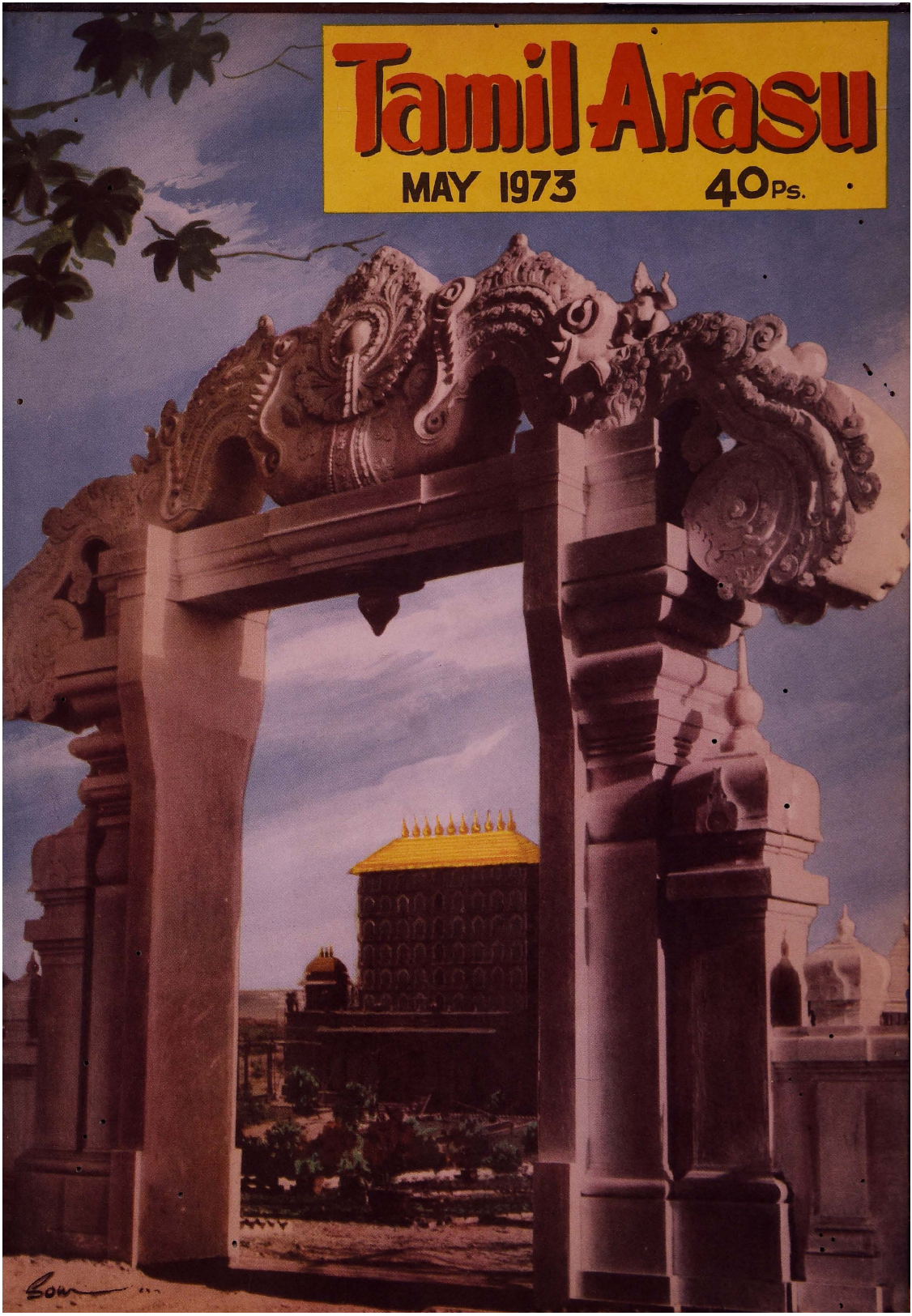
Tamil Arasu

MAY 1973 40Ps.



Tamil Arasu

Vol. III MAY 1973 Issue 13

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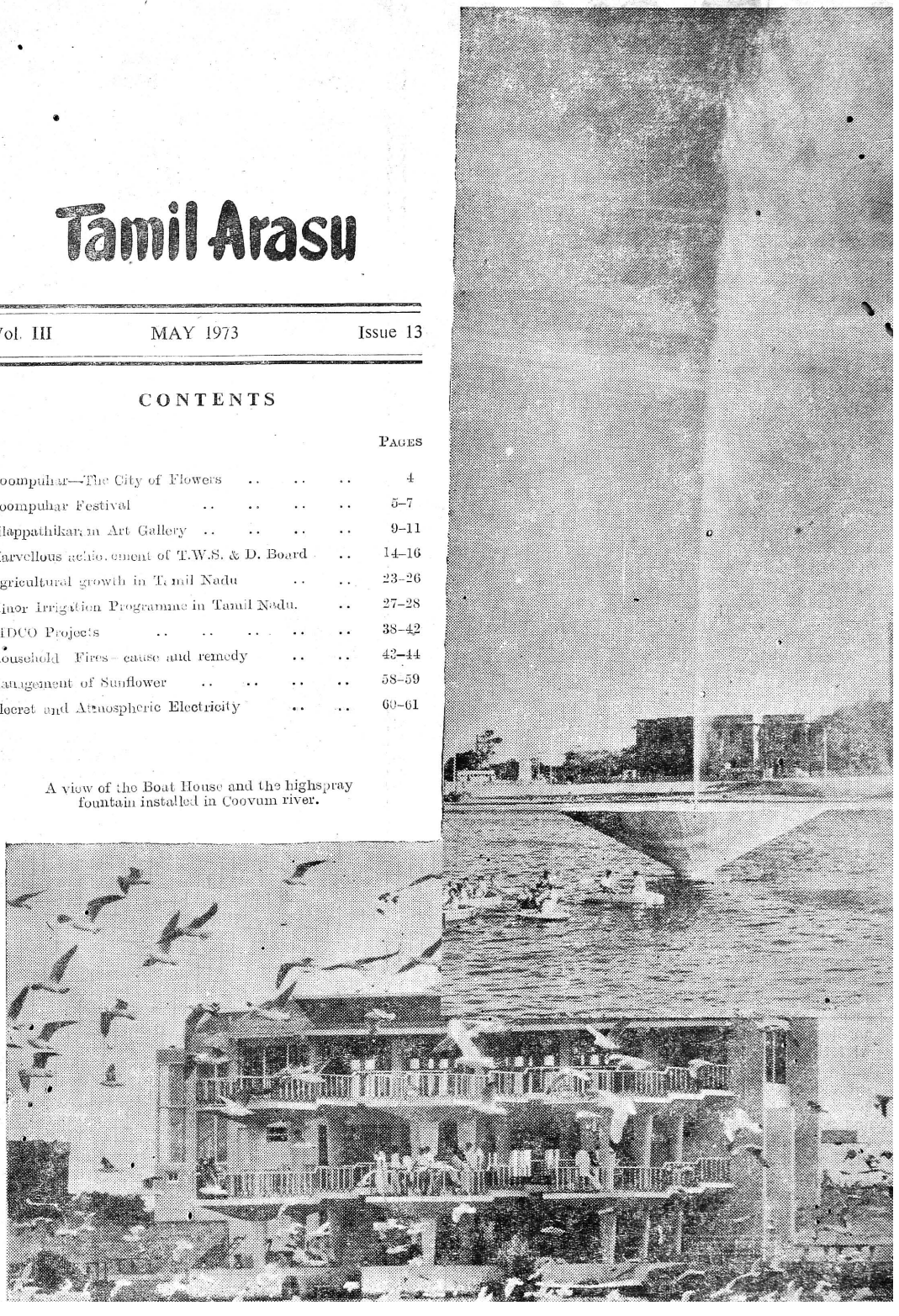


A view of the Boat House and the highspray fountain installed in Coovum river.

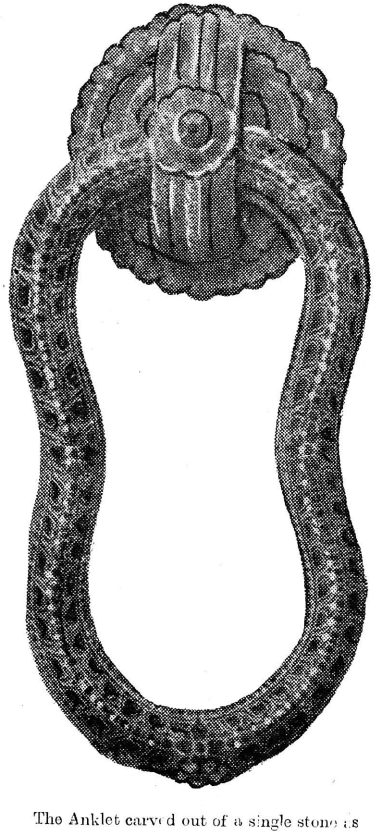
POOMPUHAR-THE CITY OF FLOWERS

DR.M.KARUNANIDHI

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 world of Tamil literature of nostalgic antiquity, drenched in nectar perennially sweet.

The beauteous 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 Pattinapakkam, Maruvoorpakkam 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 resplandent sight, the scene of active prosperity here.." Karikalan was a Chola Monarch of great renown who ruled from this Capital.



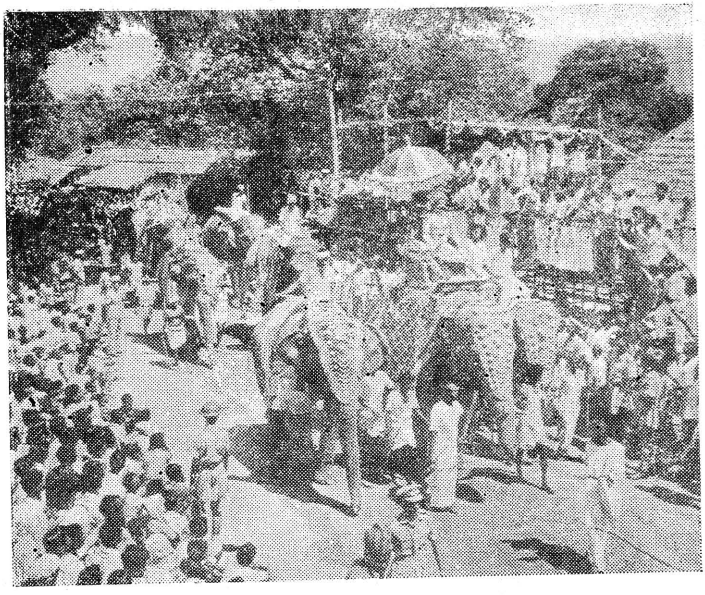
The Anklet carved out of a single stone as described in Silappathikaram.

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 thereafterwards 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 Pudhuvai (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 TamilHeritage. 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 Cauvery 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.

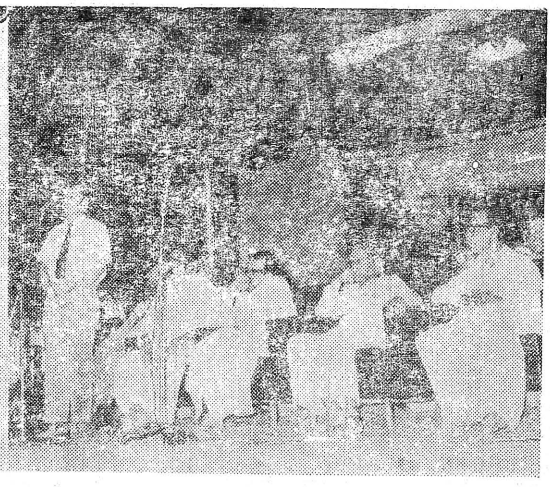
MILE-LONG PROCESSION

The Festival began on 17th April with a mile-long procession in which besides thousands of people in their multitdue, 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 magnificient 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 Poompuhar, 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.

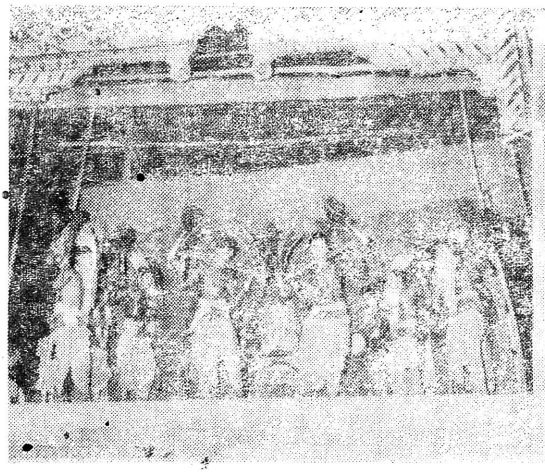
In the night Tirumathi Kamala and her drama troupe staged a dance performance on Silappathikaram and the Karikalan Nataka manram enacted a drama which was written by Dr. M. Karunanidhi, Chief Minister.

On the 18th Morning, there was a debate on Silapathikaram 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. Nedunchezhian, 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 Karagam dance.

The dance performance by Thiumathi 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, congradulated 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 Thiruvalargal Kavingar Karunanandam. Pulavar Ilangeeran and K. A. Nambiar, 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. Nedunchezhian. 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.

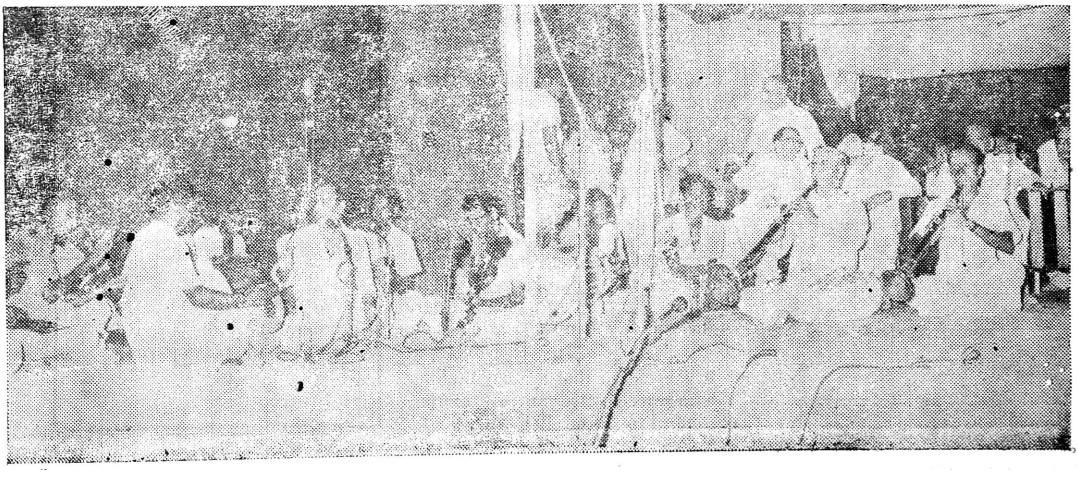
Other participants in the function were Thiruvalargal K. Anbazhagan, Minister for Public Health, K. A. P. Viswanatham, Kundrakudi Adigalar, Herbert Schulze, Consul-General of the German Democratic Republic, Burton of the British Deputy High Commission in Madras and H. Kopp of the Consulate-General of 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 Karagam display by the Special Armed Police, Avadi.

—R. N.

The Music concert by Chidambaram Jayaraman and his party.

The Nadhaswaram Music by Thiruvenkadu 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. Abhidhammavatara 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 sometime at Bhutamangala in the Chola rashtra, when Acchuta Vikkanta of Kalabrahkula was ruling the Chola country.

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

It is eveident 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.

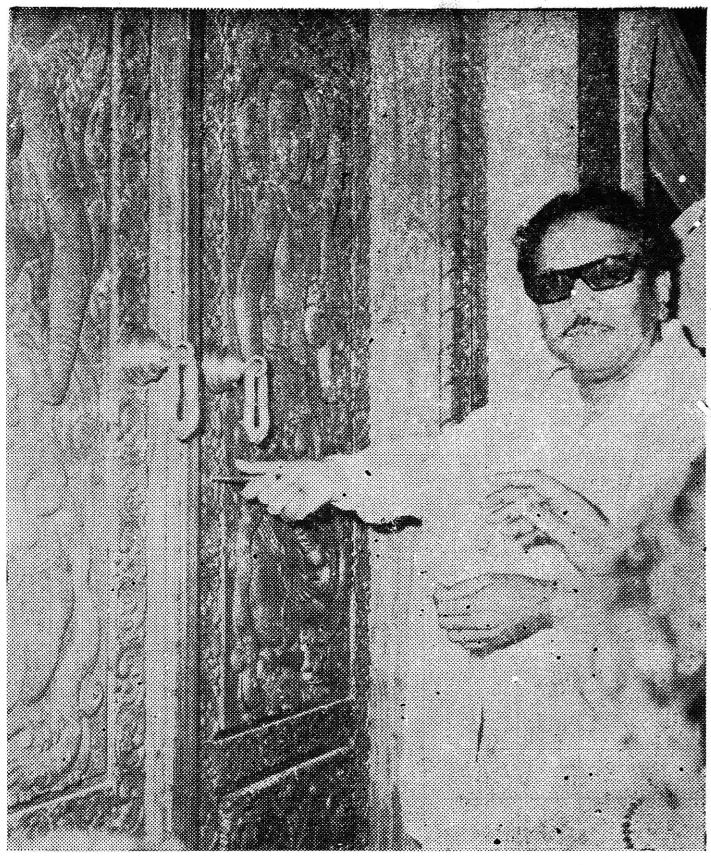
Buddhadatta's works indicate that Kaveripoompattinam was also a great centre of Prakrit learning.

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 entiquities. Mangaimadam, Vellaiyan Tiruppu, Manigramam, Pallavanisavaram and Vanagiri have so far been excavated.

THE GLORY THAT WAS POOMPUHAR UNFOLDED IN MARBLE AND GRANITE



With the turn of a long brass key, Dr. Kalaignar 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. Maruvoorpakkam and Pattinappakkam. The intervening space was used as a Market place, known as the Nalangadi. The lay-out 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 Maruvoorpakkam. 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 suzerainty up to the Himalayas, and flaped his flag of tiger on the Himalayas.

The 'Muthupandal' 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

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.

The Madhavi statue installed at the open space of the Art Gallary, is 9" 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.

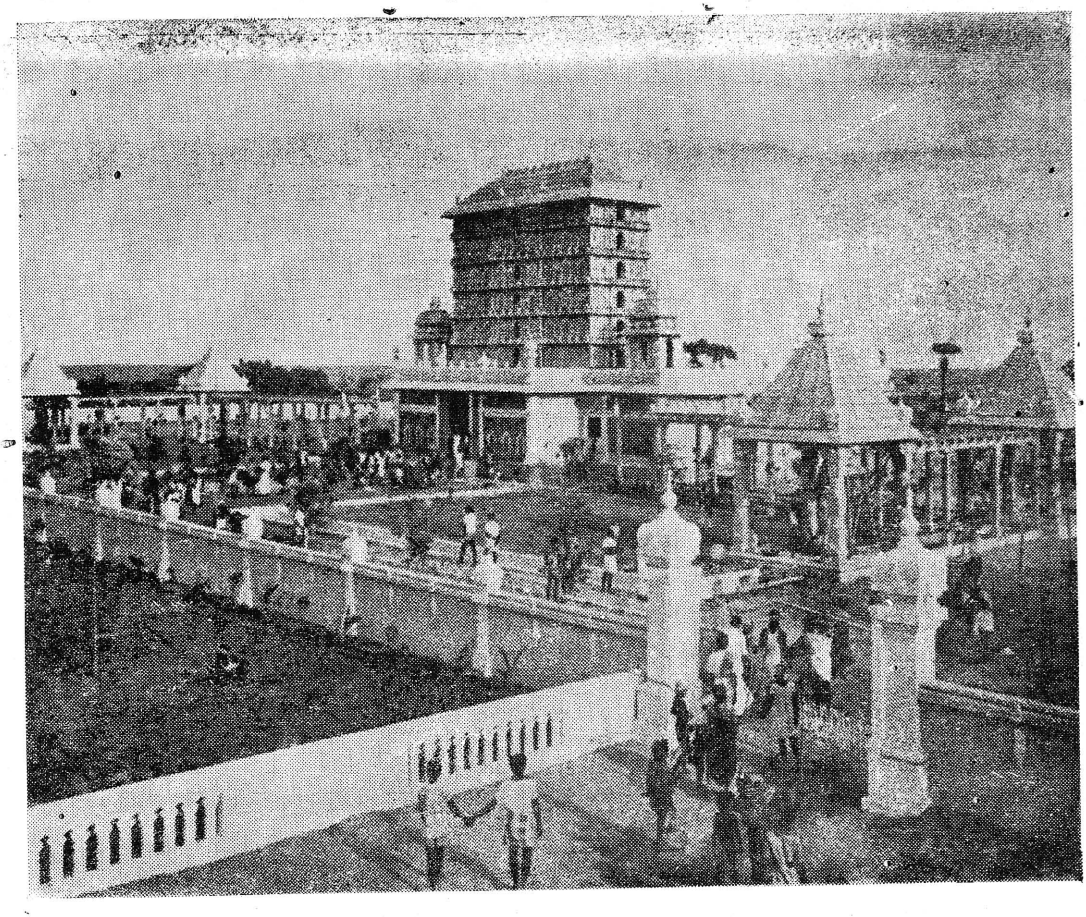
Sthapathi Ganapathi is honoured by the Chief Minister for the magnificent architectural skill that he has shown in the construction of the Art Gallery.

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

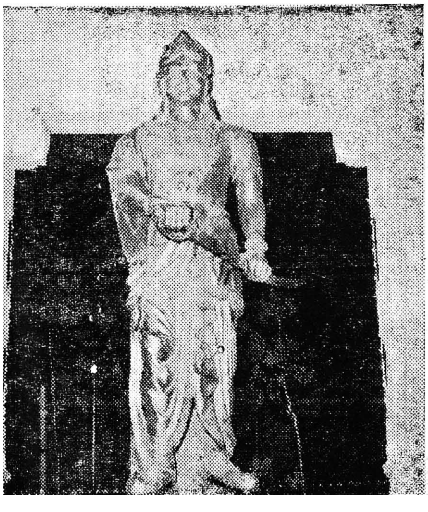
The Silappathikaram Art Gallery at Poompuhar is a unique structural style in the whole of India. This gallery has been constructed in accordance with the norms of architecture enunciated in Silappathikaram.

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 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.

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.

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

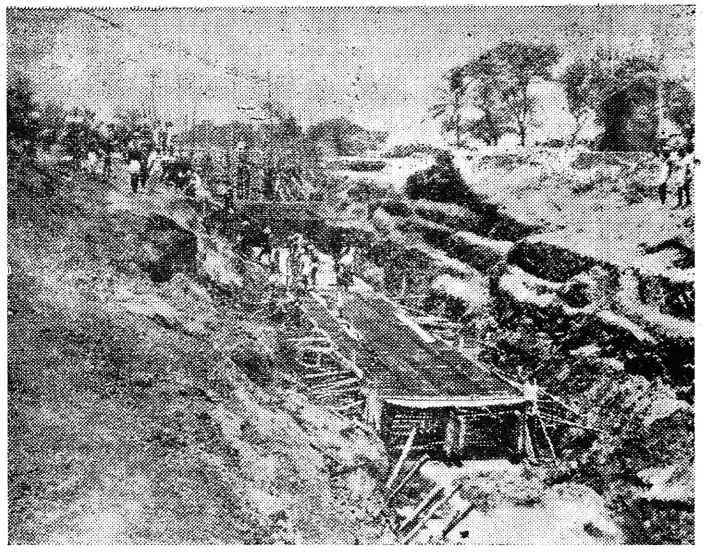
executed at a cost of more than Rs. one crore.

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 insourmountable, 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 subsoil 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 infietration 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 pro-rata 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 municipaltities, 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 dismisal.

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 faciltities 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 capabable 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, democractic 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 satsifactorily. 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 schemes 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 Tiruppattur 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 colloboration 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. colloborator 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.

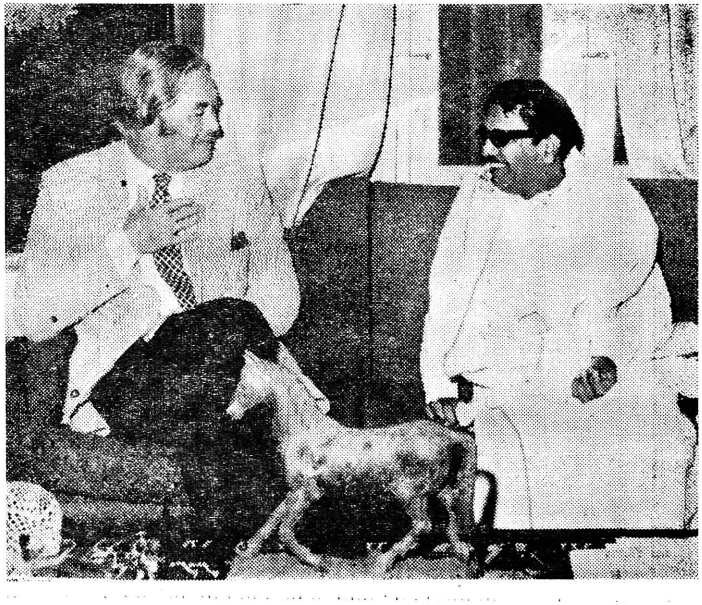
Terms most favourable

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.

According to present thinking, 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 Monihan 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.

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

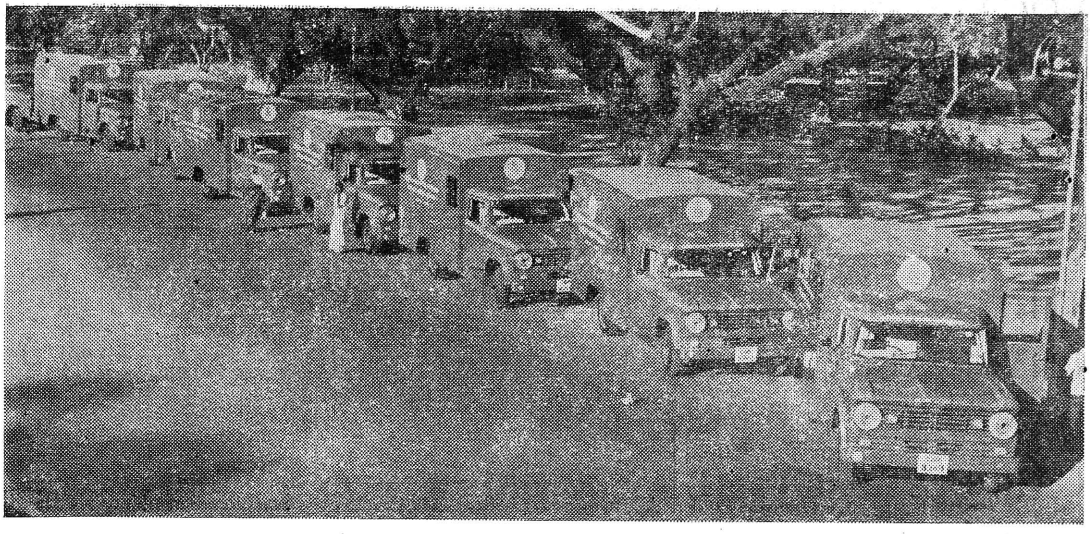
The Tamil Nadu Housing Minister, in his speech, urged the plantation companies in the State to contribute their mite towards the housing scheme and called upon them in right earnest and in a sense of rightful urgency to subsidise housing schemes by providing requisite land and infrastructure for housing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

ROLE OF GOVERNMENT AND THE COMMUNITY

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.

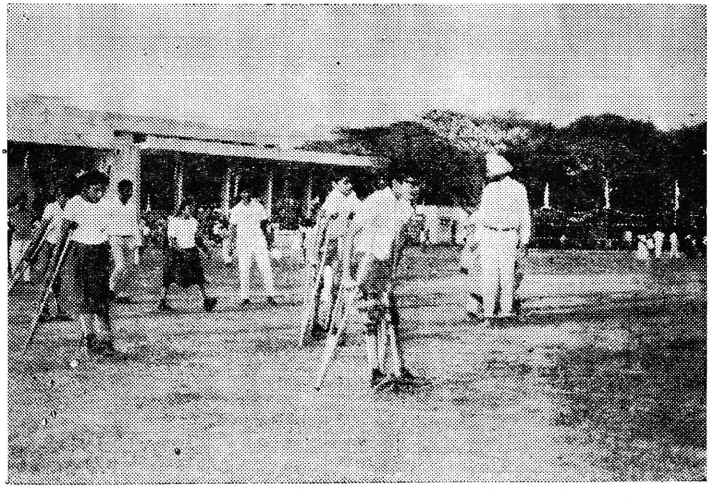
Assessment of persons vis-a-vis Jobs.—The old-world notion of viewing a person being capable of doing efficiently a particular job only no longer holds water. The modern notion is to view the individual as capable of doing several sets of jobs with equal efficiency. This is the modern 'multi-potentiality' 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 re-orient their experties 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 (Phycisally 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 individuls, 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 Occupatioanl 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 healthly 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.

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."

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

High Yielding Varieties Programme

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 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.

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

of 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. Consequent 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.

		Consumption of Fertilisers.	
Year.	*Nitrogenous.*	*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 import of chemical fertilisers like ammonium sulphate and urea, shortage of fertilisers has been experienced throughout the country. Apart 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 nitrogen 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 these 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 equipments 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, Tiruvarur, 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. Besides, 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 hosptials have achieved over a lakh of tuberctomies, 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 o 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 acquifers were located in Madras City and its environs, Palar basin and Neyveli area.

Ground water extracted from Meenjur - Panjetti - Tamarapakkam acquifers 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 Directoarate 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 1971-72 is 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.

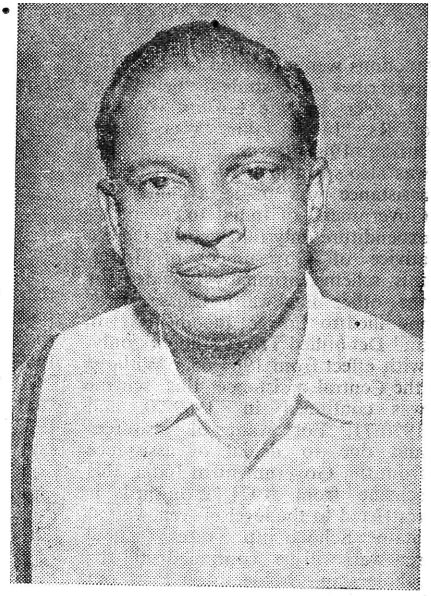
Strengthening the weak portions of the flood banks of the Coleroon and the Cauvery has also been taken up. The expenditure incurred up to 1971-72 is Rs. 10·34 lakhs. The anticipated expenditure in 1972-73 is Rs. 47·28 lakhs. The outlay for 1973-74 is Rs. 61·00 lakhs.

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.

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 Tribe 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. Hostels. PER CENT.	*B.C. Hostels.* PER 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	3,619
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 measem 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-martric.—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. But in the year 1972-73, the Revised Estimate is fixed at Rs. 2·44 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 studing in I year B.Sc., were selected from moffusal 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 Rotary or a Lion's Club what could be done is that the adopting Club can present items like wall clocks, old furniture, First-aid equipments, stationery, etc., to the hostels or to 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 ensure maximum comfort to the tourists. The following statement at the bottom shows the number of vehicles with contract carriage permits as on 31st December 1971 and 31 st December 1972.

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

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 folloing 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 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 trasnport 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.

	Public Carriers.	*Private Carriers.*	*Contract Carriages.*		
			Tourist taxis.	*Ordinary taxis.*	*Omni 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.)		

Arrangements also exist for the counter-signature of permits of goods vehicles snd 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.

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 omini 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, stricker 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 proprietory, partnership and Joint-stock companies. Special schemes have been framed to help Technocrats and Rural Medical and Veterinary Practitioners. Concessional terms have also been offered to backward areas and backward districts.

The terms and conditions of assistance

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

Rate of Interest

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

Initial repayment holiday

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

Amortisation period

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

FOR FURTHER DETAILS, PLEASE APPLY TO

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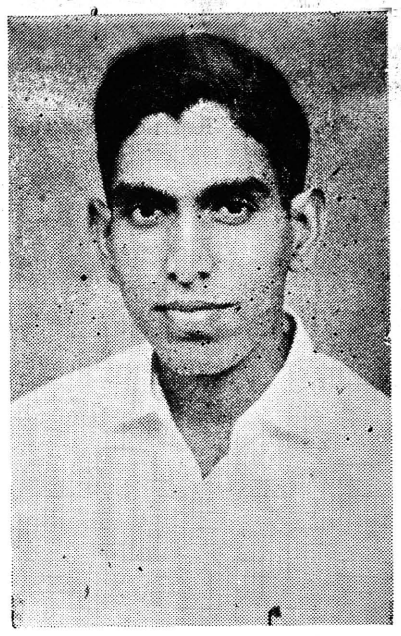
TIDCO Helps Entrepreneurs in so Many Ways



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 over 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 crash programme of industrial development in the State and in particular, in backward areas.

Financial results :

The Corporation was incorporated on 21th 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 share capital and loans has been extended to sick 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

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" 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 sc ene and has contributed to the ph enomenal growth of joint ventu res in Tamil Nadu even though the concept is still in its infancy.

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.

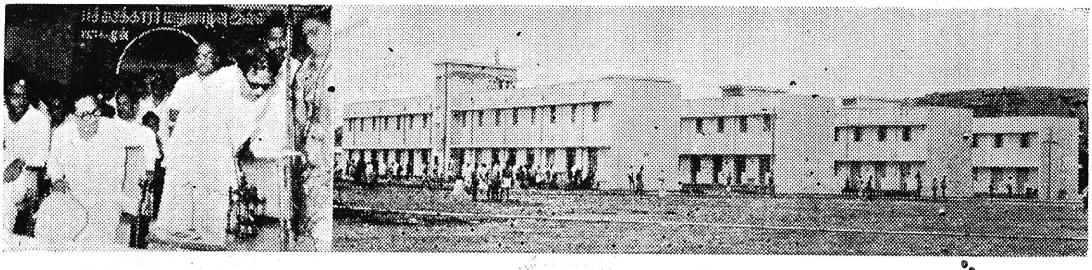
This cement unit, a public sector project has a capacity of 4 lakh tonnes per annum with two rotary kilns of 1,200 tonnes per day capacity. The plant attained full production in the year 1971-72. Employing the conventional wet process, the plant is one of the most modern of its kind in the country. The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

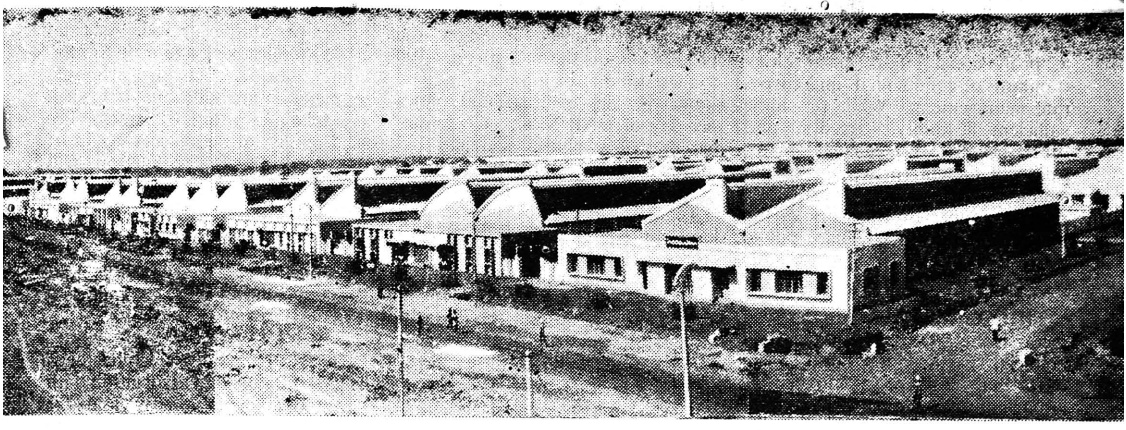
The unit has earned a net profit of Rs. 12·94 lakhs even in the second year of its operation and is a good example of a successful unit in the public sector. The operating results for the current year would have been even better but for the serious power shortage which Tamil Nadu has had to face this 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 Pudupatti in 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. The billets produced here are supplied to the rerollers in the State for further processing. The project is located at Arkonam which is an industrially 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 enterpreneur 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 polyster filament yarn, polyster film, etc. These projects would grow around the nucleus of the Nylon plant.

TIDCO's endeavour is to achieve rapid dinustrialisation of the State through joint ventures, harnessing the entrepreneural abilities of the enthusiastic investors. The promotion of the projects in the joint sector is based on the guidelines of the Government of India. TIDCO will contribute 26 per cent of equity share capital and the private entrepreneur with his associates has to contribute a maximum of 25 per cent of the equity and the balance 49 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 controlledby 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

professional managers, 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.

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.

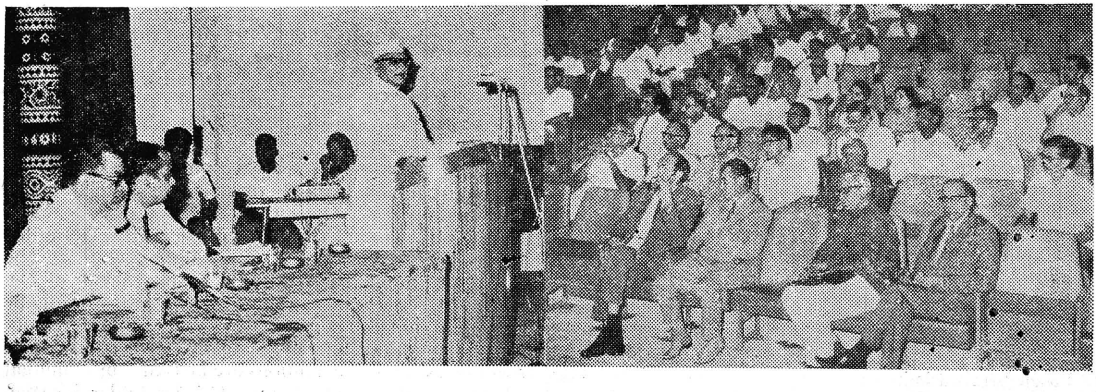
The plant will manufacture 70,000 tonnes per annum of Soda Ash and 70,000 tonnes per annum of Ammonium Chloride. It is also proposed to manufacture additional item such as Melamine and L. Lysine. The total outlay of the project would be Rs. 25 crores. Production will commence during the year 1975 giving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



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

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.

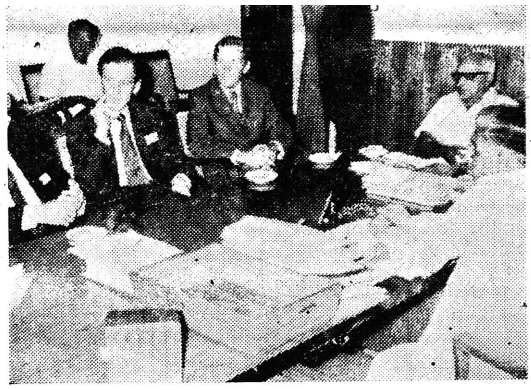
The capital cost of the project is Rs. 18 crores out of which the equity capital would be Rs. 6 crores. The unit is expected to be commissioned in 1976. The direct employment potential is about 500.

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 BURNE, 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, sulpha drugs, vitamin preparations, analgesics, atarextics, diuretics fungicides, anabolies, tranquilizers, hyphotics, antacids, anthelmantics, 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-

uments used in the engineering industry such as micro metres, calipers, dial gauges, slip 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 colloboration arragements 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 issusd 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— CAUSE AND REMEDY

(This year the Fire Service Day was observed on 14th April 1973 all over Tamil Nadu under the most apt and appropriate theme "Fire Prevention in Home". It goes without saying that most of the fire accidents are due to carelessness at home, and it has become imperative and essential that housewives should be taught the elementary precautions that they should take while in the kitchen.

The observance of the day was celebrated in the city with the mock demonstrations by the squads of Fire Service. Participating in the function Dr. M. Karunanidhi, Chief Minister, in his speech, highlighted the significant role played by the Fire Service in saving the society from the holocaust of fires and other accidents in the day-to-day life of human being. He also suggested the change of name of the Fire Service as the Fire service is involved more in the saving of human life at times of distress than extinguishing the fire accident. This article suggests the ways and means to put an end to the fire accidents—Ed.)

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.

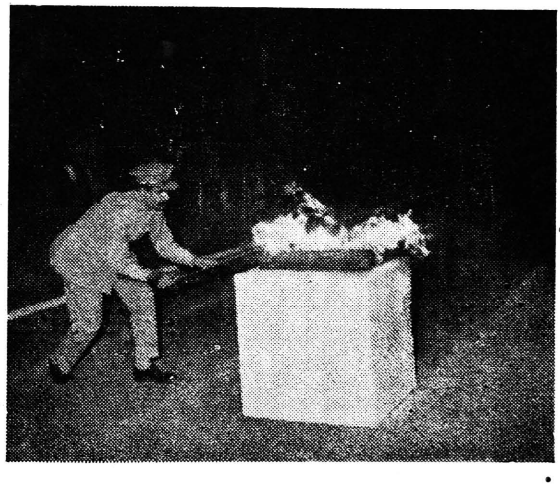
Causes for Home Fires.

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 suceptible 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.

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.

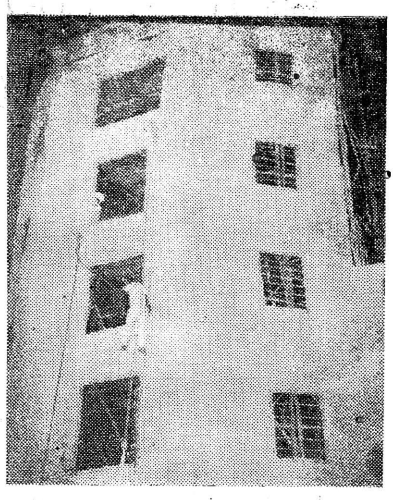
(ii) These hutments are generally located in open and windy areas and fires spread quickly due to gusty winds.

(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 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.

Fire Service Squad in action.



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

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 atablems 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 Jagannath 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. Dhayananthan, 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 lables 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 reasonable 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 forgers. It is interesting to note that Great Britain has recently reproduced these earliest stamps in their original colour.

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

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

sed. 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 purchses 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

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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 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 representatives 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 Presdient 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 Commitee.

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 catalyser 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-orbitting 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 meteorologly. 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 humogeneous 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 cooperation 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 Oceonography, 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 Mateorological 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 115 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 objecive of the diabetic in selecting food is the emphasis on wieght 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 asthamatic 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.

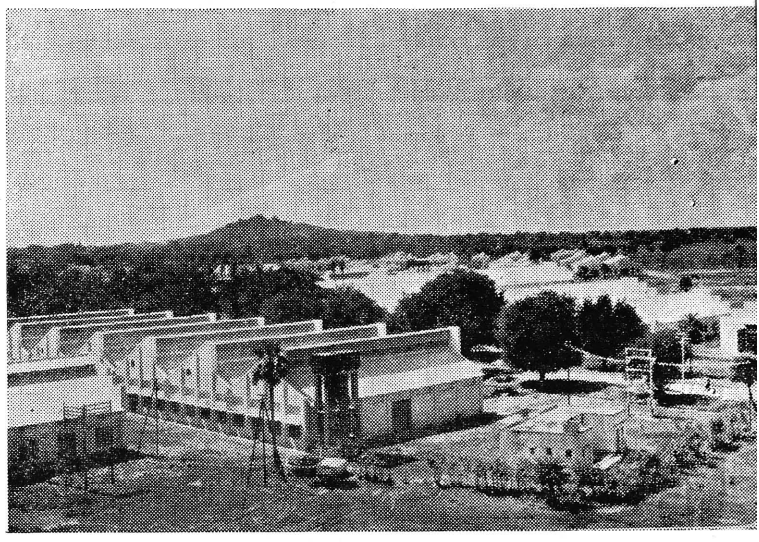
World over significance of asthma has not been fully realised. This is because, unlike malaria and tuberculosis, asthma does not happen to be a great killer. But this does cause considerable extent of disability, though not complete incapacitation. Tremendous loss of man-hours in factories, farms and 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 aerason 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 ".

INDUSTRIAL ESTATES IN TAMIL NADU



A Panoramic view of Industrial Estate, Guindy.

By H. B. N. SHETTY, I.A.S.,
Director of Industries and Commerce, Tamil Nadu.

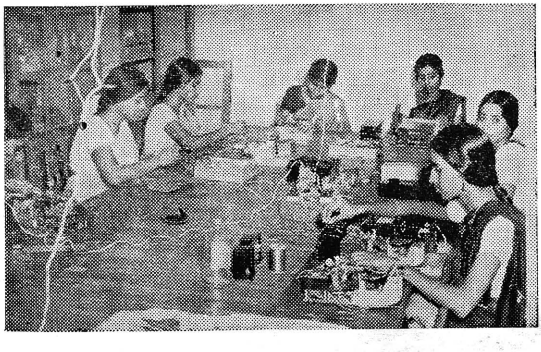
An Industrial Estate has been defined as " a planned clustering of industrial enterprises offering standard factory buildings constructed in advance of demand and a variety of services and facilities to the occupants". Historically, "industrial dispersal" was one of the first objectives of the Industrial 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.

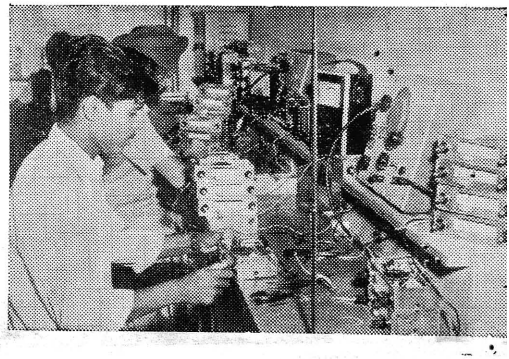
The establishment of Industrial Estates was, therefore, conceived as an effective method for accelerating the growth of industrial development and to encourage the growth of small industries in townships and major industrial areas. The schemes are meant to afford certain facilities to industries to keep 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 10small-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 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.

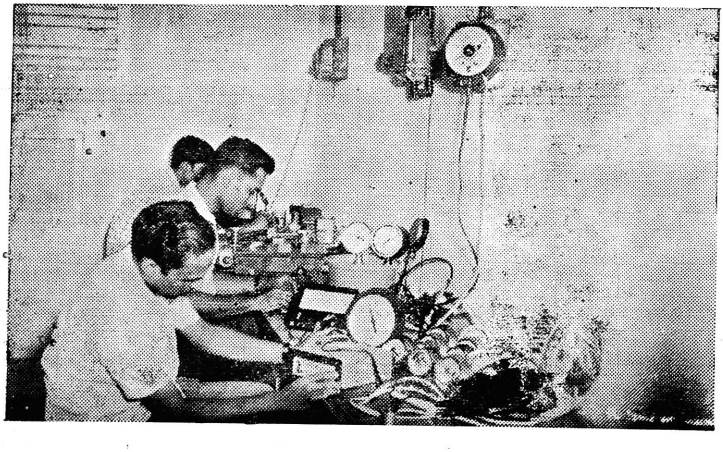
All the above mentioned Industrial Estates have been financed and run by the Government of Tamil Nadu. The factory sheds in all the earlier Industrial Estates have been given on rental basis and the allottees are asked to pay subsidised rate of rent which varies from place to place and the subsidised rate of rent is progressively stepped up to the economic rate of rent over a period of years.

Industrial Estate, Ambathur.

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

Electronic testing.



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 Estates 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 ocuppancy 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 Exhange, 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 Industiral 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.

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 artisan be 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.

Archeological 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

By
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Publicity Officer,
Tamil Nadu Electricity Board.

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 approchable 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 builting 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 practicies 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 avilable 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.

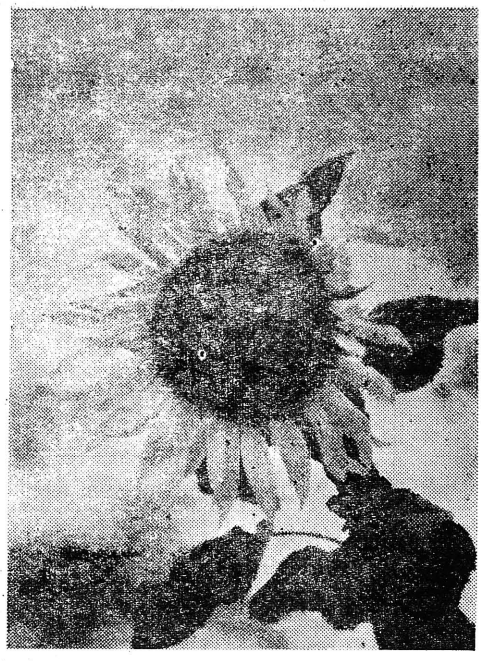
The beneficiaries of the above schemes are the 7,550 Landless Agricultural Labourers, 8,215 Sub-Marginal Farmers and 5,469 Marginal Farmers who have been identified by the Project.

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 legisiation 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 durations 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 Dry land 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, indentifying 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 manurial practices alter the rooting pattern to a considerable degree.

Effect of Moisture Stress :

The extreme drought conditions experienced during Khariff 1971 at Hydrabad 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.

Agronomy 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 preiod 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 upredictable 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 croweded.

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 subnormal 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 Manufactures 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 for indicates that :

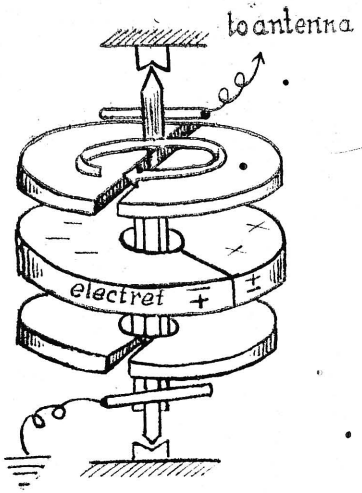
(i) Continuous heavy shower during pollination results in washing of pollen and pollinating insects are not active in cloudy weather.

(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, Hydrabad.

ELECTRET AND ATMOSPHERIC ELECTRICITY



A Electret motor run by atmospheric electric field.

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 posses 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 X 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 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.

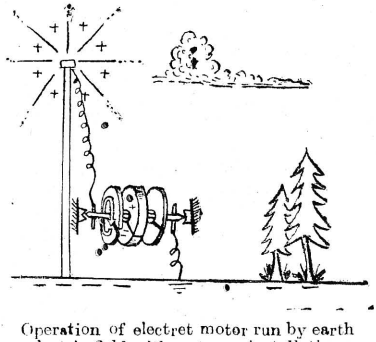
We know about the atmospheric electricity and the field due to its existance on the surface of the earth. It is known as atmospheric electric field or earth electric field. The average intensity of the above field is of the order of 120 V/m during normal periods and increases during electric storm. This 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^{5} 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 $5 \times 10\text{-}8$ 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 fixing 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 specially for a very feeble power. The axle is supported by jewel bearings.



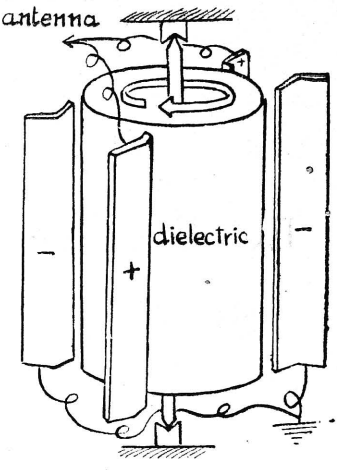
Operation of electret motor run by earth electric field with antenna installation.

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-strey 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 stationery knife like structures. These are brass electrodes, each two adjacent of them being of opposite polarity. The hallow 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 may be possible with multiple collectors or single collector of fairly big dimensions.



Corona motor run by earth electric field.

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 photopolarization vanishes under illumination. This process needs no developing and fixing liquids.

Electrets are also used in electrostatic recording, thermoplastric 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 stresses 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 INF. 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 per capita income.

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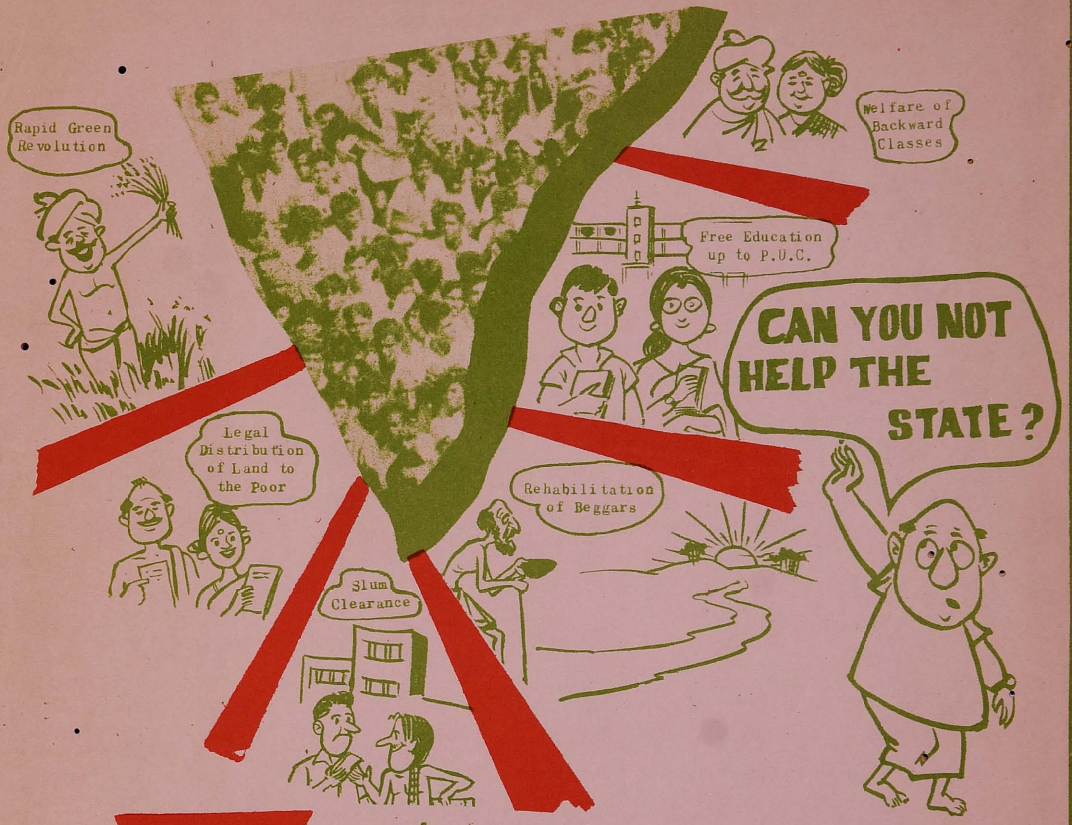

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