE COURSE ROAD, COIMBATORE-18.

## 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 cattle 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 food-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 for research during the Fifth Plan 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

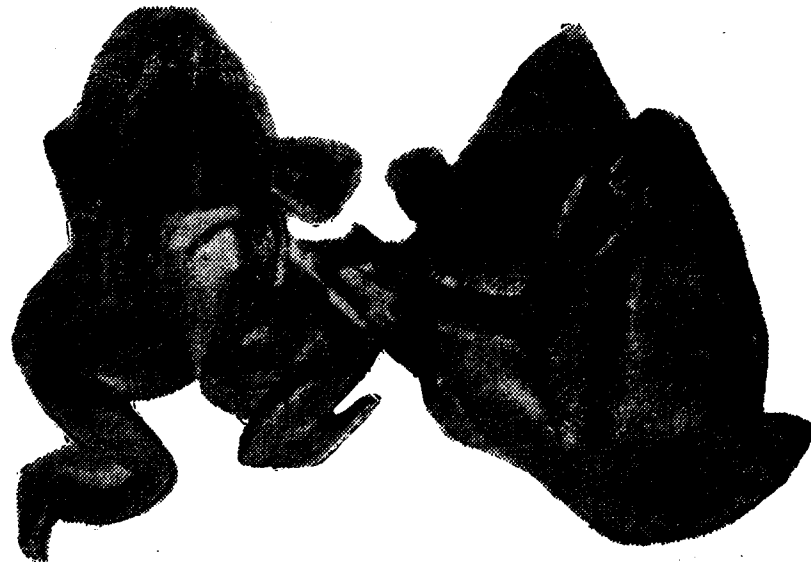
An Arbitration Promotion Board at the State level has been constituted by the Tamil Nadu Government to popularise the use of the voluntary arbitration in settling industrial disputes.

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.

# 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 free trays, 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 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 can be cultured in almost 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, branchitis, 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 micro-organisms including the pathogenic types like *Escherichia Coli*, *Faecal Streptococci* and *Salmonella*. 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  
S. SARAVANAMUTHU,  
LFT. AND N. DRAG,

Senior Instructor, Fisheries  
Technology and Navigation.



# LEPROSY BEGGAR REHABILITATION HOME AT ULUNDURPET COMPLETES THE FIRST YEAR

By. S. SRINIVASAN,

Superintendent, Leprosy Beggar  
Rehabilitation Home, Ulundurpet.



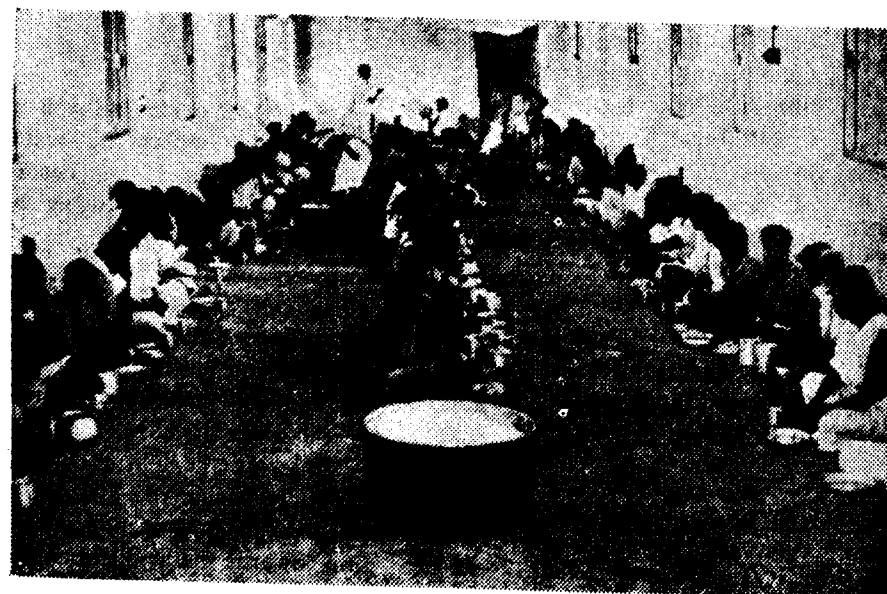
The Leprosy beggars who come forward to join the Rehabilitation Home on their own volition.

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. K. K. K. 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.



Balanced diet is being served to the inmates of the Home.

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, Dobby 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.





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 shameful 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 Tiruchirapalli District. And six more homes are to be built at Vannamali in North Arcot District, Manaiyeripatti in Thanjavur District, Vinnapalli in Coimbatore District, Deviakurichi in Salem District, Selliampatti in Dharmapuri District and Pudupatti in Madurai District.

before the end of the financial year 1972-73.

Beggar Rehabilitation Homes are accommodated in spacious area. Four blocks, each capable of accommodating 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 attended 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 pavadai. Further each inmate is given a mat and a pillow for sleeping and an aluminium plate and jug for eating purpose—R.N.





## 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 foodpads 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

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 in 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 research 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 collaborating 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".

## 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 in 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 patients 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 protective 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.



## THE MAMALLAPURAM SHORE COTTAGES

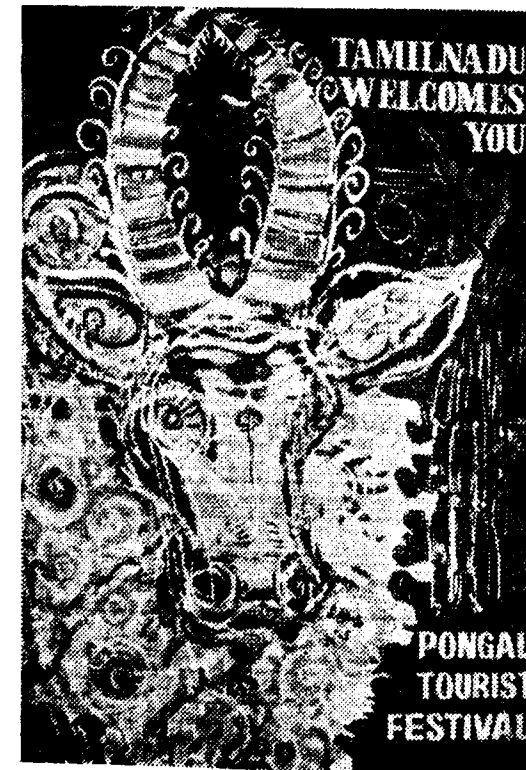
Twenty New Shore Cottages at the India Tourism Development Corporation Travellers Lodge at Mahabalipuram were formally inaugurated on Monday, March 19. This expansion is part of India's bid to capture a share of the enormous international tourist traffic in search of holiday by the seas. Mahabalipuram 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-

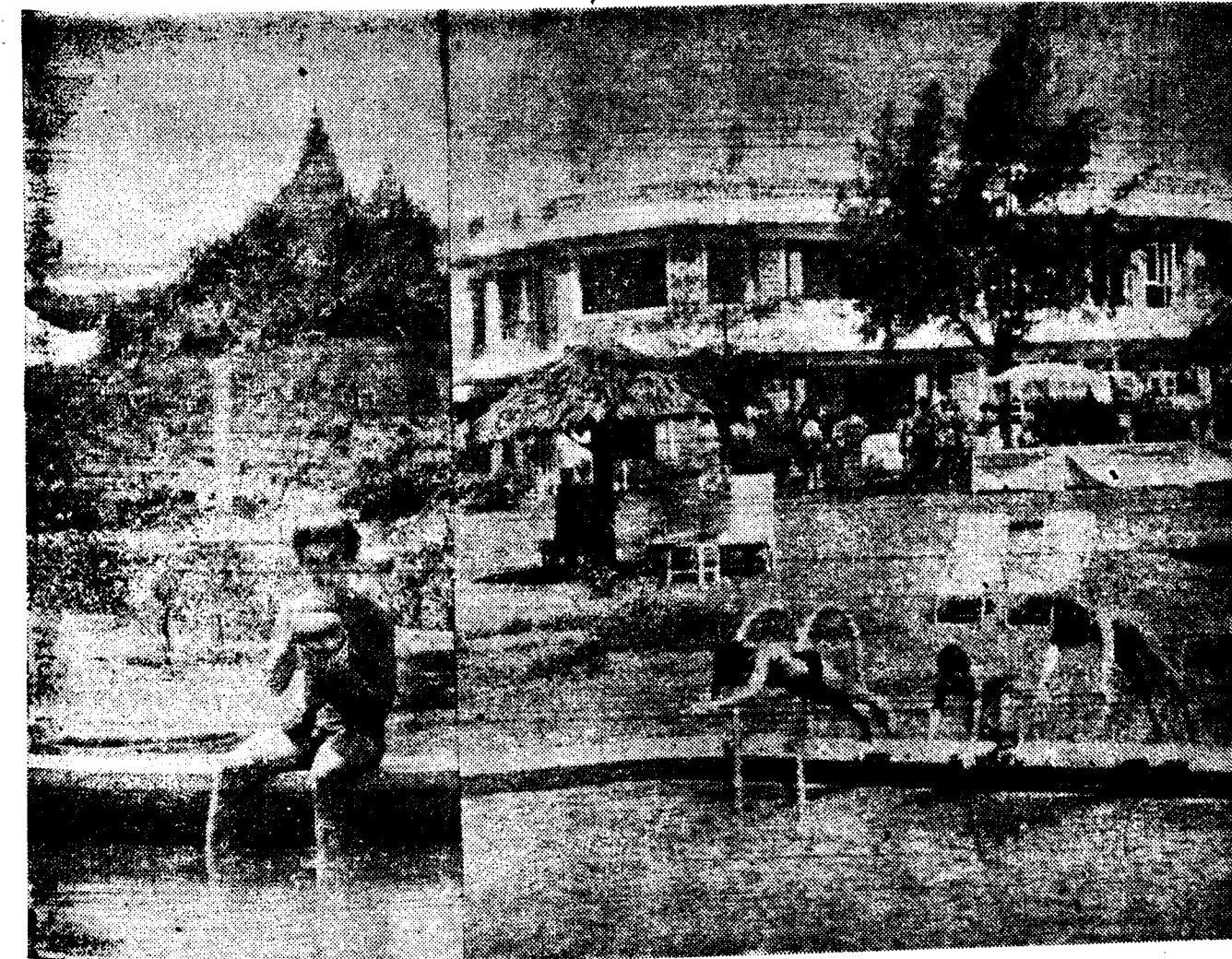
The Shore Cottages of the India Tourism Development Corporation at Mamallapuram combine the charms of local exterior and the convenience of Western Type Hotel.



## TRAVEL AGENTS BODY COMMENDS TOURISM STEPS IN TAMIL NADU

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.



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.



## 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 flagship "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 PONNANIANAR

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 Mughavanur 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 LAKSHMI MILLS COMPANY LIMITED

SPINDLES - 156,956. LOOMS - 394

| Telegram                | Branches at | Telephone            |
|-------------------------|-------------|----------------------|
| Coimbatore : LAKSHMI    |             | Coimbatore : 30251   |
| Kovilpatti : LAKSHMIMIL |             | to                   |
|                         | PALLADAM &  | 30255                |
| Telex                   | KOVILPATTI  | Kovilpatti : 418     |
| Coimbatore : 042-212    |             | Palladam : Sulur 250 |

*Manufacturers of*

**Finest Quality Cotton and Staple Fibre Yarn and Fabrics**

Ask by name our following products

- ① Tery Crown Polyester/Cotton Suiting in popular shades
- ① Gold Crown Polyester/Cotton Shirting in pastel shades
- ① Marquiss 2 x 2 Polyester Cotton Shirting in fascinating shades
- ① Daytone Poplins in white and soft colours with special 'CRESLIN' Crease resistant finish
- ① Democrat Poplins in bleached Mercerised and in pleasing shades
- ① Galakshi Gaberdine, Bleached - Mercerised
- ① Valencia Satin Duck, Bleached - Mercerised
- ① Sea Lord Drills, Bleached & Khaki
- ① Ballerina Printed Voils, Superfine Mercerised, woven from Egyptian cotton yarn
- ① Kotta Printed Sarees with beautiful designs

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, 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

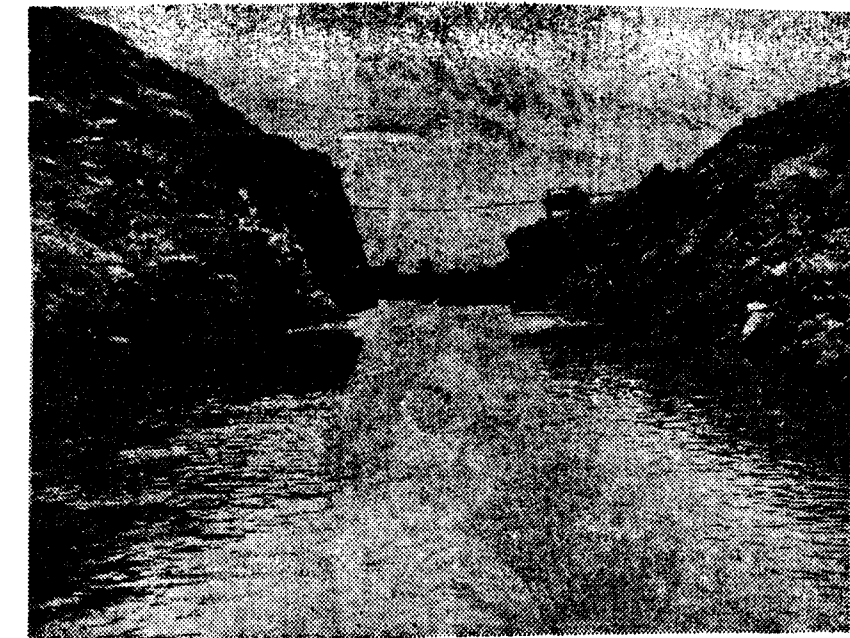
way as not to bring under submersion any of the hamlets or villages situated inside the catchment area. Arrangements have been made for making compensation to the affected land owners and a Special Tahsildar has been appointed to look into this aspect.

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.

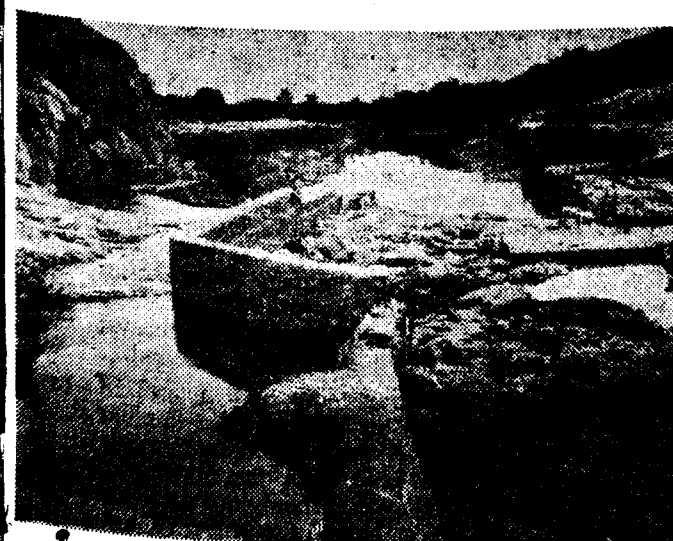
The scheme is in an advanced stage of construction and is expected to be completed by end of February 1974 at a cost of Rs. 99.97 lakhs.

So far about 60 per cent of earth dam works and 25 per cent of masonry works have been completed.

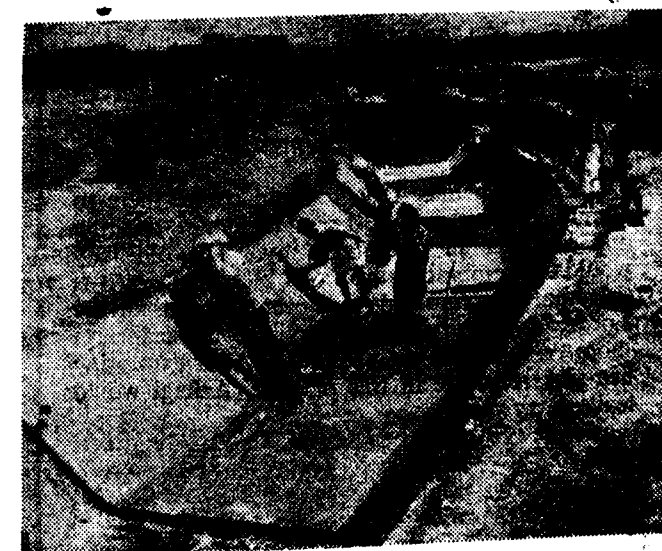
It must not be forgotten that this scheme is the brain-child of Thiru Anbil Dharmalingam Minister for Agriculture and he had pursued the idea with single-minded tenacity of purpose till the scheme got going.



Original course of the river before construction.



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 Iniyar to carve the first sculpture in a splendid manner. Expressing his confidence that one sculpture could be completed every day, Iniyar 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, Iniyar 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 Iniyar 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 Iniyar 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 Iniyar 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, Iniyar 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 to control the water. She looked at him momentarily and Iniyar 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 Iniyar as he set up some flares and returned to the carving that day. Chamundi was in ignorance of that. Iniyar'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. Iniyar 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.

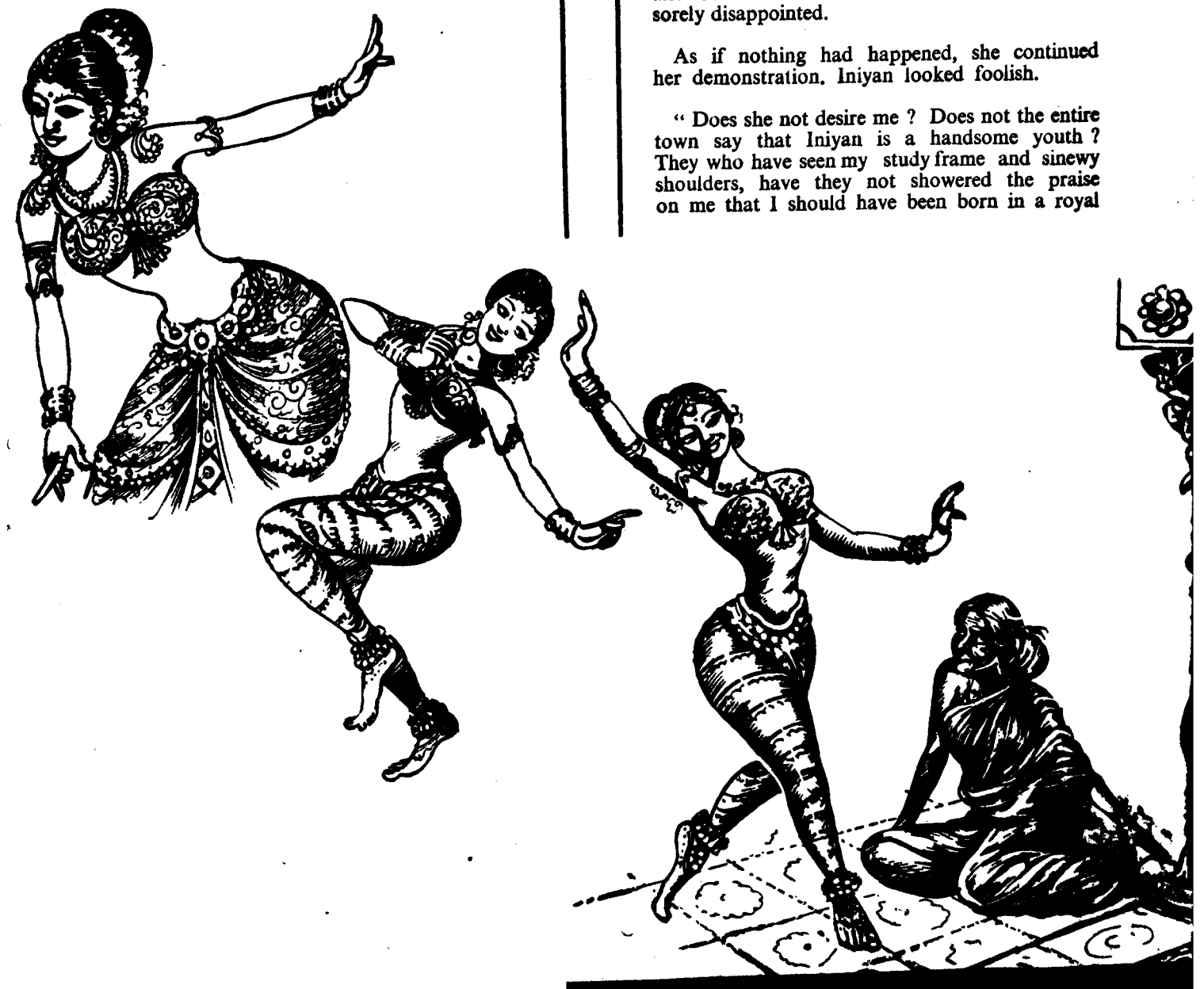
A few days passed in this manner. There were constant symptoms in Chamundi's expression, testifying to the fact that some confusion in regard to Iniyar had arisen in her mind too.

That day Iniyar 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?", Iniyar 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, Iniyar looked foolish.

"Does she not desire me? Does not the entire town say that Iniyar 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 believe 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 wrongdoing 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 Charapalam? 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

For accurate and authentic news of Tamil Nadu.

Single copy Re. 0.40  
Annual subscription Rs. 5.00.

## 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 grants 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.

247

Despite these achievements  
Rising Population Raises Problems

**SURELY YOU CAN  
BY PLANNING YOUR FAMILY**

DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING





# EVEN A CHILD KNOWS TAMILNADU RAFFLES ARE THE BEST BUY TAMILNADU RAFFLE TICKETS

First Prize:

RS. **100,000**

(For each series)

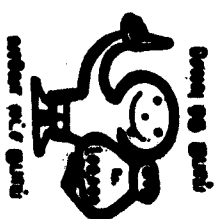
Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

54th DRAW DATE

**10-4-1973**

Cost Per Ticket Re. 1/- only.

Issued by Director of Information & Public Relations,  
Government of Tamil Nadu, Madras-8.  
All Correspondence should be addressed only to the  
Director of Raffle, Tamil Nadu, Madras-2.  
Subject to issue of 2 Series



ENTER NO. 7 GATE

*All your Needs*

*Are Available Here*

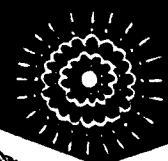
**KURALAGAM**

*Madras-1*

**KHADI-KRAFT**

PHONE } 20461, 20462,  
20463, 20464, 20465

*a*  
**REPOSITORY OF**  
**HANDICRAFT**  
**ARTICLES**



# Tamil Arasu

Vol. III

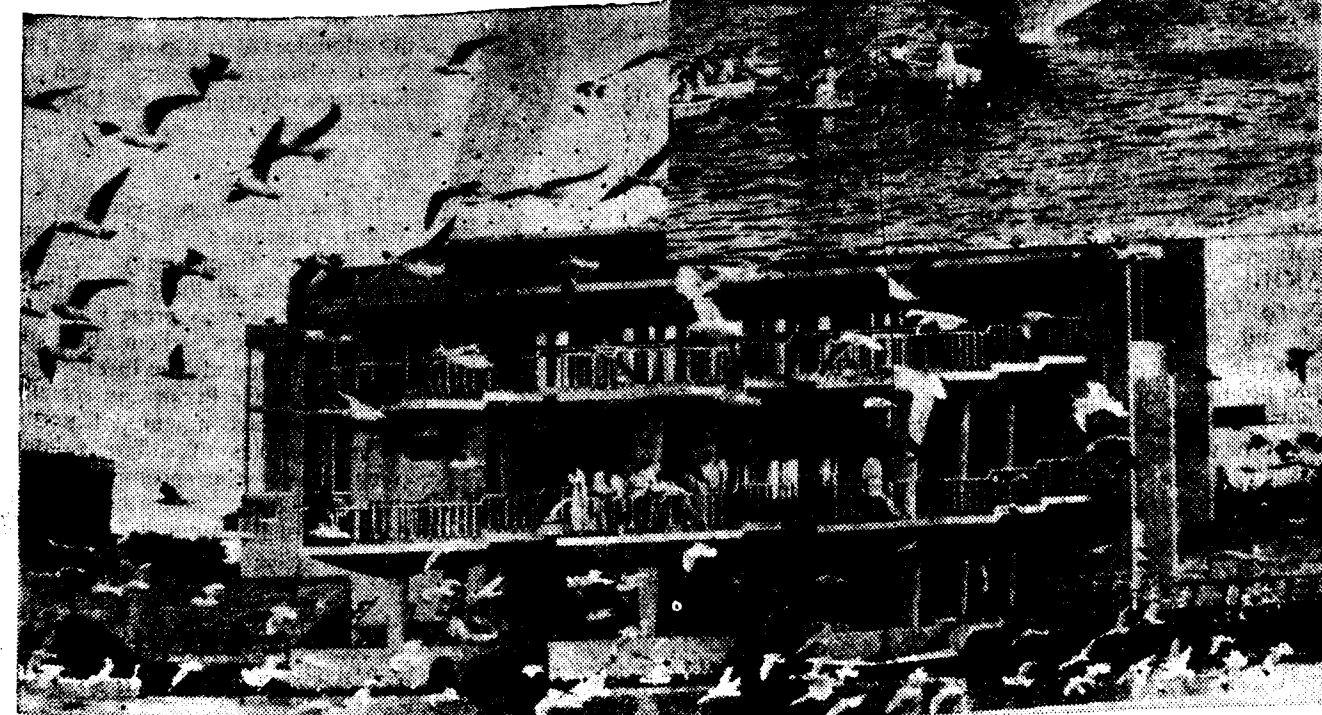
MAY 1973

Issue 13

## CONTENTS

|                                                | PAGES |
|------------------------------------------------|-------|
| Poompuhar—The City of Flowers .. .. .          | 4     |
| Poompuhar Festival .. .. .                     | 5-7   |
| Silappathikaram Art Gallery .. .. .            | 9-11  |
| Marvellous achievement of T.W.S. & D. Board .. | 14-16 |
| Agricultural growth in Tamil Nadu .. .. .      | 23-26 |
| Minor Irrigation Programme in Tamil Nadu ..    | 27-28 |
| TIDCO Projects .. .. .                         | 38-42 |
| Household Fires—cause and remedy .. .. .       | 43-44 |
| Management of Sunflower .. .. .                | 58-59 |
| Electret and Atmospheric Electricity .. .. .   | 60-61 |

A view of the Boat House and the highspray fountain installed in Coovum river.



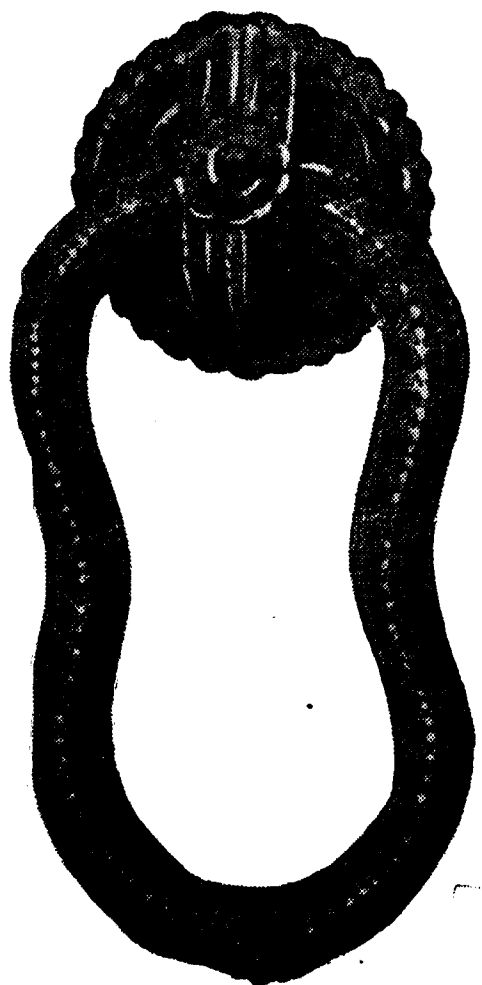
# POOMPUHAR—THE CITY OF FLOWERS

POOMPUHAR! The City of Flowers! We have listened to the song of the waves on many a shore but the poignant tune of the waves that roll in the sea off Kaveripoompattinam of the present takes us to a world far, far away from the world of today. And what we are transported to is the word of Tamil literature of nostalgic antiquity, drenched in nectar perennially sweet.

DR. M. KARUNANIDHI

The beautiful city of Poompuhar was on the banks of Cauveri where the river meets and merges with the billowing sea. The city with its three sectors, namely Pattinappakkam, Maruvorppakkam and Nalangadi where the landmarks were the Grand Arch, which the King of Avanti had constructed as a gift to Karikal Chola, the Auditorium of pearls which was a present from the Monarch of Vajra and the Pavilion, which was a tribute from the ruler of Magadha, is today under the sea. But the renown of the city reigns supreme even now and all the oceans of the world cannot draw a veil over it.

Poompuhar, the birth place of the characters of SILAPPATHIKARAM—Kannagi and Madhavi and Kovalan—was a harbour-city handling export and import on a large scale, as has been recorded in detail in Pattinappalai: "Steeds from across the seas and loads of pepper delivered by barges from inland: gems and gold from the northern hills, sandalwood and AKHIL from the western ghats, pearls brought from the southern sea and coral from the eastern sea; goods from the plains of the Ganga and produce from the banks of the Cauveri itself—a resplendent sight, the scene of active prosperity here." Karikalan was a Chola Monarch of great renown who ruled from this Capital.



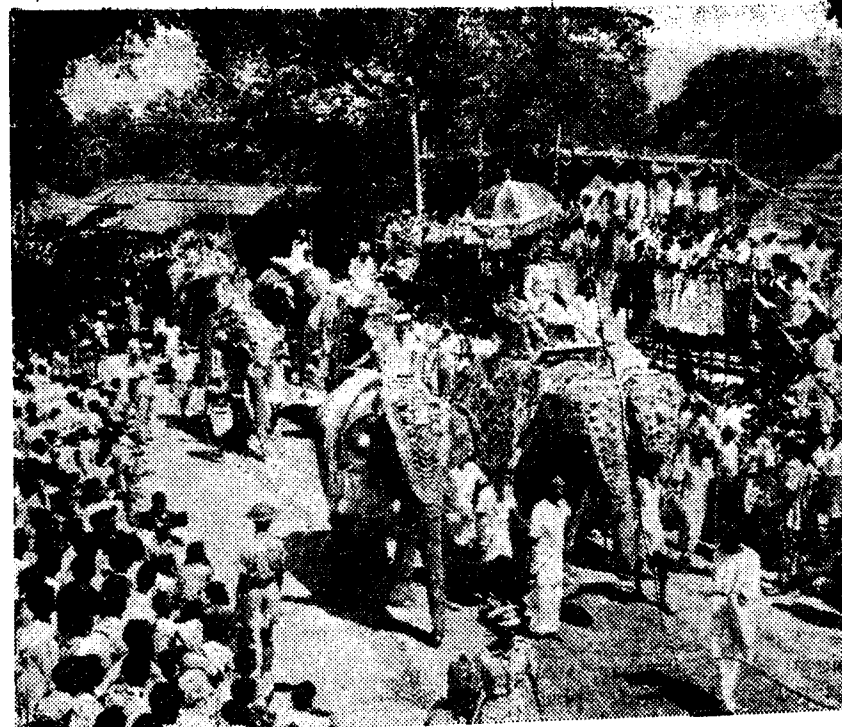
The Anklet carved out of a single stone as described in Silappathikaram.

Karikalan's period was from 60 B.C. to 10 B.C. It was during this time that Augustus Caesar ruled in Rome from 39 B.C. to 14 A.D. It is clear that the Tamil King who sent Envoys to the Court of Augustus Caesar was Pandyan Peruvazhuthi. Trade relations had been established between Rome and Tamilagam a long time before, but the ties became closer only after Karikalan and Peruvazhuthi were crowned. The friendship between Rome and Tamilagam flourished steadily thereafter and it can be said that decline set in only after the period of King Nero of Rome. Archaeology has yielded impressive material testifying to the friendly relations between Rome and Tamilagam.

The Greeks and the Romans were called 'Yavanas' here and quite a few of them were in employment in Tamil Nadu as palace-guards. Tamil literature contains ample references to this fact. Mention is made in SILAPPATHIKARAM of "the Yavanas with swords fierce in battle, making excellent guards".

In the records of Ptolemy there are references to two ports of Tamil Nadu which could be taken as Kaveripoompattinam and Puthuvai (Pondicherry).

It has also been recorded in Tamil literature that merchants and sailors from many countries used to arrive at the port of Puhar and that there was great friendship not only among them but also between them and the local people. And that way, Puhar can certainly be said to have nurtured fraternity among peoples of different lands. Such was the prominence in maritime trade and the historic greatness of Poompuhar.



The Poompuhar Festival began with a mile-long mammoth procession which was headed by a caparisoned elephant.

## POOMPUHAR FESTIVAL A MONUMENTAL AUGURY OF THE RISE OF TAMIL TO LOFTIER HEIGHTS

The Triad of Tamil Muse-Drama, Poetry and Prose engulfed Poompuhar in Thanjavur District for two days on April 17th and 18th under the scorching Sun and cool splendour of the full Summer Moon. The Poompuhar festival organised for the first time this year catered to savants and the lay public the rich splendours of Tamil Heritage. Heralded by an announcement in the Assembly during Budget Debate, it was both sedate and austere in celebration. It was an exercise in archaeology as well as a pageantry of literary lore. All who came to the festival of Poompuhar, had all their five senses satiated with nothing but the choicest delicacies of Tamil, morning moon and night. The sea can no longer engulf Poompuhar for it has risen again after 2,000 years in all her glory and shall live for ever in lasting renown, for Poompuhar witnessed not the Pomp of power but the pomp of literary

splendour, not the boasts of heraldry, but the resuscitation of our arts.

The two-day Poompuhar Festival was conducted in a mammoth and colourful manner to recapture the glory of the ancient city Kaveripoompattinam at the estuary of the Cauveri on 17th and 18th April 1973. In short on both days the ancient port city of Poompuhar wore a festive appearance of immense beauty and grandeur.

### MILE-LONG PROCESSION

The Festival began on 17th April with a mile-long procession in which besides thousands of people in their multitudes, elephants, horses and Karagam and Silambam artists took part. A caparisoned elephant carrying the Chola Flag headed the procession. As many as 12 tableaux depicting scenes from the Tamil

Classic "Silappathikaram" were the highlights of the procession. The mammoth and magnificent conduct of the procession added lustre to the festival and laurels to the organisers of the function. The procession all along was to the delight of the mass of people who had flocked to witness the function. The procession ended at the Kannagi Kalaikoodam.

After the procession came to an end, foundation stones for various manrams and kottams described in Silappathikaram were laid. The buildings are to be constructed in due course in the manner they are depicted in Silappathikaram.

The foundation stone for a guest house named after Dr. Arignar Anna was laid by Dr. M. Karunanidhi, Chief Minister with





A Poet's forum.—Kavignar Suradha is seen addressing.

Thiru Reburton of the British Deputy High Commission in Madras addressing the meeting.

Thiru K. Rajaram, Minister for Backward Classes, in the Chair.

The Chief Minister, in his speech, outlined some social and economical measures to be taken up and executed by the Government for the upliftment of the fisher folk living in and around Poompuhar. He said that "The State Government has proposed to spend Rs. 40 lakhs on welfare measures to benefit about 700 fishermen living on the coast at Kaveripoompattinam". All these welfare measures would provide fishermen with mechanised boats to undertake deep sea fishing and nylon nets. He further said that the Slum Clearance and the Housing Board would provide these fishermen with pucca tenements.

In the end, he observed that Kaveripoompattinam, otherwise

known as Poonpuhar, would be ensured its rightful place as a historic and cultural centre and developments now taking place were bound to attract tourists not only from all parts of India but also outside. The ancient glory of Tamil Culture would be restored to Poompuhar which would revive self-confidence in the Tamil People.

In the evening a seminar on the history of the Tamils was held in which Pondicherry Chief Minister, Farooq Maricar and other prominent Tamil scholars participated under the presidentship of Thiru K. V. Jaganathan.

In the night Tirumathi Kamala and her drama troupe staged a dance performance on Silappathikaram and the Karikalan Nataka

manram enacted a drama which was written by Dr. M. Karunanidhi, Chief Minister.

On the 18th Morning, there was a debate on Silappathikaram under the presidentship of Dr. M. Varadarajan and a poet's emposium under the presidentship of Kavignar Suradha.

On 18th April 1973 the Art Gallery—"Silappathikaram Kalai-koodam"—was declared open by Dr. M. Karunanidhi, Chief Minister. Thiru Dr. V. R. Nedunchezian, Minister for Education, presided.

Built at a cost of Rs. 4.5 lakhs the Art Gallery is housed in a seven-storeyed building near the coast. The Art Gallery portrays vividly the politics; life, customs and culture of the people in the ancient

The tableaux which are taken in the procession—The Picture at left side depicts Thiru Illango Adigal in a pose of writing of the immortal Tamil Classic Silappathikaram and the Picture at right side describes the scene of beheading of Kovalan, the main male character in Silappathikaram.



The Kara-gam dance.

The dance performance by Thirumathi Kamala and her troupe.

days of Tamil Nadu. The stone carvings in the art gallery were done at the architecture training school in Mahabalipuram. The stones were brought from Pachaimalaikuppam near Kancheepuram. Red decorative stones on the outer wall of the gallery were brought from Vanchi near Melur in Madurai district, while the transparent black-stones used for flooring were brought from Krishnagiri.

The Chief Minister, in his address to the audience, congratulated Sthapathi Ganapathi of Mahabalipuram and his assistants on their splendid artistic works in architecture. He was also all praise for the magnificent and marvellous services rendered by Thiruvallargal Kavingar Karunanandam, Pulavar Ilangeeran and K. A. Nambiar,

The Music concert by Chidambaram Jayaraman and his party.

Collector of Thanjavur district in the construction of the art gallery.

The Chief Minister, in his speech, said that the foundation stone for a Thiruvalluvar Alayam in Madras would be laid by the end of the month. He also said that every year festivals to revive the ancient Tamil culture and preserve the Tamil spirit would be held in all districts of the State.

The Education Minister Dr. V. R. Nedunchezian, in his presidential address, said the art gallery would bring back to life the 2300 year old Tamil civilisation.

Thiru M. P. Sivagnanam, Deputy Chairman of the Legislative Council participating in the function, said a 25 year old dream of his had

become a reality with the opening of the art gallery at Poompuhar.

Other participants in the function were Thiruvallargal K. Anbazhagan, Minister for Public Health, K. A. P. Viswanatham, Kundrakudi Adigalar, Herbert Schulze, Consul-General of the German Democratic Republic, Burton of the British Deputy High Commission in Madras and H. Kopp of the Consulate-General of the Federal Republic of Germany. They all spoke on the occasion and were all praise for the magnificent display of fine architectural works in the Art Gallery.

The festival came to an end with a music concert by Chidambaram Jayaraman and party and a Kara-gam display by the Special Armed Police, Avadi.

—R. N.

The Nadhaswaram Music by Thiruvenkudu Subramaniam and his party.



# HOW POOMPUHAR INFLUENCED INDIAN HISTORY?

The earliest reference to Kaveripoompattinam is noticed in a prakrit inscription of 2nd century B.C., found at Barhut in Northern Indian.

The inscription refers to the gift of a stone slab for an enclosure of a stupa by a Buddhist nun called Soma, who, hailed from the city, Kakandi.

## Stupa erected by Asoka

The stupa at Barhut was originally erected by Asoka and was enlarged in the time of the Sunga Kings in 2nd century B.C.

Evidently, the missionary activity of Asoka should have left its impact on the city of Kaveripoompattinam and ever since it continued to be an important Buddhist centre till at least 8th century A.D.

## Buddhist Sources

All the prakrit references to this city come from Buddhist sources. The celebrated book 'Milindapana' dealing with the questions of Menandar, and the answers of Bikku Nagasena, refers to this city as Kolapattina, one of the best known ports of the time.

This is confirmed by Prakrit texts. Abhidhammavata and Buddhavamsatta katha, written at Kaveripattinam, by about 400 A.D.

## Buddhadatta's Works

The author of the above works, Buddhadatta by name, was a great grammarian and an accomplished poet of his time, and has written another Prakrit text called Vijayaviniccaya.

From the last mentioned work, it is learnt that Buddhadatta spent some-time at Bhutamangala in the Chola rashtira, when Acchuta Vikkanta of Kalabrahkula was ruling the Chola country.

Buddhadatta states that he wrote the Abhidhammavata, and Buddhavamsattakatha, while residing at a cool and pleasant part of the vihara which was very ancient.

It is evident that a great Buddha Vihara was erected at Kaveripoompattinam, by about 400 A.D.

## Indhra School of Architecture

Manimekalai refers to Indra Viharam Elu which is taken to mean seven viharas built by Indra.

In this connection, it is interesting to mention that there is a school of architecture and sculpture called Indra matha prevalent in the Tamil country.

It is likely that the viharas at Kaveripoompattinam were built according to Indra School of Architecture.

Buddhadatta's works indicate that Kaveripoompattinam was also a great centre of Prakrit learning.

## CHOLAS CONTROLLED SEA TRADE

According to "Periplus", the Cholas controlled a major part of the sea trade. Three types of ships frequented the port, the country boats, which sailed along the coast up to Damillica on the West coast, the familiar "catamarans" built of logs of wood and called "Sangara", and huge ships called "Colandia" which sailed to far off countries like Malaya and China, etc.

Though many private institutions and scholars evinced interest, there was no scientific excavation of Poompuhar. In 1961, the Archaeological Survey of India excavated the site and continued the excavation for three seasons, but has since discontinued it. Even such a small-scale excavation has yielded remarkable remains and antiquities. Mangaimadam, Vellaiyan Tiruppu, Manigramam, Pallavanisavaram and Vanagiri have so far been excavated.

## THE GLORY IHAI WAS POOMPUHAR UNFOLDED IN MARBLE AND GRANITE

With the turn of a long brass key, Dr. Kalaingar M. Karunanidhi opened the Art Gallery at Poompuhar on 17-4-1973 to reveal to us and posterity 2000 years of Tamil culture and civilization that has long been a dream to him and many Tamil savants like him.

Poompuhar was the celebrated capital of the Chola empire.

The term 'Puhar' in Tamil means a place where a river enters the sea. Puhar is the place where the Cauvery joins the Bay of Bengal.

'Poom' in 'Poompuhar' means 'Bloom'. On account of its fertility, beauty and blossoming vegetation Puhar came to be known as 'Poompuhar' meaning a place of blossom.

'Poompuhar' came to be also called 'Kaveripoompattinam' and 'Kaveri Pattinam' meaning a place where the Cauveri enters the sea.

As the present Government of Tamil Nadu is much interested in preserving the great popular Tamil names and the pristine glory of Tamil culture, 'Poompuhar' has come to blossom again in History.



The glory of Poompuhar is well portrayed in 'Pathuppattu' and 'Ettuthogai' of the Sangam literature, and in 'Silappathikaram' and 'Manimekalai' among the five great Tamil epics.

Poompuhar was divided into two main parts. Maruvorpakkam and Pattinappakkam. The intervening space was used as a Market place, known as the Nalangadi. The layout of the City, the names of the streets, gardens, etc., are given in detail in 'Silappathikaram' and 'Manimekalai'.

The City was full of lofty and magnificent mansions with deer-eife-shaped windows and beautiful terraces. Foreign traders had their residences at Maruvorpakkam. There were store houses for the cargo. The Greek and Roman traders had their dwellings near the port.

Trade-ships of various countries called at Poompuhar frequently. Traders of spices and cosmetics as also of flowers frequented the streets.

Weavers of silk and cotton fabrics were in plenty. Pearls and ornaments of gold were sold in the market. Merchants were busy dealing in rice, millets, pulses and meat and fish.

There were carpenters, artists, sculptors, tailors, blacksmiths and goldsmiths all with commendable skill and dexterity in their respective trades.

## PATTINAPPAKKAM :

The palaces of the king was at Pattinappakkam. Poompuhar was at its height of glory in the days of Emperor Karikal Chola who conquered North India and established his suzeraniti up to the Himalayas, and flaped his flag of tiger on the Himalayas.



The 'Muthupandai' and 'Thoranavayil' were full of ornamentation with pearls and gold.

Foreign trade centred round the city life of Poompuhar. Sandalwood, pepper, precious gems, silk and cotton were exported. High breed horses are said to have been imported from the West. The Cholas had the major share of maritime trade.

There were five Manrams (Public Centres), namely Vellidai Manram, Ilanji Manram, Nedungal Manram, Boothachathukkam and Pavai Manram.

At Vellidai Manram, the thieves were punished and subjected to public ridicule.

At Ilanji Manram, there was a pool. The sick, the deaf, the dumb, the blind and the crippled used to have bath in the pool with the belief that they would recover.

The Nedungal Manram was a place where a tall stone was erected. Persons affected by witch-craft would circulate its stone and worship with the hope of being cured of their illness.

The Boothachathukkam was a place where a bootham (Demon) was supposed to punish disloyal Ministers, unfaithful wives and husbands, liars, scandal-mongers etc., when they were brought to that spot.

Pavai Manram was a place where a doll was believed to indicate with movements of its eyes whenever the king and the judiciary went wrong.

Poompuhar was a place where all religious groups, the Vaishnavites, Saivites, Buddhists and Jains lived peacefully in perfect communion.

This city with all its renown came to be forgotten latter.

Excavations are conducted in Western Countries to discover the ancient cities and to renew them wherever possible. Archaeologists and scholars in Tamil Nadu also desire to conduct such excavations to unearth cities submerged under the sea.

The Chief Minister of Tamil Nadu, Dr. Kalaignar M. Karunanidhi, desired that the glory of this ancient city with its characteristic environ should be made known to the people and a memorial be raised to honour Kannagi at Poompuhar.

The 'Silappathikaram Art Gallery' is born out of his desire endeavour to illustrate the story of Silappathikaram in sculpture and to retell them in stone to the people.

The mansion where the 'Art Gallery' is set up, is known as 'Elunilai Madam' which has been constructed in accordance with the

descriptive norms given in Silappathikaram. This is a unique structure.

The site covers a total area of 2.16 acres and the gallery covers 5,100 square feet. The foundation stone for this Art Gallery was laid by Dr. Kalaignar M. Karunanidhi in 1968 when he was Minister for Public Works. The actual work commenced only in 1970.

The Chief Minister Dr. Kalaignar M. Karunanidhi inaugurated the Silappathikaram Art Gallery on 17th April 1973. In this Art Gallery which costs Rs. 4.5 lakhs there are 49 sculptures in the frieze. These were carved at the Mamallapuram Sculpture Training Centre.

There are seven stages (storeys) of the Mansion including the ground floor. The first chamber is 12 feet high and the chambers above are 5 feet high each. The 'Kumbam' above the 7th stage is 8 feet high. The height of the 'Elunilai Madam' is 50 feet.

In front of the mansion, there is the majestic 'Thoranavayil' (Entrance arch) 22 feet in height. The 'Thorana Vayil' is modelled after the 'Mangala Devi' temple at Surilimalai. A garden will be formed in between the Thorana Vayil and the Art Gallery.

The sculptures, which are arranged beautifully, fascinate the on-looker. The polished granite stones on the



The Madhavi statue installed at the open space of the Art Gallery, is 8' high and weighs 2½ tones. It has been carved out of a single stone.

flooring are equally elegant. These stones are from the Government Granite Polishing Centre at Krishnagiri.

The lotus has an important place in Tamil literature. In Temples and other art galleries all over Tamil Nadu, the lotus finds a place in sculpture and paintings. In this Art Gallery also there are 20 lotus pieces of sculptures.

The 49 sculptural pieces depict the story of Silappathikaram from the 'Mangalakathai' to the stage of Kannagi becoming a deity. Two of these pieces depict Elango Adigal and the anklet separately. The sculptures have been carved with a masterly touch aptly expressing the feelings and emotions of the characters.

Below each piece there are verses from Silappathikaram describing the scene. These descriptions will be soon vocalised and an arrangement is being made for vocalisation in Tamil and English with the assistance of Philips Agencies.

In the open space of the Gallery, there is a tank constructed in the shape of an anklet. Near this tank is a statue of Madhavi which has all the ornaments described in Silappathikaram as worn by her.

With the object of setting up all the spectacular sights of Poompuhar so as to remind us of its glorious past, all the Manrams have been set up. The Ilanji Manram, The Pavai Manram, Nadungal Manram, Buddha Patti, Thirumal Kottam, Murugu Kottam and Arugan Kottam, are to be set up here, and foundations for these Manrams were laid down by the various Ministers of Tamil Nadu and others.

For the tourists, Arignar Anna Tourist Bungalow is to be constructed here and the foundation for this Tourist Bungalow was laid by the Chief Minister on 17th April 1973.

On the whole, Poompuhar shall be a tourist attraction, and tourists from abroad would not stop with Mamallapuram, and they shall visit Poompuhar. It is not an attraction to foreigners alone. It is an attraction to our Tamil People themselves and visitors would be thronging in Poompuhar every day.

The archaeological department has proposed to open a museum at Poompuhar near the Art Gallery.

—S. Nallarasu.



A walk through the Art Gallery of Poompuhar with its ornate friezes in stone and sculptures is a walk through the corridors of 2,000 years of Tamil history.

Ganapathi Ganapathi is honoured by the Chief Minister for the magnificent architectural skill that he has shown in the construction of the Art Gallery.



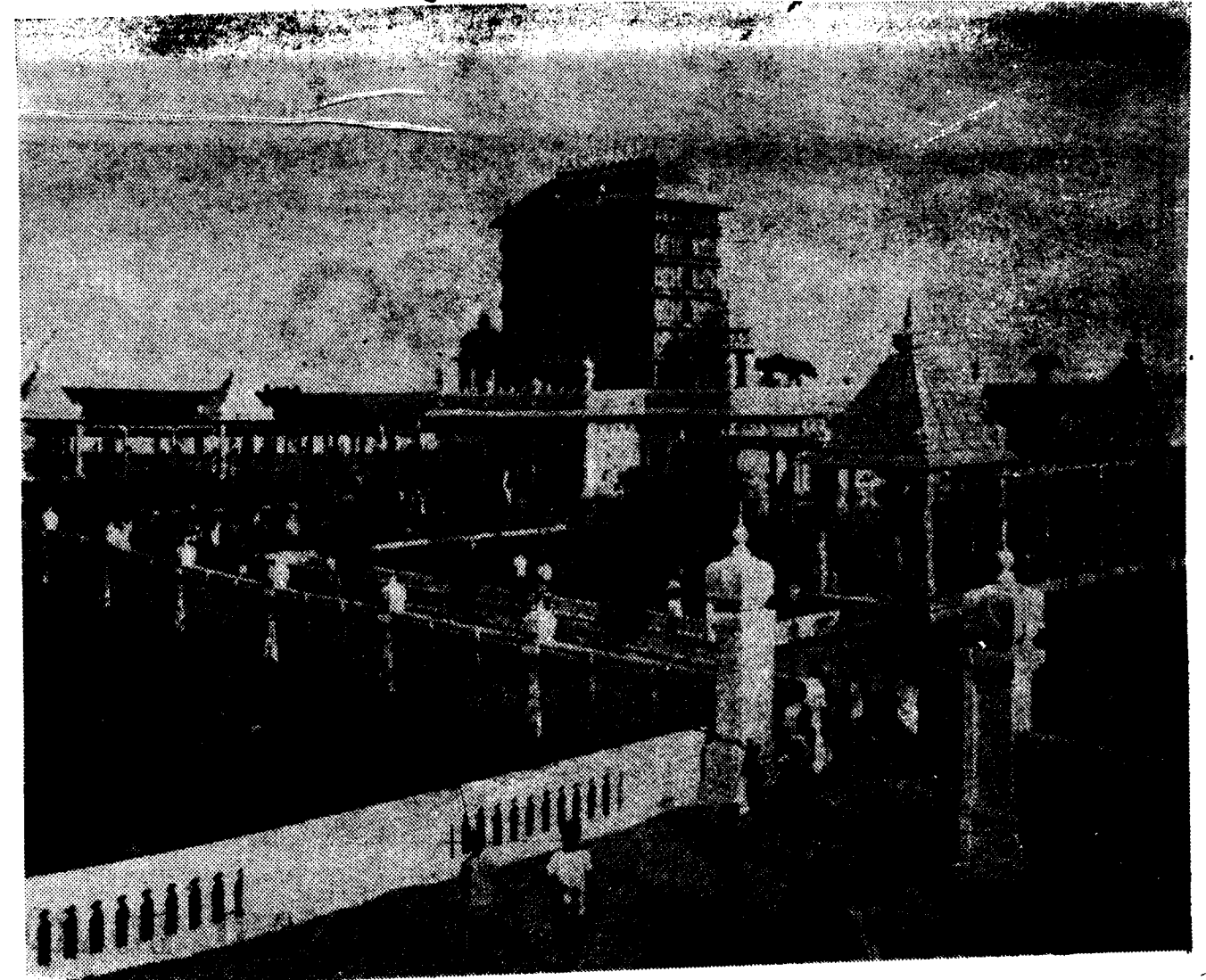


# WHEN AN EPIC BECOMES AN ART GALLERY - ARCHITECTURAL EMINENCE IS ACHIEVED

The Silappathikaram Art Gallery at Poompuhar is a unique structural style in the whole of India. This gallery has been constructed in accordance with the norms of architecture enunciated in Silappathikaram.

Of the seven storeys of the Gallery, the first stage is 12 feet high. The other storeys are each 5 feet high. The Kumbum above the 7th stage is 8 feet in height. The total height of the Gallery is 50 feet.

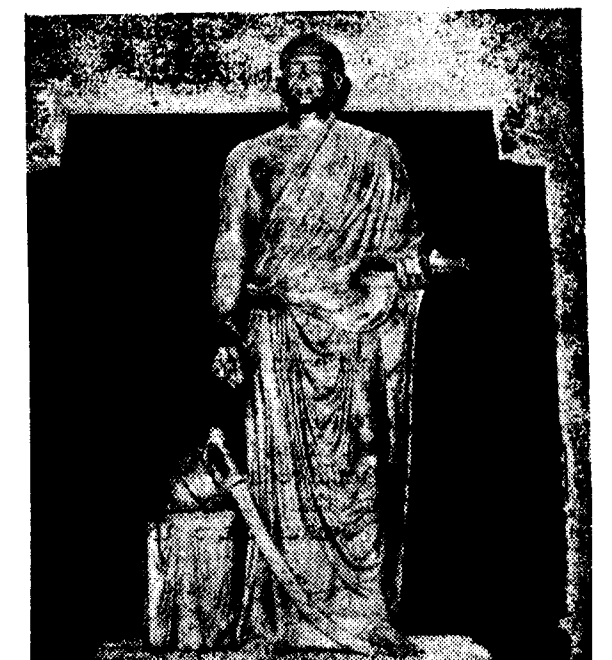
The Thoranavayil, (the Grand Arch) is 22.5 feet high. This was constructed in the shape of the Thoranavayil of the ruined Temple of Mangala Devi at Surulimalai.



A Panoramic view of the Art Gallery at Poompuhar.



*Left:* The Statue of Karikal Cholan, who held the reigns of the Chola Kingdom from 60 B.C. to 10 B.C.



*Right:* The Statue of Ellango Adigal, the Prince-turned ascetic, who composed the immortal Tamil epic Silappathikaram.



## MARVELLOUS ACHIEVEMENT OF T.W.S. & D. BOARD.

Drinking water is a basic amenity and informed people even suggest that a society cannot call itself civilised without protected water supply. It is a well known fact that in case we can give protected water and provide effective sewers for effluent disposals, we can prevent large number of infectious diseases. All ailments of intestine and many more are caused by water-borne bacteria or germs and prevention would save us enormous amounts on manufacture of drugs and provision of hospitals.

Since Independence, the much neglected aspect of human life in this land is the protected water supply for drinking purposes and proper execution of drainage system. It has told heavily upon the society with affliction of various ailments in unknown degree. Thus there is a demand all-round that water supply should be the State's responsibility and that it should be good potable water. Since to assure

Undaunted by the enormity of the problem of gigantic task beset with natural and financial obstacles, the Tamil Nadu Water Supply and Drainage Board, within its short duration of two years existence, has as many as 116 schemes under execution estimated to cost Rs. 4895.54 lakhs. All these schemes are expected to be completed in another 2-3 years. Investigations for 148 new schemes are in various stages of completion. From the fact that the Board will require inputs to the tune of Rs. 400 crores, the enormity of the problem may be gauged in proper perspective.

this quality, the State has to spend huge amounts beyond its capacity in the process of transportation, treatment and distribution. Further in view of the scarcity of rainfall, the short duration of the rainy season and the nature of geological formation, the water supply scheme is naturally beset with so many formidable and not easily surmountable difficulties in Tamil Nadu.

Against this background, the present Tamil Nadu Government under the stewardship of Dr. M. Karunanidhi, set up a separate Board for the purpose and is bent upon providing the whole State with protected water supply and proper drainage in a period of seven years.

The Tamil Nadu Water Supply and Drainage Board celebrated its second anniversary on 13th April 1973 with the inauguration of the Thanjavur Water Supply Scheme by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu, to be

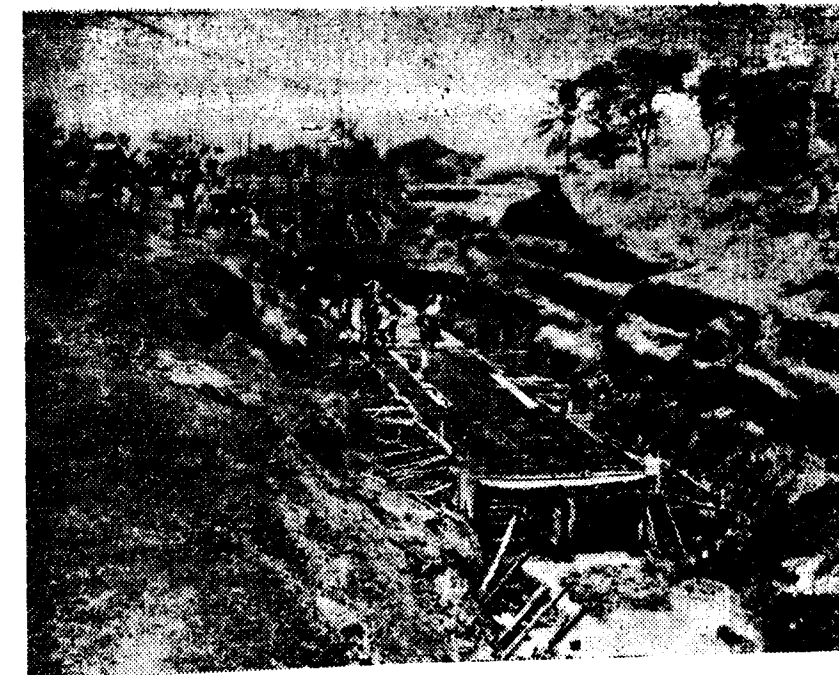
executed at a cost of more than Rs. one crore.

In Tamil Nadu there are two corporations—Madras and Madurai—consisting of 30.18 lakhs of population, with protected water supply. But out of 89 municipalities comprising 57.40 lakhs of people in the State only 75 municipalities are provided with the partially protected water supply leaving 14 other municipalities with inadequate water supply. Further there are 13 Townships and 600 Town Panchayats in the State accounting for 68.42 lakhs people residing there, out of them only 9 and 55 numbers respectively are having facility of adequate protected water supply leaving a balance of 4 townships and 545 town panchayats trailing under inadequate water supply. Among the 58,595 villages in the State, comprising 255 lakhs human inhabitants, none is provided with protected water supply while as many as 4,916 villages are having no source of water supply at all and 11,814 villages with inadequate water supply. Besides these, there are as many as 41,865 villages in the State which are left with unprotected water supply. A peep into these figures gives heretofore would remind one the enormity of the problem. It will thus be seen that there are hardly any habitation in Tamil Nadu which has protected and adequate water supply.

The performance of the Tamil Nadu Water Supply and Drainage Board within a short span of two years has been a record one. Considering the utter neglect, particularly of the rural community all these years, a complete coverage of the whole community within seven years is a stupendous task.

### Natural difficulties :

There are two major problems to be reckoned with in reaching this target. The first and foremost is obviously the problem of finance. Though difficult, it is not insurmountable, thanks to the institutional finance available. The Life Insurance Corporation has come in large measure with loans to meet the financial needs of the scheme of the Board. Besides this the enormous enthusiasm evinced by the local bodies in the State to share the burden is effective and encouraging.



The Veeranam Scheme—the biggest water supply scheme ever executed in the country—under execution.

Surface flow in our State has more or less been fully exploited. To a substantial extent the sub-soil potential is also being extracted. The Ground Water Cell, set up to assess the availability, has estimated that it may be around 12 million acre feet out of which 7 million acre feet is already being exploited. Deep aquifers which can yield substantial quantities are located only in isolated pockets along the cost. Most of the inland areas of the State are of hard rock substratum which can yield only limited quantities. The rainfall being meagre, the only alternative are getting fresh water from neighbouring States, getting sea water converted which is prohibitively costly or stimulating clouds which is not economically viable, as yet.

Because the water resources of the State are poor, the sources for many water supply schemes are distant. There are about 20 water works in the State for which the sources are 15 to 50 km. away. Madras City has its present source of water supply about 40 km. away. The scheme for augmenting supply from Cauvery involves a distance of 220 km. Likewise, inadequate yield has made it necessary for about 15 towns in the State to depend on more than one source of water supply.

Utilising the shallow sandy beds of the rivers, the State has successfully developed a special technique known as infiltration galleries to tap the ground water. River Palar and Vaigai have been extensively tapped in this manner. This method is also adopted in the perennial rivers like Cauvery and Tambaraparani. There are more than 50 such infiltration galleries in the State.

There are about 15 towns where surface water from perennial rivers are tapped, treated and used. Impounded sources have been used in about 20 schemes where surface flows are seasonal.

Deep ground water aquifers have not received much attention in the State due to the unfavourable geology of most areas. Recently substantial aquifers have been located in Madras city and in North Arcot, South Arcot and Thanjavur districts. Deep tube-wells have been developed as sources for about five water supply schemes. With the availability of fast drilling rotary and hammer rigs, it should be possible to explore the ground water sources for smaller schemes. But the fact remains that the ground water is getting depleted day by day. It is a costly experience of our State that roughly about a million open irrigation wells and

about 60,000 and drinking water wells are getting deepened more or less regularly every summer because the water table has been disturbed by indiscriminate exploitation of ground water.

Lack of adequate water sources within economical distances has also necessitated adoption of very low per capital supply of 70 liters per day in the design of our schemes against the minimum desirably prorate supply of 200 liters.

Regarding drainage condition obtaining in the State, this is the correct picture. In Tamil Nadu there are two Corporations, 89 municipalities, 13 townships, 600 town panchayats and 58,595 villages. Among them only 2 Corporations, 5 municipalities and 3 townships are covered with partial sewerage while as many as 84 municipalities, 10 townships, 599 town panchayats and 58,595 villages are let to be provided with complete coverage of sewerage. In the whole State, only one town panchayat is provided with full sewerage. Compared to the magnitude of this problem the inputs so far had been as given below at the bottom :—

Total number of schemes under execution including spillover Schemes—116.

The performance certainly bears no relations to the magnitude of the problem. To be truthful it is dismissal.

From the year 1969-70, the Government of Tamil Nadu stepped up its financial outlay on the water-supply and drainage schemes. The Life Insurance Corporation of India came in a big way with financial assistance. This co-operation has created a situation favourable to a great beginning and a bright future.

| Period.                      | Amount spent on Water-Supply and Drainage (RUPEES IN LAKHS.) | Number of schemes.                         |
|------------------------------|--------------------------------------------------------------|--------------------------------------------|
| Before 1951 ..               | 300.00                                                       | 44 Schemes.                                |
| I Five-Year Plan (1951-56)   | 140.70                                                       | 10 Water-Supply and 2 Drainage—12 Schemes. |
| II Five-Year Plan (1956-61)  | 622.00                                                       | 28 Water-Supply and 5 Drainage—33 Schemes. |
| III Five-Year Plan (1961-67) | 598.00                                                       | 28 Water-Supply and 3 Drainage—31 Schemes. |
| Annual-Plans from 1966-69    | 836.36                                                       | 26 Water-Supply and 4 Drainage—30 Schemes. |
| IV Five-Year Plan (1969-72)  | 2,899.21                                                     | 79 Water-Supply and 6 Drainage—85 Schemes. |

In the last three years namely 1969-70, 1970-71 and 1971-72, a total of Rs. 1,443.95 lakhs have been spent on the water-supply and drainage schemes in the State. This outlay was mostly in bigger habitations namely the Corporations, Municipalities and Town Panchayats the smaller populations namely the villages benefiting incidentally, being enroute on the schemes. This huge outlay either improved the existing facilities or provided for fresh start, though later in fewer cases.

As on date there are 116 schemes under execution estimated to cost Rs. 4,895.54 lakhs. All these schemes would be completed in another 2-3 years. Besides there are as many as 148 new schemes which are being investigated, work on which would be taken up as soon as the investigations are over and availability of funds is indicated by financing institutions. For investigation the State Government has proposed to lend loan to the local bodies which are capable of repaying it in due course.

The problem however, is much bigger. It has been estimated that complete coverage of all habitations with water-supply and drainage will require inputs to the tune of Rs. 40,000 lakhs or Rs. 400 crores.

In a socialistic, democratic State, the imbalances in the development of various strata of society are intolerable. Hence there is a need in the change of emphasis. The Government of Tamil Nadu Water-Supply and Drainage Board started thinking seriously last year about giving greater attention to the vast majority of the rural population which had been badly neglected all

these years. Last year a scheme was prepared for covering all the rural populations with protected water-supply in phased but restricted period. A search for financial avenues was started.

A scheme for providing 8,850 deep bore wells in scarcity areas at a cost of Rs. 275 lakhs in about 1,800 villages, to cover a population of 30 lakhs with the assistance of UNICEF was sanctioned and works taken on hand. The UNICEF assistance is proposed to be in the Form of drilling rigs, resistivity meters, terameters and support vehicles. The equipment has started coming in instalment and work is progressing satisfactorily. By the end of this year work will pick up speed and it is expected that within another three years the whole scheme would be completed.

#### ACCELERATED RURAL WATER-SUPPLY PROGRAMME.

The most important development last year had been the sanctioning of an Accelerated Rural Water-Supply Programme under the Central schemes. The aim of this scheme is to cover all rural populations with adequate and protected water-supply by the end of Fifth Five Year Plan. Last year under this scheme a sum of Rs. 100 lakhs have been allotted to Tamil Nadu out of a total of Rs. 2,000 lakhs for the whole country; this provision being besides the normal allotment for the same purpose.

A total of 421 schemes estimated to cost Rs. 310 lakhs have been sanctioned covering 295 schemes in Ramanathapuram district, 41 schemes in Dharmapuri district, 40 in Chingleput district and 39 in South Arcot district. The work on these schemes is progressing fast and it is expected that all the schemes would be completed before December 1974. Against the allotment of Rs. 100 lakhs for 1972-73, the Board has executed works worth Rs. 150 lakhs. The other districts would be taken up as and when these works are completed and fresh allotments are made available. It is hoped that this year the allotment under this scheme would be doubled and in the subsequent years it would be much more.

There is, however, no room for any complacency and much larger efforts and much larger outlays are necessary to provide all the habitation areas in the State within the stipulated time of seven years.

## TYRE PLANT IN RAMNAD DISTRICT

Work is to start soon on the setting up of the projected joint sector tyre plant in the backward Ramanathapuram district. A site on the outskirts of Tirupattur has been selected for the location of the Rs. 18 crore plant. About 240 acres have already been acquired for the purpose. Production is expected to commence during 1975.

A technical collaboration agreement between Tamil Nadu Rubber Limited, a new company in the joint sector, and General Tire International Company of Akron, Ohio, U.S.A., for the manufacture of tyres, has been signed.

The Government of India has since permitted an increase in the plant's capacity from three lakhs to five lakhs pieces of automobile tyres and tubes per annum, thus enhancing the viability of the project. The agreement with the

U.S. collaborator provides for transfer to the company of technical know-how, engineering details and documentation for operational facilities and for the employment of General Tire's latest technology for the manufacture of tyres and tubes to the highest international standards. The agreement stipulates an initial payment spread over a period and royalty after the start of commercial production.

#### Terms most favourable

The terms are the most favourable taking the agreements recently concluded with several foreign tyre companies into consideration. One other feature of the agreement is that the U.S. company would help in the setting up of Research and Development as part of the manufacturing activities.

Rs. 6 crores would be the share capital and the balance of Rs. 12 crores would come from lending institutions as long-term loan. Of the capital, 26 per cent would come from the Government promoter (Tamil Nadu Industrial Development Corporation) and 25 per cent from the private promoter making up a total of 51 per cent, the balance of 49 per cent coming as public subscription. Towards the end of the year the company would come to the capital market for public subscription. The employment potential is about 750.

Regarding power supply, the project is at present based on supply from the State grid but there is a proposal to set up captive generation later on as a standby element. As regards machinery for the project, 40 per cent would be fabricated within the country, while the balance would come from abroad.

In course of time Indian technicians would be trained at suitable factories abroad operated by General Tire. In addition, General Tire experts would be deputed to India to train Indian personnel in the operation and maintenance of the plant. This is the first occasion General Tire is entering India. The Tamil Nadu Rubber would have to export 10 per cent of its production. —R.N.



The American Ambassador to India, Thiru Moniham met Chief Minister, Dr. M. Karunanidhi at his residence when they discussed matters of mutual interest. The Ambassador visited some other important places in the State and took part in some other functions.



## TAMIL NADU MARCHES ON

# 92 PER CENT ACHIEVEMENT IN HOUSING PROGRAMME FOR PLANTATION LABOURERS

As in many other socio-economic activities in which Tamil Nadu leads other States in India, in the matter of Plantation Labour Housing, Tamil Nadu ranks topmost among the States as its achievement in this line amounts to 92 per cent of the target proposed. Of the 33,625 houses required for plantation workers in the whole State, as many as 32,770 houses have already been constructed and provided to the plantation workers until December 1971. This fact has been revealed by Thiru K. Rajaram, Minister for Housing, while addressing a meeting of representatives of the Governments of Kerala, Mysore and Tamil Nadu, the United Planters Association of Southern India and the Planters Association of Tamil Nadu, Kerala and Mysore held at Ooty on 18th April 1973. The meeting was held to identify the bottlenecks impeding plantation housing programmes in the Southern States.

### Tamil Nadu ready to cover other Employees also

The Tamil Nadu Housing Minister, in his speech, urged the plantation companies in the State to contribute their mite towards the housing scheme and called upon them in right earnest and in a sense of rightful urgency to subsidise housing schemes by providing requisite land and infrastructure for housing colonies on their estates as

lack of proper residential accommodations tells heavily upon the efficiency of the workers. He further observed that "the plantation housing projects executed in Singapore is a commendable one to be emulated here inasmuch as there the provident fund savings are diverted towards payment of initial instalments towards the hire purchase cost of a house. He also declared that Tamil Nadu was ready to cover other employees in Plantation areas, such as teachers, drivers and carpenters with houses.

### Om Metha's View

Participating in the meeting, the Union Minister of State for Housing and Works, Thiru Om Metha said the success of planning depended to a greater extent on the ultimate amenities provided to the subjects in the matter of housing, water supply, transport and medical facilities. He expressed deep disappointment over the slow and lethargic progress made in the subsidised plantation housing programme in spite of the liberalisation of rules since the Centre took over the scheme from the hands of the States in 1970.

Thiru Om Metha also said that lack of reliable data about the housing requirements of the plantation workers in the southern region was a great impediment in the implementation of the scheme.

—R.N.



## MOBILE SCIENCE LABS FOR SECONDARY SCHOOLS IN TAMIL NADU.

The idea of employing mobile science laboratories to help secondary schools in the districts to maintain standards on a par with the City schools has caught on in Tamil Nadu. At the instance of CARE, the experiment was tried in two educational districts of Thanjavur, viz., Mayavaram and Pattukkottai.

Following the successful working of the pilot scheme inaugurated in Thanjavur district, the Government sanctioned Rs. 7 lakhs for 12 more such laboratories and these were put in the hands of officers in charge of education in 12 education districts. Thus out of 47 education districts in Tamil Nadu, 14 have the facilities of these mobile science labs.

The vans each costing Rs. 48,000 have been designed and built by Messrs. T.V.S. Motors and each van is equipped with Rs. 10,000

worth of laboratory equipments. Besides, each unit is expected to incur a recurring expenditure of Rs. 15,000 per year.

Each van is complete with equipments necessary for doing practical work by as many as 20 pupils at a time and for demonstration experiments in general science for Standards IX, X and XI and in Physics and Chemistry (Elective subjects) for Standards X and XI. Each van is proposed to visit at least two schools per day and half a day stay at each school is fixed for each school. Pupils of each of the three higher Standards (IX, X and XI) will also be provided with science apparatus for doing programmed experiments individually or in groups.

Thiru V. Chitti Babu, Director of School Education, is of the view that the Government would consider in

right earnest equipping the other 33 educational districts with such laboratories in a phased programme.

It is believed that the introduction of mobile science laboratories is a boon to the student community inasmuch as they help them in gaining more scientific knowledge through practical training in the science laboratories which are not easily accessible to them so far.

### SCIENCE FAIRS.

During 1973-74 academic year, the Education Department has been permitted to hold Science Fairs in two selected District Headquarters. In each Fair at least 25 secondary schools will be participating. This is meant to augment and bring to the fore the scientific skill and inventive acumen in students of our secondary schools and thereby give an added fillip to science education in the State.

—R.N.

## VOCATIONAL REHABILITATION OF THE PHYSICALLY HANDICAPPED



Fancy parade by the handicapped children at the Medical College Grounds.

Physical disability, whether congenital or acquired, does not render a person utterly useless. There are left in the person a residue of certain abilities even after the advent of the handicap. This residue is like a dynamo and it has to be made to develop and amplify its potentialities into positive and economically viable productive capabilities. This is the essence of the modern philosophy underlying the programme of rehabilitation of the physically handicapped.

The first and foremost condition for successful tackling of the problem of the handicapped is the creation of the necessary psychosocial rapport. A psychological atmosphere has to be created in which the disabled persons will not feel their disability but will be enabled to participate in and give their best to social life in full measure and with freedom. There should be scope for an uninhibited expression of their personalities.

This reorientation of attitude need not be based on pity or philanthropy, but it should be based on the criterion of efficiency or utility alone. Given the opportunities for training and work, these persons can certainly do as good and some times even better than the other able-bodied persons. This is so because nature always compensates such physical deficiencies by bountiful endowments of other faculties like concentration, diligence, refinement of skill, etc. So what

is wanted of society is the creation of the necessary opportunities for the disabled to develop their latent potentialities and acquire skills suited to their residual physical abilities.

### VOCATIONAL REHABILITATION.

What is the *modus operandi* to convert the apparent physical handicap into an income-earning ability? The answer is the programme of Vocational Rehabilitation. This programme seeks to match the residual physical abilities with the performance requirements of jobs. This presupposes two things, viz., (1) that there is full knowledge of the extent and efficiency of the residual abilities and (2) that there is full knowledge about the details of job-requirements in respect of the various suitable jobs in the job-market. Where the first type of knowledge centres round the individuals, the second one revolves round jobs. Both are equally important.

A quantitative and qualitative study of the individual is to be done to find out what residual abilities are left in the individual and of what types and of what intensities. Assessment of the attitudes, aptitudes, interests and capabilities of the individuals has to be done on scientific lines by fully trained and competent persons. Similarly, the jobs are to be studied intensively. The techniques of job study and job analysis will

come in very handy in this task. The jobs have to be broken into patterns of performance-requirements from the point of view of worker traits and job specifications.

**Process of Matching.**—Then comes matching—matching of the ability—patterns of individuals with the patterns of performance-requirements of jobs. In this process of matching, certain adjustments and corrections will have to be made on either side to render a particular matching effective. When correction is made to the ability-pattern of individuals, it is known as prosthetic or correctional treatment. When the correction is made to the pattern of job requirements, it is known as job-engineering or correction to the machine-design. Such corrections have to be done in the best possible manner with least disturbance to the physical system in respect of the individual and the general design system in respect of machines. So this calls for expertise knowledge of the highest order and perfect co-ordination between the experts.

**Occupational analysis.**—Whether in assessing residual physical ability or in prosthesis or in job-engineering, occupational analysis plays a vital role. Occupational analysis supplies all the necessary and relevant information about the occupation, its description, its performance requirements, etc. As the rehabilitation process is essentially in the nature of canvassing

to secure suitable jobs for the handicapped, an exploratory survey of jobs to assess their suitability for persons with physical handicaps would be of immense help.

**Assessment of persons vis-a-vis Jobs.**—The old-world notion of viewing a person being capable of doing efficiently a particular job only no longer holds water. The modern notion is to view the individual as capable of doing several sets of jobs with equal efficiency. This is the modern 'multi-potentiality' or 'multi-facets' theory of vocational psychologists. This general rule applies with equal force to disabled persons and their potentialities. So there has to be a medical assessment and a psychological assessment of the disabled. Where the first can be done by qualified doctors, the second can be done by qualified psychologists or guidance workers. The Vocational Guidance Programme of the Department of Employment and Training is ideally suited to do the second job with its tools of guidance developed over the years.

**Occupational Research Programme.**—Assessment of the job specifics and requirements can be done by the Occupational Research Programme of the Department of Employment and Training. This tool has been refined by them over the years and they have recently carried out a survey to identify suitable occupations in which the physically handicapped persons

can be trained and employed. This was done by the Directorate-General of Employment and Training in collaboration with the Social Welfare Department and the State Directors of Employment. As far as Tamil Nadu is concerned there is now a proposal to conduct this survey in respect of all industries in Tamil Nadu and prepare a suitable report. The mainstay of this survey is the analysis of physical demands with reference to each job. This report, it is hoped, will go a long way in the programme of vocational rehabilitation inasmuch as it would specify numerous occupations in which such a programme could be successfully implemented.

There is thus an apparent need to strengthen and tie up these two programmes of the Department of Employment and Training, viz., the Vocational Guidance and the Occupational Research as far as the vocational rehabilitation of the physically handicapped is concerned. Both the schemes have to reorient their expertise to suit the needs of the disabled employment seekers also. On the job-engineering side, again the Craftsmen Training Programme can give a helping hand. The three can converge and evolve a suitable rehabilitation strategy.

**The role of Government and the community.**—The role of Government in this task of rehabilitation of the physically handicapped is first to identify the social and economic constraints to such a programme and take steps to remove the same. The second function would be to organise and co-ordinate rehabilitation work done by individuals and agencies and give them a sense of direction and purpose. A third responsibility would be to bring into force the necessary protection for this category of persons against competition from other more favourably placed persons in matters of securing training or job. The Government are fully seized of all these aspects of the problem and are already taking necessary steps towards their achievement. This is done by :

(a) Education and persuasion of employers and public about the normalcy of the physically handicapped persons and preference in public employment. The celebration of the World Day of the Disabled and the institutions of National



Running Race by orthopaedically handicapped children.

and State awards for the best employers and best employees are part of this scheme;

(b) Creation of a Physically Handicapped Board to organise all welfare activities and co-ordinate the welfare programmes of various individuals and agencies working in the field; and

(c) Concessions/Relaxation in matters of qualifications, etc., for recruitment to Government jobs. This has been done by the both Central and the State Governments.

The role of the community is mainly in removing any apathy in public mind towards this social misfortune and in creating a positive attitude of recognising the 'normalcy' in these persons and accepting them as useful and productive members of the society. This responsibility of the community is really very great in achieving this change of heart of its members and thus lending good support to the general programme of rehabilitation of the physically handicapped. This is easier said than done. Experience has shown us that it is difficult for the society to shed its unnecessarily acquired stigma against this innocuous phenomenon of disability. But that should be no reason to daunt our efforts. Much has been done in this direction mainly through propaganda or persuasion, but much more remains to be done. Speaking at the function organised to give away the National Awards, 1972, for the best employers and employees (Physically handicapped) on 3rd April 1972, the President of India has said that a certain percentage of jobs should be reserved for the handicapped and that a cess might be levied so that a fund could be created to provide training centres for the handicapped and also to start establishments where they could be gainfully employed. This statement of the President augurs very well indeed for the programme of Vocational Rehabilitation of the physically handicapped.

"Strike while the iron is hot" is the old adage. And this applies to any field where the effecting of a change in heart is the aim of activity. Inasmuch as the success of any rehabilitation programme depends mainly on the mental attitude of individuals and the society which they form, it is now for consideration if such a programme of education could be started right

at the pre-school stage of our general education. The point is why not we build into our educational infrastructure an early psychological build-up which is strong enough to resist undue social prejudices in the young minds and nurture in them healthy feelings of love and understanding and a genuine striving for the welfare of their fellowmen. If started early and nurtured on healthy lines this is sure to deliver the goods when the children grow up into citizens and form the constituents of a better, healthier and more advanced society. A suitable programme of 'pre-school' and 'through-school' educational in this regard is warranted right now.

#### CREATION OF A FUTURE IDEAL SOCIETY.

The programme of vocational rehabilitation of the physically handicapped is stupendous and time-consuming. It is time now to shake off complacency and enter upon vigorous action to remove barriers, mainly psychological, in the way of 'normalisation' of the disabled. Though individuals, private agencies and Government are seized of the problem and considerable work has been done already, much lee-way remains to be covered yet in this great task.

Apart from the celebration of the World Day and Institution of Awards for the best employees and employers, there is need now to launch upon specific socio-economic action programmes aimed at specific results. My first recommendation in this direction is the re-orientation of the Vocational Guidance and Occupational Information Programmes and with the aid of the the Craftsmen Training Programme to evolve a suitable strategy of securing employment for the disabled. The second recommendation is to launch upon the project to identify several suitable jobs for the physically handicapped through the Occupational Survey referred to earlier, separately for each State and covering all industries. The third and most important recommendation is to build into our educational system an effective infrastructure right from the pre-school stage which will effectively guard the young minds against unnecessary and unwarranted social prejudices and sow and nurture healthy attitudes and positive thinking conducive to the creation of a future ideal society.

#### VOCATIONAL COURSE FOR FRESH GRADUATES

The Madras University Employment Information Bureau will provide during the summer vacation some guidance and help in choosing a career or getting some kind of orientation in the line of work they want to take up.

The Bureau will conduct a one-month course in June for those who select one of the following professions: Public relations, Store-keeping and Salesmanship. The Bureau has chosen these professions where the demand for manpower is claimed to be substantial. Men in these professions will talk to the students on the basic equipment the jobs require and prepare them to accept permanent jobs later with confidence. The Bureau plans to conduct the next course on "Book Trade".

The orientation course is the first joint effort of its kind by the University, Tamil Nadu Government (Director of Employment and Training), Public Relation Society and a number of experts in the field. SUMMER VACATION WORK.

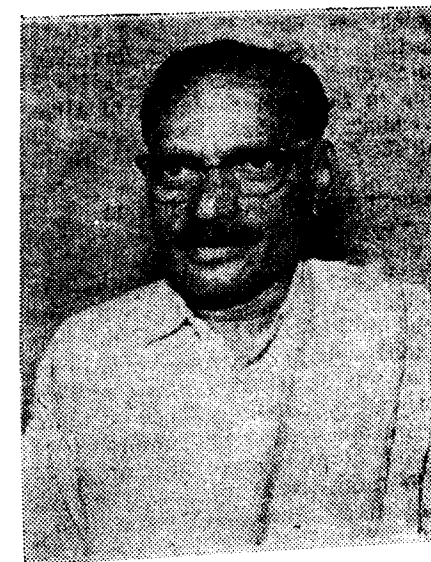
The Bureau is also finalising details of its "summer vacation work" project for deserving and earnest students.

With a little orientation, the students had done good work in skilled and semi-skilled jobs, surveys, office work, personnel department, sales, marketing and advertising. As they have gained some useful knowledge or skill their employ ability has increased.

The Bureau was able to find work last year for about 450 of 1,000 poor and deserving students. They were from arts, science, commerce and technical and professional courses. The preliminary selection of the candidates was made at the University and a panel of names with full bio-data was forwarded to the employers concerned.

Another project to give vocational guidance to college students is the "information gallery". Open to students and parents, the gallery provides information on courses of study in India and abroad training apprenticeship and scholarship schemes and types of jobs available in various fields. The gallery will be open daily between 10 a.m. and 5 p.m. at the Senate House from May 14 to June 30.

## 23-26-269 AGRICULTURE HAS STEADY GROWTH IN TAMIL NADU



Thiru Anbil Dharmalingam  
Minister for Agriculture.

"Revolutionary changes have been brought about in the agronomic practices, the dosage of manure applied and cropping pattern in Tamil Nadu. The main principle underlying this programme is to provide all the required inputs such as seeds, fertilisers and plant protection chemicals in time to the farmers.

The State has concentrated in increasing food production by creating additional irrigation potentials through minor irrigation and allied exploitation of underground resources and simultaneously efforts are being taken to saturate these areas progressively with high yielding varieties.

Thanks to all these efforts, assured irrigation has been stabilised for a large tract of lands and the rice production has increased from 36.24 lakh tonnes in 1965-66 to 55 lakh tonnes in 1972-73."

#### High Yielding Varieties Programme

During the year 1972-73, Tamil Nadu in spite of adverse natural calamities, completed various agricultural production programmes to attain a production of 72.02 lakh tonnes against last year's achievement of 70.45 lakh tonnes. Emboldened by this, the target for 1973-74 is fixed at 79 lakh tonnes.

The level of production of food grains for 1973-74 is projected as follows :-

|               | In lakh M.T. |
|---------------|--------------|
| Rice .. ..    | 59.00        |
| Millets .. .. | 17.50        |
| Pulses .. ..  | 2.50         |
| Total .. ..   | 79.00        |

The High Yielding Varieties Programme was introduced in Tamil Nadu during 1966-67 with a view to step up the production of rice and millets. With a small beginning of 5.27 lakh acres during 1966-67, this has steadily increased to 64.16 lakh acres during 1971-72. Farmers are being educated through various audio-visual aids including the radio and Farmers' Training Centres, besides conducting large scale demonstrations on farmers' fields. Revolutionary changes have been brought about in the agronomic practices, the dosage of manure applied and cropping pattern of Tamil Nadu. The main principle of this programme is to provide all the required inputs such as seeds, fertilisers and plant pro-

tection chemicals in time to the farmers.

The State has concentrated in increasing food production by creating additional irrigation potentials through minor irrigation and allied exploitation of underground resources and simultaneously efforts are being taken to saturate these areas progressively with high yielding varieties.

Based on the above achievement, it has been proposed to stabilise the 55 lakh acres under paddy and 4.15 lakh acres under millets during 1972-73 and 1973-74. But the target under HB 3 cumbu crash programme has been increased to 11 lakh acres during 1972-73 and the same will be kept up during 1973-74.



Rice Production in Tamil Nadu which was only 35.24 lakh tonnes during 1965-66 has been increased to 55.00 lakh tonnes during 1972-73 due to the implementation of High Yielding Varieties Programme in all the districts except the Nilgiris.

#### Emergency Rabi Production Programme, 1972-73.

Though the South-West monsoon set in early during last year by the end of May 1972, the rainfall was inadequate. The rainfall received too was scattered and not in time when required. Due to this, estimated loss in the production of food crops was of the order of 1.00 lakh tonnes of rice, 0.86 lakh tonnes of cholam, 0.58 lakh tonnes of cumbu and 0.10 lakh tonnes of pulses making in all a total loss of about 2.54 lakh tonnes of food-grains.

To offset the estimated loss of 2.54 lakh tonnes during Khariff 1972, it was programmed to organise an Emergency Rabi Programme commencing from the third week of December 1972 in the districts of Chingleput, North Arcot and South Arcot for paddy crop. Similar programme for irrigated millets have been started during January 1973 in the districts of Coimbatore, Salem, Dharmapuri, Madurai, Tirunelveli and Tiruchirappalli. The Pulses Programme have been launched in the districts of Thanjavur and Chidambaram taluk of South Arcot District during December 1972 and January 1973.

An extent of 4.82 lakh acres will be covered under the Emergency Programme of Rabi Production during Navari season in the districts of South Arcot, Chingleput and North Arcot and IR 8 and IR 20 will be the predominant strains replacing Co. 29.

#### Pilot Project on Multiple Cropping.

Pilot Project on Multiple Cropping in Tamil Nadu is being implemented in three agricultural divisions, viz., Cuddalore (South Arcot District), Musiri (Tiruchirappalli District) and Pattukottai (Thanjavur District) from March 1971.

The aim of the Pilot Project is to increase the cropping intensity by 20 per cent over a period of three years, i.e., 1971-72 to 1973-74. Each Project has an operational area of one lakh acres.

Development of multiple cropping will be accelerated in these areas through adaptive research trials, scientific extension demonstrations, well organised extension efforts and farmers training with the help of audio-visual aides. Short duration high yielding varieties are introduced in the place of long duration conventional ones and inter-cropping and relay cropping are also advocated.

During 1971-72, as many as 5,151 hectares (12,877.5 acres) against a target of 4,000 hectares (10,000 acres) in Musiri Project, 4,734 hectares (11,835 acres) against 6,000 hectares (15,000 acres) in Pattukottai and 4,140 hectares (10,350 acres) against 2,000 hectares (5,000 acres) in Cuddalore were covered.

*Development of Multiple Cropping is to be accelerated in the Pilot Project areas through adaptive research trials, scientific extension demonstrations, well organised extension efforts and farmer's training with the help of audio-visual aides so as to increase the food production simultaneously with high level of yield per acre.*

During 1972-73, an additional area of 3,140 hectares (7,850 acres) in Cuddalore Project, 5,000 hectares (12,500 acres) in Musiri Project and 8,066 hectares (20,165 acres) in Pattukottai Project is expected to be covered.

It has been programmed to cover additionally 5,750 hectares (14,375 acres) in Musiri, 5,264 hectares (13,160 acres) in Cuddalore and 5,070 hectares (12,675 acres) in Pattukottai during 1973-74.

#### INTENSIVE AGRICULTURAL DISTRICT PROGRAMME IN THANJAVUR DISTRICT.

The Intensive Agricultural District Programme was introduced in the year 1960 to increase the average yield of paddy and the area of cultivation by (i) developing package of practices most suited for the tract and popularising them among the farmers rapidly through various extension and education techniques and (ii) making available the various inputs to the farmers

in time. The supply of inputs like improved seeds, nitrogenous and other fertilisers, the appropriate plant protection chemicals, the credit requirement of the farmers to purchase the inputs, etc., they are ensured by the co-ordinated approach of all the departments.

Adaptive Research, a new approach for planned extension work, has been very usefully employed in Thanjavur district. After a careful analysis, the whole State is now adopting this method of test checking scientific findings of extension work. In addition to the Adaptive Research trials, three acre multi-crop demonstrations are also being conducted.

Due to the change in variety and stepping up of intensity of cultivation, the total rice production of Thanjavur district has

increased from 8.86 lakh tonnes during 1959-60 to 13.59 lakh tonnes during 1971-72. The Intensive Agricultural District Programme is being continued and efforts are being taken to increase production substantially.

#### INTENSIVE AGRICULTURAL AREA PROGRAMME.

The Intensive Agricultural Area Programme is now being implemented in 169 blocks in five districts of Madurai, Chingleput, Coimbatore, Tirunelveli and Tiruchirappalli. These districts have been selected as they have relatively larger areas under assured irrigation. Ryots in these areas are encouraged to adopt the package of practices in cultivating their lands. Necessary credit is afforded to the ryots for purchase of inputs such as fertilisers, pesticides, seeds, etc. As against Rs. 10.67 lakhs targetted, a sum of Rs. 7.61 lakhs has been spent up to 31st December 1972.

Composite demonstrations are conducted to educate the farmers to adopt all the recommended package

f practices for a crop covered under this programme. They are confined to only high yielding varieties of paddy and millets. These demonstrations are conducted in one or two important centres which may provide an educational impact over a compact area grown under the crop. As against 605 composite demonstration plots, fixed as target for the year 1972-73, the achievement is 548 up to 31st December 1972. The target for 1973-74 is 1,405, demonstration plots. A sum of Rs. 125 is allowed as subsidy for each demonstration.

The demonstrations on water use and management are laid out with the objective of educating the farmers on the efficient use of water and the fact that they can do with less water. The extent of each demonstration plot is five acres. A sum of Rs. 750 is allowed as subsidy for each demonstration.

With the introduction of high yielding varieties greater emphasis is laid on the use of fertilisers. Subsequent on the decontrol of indigenously produced chemical fertilisers, the Central Fertiliser Pool has been dealing with only imported fertilisers.

Consumption of various fertilisers has been increasing progressively as could be seen from the following statistics up to the end of 1971-72.

| Year.   | Nitrogenous. | Consumption of Fertilisers. |           |
|---------|--------------|-----------------------------|-----------|
|         |              | Phosphatic.                 | Potassic. |
| (1)     | (2)          | (3)                         | (4)       |
| 1968-69 | 1.13         | 0.35                        | 0.31      |
| 1969-70 | 1.48         | 0.42                        | 0.33      |
| 1970-71 | 1.73         | 0.72                        | 0.51      |
| 1971-72 | 2.14         | 0.71                        | 0.61      |

On account of restrictions on the export of chemical fertilisers like ammonium sulphate and urea, shortage of fertilisers has been experienced throughout the country. Part from this, the production of these fertilisers from indigenous sources was not up to expectations. Vigorous steps have been taken by this Government for special allotment from the Government of India. However a quantity

of 1.48 lakh tonnes in terms of nitrogenous fertilisers was supplied to this State for the period April 1972 to January 1973 as against the requirement of 2.74 lakh nitrogenous tonnes. The heavy shortfall in consumption of nitrogenous fertilisers during the season was due to want of adequate stock of fertilisers.

The requirements of fertilisers for 1973-74 were assessed at the Zonal Conference on Fertilisers held at Bangalore on 23rd and 24th February 1973 and fixed at 1.20 lakhs N. Tonnes for the Khariff season. (February 1973-July 1973). Taking into account the stock on hand and non-pool supplies, the pool has to supply 44,000 N.T. during the period February-July 1973.

In July 1972, Government of India issued a direction under the Essential Commodities Act, 1955, to the indigenous manufacturers to supply specified quantities to the dealers nominated by the State Government before the end of each month. The quantities specified are based on the commitments made by the manufacturers at the Zonal Conference on Chemical Fertilisers. However, for one reason or other like power cut, labour trouble, want of raw materials, etc., the indigenous manufacturers are not able to fulfil their commitments. Hence the State Government entirely depend upon the Central Fertiliser Pool for meeting the requirements of various agricultural programmes. The State Government are making earnest efforts to get adequate supplies from Central Fertiliser Pool to meet the needs of the ryots. Special efforts are being taken to convene meetings with the manufacturers of chemical fertilisers and they will be requested to keep up the supply schedule. Government also have been taking special steps for enforcing strict quality control measures.

#### Plant Protection :

The following are the major schemes that are to be implemented under Plant Protection :

All plant protection chemicals that are offered for sale through the department are first thoroughly tested both chemically and biologically and approval given only when they are found effective.

These approved chemicals are purchased by the Director by open tender system and distributed to all the agricultural depots in the State. During the year 1971-72, a sum of Rs. 562 lakhs worth of chemicals were purchased and distributed. During the current year, it is expected that chemicals worth Rs. 570 lakhs would be distributed through the depots.

#### Quality Control :

To ensure that only quality chemicals are distributed through the depots, the system of testing before release has been instituted. The chemicals are tested batch by batch by drawing random samples and testing them in the 5 Pesticides Testing Laboratories at Coimbatore, Madurai, Aduthurai, Kovilpatti and Kanchipuram before the chemicals are released to the public for sale. In case of supplies being found sub-standard, these suppliers who have supplied sub-standard chemicals are penalised.

#### Pesticides Testing :

At present the pesticides testing laboratories have a capacity of analysing 4,000 samples per annum. During the IV plan period, it is proposed to increase this capacity to 20,000 by establishing two more laboratories at Salem and Tiruchirappalli shortly and by increasing the number of Deputy Agricultural Officers doing analysing work in these laboratories from the present 7 to 26.

#### Supply of Plant Protection Equipment :

Hand-operated and power-operated sprayers and dusters are being distributed to farmers in special scheme areas. Hand-operated sprayers are being distributed at subsidised rates in the blocks also. In addition to these, the departmental officers are maintaining plant protection pools where plant protection equipment are kept and distributed to farmers on a daily hire basis. Every year, 500 power sprayers are purchased and these pools are strengthened with them. In addition, as part of the emergency programme, 2,000 power sprayers will be purchased during this year and maintained in the pools of the districts where emergency programme is in operation.

In addition to the above, 6 Mobile Servicing Units have been sanctioned and are being put in operation so that the sprayers in the villages and blocks can be serviced without delay. It is proposed to attach these six mobile servicing units to the six Agricultural Engineering Workshops situated at Madurai, Vellore, Tiruvavur, Coimbatore, Madras and Tiruchirappalli.

#### Pests Surveillance :

Pests and diseases can be tackled better if the farmers and extension officers are forewarned sufficiently early. Therefore, the pest surveillance and Forecast Scheme is now under operation in Thanjavur to provide advance information to the farmers about the probable outbreak of pests and diseases. It is proposed to extend this scheme throughout the State during Fifth Plan period.

#### Chemical Weed Control :

Control of weeds by using chemicals is the modern way of tackling the weed problem. Though this modern innovation is very popular in the more advanced countries, it is yet to catch the imagination of our farmers. It is estimated that weeds take away 25 per cent to 30 per cent of the essential inputs which are applied to the soil. Timely weed control can prevent this great loss and consequent reduction in production. Therefore to popularise this quick and modern way of weed control, a scheme to cover an area of 25,000 acres costing Rs. 3.75 lakhs for the distribution of chemical weedicides at 75 per cent cost has been sanctioned.

#### Insecticides Act :

The Insecticides Act, 1968, came into operation from 1st Aug. 1971. The main aim of this Act is to ensure quality control of insecticides sold and the reduction of the health hazards to the population.

An exgratia grant of Rs. 1,000 will be given by the Government to the family of a farmer who dies while spraying pesticides on crops.

#### Additional Agricultural Depots :

The High Yielding Varieties Programme and Navarai Crash Programme necessitate stocking of more agricultural inputs for immediate

supply to the ryots. In order to make available all agricultural inputs within easy reach of the farmers, 150 depots have so far been sanctioned at the rate of 50 depots each year. All the 150 depots are now functioning. It is proposed to open 15 additional agricultural depots during 1973-74.

The Government have ordered the provincialisation of 1,194 menials paid from contingencies, who have put in five years of service, 597 posts being provincialised before the end of 1972-73 and another 597 posts during the financial year 1973-74.

#### Agricultural Productivity Council :

Tamil Nadu has taken a novel and progressive step in establishing the Agricultural Productivity Council which has been constituted with a view to create productivity consciousness among farmers, animal breeders, extension workers, entrepreneurs and research bodies associated with agriculture and allied fields. The council would inter-alia be involved :

(i) in the conduct of series of courses and help in creating the spreading productivity consciousness among the farmers ;

(ii) in providing technical know-how to the farmers to tackle different problems of productivity both in the field and in the use of modern inputs ;

(iii) in taking up in depth studies on various problems of productivity on agriculture and allied fields ; and

(iv) in affording consultancy services to all categories in farmers, particularly to weaker sections of the farming community.

Government have already sanctioned an amount of Rs. 1 lakh for the establishment of this council and for its effective functioning it is proposed to enlist the co-operation of numerous farmers, agro-based industries and various research institutes.

#### Marketing.

With a view to provide better marketing facilities and to make the producer get the optimum share

in the consumer's rupee by reducing the price spread, so far eleven market committees have been constituted. It is proposed to establish a Market Committee in Salem. 128 Regulated Market Yards have also been opened under the Tamil Nadu Agricultural Produce Markets Act, 1959. It is proposed to open Twenty-two more Regulated Markets before the end of this year of the Fourth Five-Year Plan. It is proposed to submit a detailed scheme to the World Bank through the Government of India for the comprehensive development of all the regulated markets in the State. The project report is under preparation.

In order to increase the income of agriculturists and induce them to increase the quality of their produce 28 grading centres have so far been opened. It is proposed to open 12 more centres. Up to 1972-73, as many as 12 grading laboratories have been set up. It is proposed to bring the commodities under 'Agmark' grading and steps are being taken to impose commercial grading of agricultural produce. Kapas grading centres are functioning at Tirupur, Rajapalayam, Pollachi, Perundurai and Pudur. ●

### RELIGION NO BAR TO FAMILY PLANNING

Doubts in certain quarters that Christianity is opposed to family planning are quite unfounded. This is so true for 262 of 400 hospitals run by Protestant missions have taken up family planning programmes. These hospitals have achieved over a lakh of tubectomies, and 15,000 vasectomies and 40,000 loop insertions during the last five years or so. A third or more of these sterilizations have been performed on persons less than 30 years old. Another notable feature is that 13,000 women were put on the pills of which half the number is still continuing. Where then is the room for doubting 'Thomases' ? ●

## MINOR IRRIGATION WORKS IN TAMIL NADU IN 1973-74

With the allotted amount of Rs. 409.92 lakhs for the Special Minor Irrigation Programme for 1973-74, as many as 725 works are targeted to be completed creating a new ayacut of 25,750 acres, besides stabilising irrigation for 61,250 acres of existing ayacut. Due to complete exhaustion of surface water resources, the Tamil Nadu Government have suggested to the Centre to take up the work of linking of Cauvery with Godavari and Krishna at first under the proposed National Water Grid from Ganga to Cauvery as this reach does not involve any pumping and the benefits are likely to be realised paripassu from the progress of the Canal excavation.

Under the Special Minor Irrigation Programme, Tamil Nadu will be spending in 1973-74, as much as Rs. 409.92 lakhs. The target for the year is 725 works, creating a new ayacut of 25,750 acres, besides stabilising irrigation for 61,250 acres of existing ayacut.

With a view to providing more employment opportunities, the Government have sanctioned 10 Divisions for investigating major and medium irrigation projects in Tamil Nadu. This is being continued with Government of India assistance. So far, the following 12 medium schemes costing over Rs. 12 crores have been finalised and are under consideration of the Government.

1. Gunderipallam Reservoir Scheme—Coimbatore District,
2. Nallathangal Odai Reservoir Scheme—Coimbatore District,
3. Vattamalaikarai Odai Reservoir Scheme—Coimbatore District,
4. Valukkuparaipallam Reservoir Scheme—Coimbatore District,
5. Varattupallam Reservoir Scheme—Coimbatore District,
6. Varadhama Nadhi Reservoir Scheme—Madurai District,
7. Kudhiraiyar Reservoir Scheme—Madurai District,
8. Kodaganar Reservoir Scheme—Madurai and Tiruchirappalli District,
9. Gundar Reservoir Scheme—Tirunelveli District,
10. Adavinainarkovil Reservoir Scheme—Tirunelveli District,
11. Sathanur Anicut right side channel Scheme—North Arcot District and

12. Anicut across Palar river near Palayaseevaram Village—Chingleput District.

Moreover, 36 minor schemes are under detailed investigation and 65 schemes under preliminary investigation.

#### Survey of surface water resources.

A proposal for the survey of surface water resources in Tamil Nadu at a cost of about Rs. 200 lakhs as a grant-in-aid scheme has also been forwarded to the Government of India.

The State has exhausted almost all its surface water resources, and it has to negotiate for the surplus water of the adjoining States. Negotiations are going on with Kerala towards this purpose, viz., diversion of waters from the west-flowing rivers. In its recent report, the Irrigation Commission has also expressed its hope that this request of Tamil Nadu would be considered generously by the Kerala Government. This Government have also suggested to the Centre that under the proposed National Water Grid from Ganga to Cauvery, the linking of Cauvery with Godavari and Krishna may be taken up in the first stage itself, as this reach does not involve any pumping and the benefits would begin to be realised paripassu the progress of the Canal excavation.

#### GROUND WATER EXPLORATION.

In Tamil Nadu investigation of Ground Water potential was taken up under the United Nations Development Programme in two phases.

During the first phase (from March 1966 to February 1972) pioneer work of systematic and scientific ground water survey was taken up in selected areas and good water bearing aquifers were located in Madras City and its environs, Palar basin and Neyveli area.

Ground water extracted from Meenjur - Panjetti - Tamarakkam aquifers is being pumped and supplied to meet the requirements of the industrial complex in North Madras. The second phase of the operation, which commenced in 1969, was also completed in 1972 and final report submitted to the United Nations for its clearance. Under the second phase, detailed and intensive ground water investigation was conducted in the Cauvery Delta.

The Ground water Directorate formed by the Government of Tamil Nadu in 1970 with nine divisions is in-charge of investigations simultaneously in all the districts and hydrological and meteorological data are being collected. A detailed working plan for completing the investigation in the entire State within three to four years at an estimated cost of Rs. 11.77 crores has been forwarded to the Government of India seeking Central assistance as a non-Plan scheme.

#### World Bank Loan.

The International Development Association of the World Bank has sanctioned loans to the extent of Rs. 26.25 crores for the implementation of minor irrigation schemes utilising ground water resources in Thanjavur, South Arcot, Chingleput, Tiruchirappalli, Dharmapuri, North Arcot and Salem districts. The loans will be disbursed to ryots through Primary Land Development Banks. There are also schemes financed by the Agricultural Refinance Corporation in non-World Bank Project areas.

The AFPRO Organisation (Action for Food Production) has been permitted by the State Government to undertake ground water investigation in parts of Coimbatore, North Arcot and Madurai districts.

#### RENOVATION OF IRRIGATION SYSTEM.

The Government have sanctioned an accelerated programme of repairs to and renovation of the Cauvery Delta Irrigation System. A programme has been drawn up for

taking up works of the order of Rs. 12,98.33 lakhs spread over a period of four years commencing from 1972-73. During 1973-74, it has been proposed to execute works to the tune of Rs. 3,60 lakhs under this programme.

The Government are keen on remodelling the old irrigation channels for improving their efficiency. The remodelling of the existing Amaravathi and Thambaraparani channels has already been taken up and is in an advanced stage of progress. Proposals for the remodelling of Kalingarayan, Thadapalli and Arakkankotti channels taking off from the river Bhavani are under finalisation. The Government have approved the estimates for the first phase of lining of the Amaravathi canal in two reaches and the works are in progress. Remodelling and lining of the other channels are also being considered.

#### DROUGHT PRONE AREA PROGRAMME.

To mitigate the scarcity conditions in Dharmapuri and Ramanathapuram districts, this Centrally-sponsored scheme is being implemented. Under this programme, so far 139 minor irrigation schemes costing over Rs. 91.17 lakhs have been sanctioned for execution by the Public Works Department. Sixty-eight schemes have been completed and sixty-three schemes are in progress. Eight schemes are yet to be taken up. This programme will be continued in 1973-74 also.

Dharmapuri district has also been selected by the Government of India for implementing the Drought Prone Area Programme with World Bank assistance. This programme is proposed to be taken up in 1973-74 and will be spread over three to four years.

Two medium irrigation schemes costing Rs. 1,57.50 lakhs and 18 minor schemes costing Rs. 1,26.18 lakhs have been proposed under this programme and they are under consideration of the Government of India.

#### FLOOD CONTROL AND DRAINAGE SCHEMES.

The Government have sanctioned 19 works costing Rs. 52 lakhs and

they are in progress. The expenditure incurred up to Rs. 30.30 lakhs. The expenditure up to December 1972 in 1972-73 is Rs. 49.70 lakhs. The outlay for 1973-74 is Rs. 12.00 lakhs.

Strengthening the weak portions of the flood banks of the Coleroon and the Cauvery has also been taken up. The expenditure incurred up to 1971-72 is Rs. 10.34 lakhs. The anticipated expenditure in 1972-73 is Rs. 47.28 lakhs. The outlay for 1973-74 is Rs. 61.00 lakhs.

In order to control the floods in the Cauvery Delta a proposal for constructing a barrage across the Cauvery Arm at the Upper Anicut at a cost of Rs. 2.12 lakhs has been sent to the Government of India for clearance. This will be taken up for execution on approval by the Planning Commission.

#### ANTI-SEA EROSION SCHEME.

The work of providing protective measures to arrest sea erosion at Kovalam in Chingleput district is in progress. A preliminary estimate for constructing a sea wall along 14.5 km. of the Arabian Sea coast of 70 km. in Tamil Nadu at a cost of Rs. 3.51 lakhs has been considered by the Government and it has been sent to the Government of India. The Government of India have been requested to give 100 per cent grant for executing this work as an anti-sea erosion measure.

#### TAMIL ARASU (Monthly)

Each Copy .. Rs. 0-40

Annual  
Subscription .. Rs. 5-00

## EDUCATIONAL FACILITIES FOR BACKWARD CLASS PEOPLE



As a sizeable population in Tamil Nadu belongs to the Backward Classes and as the activities undertaken for their uplift were on the increase, a new department, viz., "Backward Classes Department" was created on 2nd May, 1969. The activities relating to Backward Classes and Denotified Tribes hitherto looked after by the Harijan Welfare Department were transferred to this new Department.

Prior to the creation of a separate department, the expenditure incurred for the welfare of Denotified Tribes and Backward Classes was only Rs. 187 lakhs in 1968-69. This expenditure increased to Rs. 248 lakhs in 1969-70, the year in which the department was created. In 1970-71 it went up to Rs. 301 lakhs and in 1971-72 Rs. 433 lakhs. The revised estimate for the year 1972-73 is Rs. 502 lakhs and Budget Estimate for 1973-74 is Rs. 556 lakhs. The increase shows that the work of the department is gaining momentum.

**Scholarships.**—The uplift of the Backward Classes mainly rests upon their educational advancement. For this reason, students of Backward Classes and Denotified Tribes have to be encouraged by providing free scholarships, hostel facilities, etc. By awarding scholarships and by running hostels, the students coming from very poor families are enabled to continue their studies. Scholarships are granted to students belonging to Backward Classes from 9th

Standard onwards, whereas the Denotified Tribes are granted scholarships even from the 1st Standard. Pupils belonging to these communities are eligible for scholarships by the department if their parent's income does not exceed Rs. 2,000 per annum. In respect of Backward Classes, scholarships are assured and sanctioned to those who secured 40 per cent of marks in their last annual examination.

The scheme of award of scholarship to Backward Classes was first introduced in 1948-49 with a sum of Rupees one lakh which benefited 609 students. In 1949-50, the number of students who got benefit was 2,908 at a cost of Rs. 5 lakhs. In 1960-61, 19,900 students got benefited at a cost of Rs. 41 lakhs. In 1969-70, a sum of Rs. 160.89 lakhs was spent for 90,565 students. During 1970-71, Rs. 201.20 lakhs was spent to benefit 134,249 students. In 1971-72, the benefit covered 168,975 students at a cost of Rs. 290.50 lakhs. In 1972-73 the benefit covered 189,466 students at a cost of Rs. 309.38 lakhs up to February 1973.

This will show that the number of students benefited with the award of scholarships has been increasing steadily after the institution of a new department for the welfare of Backward Classes. In addition to this, the restriction imposed on the grant of scholarships for certain courses, like Post-Graduate, Law,

Pulavar, etc., was removed during 1969-70, so that all eligible Backward Classes and Denotified Tribes students who are prosecuting their studies in these courses, avail the scholarships. It is proposed to sanction 5 scholarships to Backward Classes and Denotified Tribes students who are undertaking studies in Chartered Accountant Course during 1973-74 and this will cost Rs. 0.30 lakh. The question of introducing a merit-cum-means scholarship for the Backward Classes student within the income range of Rs. 2,001 to 6,000 is separately under consideration.

The boarding and lodging charges, a component of the residential scholarship was at a fixed rate for a long time. Owing to the increase of cost of commodities, the rates were raised during 1971-72.

The following are the provisions for the award of State scholarship during 1973-74.—

| Year.              | Actuals.           | Revised Estimate. | Budget Estimate. |
|--------------------|--------------------|-------------------|------------------|
|                    | 1971-72.           | 1972-73.          | 1973-74.         |
|                    | (RUPEES IN LAKHS.) |                   |                  |
| Backward Classes.  | 290.50             | 323.14            | 355.70           |
| Denotified Tribes. | 30.85              | 35.62             | 39.18            |

On the model of the regulations of the Government of India Lower Income Group Scholarships,



sanctions were accorded to Denotified Tribes and students belonging to Lower Income Group. A sum of Rs. 14.84 lakhs was spent during 1969-70. Similar amount was also spent in 1970-71. Central assistance was made available by Government of India to cover this expenditure only till 1968-69. On the advice of Government of India, this scheme originally intended for the other Backward Classes was modified to Lower Income Group and Denotified Tribes students only, with effect from 1964-65. Without the Central assistance, this scheme was continued in 1969-70 and 1970-71. For want of resources and due to denial of assistance from the Government of India, this scheme from 1971-72 onwards is restricted to the level of renewal at State Scholarship rates. These renewals will be continued till the scholarship holders pass out successfully continuously and complete their present course of study.

**Tuition fee concession.**—Up to P.U.C., no student need pay any tuition fees, irrespective of community. Beyond the level of P.U.C., students belonging to Backward Classes and Most Backward Classes whose parents' income does not exceed Rs. 1,500 per annum are exempted from payment of half and full tuition fees, respectively in all educational institutions. For the loss incurred on this account compensation is paid only to Annamalai University. In respect of other institutions, the expenditure is met by Education Department. During 1970-71, a sum of Rs. 3.30 lakhs was paid and Rs. 3.30 lakhs during 1971-72. Similar compensation will be paid in 1972-73 and 1973-74. The Revised Estimate for 1972-73 is Rs. 3.15 lakhs and Budget Estimate for 1973-74 is Rs. 3.15 lakhs.

**Government Hostels.**—For the advancement of Backward Classes and Denotified Tribes in the field of Education, Government hostels are opened and maintained. In these hostels, the admissions are made in the following ratio :—

|                      | D.N.T.   | B.C.     |
|----------------------|----------|----------|
|                      | Hostels. | Hostels. |
|                      | PER      | PER      |
|                      | CENT.    | CENT.    |
| Backward Classes.    | 10       | 65       |
| Denotified Tribes.   | 60       |          |
| Scheduled Castes.    | 25       | 25       |
| Forward Communities. | 5        | 10       |
|                      | 100      | 100      |

The following are the number of hostels maintained for the benefit of the Backward Classes and Denotified Tribes :—

| Year.      | Backward Classes.  |                       | Denotified Tribes. |                       |
|------------|--------------------|-----------------------|--------------------|-----------------------|
|            | Number of hostels. | Strength of Boarders. | Number of hostels. | Strength of Boarders. |
| (1)        | (2)                | (3)                   | (4)                | (5)                   |
| 1966-67 .. | 11                 | 979                   | 37                 | 3,019                 |
| 1967-68 .. | 11                 | 979                   | 37                 | 3,619                 |
| 1968-69 .. | 11                 | 979                   | 37                 | 3,619                 |
| 1969-70 .. | 11                 | 979                   | 37                 | 3,619                 |
| 1970-71 .. | 28                 | 2,144                 | 40                 | 4,039                 |
| 1971-72 .. | 81                 | 5,333                 | 46                 | 4,369                 |
| 1972-73 .. | 123                | 7,608                 | 46                 | 4,369                 |

Out of the 123 hostels mentioned above, 34 are intended solely for College students.

To maintain the hostels intended for the Backward Classes and the Denotified Tribes, a sum of Rs. 52.15 lakhs is set apart in the Budget Estimate, 1973-74. It is proposed to open during 1973-74 in unserved areas 20 more hostels for Backward Classes, 8 Hostels for Denotified Tribes and also to increase the strength of Boarders in Government Denotified Tribe Boarding Homes at Usilampatty and Tirumangalam in Madurai district. These new hostels will be opened in these areas where hostel facilities are not available.

**Construction of hostel buildings.**—Government have decided to get assistance of rupees one crore from Commercial Banks with a view to construct Backward Classes Hostels. These new buildings will be constructed by the State Housing Board according to the approved type design, and the intention is that as many as possible of the hostels now located in rented buildings will be shifted to the new buildings. Under this, approximately 85 new hostel buildings will be built.

**Schools.**—For the educational advancement of Denotified Tribes, 276 Schools are maintained in Tamil Nadu. In the academic year 1971-72, four higher elementary schools at K. Perumalpatti, Melakkal Thummakundu and Vilampatti in Madurai district, were upgraded to those of high schools. Pupils belonging to other communities are also admitted in these schools. To facilitate the educational advancement of "Lambadi Pupils" in

Dharmapuri district a residential school with a strength of 50 boarders at Cittilingithanda has been opened. The higher elementary school at Melagudalur in Madurai district, has been ordered to be upgraded into high school and it is named after late Thiru M. Rajangam, M.P. The following facilities are also provided in these schools to the students.

**Midday meals.**—Midday meals at the rate of 15 Paise per pupil per day is served in all Government schools for Denotified Tribes by this Department. In addition to this, the supply is extended to the non-Government schools in Tirunelveli and Ramanathapuram districts where the Denotified Tribe pupils are predominant. The intention of the Scheme is to attract poor Denotified Tribe pupils to attend the schools regularly. The Budget Estimate under this head for 1973-74 is Rs. 14.14 lakhs. 47,000 children will be benefitted under this scheme.

**Boarding grants—Pre-matric.**—Hostels run by private persons, and well-known organisations for poor Backward Classes and Denotified Tribe pupils in pre-matric courses, were recognised till 1955-56 and boarding grants were awarded to those boarders by Harijan Welfare Department. These hostels are called subsidised hostels. From 1956-57, no such private hostel is recognised as a matter of policy and Government hostels are opened wherever necessary and the badly managed subsidised hostels are taken over by Government in a phased programme. Now there are only 56 such hostels for which boarding grants at the rate of Rs. 20 per mensem per boarder for 10 months are granted to meet the food charges

of the boarders. To meet the expenditure on award of boarding grants, a sum of Rs. 5.73 lakhs, is proposed in the Budget Estimate, 1973-74.

**Post-matric.**—No boarding grants are sanctioned for post-matric studies. But residential scholarships are granted to those who are studying in post-matric courses and staying in : (1) hostels attached to educational institutions ; (2) hostels recognised by educational institutions ; and (3) hostels recognised by Education Department and by the Harijan Welfare Department or by Backward Classes Department as special hostels for this purpose. Nowadays, far too many such hostels formed by either students or by private parties seek recognition. Number of hostels were recognised by this Department during 1972-73 alone. Some of these private hostels are not being run on sound lines. The Government is now considering the question whether only the following types of hostels should be recognised for the award of Residential Scholarships :—

(1) Hostels attached to recognised private educational institutions.

(2) Hostels run by very well known organisations and

(3) Hostels run by students on a co-operative basis under the supervision of a gazetted member of the staff of a Government College. The Government will shortly take decision on this.

**Books and slates.**—For the Denotified Tribe pupils of Government Denotified Tribe Schools, books and slates are supplied free of cost. The benefit was taken advantage of by 7,600 pupils in 1969-70 and 11,800 pupils in 1970-71 at a cost of Rs. 0.38 and 0.59 lakh respectively. In 1971-72, a sum of Rs. 0.96 lakh was spent for the benefit of 19,800 pupils. In the Revised Estimate, 1972-73 and Budget Estimate, 1973-74, a sum of Rs. 0.95 lakh and 1.01 lakhs are provided for books and slates. Additional funds will be provided to the extent of necessity.

**Clothing.**—(i) Two sets of dresses are supplied to the pupils in Denotified Tribe Schools and Boarding Homes. The first set is supplied at the beginning of the academic year and the next set at the time of Pongal.

(ii) In Madurai district, the Scheme of Supply of Free clothing was introduced in 1969-70 with one set of dress in Standards I to III. Now two sets are supplied. During 1969-70 and 1970-71, a sum of Rs. 2.07 and 2.08 lakhs, was respectively spent. In 1971-72, a sum of Rs. 9.83 lakhs was spent. In the year 1972-73, the Revised Estimate is fixed at Rs. 1.44 lakhs. The Budget Estimate, 1973-74 is Rs. 4.74 lakhs.

(iii) From 1971-72 onwards, two sets of dresses are supplied to the inmates of Government Backward Classes Hostels. A sum of Rs. 1.07 lakhs was spent in 1971-72. In the Revised Estimate, 1972-73 and Budget Estimate for 1973-74, Rs. 2.58 lakhs and Rs. 2.88 lakhs, are provided respectively. If necessary additional funds will be allowed to the extent of necessity and availability of funds.

**Coaching in Government Hostels.**—

(i) Tuition is being imparted by Part-Time Tutors to the Denotified Tribes and Backward Classes. Boarders of Government Hostels of this Department in the subjects in which their standard is not upto the mark. To appoint Part-Time Tutors a sum of Rs. 0.03 and 0.06 lakh was spent in 1969-70 and 1970-71, respectively. In the year 1971-72, Rs. 0.23 lakh was spent. In the Revised Estimate, 1972-73 and in the Budget Estimate, 1973-74, Rs. 0.48 lakh and Rs. 0.54 lakh, are proposed, respectively.

Meritorious students belonging to Backward Classes, Scheduled Castes and Denotified Tribes studying in I year B.Sc., were selected from mofussal and special coaching was provided at Madras for a period of three weeks during September-October 1972 so as to improve their standards with the help of Lectures by able Professors and laboratory facilities available at Madras. The same scheme will be implemented during May-June 1973.

**Adoption of hostels.**—(i) The Department of Backward Classes is running several hostels for both boys and girls. Recently a branch of Lion's Club, Madras, has "adopted" one Girls' Hostel in the City. The idea of "Adoption" is not that our boys and girls need charity, but rather those who are better off economically have a duty to do towards those who are less fortunate.

When a hostel is "adopted" by the Rotarians of a Lion's Club what could be done is that the adopting Club can present items like wall clocks, bed furniture, First-aid equipment, stationery, etc., to the hostels of the inmates. This establishes a link between the students and the general population. Such Club members could also be encouraged to visit the hostels once in a month and to take some personal interest in the welfare of the inmates.

All Collectors have been requested to take some personal interest in this matter and that at least one boys' hostel and one girls' hostel is thus adopted. Each Collector is taking interest in this regard.

**Houses for teachers.**—Houses are constructed to the teachers of Denotified Tribe Schools on a Phased Programme at a cost of Rs. 6,200 per house. The cost includes the cost of site. In 1969-70, six houses were constructed. In 1970-71, seven houses were constructed. In 1971-72, seven houses were constructed. In 1972-73, fifteen houses are under construction. In 1973-74, it is proposed to construct fifteen more houses.

**Special Training Institute for I.A.S. and I.P.S. and allied services.**—

(i) The Backward Classes Commission constituted by this Government recommended among other things, that a Special Training Institute might be started to coach up candidates from Backward Classes appearing for the All India Services and corresponding positions as executives in public and private sector business houses. The Government accepted the recommendation and set up a Special Training Institute at Madras in 1971 to coach fifty candidates from Backward Classes for Competitive Examinations held for All India Services.

(ii) The first training course was from November 1971 to October 1972. The first batch of candidates appeared for I.A.S., etc., examinations held in October 1972.

The second course commenced from November 1972 in which sixty-four students including seven girls, have been admitted.

# FASTER PACE OF VEHICULAR GROWTH AND MORE TRANSPORT FACILITIES

There has been a steady growth of vehicular traffic during 1972. The strength of buses as on 31st December 1971 and as on 31st December 1972 is given below :—

Number of buses as on 31st December 1971—8,449.

Number of buses as on 31st December 1972—8,794.

## Liberal issue of new permits

All the Regional Transport Authorities have been instructed to adopt a policy of liberal issue of new permits for stage carriages for the benefit of the travelling public instead of variations, which may not meet the full requirements of the public and to achieve, as far as possible an annual growth of 10 per cent increase in passenger transport facilities. State-wide permits for public carriers and private carriers are issued liberally by the Regional Transport Authorities. This is to ensure that transport keeps pace with the development of trade and commerce. There has been an increase of 213 goods vehicles during the year 1972. State-wide permits for taxis and tourists taxis are issued liberally. Tourist taxi permits are issued by the State

Transport Authority, Madras for new Ambassador cars and imported cars to the tourists. The following statement at the bottom shows the number of vehicles with contract carriage permits as on 31st December 1971 and 31st December 1972.

## NATIONALISATION OF PASSENGER TRANSPORT.

Of 8,794 buses plying on 31st December 1972, 3,085 buses are operated by the Tamil Nadu State Transport Undertakings. Under the policy of nationalisation of passenger transport, bus routes were taken over as and when the permits to private operators expire in the following cases—

(i) all routes of 75 miles and above, both express and ordinary services ;

(ii) all routes radiating from or terminating in Madras City irrespective of length ;

(iii) all routes in Kanyakumari district including those which are radiating from or terminating in that district.

However, there was no appreciable progress in this regard, as most of

| As on                  | Taxis. | Tourist<br>Taxis. | Autorick-<br>shaws. | Contract<br>carriages<br>ordinary. | Contract<br>carriages<br>Luxury<br>Coaches. |
|------------------------|--------|-------------------|---------------------|------------------------------------|---------------------------------------------|
| (1)                    | (2)    | (3)               | (4)                 | (5)                                | (6)                                         |
| 31st December<br>1971. | 7,980  | 963               | 2,138               | 204                                | 28                                          |
| 31st December<br>1972. | 7,991  | 1,314             | 2,576               | 136                                | 39                                          |

the operators had taken the matter to the High Court and thereafter to the Supreme Court. The Supreme Court by its judgment dated 9th January 1973 has upheld the nationalisation of passenger bus routes taken up by this Government under Chapter IV-A of the Motor Vehicles Act. Steps are being taken to nationalise the remaining routes falling within the categories mentioned above.

## Nationalisation of all Bus Routes

In order to prevent monopoly in respect of stage carriage permits, the Motor Vehicles (Tamil Nadu Second Amendment) Act, 1971 was enacted. There were 52 operators, with more than 10 permits each. The number of surplus permits was 485. Of these 51 were actually surrendered. In the remaining cases action has been deferred in view of the stay order issued by the High Court. Just about the same time, the Tamil Nadu Fleet Operators Stage Carriages (Acquisition) Act, 1971 was also enacted for nationalisation by acquisition of fleet undertakings with 50 and more stage carriages. In pursuance of this, four concerns were taken over. Tiruvalargal Sri Sathi Vilas Motor Service has not yet been taken over, as the case is pending before the Supreme Court. In August 1972, the Government announced its policy to nationalise the entire passenger transport service within a period of five years. The Tamil Nadu Stage Carriages and Contract Carriages (Acquisition) Ordinance was promulgated on 12th January 1973 to give effect to this policy. This ordinance has since been replaced by the Tamil Nadu Stage Carriages and Contract Carriages (Acquisition) Act, 1973.

# Nationalisation of all Bus Routes within 5 years

With a view to facilitate free flow of goods and traffic between Tamil Nadu and the neighbouring States, action has been initiated to finalise inter-State transport agreements with Andhra Pradesh, Mysore, Kerala and Pondicherry. The important principles governing these agreements are—

(a) Parity in service kilometrage and

(b) Counter-signature of permits on single-point tax.

Negotiations are in progress with these States and are at various stages as indicated below :—

(i) *Tamil Nadu and Andhra Pradesh.*—An agreement was already entered into between these two States. Proposals for including certain new routes and for certain variations in the agreement are under consideration.

(ii) *Tamil Nadu and Mysore.*—In pursuance of a tentative agreement, draft proposals were published by both the Governments. Representations received are under consideration of the two Governments.

(iii) *Tamil Nadu and Kerala.*—The main principles of inter-State operation have been agreed upon. Negotiations are in progress for allocation of the existing routes and additional routes.

(iv) *Tamil Nadu and Pondicherry.*—The principles to govern inter-State operation between these two States are under negotiation.

Arrangements also exist for the counter-signature of permits of goods vehicles and contract carriages with the neighbouring States as mentioned below at the bottom.

## Permits for all the Southern States

With a view to allow free flow of goods traffic in the Southern States, permits are granted to public carriers of this State to be valid in the States of Kerala, Andhra Pradesh, Mysore and Maharashtra without counter-signature.

With a view to eliminate procedural bottle-necks and avoidable correspondence, the Transport Ministers of Southern States met at Coimbatore on 12th December 1972 to discuss all transport problems of common interest. A Standing Committee of the Transport Commissioners of the Southern States has also been constituted to ensure follow-up action on the decision taken at this conference, which is likely to be held once every year.

During the year, a surcharge was levied on the Motor Vehicles Tax at 10 per cent on passenger buses and 5 per cent on goods vehicles. The actual collection during the year 1972-73 is estimated at Rs. 135.00 lakhs. The proceeds of this tax are credited to a fund called the "Rural Road Development Fund" for the maintenance and development of public roads in rural areas.

|                            | Public<br>Carriers. | Private<br>Carriers. | Contract Carriages.  |                    |                |
|----------------------------|---------------------|----------------------|----------------------|--------------------|----------------|
|                            |                     |                      | Tourist<br>taxis.    | Ordinary<br>taxis. | Omni<br>buses. |
| (1)                        | (2)                 | (3)                  | (4)                  | (5)                | (6)            |
| Tamil Nadu-Andhra Pradesh. | 2,500               | 100                  | 20                   | 150                | Nil.           |
| Tamil Nadu-Mysore.         | 1,000               | 50                   | 20                   | 100                | Nil.           |
| Tamil Nadu-Kerala.         | 800                 | 100                  | 20                   | 250                | Nil.           |
| Tamil Nadu-Pondicherry.    | 4 : 1               |                      | (Under negotiation.) |                    |                |

To facilitate easy payment of tax, Government have introduced the system of collecting taxes in the offices of the Regional Transport Officers by means of bank drafts in respect of transport vehicles with effect from 1st April 1972.

## Enforcement

The inspection staff of the Motor Vehicles Department is incharge of prevention of evasion of tax besides check of vehicles for fitness. Government have sanctioned the supply of uniforms to Motor Vehicles Inspectors and Assistant Motor Vehicles Inspectors. The Flying Squad and other staff meant for enforcement work continued to do useful work, detecting cases of tax evasion and other offences, like overloading in stage carriages, misuse of omni buses as stage carriages and plying illicit taxis, etc. During the period from 1st January 1972 to 31st December 1972, 580 omni buses were checked. In all 45,319 vehicles were checked during the period and 1,853 major irregularities were detected. An amount of Rs. 59,112.08 was realised by way of impounding of vehicles and another sum of Rs. 13,028 by way of compounding fees in respect of cases detected by the Flying Squads.

## Road Safety

Decisions have been taken regarding the starting of Government Driving Schools, for regulation of private driving schools, stricter standards for grant of driving licences, control of drivers by introducing point system by amending the Motor Vehicles Rules, use of equipment to detect those driving under the influence of alcoholic drinks, painting of goods vehicles with distinct yellow colour so as to give a clear visibility of the vehicles in the night, enforcing the use of crash helmets, evolution of a traffic highway code and amendment to the existing statutes with the objective of reducing the incidence of accidents and for stringent action against those who contravene traffic rules and regulations.

## 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

**TIIIC**  
THE FINANCIAL  
INSTITUTION  
WITH A HEART

**TAMIL NADU INDUSTRIAL INVESTMENT  
CORPORATION, LTD.**

(Sponsored by the Government)

LLA Buildings, III Floor, 150-A, Mount Road, Madras-2.

### Branches :

1231, SOUTH MAIN STREET, THANJAVUR.  
247, NAICKER NEW STREET, MADURAI.  
6/37, RACE COURSE ROAD, COIMBATORE-18.

## TIDCO Helps Entrepreneurs in so Many Ways



Thiru S. Madhavan,  
Minister for Industries.

Tamil Nadu Industrial Development Corporation Limited, an undertaking of the Government of Tamil Nadu, was set up in 1965 for the development of major industries in the State. In the short span of seven years, it has undertaken activities of a diverse nature and has set up new industries in the public sector, promoted joint ventures in association with private entrepreneurs, assisted existing units which were facing difficulties and provided financial assistance to many industrial concerns.

Up to 1969, TIDCO's activities were largely confined to the setting up of a cement unit at Alangulam in Ramanathapuram District and a Continuous Steel Casting Plant at Arkonam in North Arcot District. Both are public sector projects now in successful operation. Since 1969, TIDCO has applied for and obtained 20 Letters of Intent from the Government of India for various industrial ventures. Most of these projects are now being implemented by TIDCO in the joint sector, a concept which has been put to effective use to activate a cash programme of industrial development in the State and in particular, in backward areas.

### Financial results :

The Corporation was incorporated on 21st May 1965 with an

authorised capital of Rs. 10 crores and with an initial paid-up capital of only Rs. 75 lakhs. As on 31st December 1972, the paid-up capital of TIDCO was Rs. 9.66 crores, an over ten fold increase over 7 years.

With a large investment programme for the next three years on a number of major joint ventures, it has been proposed to increase the authorised capital from Rs. 10 crores to Rs. 20 crores and to raise money by way of capital loans and issue of debentures.

Apart from the Corporation's own committed investments in Tamil Nadu Cements and Continuous Steel Casting Plant amounting to Rs. 677 lakhs and Rs. 807 lakhs respectively, it has invested Rs. 350 lakhs towards the share capital contribution in one of the major joint sector projects viz., Messrs. Southern Petrochemical Industries Corporation Limited. The Actual outlay in other joint sector projects so far works out to Rs. 24.38 lakhs. In addition, financial assistance by way of loans and grants has been extended to such units to the extent of Rs. 57.74 lakhs.

The Tamil Nadu Cements, the first unit of the Corporation, commenced production in February 1970 and the Continuous Steel Casting

Plant commenced commercial production in July 1972. As such the Corporation has made only a marginal profit of Rs. 6.54 lakhs during the year ended 31st March 1972. In the current year, there may not be any profit. It has to get over initial teething troubles in the Continuous Steel Casting Plant. However, the profitability of these ventures in the coming years is expected to be bright.

Arrangements have been finalised for expanding the two units of Tamil Nadu Cements and Continuous Steel Casting Plant at a cost of Rs. 1,000 lakhs. The Corporation's future commitments in joint sector ventures will be roughly Rs. 1,750 lakhs over the next 3 years, the total cost of these projects being over Rs. 175 crores, Southern Petrochemical Industries Corporation Limited alone being 71 crores.

### TIDCO's Projects :

TIDCO has so far received 23 Letters of Intent out of which 2 have already been implemented in the public sector viz., cement and steel. The sponge iron will be taken up in the public sector as part of the steel complex at Arkonam. The Letter of Intent for the Nylon-6 filament yarn project is



TELEPHONE : 8306

TELEGRAM : "STATEINDCO"



## TANSI's

### *Contribution to the Country's Progress*

#### TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.

with its net work of well equipped Modern Workshops contribute substantially for the progress of the Industry and the Nation.  
The fields of activities at a glance.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>INDUSTRY</b></p> <ul style="list-style-type: none"> <li>• DESIGN AND MANUFACTURE OF DIES, JIGS AND FIXTURES •</li> <li>• PRESURE DIE CAST COMPONENTS •</li> <li>• STEEL AND BRASS FORGED COMPONENTS •</li> <li>• SUPER ENAMEL WIRE •</li> <li>• D.C.C. WIRE •</li> <li>• STRUCTURAL FABRICATIONS •</li> <li>• QUALITY C.I. CASTINGS •</li> <li>• RADIAL AND PILLAR DRILLING MACHINES •</li> <li>• GRADED QUARTZ POWDER •</li> <li>• ELECTRICAL INSULATORS •</li> <li>• SCIENTIFIC GLASS APPARATUS.</li> </ul> <p><b>EXPORTS</b></p> <ul style="list-style-type: none"> <li>• PLAIN FINISHED LEATHER IN DIFFERENT SHADES •</li> <li>• WET BLUE CHROME LEATHER •</li> <li>• STRUCTURAL AND TRANSMISSION TOWERS.</li> </ul> | <p><b>AGRICULTURE</b></p> <ul style="list-style-type: none"> <li>• IMPROVED AGRICULTURAL IMPLEMENTS •</li> <li>• PLANT PROTECTION EQUIPMENTS •</li> <li>• TILLERS AND TRACTOR TRAILERS •</li> <li>• PUMPSETS •</li> <li>• SUGAR-CANE CRUSHERS ETC •</li> <li>• BRIDGE TYPE FILTER POINTS.</li> </ul> <p><b>UTILITY PRODUCTS</b></p> <ul style="list-style-type: none"> <li>• STEEL AND WOODEN FURNITURE •</li> <li>• STEEL WINDOWS, VENTILATORS ETC •</li> <li>• HOSPITAL EQUIPMENTS •</li> <li>• BRASS OXIDISED DOOR FURNITURE •</li> <li>• LATCHES &amp; LOCKS •</li> <li>• SANITARY WARE &amp; CROCKERY •</li> <li>• STONE-WARE PIPES •</li> <li>• LEATHER GOODS •</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Enquiries Solicited

THE MANAGING DIRECTOR

**TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.,**

An Undertaking of the Government of Tamil Nadu

26, WHITES ROAD, MADRAS-2

**"TANSI"** Stands for **Reliable Products**  
at **Reasonable Cost**

### TIDCO'S INPUTS' TO JOINT VENTURES :

#### Feasibility Reports :

Careful identification, formulation and planning of a project is the key to rapid industrialisation. TIDCO has spent over Rs. 10 lakhs so far in the preparation of feasibility studies covering a range of chemical engineering and heavy industries. Reputed consultants and experts are employed for preparation and scrutiny of project reports. These reports are available to prospective investors.

#### Technical Services :

At every stage in project implementation the joint sector units are provided with technical help by TIDCO, which assists in conduct of load tests, field surveys, determination of water availability, preparation of detailed plans and scrutiny of engineering details, furnishing of expert technical advice, etc.

#### Know-how and technical collaboration :

Successful implementation of a venture, particularly a chemical project, hinges on the availability of proven know-how. With the Corporation's wide contacts within the country and abroad, it provides assistance to the joint sector associates in obtaining technical tie-ups from competent parties. TIDCO has sent a number of delegations abroad for this purpose.

#### Financial assistance, underwriting and guarantees :

TIDCO's full-fledged finance division, headed by a full time Finance Director renders special assistance in documentation of projects, dialogue with financing institutions and banks for underwriting of share capital, loans and furnishing of guarantees.

#### Liaison :

TIDCO offers free and effective liaison to its partners in expediting

and securing clearances, licences and permits during project implementation. The projects cell maintains an intimate and continuous dialogue with the Ministers and departments of the State Government as well as Government of India in particular with the D.G.T.D.

#### Secretarial, accounting and management services :

Whenever called upon, TIDCO offers to its associates ready assistance in regard to secretarial and accounting matters and in locating and training Managers and technical personnel for project construction and management. The Company law cell offers guidance to entrepreneurs in corporate matters.

The package of services listed above has made TIDCO a live force on the Tamil Nadu Industrial scene and has contributed to the phenomenal growth of joint ventures in Tamil Nadu even though the concept is still in its infancy.

## 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.

**Seshasayee Paper and Boards Ltd.**

Pallipalayam, Salem District, S. India



The Watermark of Quality



FOSSPB 777 A

5A

## GREATER PACE OF INDUSTRIALISATION IN TAMIL NADU THROUGH TIDCO

The Tamil Nadu Industrial Development Corporation Limited (TIDCO), an undertaking of the Government of Tamil Nadu, has so far received 23 Letters of Intent out of which 2 have already been implemented in the public sector, viz., cement and steel. The sponge iron will be taken up in the public sector as part of the steel complex at Arkonam. The Letter of Intent for the Nylon-6 filament yarn project is being implemented by a Public Limited Company in which TIDCO'S investment will be 49 per cent of the equity, the balance being contributed by the Co-operative and handloom sectors and the public. No large house or private entrepreneur is being associated with this project as a promoter. All other projects will be implemented in the joint sector by Companies already formed or to be formed for the purpose.

### TAMILNAD CEMENTS, ALANGULAM.

This cement unit, a public sector project has a capacity of 4 lakh tonnes per annum with two rotary kilns of 1,200 tonnes per day capacity. The plant attained full production in the year 1971-72. Employing the conventional wet

process, the plant is one of the most modern of its kind in the country. The capital cost of the project was about Rs. 6.7 crores and it has been financed from TIDCO's own funds and loans from Government.

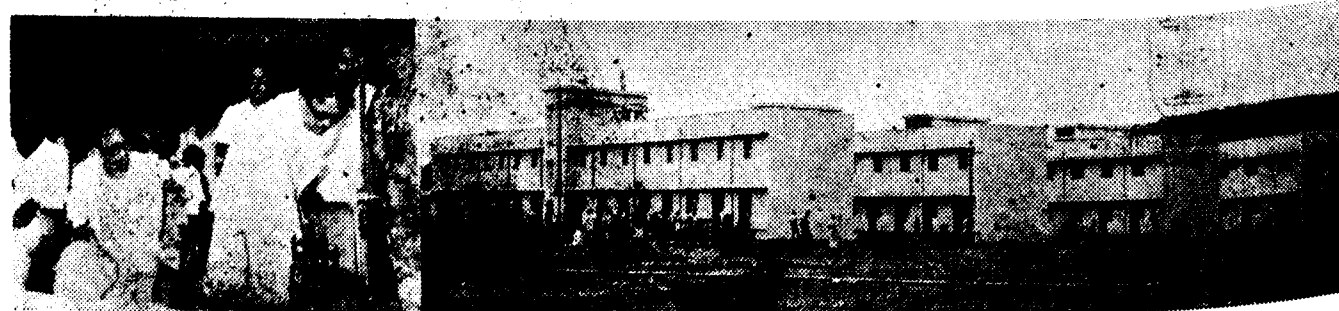
The factory is located at Alangulam, about 13 miles from Rajapalayam in Ramanathapuram district of Tamil Nadu which is a backward area. It employs over 1,000 persons. Sufficient reserves of high quality limestone are found within 2 KM of the plant site.

The unit has earned a net profit of Rs. 12.94 lakhs even in the second year of its operation and is a good example of a successful unit in the public sector. The operating results for the current year would have been even better but for the serious power shortage which Tamil Nadu has had to face this year. Particularly, noteworthy has been the unit's assiduous efforts in building up a full-fledged and aggressive marketing organisation that has enabled the "ARASU CEMENT" manufactured at Alangulam to capture the market. The unit was able to sell 62 per cent of its production in the free market direct to consumers against stiff competition by other established units. "Arasu Cement" is now being used all over

the country and worth mentioning among the structures built with it are Gemini fly over, Wallajah Bridge, buildings by Housing Board, Slum Clearance Board, etc. The unit has over 600 stockists in Tamil Nadu alone and a network of distributors at Delhi, Calcutta, Mysore and Kerala where there is a great demand for the product. About 10,850 tonnes have been shipped to Bangla Desh. The cement unit is to be shortly expanded to a capacity of 7.0 lakh tonnes per annum. Work relating to expansion has already been taken up and it is anticipated that the extra capacity will be available in 2 to 3 years from now. TIDCO is also exploring the possibility of erecting cement units in other places where primary raw material is available.

### CONTINUOUS STEEL CASTING PLANT, ARKONAM.

This scrap-based project, set up with Soviet technical assistance, is designed to produce 50,000 tonnes of steel billets per annum utilising the continuous casting technique and is the first "mini" steel plant in the public sector in India. The plant is now operating at 50 to 60 per cent of its capacity and is well on the way to achieving full production very shortly.



The Leprosy Beggar's Rehabilitation Home at Duddur, Madurai district which was declared open by Dr. M. Karunanidhi, Chief Minister this month. This is the seventh one of its kind opened in the State. Three more are to be opened shortly.



An aerial view of Ambathur Industrial Estate.

The plant is equipped with a 25 T. electric furnace and a vertical, four stand continuous casting machine for the manufacture of 100 sq. mm. and 75 sq. mm. steel billets. The plant has considerably relieved the scarcity of steel in Tamil Nadu. At the same time, it puts to productive use the large quantities of steel scrap available within the State and in the Southern region which was formerly exported to other parts of the country for being melted. Billets produced here are supplied to the rollers in the State for further processing. The project is located at Arkonam which is an industrial backward area. TIDCO is trying to convert it into a busy industrial growth centre. Extensive lands have been acquired round the complex for locating other related industries and ancillary units.

### Sponge Iron Project :

Springing from the Arkonam growth centre is the sponge iron project (1,00,000 tonnes/annum) on which TIDCO was the pioneer in conducting pilot tests with the help of Lurgi, West Germany. Tests were carried out with Hospet iron ore and Singareni coal at the works of Lurgi and these tests have successfully established suitability of these raw materials for the manufacture of sponge iron. Preparatory work on the project is under way and it is expected that this project costing about Rs. 8 crores would be set up at Arkonam.

### Lasco Steels Limited :

This is a Company set up in 1964 in the private sector at Doddampatti

in Dharmapuri district with technical collaboration from M/S. Latrobe Steel of the United States. It is designed to produce a wide range of high quality alloy and tool steels. Its capacity is 3,000 tonnes of alloy per annum. It commenced production towards end of 1964 but faced closure due to financial difficulties. It was then that TIDCO stepped into the field and decided to take over the management and to revive the Company. The factory was reopened in October 1971 under TIDCO'S management. Out of the total investment of Rs. 23 lakhs which the Corporation decided to make in this Company, a sum of Rs. 1 lakh was invested in the equity capital of the Company. The balance amount is being provided as loans convertible into equity at the option of Corporation within a period of 5 years. The Corporation has so far advanced a sum of Rs. 14.82 lakhs as loan to the Company. The factory is now producing steel castings and ingots. With additional machinery for which orders have been placed, it is expected that tool and alloy steel production will commence by March 1973.

### Tamil Nadu Synthetic Fibres Limited:

TIDCO holds a Letter of Intent for a Nylon/6 filament yarn project of 6 tonnes per day capacity. The Project will cost 12 crores. A Company under the name of "Tamil Nadu Synthetic Fibres Limited" has been registered as a Public Limited Company for implementing this project and TIDCO will invest upto 49 per cent in the share capital of this Company. A unique feature of

this project is that no large house nor has any private entrepreneur been associated as a promoter. The shares will be held mainly by TIDCO and the Co-operative Handloom institutions in the State and the public. The Company is now finalising proposals for foreign technical collaboration and import of capital goods and work on the project which will be located in Madurai District is scheduled to commence very soon.

TIDCO has an ambitious programme for a number of other projects in the public sector for the manufacture of polyester filament yarn, polyester film, etc. These projects would grow around the nucleus of the Nylon plant.

TIDCO'S endeavour is to achieve rapid industrialisation of the State through joint ventures, harnessing the entrepreneurial abilities of the enthusiastic investors. The promotion of the projects in the joint sector is based on the principle of the Government of India. TIDCO will contribute 26 per cent of equity share capital and the private entrepreneur with his associates will contribute a maximum of 24 per cent of the equity and the balance 50 per cent is thrown up as public shares. The representation of the Board of Directors, both for TIDCO and for the private entrepreneur will be equal and the management of the new joint sector company will be controlled by the Board of Directors of the Company. Other terms and conditions are arrived by mutual negotiation. The day-to-day management of the Company will be by

...the managing director himself being generally a professional. This ensures high standards of commercial and corporate management. While providing sufficient flexibility, freedom and other incentives for efficient organisation of the enterprise, the system enables TIDCO to lay down broad policies, supervise the work of the joint sector and to safeguard public interest.

TIDCO's involvement in the joint sector company is not limited to financial participation alone. It offers an input of a number of important services such as availability of land and water, assistance in providing power and technical know-how, import licences and other clearances, technical advice from within TIDCO as well as from other experts, assistance in negotiations with financing institutions and Banks, etc.

Nine companies have already been set up in the joint sector for implementing various projects.

#### **Southern Petrochemical Industries Corporation Limited (SPIC) :**

The first and major joint venture of TIDCO is the Southern Petrochemical Industries Corporation Limited (SPIC) which has been set up in association with Thiru M. A. Chidambaram and his group. On completion, this will be the largest undertaking for the production of urea and ammonia in India.



Thiru K. K. Shah, Governor, addressing a group of Public sector executives.

The plant located at Tuticorin of Tirunelveli District envisages the production in the first phase 1,100 tonnes per day of ammonia, 1,600 tonnes per day of urea, 600 tonnes per day of DAP/NPK, 476 tonnes per day of sulphuric acid and 165 tonnes per day of phosphoric acid.

This Rs. 74 crores project will have an equity capital of Rs. 19 crores of which TIDCO's contribution is 26 per cent. This project will provide direct employment opportunity to about 1,100 and will provide an opportunity for creation of many ancillary industries nearby. The project is bound to make a significant impact on the agricultural production in the State considerably increasing the application of fertilisers and rendering agricultural operations more scientific. The unit is expected to go on stream in 1974.

#### **Tuticorin Alkali Chemicals Limited (TAC) :**

Tamil Nadu has vast potential for the development of salt and salt based industries. One such salt based industry is being set up in the joint sector adjacent to Tuticorin Fertilizer Complex. This Project for the production of Soda Ash and Ammonium Chloride will utilise the salt available from the Tuticorin coastal area and the surplus ammonia and bye-products from SPIC. A Company "Tuticorin Alkali Chemicals Limited" has been incorporated as a joint venture between TIDCO and SPIC.

The plant will manufacture 70,000 tonnes per annum of Soda Ash and 70,000 tonnes per annum of Ammonium Chloride. It is also proposed to manufacture additional item such as Melamine and L. Lysine. The total outlay of the project would be Rs. 25 crores. Production will commence during the year 1975 giving employment opportunities to about 600 persons.

#### **Tamil Nadu Chemical Products Limited (TCP) :**

This is a Company which has been set up by TIDCO in association with Thiru B. Ananthaswamy and his associates. The plant will be set up at Kalanivasal village of Tirupathur taluk in Ramanathapuram District, which is an industrially backward area. It will manufacture 3,300 tonnes per annum of Sodium Hydrosulphite required by the textile industry and for use in vat dyes. The project is expected to commence its production in 1974. The capital cost of this plant is about Rs. 3.75 crores. TIDCO is investing 26 per cent in the equity share capital. This project will provide direct employment opportunity to about 110 and is being set up with Japanese collaboration.

#### **Tamil Nadu Rubber Limited (TNR) :**

TIDCO has set up Tamil Nadu Rubber Limited in the joint sector in association with Thiru N. AR. Nagarajan and his associates. The unit will manufacture automobile

tyres and tubes with an annual capacity of 4 lakh nos. each. The location of the plant is at Karaiyur village, Tirupathur taluk of Ramanathapuram district. The plant is being set up in technical collaboration with a reputed foreign firm, viz. General Tyres International Company of U.S.A.

The capital cost of the project is Rs. 18 crores out of which the equity capital would be Rs. 6 crores. The unit is expected to be commissioned in 1976. The direct employment potential is about 500.

#### **Tamil Nadu Chromates and Chemicals Limited (TCC) :**

This is a project for the manufacture of 3,300 tonnes of basic chromium sulphate tanning (BCT) powder based on Sodium Dichromate. The joint sector Company has been set up by TIDCO in association with Thiru K. K. Mohiadeen of Kamsons Group of Companies. The plant will be located at Arkonam in North Arcot district which is industrially a backward area. It is expected to commence production in the year 1974, giving employment potential to about 110 persons. No foreign collaboration is envisaged. The total cost of this venture would be Rs. 118 lakhs. TIDCO will contribute 26 per cent of equity capital of about 40 lakhs. The unit will help to solve the acute shortage of BTC powder used by the tanneries in the South.

#### **Pandian Chemicals Limited :**

The Corporation has recently registered a joint venture, "Pandian Chemicals Limited", in association with M/s. Metal Powder Company, Tirumangalam for the manufacture of Potassium Chlorate of an annual capacity of 1,825 tonnes. The project will be a boon to the match and allied industries in the State for which Potassium Chlorate is the main raw material. This 70 lakhs project will be located at Narasingampatti village of Melur taluk in Madurai district. This project is likely to be set up with indigenous know-how and basic engineering. As scheduled, the plant will go into production by the end of 1974 giving employment potential to about 100.



Thiru B. BURNÉ, Chairman and Thiru O. I. S. WABE, Secretary of the Birmingham Chamber of Commerce and Trade Mission along with Thiru J. H. GILLIGAN, First Secretary of the British High Commissioner at Madras met the Minister for Industries, Thiru S. Madhavan at his Chamber on 12-3-73.

#### **Southern Boraax Limited :**

The Corporation is also setting up a plant for the manufacture of 15,000 tonnes per annum of Boraax and 3,000 tonnes per annum of Boric acid. These products are used for glass manufacturing and pharmaceuticals. A joint sector Company by name "Southern Boraax Limited" has been set up to implement this project in association with Thiru P. S. Bashyam.

The location of the plant will be Thatchur village in Panchetti Panchayat Union in Chingleput district. The capital cost of this venture would be Rs. 85 lakhs. The plant will go into production by the end of 1974. The employment potential is estimated to be about 150.

#### **Tamil Nadu Fluorine and Allied Chemicals Limited.**

TIDCO is implementing a project for the manufacture of Aluminium Fluoride with an annual capacity of 3,000 tonnes which is basically needed for the production of Aluminium. A new joint sector Company "Tamil Nadu Fluoride and Allied Chemicals Limited" promoted by TIDCO in association with Thiru L. Narayanan Chettiar of Madurai has since been incorporated. Foreign technical collaboration proposals for this project are now being examined. The three crore project will be located in a suitable place in Tamil Nadu. TIDCO will have 26 per cent equity share capital, as usual. The plant is expected to go into production by the end of 1975.

#### **Tamil Nadu Dhada Pharmaceuticals Limited.**

There has been practically no development of the Pharmaceutical industry in the State. A few small scale units are producing a limited variety of pharmaceutical products. With a view to developing the pharmaceutical industry in the State TIDCO proposes to enter into an agreement with Messrs. Dhada Drugs and Pharmaceuticals Private Limited for the enlargement of their units after conversion of the Company into joint sector enterprise. The existing unit is small and of comparatively limited scope. Our proposals aim at conversion of this small enterprise into a major, organised pharmaceutical industry. The proposal involves the take over of the existing manufacturing facility of the private firm and additional investment both by TIDCO as well as by the general public. Loans will also be obtained from the financial institutions. The total size of the investment will be about Rs. 2.5 crores.

The joint sector unit will manufacture antibiotics, sulphate drugs, vitamin preparations, analgesics, atarextics, diuretics, fungicides, anabotics, tranquilizers, hypnotics, antacids, anthelmintics, anti-malarials, anti-rheumatics, haematinics and various other common drugs with an annual turnover of Rs. 2.5 crores.

#### **Fine Measure Instruments Limited.**

TIDCO has received a Letter of Intent for the manufacture of a wide range of precision measuring instru-



ments used in the industry such as pressure gauges, dial gauges, etc. This has been recognised as a priority industry by the Government of India and there is practically no large scale unit of this kind in the country. A Company has been promoted in the joint sector with Thiru K. Sriram of Madras and his associates. The factory will come up near Madras at a cost of about Rs. 70 lakhs.

Apart from 10 Companies which have been already incorporated in the joint sector, three more are under incorporation for setting up other projects as under :—

#### Arkonam Castings and Forgings Limited :

This is a joint venture between TIDCO and KCP Limited. The new Company is being set up to utilise the melting facilities available in the arc furnace at the Continuous Steel Casting Plant, Arkonam for the manufacture of heavy castings up to 25 T. for which KCP have the expertise. The project also helps to diversify the production at Arkonam Steel Plant and will establish, for the first time in the South, facilities for manufacture of heavy castings. Arkonam Castings and Forgings Limited will buy the hot metal from the Continuous Steel Casting Plant, Arkonam and prepare the rough casting for machining by KCP.

Production of casting on trial basis has already started and the results have been highly successful. The project may cost about Rs. 1 crore towards equipment and building. It is expected that Arkonam Castings and Forgings may pave the way for heavy machine building industry at Arkonam ultimately.

#### Dynavision Limited :

A Letter of Intent has been granted to Thiru Obul Reddy of Madras by Government of India for manufacture of 10,000 TV sets per annum. TIDCO will participate in the venture in the joint sector under terms of Letter of Intent issued by the Government of India. Import of capital goods is being arranged and registration of the Company is under way. The project will be located in the Instronics Estate at Madras.

#### Cigarette Project :

TIDCO was issued a Letter of Intent by the Government of India in 1971 for the manufacture of 4,500 million cigarettes per annum. A joint sector project to implement this proposal has now been finalised by TIDCO in association with Thiru K. S. Narayanan, Managing Director of India Cements Limited. Technical know-how for the project is being arranged. A new company in the joint sector will be incorporated shortly.

#### Salt Development Project :

Tamil Nadu has excellent potential for the development of salt and salt-based industries. TIDCO has on hand, a scheme for development of a modern salt works at Kovalam near Madras, in association with some experts in salt field. Proposals are being finalised for development of about 3,000 acres for cultivation of salt. The proposals envisage a marine chemical recovery unit attached to the salt works to make the operation more scientific and viable.

#### Plans for the Future :

TIDCO holds Letters of Intent for the manufacture of ball-bearings, biaxially oriented Polystyrene film, steering gears and speciality papers. Steps are being taken to finalise collaboration arrangements to set up joint sector companies to implement these Letters of Intent.

Apart from these, TIDCO has applied to Government of India for permission to set up a number of other projects as listed below :—

1. Industrial Refinery at Tuticorin.
2. Manufacture of Seamless tubes.
3. Petrochemical Complex.
4. Silicon Transistors, Diodes and Integrated Circuits.
5. Acetylene Gas Cylinders and Air Separation Plant.
6. Dyes and Naphthol ASG.
7. Graphite Electrodes.
8. Scooters.

It is expected that with its untiring enthusiasm and the experience so far gathered, Tamil Nadu Industrial Development Corporation Limited would be able to render valuable contribution to the industrial advancement of the State.

## CONCESSIONS TO RYOTS AND SMALL-SCALE INDUSTRIALISTS AFFECTED BY POWER-CUT.

The Tamil Nadu Government have announced grant of concessions to the farmers and small-scale industrialists in the State affected by the power cut in force.

Full remission of land revenue and water cess is to be granted to agriculturists who could not raise any crop in their fields during the current Falsi. But the local cess and surcharge will, however, be collected. So also, recovery of Government loans issued to and due from agriculturists and the agricultural income-tax due for the current Falsi is postponed to next year.

In the case of lands where ryots are able to raise only one crop during the current Falsi, collection of land revenue and water cess has been postponed to next Falsi as also agricultural income-tax. But the concessions will not apply to lands irrigated by unauthorised pumpsets.

The Director of Industries and Commerce has announced some concessions for small scale industries affected by the power-cut. Accordingly, loan instalments falling due between April 1 and June 30 will be collected in two instalments over a period of one year. So also rental dues for sheds in the industrial estates from April to August 1973 will be collected in ten monthly instalments from 1st September along with current dues.

The rate of rent in force during 1972—73 will be continued for 1973—74.

These concessions are expected to go a long way in redressing the grievances of ryots and small-scale industrialists in the State by lessening their financial burden to certain extent.

R.N.

# HOUSEHOLD FIRES—289 CAUSE AND REMEDY

Every citizen considers his home a worthy possession, whether it is a huge bungalow or a tiny hut. Even a platform-dweller develops a certain affinity towards the little space he occupies during night for his temporary shelter. There is definitely something sacred and sentimental about one's own living space. It is, therefore, our responsibility to concentrate on ways and means to save our houses from destruction.

Thousands of homes are destroyed by fires in our country every year. Last year, 2,303 fires involving residential buildings were tackled by the Tamil Nadu Fire Service. In some of these cases, entire villages with hundreds of huts were destroyed. The total loss due to such accidents worked out to Rs. 54.8 lakhs. More than 50 human lives and 33 animals were lost in fire accidents. It is for us now to alleviate the distress caused to thousands of citizens who lose their homes every year.

## Causes for Home Fires.

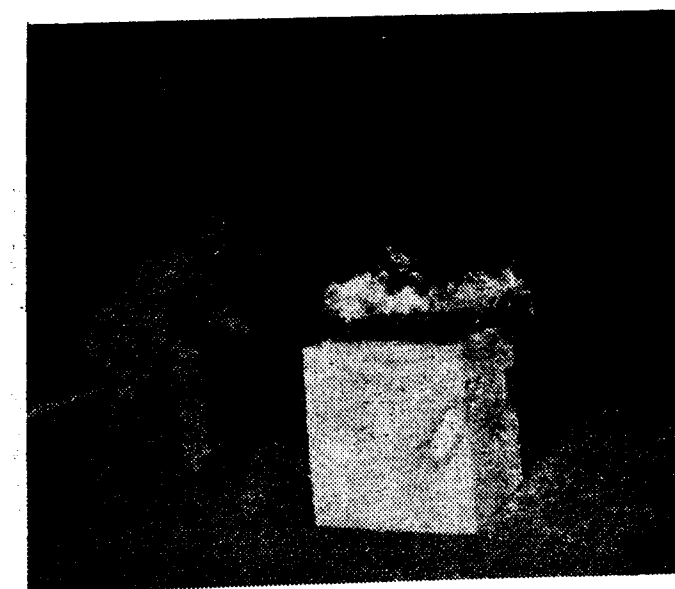
We are thus compelled to analyse the causes of such home fires. A large majority of cases is attributed to carelessness or ignorance of the housewives. If every housewife could take adequate steps to ward off the common causes of

fires in homes, the loss due to such fires could considerably be reduced. In villages, which have not known electricity, naked lamps are extensively used during nights and this has accounted for several household fires. Care should be taken to see that these lamps are not accessible to children or placed near hanging curtains or other combustible materials in the houses. A little extra money spent for the purchase of hurricane lamps would go a long way to reduce fire risk due to naked lamps in houses.

Live cigarette and beedi butts thrown in the vicinity of rubbish heaps, thatched roofs and dry grass, paper, etc., start fires quickly and develop into major proportions with the aid of the wind. Smokers should, therefore, make sure that the fire in the cigarette or beedi butt is stamped out after they finish smoking.

## Avoidable Accidents.

Housewives leave the children to take care of themselves while they go out for work, and the children thus left inside the houses play with matches near combustible articles like kerosene, cradle cloth, wood shavings, etc. They do not realise that the small match stick can start a fire which will destroy their homes



Fire Service Squad in action.

including themselves. Wise parents should, therefore, see that matches and crackers are kept out of view of their children at home.

Of late, we have been frequently confronted with tragic news of women in the kitchen being burnt alive due to their saris accidentally catching fire. It is needless, therefore, to mention that the women in the kitchen should tuck in the loose ends of their saris when they are at work in the kitchen. Nylon and Terelene saris are quickly susceptible to ignition and spread fire fast.

It is advisable to avoid use of such clothings while women are at work in the kitchen. Stacking of firewood, kerosene, wood shavings, wood dust, etc., quite close to the oven and careless disposal of hot ash removed from the oven, have been the causes of very many devastating fire accidents in Tamil Nadu.

Electric iron switched on and left behind while the user's attention is suddenly diverted, has caused many fires. Electric bulbs often become hot while in use and when such bulbs are fitted quite close to the thatched roof, they are liable to cause major roof fires. Combustible materials should, therefore, be kept away from electric bulbs. Unwanted combustible materials stored in houses have caused major fires. We all know that it is often the contents of the house that starts fire and even well-built pucca houses can be irreparably damaged by fires. Therefore, unwanted junk and rubbish should be periodically disposed of.

Fire Service Squad in action.



Fires started by the carelessness of the housewives or children could not be localised in many cases due to the following reasons :—

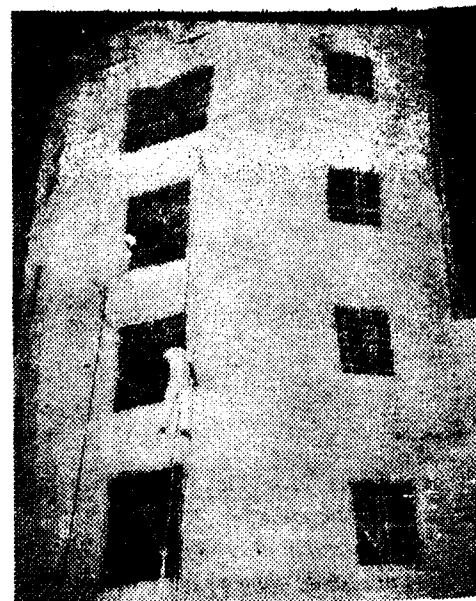
(i) The spacing of huts in hutment colony is improperly done with no intervals between one and another, thus leaving a continuous row or stretch of huts.

(ii) These hutments are generally located in open and windy areas and fires spread quickly due to gusty winds.

(iii) Absence of able-bodied male members during day time, when most of the hut-dwellers are out for work.

(iv) Remote location of the hutment colony which is quite inaccessible for the fire brigade. It is, therefore, needless to emphasise that the hut dwellers should take keen interest in avoiding the above situations. It is always advisable to provide non-combustible roof to one hut located in the midst of two or three huts. This will serve as a fire-break.

If every housewife takes a vow to protect herself and her family by carefully resorting to the elementary precautions listed above, I am sure that by this time next year, we will have reduced fire losses and also made our homes safer places to live in with confidence. I wish to impress firmly that the negligence on the part of house-wives leads to incalculable harm not



A Fire Service Squad climbing a building to put out fire.

only to her and her property but also to the lives and properties of the neighbours, who are in no way responsible for such negligence.

## A NEW CONTRACEPTIVE DEVICE.

The Central Drug Research Institute, Lucknow, has developed a safe and easy-to-use contraceptive — the Centsquare. It is an effective method of preventing pregnancy when used according to the prescribed instructions.

Centsquare has all the advantages of nirodh, foam atables and the like, minus their disadvantages. For instance, the ingredients used or Centsquare are all inert and non-irritating. The spermicide is a highly soluble substance. It leaves nothing to be removed or disposed of after use.

Another advantage of Centsquare is that it becomes effective almost immediately and there is little chance of its going out of the female passage, once introduced properly. It remains effective for a long time too.

“In general usage Philately covers both the study and the collecting of postage stamps and so anybody who is actively interested in stamps, from whatever angle, is known as a Philatelist. The word, Philately, is derived from two Greek words, Philos, meaning “fond of” and atales meaning “exemption from tax”. It was coined by a Frenchman M. G. Harpin in 1866”.



Thiru Jaganath Pahadia, Union Deputy Minister for Communications, inaugurated the Tamil Nadu Philatelic Exhibition 1973 at the Nehru Stadium hall, Madras-3 on 20-4-73. Picture shows the Minister distributing the Prize to the participant in the Exhibition.

## WHAT EXACTLY IS THE POSTAGE STAMP?

Under the Title Tanapex 73 the first Philatelic Exhibition in this part of the country was held for 3 days from 20th to 23rd April 1973. A Committee under the Chairmanship of Thiru C.A. Dhayanathan, Postmaster-General, Tamil Nadu Circle, has taken upon itself the responsible task of organising the Exhibition. It was representative of the finest exhibits in the country, and more particularly in Tamil Nadu.

### WHAT IS STAMP?

The postage stamp are adhesive labels affixed to letters, parcels, etc., serving as a receipt for money prepaid for their carriage by the Post Offices. Prior to the introduction of the penny post in Great Britain, represented by the first adhesive Postage Stamp, the one-penny black and the two-penny blue of 1840, postage rates depended on the distance a letter was carried, its contents and weight. Rowland Hill, who was responsible for the penny post, believed that if the rate was lowered to a uniform charge of one-penny for a letter of reason-

able weight and the service re-organised (making use of the railways) the increase in the use of the post would justify the drastic reduction. In 1837 and 1838 a public competition brought 7,000 proposed stamp designs and four prizes were awarded. The profile of Queen Victoria on the first stamps was taken from a medal of Wyon's struck in 1837. The portrait of the Queen was chosen not so much as a compliment to the Sovereign as to defeat would be for-

C.A. Dhayanathan,  
Post-Master General,  
Tamil Nadu Circle.

gers. It is interesting to note that Great Britain has recently reproduced these earliest stamps in their original colour.

The actual printing of stamps have undergone many changes and modifications. Many different kinds of paper and water-mark have been

used. Many sizes of gauge and types of perforation have been tried and even various qualities of gum and it must be mentioned that, just as early stamps were imperforate, some early stamps were ungummed. As for the shape of stamps, although there have been divergences, such as the triangular shape of the early Cape of Good Hope stamps and the large size of some commemorative stamps the size and shape of the very first postage stamp has survived to this day.

The first postage stamp was issued in India on the 1st October, 1854 and the portrait of the British Monarch figured on it. It was capt. Thullier, Deputy Surveyor General of India, who was entrusted in 1853 to print the Indian stamps. He had, some difficulty with paper and ink. On the 4th May 1854, as many as 1,147 sheets were struck off giving nearly a lakh and a half of stamps. The first four stamps produced in 1854 were the half-anna, one-anna, two-annas and four annas. India printed its stamps in this country only in 1855. From 1856 to 1926, that is for a period of 70 years. Messrs. Thomas De La Rue Co. & of London printed them for the East India Co. and then the Indian Government.

#### HIGHER DENOMINATION STAMPS

When postage stamps were ordered to be used as pre-payment for telegraph charges higher value stamps of Rs. 10, Rs. 15 and Rs. 25 were introduced in 1909.

With the establishment of the Security Printing press at Nasik in 1926 the printing of Indian Stamps was entrusted to it. The first stamps were the king George V series. India was the first country in the British Commonwealth to issue a special set of air mail stamps in 1929. Until 1931, the Indian P. & T. Department avoided issuing any pictorial stamp. The department prided itself on what is called the purity and simplicity of the design of the monarch's head. On the occasion of the inauguration of New Delhi, as the new Capital of India, however the Department overcame its prejudices and issued its first commemorative stamps.

#### GREAT LEADERS HONoured

Since independence, India has issued several pictorial and commemorative series of stamps portraying the varied aspects of its life. It has also honoured great leaders of the world though they do not belong to India. Other countries have reciprocated this compliment and Mahatma Gandhi, Rabindranath Tagore, Jawaharlal Nehru and Lal Bahadur Sastri have been similarly honoured.

#### STAMP AS CURRENCY!

During the war, India's stamps were put to a strange use which neither the inventors nor the postal authorities could have foreseen. Owing to a temporary scarcity of small coins on account of a shortage of metal, especially copper, stamps came to fulfil the purpose of currency.

Sikkim is very much in the news today and that reminds us that Bhutan has created much Philatelic history. It has not only issued the first three-dimensional relief, steel, silk and plastic postage stamps but has very recently brought out a series depicting the rose with more or less natural fragrance.

As collectors of postage stamps you must be going to the philatelic Bureau in Mount Road Post Office every time a new stamp is issued making your purchases and getting the stamps cancelled by means of the special catchet issued for the purpose. For those collectors who are at out-stations, there is a system known as the "Deposit Account". A minimum of Rs. 50 has to be deposited in the Philatelic Bureau and subsequent payments also have to be not less than Rs. 50. There are about such deposit accounts. On receipt of their orders, the stamps are taken out, cancelled, packed and sent to them. These philatelists have to pay for the postage plus one per towards packing charge.

#### HISTORY OF PHILATELY

—o—

Stamp collecting must have started soon after the introduction of the first adhesive postage stamps by Great Britain in 1840. The earliest reference to stamp collecting is in an advertisement in the TIMES of London in 1841, wherein a young lady, being desirous of covering her dressing room with cancelled postage stamps and having succeeded in acquiring 16,000 stamps, advertised for assistance in the fulfilment of her whimsical fancy. This craze for accumulation, if not collection, must have spread gradually over the years till indiscriminate accumulation gave way to orderly and methodical collection.

Among the reasons which have so vastly enhanced the popularity of stamp collection may be cited the introduction of pictorial and commemorative issues and of air mail stamps. The first popular commemorative stamps were issued in the U.S.A. in 1893 to celebrate the discovery of America by Christopher Columbus.

Great Britain has always prided itself in the austerity of its design and its stamps have carried the sovereign's portrait. But, in the last decade, it completely changed its policy, realising the money-making potentialities of its stamps. It has started issuing a regular stream of pictorials and commemoratives.

Modern trends in Philately include the fashion of thematic collecting, where stamps picture a particular theme—flowers, animals, birds, ships, aircraft, railways, sport, music, religion, architecture and the like.

# The Fascinating World<sup>297</sup> of Weather Forecasting

On 19th March 1951 the first Congress of the World Meteorological Organisation opened. Thus virtually the IMO converted itself into the WMO which is now specialised agency of the United Nations.

The W.M.O. was created—

to facilitate international co-operation in the establishment of net works of stations and centres to provide meteorological services and observations;

to promote the establishment and maintenance of systems for the rapid exchange of meteorological information;

to promote standardization of meteorological observations and ensure the uniform publication of observations and statistics;

to further the application of meteorology to aviation, shipping, water problems, agriculture and other human activities and

to encourage research and training in meteorology.

Although W.M.O. is one of the youngest of the Specialised Agencies of the United Nations, it has inherited nearly eight decades of experience which its predecessor, the International Meteorological Organisation had gleaned in the field of international co-operation in meteorology and its application to the activities of mankind. A very significant step in its effort towards uniformity of meteorological practice has been the acceptance by an increasing number of countries of the metric system and the celsius degree for the exchange of meteorological information. India has accepted this system as early as in 1956. The enormous expansion of commercial air services during this initial period focussed attention on Aeronautical Meteorology. W.M.O.,

accepted responsibility for the development of the meteorology programme of the IGY (1957-58) and the collection, reproduction and subsequent distribution of data. The participation of WMO in this gigantic scientific project and subsequent research programmes of International Year of Quiet Sun in 1964-65 was in keeping with the traditional co-operation which it inherited from I.M.O.

With the formation of W.M.O. in 1951 India's activities in the field of International Co-operation in meteorology also increased greatly and gained importance. The Director-General of Observatories was designated permanent representative of India in the W.M.O. At the first Congress of the Organisation held in 1951 Shri V.V. Sobani the then Director-General, was elected President of the Regional Association II (Asia), and successive Directors-General held that post till 1959. Since 1963 successive Directors-General were also elected to the Executive Committee.

#### Weather Data Aid Economic Development.

The need for weather information has increased very greatly in recent years because of world wide recognition of the benefits which it can provide to economic development. The two facts which could be said to have acted as a catalyst for a complete reappraisal of the role of meteorology in the world were the development of the artificial satellite and the highspeed electronic computer. The artificial earth-orbiting satellite is a new means of observing the weather, it provides a means of observing the weather from outside the atmosphere promptly and on a truly global scale. Now-a-days, direct reception of weather information in the form of cloud photographs covering an area of a radius of 1,600 kilometres around the receiving station is within the reach of every country in the

world. A weather satellite system detecting the variations of temperature and the water contents in the air in a vertical direction through the earth's atmosphere is also being perfected. These developments and the increasing importance of meteorology to human affairs led the W.M.O. in 1967 to develop a new World Weather System known as the World Weather Watch (W.W.W.). It is an unprecedented world weather system based on revolutionary techniques and procedures particularly the use of artificial satellite data, their processing by high speed electronic computers and the use of mathematical techniques in theoretical meteorology. The plan comprises—

(i) A global observing system where here has been and there will be a vast extension of both conventional networks and satellite observing tools to ensure more homogeneous distribution of observation on a global basis;

(ii) A global data processing system consisting of arrangements for the processing of observational data and which works through World, Regional and National Meteorological Centres;

(iii) A global telecommunication system consisting of telecommunication facilities and arrangements for rapid exchange of observations and processed data;

(iv) A research programme known as Global Atmospheric Research Programme on a joint basis with the International Council of Scientific Unions (I.G.S.U.); and

(v) A programme in education and training.

It was foreseen that the improved meteorological services which result from the W.W.W. would have a profound impact on the agriculture, commerce and industry of all nations and permit more accurate



and timely warnings of severe storms and other weather hazards for the protection of life and property.

#### The vast net work of Observatories.

At the end of 1972 there were 81,500 surface stations, 5,500 merchant ships, plus ocean weather ships, commercial aircrafts and meteorological satellites all working in a fully coordinated global observing system. In technical assistance to developing countries, by the end of 1972 W.M.O. had launched nearly 700 expert missions, had awarded more than 1,500 fellowships, had organised some dozens of seminars and training courses and provided equipment the whole amounting to approximately U.S. \$55 million in value. India has also obtained expert assistance and equipment from U.N. Special Fund and Voluntary Assistance Programme of the value of U.S. \$2.6 million. In turn, India has provided 31 experts to serve in different developing countries.

W.M.O. is also vitally interested in planning towards mitigating the disastrous effects of tropical cyclones and the associated storm surges as well as in reducing the effects of environmental pollution. It also plays an expanding note in hydrology and oceanography.

The important part that India is playing in international meteorological activities is evident by the fact that 36 officers of the department are members of various bodies of the W.M.O. A number of them has also held the Chairmanship of the Commissions, Expert Panels Working groups, etc., two officers held the Presidentship of the two important Technical Commissions. Dr. P. Koteswaram, the present Director-General of Observatories was elected as Vice-President of the Organisation at its Sixth Congress in May 1971. This is the first time that an Asian has been elected to the high executive post in the organisation and India got this honour after nearly 97 years of devoted service to the cause of international meteorology. He was elected in May 1971 as Chairman of W.M.O. Panel of Experts on Tropical Cyclones.

#### India offers Training in Meteorology.

Another significant contribution made by India to international co-operation in meteorology is in providing facilities for training for quite a number of scientists from the middle East and South East ASIAN COUNTRIES in meteorology and related sciences. The Departmental Training Directorate at Poona has during the war years and thereafter trained many foreign candidates, some of whom are now holding responsible positions in their national meteorological services. The total number of foreign scientists so trained is 64 during the period 1947-72.

In 1956 W.M.O. initiated an award called the I.M.O. Prize which is awarded to meteorologists of scientific eminence in recognition of their scientific work and work in the field of international meteorology. So far, 15 I.M.O. Prizes have been awarded. The sixth prize was awarded in 1961 to Dr. K. R. Ramanathan, a retired Deputy Director-General of the Department.

India Meteorological Department played significant role in some of the major international programmes of the W.M.O. These are—

(i) Participation in the International Geophysical year/International Geophysical Co-operation Programmes (1958-60) for organising special observational and research programmes associated with a period of intense solar activity;

(ii) International Quiet Sun Year (I.Q.S.Y.), during 1964-65, for organising observational and research studies during the period of minimum solar activity, as an extension of I.G.Y./I.G.C. programmes;

(iii) International Indian Ocean Expedition (I.I.O.E.) Programme, including the International Meteorological Centre at Bombay (1961-65) for an intensive exploratory study of the Indian Ocean in Physical Oceanography, Meteorology, Marine Biology and Marine Geophysics;

(iv) International Hydrological Decade (I.H.D.) started from January 1965 (and still continuing) for organising special Hydrometeorological observations and research studies for exploitation of water resources and water management;

(v) International Pollution Studies Programme, since 1971, by establishing a background station at Poona for participating in the Global Studies Programme on pollution;

(vi) Global Atmospheric Research Programme (G.A.R.P.), for the study of the physical processes in the troposphere and stratosphere that are essential for an understanding of the transient behaviour of the statistical properties of the general circulation of the atmosphere. Under this programme plans are afoot for undertaking detailed experimental and theoretical studies of the monsoons over the Indian Seas;

(vii) International Global Ocean Station System (I.G.O.S.S.) jointly sponsored by W.M.O. and Inter-Governmental Oceanographic Commission, since 1969, for exploration of the marine environment and provision of marine services.

Some of the other important international responsibilities at present held by the Department are—

(i) The Sub-regional Meteorological Broadcasting Centre;

(ii) Facsimile Broadcast Centre;

(iii) Northern Hemisphere Exchange Centre and

(iv) Regional Meteorological Centre (R.M.C.) and Regional Telecommunication Hub under W.W.W. Plan of W.M.O. at New Delhi. As a result of this the World Meteorological data are handled at New Delhi which is on the main trunk circuit of the Global Telecommunication System of the W.M.O. The Regional Meteorological Centre analyses and forecasts weather charts covering India and a large number of countries around. These charts are broadcast daily round the clock.

Meteorology being essentially an international subject, it is no wonder that India is required to play a significant part on a global scale. The India Meteorological Department has always kept pace with the growing and exacting requirements of national as well as international needs and has been striving to contribute its best ever since its inception nearly a century ago.

## DOS AND DON'TS FOR THE EYE CARE OF BABIES

A Stitch in time saves nine. This age-old adage is universally accepted. A very, if not the most, glaring instance which establishes veracity of this maxim is in the care of the eyes of the new born babies. For, a slight negligence in handling eyes at birth can cause irreparable loss.

Perfect eye sight is a God-given gift for all living beings, with no exception. Being the most precious of the five senses, it calls for added attention.

All through the life eyes need proper care. This begins before even one comes into the world. Adequate care of the expectant mother is of great significance. Prevention of blindness among the new born babies must, therefore, receive full attention. Special care, before and after delivery, is a must. Subsequently too, as the baby grows, eyes need continued protection against infection and bright light.

During first two months of pregnancy all possible care is necessary to avoid German measles. Otherwise the coming baby may have cataract and other developmental defects. If unfortunately the mother suffers from a venereal disease—gonorrhoea, syphilis, and the like—she has to undergo treatment before the baby is born.

Syphilis can be passed on to an unborn baby. This happens if the mother having syphilis during pregnancy is denied proper treatment. But, unlike syphilis, gonorrhoea is not passed on to unborn babies. However, don't get away with the impression that it does not cause any harm. This too is a hazard for the eyes of the baby as germs from mother's sex organs may find their way into the eyes causing inflammation and eventually blindness. Prompt measures at delivery can help avert this catastrophe.

Diet of the expectant mother should contain adequate quantities of vitamins and other essential nutrients. Lack of certain vitamins and improper diet affect health of the new-born and make him susceptible to various diseases including those of eye.

Careless handling of a delivery also affects eyes of the baby. Venereal infection and genital discharges of the mother, if not properly treated, may infect eyes at birth. Services of trained midwife and doctor must be ready at hand. Special care has to be taken in caesarian, forceps or any other instrumental case where chances of damage to the eye are more pronounced.

Soon after birth steps have to be taken to prevent discharge from the genital passages reaching eyes of the new-born. Before eyes of the baby open, eyelids have to be wiped with clean moist cotton-wool from the nose towards outer angle of each eye. Even while the baby is washed in a basin, the bath water should not get into the eyes. To avoid infection, crystalline penicillin drops are required to be put in the eyes.

Before the antibiotics came in use, preventive measures consisted of pouring of one per cent silver nitrate solution in eyes. If any discharge appears in the eyes of the new-born, it needs prompt reference to the attending doctor. Puslike discharge in infants is responsible for high incidence of blindness. During its passage through the mother's genital organs, the eyes are liable to contract this disease. After birth too there is risk of the disease through use of infected napkins, towels, sponges or by the infected hands of the midwife.

#### Care after the birth.

Exposure to direct sunlight is very damaging for the young infants eyes and must be avoided at all costs. Very often babies are left

unprotected from sunlight in the cradles. Protection has also to be ensured against flies.

Personal hygiene of the mother or the nurse is equally essential. Wiping of eyes with dirty rags or towels used by other family members must be avoided. The age-old practice of applying black soot (kajal and surma) should be discouraged as they can act as carriers. More attention to this is required in trachoma infected families and in areas with a higher incidence of this disease.

#### DOS AND DON'TS.

Some of the important Dos and Don'ts are:

##### Dos:

Nourishing diet rich in vitamins is a must for an expecting mother;

Competent doctor and trained midwife only should handle delivery;

If the mother suffers from a venereal disease, proper treatment is necessary;

While giving first bath to the infant, infected water should not touch the eyes;

Seek advice of the attending doctor if any discharge is seen in the eyes.

##### Don'ts:

Avoid exposure to bright and direct sunlight;

Cover the cradle with mosquito net to protect against flies infecting the eyes;

Avoid use of surma or kajal for the eyes of the infant.

Remember: Good eye-sight is the birth right of every new-born infant and has to be preserved with all the care and caution. Maximum care has to be exercised lest one should unknowingly become cause of a tragedy which the innocent child will suffer all his life.

## TIPS TO DIABETICS

Diabetes is a worldwide public health problem and a sizeable number of people suffer from it. In India, on a rough estimate, 5.5 million persons suffer from this disease. Of these, 3.3 million are in urban areas. New Delhi alone has 60,000 diabetics.

Incidence of diabetes is higher in the higher income groups. Sedentary habits, inadequate exercise and excessive indulgence in sweets or soft and fatty foods account for its higher incidence in the urban areas.

Early check-up for diabetes along with the general medical check-up is, therefore, an essential requirement. Doubly important are such check-ups for those who are over-weight, suffer from high blood pressure and heart diseases and mothers with a number of children. For one who is in for any operation, a check up for diabetes is a must.

One can easily avoid diabetes. Proper treatment can easily cure it too. Since the discovery of insulin in 1922 by Banting and Best, which earned them a Nobel Prize, many new vistas have been opened for the treatment and prevention of this malady.

A correct use of insulin, diabetic pills and antibiotics coupled with exercise and reasonable diet control ensure a diabetic all that a non-diabetic enjoys.

### Do's and Don'ts for a Diabetic—

A person suffering from diabetes should strive his best to maintain an ideal body weight and avoid scrupulously getting overweight. Tables are available to indicate one's ideal body weight. A simple formula to calculate one's ideal body weight is:

a 5-ft. tall man should weigh around 145 lb; add 5 lb. for every inch beyond 5 ft.

a 5-ft. tall woman should weigh around 105 lb; add 5 lb. for every additional inch.

Over-eating and starchy foods like rice, potatoes, sweets and sugar have to be eliminated. Daily exercises and doing away with mental tensions are also essential.

Women with a family history of diabetes should in no case have more than two or three properly spaced pregnancies.

No longer holds good the earlier conviction that a diabetic has to give up tasty food. Medical opinion has now relaxed some of the requirements on food permitted to a diabetic. One main objective of the diabetic in selecting food is the emphasis on weight control. Total elimination of carbohydrates—starches and sugars—is not at all necessary. All that is required is small amounts of food at frequent intervals distributed during the day. He can take some sugar provided he cuts down equivalent amount of carbohydrates, proteins and fats. His food does not have to be a repetition of the same item every day.

With all these precautions and scrupulously adhering to medical advice, he can ensure for himself a really normal and full life.

## FOCUS ON ASTHMA

Ever experience wheezing while breathing! If it accompanies frequent bouts of difficult breathing, you may be one of nine to twelve million asthmatics in the country.

Unlike very many diseases, asthma has eluded specific treatment and cure. Eminent scientists too have accepted this as a 'reproach to the sciences of medicine'. That is so despite vast accumulation of knowledge about the disease. Rightly has an expert described asthma as a 'condition about which we know a great deal but understand relatively little'. What an apt description of asthma by another scientist, who remarked that 'this intractable disease puzzled doctors and tormented patients'.

In general terms any sort of difficulty in breathing is taken for granted as asthma. If wheeze accompanies breathing, one is apt to take it as an asthmatic attack. The term 'asthma' is so well-known to common man that it is often likely to be misused. It is characterised by recurring attacks of difficulty more in breathing-out than breathing-in. Heredity too plays no

insignificant a role. Anyone with an inherited pre-disposition is prone more to it. In simple words, if your father and forefathers suffered from asthma, there are greater chances of your getting it too.

No country can boast of total freedom from this disease nor of having got rid of it through preventive or curative means. Two per cent of the population of every country is estimated to suffer from asthma. In India, results of several surveys place percentage of suffering population between 1.7 to 2.3.

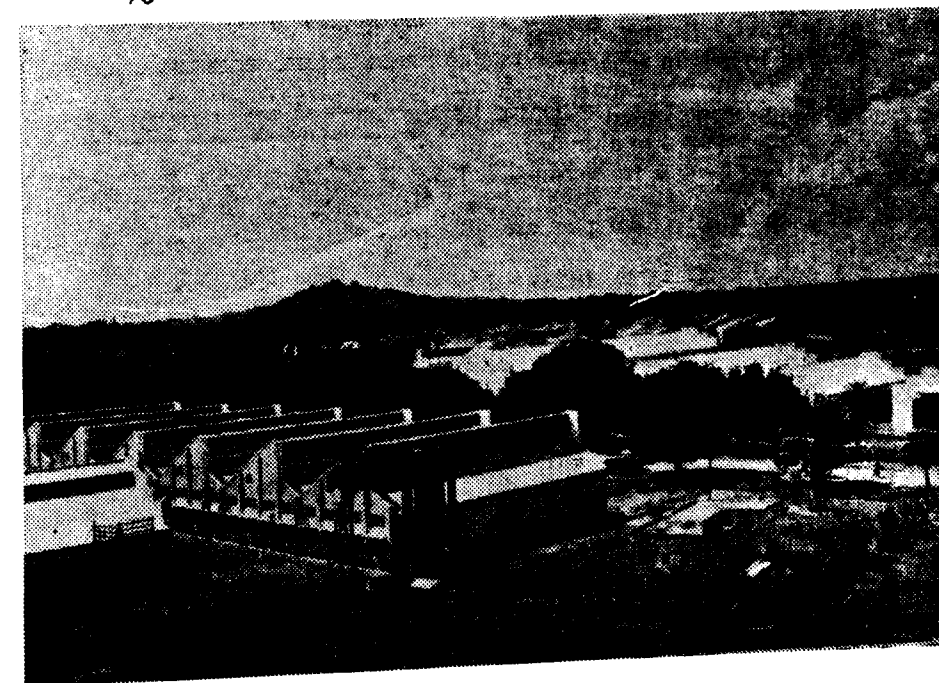
World over significance of asthma has not been fully realised. This is because, unlike malaria and tuberculosis, asthma does not happen to be a great killer. But this does cause considerable extent of disability, though not complete incapacitation. Tremendous loss of man-hours in factories, farms and offices are the outcome of this affliction. Complications, which follow in its wake, may cause death as well. Paradoxically, death often occurs not due to this disease but from the treatment administered. Indiscriminate aerosol inhalations are reported to have caused death in young asthmatic patients. High concentration of oxygen has at times resulted in death.

Though there is no specific cure for asthma, several drugs have been developed to provide some measure of relief from its symptoms. Undoubtedly, these drugs have to be administered for long during an attack, but certainly they do make life of the suffering person worth living. Two quite useful drugs have been introduced recently. One controls the attack, while the other helps to prevent it.

Asthma often results from allergy to some eatables or inhaled particles like house dust, pollens and fungal spores. Skin tests bring out the offending factors to which the patient is allergic. Once these factors are detected, the patient can be desensitised through small doses of injections prepared from allergy-producing material. In other words, the irritant itself provides the cure.

The treatment, however, is a long-drawn process. Every patient too may not respond favourably, for majority of asthmatics are allergic to more than one factor. That is why there are only a few beneficiaries—proving scientist's wise words that "asthma has puzzled doctors and tormented patients".

## INDUS- TRIAL ESTATES IN TAMIL NADU



A Panoramic view of Industrial Estate, Guindy.

An Industrial Estate has been defined as "a planned clustering of industrial enterprises offering standard factory buildings constructed in advance of demand and a variety of services and facilities to the occupants". Historically, "industrial dispersal" was one of the first objectives of the Industrial Estate Programme as in the United Kingdom after the FIRST WORLD WAR. In the industrially advanced countries, the Industrial Estates have been mostly used as a device to decentralise industries from those areas where the industries have highly been concentrated and also to help industrialise the "Depressed Areas" lacking in industries. On the other hand, Industrial Estates have been used in developing countries like India to accelerate the growth of small scale industries and to strengthen the economic base of urban centres. The Industrial Estate Programme in Tamil Nadu was, therefore, considered as a tool for the development

of small industries and Industrial Estates have been established as an integral part of the Small Scale Industries Promotion Programme.

The establishment of Industrial Estates was, therefore, conceived as an effective method for accelerating the growth of industrial development and to encourage the growth

By H. B. N. SHETTY, I.A.S.,  
Director of Industries and  
Commerce, Tamil Nadu.

of small industries in townships and major industrial areas. The schemes are meant to afford certain facilities to industries to keep their own investment down to a minimum and to shorten the period of gestation. It is also an effective means for small scale industries to solve the initial difficulties such as delays and

troubles involved in acquiring suitable sites, obtaining approval of plans in conformity with Municipal laws and factory laws, construction of factory buildings and getting water and power supply in setting up of small scale industries.

Government have sanctioned 10 Industrial Estates during the second plan period and 14 Industrial Estates during the third plan period in this State. The scheme of Industrial Estates have been continued during the Annual Plan period and during the fourth plan period also and the target has been to establish at least one Industrial Estate in each of the revenue divisions in this State.

The Industrial Estates set up during the earlier periods were mainly of the conventional type. These estates provide factory space for industrialists engaged in different and varied line of manufacturing. As a refinement of the basic concept

### ELECTRONIC ASSEMBLING PROCESS.



of Industrial Estates, it was later decided to set up separate "Functional Industrial Estates" which would give specialised facilities to industries engaged in a single line of industry. The important Functional Industrial Estates which have come up in the recent past are :—

1. Functional Industrial Estate for Chemical Industries at Mettur,
2. Functional Industrial at Estate for Electrical Goods Kakkalur,
3. Functional Industrial Estate for Electronics and Instruments at Adyar and
4. Functional Industrial Estate for Food and Fruit Based Industry at Bathalagundu.

In addition, there is also a well-established Functional Industrial Estate for Leather at Madhavaram, near Madras City and another for Ceramics at Vridhachalam. These Estates in due course are to develop their own servicing and testing laboratories and will help overcome the problems relating to lack of technical know-how, servicing facilities, quality testing facilities, etc.

A pioneering work has been done in this State in setting up an Ancillary Industrial Estate at Tiruverambur in Tiruchirappalli district. This Estate serves as ancillary to the Bharath Heavy Electricals, Limited and has enabled to establish 10 small-scale industries. It has met with such success that the scheme has been extended. Under the expansion programme, 14 industrialists have now been allotted with lands to

Electronic testing.



Industrial Estate, Ambathur.

put up buildings at their own cost as per type designs evolved by the Department in consultation with the Bharath Heavy Electricals Limited. While in other parts of the country these ancillary industries are mainly set-up by the Public Sector concerns, in the Ancillary Industrial Estate at Tiruverambur the initiative has been taken up by the Government of Tamil Nadu in consultation with the Public Sector Undertaking.

All the above mentioned Industrial Estates have been financed and run by the Government of Tamil Nadu. The factory sheds in all the earlier Industrial Estates have been given on rental basis and the allottees are asked to pay subsidised rate of rent which varies from place to place and the subsidised rate of rent

is progressively stepped up to the economic rate of rent over a period of years.

In response to the demand from various Industrial Estate Manufacturer's Associations, Government of Tamil Nadu have recently introduced the scheme of hire purchase for all the new Industrial Estates that are coming up. Under this scheme, the factory sheds depending on the industrial needs are put up by the Department on the lands acquired for the purpose. The factory sheds are allotted to small-scale industrialists and entrepreneurs after collecting 10 per cent of the cost of the shed as the first instalment towards hire-purchase. The cost of the shed includes proportionate cost of the lands acquired for the Industrial Estate and also the proportionate cost of the amenities provided in the Industrial Estate. The balance of 90 per cent of the cost of the factory shed, as worked out above, is collected in 30 half yearly instalments spread over a period of 15 years.

Besides these departmentally run estates, there are 5 Estates administered by Industrial Co-operative Societies and 2 by Private Companies in Tamil Nadu. Of the two Estates which are administered and run by the Private Companies one is serving as Ancillary to Messrs. Enfield India, manufacturers of Motor Cycles. In the case of the above 7 Industrial Estates, 20 per cent cost of the scheme is collected as share capital from the members in

the first instance and the balance is met by means of Government loan and loan from the Life Insurance Corporation of India.

Out of the 44 Industrial Estates so far sanctioned, 38 Industrial Estate schemes have been implemented and 807 factory sheds have been constructed so far. Six Industrial Estate schemes with 30 factory sheds are under implementation.

Of the 807 factory sheds constructed in the Functioning Industrial Estates, all the factory sheds but two have been allotted. Of the Industrial Estate schemes, six are Functional Industrial Estates and two are Ancillary Industrial Estates. All the six Functional Industrial Estate schemes and two Ancillary Industrial Estate schemes have been implemented.

One notable feature of the Industrial Estate schemes in Tamil Nadu is the high ratio of occupancy. In spite of the fact that many of the Industrial Estates have been set up in backward areas where Industrial Entrepreneurship is lacking the overall occupancy position in the Industrial Estate Scheme in Tamil Nadu.

The recent development in the establishment of Industrial Estates has been the emergency of the Tamil Nadu Industrial Corporation (SIDCO), among other things, as an agency for the establishment of Industrial Estates in areas as below—

1. To formulate schemes which have not already been taken up by the Director of Industries and Commerce for the implementation upto 1973-74 and

2. To implement the Industrial Estate programme other than those which are of the nature of expansion of existing Industrial Estates under the control of the Department inclusive of additional areas to be acquired for such estates.

Under the above programme Tamil Nadu Small Industries Development Corporation Ltd., has made a beginning at Ambattur where 35.97 acres of land has been allotted out of 1,136 acres acquired by the Department. In the first phase, 17 factory sheds have been constructed by Tamil Nadu Small Industries Development Corporation and these sheds have been allotted under hire purchase basis. The second phase with 52 sheds has also been taken up.

As a corollary to the Industrial Estate scheme, Government of Tamil Nadu have taken up the provision of well developed factory sites for the establishment of industries, these Developed Plot (Industrial Area) schemes were started during the third Plan period. To meet the increasing demand for industrial sites, since the provision of factory accommodation cannot meet the total needs for industrial expansion, large tracts of land were acquired by the Government at growth centres and developed by providing roads, water-supply, communication and transport facilities, sewage and drainage arrangements, etc. These plots are allotted to industrialists according to their needs and have roughly a minimum extent of about one-fourth acre. As in the case of Industrial Estates, these developed plots also offer all amenities such as Canteen, Post Office, Telephone Exchange, First Aid Canteen and Recreational facilities such as Parks, Palyground, Garden, etc. There are

five such Developed Plot Estates under implementation at—

1. Ambathur,
2. Guindy,
3. Madurai,
4. Tiruchirappalli ; and
5. Mettur.

These plots are allotted to the industrialists on attractive terms. They could either be had on conditional assignment basis or on 95 years lease. The developed plots at Ambathur are allotted on conditional assignment basis and the cost of the plot collected in 3 instalments without interest while at Guindy, the cost is collected in 6 instalments without interest. In the case of mofussil developed plots the cost is collected in 6 instalments with interest or are allotted on 95 years lease at annual economic rate of lease.

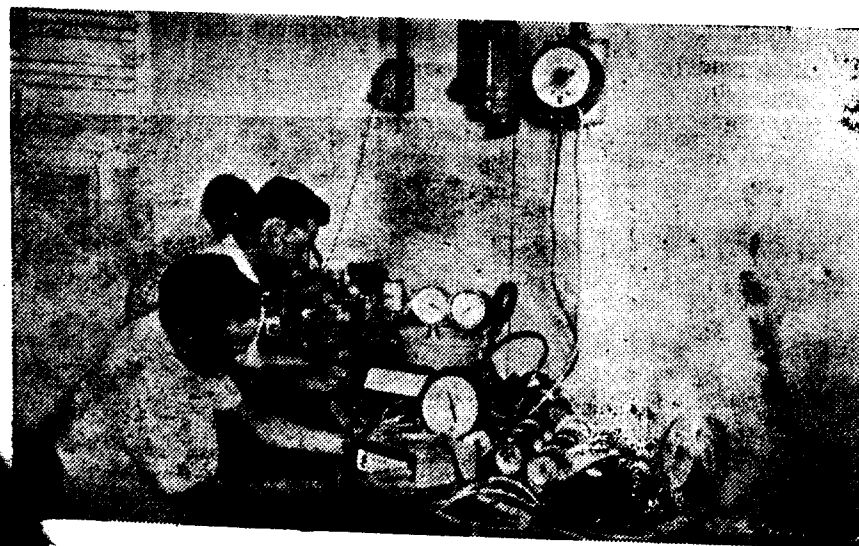
It is beyond doubt that the Industrial Estates in this State have paved the way by the provision of infrastructure facilities for quickening the pace of industrial development and have attempted to effect the dispersal of Industrial development. The magnitude of the scheme could be gauged by the fact that the Industrial Estate Programme so far implemented has been at a total cost of Rs. 10 crores which has enabled the setting up of about 700 industries, with an annual turn over of about Rs. 19 crores and provide direct employment to about 17,000 persons.

Read

# Tamil Arasu

For accurate and authentic news of Tamil Nadu.

Single copy Re. 0.40  
Annual subscription Rs. 5.00.





# INCENTIVES TO HANDICRAFT INDUSTRY IN TAMIL NADU

Long before the invention of machines and their accessories, man in the course of his mental development accustomed to adopt natural methods to create new things which were found most useful and profitable. He utilised his skill during his rest time to create art and to give life to it. This tendency to create art is seen from the very beginning of the history of this State. During the ages, the only tool accessible to him has been his hands. With the help of this tool, he carved stones, made clay toys, shaped horns and wood in the past.

Archaeological studies reveal how man began to use small tools during the gradual evolution of civilisation. The invention of new tools made of stone, iron, brass metal, etc., helped him to imbibe new vision in the field of art and architecture.

Handicrafts in Tamil Nadu is reputed throughout the world for its embroidery, sculpture, wood work, carving, etc. These crafts flourished in the South till the Industrial Revolution crippled its basic root, by destroying the village community and its harmony. The long living peace and tranquillity of the village life has once for all been thwarted and poverty has come to stay as an unavoidable enemy.

The handicrafts sector received the most set-back under the British regime which heralded destroying the village industry once for all in order to secure market for the Lankashire Mills. As a result, among the dejected village artisans, many of them left their traditional practice and art and craft and put a full stop to the growth of handicrafts in this region. Only a few stuck on to the same profession unabated by the sudden emotional change.

The Indian pioneers were attracted by the deteriorating condition of handicrafts sector after independence. They volunteered to arrest further declining in the industry and to regain the past glory to this field and chalked out several programmes for its development

taking into account its importance in the Indian economy and the necessity to provide additional vocation to the millions of our agriculturists who are the backbone of our country.

Many schemes were drawn up during the first three five-year plans to revive the long neglected industry. A number of training, service, research, design and production centres were established in different parts of the State. In order to create sustained growth in this sector, small co-operative societies were introduced to organise the scattered artisans so as to increase production and to protect them from the exploitation of middle men. The societies supplied loans and raw materials to its members and procure manufactured articles for sale both within and foreign countries. The organisation of small co-operative societies for these artisans helped them a good deal in redressing their grievances by mutual help.

By  
**K. PADMANABHAN, M.A.,**  
Assistant, Department of  
Industries and Commerce.

The State Handicrafts Board was set up in par with the All-India Handicrafts Board, New Delhi, in order to advise in quality production, marketing, etc., of the Handicrafts of Tamil Nadu. The establishment of a Design Demonstration Centre at Madras with a view to giving design and guidance to the artisans in the crafts by distributing to them improved designs and to train them to adopt new good designs, is worth mentioning.

## Establishment of Emporia.

A tentative provision of Rs. 60 lakhs have been made under the Fourth Five-Year Plan for the development of Handicrafts in this State. In order to market the handicraft

products and to make it easily available to the foreign buyers, departmental emporia have been established in various important centres.

## Central Ware-house.

In July 1970, a Central Ware-house for Handicrafts at Madras was set up in order to store huge stocks of better variety of art pieces and to meet the huge demand of foreign buyers. The handicraft products of this State suffered due to lack of adequate market and wide publicity. This drawback has been done away with the organisation of seasonal exhibition in various parts of the country.

## Importance of Handicraft.

The paper on approach to the Fifth Plan, while laying down the major objectives of the plan, has stressed the importance of the development of Handicrafts Sector to increase production, improve the earnings and working conditions of craftsman and provide greater employment opportunity to the unemployed and the under-employed. Keeping this objectives in view, a Task Force on Handicrafts has been set up both under the Tamil Nadu State Planning Commission and under the All-India Handicrafts Board.

With these strenuous effort and endeavour from different corners, spectacular achievement has been made in this sector during the last 25 years. But the living conditions of artisans and their daily earnings continue to remain very low. For improving the lot of the artisans and the handicraft industry much has as yet to be done and the Government is very eager and earnest in this line.

# SURULIYAR HYDRO-ELECTRIC SCHEME

The Suruliyar Hydro-Electric Scheme envisages the utilisation of the water of Suruliyar together with its main tributaries viz. Manalar, High Ways Ar. Vennir Ar river and Eravangalar river for generating power at a single power station located in Madurai District.

'Suruliyar' is a tributary of the Vaigai river and has its origin in the hill ranges (called as Pachaikumachi hills) which separate the Cumbum Valley in Madurai District from the Periyar catchment within Kerala State lying in the south and Vaigai Basin in the east. The scheme area is approachable from the Madurai-Kumili Road and the proposed power house will be about 5 miles from the Periyar Power House now in operation.

## THE HIGHEST HEAD

A single unit of 35 Megawatt capacity commanding a maximum gross head of 1,030 meters; the highest head for any power house in India, will be installed in the power house. The energy that could be generated in a 90 per cent dependability year is 114 million units. Power from the power house will be fed to the Madras Grid at Periyar Power House.

It is proposed to collect the yield from a total catchment area of 38.85 K.M. amounting to 48.23 m. cu. m. in a 90 per cent dependability year of various sub-basins of Suruliyar like Highways stream, Manalar Stream, Vennir Ar Stream, etc., by building suitable dams and weirs across to divert the flows successively into a forebay proposed across Eravangalar stream for drawal for power generation. The successive diversions will be effected by means of pumping main and four unlined Tunnels. A peak draft of 4.332 cusecs will be conveyed from the forebay dam through a 846 m. long lined tunnel to a 5 m. dia. surge shaft and then through a pipe tunnel to a valve house and then through a single line penstock to the power house to be located on the right flank of Eravangalar near "Vannathiparai" with the tail race discharging into Eravangalar which joins Suruliyar Lower Down.

## REMUNERATIVE SCHEME

The scheme is estimated to cost Rs. 650 lakhs. The scheme is remunerative, capable of fetching a nett revenue of 8.85 per cent on the capital outlay and the cost of generation works out to 5.34 paise per unit.

The project report for the Suruliyar Hydro-Electric Scheme with an installed capacity of 35 Megawatt was sent to Planning Commission by Government of Tamil Nadu in May 1970. Sanction for the scheme was given by Government of India in August 1972. Civil Works on this project are progressing as per the target and a decision is yet to be taken by the Government of India regarding high head turbines and generating machinery for this project.

The power house is expected to be commissioned in 1977-78.

## FAMILY PLANNING AMONG WORKERS

A National Committee consisting of leaders of organised labour and representatives of trade unions is being constituted to popularise Family Planning among the working class. Similar committees will be set up in the States and in the Cities having concentration of labour force.

Trade Union leaders representing various organisations participated in a recent seminar on "Workers' Participation in the National Family Planning Programme" organised by the Ministry of Health and Family Planning, and were unanimous that Family Planning, being a non-controversial subject, should be implemented with full vigour.

Employers have also not lagged behind. Several industrial concerns have encouraged their workers to go in for Family Planning and have even offered cash and other incentives for sterilization.

# MARGINAL FARMERS AND AGRICULTURAL LABOURERS DEVELOPMENT AGENCY SCHEME IN SALEM DISTRICT

The Marginal Farmers and Agricultural Labourers Development Agency Scheme has been devised by the Union Department of Agriculture in consultation with the Planning Commission to assist the Marginal Farmers and landless agricultural labourers and to enable the weaker sections of the rural population to benefit from the economic growth and development in the rural sector. This programme has been given high priority in the Fourth Five Year Plan. The principal objective is to assist the marginal cultivators in making the maximum productive use of their small holdings by undertaking horticulture, animal keeping and dairying, etc. The effort will be directed towards generating larger income by channelising credit, improved inputs and improved practices into these activities. The marginal farmers and specially the landless agriculturists will also be assisted by providing greater employment opportunity through such rural works as may help in the maximum exploitation of the agricultural potential in the area.

The Marginal Farmers and Agricultural Labourers Development Agency Scheme is being implemented in Salem District covering the two blocks of Vadapadi and Peddanaikenpalayam since the year 1971. A separate body called the Marginal Farmers and Agricultural Labourers Development Agency registered under the Registration of Societies Act and with the Collector as the Chairman is functioning with 100 per cent financial assistance from the Union Government.

The Scheme is to cover three categories of beneficiaries, viz. Landless Agricultural Labourers, Sub-marginal Farmers and Marginal Farmers. Landless Agricultural Labourers are those having a homestead and earning 50 per cent or more of their income from agricultural wages. Sub-marginal farmers are those having holdings of one acre and less of wet land or two acres and less of dry lands. Marginal Farmers are those having holdings of 1 to 2.5 acres of wet lands or 2 to 5 acres of dry lands. In the project area 7,550 landless agricultural labourers, 8,215 sub-marginal farmers and 5,469 marginal farmers have so far been identified based on this definition.

The total outlay for the project is Rs. 1 crore to be made available as grant by the Government of India in a period of three years. The basic feature of this project is to enable the weaker sections of the community to have access to institutional credit facilities for undertaking various economic activities. The agency will not by itself finance the participants directly but it will stimulate the flow of credit through the co-operatives. As an incentive the agency would provide grants in the shape of risk fund at 8 per cent to the primary Societies and 3 per cent to the Co-operative Central Bank on loans granted and disbursed and 3 per cent of the total loan issued by the Land Development Banks. In addition 33-1/3 per cent of the credit made available to each and every beneficiary under these three categories will be treated as subsidy and the expenditure towards the same will be met from the Agency Funds. In addition, a sum of Rs. 15 lakhs has been earmarked for works programme for affording employment and Rs. 5 lakhs for assisting Rural Artisans.

The Agency would also assist the institution which are concerned with the distribution of inputs, marketing, processing and storage to build up adequate infrastructure for improving the marketing and storage facilities in the project area to benefit the participants. As a result, arrangements are being made to construct two godowns for marketing societies at Rs. 50,000 each, and eight for credit societies at Rs. 25,000 each. As much as 25 per cent of the cost will be met as subsidy by this agency.

Arrangements are also under way to ensure that adequate number of custom service units are set up by the Agro-Industries Corporation, and in this connection the Agency will provide subsidy of the order of not exceeding 33-1/3 per cent of the rates per acre, fixed by the Corporation.

Another very important feature in this scheme is supply of inputs to sub-marginal farmers at 25 per cent subsidised rates. All the 9,584 sub-marginal farmers in the project area have been given individual identification cards, and they have just started taking the required inputs from the Co-operatives, which, in turn, claim the subsidy from this Agency.

## DIFFERENT TYPES OF SCHEMES TACKLED BY THE AGENCY.

### 1. Landless Agricultural Labourers :

- |                          |       |                               |
|--------------------------|-------|-------------------------------|
| (i) Supply of Ewes       | .. .. | } At 33-1/3 per cent subsidy. |
| (ii) Supply of Stud Rams | .. .. |                               |
| (iii) Supply of Poultry  | .. .. |                               |
| (iv) Supply of Seedlings | .. .. |                               |

### 2. Sub-Marginal Farmers :

- |                                                   |       |                               |
|---------------------------------------------------|-------|-------------------------------|
| (i) Purchase of implements                        | .. .. | } At 33-1/3 per cent subsidy. |
| (ii) Subsidy on inputs                            | .. .. |                               |
| (iii) Supply of milch animals (cow or buffaloes). | .. .. |                               |
| (iv) Supply of poultry                            | .. .. |                               |
| (v) Supply of coconut and fruit seedlings.        | .. .. |                               |
| (vi) Crop loan at Rs. 250 per acre.               | .. .. |                               |

### 3. Marginal Farmers :

- |                                            |       |                                                                                                                               |
|--------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------|
| (i) Sinking of new wells                   | .. .. | } By Land Development Bank 33-1/3 per cent subsidy and share capital loan of 75 per cent and 5 per cent of the share capital. |
| (ii) Deepening of existing wells           | .. .. |                                                                                                                               |
| (iii) Installation of Electric motors.     | .. .. |                                                                                                                               |
| (iv) Supply of hand operated sprayers.     | .. .. | } At 33-1/3 per cent subsidy.                                                                                                 |
| (v) Supply of coconut and fruit seedlings. | .. .. |                                                                                                                               |
| (vi) Supply of poultry                     | .. .. |                                                                                                                               |
| (vii) Supply of milch animals              | .. .. |                                                                                                                               |
| (viii) Crop loan at Rs. 750 per acre.      | .. .. |                                                                                                                               |

An amount of Rs. 19,446-67 and Rs. 2,97,881-34 and Rs. 2,99,773-38 has been spent for the benefits of landless labourers and Sub-Marginal Farmers and Marginal Farmers respectively during the year 1971-72 for various purposes mentioned above.

Progressive steps are being taken for full-scale implementation of the Project through different programmes.

During the year 1972-73, further advancement has been made in different levels and variety of new schemes are being implemented.

1. An amount of Rs. 9 lakhs has been sanctioned for the scheme for replacements of the indigenous cows by crossbred progenies produced by farmers themselves or by supply of crossbred heifers and calves to them from other resources.

2. An amount of Rs. 5.9 lakhs has been sanctioned for the scheme for formation of road from Karumandurai to Maniyarkundam in the Kalrayan Hills.

3. To enable the needy farmers to construct cattle shed, the Marginal Farmers and Landless Agricultural Labourers Development Agency has sanctioned Rs. one lakh during this year.

4. Another implement scheme costing of Rs. 8.48 lakhs for the Marginal Farmers and Agricultural Labourers Development Agency floated for poultry-keeping on modern methods, milch animals and sheep breeding.

In the project area 20 Milking Centres have been opened by the Salem Co-operative Milk Supply Union, Salem for collecting milk for the beneficiaries and have purchased a chilling plant and a van for collecting milk from the beneficiaries for which a long-term loan of Rs. 1,46,250 has been given by the Co-operative Central Bank, Salem, out of which 33-1/3 per cent of the subsidy for the Marginal Farmers and Agricultural Labourers Development Agency Scheme has been met by the Agency.

The beneficiaries of the above schemes are the 7,550 Landless Agricultural Labourers, 8,215 Sub-Marginal Farmers and 5,469 Marginal Farmers who have been identified by the Project.

## AVOIDANCE OF STRIKES AND LOCKOUTS THROUGH ENACTMENT.

The Hon'ble Minister for Industries Thiru S. Madhavan said that there should be only one union for one industry, entirely free from political influence. For this purpose legislation had to be introduced by the Central Government, he said, while delivering the 10th Annual Convocation address at the Madras School of Social work.

Referring to the problem of industrial relations, the Minister said thought should be given to the question whether strikes could be considered as a proper bargaining instrument under modern conditions or as out-moded. Strikes and lockouts affected the country's economy. He wanted laws to be framed in such a way that industrial disputes could be settled without resort to strike or lockouts.

# MANAGEMENT OF SUNFLOWER UNDER DRY LANDS



At present there is an acute shortage of edible oils in India. The major source of this oil is groundnut, most of which is grown under rainfed conditions. The average yield of groundnut is about 250 kg. oil/ha in 120 to 135 days.

Groundnut suffers heavily when the rainy season is short or when sown late because of delayed monsoon. Drought in later stages not only results in poor pod formation but also poses a harvesting problem. It can be grown successfully only in light soils and is susceptible to pests and diseases. As in groundnut, the yield of other oil seed crops, such as, mustard, sesamum, sunflower, etc., is also low.

| Crop.                  | Grain yield. (kg/ha). | Oil. (Per-cent) | Oil Production. (kg/ha) |
|------------------------|-----------------------|-----------------|-------------------------|
| Groundnut (in shell).  | 631                   | 38              | 240                     |
| Sesamum ..             | 172                   | 52              | 89                      |
| Rape seed and mustard. | 525                   | 40              | 210                     |
| Sunflower ..           | 1,000                 | 27              | 270                     |

Under conditions which are not optimal for groundnut cultivation, sunflower offers distinct advantages. Its duration is 90 to 100 days. Because of deep root system and short duration, it is drought evading. It can successfully be grown on heavy as well as light soils. Harvesting is no problem. Except for damage due to birds, sunflower has so far been practically free from pests and diseases.

A comparison of groundnut, sesamum and sunflower was made

at six locations under the All India Co-ordinated Research Projects for Dryland Agriculture during khariff 1971-72. At all the six locations, sunflower has outyielded groundnut and sesamum.

The effect of sowing date on yield of groundnut and sunflower was studied at Akola and Anantapur. The highest yield of groundnut was obtained with the earliest sowing date and the yield was reduced as the sowing was delayed. On the other hand, the yield of sunflower was highest when its sowing was delayed.

Besides there is the possibility of replacing groundnut with sunflower in areas of marginal groundnut production. Groundnut and sunflower may complement each other in assured rain fall areas. If the season is early, groundnut may be sown and if the season is delayed, sunflower may be sown with advantage.

## NO STRANGER :

Sunflower is not a new introduction into India. It was actually introduced about 10 years back. But at that time, it was not widely accepted due to (i) the low oil content of the then varieties (25 per cent oil) and (ii) its susceptibility to virus diseases. For the past two years, sunflower was retested using new introduction from Russia and Canada obtained through the Plant Introduction Division of I.A.R.I. The short duration (90 to 120 days) and high oil content (45 per cent) are the characteristics of the new varieties.

In the present paper a summary of research conducted during 1971-72 in the All India Co-ordinated Research Project on Dryland Agriculture is presented, identifying the priority areas of future research. Unless otherwise stated, the experiments were conducted under entirely rainfed conditions during the khariff season. The crop experienced a severe moisture stress both during late vegetative stage and at flowering.

## Growth and Development :

The duration of the crop in most places varies from 90 to 105 days, barring the cool regions where its duration may be as high as 150 days.

## Maturity :

A periodic sampling for dry matter accumulation in grains has indicated that it takes about one week after the flower opening to complete the process of fertilization. After that, in the next week the rate of dry matter accumulation is very slow. Nearly 2/3 of the total dry matter of grain is added during the 15th to 25th day after the flower opening. After 27 days of flowering, there is practically very little addition of dry matter in the grains. It appears that at this period the plant has reached the stage of physiological maturity. Additional 15 to 18 days are required for the plant to completely dry up and it is at this stage the harvesting is usually done.

Rooting pattern, more or less, decides the crop suited for a region. This is all the more true in dryland where for successful crop production deeper root system is a must. Cultural and agronomic practices alter the rooting pattern to a considerable degree.

## Effect of Moisture Stress :

The extreme drought conditions experienced during Khariff 1971 at Hyderabad showed that until the upper two or three leaves wilted yield may not be drastically affected. Sunflower has also a remarkable ability to revive within a few hours once the stress is removed. Although crops suffer from moisture stress through their life cycle, there are certain stages at which they are particularly sensitive to moisture deficiency. Sand culture experiments have shown that the critical period for sunflower for moisture stress is from bud stage to flowering.

## Agromony of Sunflower :

The analysis of climate, particularly rainfall, is essential. This will help in deciding the optimum date of sowing which depends on two important considerations—(i) the sensitive stages of the plant to moisture stress should coincide with the reliable periods of soil moisture and (ii) pollination stage should not synchronize with heavy rains.

The probability and duration of drought during growing season can be worked out upon the rainfall analysis, mean evapo-transpiration and moisture storage capacity of the soil. For example, in shallow red soils of Telangana region, where the mean evapo-transpiration during khariff season is 3 to 4 mm per day, the moisture storage in the soil is not enough to sustain a normal crop for more than a fortnight. Based upon the rainfall probability of this region, it appears that the optimum sowing period is 4th week of July to 1st week of August.

## Plant Population :

The concept of yield stability is vital to dryland agriculture. In drylands, moisture fluctuates from year to year in an unpredictable manner. In favourable years a dense plant population may yield high, but, it may lead to complete failure in unfavourable years. On the other hand, a low population minimizes the risk of crop failure during lean years, but is not conducive to high yield in favourable years. Hence, it becomes essential to determine the

population density which gives reasonably high yield during normal and above normal rainfall years with minimum chances of crop failure in years of sub-normal rainfall.

Studies on plant density were conducted with variety EC-68415 using systematic designs. The yield varied from 532 to 1,478 kg/ha. Highest yield was obtained at 67 thousand plants/ha.

The population as high as 171 thousand plants/hectares has shown a yield level of 1,050 kg grain/ha. The increasing number of barren plants in the closer spacings indicates that the phenomenon of 'self thinning' operates when the crop is crowded.

The data indicate clearly that sunflower EC-68415 has a very high plasticity across the population levels. The yield plateaux at two different ranges of population densities (i.e., between 56-100 thousand plants/ha. and between 18-32 thousand plants/ha) is an interesting feature, which needs to be ascertained for other varieties of sunflower. In the case of EC-68415 it is apparent that if the objective is to achieve highest grain yield then the population should vary between 56-100 thousand plant/ha. **The optimum population could safely be about 60 thousand plants/ha. This population is low enough to minimise the risk of crop failure during sub-normal years and high enough to give nearly maximum yields during above normal years.**

The consistency in yield at second range of population level (18-32 thousand plants/ha) indicates that even with such a low population of sunflower, about 70 per cent of the total yield could easily be obtained. This range of low population densities may be utilized for developing systems of inter-cropping.

During early seedling stage, when available moisture was not limited, the most vigorous crop was in square planting. With decreasing crop spacing (wider rows) competition was increasingly severe, and the early growth was restricted. As soil moisture became critical due to prolonged rainless period, the square planting was the first one to show symptoms of wilting. In square planting, most of the roots were in top 15 cm. of soil whereas in the widest spacing of 135 cm. roots tended to grow deeper indicating that in square planting, plants grew luxuriantly in early stages using up most of the soil moisture which later became limiting to support the early

vigorous growth. The plant competition in closer crop spacings seemed to "train" the roots to penetrate deeper into the soil. The restricted early growth, the deeper root system and the higher root mass in wider row spacings enabled the plants to withstand moisture stress better.

This provides enough flexibility in adjusting the row to row and plant to plant distances to suit the available equipment for seedling, weed control and inter-cropping.

## Oil Extraction and Consumers' Acceptability.

Variety EC-68415 has yielded 45 to 51 per cent oil by solvent extraction method, whereas it was found to be 30 per cent in country ghanis method. The suitability of oil cakes as feed is being tested. The oil was tried for its acceptability as cooking medium. A preliminary survey has indicated that sunflower can easily replace any other cooking medium available in the country. The sunflower oil is being sold at Kuralagam in Madras and by oil merchants in Tamil Nadu.

Since the Vanaspathi Manufacturers Association of India stipulate a minimum of 45 per cent oil on seed basis, it is essential to study whether the seed size has any influence on oil content. Such an information would decide whether any grading of seed should be done. Preliminary studies showed that in the range of 1,000 seed weight of 50 to 100 grams there is no appreciable difference in the oil content.

Although there appears to be little variation in oil per cent with the seed size, the variation in the quality of oil remains to be studied.

Poor setting of seed is frequently reported in Sunflower. In formation available so far indicates that :

(i) Continuous heavy shower during pollination results in washing of pollen and pollinating insects are not active in cloudy weather.

(ii) Rapid depletion of soil moisture after pollination results in poor seed setting, particularly in the centre portion of the head. Seed size is also reduced.

(iii) Nutrient inadequacy may also affect the seed setting. Precise information on the various factors and the magnitude at their effect is essential for achieving the high yield levels.

Source : AICRP for Dryland Agriculture, Hyderabad.



# ELECTRET AND ATMOSPHERIC ELECTRICITY

To day we are living in an age of Science. Science serves the humanity and improves the civilization of mankind. Science serves them through electricity. It is needless to stress the importance of electricity in everyday life. To day we are paralysed due to power cut. Power cut is the talk of the day. We are not able to imagine fully the consequences of power cut. This is the time to think of alternative source of power. If we study nature with great care it will indicate new ways for progress.

Atmospheric electricity is not utilized so far for running of low power motors which can be used for specific purposes. Electret is a new material which finds use in slot-effect electret motor and also used in a variety of ways. We shall see some of the properties and uses of this new material in harnessing the atmospheric electricity.

## ELECTRET.

An "Electret" may be defined as a permanently electrically polarized substance which exhibits an electric field adjacent to its free surface. The field is undiminished for years together just like magnetism exhibited by permanent magnets for many years. Space charge polarization is the working principle of electrets.

It was found by Eguchi that a mixture of bees wax and resin exhibits a permanent polarization if it is subjected to an electric field in the molten state and then hardened (freeze) in the field. Specimens of

material exhibiting this phenomenon are called Electrets, which possess a permanent dipole moment.

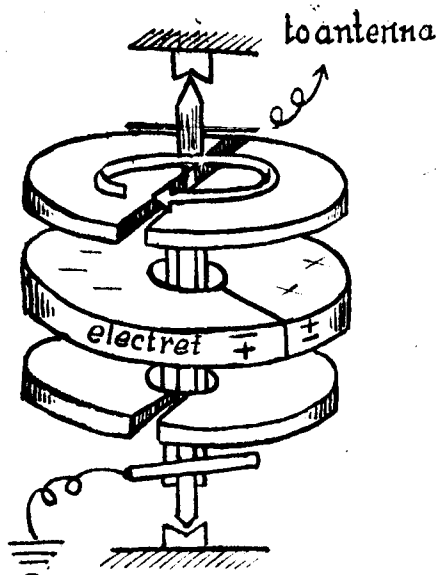
Thiru Eguchi was the first man to prepare an electret in the year 1920. He prepared it by melting a mixture of equal percentage in volume of carnauba wax and resin and cooled the melt under a steady D.C. field.

A. R. RAMA RAJU,  
M.Sc., D.S.S.,  
F.I.C.S.

More precisely, the electret is prepared out of a mixture of carnauba wax 45 per cent, colophonium 45 per cent and bees wax 10 per cent respectively. The pulverized mixture was melted and heated for 1.5 hours at 120 degree to 125 degree C. This melt was allowed to solidify in D.C. field of 7,900 V/cm. The surface charge density of the electret is of the order of  $2 \times 10^{-6}$  Asec/m.

## ELECTRET AND MAGNET.

When a magnet is cut between two poles it yields two separate magnets. Similarly when an electret is cut between two poles it yields two separate and complete electrets. Electrets are representing the reverse of the principle of dynamo. Further electrets are obtained by freezing current electricity in solid substances. But the dynamo is a device to derive current electricity from solid substances by making



A. Electret motor run by atmospheric electric field.

use of the mechanical energy of rotation. If we apply external electric field to dielectrics or insulators the alignment of electronic dipoles or polarization is observed. In many respects paramagnetism (viz. alignment of electronic magnetic moment parallel to an external applied magnetic field) is exactly similar to the above phenomenon of polarization. So it is evident that an electret is nothing but an electrical analogue of a magnet.

## TWO TYPES OF CHARGES.

During the process of preparation of an electret, two kinds of charges can appear on the electret. If opposite charges are developed it is called hetero-charges and charges of the same type is called homo-charges. Humidity plays a vital role in the life of an electret.

## ATMOSPHERIC ELECTRICITY AND MOTOR.

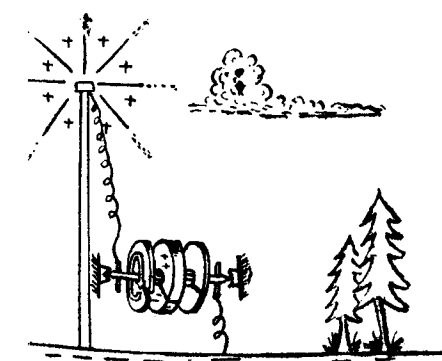
We know about the atmospheric electricity and the field due to its existence on the surface of the earth. It is known as atmospheric electric field or earth electric field. The average intensity of the above field is of the order of 120 V/m during normal periods and increases during electric storm. This electric field will be useful for operating many electrical instruments. By making use of suitable earth-field antenna of few metres high it is possible to get a voltage of 1,000 Volts or more between the tip of the antenna and the earth.

The important feature of this field is that it gives high voltage with very feeble current. Therefore electric motors operating at a high voltage with feeble current can be run by this type of electricity. So extra high impedance motors can be run very effectively using this atmospheric electric field. The impedance should be of the order of  $10^8$  ohms to  $10^9$  ohms. The current produced using earth-field antenna with alpha-source collectors is of the order of fractions of a microampere and with sharp-point collectors is of the order of few milliamperes.

The usual electromagnetic motors require very high currents for their operation. So now-a-days it is possible to develop Electrostatic motors with electrets which are capable of operating from the earth electric field by making use of special type of antennas mentioned earlier.

## SLOT-EFFECT ELECTRET MOTOR.

This type of motor requires 100 volts at 5-10-8 ampere for its operation. This motor essentially consists of a stationary disc electret. Figure No. 1 gives a clear picture of the motor. The above disc consists of two oppositely polarized half-discs. The electret is fixed between two slotted disc-shaped rotor electrodes. These electrodes are made of aluminium foil glued on two thin mica discs. The rotor electrodes are fixed to a axle. The two commutator are arranged one at each end of the axle. There is a connection between rotor and commutator. The rotor assembly with two electrodes and the axle weighs 4 grams. The two brushes are touching the two commutators. The brushes are made of aluminium foil strips 0.5 mm wide. The diameter of the electret and rotor electrodes is 7.5 cm. The thickness of the electret is 1.3 cm. This motor is designed



Operation of slot antenna installation.

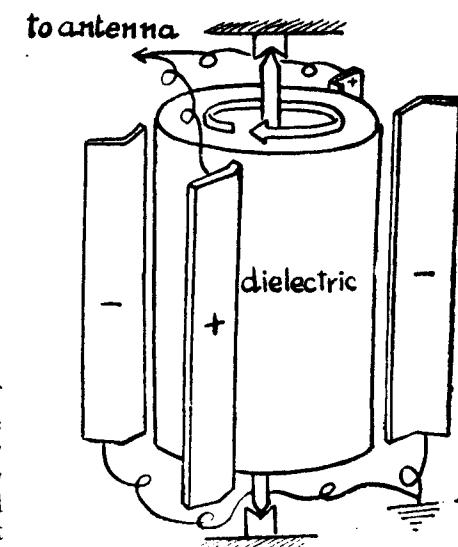
specially for a very feeble power. The axle is supported by jewel bearings.

Method of installation of an electric motor with antenna is shown in Figure No. 2. An earth field antenna is installed—Antenna consisting of a 7 metre wooden pole carrying an alpha source in a brass capsule at its tip. Antenna is installed far from high buildings and trees. This antenna during the maiden attempt produced a voltage of 500 V and a current of  $10^{-7}$  ampere. The electric motor ran at a rate of 60 rotations per minute. The same antenna when installed on a 11-storey building (West Virginia University Engineering Buildings) it produced several thousand volts and a current of about one microampere. The interaction between the fields of motor and electric is responsible for the rotation of the rotor. The motor ran at a rate of several hundred rotations per minute.

Efforts are being taken to use the earth electric field to operate metres of higher and appreciable power. Of all these types of motors, Corona type motors may be ideal for practical use. Corona motor is described here.

This type of motor consists of a cylindrical rotor 10 cm in diameter and 10 cm. long. This rotor is surrounded by 20 stationary knife like structures. These are brass electrodes, each two adjacent of them being of opposite polarity. The hollow rotor has an aluminium foil as lining inside. This arrangement aids the corona discharge from the brass electrodes into the rotor. The rotor is supported by a steel axle which in turn is supported by ballbearings. The assembly of rotor with axle weighs about 300 grams. Schematic diagram of Corona motor is given in Figure No. 3 with four electrodes only. The maximum power output with this type of motor is 70 Watts at about 10,000 rotations per minute. This motor will operate with a voltage of 4000 Volts at 10 ampere current.

So it is possible to operate electric motors from the earth electric field. If novel types of antenna are available it is possible to develop motors with higher powers. The antenna must be designed in such a special way as to produce large currents. This



Corona motor run by earth electric field.

may be possible with multiple collectors or single collector of fairly big dimensions.

## OTHER APPLICATIONS OF ELECTRETS

Electrets are used in a variety of ways and instruments. It is used in electrophotography. Electrophotography is a phenomenon which is similar to the magnetic recording of sound. The principle of the method is that a photoelectret retains its polarization if it is in total darkness, but this polarization vanishes under illumination. This process needs no developing and fixing liquids.

Electrets are also used in electrostatic recording, thermoplastic recording and image projection system. In computers technology electrets are used as electrostatic memory devices and in industries electrostatic air filters made out of electrets are used. Electret will also form an ideal substitute for crystals in radio, television, transistor and a host of other electronic equipment. More and more efforts and researches are in the way to explore other possible use electrets for the service of humanity. Basic studies regarding the novel ways of formation of electrets and their various properties are also in progress in different research laboratories of the world. Humidity has specific bearing on the property of electrets. We hope to get many more facts about the behaviour of electrets and other new applications in the service of man in the near future.

# ECONOMIC SURVEY OF INDIA

The Economic Survey for 1972-73, presented to Parliament by the Finance Minister Thiru Y.B. Chavan, refers to considerable strains which the Indian economy had to go through partly as a result of the spillover of the efforts of imbalance between aggregate demand and supply in 1971-72 and partly as a result of the continued sluggishness of commodity production in 1972-73.

India's national income, which had increased by 4.6 per cent in 1970-71, is estimated to rise by 1.5 to 2.0 per cent in 1971-72 and the Survey's prognosis for 1972-73 is that the rate of increase in national income in that year should be about the same as in 1971-72.

Agricultural production which had increased by 6.7 per cent in 1969-70 and 7.3 per cent in 1970-71, declined by 1.7 per cent in 1971-72 and on present indications, is expected to register some further decline in 1972-73.

With regard to industrial production the survey observes that the deceleration in the rate of growth—from 7.5 per cent in 1969 to 3.1 per cent in 1970—was reversed in 1972. The index of industrial production in the first eight months of 1972 shows an increase of 7.4 per cent over the level reached in January—August 1971. A significant aspect of industrial performance in 1972 was the improvement in the capacity utilisation. The industrial relations showed some improvement as judged by the number of man-days lost through industrial disputes.

The Survey states that the "Price situation remains a source of continuing concern and anxiety". Despite the fact that the tax revenues have turned out to be more buoyant than what was originally anticipated and Central Government's net market borrowing touched an all-time high of Rs. 478 crores, the survey cautions that the actual outturn for the Centre in 1972-73 may reveal a deficit larger than the budgetary provision of Rs. 252 crores.

The Survey also states that the imperative need of reversing the

recent trend in the decline in the ratio of public saving to national income.

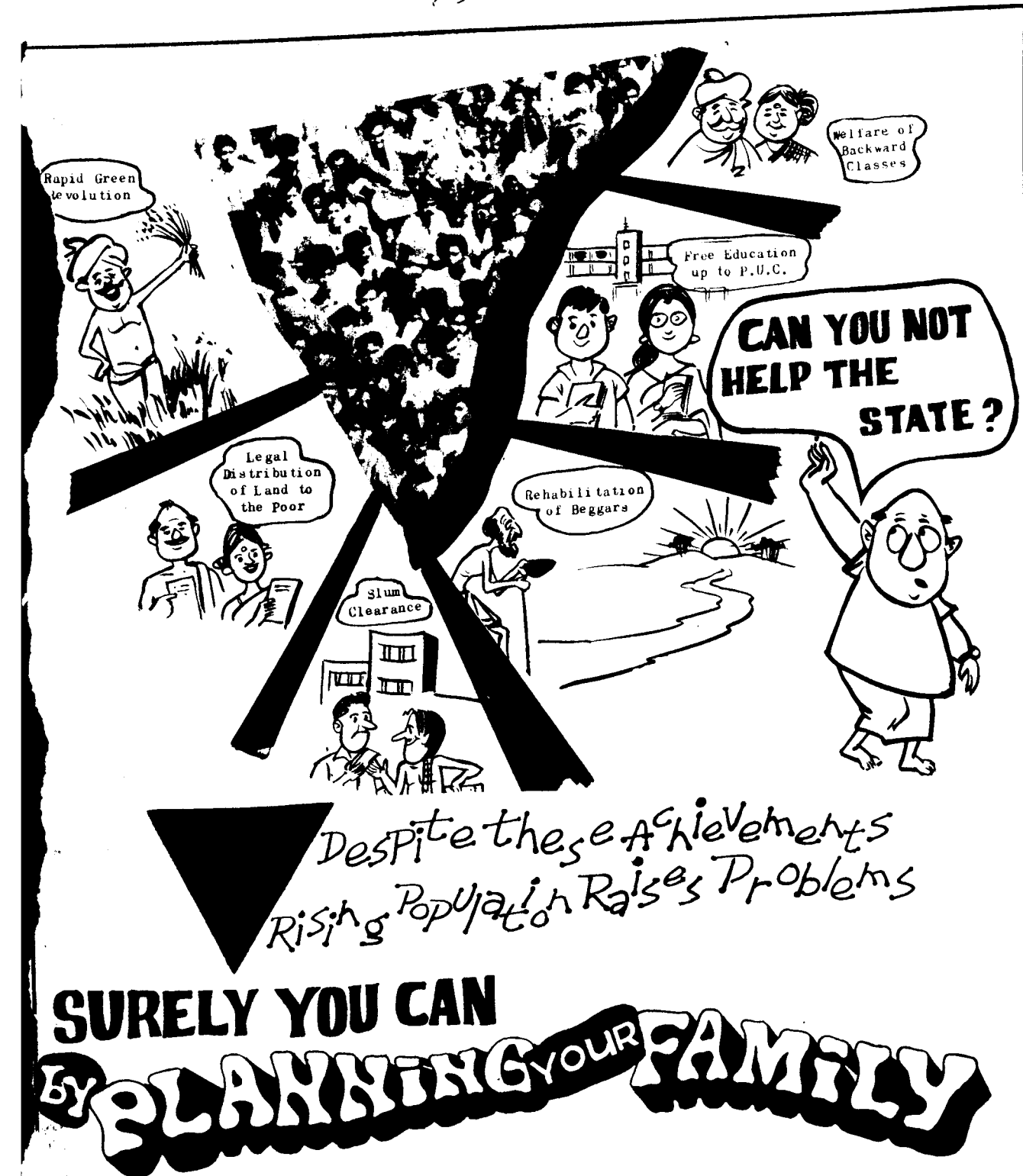
The Survey traces the recent developments in credit policy and states that a major task of the credit policy was to siphon off excess liquidity of the banking system for the public sector and to maintain the stress on credit restraint consistent with the need of meeting the genuine requirements of priority and neglected sectors.

The Survey mentions that India's external payment position which had shown a remarkable improvement in 1971-72 has been under pressure in the current year; during the first ten months of 1972-73, foreign exchange reserves registered a decline of Rs. 59.8 crores.

The Survey also deals with the crises in the international monetary system and calls attention to the active part that India is playing in the deliberations of the committee of twenty constituted by the IMF. In order to attain the target of a 7 per cent annual increase in exports, the Survey calls for much greater efforts to expand and diversify exports than undertaken in the past, particularly in the context of the planned decline in net external assistance.

On the assumption that 1973-74 will be a normal year for agriculture, the Survey anticipates for the economy an overall growth rate of more than 5 per cent.

Discussing areas in which action is called for in 1973-74, the Survey calls for speedy translation of sectoral outlays of the Fifth Plan into programmes and projects and initiation of reforms to broaden the tax base and improve the efficiency of public sector enterprises. The Survey also refers to the need to streamline the operation of various administrative controls. It stresses the need for curbing the demand for luxury goods through licensing and other policy weapons so as to avoid wasteful use of available savings and foreign exchange. The Survey also calls for a far more intensive programme of family planning with a view to raising the rate of saving and the growth of the economy.



DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

# Tamil Arasu

STATE ED  
173  
JUNE 1973

JUNE 1973

40Ps.



TAMIL ARASU

## Make Sure!

**BUY TAMILNADU  
RAFFLE TICKETS  
YOU MAY WIN**

**First Prize:**

**RS. 1,00,000**

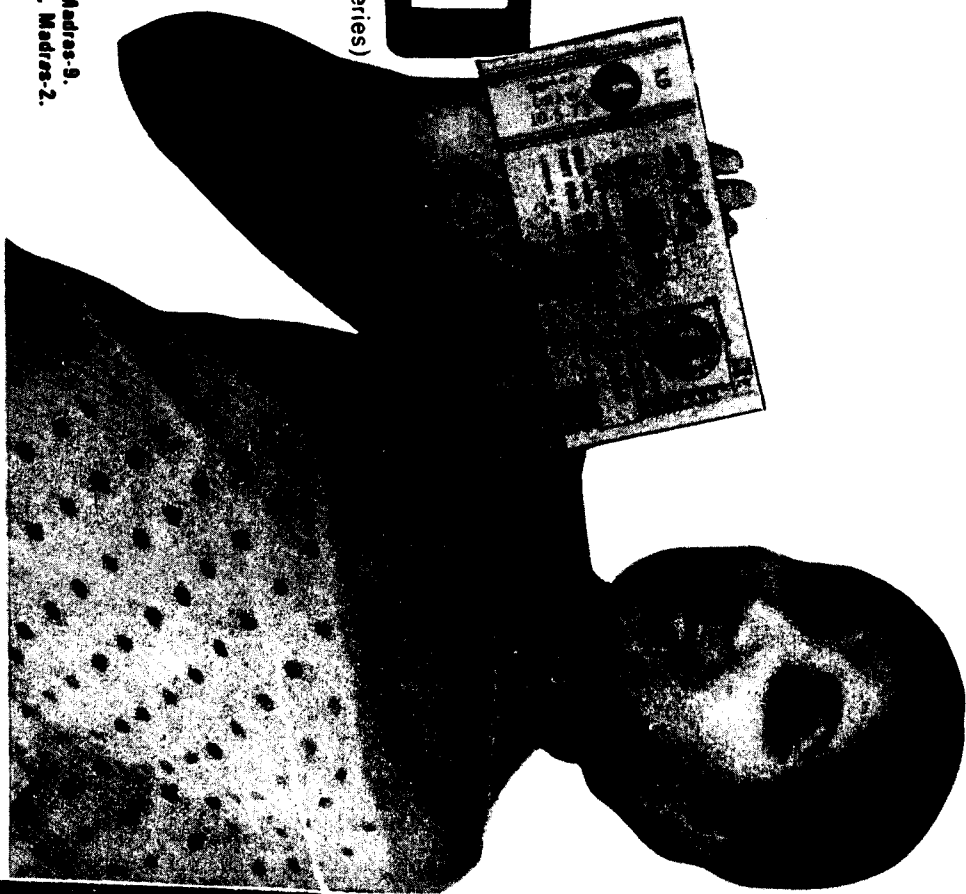
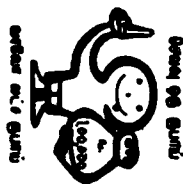
(For each series)

Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

**55th DRAW DATE  
10-5-1973**

**Cost Per Ticket Re. 1/- only.**

Issued by Director of Information & Public Relations, Government of Tamil Nadu, Madras-3.  
All Correspondence should be addressed only to the Director of Raffle, Tamil Nadu, Madras-2.  
Subject to issue of 2 Series

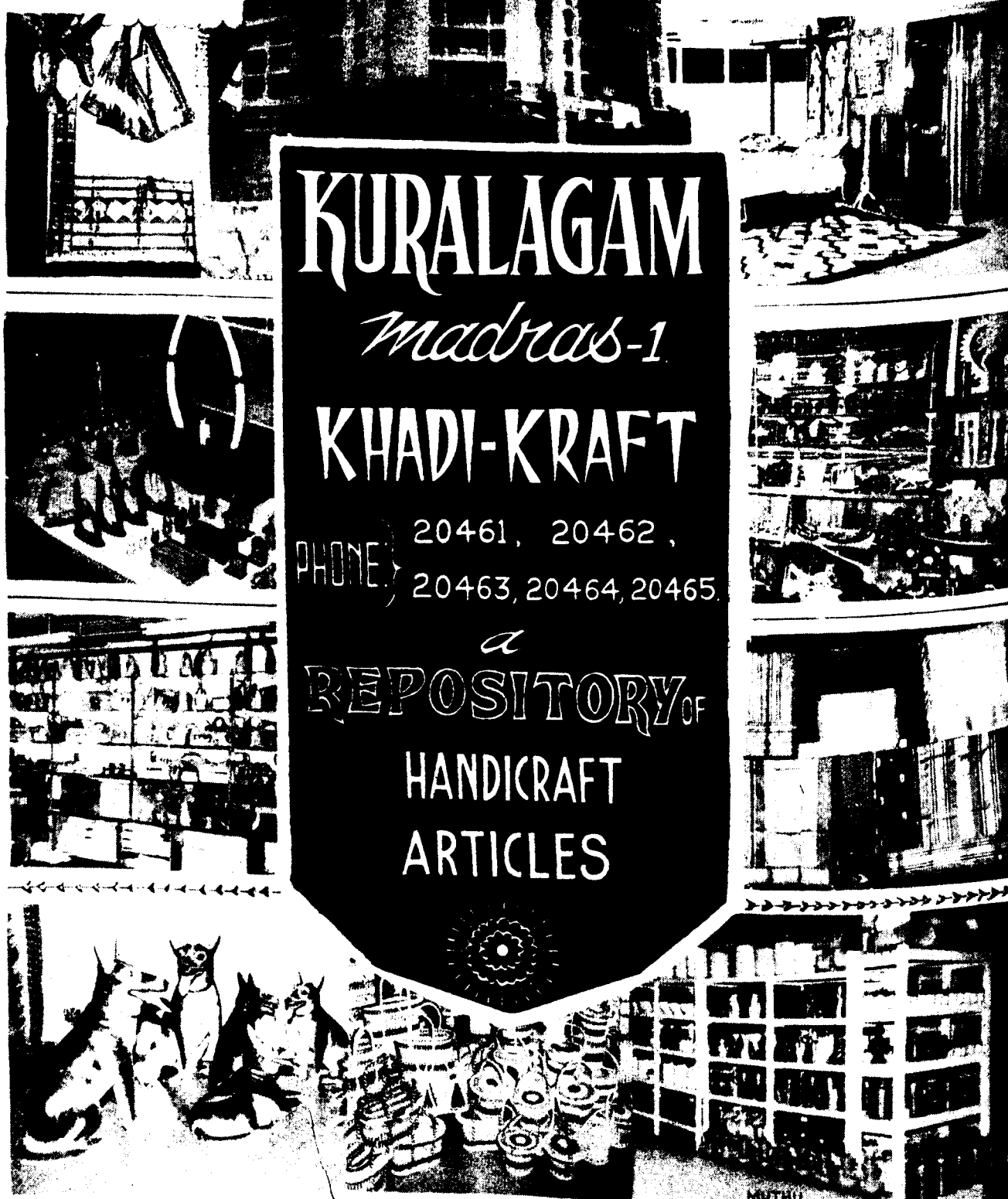


Registered No. M. 8676 — A



*All your Needs*

*Are Available Here*



**KURALAGAM**  
*Madras-1*  
**KHADI-KRAFT**  
PHONE 20461, 20462,  
20463, 20464, 20465  
*a*  
**REPOSITORY OF**  
**HANDICRAFT**  
**ARTICLES**

# Tamil Arasu

Vol. III

JUNE 1973

Issue 14

## CONTENTS

|                                                     | PAGES |
|-----------------------------------------------------|-------|
| Eye-Camp Campaign completes one year ..             | 4-11  |
| Industrial growth in Tamil Nadu ..                  | 14-18 |
| Tamil Nadu Education Budget crosses Rs. 100 crores. | 35-36 |
| Comprehensive Health Care Service in Tamil Nadu.    | 37-39 |
| Homeopathy an answer to allergy diseases? ..        | 41-42 |
| Deep into the economic development of Tamil Nadu.   | 48-50 |
| Approach to improve wetland pulses cultivation.     | 51    |



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 enviable image of lacking in everything but the spirit of dedicated service and indomitable courage against heavy odds.

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.

## 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.)

## 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 collec-  
tions 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 con-  
sisting 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 inaugura-  
tion, 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  
day itself. The latter sum  
included in it the contribution of  
Rs. 2,02,049 by the temples in the  
State. Among the notable contri-  
butors 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. Venkata-  
swamy, Vice-Principal, Madurai  
Medical College, Madurai. Both  
are noted specialists in their profes-  
sion in Tamil Nadu.

Each Mobile Unit consist, apart  
from the head surgeon, of 4 Assis-  
tant 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 Dharma-  
puri; the Mobile Unit three is  
to camp in Thanjavur, Tiruchirap-  
alli 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 convey-  
ances 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 supervi-  
sion 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 Tiruchi-  
rappalli district where as many as  
1,218 operations were done in a  
single day. This is a creditable achie-  
vement to-date in the annals of  
Medical History and this record was  
possibly created only with the self-  
less, 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 conti-  
nuous 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 :-

# • 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)                                     |
| A. Achievements made by the three units which are under the control of Dr. Venkataswamy. |                      |                      |                                                   |                           |                   |                        |                                         |
| 1 Thiruvavarur .. ..                                                                     | 2nd June 1972 ..     | 10th June 1972 ..    | 15,013                                            | 2,035                     | 1,678             | 120                    | 1,16,630                                |
|                                                                                          | 24th June 1972 ..    | 10th July 1972 ..    |                                                   |                           |                   |                        |                                         |
| 2 Kumarapalayam .. ..                                                                    | 22nd July 1972 ..    | 31st July 1972 ..    | 5,048                                             | 1,051                     | 1,618             | 24                     | 72,918                                  |
| 3 Gobichettipalayam .. ..                                                                | 15th July 1972 ..    | 7th August 197 ..    | 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. |                                                   |                           |                   |                        |                                         |
| 11 Mayavaram .. ..                                                                       | 19th September 1972. | 28th September 1972. | 3,576                                             | 1,770                     | 151               | 63                     | 1,03,860                                |
| 12 Podinaickanoor .. ..                                                                  | 23rd September 1972. | 2nd October 1972 ..  | 8,317                                             | 848                       | 512               | 54                     | 51,174                                  |
| 13 Mettur .. ..                                                                          | 30th September 1972. | 8th October 1972 ..  | 6,626                                             | 940                       | 1,134             | ..                     | 1,08,000                                |
| 14 Velur-Paramathi .. ..                                                                 | 21st October 1972.   | 6th November 1972.   | 4,165                                             | 768                       | 502               | ..                     | 36,000                                  |
| 15 Pudukottai .. ..                                                                      | 28th November 1972.  | 7th December 1972.   | 4,778                                             | 548                       | 802               | ..                     | 36,000                                  |
| 16 Pollachi .. ..                                                                        | 13th December 1972.  | 19th December 1972.  | 2,428                                             | 374                       | 369               | 12                     | 28,804                                  |
| 17 Paramakudi .. ..                                                                      | 21st December 1972.  | 30th December 1972.  | 4,387                                             | 534                       | 879               | ..                     | 28,80                                   |

|                          |                     |                      |        |       |       |    |        |
|--------------------------|---------------------|----------------------|--------|-------|-------|----|--------|
| 8 Jilampatti .. ..       | 23rd December 1972. | 3rd January 1973 ..  | 11,293 | 1,229 | 885   | 14 | 36,000 |
| 9 Karur .. ..            | 26th December 1972. | 4th January 1973 ..  | 5,324  | 592   | 176   | 42 | 18,000 |
| 10 Udumalpettai .. ..    | 28th December 1972. | Do.                  | 1,250  | 265   | 551   | 16 | 28,800 |
| 11 Kulithurai .. ..      | Do.                 | Do.                  | 379    | 54    | 227   | 3  | 7,200  |
| 12 Virudhunagar .. ..    | Do.                 | 6th January 1973 ..  | 2,907  | 412   | 423   | 16 | 18,000 |
| 13 Sivakasi .. ..        | 30th December 1972. | 8th January 1973 ..  | 4,157  | 351   | 390   | 11 | 18,000 |
| 14 Erode .. ..           | 2nd January 1973 .. | 9th January 1973 ..  | 5,849  | 634   | 307   | .. | 28,800 |
| 15 Thirukarangudi .. ..  | 4th January 1973 .. | 10th January 1973 .. | 3,843  | 432   | 243   | 12 | 25,200 |
| 16 Mettur .. ..          | 19th January 1973   | 28th January 1973..  | 2,465  | 457   | 477   | 31 | 18,000 |
| 17 Tuticorin .. ..       | 20th January 1973.. | 29th January 1973..  | 1,325  | 310   | 464   | 2  | 25,200 |
| 18 Musiri .. ..          | 26th January 1973.. | 4th February 1973 .. | 4,625  | 615   | 1,859 | .. | 18,000 |
| 19 Sankarankoil .. ..    | 27th January 1973.. | 5th February 1973 .. | 5,236  | 507   | 419   | 13 | 25,200 |
| 20 Dindigul .. ..        | 9th February 1973   | 16th February 1973   | 5,520  | 562   | 533   | 8  | 36,000 |
| 21 Kutralam .. ..        | 12th February 1973  | 19th February 1973   | 3,785  | 296   | 477   | .. | 25,200 |
| 22 Manapparai .. ..      | 24th February 1973  | 5th March 1973 ..    | 1,851  | 149   | 495   | 3  | 18,000 |
| 23 Mannargudi .. ..      | 14th March 1973 ..  | 23rd March 1973 ..   | 6,676  | 570   | 537   | 22 | 36,000 |
| 24 Athur .. ..           | 16th March 1973 ..  | 25th March 1973 ..   | 4,326  | 554   | 298   | 33 | 36,000 |
| 25 Ootacamund .. ..      | 17th March 1973 ..  | 26th March 1973 ..   | 1,292  | 51    | 381   | .. | 36,000 |
| 26 Coimbatore .. ..      | 24th September 1972 | 31st March 1973 ..   | 10,535 | 1,398 | 1,041 | .. | 31,000 |
| 27 Tiruchirappalli .. .. | 21st October 1972   | 31st March 1973 ..   | 2,175  | 386   | 87    | .. | 14,400 |
| 28 Vaigai Dam .. ..      | 6th April 1973 ..   | 18th April 1973 ..   | 1,606  | 160   | 480   | 7  | 27,000 |
| 29 Jayangondam .. ..     | 16th April 1973 ..  | 25th April 1973 ..   | 1,495  | 397   | 247   | 3  | 18,000 |
| 30 Aruppukkottai .. ..   | 16th April 1973 ..  | 25th April 1973 ..   | 3,141  | 274   | 151   | 10 | 18,000 |
| 31 Thaccalai .. ..       | 19th April 1973 ..  | 26th April 1973 ..   | 2,020  | 37    | 337   | .. | 5,040  |
| 32 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. |
|------------------------------------------------------------------------|--------------------|------------------|---------------------------------------------------|---------------------------|-------------------|------------------------|-----------------------------------------|
|                                                                        | From               | To               |                                                   |                           |                   |                        |                                         |
| (1)                                                                    | (2)                | (3)              | (4)                                               | (5)                       | (6)               | (7)                    | (8)<br>Rs.                              |
| 43 Cumbum .. ..                                                        | 23rd April 1973 .. | 3rd May 1973 ..  | 4,474                                             | 292                       | 446               | 11                     | 36,000                                  |
| 44 Thiruppur .. ..                                                     | 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 Patukkottai .. ..                                                   | 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 Gummidipoondi .. ..      | 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. |
|------------------------------------------------------------------------|-----------------------------------|---------------------|---------------------------------------------------|---------------------------|-------------------|------------------------|-----------------------------------------|
|                                                                        | From                              | To                  |                                                   |                           |                   |                        |                                         |
| (1)                                                                    | (2)                               | (3)                 | (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                       | 259               | ..                     | 18,000                                  |
| 90 Hosur                                                               | 14th May 1973 ..                  | 26th May 1973 ..    | 1,962                                             | 222                       | 765               | ..                     | 8,000                                   |
| 91 Madurandhakam                                                       | 21st May 1973 ..                  | 2nd June 1973 ..    | 1,446                                             | 299                       | ..                | ..                     | 1,000                                   |
| 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.                                    |

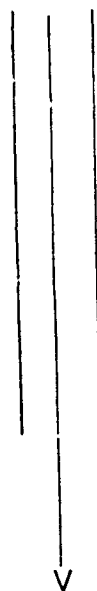
## BRIEF SYNOPSIS OF FREE EYE CAMP FOR ONE YEAR ENDING MAY 31st 1973.

|                                                                          |                  |
|--------------------------------------------------------------------------|------------------|
| 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) Sellampatti.<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



Prof. R. K. SIVANAPPAN,  
College of Agricultural  
Engineering, Tamil Nadu  
Agricultural University,  
Coimbatore.

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.

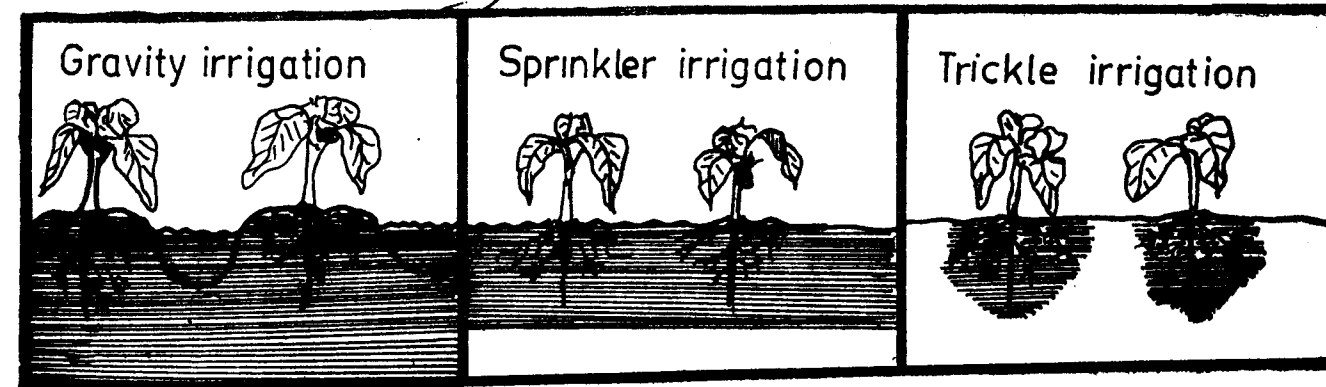
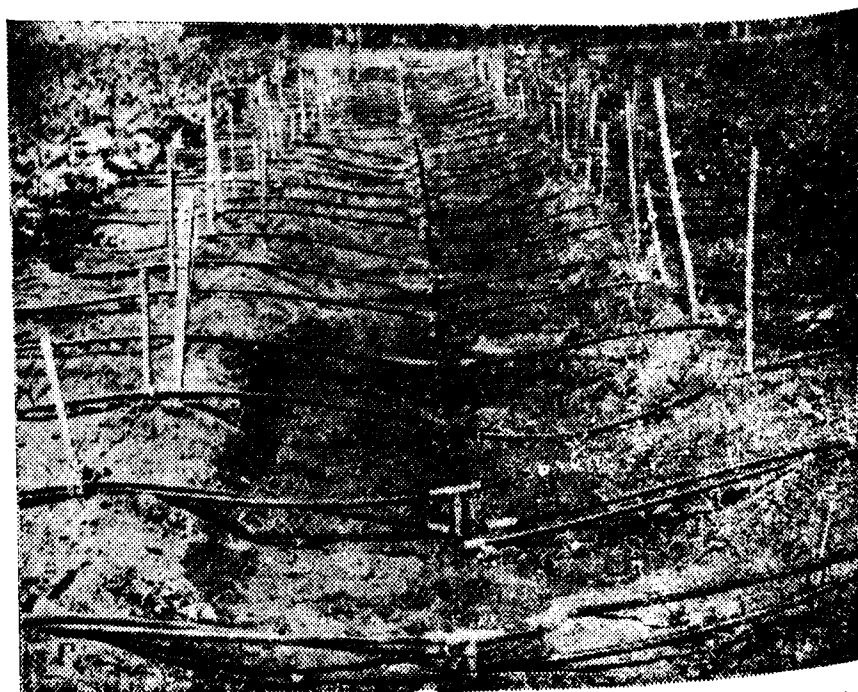


FIG.1. AREAS WATERED BY 3 METHODS OF IRRIGATION

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 evapo-transpiration 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 Petro-chemical 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 network 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 network 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.

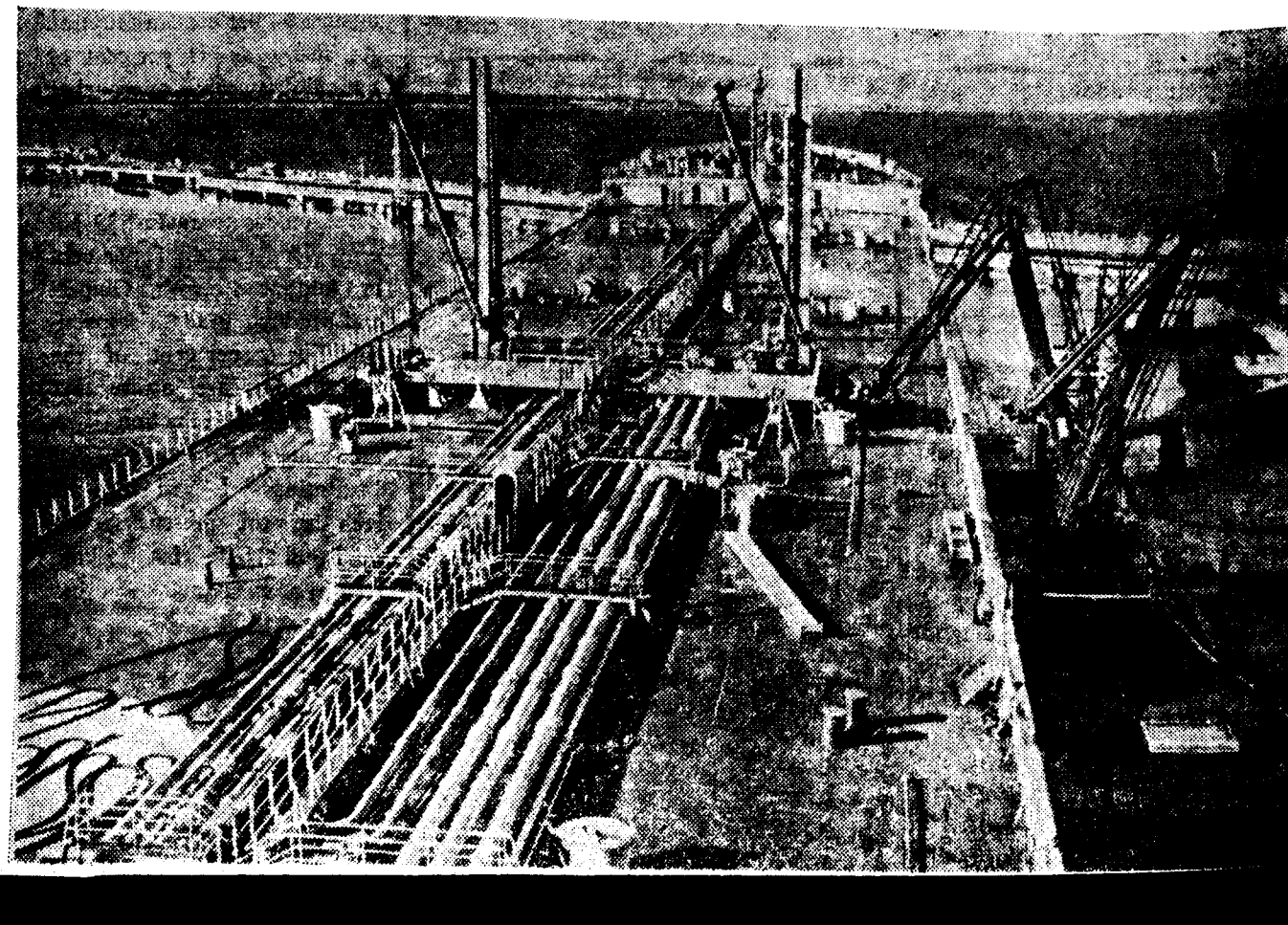
## Raw Materials

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. Intergral 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 Vechicles Factory, Avadi, Madras.
10. Ordnance Factory, Tiruchirappalli.
11. Indian Oil Corporation Limited, Madras.

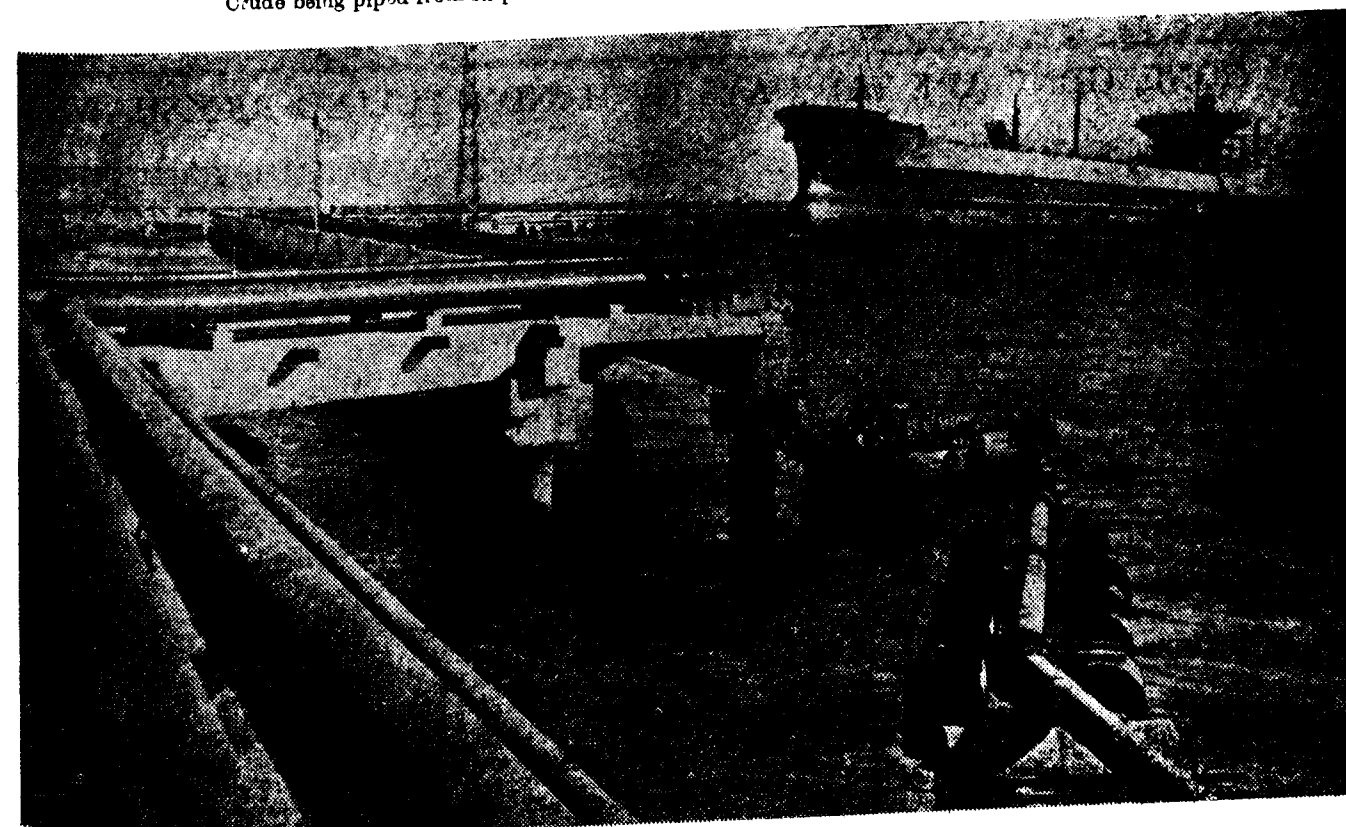
The Industrial undertakings in the Central Sector have been helpful in strengthening the regional economy and some units have expanded their activities considerably. The high pressure boiler plant at Tiruchirappalli has been steadily increasing its production and boilers of bigger capacities are being 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 difficulties. 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.

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                 |

Crude being piped from ship to shore makes Madras the first harbour to have this facility.



### 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. The 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.

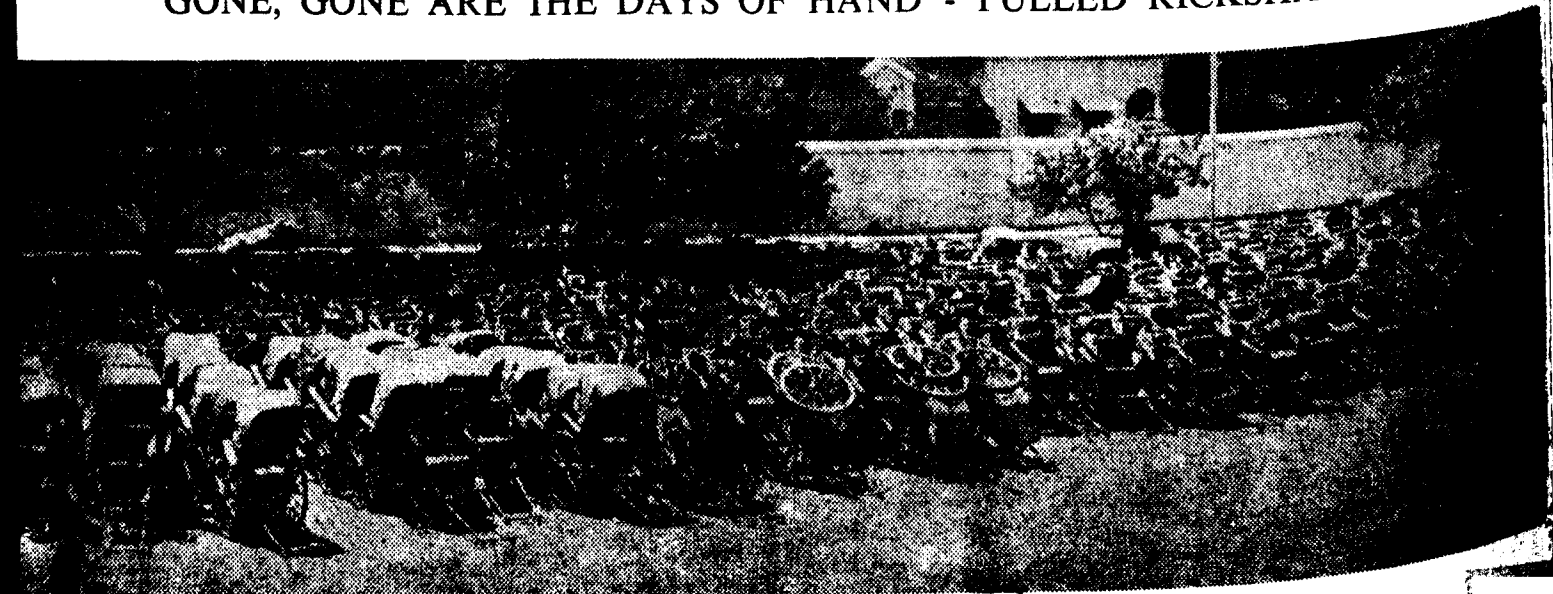
It is interesting to trace the history of Planning Administration in Tamil Nadu during the past century. The initial step towards tackling the problem of insanitation of towns commenced with the nomination of the Royal Sanitary Commission by British Parliament in 1859 recommending the appointment of 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 a 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 appointed Sanitary Inspectors to look after the roads, construction of houses, collection of revenues,

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.



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 the 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, Regio-

nal 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-

tively 3-6 lakh hectares and 4-00 lakh bales accounting for nearly 7-5 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 20 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 tract, but also is the best superior quality cotton among the arboreum varieties grown in the country. A yet superior cotton in arboreum strain K. 8, is to be released shortly.

An extra-long staple barbadense strain christened as "Sujata" spinning about 90 counts is being introduced in the State of Tamil Nadu. Trials are in progress to evolve a *barbadense* strain with shorter duration and higher ginning.

In recent years, a new wilt disease was found spreading on irrigated Cambodia crop in parts of Coimbatore district causing serious damage to the crop. Investigations revealed that the disease was caused by the fungus *Verticillium albo atrum*. Studies on the control of the disease are in progress and initial findings indicate that application of 0.1 per cent wet cerasan by soil drenching 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 Tambaraparani 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 crumpled 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 make 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 is 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 out-of-doors. 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 a 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 tempe-

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.

### 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. Beskrovsay, 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 notable event in Soviet Indology

V  
By  
A PLESHKOV



# ENTREPRENEURSHIP — OLD AND NEW CONCEPTS

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 Aitmatov, 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 toured the State of Madras extensively. In 1968, Samyon Rudin attended the Second International Conference—Seminar of Tamil studies, held in Madras.

The Leningrad scholar is well known in India, in Tamilnadu 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. Kodandharaman'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 Novelette" 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 Pudumai-pittan, B. C. Ramiah, K. B. Jagan-nadan and others. Still another collection from the "Modern Eastern Novelette" 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 *Senbiyan*. Under that name he is known to many people in Tamilnadu, 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.

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 passage of time and 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.

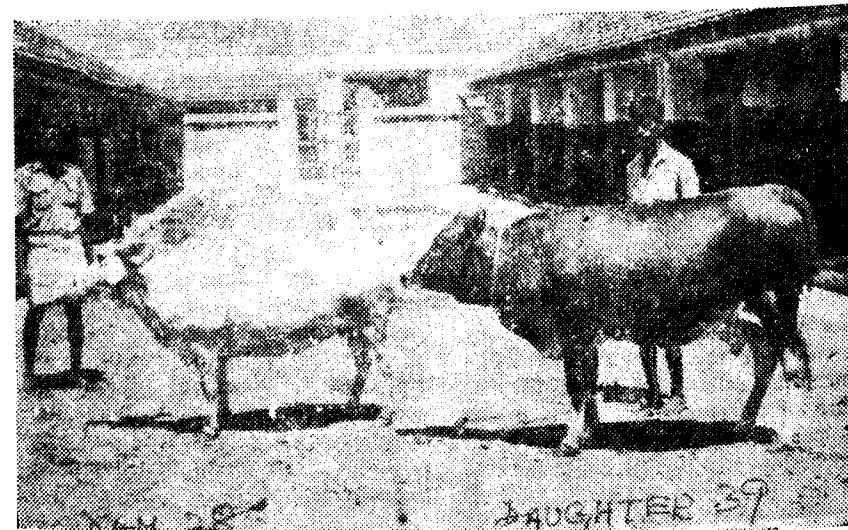
Thiru K. Rajaram, Minister for Tourism, Government of Tamil Nadu, while welcoming the Union Minister stressed the need for wide publicity for tourist potentialities in Tamil Nadu in foreign countries.

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. 29  
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 Inspector 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 Liasion, 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

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.

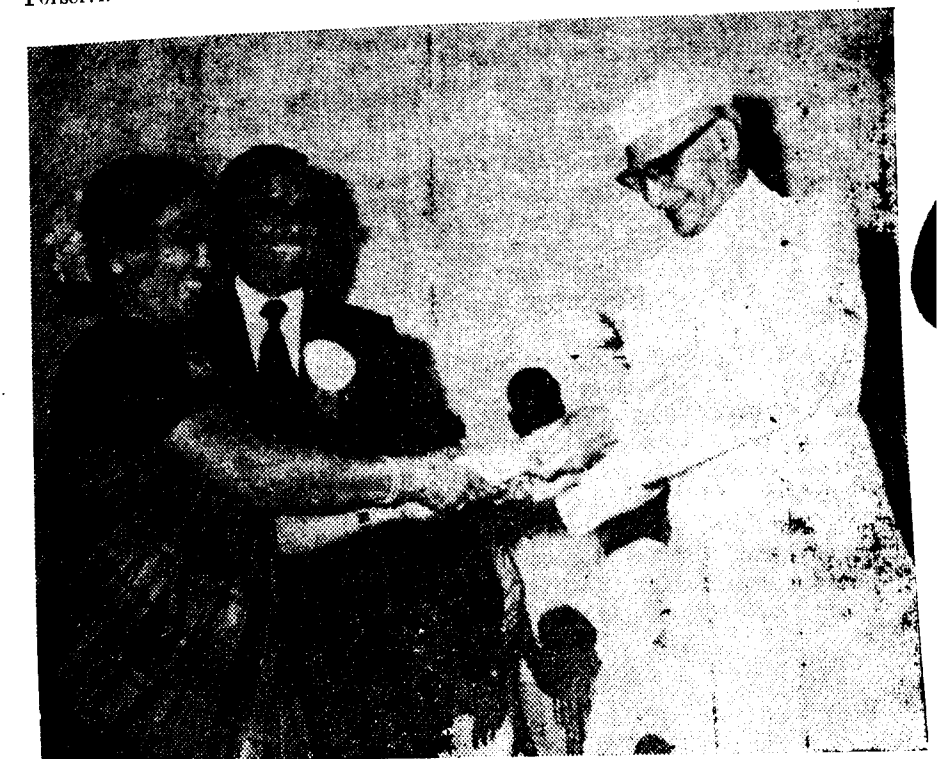
During the past few years, 24,500 Secondary Grade Teachers working in Higher Grade posts have been allowed Secondary Grade scales of pay by upgrading their posts into secondary grade ones. Orders for upgrading 5,000 more posts with effect from 2nd October 1973 have been issued.

## 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

The Governor Thiru K. K. Shih distributed the State Award to Elementary and High School Teachers in a function held at the World University Service Centre, Egmore, under the presidentship of Dr. V. R. Nedunchezhiyan, Minister for Education on 18-2-1973.

Picture shows the Governor distributing the prize to Thirumathi Ilamurugu Porselvi.



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.

Regular reading of  
Tamil Arasu is highly  
rewarding.

TAMIL ARASU  
(English)

Each copy 0.40 Ps.

ANNUAL SUBSCRIPTION Rs. 5

## ANATOMY OF RURAL ELECTRI- FICATION EXTENSION IN ALANGA- NALLUR 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 LT. 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- Katchai-patty 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

### ADMINISTRATION'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 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

**R. PARAMASIVAM, M.A.**

*Tamil Nadu Government  
Research Fellow (in Economics),*

St. Joseph's College,  
TIRUCHIRAPPALLI.

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

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 broadcasted 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  
Assistant Crop Specialist (Pulses),  
Regional Agricultural Research  
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 Thengumurahada 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.

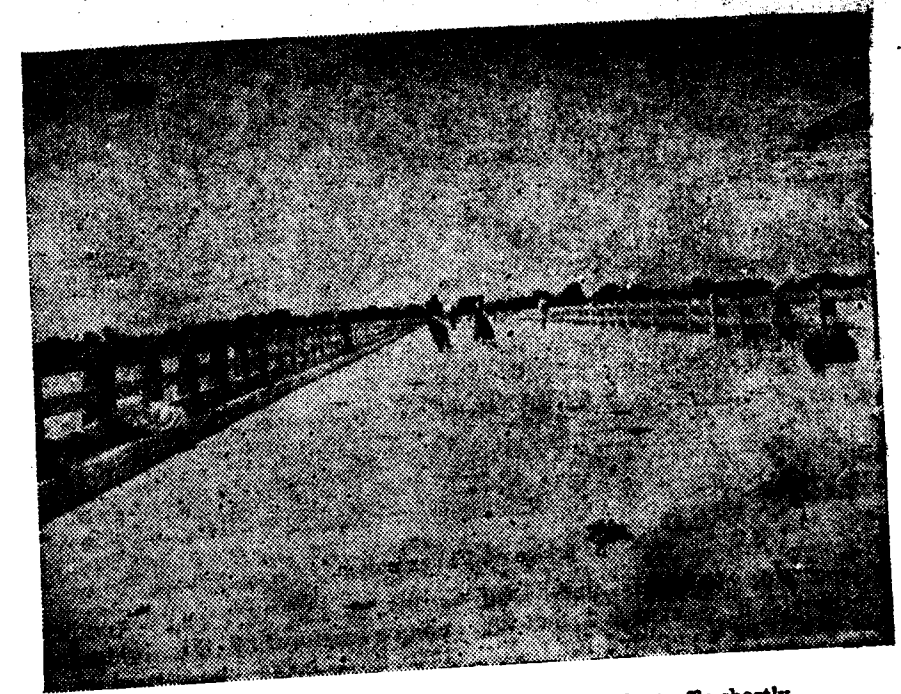
Six thousand tonnes of ammonium sulphate will be sold to the Nilgiris Co-operative Marketing Society Limited and the rest to private fertiliser manufacturing firms.

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.

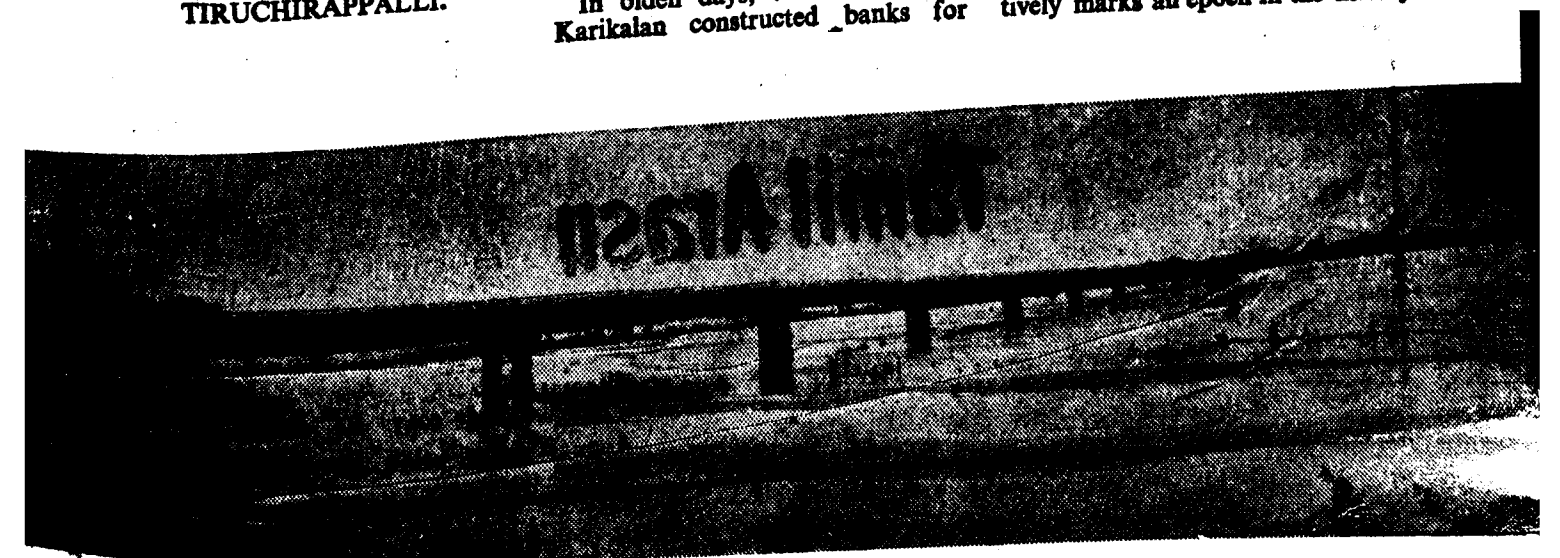
In olden days, the Chola King Karikalan constructed banks for

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.



Full length view of Thirumanur Bridge which is 3,765 feet long consisting of 23 main spans of 152 feet long each.



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. Colebrook 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.

Read

# Tamil Arasu

For accurate and authentic news of Tamil Nadu.

Single copy Re. 0.40.

Annual subscription Rs. 5.00.

## 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.

# 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 improve your 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.

# 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 change has arisen out of economic changes which have taken place

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

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

## 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.

**Seshasayee Paper and Boards Ltd.**  
Pallipalayam, Salem District, S. India



The Watermark of Quality





able 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.

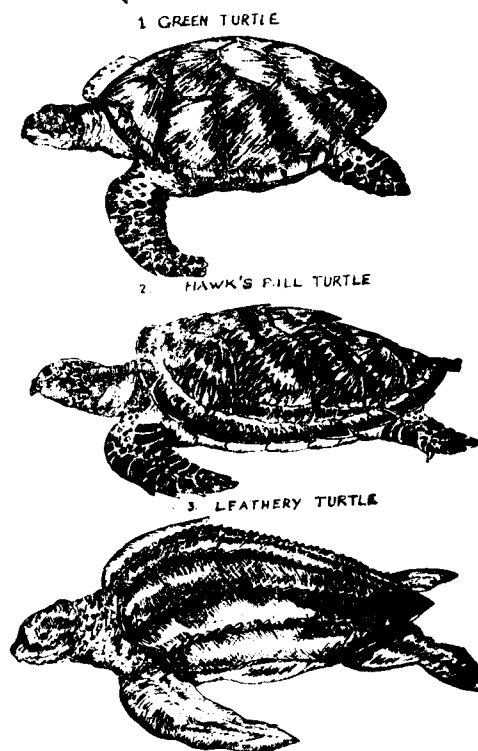
The prescribed fee for preferring an application is ten paise in the case of applications to the Electoral Registration Officer and Rupee one for appeals to the Chief Electoral Officer. The fee shall be remitted into the Treasury or the Reserve Bank of India or its agents under the head of account "L. 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 in human 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.

### Graceful 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

helplessness to escape when once it is caught. It has to be put on its back soon after the catch as otherwise the heavy carapace and other internal organs exert a fatal pressure on the animal's heart and lungs. It requires the efforts of several men to lift it.

### 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

TELEGRAP : " STATEINDCO "

**TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.**  
with its net work of well equipped Modern Workshops contribute substantially for the progress of the Industry and the Nation.  
The fields of activities at a glance.

**INDUSTRY**  
 • DESIGN AND MANUFACTURE OF DIES, JIGS AND FIXTURES • PRESSURE DIE CAST COMPONENTS • STEEL AND BRASS FORGED COMPONENTS • SUPER ENAMEL WIRE AND D.C.C. WIRE • STRUCTURAL FABRICATIONS • QUALITY C.I. CASTINGS • RADIAL AND PILLAR DRILLING MACHINES • GRADED QUARTZ POWDER • ELECTRICAL INSULATORS • SCIENTIFIC GLASS APPARATUS.

**AGRICULTURE.**  
● IMPROVED AGRICULTURAL IMPLEMENTS ● PLANT PROTECTION EQUIPMENTS ● TILLERS AND TRACTOR TRAILERS ● PUMPSETS ● SUGARCANE CRUSHERS ETC ● BRIDGE TYPE FILTER POINTS.

**UTILITY PRODUCTS**  
● STEEL AND WOODEN FURNITURE ● STEEL WINDOWS, VENTILATORS ETC ● HOSPITAL EQUIPMENTS ● BRASS OXIDISED DOOR FURNITURE ● LATCHES & LOCKS ● SANITARY WARE & CROCKERY ● STONEWARE PIPES ● LEATHER GOODS ●

**EXPORTS**  
● PLAIN FINISHED LEATHER IN DIFFERENT SHADES ● WET BLUE CHROME LEATHER ● STRUCTURAL AND TRANSMISSION TOWERS

### Enquiries Solicited

## THE MANAGING DIRECTOR

**TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.,**

**An Undertaking of the Government of Tamil Nadu**

26, WHITES ROAD, MADRAS-2

**"TANSI" Stands for Reliable Products  
at Reasonable Cost**

**After** 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 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 snail's pace. Already

our varieties of Indian and Hawke'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 90 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 6,000 nests of the green turtle were filed on some islands in Borneo and in Burma, the yearly haul of the turtle eggs is reported to be nearly 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 catch, 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

The Government expendi-

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.

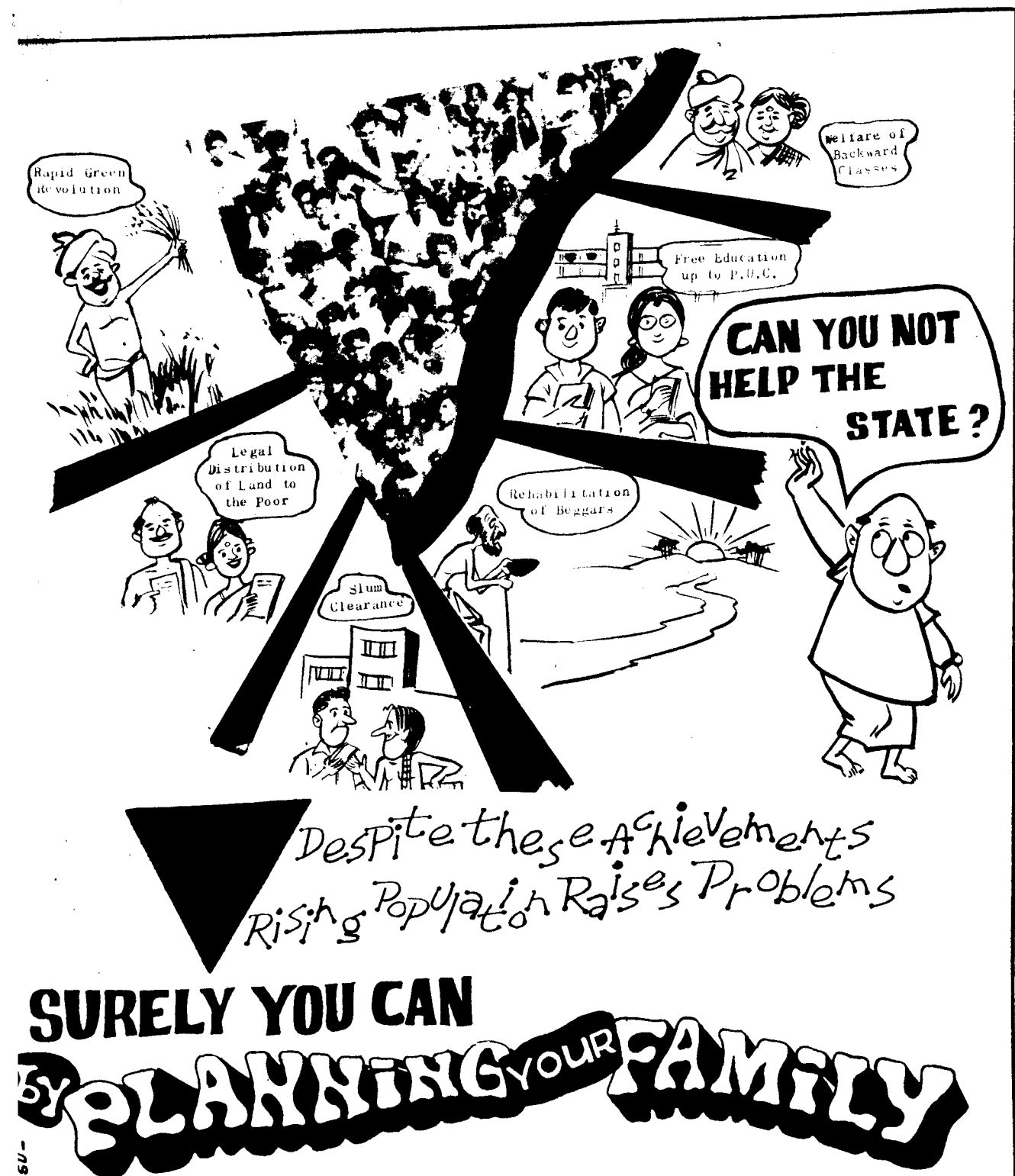
### Adulteration Must Be Reported

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 licensed 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 legislation 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 negligence, exposing the offenders. Their co-operation 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.



DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING



# Housewife's first choice...

## ...TAMILNADU RAFFLE TICKETS

366

First Prize: Rs.

# 1,00,000

(For each series)

Consolation Prizes to Preceding and  
Succeeding Prize Winning Numbers to  
First Prize & Second Prizes and  
many other attractive prizes.

56th DRAW DATE

## 12-6-73

Cost Per Ticket Re. 1/- only.

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

