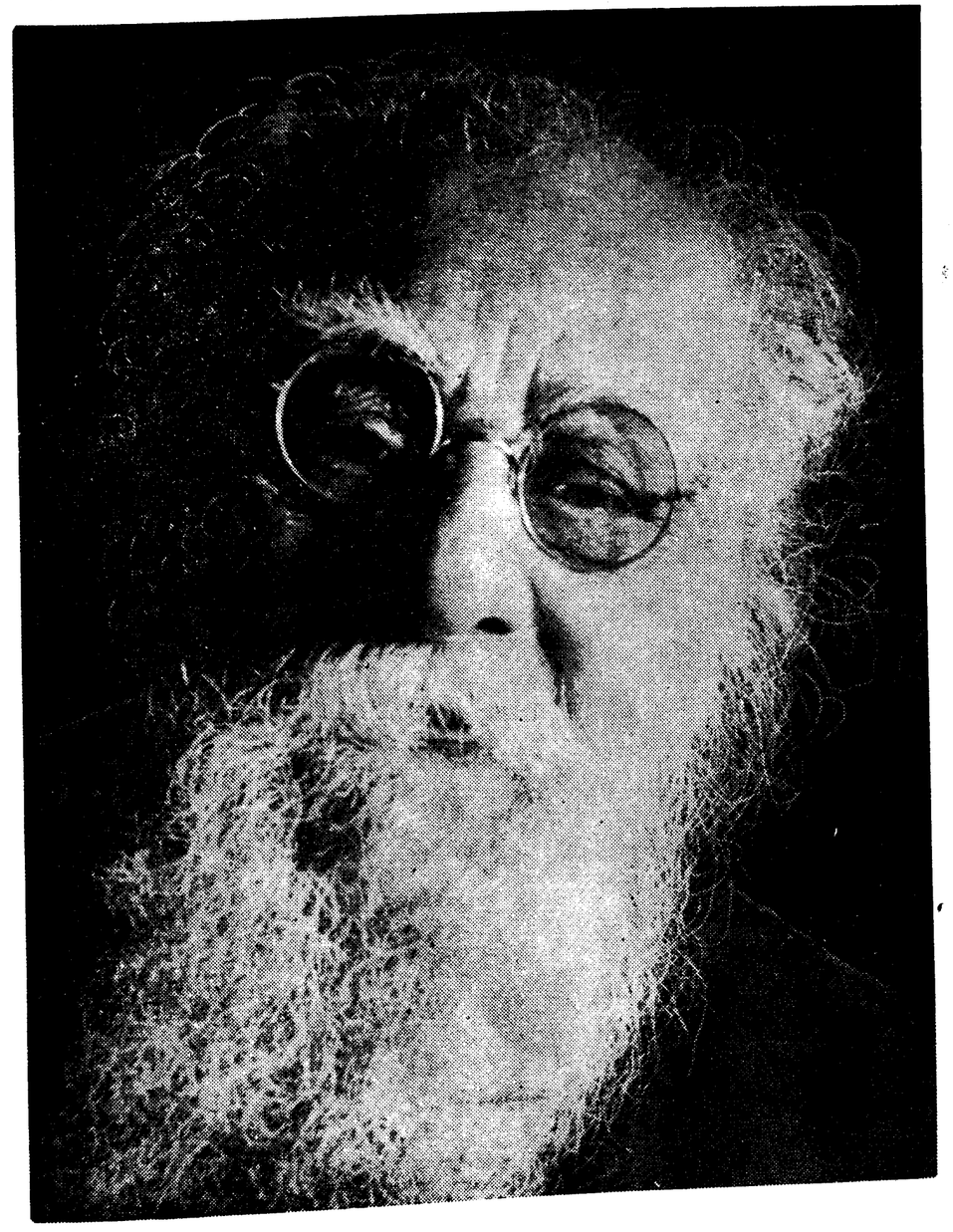
Tamil Arasu

R.R. NO. 16/YA.

7

trusted name for khadi
village industries articles
Khadi Kraft is Elegance
Excellence.
KHADI & VILLAGE
INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.
Khadi Kraft at:
MAIN ROAD
AVANASH



TAMIL NADU GOVERNMENT GAZETTE

EXTRAORDINARY

PUBLISHED BY AUTHORITY

No. 392. MADRAS, MONDAY, DECEMBER 24, 1973

[MARGAZHI 10, PIRAMATHISA (20001—THIRUVALLUVAR ANDU)]

PART II—SECTION I

NOTIFICATIONS BY GOVERNMENT

—oOo—

PUBLIC DEPARTMENT

(Political)

DEMISE OF PERIYAR THIRU E. V. RAMASAMY,

[*G. O. Ms. No.* 3398, *Public (Political)*, 24*th December* 1973]

II-I No. 6237 *(e)* of 1973.

The Government of Tamil Nadu deeply regret to announce the demise of Periyar Thiru E. V. Ramasamy, India's foremost Social Reformer, in Vellore at 7-40 a. m. on 24th December 1973. The Government place on record his yeoman services in eradicating social disabilities and cast distinctions. As a mark of respect to the departed leader, the Government order State mourning today, 24th December 1973 and declare it as a holiday. All offices of the State and educational institutions will remain closed. National flags will be half-masted for today (24th December 1973) and the following day (25th December 1973) when the funeral will be held.

(By order of the Governor)

P. SABANAYAGAM,
Chief Secretary.

Tamil Arasu

Vol. IV JANUARY 1974 Issue 7

CONTENTS

	PAGE
Thanthai Periyar's Demise	3
Governor on Rajaji	11
Tamil Nadu Tribes	13
Leather Puppetry	27
Paper Industry	29
N. D. R. I	32
Casuarina Cultivation in Tamil Nadu	37
New Insecticide Formula	41
Articles on agricultural subjects	43
Festivals of Tamil Nadu	53
C. M. on Fifths Plan	56
Arkonam Steel Plant	58
Ranipet Industrial Estate	60
Tuticorin Harbour	62

PERIYAR'S LIFE— A SYNONYM FOR SERVICE

GOVERNOR'S TRIBUTES

The passing away of Thiru E.V. Ramaswamy affectionately called Periyar by the people of Tamil Nadu, is a great loss to Tamil Nadu. Starting his political career as a disciple of Mahatma Gandhi, he did yeoman service to the National Reconstruction Programmes like Khadi and abolition of Untouchability. By virtue of the pivotal and prominent role he played in the agitation against Untouchability staged in the citadel of orthodoxy, Vaikom in Kerala, he earned the title of "Vaikom Warrior". All through his 95 year-long life, he travelled far and wide to every nook and corner of Tamil Nadu, carrying the message of social reformation to the village folk. He ceaselessly and tirelessly fought for a better deal to the oppressed and depressed classes of people, as also for the emancipation of women so that they could play their rightful role in all walks of life. In short, his life has been a synonym for Service.

JL
V2 11m, N70
N24.4
69693

CHIEF MINISTER'S CALL TO THE PEOPLE

Thanthai Periyar has passed away. The great leader, who kindled the flame of self-respect in Tamil Nadu, has left leaving us all in unbearable sorrow. His 60 years' public life out of the 95 year life span was full of agitations. Those agitations were conducted by Periyar for the upliftment of Tamilians in the times ahead and to kindle the passion of self-respect among them. He courted imprisonment many a time. He conducted countless numbers of agitations to put an end to the practice of untouchability. He plunged into serious activities to abolish untouchability to such extent that they earned him the title of " Vaikam Warrior."

He participated in the freedom struggle and earned the appreciation of Mahatma in rightful measure. His sincere and selfless service to the country made Nayudu, Naicker and Mudaliar as the only shining stars in the political horizon of the country. He founded the Self-Respect Movement and took keen interest in the Justice Party which worked for the uplift of the non-Brahmins. During that period the victories he garnered were many and many, many more are his enduring achievements against heavy odds.

His life is an elixir to those who wish to serve humanity.

He toiled tirelessly without rest and he has gone to take eternal rest.

His journey may be said to have come to a close but it is for us to carry on.

Long live Periyar !

Long live Periyar !

Let his rationalistic ideals spread far and wide !

And let his ideals live long !

THE VETERAN OF MANY WARS

LEAVES MILLIONS IN GRIEF

IN LIFE
HE TOOK NO
REST
AND
GAVE US NO
REST.

LEADERS' TRIBUTES TO THE DEPARTED LEADER.

The passing away of Thanthai Periyar E.V. Ramaswamy has been condoled by many. A few of the condolence messages are given below :

The President's Condolence

President, V.V. Giri, in a message to Governor K.K. Shah, said : " I am grieved to learn of the demise of Periyar Ramaswamy. A colourful leader, he was always a fighter. In the 20's he took a prominent part in the national struggle for freedom and later devoted himself to social reform according to his light. Please convey my sympathy to his wife and other members of the bereaved family."

P. M.'s Message

In a condolence message addressed to the Chief Minister, the Prime Minister, Thirumati Indira Gandhi said : " I am grieved to learn of the death of Thiru E.V. Ramaswamy. He was a colourful personality who revelled in controversies. He challenged many accepted notions. My condolences to his co-workers and followers."

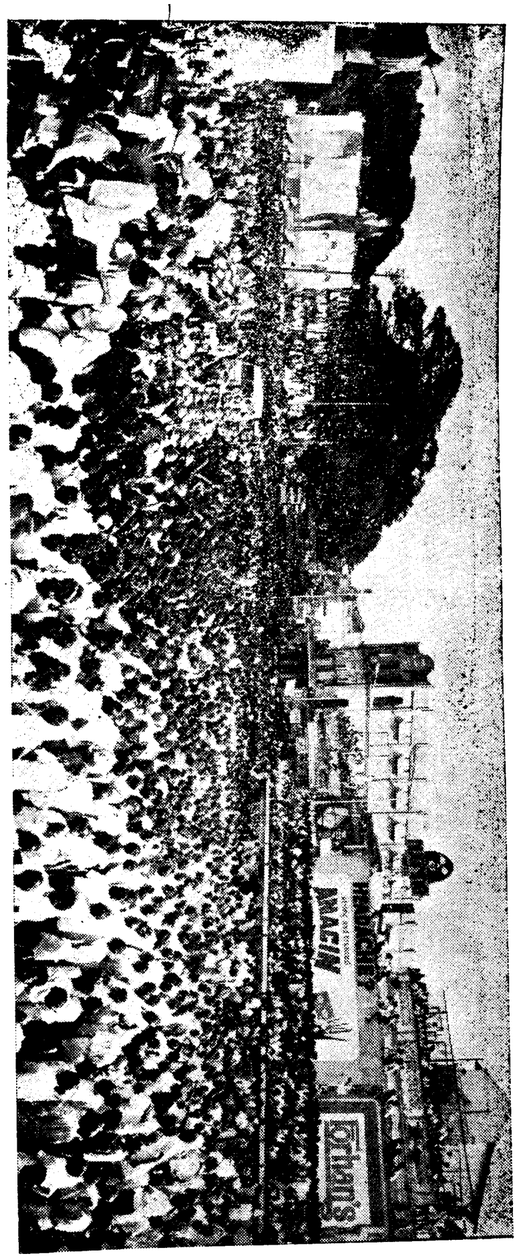
Governer's Message

Tamil Nadu Governor, K.K. Shah, in a message sent from Bombay, said EVR was " an ardent social reformer. I am extremely grieved over his sad demise."

Chief Minister's Message

Chief Minister Dr. M. Karunanidhi, the first to receive news of the death at Madras, expressed his sorrow in the following words :

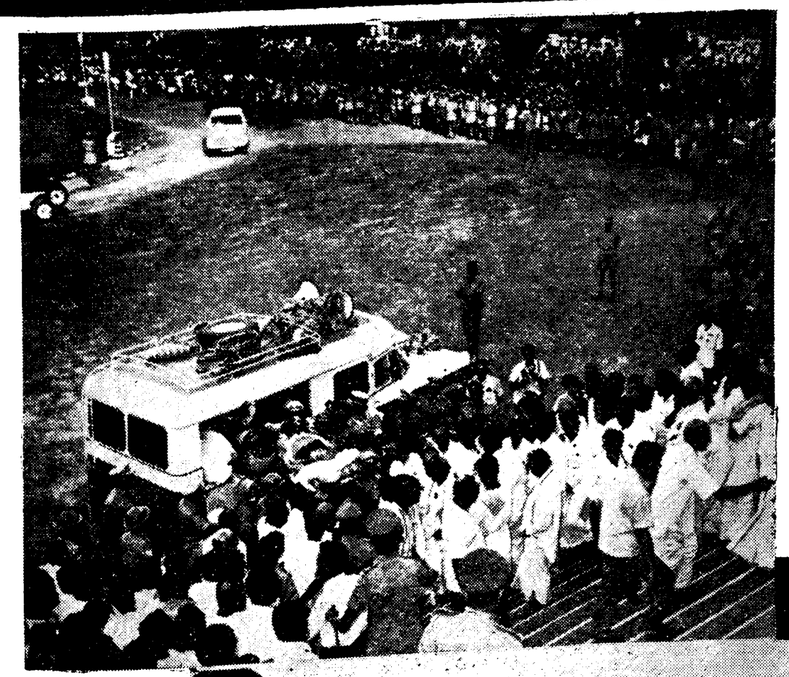
" Periyar has ended his journey. The country cannot forget the great saga of this 95-year-old rationalist lion's fight for social reform till his last breath. He was the great leader who enabled Tamils to stand upright with a sense of self-respect. The lakhs and lakhs of the backward and downtrodden people, who secured a social status because of Periyar, cannot bear this loss. I am unable to put in words my great bereavement in the loss of this great man who was a guide to all of us, and who made us real men. We have lost India's great social reformer. He has ended his journey. But we shall continue it."



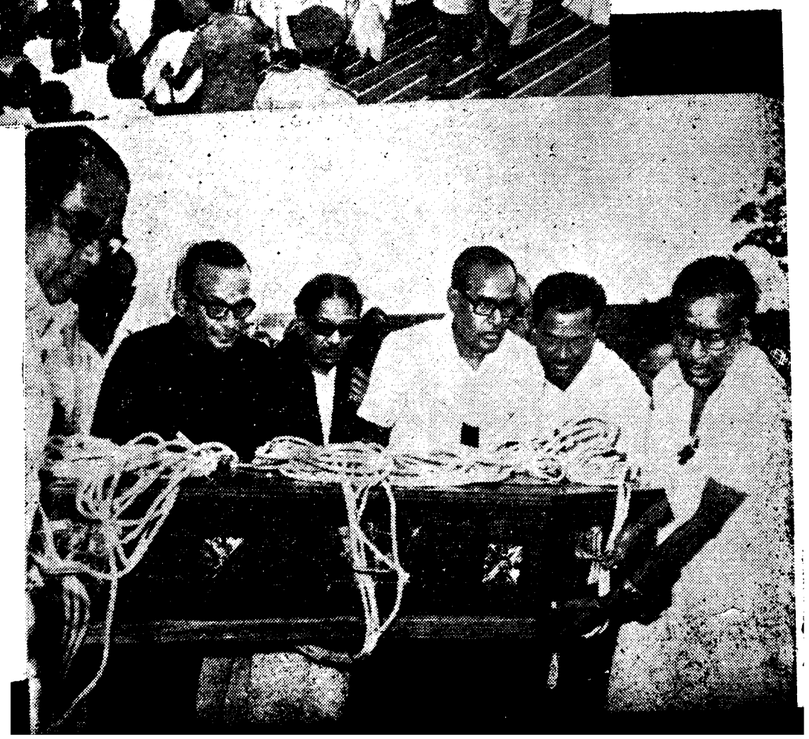
IN LIFE AS IN DEATH

PERIYAR WAS THE BELOVED OF ALL LEADERS

THE END OF A MOMENTOUS JOURNEY



The Periyar's Body was brought to Rajaji Hall by afternoon on 24—12—73. Already a long line of mourners were there in a long Queue formation.



The Capsule of our era is being lowered to its ultimate resting place.

AT POOMPUHAR

The land of ancient civilisation
and gateway to Dravidian Culture
Tamil Nadu is a land of temples—
These veritable treasure houses
Depict our glorious art and culture.
The five great epics—Silappathikaram,
Manimekalai, Valayapathi, Kundalakesi
and Seevaka Chinthamani—blossomed forth
in Chaste Tamil, mirroring the
Tamil Way of life, under the
Patronage of the three Royal Houses,
the Cheras, the Cholas and the Pandyas,
The Sangam Age—A Golden Era,
when learning and fine arts flourished
And Valour and Chivalry were the order of the Day.
The Land of the Tamils prospered
With Industry and Trade.
Vessels from lands beyond the Seven-seas
Visited the Chief Ports-Puhar, Korkai and Vanchi
Laden with Merchandise.
Today, a great step is taken
to recapture the ancient glory and
grandeur of the Tamils at Poompuhar.
As a first step towards its resustication,
the Silappathikaram, the story of the
Immortal Lovers, Kovalan and Madhavi
and the Divine Kannagi—of the Sacrifice
of true love and triumph of chastity
are chronicled in Stone for posterity.
Today, we restore the heritage
of the Tamils by not only reviving
the art and culture of the Tamils,
but what is more important,
revive the prosperity in
The Land of Tamils.

Selvi. Rajalakshmi.
Public (I. & P.R.) Dept.

Above is a poem to elucidate the cover page.

RAJAJI.....

.....The Great Indian

Tributes to the memory of Rajaji by
Thiru K. K. SHAH, Governor of Tamil Nadu

A life which radiates lustre and provides guidance, when extinct, leaves a void sometimes for generations. Rajaji's passing away is keenly felt and sincerely mourned because the voice of wisdom and the prophet of dissent as he was in every minute, is today missing in all walks of life, especially when we are struggling to strengthen norms of democracy. When sometimes upsurge of emotions betrays national interest, when uninformed criticism gets the better of reason and when personal frustration is inclined to neglect common good, a fearless and respected voice, as that of Rajaji, serves as a most valuable asset.

RESPECTED BY ALIENS AND INDIANS ALIKE

Whether we agreed with Rajaji or not, we were in the habit of reading Swarajya wherein Rajaji's reactions and advice could be had. Rajaji is a mighty example and a demonstrative proof, if any proof were needed, of an intellectual of high calibre accepting the existence of God. If one goes through the writings of Rajaji, there is an undercurrent of mature philosophy and high scholarship. It is very difficult for intellectuals to get out of the walls built up by them as they are afraid of being inconsistent. Rajaji had the courage to modify his earlier views if circumstances demanded and had the ability and honesty to explain.

The outstanding example of his approach to life being practical is provided by what is known as a shooting incident. It took place on his way from Namakkal to Salem. Luckily the man was not killed. It was his integrity and honesty which stood by him and even though he was prosecuted, he was exonerated. Even the licence that was taken away was restored and the permanent District Magistrate, an Englishman, had to say that he should not have been prosecuted. How many, on such occasions, have the courage to tell the truth? He was so confident of his ability to stand by what he thought to be right that he could neither be cornered nor could he be swayed either way.

Be that as it may, to earn such encomiums even from Gandhiji is not only rare but a real achievement. On 10th September, 1938, Gandhiji wrote in *Harijan*—" I have boundless faith in his (Rajaji's) wisdom, his uprightness and his unsurpassed ability as a parliamentarian. He has to his credit no mean achievements. We have in our ranks no abler fighter in Satyagraha." On the 10th February, 1946, Gandhiji wrote in *Harijan*—"Rajaji is one of my oldest friends and was known to be the best exponent, in word and deed, of all I stand for. That in 1942 he differed from me, I know. All honour for the boldness with which he publicly avowed the difference. He was a great social reformer never afraid to act according to his belief. His political wisdom and integrity are beyond question." What greater tribute can be paid?

RIGHT TO REBUKE US

Rajaji earned the right to rebuke us and his classical wisdom was accepted to be a national asset. It was Rajaji who always emphasised that dogmatism is a mark of intellectual immaturity. The Gaya Congress of December 1920 was typical. Mahatma Gandhi was in jail. It was given to Rajaji along with his colleagues to fight hard against such intellectual giants as Deshbandhu Chitta Ranjan Das, Pandit Motilal Nehru and Sri Vithalbhai Patel for acceptance of Gandhiji's programme by the Congress. There were endless round-the-clock speeches on the banks of the Phalgu and ultimately Rajaji won.

In good manners, nobody could beat Rajaji. He believed that our culture embodied highest norms of

personal behaviour and provided an ideal for others to follow. At the Gaya Congress when Rajaji was speaking, some members requested him to come a little forward. His typical reply was " How can I turn my back towards the President." He observed highest courtesies. " Good manners " he said " are like oil that keep the machine of human relations moving smoothly and satisfactorily."

When Rajaji was born, his mother was worried about his health. He suffered from this handicap all his life but got over this handicap by sheer strength of will. He regulated his diet, took proper exercise and maintained his ability to put in hard mental and physical work.

LEFT US HIGH TRADITIONS

Even long before power was officially transferred into his hands as the first Indian Governor-General Rajaji's Prime Ministership of Composite Madras State in the years of Provincial Autonomy had provided ample proof of his unparallelled administrative capacity, vision and far-sightedness and not only convinced the British rulers that India was fit for self-Government but also earned their admiration for the remarkable ability with which he steered the Ship of State. In all the high offices, he occupied in free India—as Home Minister at the Centre or Governor of West Bengal or again as Chief Minister of Madras—he left his special mark on the administration and earned the love of the people in those turbulent and formative years of our democracy. He has left high traditions which it is not easy for others to follow. His greatness was that he saw far ahead of the times while others were carried away by momentary impulses.

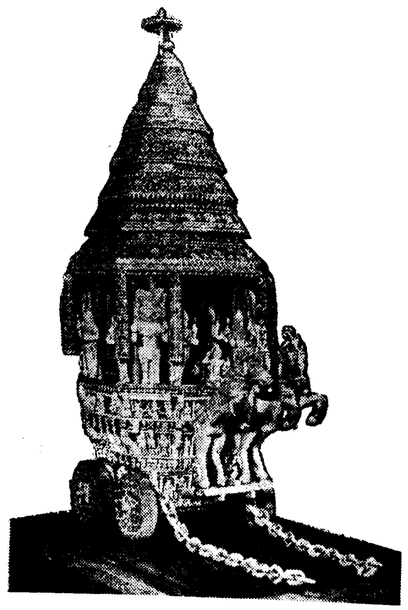
In conversation and arguments, he had few equals. He invariably impressed others and made them listen. President Kennedy was so deeply impressed that though he had set apart only a few minutes for Rajaji, he insisted on Rajaji remaining with him for quite a long time, necessitating cancellation of other engagements.

BALANCED PERSONALITY

Like Pandit Jawaharlal Nehru, Rajaji was a forerunner in stressing even in the days of our Freedom struggle that India should concentrate on scientific and technical education for wiping out poverty. The same Rajaji pleaded for ban on nuclear weapons. These instances present Rajaji as a balanced personality, avoiding extremes and preferring the golden mean for the benefit of humanity.

As a true democrat, Rajaji turned down the idea of starting special schools to encourage talent. He boldly said—" India wants equality ; not excellence." Rajaji's sympathy for the poor and the downtrodden found concrete expression in his Harijan uplift work and agriculturists" debt relief measures. Plain living and high thinking were his hall marks. I learn from his old friends that when they wanted to see him, he would go to them himself, much to their embarrassment. This shows his humility and simplicity.

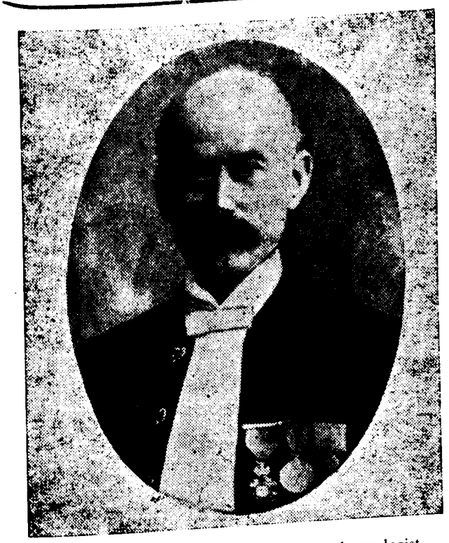
I pay my humble homage to the great Indian who inspired us and played a leading role in India's liberation and growth. May we perpetuate the memory of Rajaji by spiritualising our public life and make democracy a mode of living.



Thiru V. Kalastri of Thirumazhisai, village near Madras has carved a miniature temple car and won the First prize, in the Mahatma Gandhi Centenary Award for the year 1973. The Sandalwood Car has been decorated with exquisite figurines. Thiru S. Madhavan, Minister for Industries distributed the prize on 26—11—73 to the deft craftsman.

Tamil Nadu Tribes

*** Their Life
*** Their Religion
*** Their Health
*** Their Welfare



Dr. Edgar Thrston, Superintendent, Anthnopologist, (1885—1908)
Tamil Nadu Goverement Museum.

Top : The Kota Tribes at pottery making.

Above : At the Tamil Nadu Tribes Exhibition at Government, Museum, Thiru V. Devasahayam, Curator, Anthnopology Section explaining exhibits to Minister for Backward Classes Thiru N. V. Natarajan.

Sig.—2A.

URALI tree tribes of Coimbatore.

OUR TRIBES ARE ALONE ALOOF ALOFT

The tribal population of the Tamil Nadu State as per 1971 Census is 3.30 lakhs which is only 0.78% of the total population of the State. The largest concentration is in the Salem District (39.89%), followed by North Arcot (23.53%), Chingleput (10.45%), Coimbatore (7.99%), South Arcot (5.37%) and the Nilgiris (5.14%).

The Malayalis form the biggest tribe with 53.7% and next to it, is the Irular with 33.9%. The Sholagas, Kattunayakans, Pariyans and Pulayans are also fairly appreciable in strength. The wellknown tribes of Toda, Kota, Kadar and Mudugar are seen to be minor ones from the point of view of their numbers. They are each less than 1,000 in number.

Regarding the literary standard of the tribes, the Kurumbas, Todas, and Kotas rank foremost. The tribes having low literacy figures per 10,000 are Sholagas (391), Malasars (399), Malayalis (493) and Irulars (629). Passing of the S.S.L.C. or the Matriculation is a definite stage in education. In the next educational level, *viz.*, matriculation and above, Kotas and Todas stand ahead. The Kadars, Kanis, Malasars, Mudugars, Paniyans and Sholagas are reported not to have any Matriculate among them.

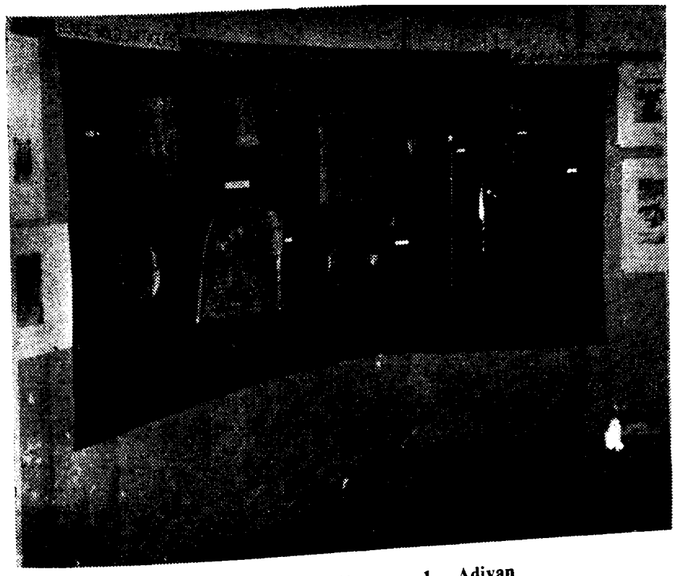
Out of the total population of 2.52 lakhs (1961 Census), 1.09 lakhs are non-workers and out of 1.43 lakhs of workers, 58.22% are cutilvators, 20.65% are agricultural labourers, 7.35% are engaged in other works like fishing, forestery, etc.

The welfare measures taken up by the Government to uplift the tribes are varied. They include the opening of the Labour Contract Societies, Co-operative Market Societies, Multipurpose Co-operative Societies, Cottage Industrial Centres, Tribal Residential Schools and Hostels, Mobile Medical Units and Dispensaries, Tribal Housing Colonies, Industrial Training Centres and the Tribal Development Blocks. Apart from these, the tribes are privileged to avail themselves of the schemes to have agricultural implements and seeds, to sink irrigation wells and drinking-water wells.

The Tamil Nadu Tribes exhibition presents at a glance the various appliances of the food gatherers, hunters, fishing folk, cultivators and nomads. It also includes the Arts and Crafts including the handicrafts, household articles, jewellery, habitations, health practices, burial systems, etc., pertaining to Tamil Nadu Tribes with the help of objects, models, diagrams, charts and photographs. The exhibition, which is organised by the Anthropology section of the Government Museum, Madras, will be thrown open to the public from 10th December, 1973 till 30th December, 1973 (10-30 a.m. to 5-00 p.m.) in the Centenary Exhibition Hall of the Museum.

THE TAMIL NADU TRIBES

The word "Tribe" is defined as a social group possessing a distinctive culture which marks it out from other groups having different cultures. The term "Adivasi" has become popular in India, since they are presumed to form the oldest ethnological sector of the population. Etymologically "Adi" means original and "Vasi" means inhabitant.

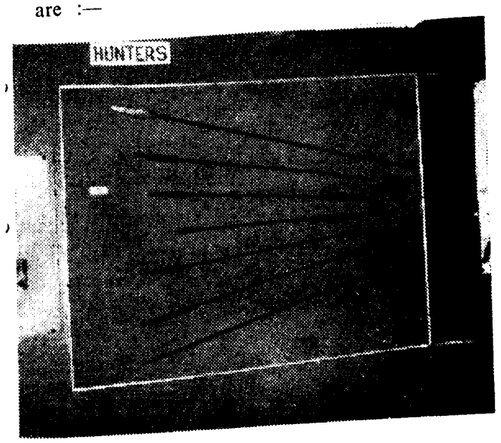


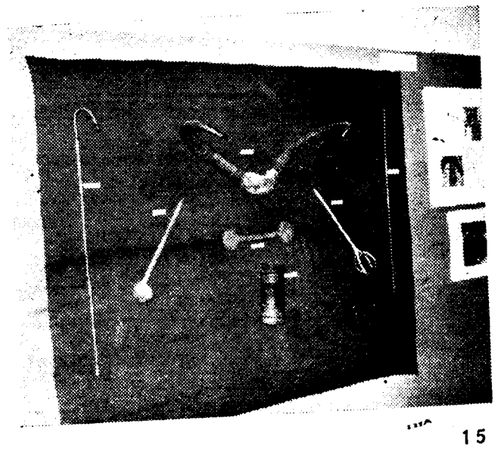
Pictures alongside and at the end of the page are some of the exhibits displayed at Government Museum, Madras, to explain the Tribal ways of life.

According to the Census 1961, it is recorded that there are about 630 tribes in India, constituting a population of 30 millions. It is also noted that the highest number of Scheduled Tribes is found in the State of Mysore which has 63 tribes and the lowest figure is one which comes from the Union Territories of Laccadive, Minicoy and Amindivi. In India it is recorded that tribal population forms 6.87% of the total population of the country.

The State of Tamil Nadu is included under the medium area of concentration with 42 tribes scattered at different district levels. They are :—

1. Adiyan
2. Aranadan
3. Eravallan
4. Hill Pulaya
5. Irular
6. Kammara
7. Kattunayakan
8. Konda Kapus
9. Konda Reddis
10. Koraga
11. Kota
12. Kudiya or Melakudi
13. Kurichchan
14. Kuruman
15. Kadar
16. Kaniyan or Kanyan
17. Kurmbas
18. Kani or Kanikaran
19. Kochu Velan
20. Maha Malasar
21. Malasar
22. Malaye Kandi
23. Mudugar or Muduvan
24. Malakkuravan
25. Malai Arayan
26. Malai Pandaram
27. Malayali
28. Malai Vedan
29. Malayan
30. Malayarayar
31. Mannan
32. Muthuvan
33. Palliyan
34. Paniyan
35. Pulayan
36. Palleyan
37. Palleyar
38. Sholaga
39. Toda
40. Ulladan
41. Uraly
42. Vishavan





A tribal residential school Kargudy.

The New Tribal dwellings.

WELFARE MEASURES FOR SCHEDULED TRIBES IN TAMIL NADU

By
Thiru M. K. Gomethagavelu, I. A. S.,
Director, Harijan Welfare Department,
Government of Tamilnadu.

There is no satisfactory definition either in the constitution or anywhere, for the term "Tribe." To an administrator, the term 'tribe' means group of citizens who are the special responsibility of the President of India. To an anthropologist, it means a special field for a study of a social phenomenon. But, however, all these impressions are correct. These groups are presumed to form the oldest ethonological sect and therefore, they are called "Adhivasi", which means an earlier inhabitant. The International Labour Organisation has classified such people as 'Indigenous.'

The tribal population of the Tamil Nadu State, as per 1971 Census, is 3·30 lakhs, which is only 0·78% of the total population of the State. The largest concentration is in the Salem District, (39·89%), followed by North Arcot (23·53%) Chingleput (10·45%), Coimbatore (7·99%) and South Arcot (5·37%). There are 42 Tribal communities in Tamil Nadu. The more important among them are Malayalees, Irulars, Kattunaickens, Paniyans and Pulayans. The tribal live scattered in hilly areas and forest slopes of hills and their socio-economic development is solely conditioned by their environment. Since they live in interior forests and mountains, they are far away from the centres of civilisation and are not aware of the amenities of towns and cities. The very existence of the tribals has depended, during these centuries of their forest and mountain existence, upon the principles of challenge and

Malasar woman, Coimbatore.

response. Rigours of climate have not driven them away from their home lands nor obliged them to abandon their way of life. The tribals are "open, frank, simple, trusting, tough and hardy and convinced of wholesomeness of the way of life and ready to change, if convinced and necessary." The point for decision is whether to allow them in their existing way retaining their present identity or to change their habits and way of living.

As already stated the tribal population of the State is only 0·78% of the total population. The tribal population of the State is scattered, sparse and in isolated groups, except in Kolli Hills and Yercaud in Salem District, where two Tribal Development Blocks at the rate of one each were started during 1965. Except in these areas, there is no tribal concentration. Therefore, the "area concept" cannot be applied to the tribals of our State. The Scheduled Tribes are very backward, socially, economically and educationally.

SHY AND RESERVED

The tribals are generally primitive in nature. They have their own characteristics, customs, habits and manners. They are shy and do not easily mingle with others. Their birth rate of females during the last 40 years is greater than the males. It is only through social and moral education, they are to be encouraged to have intercaste marriages with non-tribals. The question here again is whether it would be possible unless the tribals are educated to realise their rights and responsibilities, in society, we cannot be content and complacent that we have done anything for their welfare. The welfare schemes so far undertaken for improving the down-trodden section of the society are as follows. No area in the State has been declared as Scheduled area since the tribal population is scattered. As there are no schedued areas in Tamil Nadu, it is not mandatory for the Government of Tamil Nadu to establish a Tribes Advisory Council with reference to the provisions of the Fifth Schedule of the Constitution of India. However, it was considered desirable to have an Advisory Council at State Level to advise the Government on matters relating to the advancement of the Scheduled Tribes. Accordingly, a State Tribal Advisory Council to advice the Government on the implementation of the welfare schmees for Scheduled Tribes has been constituted. The Chairman of the Council is the Minister for Harijan Welfare. The Council meets once in 4 months and discusses and takes decision on the suggestion put forth by its members.

LITERACY LEVEL

The level of literacy among Scheduled Tribes, according to 1961 Census, is 5·91% against 31·41% for the entire population (1971 Census details are not available). The literacy among the tribal males is 8·93% and females is 2.73%. Therefore it is clear that the tribals are lagging far behind the general population in literacy. Though the country's growing education consciousness has reflected among the tribals also, it cannot be said that they have attained the normalcy in education. The educational backwardness of the tribals has bearing on their environment and educational background and economical soundness of the tribals. For a tribal family, to send its grown-up children to school is an economic preposition and entails dislocation and loss to the family labour force. Girls help their mothers in their household chores and the boys their fathers in the field in agriculture. Further, the tribals are not in a position to send their children to the schools with proper clothings, books, slates, etc. Therefore, unless the tribals are provided everything free of cost, they cannot be brought into the educational fold. With a view to achieve this object, the State Government with whom "Education" lies as one of the primary responsibilities, are taking all efforts to educate the tribals. The Government are running 74 Residential Schools, 1 Non-Residential School and 15 hostels for the tribals in the State. About 5,000 tribal boys and girls are benefited by these institutions. In the tribal residential schools and hostels, the tribal students are provided with free books, slates, clothings, (two sets per year), food and shelter. In short, the Government have taken complete charge of the education of the tribal students.

VOLUNTARY AGENCIES

In addition to this, voluntary organisations which show interest in doing welfare work for Scheduled Tribes are running residential schools for which financial assistance are advanced by the State Government. In Tamil Nadu, 4 residential schools and 1 hostel run by voluntary organisations as detailed below are receiving assistance to maintain the schools and hostels.

1 and 2. Tribal Residential School for boys and girls run by Sri Sarguru Sarva Samarasa Sangam at Coonoor.

3. Takkar Baba Gurukulam at Nirgacimund run by the Servants of India Society.

4. Tribal Residential School at Kallar in Coimbatore District run by Sri Sarguru Sarva Samarasa Sangam, Coonoor.

5. The Palanimalai Adivasigal Seva Sangam at Thandigudi in Madurai District (Hostel).

To shed the shyness of the Scheduled Tribes and to allow them to mix with others, the following ratio is adopted in admitting boarders in the Hostels :

Scheduled Tribes—60%

Scheduled Castes—30%

Backward Classes—10%

The development of Scheduled Tribes has a bearing on their physical and mental development. To ensure both mental and physical development, the Scheduled Tribes staying and/or studying in Government Tribal Residential Schools and Hostels are supplied with milk, mutton and eggs.

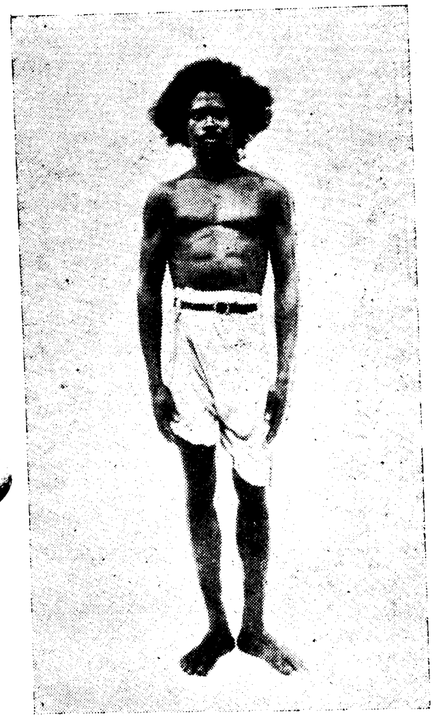
In the field of primary and secondary education, there is visible but slow progress. The Scheduled Tribes receive education only from recent years. There is therefore paucity of Scheduled Tribe students at collegiate level. The position is expected to improve only in due course. All the Scheduled Tribe students studying in colleges are granted scholarships irrespective of their parents income and irrespective of the religion which they profess. Inspite of the liberal concessions, only a few Scheduled Tribe students have pursued college studies and availed the concessions. During 72-73, a sum of Rs. 1·10 lakhs was spent for granting scholarships to Scheduled Tribe students. The tribal day scholars in the schools run by Forest Department are provided with midday meals.

ECONOMIC DEVELOPMENT

A Pre-Examination Training Centre is also functioning in the State from 1966 onwards to train Scheduled Caste and Scheduled Tribe candidates for I.A.S., and I.P.S., etc. examinations conducted by the Union Public Service Commission. At present 38 Scheduled Caste and 2 Scheduled Tribe candidates are undergoing training in the Centre. To educate the tribals of the State, the Government spends about Rs. 27 lakhs annually.

So far 5 Scheduled Tribe candidates trained in the centre have got selection in the All India Services and allied services.

The efforts and expenditure on educating the tribals can only be an investment which cannot produce immediate economic results. Agriculture is the main stay of the tribal population. 60·49% of the tribals are depending upon agriculture either as cultivators or as agricultural labourers. Out of the total population of 2.52 lakhs (1961 Census), 1.09 lakhs are non-workers; out of 1.43 lakhs of workers, 58·22% are cultivators, 20·65% are agricultural labourers, 7·35% are engaged in other works like fishing, forestry, etc. The average land holding of a tribal is 2·5 acres in Kolli Hills and 1.3 acres in Yercaud Block in Salem District. To prevent the tribals



Irula girl.

(Left)

A member of the Kadar Tribe, Coimbatore.

from being exploited by the middlemen, multi-purpose co-operative societies have been started for the tribals in the forest areas. At present, 7 co-operative marketing societies, 6 multi-purpose co-operative societies are functioning in the State for their benefit. To augment their income, cottage industrial centres are also run. Work centres for the benefit of tribal women are also maintained. These institutions are either under the control of the Registrar of Co-operative Societies, Khadi and Village Industries Board, Director of Industries and Commerce or Director of Women's Welfare, but financed by the Harijan Welfare Department.

To promote the standard of living of Scheduled Tribes whose main stay is agriculture, the following assistances are given :—

Scheduled Tribe agriculturists are supplied with a pair of plough bulls and agricultural implements and seeds free of cost at a cost not exceeding Rs. 500 per individual. The scheme was implemented in the Second and Third Five Year Plans and also in 1966-67 and 1967-68 with a subsidy of Rs. 400 per individual. The amount has been increased to Rs. 500 per individual from 1970-71. Scheduled Tribe agriculturists are also granted a subsidy of Rs. 2,000 per individual for sinking of irrigation wells. The schemes was implemented in the Second and Third Five Year Plans and also during 1966-67 to 1970-71. The rate of Rs. 1,500 was increased to Rs. 2,000 from 1970-71. For this purpose a sum of Rs. 3 lakhs is spent every year. Government cultivable poramboke lands are assigned to Scheduled Tribes for cultivation. In hilly tracts 3 acres of dry or 1·5 acres of wet lands are assigned free of cost to Scheduled Tribes. The Scheduled Tribes and Scheduled Castes are given second preference in the assignment of lands.

HORTICULTURE TRAINING

The above schemes help financially weak Scheduled Tribes to stand on their own legs by sinking irrigation wells of their own and by purchasing plough, bulls, seeds, etc. As already mentioned the Scheduled Tribes live in forests and hilly areas.

There is ample space for the development of Horticulture. In Attur Taluk of Salem District, one Horticultural Assistant is working for giving technical advices for improving both the horticulture and income of the Scheduled Tribes. For the development of horticulture in Kolli Hills, the Government spends about a lakh of rupees annually.

The Scheduled Tribes who are trained in skilled works like carpentry, blacksmithy, etc., are supplied with tools and implements worth Rs. 300 to 350 each to enable them to stand on their own leg. In addition, the tribal artisans like carpenter, blacksmith, barber are supplied with the tools and implements to carry on with their trades with advanced tools, etc.

SURVEY OF INDEBTEDNESS

It has been felt, any amount of economic development cannot have the effect of redeeming the Scheduled Tribes from the strangle helds of the money-lenders. The attack on the indebtedness among the Scheduled Tribes should be two pronged, *i.e.*, they should be relieved from the strangle holds of the money lenders by giving long term loans and by augumenting their income. To achieve this, as a first step, a door to door survey on the indebtedness in Kolli Hills and Yercaud Blocks has been taken to ascertain the depth of indebtedness of the tribals. The following laws are in force in the State to control money lending, debt redemption and abolition of debt-bondage :

1. The Tamil Nadu Debt Conciliation Act, 1936.
2. The Tamil Nadu Pawn Brokers' Act, 1943.
3. The Tamil Nadu Indebted Agriculturists (Repayment of Debts) Act, 1955.
4. The Tamil Nadu Money Lenders' Act, 1957.

BONDED LABOUR

Indebtedness has led to the emergence of a system of Bonded Labour which is known by different names in different States. Under this system a tribal pledges his persons and some times members of his family, against a loan. He is released when the loan is repaid. Until then, the tribal or his family is required to work for his creditor, the period of services varies from area to area and in some case families work from generation to generation at master's house. The tribals have no wherewithal to repay the loan amount, he remains a debtor for life and his life is a life of perpextual serfdom under one master or another. In Tamil Nadu, it is learnt there are very few cases of Bonded Labour in the interior parts of Coimbatore and Nilgiris districts. Eventhough there are very few cases of bonded labour, they could not be checked since the tribals are not courageous enough to reveal this fact either to the Police or to other officials to do the needful. This system has not taken the shape to cause concern as in the case of other States. The Director of Harijan Welfare has proposed to make a personal study in this matter.

HEALTH AND NUTRITION

The tribals live in interior forests and on hills. Therefore, they are far away from the civilisation and amenities available in towns and cities. They are fortunate in living in forest areas. But, they suffer from chronic diseases, the most prevalent are waterborne. Therefore, there is imperative need to provide drinking water supply. Drinking water wells are sunk at Rs. 5,000 wherever necessary, in the tribal areas. For providing drinking water facilities to the tribal hamlets a sum of Rs. 2·25 lakhs is spent annually.

Due to malnutrition, the Scheduled Tribe children are physically weak with poor resistance. In order to give them nutritious diet, the Scheduled Tribe children studying or staying in the Government Tribal Residential Schools and Hostels are supplied with eggs, mutton and milk. The other tribal children are also provided with nutritious feed through centrally sponsored scheme. This scheme is being implemented by the Social Welfare Department. Multi-Vitamin tablets are supplied to the tribals free of cost.

Yaws used to be common among the Todas of the Nilgiris District and is rampant amongst tribals in the Kolli Hills. The incidence of T.B. is also high. In order to give relief to the Scheduled Tribes, seven mobile medical units in Madurai, the Nilgiris, North Arcot, Dharmapuri and Coimbatore Districts are functioning in the State, *i.e.*, in areas where there is heavy concentration of tribals. And it has also been proposed to start one more mobile medical unit for giving medical assistance to the tribals of Kolli Hills. In addition to this, hospitals and dispensaries are run by the Government, and Local Bodies, State Forest Department, Private Practitioners, Co-operative Societies in the plantation areas and also by other voluntary organisation. Financial assistance is given to the deserving privately managed institutions wherever necessary. For instance, the Nilgiris District Adivasis Welfare Association, Coonoor is getting assistance to the tune of Rs. 10,000 per annum for running dispensaries for tribals.

In Madurai District, where the tribals are in some concentration, anti-malaria tablets are supplied to the tribals.

The students studying and staying in the Government Tribal Residential Schools and Hostels are periodically checked by the medical officers to arrest the development of chronic diseases and to maintain good health.

HOUSING

The problem of housing is complicated by its enormous difference in climate, poverty of the tribals, etc. This has to be viewed in the aspects on shelter, sanitation and comprehensive cost. The plight of the Scheduled Tribes is miserable. They live in ill-ventilated huts put up in unhygienic conditions. They are also not economically sound to provide themselves with good houses. Unless they are provided with houses for their own and made to feel that they have got some interest, it will be very difficult to improve their lot. Therefore, houses are constructed and assigned to them. The cost of a single house comes to Rs. 1,600 in plains and Rs. 2,000 in hills of which 3/4th is subsidy and the rest as interest free loan, recoverable in 100 monthly equal instalments. During the Fourth Five Year Plan period, 1,200 houses at a cost of Rs. 12 lakhs were constructed for Scheduled Tribes. Ten percent of the house sites allotted by the Tamil Nadu Housing Board are for Scheduled Castes and Scheduled Tribes in the new colonies coming up.

ELECTRIFICATION OF TRIBAL COLONIES

The tribal colonies of the State are being electrified wherever the adjoining villages have been electrified. To meet the capital expenditure on this, the State Electricity Board is being given subsidy every year. The programme of electrification of all villages in the State was obstructed by the financial unsoundness of the Panchayats ot pay the consumption charges of the street lights in the Scheduled Caste and Scheduled Tribe colonies. **To overcome this, and to speed up the process of electrification, the Government have undertaken the task of meeting the current consumption charges in respect of Scheduled Caste and Scheduled Tribe colonies electrified from 1970-71 onwards.** This has paved the way for the quick electrification of tribal colonies.

Toda girls are famous for their skill at embroidery.

To improve the communication facilities in tribal areas programmes of link roads are undertaken. Two major road works costing Rs. 7·50 lakhs in Pachamalai Hills in Tiruchi District are in progress. The works are executed by the State Forest Department. Further, it cannot also be taken for granted that the tribal pockets are completely isolated and inaccessible. Many of them are connected by Jeepable roads and the rest with atleast bridle or foot-paths. For providing communication facilities, about Rs. 2 to 3 lakhs is spent every year.

INDUSTRIAL TRAINING

To train the tribals in skilled trades like carpentry, blacksmithy, etc., 6 Industrial Training, Training-*cum*-Production Centres are functioning in the State. The trainees of the Centres are given stipend.

The tribals in forests are given rights to take free of charge fuel and timber of unclassified species and bamboos. They are allowed to graze their cattle in the forest areas freely, since they rear their cattle. The tribals are employed on payment of daily wages for carrying out works like sandalwood extraction, constructions, etc. They are also employed as elephant men, watchers and foresters. Minor forest produces are leased out to the forest labour co-operative societies at concessional rates. They are also encouraged to take up 'Kumri' cultivation in Salem District.

BONDED LABOUR AMONG TRIBALS

Though the system of Bonded Labour is not of such dimensions as in other States, the Director of Harijan Welfare, Tamil Nadu has been asked to make a personal study of the pernicious practice.

TRIBAL DEVELOPMENT BLOCKS

Among the Tribal Development Programmes, the Tribal Development Blocks are the most important and more significant. The aim of these blocks is to bring about a rapid improvement in the economic and social standards of the tribal people by selecting specially undeveloped but compact areas for multisided development. In our State there are two Tribal Development Blocks in Salem District, one is at Yercaud and the other is at Kolli Hills. During Fifth Five Year Plan, it has been proposed to have special Tribal Development Blocks in Kodaikanal Hills of Madurai District, Pachamalai Hills of Tiruchi District, Gudalur area of the Nilgiris District and Chinnakalrayan Hills of South Arcot District where the tribals are in some concentration.

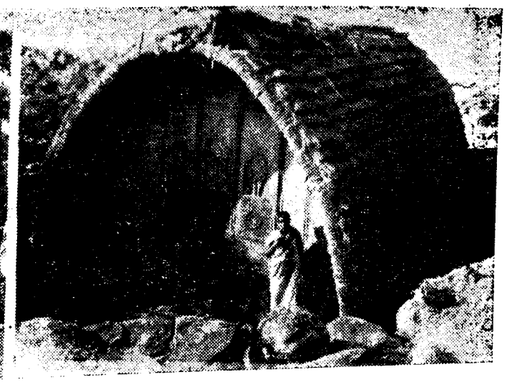
TRIBAL MODEL VILLAGES

There are three model villages in this State as detailed below, with all basic amenities :—

1. Nedungalacombai – Nilgiri District.
2. Aggal
3. Kunjaparai.

Todas present a majestic appearance.

Toda women accord reverential treatment to male elders.



A toda temple where rituals are performed.

Tamilnadu Tribes Religious Aspects

By
Dr. M. S. GOPALAKRISHNAN,
M. A., M. LITT., Ph. D.
Reader, Department of Anthropology,
University of Madras.

The primitive man attaches much importance to religion and religious conceptions which have their impact on all his activities. Unlike the modern man who deals with things in a scientific and logical way, the primitive man is governed by dogmas based on beliefs which in their turn have an emotional basis. This is why the primitive man's problems are secretive or occult whereas the modern man always approaches problems with an objective mind.

RITES AND RELIGION

The religious life of any people is understood by manifestations of their beliefs and in doing certain rites. In fact to refer to Durkheim religion is composed of 'beliefs' and 'rites'—beliefs about sacred things and rites addressed to them. It is in fact rites which give life to religion. According to Max Schmidt religion can be classified into its component parts 'cultus' and 'rites.' Cultus refers to the acts of men, which they themselves think, brings them into contact with the powers that are the objects of their religious faith. Schmidt defines art as "representation of ideas that afford an outlet for human emotion" and brings within art the various representations of religious ideas and makes one think that worship is through art. And this is how we find dancing, music, architecture, etc., as indispensably connected with worship.

The essence of primitive religion is a belief in an impersonal power ; the idea or concept of power varies from group to group. These powers which are deemed to influence human life act both favourably and unfavourably and are differentiated. The good ones are worshipped while the bad ones are propitiated. Primitive man's wrong idea of reality has confused his thought and this had led to errors of action. But in the case of the modern man experience and knowledge have made him view things differently and in a realistic way. This difference between them is not **organic** but **circumstantial** and should be thoroughly understood.

MAGIC AND RELIGION

Magic and religion are much interrelated and one can even say that much of magic is on a part with religion. Both are based on intellectual attitudes which resemble one and the same. While magic explains "the ways in which things happen in terms of hidden force," religion achieves this through deities, spirits and powers. Both the artistry of the magician and the rituals of religion are aimed to "create an atmosphere of suggestibility" and both employ the same means. Both follow a set form and traditional order the adherence to which is vital for success.

Primitive man views magic as important to understand the mystery of nature and life unlike the modern man. When the element of chance in day to day life upsets his calculations he is led to believe that some evil forces control the processes of nature and in turn he wants to control this through magic. Magic is different from religion in the way

in which the mystery of the world is viewed. Magic denotes an inflated notion of man's power whereas religion admits man's helplessness and his resignation to his destiny. In spite of the advance of science and general knowledge man will continue to live adapting himself to both magic and religion. Both magic and religion are complimentary and they serve the same purpose of restoring confidence in times of danger or crises. Where magic fails religion helps to tide over social and economic difficulties.

Magic assumes a uniformity of nature which brings it in line with science. To say with Frazer, " the magician does not doubt that these same causes will always produce the same effects, that the performance of the proper ceremony, accompanied by the appropriate spell, will inevitably be attended by the desired results, unless indeed his incantations should chance to be thwarted and foiled by the more potent charm of another sorcerer." The magician strictly follows what he considers to be the laws of nature ; so also the scientist and both assume a regular course of events in a well planned way which is their opinion are determined by those unchangeable laws which according to them they can calculate and determine correctly. Magic assumes occult causes while science deals with matter of fact causes. This is the reason why as Frazer says, all magic is barren and false, for, were it otherwise, it would no longer remain magic but would be science. **While magic tells us the ways by which things happen in the background of hidden forces, religion explains and interprets things in terms of spirits and Gods.**

ANIMISM

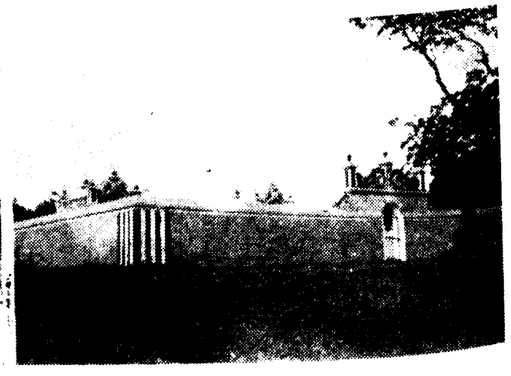
The word ' animism ' has been used to describe the tribal religions in India. " Animism is that exceedingly crude form of religion in which magic is the predominant element." According to this form, man's life is supposed to consist of powers, elements, ghosts, etc., which are impersonal in character, and also " shapeless phantoms of which no image can be made " and no definite idea can be formed. These are thought of to preside over various spheres of life and in this sense we have a spirit presiding over cholera, another over small pox, etc. and spirits existing in rocks and mountains and those associated with rivers. The primitive man diligently offers prayers and propitiates these to ward off the dangers associated with their influence. In this place we should bear in mind the fact that the primitive man not only cares for malevolent spirits but worships also such things as stones, feathers and symbols as also plants, trees, the sun, the moon, and the stars. The sun god is considered to be benign and expected not to do any wrong. Viewed from this point, we can say that ' animism ' has been replaced by " tribal religions " as such. In fact tribal religions are considered to come in line with popular Hinduism in the near future. Dr. Hutton has remarked that " tribal religions represent, as it were, surplus material not yet built into the temple of Hinduism." We can also refer to Elwin who is of the view that distinction between tribal religions and Hinduism or " the previous classification into animism and Hinduism is meaningless." We can conclude that tribal people have no objection to worship Hindu Gods provided it will benefit them.

RELIGION IN TAMIL NADU TRIBES—KOTAS

We can now study the four tribes of Tamil Nadu, *viz.*, the Kotas, the Todas, the Kanikkars and the Kadars from the point of view of religious aspects.

The villages where the Kotas live lie on a plateau in the South of India, the area which is now the Nilgiris District of Tamil Nadu. The town of the people called Kokal is a little away from the city and near the forest. In the town there are two temples at the eastern corner of the place dedicated to the father god and the mother goddess. There is one Chief Priest and two assistants to help him. These priests also conduct the main festival of the Kotas called Kambatrayan therv. The Kotas have no particular figures of their god. At the end of the year the Kotas celebrate a festival called Varldav which has a bearing on the performance of funeral rites. At this time the people make small cots which are used for carrying dead people depending on the number of the dead in the year. Those things which were used by the dead are put in small baskets and placed in the cots. In the evening these cots with the things are taken to the place called Davnat. Here the bones of the dead which are kept hidden somewhere are brought out and put in the cots and then the people start weeping. Finally all the cots are burnt. Thereafter food is prepared in the same place and

Toda Temple (Mund).



Kota Temple.

SOME TRIBAL DANCES

Top : The Kotas at dance.

Middle : The spiritual dance of Toda.

Bottom : The dummy horse forms part of all religious processions.

distributed to those who have come there. During the night two relatives of the deceased will stay in the same place Davnat and return to their home the next morning. The belief underlying the whole ritual is that only if this is done the dead will go to heaven. And also only after the performance of this a man or woman can remarry.

After the performance of this death ceremony the Kotas celebrate their famous festival Kambatrayan therv, the biggest ceremony for them, for a period of twenty one days. Even women participate. However, as a rule women never appear before the priests nor they approach anywhere near any of the sacred things. People prepare different varieties of foods and these are offered to god. The chief priest will participate in the eating and then only others take their food. **After the celebration of the function some kind of sports takes place in which all men and women should participate without fail. Otherwise they are fined by the local panchayat the next day.** The priests who perform the ceremony get possessed and make certain utterances about the coming events. Because of mixing with Hindus to a certain extent, the people now celebrate Hindu festivals like Sivaratri and Krishna puja.

AMONG TODAS

The Todas who inhabit the areas in Nilgiris District along with other tribes are said to have lived there for a number of centuries. The Todas give great importance for the buffaloes which are part and parcel of their life in every sphere of activity. There are different theories with regard to their origin. According to Dr. Rivers, Todas should have come from Malabar, the present Kerala. It can definitely be said that the Todas have been brought up in the Nilgiris. The Todas have great respect for their elders. The Todas believe in a large number of spirits, gods and goddesses particular among them being Teikirzi and on. Teikirzi is the supreme goddess which rules the people on the earth. On the youngest brother of the goddess rules over the world of the dead. We have also to note that the Todas have various river gods and also hill deities each being associated with a special hill top. The places where the buffaloes are kept are

considered very sacred by the Todas and the people who manage the cattle yards are the priests for them. In these sacred places special vessels, bells, lamps, etc., are used and kept separate from other ordinary things. Prayers are offered here but the words used are unintelligible. Though the Todas do not care much for omens they believe in divination. The diviners who form a separate class by themselves always work in pairs. They always give the decision in a particular matter, when they are in a semi-hypnotic state. The Todas also give importance for sacred days and sacred numbers. Among numerals three and seven are considered very important.

The Todas believe in the concept of spirit. After the death of a person, the spirit is supposed to travel to the other world. And according to them this other world is in the west and below the earth. Here the Sun shines while it is night on this earth. The concept of incarnation is also in vogue among the Todas and according to them after a considerable period of stay in the other world the spirit is reborn in this world as a new individual. Magic and sorcery are also practised by the Todas and they practice two types of magic, *viz.*, homoeopathic magic and contagious magic. As regards the religion of the Todas, Rivers has observed that " worship has been transferred from gods not to stocks and stones but to bells and dairy vessels." Thus we find that the religion of the Todas is moving farway from reality because there is more of ritualism than religion and in fact religion is overshadowed by ritualism.

ABOUT THE KANIKKARS

The tribal people known as Kanikkars are to be found in the Kanyakumari District in Tamil Nadu in forest areas like Keeripparai, Pechiparai, Kothayaru, etc., They are also found in the Kerala border particularly in the Neyyantankara forests. There are about 4,000 of these in Tamil Nadu alone.

We cannot say with certainly what religion the Kanikkars follow. There is evidence to show that they worshipped Lord Siva, Parvathi, Vishnu and also Satan. The Kanikkars worship this Satan as a hill god. The stories prevalent among these tribal people bear testimony to these. They also believe in animism, magic, sorcery, etc. Apart from the deities mentioned above the Kanikkars worship many other minor deities. The watch god of the area is worshipped first. This is supposed to guard the land of the tribals. Then comes Satan the hill god. Among the smaller deities come also the forest deities which are expected to protect the people when they go for hunting. Another particular deity worshipped by the Kanikkars is the Madan. The figure of this deity is prepared in mud. This deity is worshipped on all occasions. The Sun god is also worshipped as an important deity and in all ritual practices first worship is offered to the Sun god. Food is offered after prayers. In an open space the food is prepared and placed in a plaintain leaf. The whole thing is then offered to god.

The festivals celebrated by the Kanikkars are many. On these occasions, prayers are offered for particular deities. Thus before sowing and starting the agricultural operations the Kanikkars clear the land destroying the forest. In order not to offend the god of the land they make offerings to the forest deity. After the harvest also they make offerings to the deities and celebrate the same in an elaborate fashion. This function starting in the early hours of the morning goes on till midday. Rice is then offered. Music and dancing also take place. Finally the offering of fruits, coconuts and other things is made. After the offering the things are distributed among the members. In order to avoid harm while going out for hunting the Kanikkars worship certain forest deities. Worship of the Sun god takes place first in the morning. The actual prayers for the forest deities takes place in the forest itself where a big pit is made and fire lit in it. The instruments of hunting are then placed before the fire and certain words are said in prayer. After this the hunting takes place.

Lastly the Kanikkars make special prayers on occasions when there is no rain and when disasters come to them in their place. This is also an elaborate ritual starting in the morning and going till the end of the day. In an open place the important among the tribal people assemble and put a pandal with coconut leaves and plaintain leaves and also flowers. Then they improvise the deity by making a small dwelling place inside the pandal and placing there the dress, the weapons, etc., supposed to belong to the gods. Then elaborate offerings of rice, paddy, tender coconuts, fruits, etc., are placed in a number of leaves. Songs praising the deity are then sung. At about twelve the puja takes place. A prominent member among those assembled gets hypnotised and utters some words supposed to come from god himself. This man later dances on a platform of fire and drinks the blood of a fowl after its head is cut. Then the man falls down. The function now comes to an end and everybody assembled shares the offerings placed there.

THE SUMMING UP

"Our analysis of the beliefs and practices relating to the supernatural being among the tribals in general, reveals that whatever be the way of life, whether gathering are hunting or cattle herding the tribal enacted his myths through rites and rituals, dances and songs, fear and taboos thus confirming his belief in the supernatural, invisible, imperceptible force not individually but collectively. What matters to him is social survival."

THE KADARS AND THEIR WORSHIP FORM

The Kadars are a food gathering jungle tribe of South India spread in the Nelliampathy and Kadacheri mountains situated in the erstwhile Cochin State now part of Kerala. They are also to be found in Anamalais Hills in Coimbatore District of Tamil Nadu, Kollegal Taluk and SouthKanara forming part of Mysore State. The Kadar religion is basically primitive polytheism. However, Hindu religion has crept in here also as in the case of other tribes to bring about notable changes in the traditional religion of the Kadars. The important deities of the Kadar are Ayyappan, Goddess Kali, Maruti and Malavashi. The Kadar have faith in the existence of spirits, particularly nature spirits. Rising Sun is worshipped among the Kadars and there are small temples also in their area for worship. The Kadar attach much importance in the matter of being blessed by spirits, demons and deities and also ancestral spirits. This can be seen during celebrations of festivals and ritual and social undertakings. On all occsions considered important the Kadars make fire in the belief that it is necessary to invoke the blessings of deities and ancestral spirits. Usually the village headman is the priest. From all this we find that Kadar religion has become more intermixed with Hindu forms of worship and other things.

Our analysis of the beliefs and practices relating to the supernatural beings among the tribals in general reveals that whatever be the way of life, whether gathering or hunting or cattle herding, the tribal enacted his myths through rites and rituals, dances and songs, fear and taboos thus confirming his belief in the supernatural, invisible, imperceptible force not individually but collectively what matters to him is social survival.

The Buffalo Pen among Todas is a place of veneration.

According to Frazer "While magic tells us the ways by which things happen in the background of hidden forces, religion explains and interprets things in terms of spirits and Gods."

69693

TRIBES OF TAMIL NADU–THEIR HEALTH PRACTICES

This report is an attempt to study the Social Cultural aspects and mainly the health problems among the Tribes of Tamil Nadu. The report is based upon the visit of the Officer to the Kanyakumari District and Madurai District. The Kanis of Kanyakumari District and the Adivasis of Madurai were visited in order to study their living conditions and the health practices.

The Adivasis of Madurai District live in the Palni Hills. They live in twentytwo places of Kodaikanal and Palni Taluks. The Tribes of these hills consist of Mannadiyars, Kunnavas and Puliyars.

The Kanikkars of Kanyakumari District believe that their ancestors should have lived in the same hilly areas where they find themselves now. The existence of these Kanikkars come to be known when Maharaja of Moolanthirunal took shelter in this thick forest of the hills under enemy attack and the secular leader of this tribe Muttakani protected the Maharaja.

The tribes live in eighteen hills of four taluks of Kanyakumari District namely Kalkulam, Thovalai, Vilvancode and Andipothai. Since, the Kanikkars are located mainly in the forest and hilly areas, their main occupation is agriculture.

HEALTH FACTORS

Now, coming to the health factors of these tribes of uamil Nadu, they have very little knowledge regarding health and health practices. Practice of medicine is in the crude form. They get the cases treated through their tribal leader. Local herbs are used for ordinary ailments.

The tribes do not bathe daily and soap is rarely used. They use dry coconut fibre to rub the skin. For ceremonial occasions dry flower powders are used. Cutting of nails, combing of hair is not done regularly. Brushing of teeth is done with neem stick or with powdered charcoal. Defecation is done in the open space by children as well as by adults. Drinking water is got from the small rivulets which are present in all the villages as natural source. There is no well at all. The stream water is used for all purposes.

It is interesting to state that the tribes who are working for the Harijan Welfare Department and Forest Department seem to have contracted some healthy habits like brushing of teeth, bathing and combing from the Plains people.

Knowledge on health and diseases are fairly poor. Though the tribes are not fully aware of the diseases and the mode of spread etc., they are frightened of certain diseases like Cholera and Small pox. When these two diseases break out in an area, the entire community leave the area and they settle down far away from the infected areas. The diseased are also left all alone uncared for and if by chance they survive they rejoin the other tribes later (actually such instances were also witnessed by the Author). The tribes name the diseases in their own language and it is mostly related to the usual definition of the Tamilians. The tribes have often diseases like Cholera, Small pox, Wooping Cough and worm infections among children. Diarrhoea and Dysentries are also very common. There is no problem of skin conditions but majority of the tribes suffer from Venereal Diseases. The attack is in equal percentage among men and women. In general, they know very little about the diseases mentioned above. Knowledge about the communicable diseases is very limited. They are not aware of the mode of onset, spread, causative agent and treatment, prevention, etc., of such diseases are not known to them. They believe that these diseases are set on them by the Hill Gods and Goddesses as a curse or as a punishment for any dead or offering not acceptable to these Gods.

Normally, the tribes get treated by the head or leader of tribal people. They also get treatment by Pachamalai Vaidyam and Moolakashayam. Practice of medicine by herbs and leaves are commonly present and there are persons specialised in this field. In cases where the condition becomes serious then they take such a case to the plains and to the nearest hospitals.

All the Hill Tribes believe that the Hill God and Goddesses are giving all kinds of protection to them against diseases and evil spirits. They strongly believe that propee offering to the deities and sincerr worship will keep them in good health. They also believe in natural cure method. If they come to know that an individual cannot be cured then they do not pay any attention to the diseased except the offer of prayers to the Hill God.

To conclude, the Tribes of Tamil Nadu (whom so far the Author has seen) generally look healthy. Among children protein deficiency seems to be common and among adults Vitamin 'A' and B2 deficiency. They rarely suffer from fever, scabies, etc.

Tribes are found with common nutritional problems. Their main staple food is tapioca, . Fish and flesh from hunted animals are also eaten, use of spices and condiments are very little. Vegetables are used very sparingly. No oil is used for cooking purposes. During festivals they may use of Rice, Maize, Honey and Coconut.

It is interesting to note that the tribes have limited number of family members. An average size of the tribal family is three to four only. The children are born on spacing method but natural. They believe that repeated pregnancies will not occur if a married woman regularly offers offerings to the hill goddess and take regularly a species of herb available in the hills.

Though the Tribes of Tamil Nadu living in different parts of the State in different districts from the study it appears all have similar practices of Social, Cultural and Health factors. The studies undertaken by the Author has clearly shown the superstition and primitive beliefs that are still lingering with the tribes whereas their counterparts in the plains have made progress in all aspects in leaps and bounds. They need a good educational and publicity programme regarding the various health problems. This is being considered by the author and arrangements are being made in a planned phase to educate the tribes on health practices.

By

Thirumathi Sumathy S. Rao, B.Sc. (Hons) D. Ap., MPH (Carel). Health Educator Training Officer, Directorate of Health Services and Family Planning (Public Health wing), Madras-600006.

LEATHER PUPPETRY COLLECTION AT THE GOVERNMENT MUSEUM MADRAS

Kumbakarna Indo-China Leather Puppet

Rajasthan string puppets

N. DEVASAHAYAM,
Curator for Anthropology,
Govt. Museum, Madras-8.

Puppetry had its inception long back dating to the Prehistoric culture of human beings in the world. In fact Prehistoric man was using twigs or pieces of bones to focus shadows on the walls of his caves or rock-shelters. Thus, the primitive type of entertainment was first started by the early man.

India—a Pioneer in Drama

India has been a pioneer in the field of drama right down through the ages. Inscriptions from the Sitabenga and Jogimara caves in the Ramgarh hills in South Bihar reveal the existence of a developed dramatic art in ancient India. The native Indian Sanskrit drama thus flourishing was brought to suppression by the Turks when they conquered India. But isolated scholars all over contributed to the existence of this esteemed art of drama. When Sanskrit drama was lost as a living form under the enormous pressure from the invading muslims, the Indian or Hindu culture and way of life were both modified and attempts at literary self expression were made after 1200 A.D. through all types of literature. The two great Indian Epics, the **Ramayana** and the **Mahabharata** and various Puranas were translated into both North Indian and South Indian languages during this age and these puranas form the basis for the selection of characters and plays for the leather shadow play figure art.

*

The modern leather puppetry has developed into a well-defined and well-controlled shadow play figure art from the rudimentary form of entertainment of Prehistoric man using twigs or pieces of bones to focus shadows on the walls of his caves or rock shelters. India has been a pioneer in this art though it now lags behind some of the European countries in this art.

The **Purana Kalashepamu** at the Gramachavadi and the **Bhajana** form of congregational worship expressed in song and dance were the earliest forms of entertainments in Tamil Nadu and Andhra Pradesh. This rudimentary form of primitive drama was replaced by better planned **Padas** and **Geyakaiyas.** Later, poetically narrated stories of episodes from Shrikrishna's life interpreted in dance accompanied by music which was popularly known as **Bhagavatamu** or **Bhamakalpamu** were introduced. About the same period the shadow play art had made its appearance, thus becoming the precursor of the early Telugu drama, which was written and flourished in the form of **Yakshaganams** and **Veedinatakams.** In Andhra Pradesh the coloured shadow leather puppetry has made special attempt in primitive dramatic art within the rural areas.

Simple method

The method of manufacture of the leather puppet figures is simple and interesting. The wet skin of a goat or deer is dipped in warm water and the hair is completely removed by means of a sharp knife. Especially in Andhra leather figures, the skin (membrane) must be thin and uniform. No process of tanning is involved while preparing the skin. On the next day, the cleaned skin is allowed to dry for a day or so. Thus the dried skin looks very clear, white, translucent, thin and

of about 1/32 inches in thickness. The skin should be devoid of any smell or odour. Each wet skin costs about Rs. 5. This skin is now ready for being cut into the shape of the required figure. Generally three dried skins are required to complete a figure with the moving parts, namely the head, trunk and the limbs. The puppeteer with his skilled artistic capacity draws the outline of the figure on the dried skin from which he has to produce a figure. At times, he traces old figures and their main lines either by pencil or by charcoal or by means of a sharp edged tool.

Process of making of Puppetry Figure

After the outline of the figure is drawn and cut, the inner design of the figure to represent the jewellery and the clothing is marked in delicate outline by means of a sharp tool. The next stage starts with the punching of holes in the skin figure to represent jewellery and this is effected with the help of small sharp and delicate chisels.

Generally the artists select the figures from the famous ceiling paintings of Lepakshi temple which is about 12 miles away from Hindupur in Anantapur District. Not only the forms, but also the colour scheme adapted is copied or derived from these paintings. In fact, it is also argued that the paintings of Narasimha Avatar were very helpful to the artist to punch the leather figures to show the decorative nature of the jewelleries. In Andhra Leather play figures, colouring is very important which is quite alike the Mysorean leather figures. Usually chemical dyes are used for the purpose. Older figures have two or three prominent colours, mostly red and black while blue, green, violet, pink, yellow, black and white are also used in modern figures which look gaudy but are popular among the rural folk. The colours are mixed in water and spread on the skin on both sides with a piece of cloth or rag. The general convention is that for particular characters, definite colours should be used

The technique of performing the show has taken its own course of evolution. In the earlier types the entire figure was of a single piece with immovable limbs as a result of which the entire figure was tilted downwards or upwards or to the sides. This difficulty was overcome by a new method of animating the figures by making the neck and joints of the limbs flexible by joining independent pieces together loosely. In olden days in Andhra Pradesh burning wicks dipped in castor oil were used to throw illumination. Gradually in rural areas petromax lights have replaced the castor oil lamps. But from practical experience, castor oil lamps have a better effect than petromax lights and electric bulbs or fluorescent lamps.

The Bommalattam troupe consists of three to six members, chief among them being the leather figure operators and articulators, a couple of accompanying singers and a few musicians. In villages the show starts at 9 or 10 p.m. in a specially erected stage and lasts till 4 to 5 a.m. the next morning. The show commences by singing an invocation to Lord Vigneswara and Goddess Saraswati by the performers.

Rich Collection in Madras Government Museum

The Madras Government Museum has got a rich collection of about 270 leather shadow play figures, representing a good variety from Andhra, Mysore, Kerala, Tamil Nadu, Malaya, Indo-China and Java. Collected in course of its long history by means of purchase and exchange, only a few select leather puppets are on display in two wall cases in the Anthropological Galleries. Schemes and plans are ahead to have a series of new built-in show cases to accommodate leather, string and glove puppets on modern display techniques. The rest of the leather puppets which form the reserve collection for the purposes of study and research by the visiting research scholars and workers are conveniently arranged one above the other in rows in specially designed movable drawers in the cupboards of the gallery. A special type of packing wooden boxes with partitions are also made now and then for sending the leather puppets for exhibition purposes to different institution in different parts of the country and abroad. The leather puppets of this Museum are preserved by applying chemicals like D D T and the mixture of castor oil with rectified spirit in suitable proportions periodically.

For the benefit of the visiting public, students and research workers connected with Leather Technology, the museum is bringing out a bulletin on the " Puppets in the collection of the Madras Government Museum " by Thiru N. Devasahayam, Curator for Anthropology of the Museum. The Part I of the bulletin contains brief notes about the puppets and puppetteers from different parts of the country and abroad and the Part II portion deals with the catalogue of the puppets in the collection at the Museum. The literature is supplemented by 35 photographs of leather, string and glove puppets drawn from different parts of India and abroad.

—oOo—

SERICULTURE IN SALEM DISTRICT

Sericulture has broken two barriers of climate and elevation. Promising signs in Sericulture Cultivation exists in Salem District. Thiru Shanmugam of D. Perumalpalayam in Salem Taluk, an enthusiastic farmer, developed mulberry plants in his one acre plot in which he got cocoons worth Rs. 5,214 within ten months, which is a notable profit. This goes only to prove that Shervaroy, Chitteri, Kalrayan, Pachamalai and Kollimalai Hills belt area of Salem Region have the highest potential for sericulture development in the State. The existing mulberry garden in this belt area have been acclaimed the best among their counterparts in the other districts.

At present, statistics reveal that there are about 5,000 handloom silk weavers in Salem District. Their requirement of raw silk will be 25 Kgs. per loom per annum. On an average, the raw silk production per acre will also be roughly 25 Kgs. per acre per annum. Therefore, it will be enough if we have 5,000 acres planted with mulberry in the hill belt for solving the shortfall of silk supply in this district.

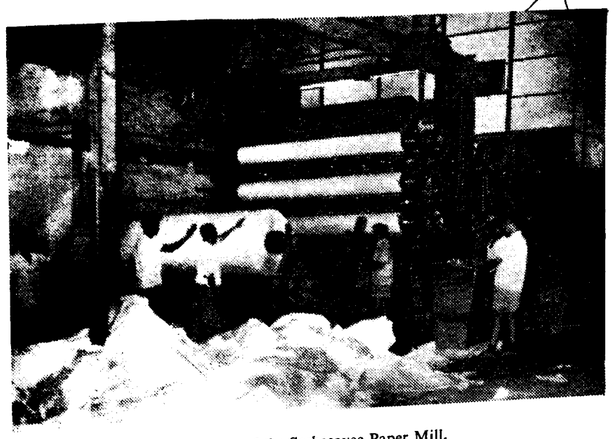
—FIELD PUBLICITY OFFICER, SALEM.

BRIGHT PROSPECTS FOR PAPER INDUSTRY IN TAMIL NADU

V

By

Prof. C. S. MAHADEVAN,



A view of the Seshasayee Paper Mill.

There are at present 57 Industrial Units in India engaged in the manufacture of different varieties of paper and paper boards. Besides, there is one unit in the Public Sector which manufactures newsprint. Out of 57 Units in the country, about 18 Units can be considered to be big sized units, whereas the rest of them are either medium or small scale units. The current total production of finished paper is about 7,58,000 tonnes per annum, consisting of cultural paper and other varieties ; e.g. writing and printing paper (4,50,000 tonnes), packing and wrapping paper (1,61,000 tonnes), special varieties (23,000 tonnes to 24,000 tonnes) and boards (1,30,000 tonnes). As against this output, the current demand in the country for different varieties of paper may be put at 9,00,000 tonnes. Thus, there is a shortfall to the tune of 1,42,000 tonnes.

This shortfall is likely to assume acute proportions if the expansion programmes of the existing big units and already licensed units take time to fructify. It is expected that the implementation of the expansion programmes will take atleast 3 years from now and during that period the demand for paper will continue to grow resulting in an accentuation of the shortfall.

PAPER INDUSTRY IN TAMIL NADU

In the light of this analysis, this industry will have to play a very important role in Tamil Nadu during Vth and VIth Five Year Plans. It is really gratifying to observe that the working group on Agro-Industries in the State Planning Commission headed by Thiru A.S. Padmanabhan, I.A.S., has brought out clearly the distinct role which the paper industry has to play in Tamil Nadu in the next decade.

OUR ADDITIONAL REQUIREMENTS

This will necessitate an additional output of 54,000 tonnes of printing and writing paper, 39,000 tonnes of packing and wrapping paper and 30,000 tonnes of paper boards.

Considering the long term nature of the present plan, it will be safe to provide for a 5 per cent margin in production capacity so that the actual production may result in achieving an additional quantity of 130,000 tonnes which is necessary if the State is to reach self-sufficiency in the matter of paper boards by 1983-84. The total requirement of the different raw materials would be of the order of 3,82,000 tonnes (air dry) or roughly 4,00,000 tonnes per annum.

In order that the paper industry may develop on sound lines, it is necessary to allocate a sum of Rs. 120 crores for achieving the objective of establishing an additional production capacity of 98,000 tonnes of writing and printing paper, packing and wrapping paper and paper boards. **It will be of**

advantage to the State if it establishes at least one unit of not less than 300 tonnes per day production capacity as early as possible. Action will have to be taken either to procure pulp from up-country mills which produce only pulp or to import pulp from abroad with the permission of the Government of India. Also, it may be necessary to think in terms of developing raw materials other than bagasse for utilisation in the paper industry. Mesta, otherwise called as Kenaf or Deccan hemp, can be thought of as a valuable raw material for the paper industry. The crop is capable of giving excellent pulp for making superior quality of paper and the Tamil Nadu Government have already obtained a letter of intent for setting up a paper unit in the co-operative sector for using this item as raw material. Mesta yields pulps which are equal to most soft wood pulps and are superior to most hard wood pulp. The paper made out of mesta pulp have good bursting strength, tensile strength, folding endurance and surface finish. Mesta grows well as a Khariff crop in areas having a rainfall of 15 to 75 cms distributed over 4 to 5 months. It is usually grown on light black soils, sandy, alluvial loams and even lateritics and gravely soils. It is mostly grown mixed with Bajra, Jowar, Ragi, Pulses and Khariff, cotton and sometimes on the borders of irrigated sugar cane. In some areas it is grown alone in rotation with different cereals, pulses and other crops. As a mixed crop it may form a sprinkling in the main crop, or may be grown in single rows planted after every 5 or 6 rows of the major component in the mixture.

For the pure crop, the land is ploughed, cross ploughed and harrowed two or three times, to get a well pulverised seedbed. Manure is seldom applied, though the crop gives a good response to an application of 25 to 35kgs. of N in organic or inorganic form. Grown as a mixed crop, it shares in the preparatory tillage, manuring, interculture and irrigation given to the principal crop.

PRICE POLICY

It will be totally unrealistic to believe or proceed on the assumption that the price per tonne of paper should remain pegged at the present level or the increase in prices should be only nominal from year to year. In fact, the rise in the price of paper when compared to the rise in the prices of other basic items such as rice and wheat has been remarkably low. If the Units in the paper industry are to be viable, it is inevitable that the price of paper should be so adjusted as to make the operations of the industry gainful and also to enable it generate internal resources for supporting its expansion and diversification programmes.

A NUTSHELL ACCOUNT OF PAPER INDUSTRIES AND THEIR PRODUCTION CAPACITIES IN TAMIL NADU AND ITS PRESENT CONSUMPTION AND FUTURE DEMAND

According to the report of the Working Group, Tamilnadu is currently producing about 42,000 tonnes per annum of finished paper and the Industrial Units which contribute this output are :—

	Tonnes
(*i*) Seshasayee Paper and Boards Limited, Pallipalayam. (including 7,000 to 10,000 of duplex board)	33,000
(*ii*) Sun Paper Mills Ltd., Tirunelveli ..	5,000
(*iii*) Venkateswara Paper Mills, Udumalpet ..	4,000
Total ..	42,000

It is estimated that the present consumption of paper and paper boards is as follows :—

	Tonnes
(*i*) Writing and Printing Paper (including special varieties)	30,000
(*ii*) Packing and Wrapping Paper ..	10,000
(*iii*) Paper Boards (Duplex, Triplex and Pulp Boards) ..	10,000
Total ..	50,000

In view of the increase in population and rise in the standard of literacy, the demand for different varieties of paper and paper products in the State is sure to go up, and the likely pattern of demand in 1984 will be as follows :—

Item	*Demand (consumption) in 1983-84 (in tonnes).*
Printing and Writing Paper	80,000
Packing and Wrapping Paper	40,000
Paper Boards (Duplex, Triplex and Pulp Boards)	45,000
Total ..	1,65,000

THE QUTAB HOTEL GIVES LURE OF APARTMENT LIVING

The new Qutab Hotel of India Tourism Development Corporation, situated in south Delhi, is now ready to welcome tourists. It is the sixth hotel of I.T.D.C. in the capital and an important addition to India's fast developing tourism industry. Overlooking the 13th century Qutab Minar, the Hotel is a unique reflection of Delhi's blend of tradition and modernity. Its facilities include service apartments, which provide all amenities of a private flat. Qutab Hotel is a straight run from the airport and 20 minutes drive from the heart of the town. Built in 1971 as a hotel and residential complex for the United States Agency for International Development, it consists of a main block of 18 double rooms and five apartment towers with 30 apartments.

APARTMENT LIVING

The facilities for apartment living, now a range in foreign countries and introduced in India for the first time, coupled with the lure of the historic surroundings in which the hotel is situated, may make it a star attraction for the discriminating tourists. The Qutab Service Apartments offer complete privacy and are particularly suited for those planning a long stay in Delhi, who need the convenience of a hotel as well as the atmosphere of a home. Every apartment has attached baths, a living dining room, study and kitchenette with a refrigerator and a private balcony and channel music in rooms. The east-west orientation of the apartment buildings and tinted glass in all windows reduces heat radiation and eliminates glare. Of the 30 apartments, 18 have two bed rooms each and 12 contain one bed room. The entire complex is centrally air-conditioned with individual temperature control in rooms. The decor of the Qutab Hotel is a subtle blend of Indian fabrics and American furnishing. A unique service offered at the Hotel is a four-lane semi-automatic bowling alley, the only one in India. Other hotel services include channel music in rooms, swimming pool, party and meeting rooms, gourmet restaurant and bar, louges, tennis courts, car rentals, money changer, laundry and dry cleaning, safe deposit and parking space.

N. D. R. I. —

HIGH-YIELD MILKERS

Research on the upkeep of milch animals and breeding are very much restricted in India and perhaps the only institution carrying out such investigation of a fairly large scale is the National Dairy Research Institute with its head quarters at Karnal, Haryana and the three regional stations at Bangalore for the south, Bombay for the west and Kalyan for the Eastern Zones. Many research projects on both fundamental aspects and applied aspects during the past 49 years have been taken up at NDRI but more recently greater emphasis is laid on cross breeding using exotic bulls. At Bangalore, cross breeding of Tharparkar cows with Jersey bulls followed by F1 intercrossing has given satisfactory results. The hardy Tharparkar and the high yielding economic exotic Jersey breeds have thus been brought together and the final release of the blend may be expected to be something that will be suited to all types of cattle growers in the south. The blend Karan Swiss that has already been evolved by using Sahiwal and Red Sindhi as the indigenous base for a cross breeding programme using imported frozen semen from outstanding progeny-tested Brown Swiss bulls from USA. This has been a real breakthrough as the Karan Swiss averaged more than 3,000 litres of milk per lactation and more so because it produced milk at 72 paise per litre (with imputs calculated at current prices in Karnal) as against the Sahiwal indigenous improved breed with an average of 2,000 litres of milk per lactation and a cost of Rs. 1.10 per litre of milk. The Institute has now taken up another exotic breed Holstein Friesian for breeding programme. The target is to produce a new strain of cattle averaging more than 3,500 litres of milk per lactation and to bring down the milk price further to 69 paise per litre.

With all the awareness regarding the importance of animal science (relating to breeding, feeding and management) this aspect is yet to gain sufficient emphasis in the Agricultural Universities. The Tamil Nadu Agricultural University has started an animal science department, but it is too early to create an impact on the economy.

A PIONEER IN DAIRY RESEARCH

The need for development of milk production on scientific lines and realisation of the vital role dairying plays in the country's economy led to establishment of the dairy training institute at Bangalore in the year 1922. Over the years, the objectives and facilities at the disposal of the institute have been enlarged. Now the NDRI is one of the few International Research Centres, exclusively devoted to the study of the various phases of dairy science and technology. The Institute also gives graduate, post-graduate and specialised training in all branches of dairy science. These facilities are often made use of by scholars from neighbouring countries. The development of NDRI has been on a pattern of an integrated approach between research, teaching and extension. Institute's *alumni* continue to be associated with every phase of dairy development throughout the country.

National Dairy Research Institute, KARNAL

The headquarter at Karnal has a fodder farm of about 411 hectares along with herds of Red Sindhi, Sahiwal, Tharparkar and Brown Swiss crossbred cows and Murrah and Surti buffaloes. At the Southern Regional Station, Bangalore, crossbreeding native cattle to Jersey and Holstein breeds has helped the development of high producing crossbred cattle suited to that region. The Eastern Regional Station at Kalyani and the Western Regional Station at Bombay have herds of Red Sindhi cows together with some crossbreeds for feeding trials.

Research on cattle improvement

Over the years, the Institute has been an important source for the supply of improved animals to various farms all over the country, specially for the Sahiwal, Red Sindhi and the Tharparkar breeds. The institute demonstrated the benefits of crossbreeding for commercial milk production in early twenties by having high yielding progeny from Haryana cows crossbred with Ayrshire bulls. The present day popularity of the crossbred cow in the South owes its origin to this pioneering work. Similarly, the institute was the first to introduce artificial insemination in a large scale in cattle in rural areas around Bangalore. In 1962, a new ground was broken when frozen semen was imported from USA for crossbreeding Red Sindhi and Sahiwal cows in Karnal with Brown Swiss semen.

As a result, a new strain of Dairy Cattle 'Karan Swiss' has been developed in Karnal incorporating exotic inheritance from Brown Swiss and Zebu inheritance from Sahiwal and Red Sindhi. A nucleus herd of 140 Karan Swiss cows along with 187 female followers and bulls are available for providing germplasm for increasing milk production. The Karan Swiss female calves weighed 27 kg at birth-range 16 to 41 kg. These were 25 to 30 per cent heavier than their contemporary pure bred Zebu. The crossbred calves grew at a faster rate, by additional 100 grams a day, compared to the Zebu. At six months of age, crossbred female averaged 127 kg as against 100 kg for the Zebu base. The weight at first service for the Karan Swiss was 270 kg as against 247 kg for the Zebu and weight at first calving was 377 kg as against 322 kg for the Zebu. The average age at first calving for the Karan Swiss also had a better reproductive efficiency. It took 1·4 services per conception as against 1·7 in the case of Zebu.

During the last five years the first generation of Karan Swiss averaged 3,196 kg mlk per lactation, whereas the Indian cows during this period averaged 1,808 kg milk per lactation. Among the crossbred cows, some animals have recorded over 5,600 kg of milk in a lactation of 305 days as against 3,814 kg for Sahiwal and 3,996 kg for Red Sindhi. A Karan Swiss cow No. 65 produced the record production of 43 litres of milk in a day in four milking and this is probably the highest per day milk yeild for any cow in India.

The technique of handling, preserving and transport of semen have been standardised and applied under field conditions. In recognition of the initiative taken by the Institute in this important phase of cattle improvement, the Indian Council of Agricultural Research established its Central AI Centre at the Southern Regional Station which has now been merged as a normal activity of the NDRI. Buffalo semen is known to be fragile and has a shorter storage life. Attention has been paid to study its various properties and characteristics so that semen can be kept over longer intervals facilitating transport over long distances. Recently, a new diluent for preserving buffalo semen has been formulated. This is prepared by mixing cows milk with citric acid and the citric-acid-whey. This found is at present being successfully used in preserving and freezing of buffalo semen. Whilst semen for long storage has to be preserved in liquid nitrogen around 178°C, work is in progress to standardise a technique whereby semen would remain active over 8—10 days at room temperature so that it is transported to interior rural areas for AI work.

Students testing the quality of milk and milk products

Import of proper feeding

Cultivation of different nutritious forages for feeding cattle and their preservation are a pre-requisite for dairy farming. In the absence of proper nutrition animals cannot show their genetic potential. For lowering cost of production of milk, reliance of home grown fodder is essential. From the initial work on growing perennial fodders like Guinea, Napier and Hybrid Napier grasses with the help of town sewage, work has now been extended to relay cropping under irrigated conditions so that by feeding 30-35 kgs. of fodder, requirements of adult milch animal giving up to 6–7 kgs. of milk per day are met eliminating the use of costly concentrates.

In one intensive rotation two crops Maize and Cowpea and Maize and Cowpea Teosinte in Kharif season and followed by Oats and Mustard in Rabi season produced 150 tonnes of green fodder per hectare which was found to be sufficient to maintain 10 milch animals the year round assuming that each animal is fed at the rate of 40 kgs. green fodder per day. In another rotation multi-cut crops like Sudan grass, Towar, Bajra and Teosinte together with Cowpea in kharif season followed by Berseem, Mustard and Oats in rabi season produced 200 tonnes of green fodder per hectare.

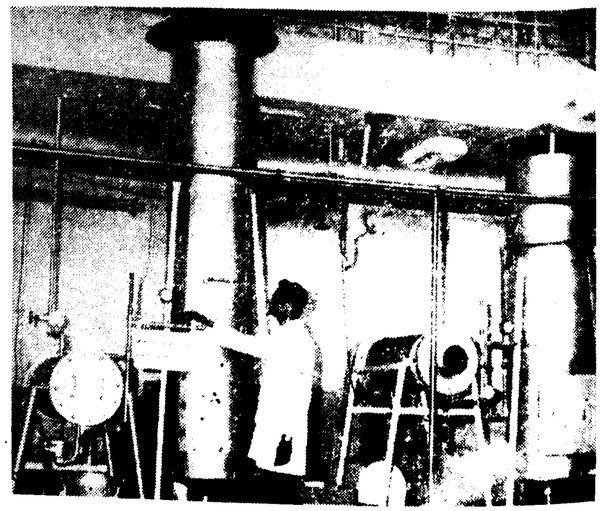
By maintaining high yielding cross-bred cows and adopting relay or intensive cropping of fodder crops, profit of Rs. 6,000 and above can be obtained per hectare per year.

The fodder grasses which generally thrive in summer and monsoon

seasons are inter-planted with legumes which grow better in the cold season. Thus the land is utilised to the maximum throughout the year and a system of taking 4—5 different crops in rotation, or 7—8 crops in rotation combined with combinations is a practical feasibility.

Surveys of feeding practices and rations used in different parts of the country have been made. It has been demonstrated that even when adequate supply of green fodder is not available, the farmer could keep animals in maximum production by using straw sprayed with urea and molasses, 4—5 kgs. of shark liver oil, supplemented with only 4—5 kgs. of green fodder.

The digestability of different feed constituents in the rumen of the cow, the buffalo and the goat are being studied with the help of fistulated animals. The differences noted are being correlated with the types of micro-organisms present in the rumen of different species. This could enable greater use of agricultural and industrial waste materials and non-protein substances like urea to be used for routine feeding to lower the cost of milk.

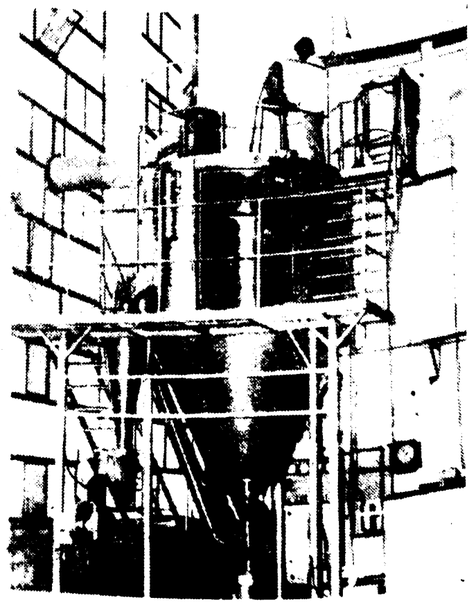


The continuous Ghee making equipment

Improved management practices

A dairy animal takes about 3 years to come into milk and start giving returns to the farmer. A constant effort is being made to reduce the age at first calving, through better management practices and also to reduce the cost of rearing young stock by replacing

Frozen semen ampoules from outstanding Brown Swiss Sires.



Spray drier used for macufacture of milk, etc.

milk used for feeding with equally nutritious "Calf starters" prepared from cheaper materials like cereals, fishmeal, deoiled cakes, etc.

Studies on composition of buffalo milk

Balanced feeding has been shown to be important not only for maximising production, but also in maintaining the composition of milk to the same level throughout the year. Cow and buffalo milk, though containing the same constituents, differ markedly in their properties. This leads to difficulties in utilising established manufacturing practices for preparing products like condensed milk, sterilised milk, cheese, etc., with buffalo milk. Methods for studying in detail the reasons for observed differences were standardised and the components which give rise to these differences identified and isolated. This understanding has enabled the manufacture of as good products from buffalo milk as from cow milk.

Quality control of milk and milk products

The high cost of production of milk and the large unsatisfied demand for milk and milk products often leads to negligence of hygiene and adulteration. A constant check is needed on quality. Rapid bacteriological and chemical tests have been devised to check hygienic quality as well as freedom from presence of extranuous substances like water in milk, cheaper fats in ghee, etc.

Studies have been taken up to see how milk produced in rural areas differs from the produce obtained from animals in well managed organised farms. With the help of the Hansa Test, presence of as little as 5 per cent of buffalo milk can be detected in cow milk. With the same sensitivity, the freezing point of milk detects added water in milk and chromatographic methods foreign fats in ghee. Intensification of milk production brings certain problems in its wake which have to be continuously watched and corrected. Recently an effiective, simple, rapid and inexpensive platform tests were evolved to detect extraneous urea, ammonium sulphate and glucose in cow or buffalo milks, which were alleged to be used as adulterants in milk supplied to various milk plants in the country. In high milk producers, the prevalence of mastits infection is one such problems and each test of animal has to be tested at each milking with rapid tests. A rigorous routine for sanitation has to be evolved. In selecting the equipment for storage and processing, care has to be taken for their proper design to facilitate easy cleaning and eliminating areas where bacteria thrive.

Adulteration of ghee with vegetable fats and animal body fats is another challenging problem which has received considerable attention. Paper and thin layer chromatographic techniques have been developed for the rapid detection of adulteration of ghee with vegetable fats. An opacity method for detecting the addition of animal body fats in ghee has also been developed at the Institute. The NDRI has associated with the Indian Standard Institute in evolving suitable formula for sanitizers and formulating code of desirable practices.

Dairy Technology

A problem of considerable importance in handling milk is its rapid transport from the place of production to the dairy. The work at the Institute suggested the feasibility of concentrating milk for long distance transport and this innovation has been adopted by the Delhi Milk Scheme in getting its supplies from Gujarat. Methods for the manufacture of products with long storage life are under constant review. With a view to find new outlets for surplus milk, researches have demonstrated the feasibility of keeping Dahi over long intervals at room temperature, preparation of cheeses with various combinations of condiments and fruits, "Complete" coffee, ready-made tea in powder form, sterilised cream, preserving butter milk and preparing refreshing drinks from milk and sour milk.

In view of the fact that buffalo milk is the most suitable raw material for dairy manufacture. Considerable attention has been paid towards the development of technology for production of condensed, dried and coagulated milk products from buffalo milk.

A new bio-manufacturing section has been set up to prepare a semi-commercial scale of some of the materials which have shown promising results in the laboratories. One such material is animal and microbial rennets. Animal rennet is prepared in the Western countries by slaughtering young calves. The NDRI has shown that rennet can be prepared from living calves by putting a later date without any ill-effects on the subsequent growth of the animal. At present, there is a shortage of rennet even in European countries, and the finding has good commercial potentials. Process for the manufacture of microbial rennet has also been standardised and rennet from this source could also be prepared on a commercial scale.

Two machines for Ghee Production

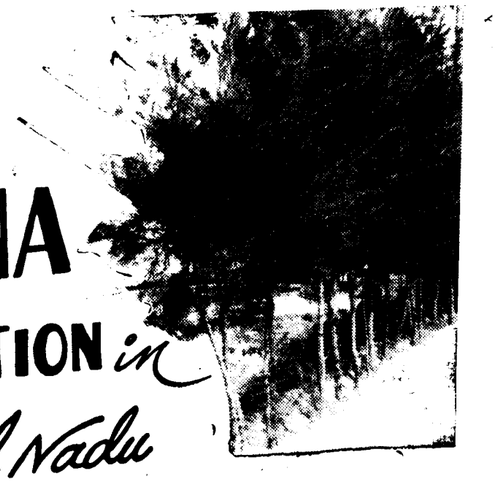
Many dairy products are susceptible to microbial attack which lowers the keeping quality and produces toxic substance. It has been shown that some of the organisms, which grow in dahi, have got the property of secreting anti-biotics which in turn could be utilised for incorporating in milk products to enhance their self-life. The isolation of such anti-biotics, which are non-toxic, also holds good promise. Greater emphasis has been laid on the study of indigenous milk products to standardise the methods of manufacture and packaging. Recently two machines have been devised, one for the continuous manufacture of khoa and another for continuous manufacture of ghee which dispenses with considerable amount of manual labour required now. The packaging of milk products is a subject which has hardly been touched in India. A dynamic marketing programme is closely related to packaging. Emphasis will be given to this aspect which will also include gamma rays for sterilising the material. Side by side, fundamental studies on the synthesis of milk proteins by the cow, the nature of mineral balance in milk, the associative effect of various micro-organisms on their growth and flavour production in dairy products, etc. will also be further intensified.

By

C. A. THOMAS

National Dairy Research Institue KARNAL.

CASUARINA CULTIVATION in Tamil Nadu



The graceful pine-like trees that we encounter along the eastern sea coasts are known to have been brought to India from Australia for its beauty as Avenue Trees. Now they have been grown more for their economic value as a fuel-wood than for their orchard value. It is also grown as a forerunner in plant succession, as a check to shifting sand dunes and also as a wind-breaker. All along the sea coast, casuarina plantations are maintained both by private enterpreneurs and in some areas by the State Forest Department.

The trees are capable of growing to a height of 130—140 feet easily and the trees live for 40—50 years under favourable conditions. Normally they grow to a height of 80—100 feet and live for 25—30 years. Most of the areas where casuarina is grown, the annual rain-fall ranges from 35 to 100 inches. Sandy soil is ideal for planting. If the sand covers a rich alluvial arable soil, the tree grows profusely and in record time also. The trees flower during March to April and then during September to October. The fruits become ripe and the seeds are dispersed after a lapse of two months. The fruits borne of female flowers look like the cones of the pines and the seeds are very light and membraneous that they are easily carried away by wind.

PARADOXES IN CASUARINA LIFE

Although many millions of seeds are produced by a single tree in one season, the establishment of natural seedlings is unexpectedly very poor. Just like many other paradoxes in life, the adult tree is resistant to adverse seasons and conditions but its seedlings are very delicate and require much care and tending.

SEEDLINGS PROCESSES

The seedlings are raised in flat beds of varying length and size, normally of 25 feet by 3 feet by private ryots. But the Forest Department adopts raised beds of at least 6' high, 48' wide and 45 to 48' long. In all the cases, pure sandy soil is filled in the bed and the seeds are broadcast. After broadcast, fine white sand is gently sieved over the seed to cover it to nearly 1¼" to 1½" thick. Watering is immediately followed with a rose-can. To protect the germinating seeds from severe sun, a shade is provided by spreading thin twigs of casuarina or straw. Normally germination occurs within eight to ten days at the end of which the shade is removed. Watering is continued regularly, once a day or even twice a day depending on the drying of the seed bed. Always fresh seeds are used as they do not retain viability for more than a few months. One year old seeds may show only about 5% viability while eighteen month old do not germinate. A farmer will sow three litres of seed per bed resulting in the development of 20—25 thousand seedlings. Regular weeding of the beds is necessary. The seedlings are retained in the same bed for 6—8 months and by a process of elimination, the faster and vigorous growing seedlings are removed first whenever there is a demand. But, in the Forest Department Nurseries, the seedlings from the mother bed are removed and planted in a transplant bed giving 3—4 inches spacing between seedlings. Consequently the latter method provides healthier and vigorous seedlings. The seedlings in this case may remain for 5—8 months in the transplant bed. Manuring is normally not advocated for the seedlings since those seedlings that receive manure of course look healthier and greener but once they are removed to actual sites of planting they wither very quickly and the chances of future establishment are comparatively poor. A

R. JAMBULINGAM,
Department of Biology,
Tamil Nadu Agrl. University,
Coimbatore-3,
Tamil Nadu.

ryot will commence planting the seedlings in the field during the rains of July or October months. Usually he digs a hole in the ground with a crow-bar and puts the seedling in it. However, digging a pit of 12"×12" ×12" is a recommended procedure which will enable the seedling to put forth a good deal of lateral roots.

POT WATERING PREFERRED

Once the seedlings are planted in the field, pot watering for a week in the ryots field has to be made in the absence of monsoon rains. The spacing adopted differ from place to place. Most frequently 3'×3' is the common spacing adopted by the ryots resulting in 4800 to 5000 seedlingslac. The Forest Department maintains 2 m. × 2 m. spacing with a stand of 1000 seedlings per acre. Soil work around the seedlings or interploughing the interspace are normally done by progressive farmers. Depending on the vigour and growth of the seedling, pruning of the low lying lateral branches is done from second year onwards. These pruned lateral branches are also in good demand as fire wood. After this pruning, no successive pruning is advocated by the ryot whereas repeated pruning at specific interval is done by the Forest Department. Under normal cultivation practices, an acre of casuarina yields 20 to 40 tons of wood at the end of five years. This depends on the fertility status of the soil, population and also the care bestowed on them after planting in the field. The felling of the trees may commence from the 5th year onwards ; the Forest Department recommends a ten year standing of the crop for felling. Normally a well-grown casuarina tree would easily give 50 lbs. of dry wood per cubic feet.

ANTS AND GRASSHOPPER- MAIN ENEMIES OF SEEDLINGS

Ants are major pests in the seed bed as they carry away the seeds. Similarly, crickets (*Brachytrypes achatinus*) and grasshoppers cut off the young seedlings. Dusting the seed bed with sulphur or BHC may be attempted to prevent ant damage ; clearing all the vegetation around the seed bed area would effect the control of these insects. Damage from small crabs are also mentioned by farmers ; the crabs may be killed by manual operations.

The wood, which is white with a brown core, is very hard, and splits easily by cracking. It burns readily whether wet or dry, because of the resins it contains. The ash retains heat for a long time. The bark is used for tanning skins and hides. The bark is also readily utilized as an useful 'astringent' in the treatment of chronic diarrhoea and dysentry. Fishermen dye their fishing nets brown with the juice of the bark.

STUDENTS WORK FOR THE SILVER JUBILEE INDEPENDENCE HAMLET

The Social Service League of Government College of Technology, Coimbatore and Coimbatore Institute of Technology have rendered their valuable services by connecting an isolated hamlet with a nearby town panchayat by laying a road. Panaimarathur is a small hamlet in Kumarapalayam Town Panchayat under Perur Panchayat Union and it is the village adopted by the Union under Silver Jubilee of Independence Scheme for development.

DIGNITY OF LABOUR EXPLAINED

About 220 volunteers of Social Service League of Government College of Technology and Coimbatore Institute of Technology joined together and arranged a 3 days camp at Telungupalayam from 29th September 73 to 1st October 1973 under the guidance of Staff Adviser of Government College of Technology. On these three days the 220 student volunteers, who were divided into 10 batches, had taken up the road laying in a planned manner. When the camp was inaugurated, they were told about the importance of dignity of labour. They were also informed that their hard work and readiness for service will definitely fetch colours in their profession.

NEW ROADS LAID

The place selected for the road laying was originally sugarcane fields in part and thorny bushes intermixed with ditches and boulders. In other words, the latter part was inaccessible to human beings and even animals were not dare enough to enter there for grazing. The industrious and enthusiastic young volunteers changed the scene of the place into a road running to a length of 5.5 furlongs—slightly greater than a kilometre. The width of the road is about 8 metres. Channels of about 0.6 metre width and depths varying from 0.5 metre to 0.1 metre were formed on either side of the road.

WORK COMPLETED IN TIME

Among the many visitors to the camp to encourage and guide the students, the visits of the Principal of the Coimbatore Institute of Technology, Thiru P. Ramakrishnan and the District Collector, Thiru J. Shivakumar were very much useful to the volunteers in understanding the rural conditions. The Collector stated that the road laid by the social service student volunteers will be metalled very soon so that their aim will be fulfilled.

The spirit and enthusiasm of the volunteers remained high throughout the three days, unmindful of their lose of sweat and blood. They have also faced the hot sun and poisonous reptiles and insects with courage and humour. The solubrious aspect of their camp was that the work was carried out and completed according to the plan.

—FIELD PUBLICITY OFFICER

Coimbatore-12

—oOo—

Seed technology covers a broad range of agricultural and business fields in producing high quality of seed stocks and delivering them to the ultimate consumer.

Seed multiplication;

Seed drying and conditioning;

Seed processing, sizing, treating and packing, storage,

Distribution and marketing and

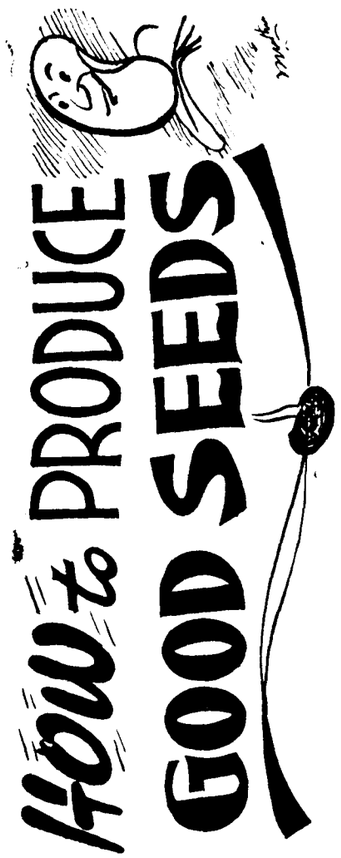
Quality control are the several phases which need to be modernised to make available quality seed to the ultimate consumer.

Seed production

In the past, seed production has been scattered on small fields in many areas. Today, it is beginning to centre around specific locations where facilities exist for production at a less cost, with high quality and more efficiently. The development of new varieties made for specific conditions is advancing through excellent breeding programmes. No single variety can be more efficient for all varied growing conditions. Highest yields will be obtained when we have specific varieties for specific conditions. The technique of seed production is becoming more and more complicated with the advent of hybrids. Certain minimum requirements have to be met with by any seed crop to be eligible for seed production. These requirements are called the minimum seed certification standards. These standards vary from crop to crop and from one class of seed to the other. However, it is encouraging to note that more seed growers are beginning to specialise in a narrower range of seed crops which in itself result in greater efficiencies. The development of seed growing areas, use of more efficient tillage equipments, use of fertilisers based on recommendations designed for specific soil condition, use of weedicide for effective weed control, improving the irrigation and drainage facilities, provision of processing and storage and facilities will greatly improve the quality and production efficiency. The increased use of threshers will enable to get better quality seed with less mechanical damage to the seed.

Seed Drying

Drying seed is a critical problem in our country. High moisture is the greatest single cause of loss of germination in seeds. For this reasons, we must know about the dangers of high moisture and how to control or eliminate these dangers.



K. MUTHUSWAMY,
Seed Certification Officer,
Tiruchirappalli.

Seed is often too high in moisture, when it comes from harvest. Even sufficiently dried seed in storage may gain moisture to unsafe level during periods of humid weather. Thus we need to know what are safe moisture levels and how to dry it these levels and then how to store or package it to keep it at the safe moisture levels.

The amount of moisture in seed affects many processes and the same can be explained as follows :

Seed Moisture above 45-60%—Germination occurs.

Seed Moisture above 18-20%—Heating may occur.

Seed Moisture above 12-14%—Molds grow on and in seed.

Seed Moisture above 8-9%—Little or no insects activity.

Seed Moisture above 4-8%—Sealed storage is safe.

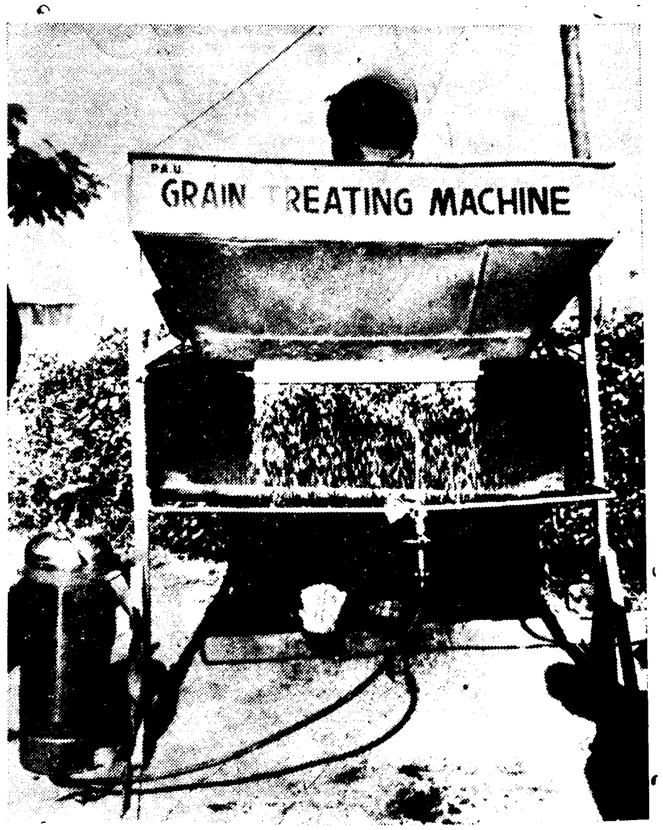
From this we can see that higher the seed moisture, the greater is the danger to the seed. Therefore, we should decide how dry we want the seed. Certainly, we would want the seed dry enough that mold will not grow and so we want it drier than 12-14%. Even sealed storage below 4 % for seeds is not necessaryand extreme dryness induces dormancy in some seeds. Some need the moisture content of the seed somewhere between 14 and 4% depending on the kind of seed, how long we want to keep it and how we want to store it. For open storage for one year 12-14% is satisfactory. For open storage for longer times 8-10% is better and for storage in moisture proof containers 4-8% is necessary.

Seed Processing

Seed processing is an integral part of the technology as by the genetic engineering of the plant breeder we get the improved seed. It encompasses all steps involved in preparing harvested seed for marketing, handling, shelling, pre-conditioning, drying, cleaning, size grading, upgrading, treating and packaging.

The quality of the final product, regardless of its inherent capacity to produce, is directly related to the processor's ability to remove contaminants and low quality seeds to size-grade for precision planting, to treat the seed effectively and to prevent mechanical mixtures of the seed with those of other varieties or hybrids. In turn, the processor's ability to render these services efficiently and effectively is affected by the types of processing and handling equipments available to him, their arrangement within the plant, his skill in operating them and his knowledge of seed characteristics and how they relate to processing.

The seed processor is interested in five things. (i) Complete separation :—Removal of all contaminating or undesirable materials from the seed. (ii) Minimum seed loss:—Some good seeds are removed along with contaminants in almost every processing operation. But this loss must be kept at a minimum. (iii) Upgrading quality :—Improving seed quality not only through removal of contaminating seed, but also removal of rotten, cracked, broken, insect damaged or otherwise injured or low quality crop seed. (*iv*) Efficiency :—The highest capacity consistent with effectiveness of separation and (*v*) Minimum labour requirements :—Labour is a direct operating cost and should be used only to bring into and remove it from the processing line.



Steps in processing

Seed processing operation can be broken down into definite steps that follow in a specific sequence. The first step is *receiving*—seed arrive at the processing plants in bags or bulk. From receiving station the seed may go into *storage* to be held for later processing, or directly into the processing line for cleaning.

The next step in seed processing is *conditioning and pre-cleaning* . This includes removal of appendages, large pieces of trash, debearding to remove awns etc.,

The first actual cleaning and/or upgrading step is *basic-cleaning*. The air screen machine is probably the most common basic cleaner. Seed lots may come from the field in good condition with few cotaminants and will require cleaning only on the air screen machine. It is however often, necessary to send the seed through one or more special separating or upgrading machines to remove two specific contaminants. These special machines separate contaminants from crop seed by differences in specific physical characteristics.

When all possible contaminants have been removed, the seeds are ready for *bagging*. Sometimes a fungicide or insecticide *treatment* is applied before they are bagged. The seed may then be moved directly to other stores, or held in storage until they are needed.

Seed processing is based on differences in physical properties between the crop seed and the contaminant. There is a wide selection of machines that separate seed differing in size, length, shape, weight, surface texture, colour, affinity for liquids or conductivity. A single machine cannot separte seeds that differ in all these characteristics. In most instances a different machine must be used to make separations based on each of these characteristics. To use the machine effectively the processor must know the principle of each machine used to separate seeds, how to adjust them and their proper places in the overall processing operation. The processor must also know the physical properties of the crop seed he is processing and of contaminants in the crop seed.

Seed storage

Good seed storage is an important phase of processing and is essential to successful seed marketing. Proper storage preserves seeds viability from harvest to sale and protects the producer, the processor and the user. Storage must be provided for seed from the time of harvest until planting time. Storage must also be provided for seed which may be carried over until the planting season in the next or a subsequent year. There must also be long term storage for lots of foundation and breeder seed to preserve valuable germ plasm.

—oOo—

NEW INSECTICIDAL FORMULATION TO CONTROL PADDY LEAF ROLLER

By
V.M. KALYANARAMAN,
Entomologist,
Kalaignar Karunanidhi Agricultural Research Institute, Kudumianmalai.

The paddy leaf roller (**Cnaphalocrocis medinalis G**) is apest having world wide distribution. In India it was first reported by Lefroy in 1909. Earlier research workers have reported that this is a minor pest on rice in Andhra Pradesh, Assam, Bihar, Kerala, Maharashtra, Mysore, Orissa, Tamilnadu, Uttar Pradesh and West Bengal, occuring during certain seasons on transplanted crop. Consequent on the introduction of high yielding varieties of paddy, this minor pest has assumed the status of major pest causing serious damage. In cases of severe damage, the less in yield has been estimated up to 50 per cent. The importance of this pest has been felt from the year 1968 in Tamilnadu with the large scale introduction of high yielding varieties of paddy and research work on the life history and control measures have been taken up in detail since then.

Description of the pest

The adult is a small math, slender, yellow in colour and with a dark brown border along with the margin of the fore and hind wings. Two dark grey way lines extend from the fore to hind wings with a small broken line in between the lines in the forewing.

Eggs can be seen mostly on the upper surface of the leaves in between the veins of the leaf, either singly or in groups of 4 to 6. Eggs are ablong, oval or broadly rounded and measure about 0.6 mm long and 0·37 mm wide. They are uniformly pale yellow in colour smooth and have glistening surface. Just before hatching they turn black.

Immediately after hatching from the egg, the caterpillar is pale white in colour and after it starts feeding, it appears greenish due to the presence of plant tissue within the gut. Slowly the colour of the body turns dark green on subsequent moultings. The full grown caterpillar is yellow in colour with a light brown head and it turns pinkish before pupation. The full grown larva measures about 15 mm.

The pupa is pale yellow in colour and gradually turns light brown. The pupal stage is spent inside the leaf roll itself. The average length of the pupa ranges from 6 to 7 mm.

The total life cycle from egg to adult emergence varies from 30 to 39 days.

Habits of the pest and symptoms of damage

The months of this pest are usually seen after sunset. They become active and are attracted to light. They are active fliers but during day time, they cling to the stems or leaves of paddy and when disturbed, fly from one plant to another for a short distance in large numbers.

The caterpillars became very active on hatching from the eggs, secrets a silken thread with which the edges of the leaves are fastened and the ends brought together to form the characteristic "leaf roll". Four types of leaf rolling are observed :—

(*i*) the edges of the leaf are fastened together in the middle region;

(*ii*) the tip of the leaf is fastened to the middle portion of the leaf blade;

(*iii*) Similar to the second type except that the leaf is fastened in a twisted manner and

(*iv*) adjacent leaves are fastened together after rolling each leaf.

The caterpillars start feeding on the chlorophyll by scraping and they become voraceous feeders as they

NEW TECHNIQUES FOR HIGHER RICE PRODUCTION

In crops like rice, which are grown from sea level up to nearly 3,000 metres altitude, considerable variations naturally exist with reference to adaptation for different agro-climatic conditions and consumer preferences and hence an intensive programme of minikit demonstrations-cum-trials have been initiated.

Agriculture is becoming an increasingly sophisticated occupation. With the growing awareness of the ecological dangers arising from the inappropriate and unscientific use of agricultural inputs like pesticides, fertilizer and water, steps are under way to develop techniques like integrated pest control, watershed management, etc., which will ensure enhanced productivity continuously without any danger to the long term production potential of the soil.

Modern agriculture rests upon four major revolutions : (1) agronomic (including genetic), (ii) chemical, (iii) engineering and (iv) management. It is only when all these four revolutions are synchronized in a perfectly co-ordinated manner that agriculture becomes highly efficient and competitive. —Ed.

grow up. The affected leaves show white streaks in the beginning and and when the damage is severe, the leaves get completely depleted of chlorophyll and appear scorched and distorted. In case of severe infestation, the fields exhibit scorched appearance. The caterpillars wriggle out of the leaf rolls when distrubed and quickly fall down.

More severe damage in shady areas

The pest also causes damage to the seedlings in the nursery. It has been reported that the damage by the leaf roller was more severe in shady areas, particularly near the bunds and also whenever there was heavy crop growth due to heavy manuring. Studies conducted on the incidence of the pest in relation to crop growth have indicated that there was no appreciable infestation up to 40 days after transplanting and the incidence increased progressively with the maximum infestation recorded 80 days after transplanting. Thereafter, there was no further increase in the extent of damage.

Control

Studies have been conducted at the Agricultural College and Research Institute (Tamil Nadu Agricultural University) Coimbatore and Regional Agricultural Research Station, Aduthurai and the All India Coordinated Rice Improvement Project, Coimbatore and Aduthurai for the control of this pest with different insecticidal formulations. Of the different insecticides tested, the following formulations have given encouraging results in reducing infestation and in giving increased yield.

From the statement above, it may be seen that any one of the above insecticidal formulations will be effective in controlling the paddy leaf roller. It is suggested that spraying may be taken up when stray incidence of the pest is noticed and repeated 2 to 4 times at 15 day-interval depending on further intensity of the pest. In the case of granular insecticides, 2 applications may be necessary on the 15th and 45th day after transplanting.

Statement showing the list of insecticides found effective against paddy

Sl. No.	*Name of the Insecticide*	*Quantity of Insecticide required.* Per acre	Per hectare	*No. of applications given in different trials (*)*
	EMULSIFLABLE CONCENTRATE (E.C.)			
1	AZODRIN 60% (Monocroptophos)	167 ml 334 ml	417 ml 834 ml	D
2	DIMECRON 100 (Phosphamidan)	110 ml	275 ml	C
3	DURSBAN 40% (Chlorpgriphos)	310 ml 634 ml	775 ml 1585 ml	B,C
4	EKALUX 25% (Quinalphos)	200 ml	500 ml	A
5	EPN 45%	450 ml	1125 ml	B,D
6	FOLITHION COMBI (Febitrathion+DDT)	1600 ml	4000 ml	A,D
7	HELIOTOX (Texaphene+DDT)	1000 ml	2500 ml	C
8	METACID COMBI (Methyl parathion +DDT)	1600 ml 1120 ml	400 ml 2800 ml	A,B,D, C
9	PARATHION 50%	200 ml	500 ml	A,B,C,D
10	PHOSVEL 35%	630 ml	1575 ml	A,B,D
11	VALEXON 50%	400 ml	1000 ml	A
	WETTABLE POWERS (W.P.)			
1	SEVIN 50% (Carbaryl)	400 gm	1000 gm	C
2	FURADAN 75% (Carbofuran)	1000 gm	2500 gm	D
	GRANULES (G)			
1	CYTROLANE 10%	6 kg	15 kg	E
2	DIAZINON 10%	6 kg	15 kg	E
3	FURADAN 3% (Carbofuran)	12·5 kg	31·5 kg	E

A : Four rounds at 15 days interval, the first application commencing when stray incidence is noticed.

B : Four rounds on the 15th, 30th, 45th day after transplanting, and in the shot-blade stage.

C : Four rounds on the 45th, 60th, 75th and 90th day after transplanting.

D : Four rounds on the 15th, 30th, 45th, 60th and 75th day after transplanting.

E : Two applications on the 15th and 45th day after transplanting.

HOW PADDY FARES WHEN THE SOIL BEGINS TO DRY UP

When the soil begins to dry out, the survival of a rice plant depends in part on how fast it reduces the loss of water vapour from its leaves. The opening and closing of stomates on the leaves are the plant's chief means of controlling the passage of water vapour.

In preliminary work on a test for resistance to drought, IRRI physiologists found that stomates of some rice varieties close quicker than those of other varieties. Of 12 varieties studied, MI—48, IR.5, and OS 4 had the fastest closing stomates after moisture stress was created. IR. 20 and Taichung Native 1 had the slowest closing stomates. Based on field observations, MI—48, IR. 5 and OS 4 are generally regarded as more drought tolerant than IR. 20 and Taichung Native 1.

HEAT TEST

Because the leaf temperature rises when stomates close, heat tolerance is an important aspect of drought resistance. When the internal temperature of the leaf reaches about 48°C the cells begin to die. The destruction can be measured by a conductivity test. Electrolytes in dead cells can be extracted with water, so comparing the amount of extractable electrolytes at a specific leaf temperature with the amount when all the cells are killed indicates the degree of destruction.

Using this method the physiologists rated the heat tolerance of the 12 varieties at a leaf temperature of 53°C. When the varieties were grown without moisture stress, all had about the same heat tolerance. But after being subjected to moisture stress all varieties were " hardened " and while the over all level of heat tolerance increased, the differences between varieties became more distinct. OS 4 and IR. 5 were among the most tolerant to heat, IR. 20 was among the least.

In a study of stomatal closure in the field, the physiologists found that in plants under severe moisture stress, the stomates begin to close early in the morning. Stomates of plants in flooded paddies remain open until the late afternoon, however. Since carbon di-oxide which is necessary for photosynthesis can enter the leaf only when stomates are open, photosynthesis takes place in plants under moisture stress only during the morning.

PLANT DESIGN AND DROUGHT

This finding has implications for the design of rice varieties. Erect leaves are desirable in varieties grown in irrigated paddies. Stomates of irrigated plants stay open throughout the day so photosynthetic activity is governed primarily by the amount of sunlight that strikes the leaves. Since sunlight intensity is greatest at noon erect leaves are the most efficient arrangement for high rates of photosynthesis because sunlight can reach even the lower leaves. For this reason, modern rice varieties like IR. 8 have been bred for erect leaves. In plants with droopy leaves the upper leaves shade the lower leaves.

But plants under moisture stress are photosynthetically active only during the morning when the sun is rather low in the sky. To make efficient use of sunlight coming in at an angle, less erect leaves might be desirable.

Closure of stomates is not a clear cut indicator of drought resistant varieties. The stomates of a variety whose root system is highly efficient in extracting water would remain open under moisture conditions that would cause the stomates of other varieties to close. Thus IRRI physiologists are planning to look at the water potential of the leaf. This is the best indicator of moisture stress in the plant. When the stomates are open a high water potential in the leaf shows that the plant is highly capable of extracting water from the soil.

UNLOCKING THE SECRET OF TKM. 6

A few years ago, an outbreak of brown planthoppers devastated a trial of early maturing lines at the IRRI farm. Only two of 55 lines survived. One of the lines, IR. 747B-2—6, is from a cross between TKM. 6 and Taichung Native 1. The other line, IR. 1154—243, is from a cross between Zenith and IR. 8. None of the parents is resistant to brown planthoppers. The breeders suspected that the two lines might have accidentally escaped damage from the insects. But to be sure, they put the lines through a standard screening test for brown planthoppers in the greenhouse. The test confirmed that both lines were resistant. Where did the resistance come from?

The breeders made a series of crosses involving IR. 747Bz—6 and several resistant and susceptible varieties. The progeny of these crosses were subjected to the standard screening test so that the resistant and susceptible seedlings could be distinguished.

Based on the proportion of resistant and susceptible seedlings from each cross, the breeders were able to rule out the possibility that complementary genes were at work. Complementary genes would convey resistance when two or more occurred in the same genotype but would be ineffective when only one occurred in a genotype.

Similarly, based on the segregation data, the breeders excluded the possibility that IR. 747B2—6, was a mutant with resistance to brown planthoppers.

The most reasonable explanation was that TKM.6 contains a dominant gene for resistance, but that it also contains a dominant gene wihch inhibits the expression of the resistance. When TKM. 6 is crossed with another variety some of the progeny lose the inhibitor gene and retain the resistance gene. Such progeny, like IR. 747Bz—6, are resistant to the brown planthopper.

Although IR. 1154—243 was not completely tested, the breeders suspect that Zenith, one of its parents, also has a resistance gene plus an inhibitor gene.

Rice breeders already use TKM.6 as a source of resistance to tungro virus, bacterial blight and stem-borers. The hidden gene for resistance to brown planthoppers makes TKM. 6 even more valuable as a parent of new varieties.

Source—

The I.R.R.I. Reporter.

RAGI VARIETIES SUITABLE FOR DECEMBER AND MAY SOWINGS IN SOUTH ARCOT DISTRICT

Ragi (**Eleusine coracana G.**) forms one of the important staple food crops and occupies 2·35 million hectares in India and 0·32 million hectares in Tamil Nadu. It comes up well in varying agro-climatic conditions. The colour of grain is brown or pearly-white. The brown types are high yielders but poor in protein-content, whereas the white types are poor yielders but rich in protein-content.

An experiment in split plot design was laid out at Agricultural Research Station, Palur, in the May-sowing season of the years 1969—70, 1970—71 and 1971—72 and in December-sowing season of the years 1970—71 and 1971—72 to find out suitable varieties for the respective seasons and optimum NPK schedule of manuring for ragi. Four varieties of ragi, Sarada, Co. 7, PLR. 1 and Co. 9 (white) were compared under four levels of NPK manuring. Half of N and entire quantity of P and K were applied basally at planting and remaining half of N on the 20th day of planting. Young seedlings were transplanted at spacing of 23 cm. x 15 cm. Weeding, irrigation and plant-protection were done properly. The recommended dose on resulting yield are furnished below :

During the May—August season performance of Co. 7 was superior to PLR. 1 in two years and superior to Co. 9 in all the three years. Again, Co. 7 yielded on par with Sarada in two years and was superior to it in one year. The mean yield of Co. 7 was 2,452 Kgs. per hectare for the three years and the highest among the varieties compared. **Therefore, it is concluded that Co. 7 is a suitable ragi strain for the May-sowing in the tract.**

During December—March season of 1970—71, the performance of Sarada was superior to Co. 7 and Co. 9 but on par with PER. 1. In the following year, the differences in yield between varieties were not significant. However, Sarada and PLR. 1 maintained their better performance, compared to Co. 7 and Co. 9. On the average, the recorded yield of PLR. 1 was 4,617 Kgs. per hectare. This was slightly higher than Sarada and not less than 10% higher than Co. 7 and Co. 9. In local parlance PLR 1 is known as 'Perumragi' and appears to be an outstanding variety for the December-sowing in the tract. The earhead of PLR. 1 is first-shaped and weighty.

The grain yield data revealed that the differences between NPK levels were significant in both seasons. Application of NPK, at 90 : 45 : 45 Kgs. per hectare increased the grain yield of ragi significantly over the lower levels whereas NPK level at 110 : 55 : 55 Kgs. per hectare yielded on par. Therefore, NPK at 90 : 45 : 45 Kgs. per hectare is found to be an optimum dose for ragi for both the seasons.

The differences in yield due to interaction between varieties and manures were not significant in obth the seasons for all the years.

*

STUDIES ON TIME OF APPLICATION OF NITROGEN TO RICE KURUVAI.

The trial conducted during 1971 Kuruvai with the varieties Karikalan and Kannagi revealed that for Karikalan top dressing 10 kgs. Nitrogen per acre at all the three stages of viz. max. tillering, panicle initiation and heading over a basal dose of 10 Kgs. Nitrogen/acre gave the highest yield of 2522 during 1971 and 2381 kg/acre during 1972 with the increase of 17.60% and 14.72% over the general mean for the two year respectively. For Kannagi top dressing 10 Kg/acre at all the above three stages over a bsal dose of 40 kg nitrogen/acre gave the highest yield of 3039 kg nitrogen/acre with an increase of 16.34% over the general mean although application of 20 kg nitrogen/acre with the above dose of top dressing was the optimum economic dose for economic return. During 1972 the highest yield of 2525 kg/ac was obtained by top dressing nitrogen at 10 kg Nitrogen/acre at all the three stages over a basal dose of 30 kg M/acre with an increase of 22.72% increase over the general mean.

EFFECT OF FUNGICIDES ON THE CONTROL OF RAGI BLAST

By
1. K. Sivaprakasam,
2. K. Pillayarswamy,
3. S. Iyemperumal of Regional Agricultural Research Station Koilpatti.

Ragi plants develop heavy infection of blast caused by **Pyricularia Setariae** every year. When the disease appears in an epidemic form, the loss of grain may range up to 50%. Blast infection occurs in all stages of the crop both in the nursery as well as the transplanted crop. In the nursery spindle shaped leaf spots are formed and in severe outbreaks, the leaves dry up. In the transplanted crop, the infection is found as leaf spots as well as blackening of the nodes, neck and fingers. The affected earhead dries up and becomes chaffy resulting in heavy loss in yield. In view of the absence of resistant varieties, the chemical control of the disease is an imperative need. The present study reports the efficacy of certain fungicides and an antibiotic on the control of blast disease. The experiment was carried out at Regional Agricultural Research Station, Koilpatti, Tamil Nadu during 1972—73 in randomised block design on Saradha ragi. The treatments were replicated thrice, the plot size being 5·00 x 3·64 metres. The fungicides were applied four times, the first one in the nursery stage (a fortnight, after sowing) and the rest at fortnightly intervals from three weeks after planting. The spray formulations were applied with a hand operated rocker type sprayer at 1,000 litres per hectare and the dust formulation was applied by means of muslin cloth bags at the rate of 22 Kgs. per hectare. The leaf infection was recorded prior to each round of applications and finally 15 days after the last round of treatments, with the help of a numerical scale from 0 to 4 (no, hypersensitive, light, moderate and severe disease development, respectively) by examining 25 selected plants in each treatment. The percentage of node, neck and finger infections was recorded from the same plants prior to harvest.

It is seen that all the chemical treatments were effective in reducing the disease incidence to the varying degrees of intensity and increasing the yield. However, Ceresan lime dust was outstanding in giving the maximum yield by 36·87% over control besides effective control of blast disease. Bla—s, Zineb and Hinosan were also superior in reducing the disease incidence and increasing the yield by 26·3, 23·5 and 16·9% respectively over control.

In case of non-availability of Ceresan lime dust and Bla—s, Zineb and Hinosan can effectively be employed for increasing the grain yield of ragi, besides controlling blast disease.

the living past

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

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

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

SPB
The Watermark of Quality

DAIRYING AND MILK SUPPLY IN TAMIL NADU

There are two large scale Government milk projects in the State, one in Madras and the other in Madurai. Besides these projects there are 1,129 milk co-operatives and 23 milk co-operative unions in the organised sector, leaving the distribution of a large share of the total milk production to the private vendors.

The various Dairy Development Programmes in the State aim at narrowing down this gap by means of producing and supplying adequate and quality milk to the consumers in an organised manner. With an outlay of Rs. 534 lakhs for Dairy and Milk Supply Schemes, the Fouth Plan has laid emphasis on the extension of dairy and milk supply schemes to rural areas. A noteworthy feature of dairy development is the formation of the Tamil Nadu Dairy Development Corporation during the year.

MADRAS CENTRAL DAIRY

The Central Dairy at Madhavaram is intended for the supply of milk to Madras City. With effect from 1st July 1972, the Tamil Nadu Dairy Development Corporation has taken over the management and control of the Central Dairy at Madhavaram together with its transport and distribution units, its feeder plants at Erode and Vellore and also the allied chilling centres located in different places. At the instance of the Dairy Development Corporation, the Marketing Research Corporation of India, New Delhi, recently conducted a market survey in Madras City and this survey has brought into hold relief the fact that the estimated aggregate consumption requirement of liquid milk for the household sector in Madras City is 4·13 lakh litres a day as contrasted to 85 thousand litres of milk a day distributed by Madhavaram Dairy. However, the present distribution itself signifies a distinct improvement over the previous years—41 thousand distributed during 1968-69. 49 thousand during 1969-70; 57 thousand during 1970-71 and 66 thousand during 1971-72. This increase has been made possible because of the scheme called "Operation Flood" being implemented now with the assistance of World Food Programme. Under the first phase of this scheme, the original installed capacity of the Central Dairy which was 50 thousand litres a day has been raised to 90 thousand litres and it is expected to handle 1·25 lakh litres a day by March 1973 to most the growing requirement of the City.

The Tamil Nadu Dairy Development Corporation has proposed to set up a second dairy with a handling capacity of two lakh litres a day near the Industrial Estate, Ambattur. This is expected to be commissioned by December 1973. In order to step up the collection of milk at the Ambattur Central Dairy, the Dairy Development Corporation is contanplating to locate a feeds dairy at Erode to handle one lakh litres of milk a day and another dairy near Jolarpet in North Arcot district to handle sixty thousand litres a day. The chilling plant at Sathuvacheri is also being converted into a pastourisation plant.

MADURAI MILK PROJECT

The Madurai Dairy established with the assistance of UNICEF has a handling capacity of fifty thousand litres of milk a day. After meeting its local requirements which come to about twenty-three thousand litres a day, the surplus milk is sent to Madhavaram Dairy. In order to conserve the surplus milk for utilisation during lean season, there is a proposal to set up a milk powder plant at Madurai with a capacity of ten thousand litres per hour.

MILK CO-OPERATIVES

Twenty-three milk co-operative unions and 1,126 milk co-operative societies are engaged in the collection and distribution of milk in most of the urban areas. The total quantity of milk produced by these milk co-operatives has increased from 823 lakh litres in 1970-71 to 980 lakh litres in 1972-73.

PUBLIC HOLIDAYS FOR THE YEAR 1974

The Government of Tamil Nadu declared the following as Public Holidays during the year 1974.

Tuesday	the 1st January	New Year's Day
Saturday	the 5th January	Bakrid
Monday	the 14th January	Pongal
Tuesday	the 15th January	Thiruvalluvar Day
Saturday	the 26th January	Republic Day
Monday	the 4th February	Muharram
Friday	the 5th April	Meelad-un-Nabi
Friday	the 12th April	Good Friday
Wednesday	the 1st May	May Day
Saturday	the 29th June	Half-Yearly Closing of Bank Accounts.
Thursday	the 15th August	Independence Day
Thursday	the 19th September	Vinayaka Chathurthi
Wednesday	the 2nd October	Mahatma Gandhi's Birth Day.
Friday	the 18th October	Ramzan
Thursday	the 24th October	Ayudha Pooja (2 days)
Friday	the 25th October	
Wednesday	the 13th November	Deepavali
Wednesday	the 25th December	Christmas Day and Bakrid
Tuesday	the 31st December	Annual Closing of Bank Accounts.

NOTE :—As Bhogi festival, the Telugu New Year's Day and the Tamil Years Day fall on Sunday the 13th January 1974, Sunday the 24th March 1974 and Sunday the 14th April 1974 respectively, they have not been shown in the above list of holidays. As 30th June 1974 falls on Sunday, Saturday the 29th June 1974 is declared as holiday for half-yearly closing of Bank Accounts.

New Agricultural Strategy in Tamil Nadu

47

By

R. PARAMASIVAM M.A.,

Tamil Nadu Government Research Fellow (in Economics) St. Joseph's College, Tiruchirappalli-2.

As a unilingual state, Tamil Nadu came into existence on November 1, 1956. It is situated at the south-eastern tip of the Indian Peninsula. During the last five or six years Tamil Nadu holds an important place among the economically developed states of India. It ranks second in respect of urban population and literacy. It stands third in respect of percapita power consumption and fourth in industrial production and employment, percapita income, density of population and food grains out put. It accounts for 7·5 percent of the country's population and 4 percent of the area.

Tamil Nadu has mostly fertile soil, generally assured rainfall and largely irrigated area. Agricultural in the state is dynamic in growth. The state occupies the seventh place, accounting for 6·2 per cent of the total value of the agricultural out put in the country. A notable feature of the state's agriculture is that it provides employment to 60 per cent of the working population and it contributes 42 per cent to the state income. On the other hand, agriculture in the national economy absorbs 69 per cent of the working force by generating about 50 per cent to the national income. Here an attempt is made to show that how far Tamil Nadu has made a rapid progress in the agricultural field particularly during the last five-years.

The wide index of agricultural production over a period of time bears testimony to the concentrated attention paid on the growth of agricultural sector in the state. The following table protraits the index numbers of area, production and productivity of all crops in Tamil Nadu :

The agricultural indices set above bear ample evidence to the fact of remarkable progress in the State's agricultural field. The agricultural production showed an impressive growth during the last five years. The general index of agricultural production in 1965-66 stood at 97.8 which rose to 118.7 in 1969-70 and further to 127.4 in 1970-71.

Tamil Nadu has made a spectacular achievement in the production of foodgrains. In 1969-70 the index of foodgrains production was 117.9 which has steadily increased to 133.8 in 1970-71. By means of absolute terms in 1966-67, the total production of foodgrains stood at 54.58 lakh tonnes which rose to 70.34 lakh tonnes in 1970-71. Tamil Nadu Government have completed various agricultural production programmes to attain a production of 72.02 lakhs tonnes as against 70.45 lakh tonnes in 1971-72. The target fixed for 1972-73 is 79 lakh tonnes. Thus it is clear that food grains alone account for half of the total value of the agricultural production in the state.

Rice accounts for the three-fourths of the total foodgrains output in the state. Accounting for 11 per cent of the rice production in India it ranks second after West Bengal. During 1965-66 rice production in Tamil Nadu was only 35·24 lakh tonnes which has risen to 45.32 lakh tonnes in 1969-70 and to 55.00 lakhs tonnes in 1972-73.

The state occupies the third place by accounting for about one-sixth of the total groundnut output in the country. During 1966-67 groundnut production stood at 883 thousand tonnes which rose to 1,148 thousand tonnes in 1971-72. During 1968-69 to 1970-71 the state's average yield stood at 930 Kgs. per hectare which was much better than 707 Kgs. in Gujarat.

Indices of area, production and yield of all crops in Tamil Nadu.

(Base . 1961-62=100)

Year	*Area*	*Production*	*Yield*
1962—63	101.9	105.9	103.7
1965—66	97.5	97.8	98.4
1966—67	105.1	102.4	101.3
1967—68	99.5	103.7	102.6
1968—69	93.9	101.8	108.4
1969—70	103.7	118.7	113.6
1970—71	103.7	127.4	110.8

(*Source* :—Tamil Nadu—An Economic Appraisal—1972, Part I—p. 15)

The state accounts for 9 per cent of the total sugar-cane grown in the country. It stands third in respect of sugar-cane growing states after Uttar Pradesh and Maharastra. During 1968-69 peak level production (gur) was 1,514 thousand tonnes and the target for 1970-71 is fixed at 1,144 thousand tonnes.

Tamil Nadu accounts for 7 percent of cotton grown in the country. It ranks sixth among the cotton-growing states. During 1965-66, cotton production was 301 thousand bales (of 180 Kgs. each) which rose to 397 thousand bales (of 180 Kg. each) in 1969-70 and further to 345 thousand bales (of 180 Kgs. each) in 1970-71.

Dry chillies, coconut and tobacco are other important cash crops in the state. It occupies the third place providing about quarter of the country's dry chillies. The state is the largest producer of coconut and it accounts for 6.5 per cent of tobacco in India. The three important plantation crops raised in Tamil Nadu are tea, coffee and rubber. There is surplus in rice, groundnut, sugar and coffee. So Tamil Nadu earns too much by exporting these commodities to other states. Pulses, raw cotton and raw jute are the shipping list of agricultural commodities. Tamil Nadu, on the whole, has a favourable inter-state trade.

Causes for this rapid progress in agriculture :

A large number of factors including of course seasonal and climatic conditions lead to increased production in the farm-front. Stable government and efficient public administration play a dominant role in the economic development of Tamil Nadu. Since the new ministry under our Bloved late Anna in 1967, they have contributed a great deal to the state's economic growth. Tamil Nadu is a pioneer state in introducing a seperate Planning Commission at State level. In the recent collector's conference our Chief Minister said "that the officials in the belt areas of the state should be vigilant and apprise the Government from time to time of the situation and take all measures to avoid shortage of foodgrains and to arrest the price rise. The police officials should effectively check smuggling of foodgrains to the neighbouring States." Tamil Nadu administration is being appaluded as the best in the country due to its prompt and swift action.

Further, Green Revolution or New Agricultural strategy or High Yielding Varieties Programme is nothing but a technological breakthrough in agriculture which is composed of the introduction of high-yielding varities of seeds, pesticides, fertilisers, provision of adequate and timely credit to the farmers and the creation of more irrigation facilities. "Revolutionary changes have been brought about in the egronomic 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."

"If you are late in doing one thing in agriculture, you are late in all things." Realising agriculture as the backbone of the State's economy Tamil Nadu Government have launched various novel and progressive schemes for developing agriculture. During 1966-67 the High-yielding varieties programme was introduced in Tamil Nadu in order to step up the production of rice and millets. In 1966-67 the coverage was 5·27 lakh acres which has steadily risen to 64·16 lakh acres in 1971-72. Farmers are being educated by the radio and farmers training centres.

Irrigation is the first essential for developing agriculture in the State. "What you need most" Lenin stressed, "is irrigation, for more than anything else it will revive the area and regenerate it, bury the past and make the transition to socialism more certain." In Revised Estimate 1972-73, a sum of Rs. 12·23 crores and in Budget Estimate 1973-74 Rs. 12·44 crores have been allocated for capital out lay on irrigation works under various heads. Thus the state has allotted nearly Rs. 55 crores for the growth of agriculture.

Multiple cropping has become possible with assured irrigation facilities in the state. The programme was launched in 1967-68 with)a view to introduce crop varieties of shorter duration than conventional ones. In recent years, the area covered under the programme stood at 0·87 lakh hectares in 1967-68 which has rapidly increased to 2·23 lakh hectares in 1968-69 and to 4·0 lakh hectares in 1969-70 and further to 5.25 lakh hectares in 1970-71. 6·06 lakh hectares will be covered at the end of the Fourth Plan.

The farmers get the provision of credit facilities through co-operative societies and commercial banks. There were 6,058 primary agricultural credit societies at the end of 1970-71. Up tothe end of December 1972 Tamil Nadu Government have sanctioned Rs. 57·27 crores by way of short, medium, and long term loans. A sum of Rs. 40 crores as loan will be sanctioned for the rest of the year. Under all these heads, for the year, 1973-74 a total sum of about Rs. 100 crores is to be sanctioned by the Government. Tamil Nadu has a well developed banking system and consequently commercial banking system provides the advance to the agricultural sector in the state Rs. 56 crores by the end of December 1971.

With the introduction of Green Revolution, the state had laid a great emphasis on the use of fertilisers. In recent years, consumption of various fertilisers has been rapidly increasing as we could see from the following table:—

Consumption on fertilisers in Lakh tonnes.

	(N)	(P)	(K)
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	0.72	0.61

To over come the shortage of fertilisers the state has taken vigorous steps for allotment from the Government of India. It takes earnest efforts to get adequate supplies from the Central Fertiliser Pool to meet the needs of ryots. Strict quality control measures are being adopted by the Government.

The farmers in the state have fully realised the necessity of taking adequate steps to prevent their crops from the attack of pests and diseases. The government have supplied adequate pesticides to the farmers in time. Pesticide samples from all depots are analysed in Pesticides Testing Laboratories with a view to maintain quality control on the chemicals. There are five such laboratories at Coimbatore, Madurai, Aduthurai, Koilpatti and Kanchipuram. The state has distributed hand operated sprayers and dusters to the peasants with a subsidy of Rs. 25.00 and Rs. 35·00 respectively. With the introduction of High yielding varieties programme there is a necessity for stocking of more agricultural inputs which are to be supplied immediately to the farmers. For this, 150 depots have so far been sanctioned at the rate of 50 depots each year.

The establishment of Agricultural Productivity council is a noval and progressive step taken by Tamil Nadu Government. This has been constituted for creating productivity consciousness among farmers, animal breeders, extension workers, entrepreneurs and research bodies associated with agriculture and allied fields. Eleven market committees have yet been constituted in order to provide better marketing facilities and to make the producer get the optimum share in the consumer's rupee by reducing the price spread. Further, twenty-eight grading centre, have been opened for increasing the incomes of the farmers and inducing them to increase the quality of their produce. Till 1972-73 twelve grading laboratories have been set up.

Besides these factors which are responsible for the rapid progress in agriculture, Tamil Nadu is a state keenly consicious of its role in the development of human resources and the improvement of welfare activities. Investment in man and his development as a creative and productive resource is called human capital formation.

Further, Tamil Nadu Government have launched upon social welfare schemes for establishing an egalitarian social order based on science. These include abolition of beggary through Beggar Rehabilitation Homes, Youth Service Corps for unemployed graduates, Free Eye Camp Campaign, Slum Clearance Scheme, relief for weavers, distribution of cycle rickshaws for hand pulled, poor homes etc. Recently the backward class people have been given due priority in respect of getting admission in colleges, few concessions, scholarships and government jobs. For improving the living standards of this section recommendations of the Backward Classes Commission are to be implemented very soon by the Government. The state follows socialistic ideas for uplifting the masses who are socially and economically backward. "Socialism does not mean making the rich poor, but providing equal opportunities to all and strive for the uplift of the poor and the middle Class."

The trials conducted during 1971 and 1972 Kuruvai have revealed that planting done in the Ist week of July gave the highest mean yield of 1,850 and 2,736 Kgs. per acre during the two years respectively.

A NEW PAPAYA FROM COIMBATORE

A new variety of papaya that bears 53 fruits in the first 5 months has been released by Tamil Nadu Agricultural University. This has been evolved from Hawaii varieties and are called Sunrise Solo and Line 8 Solo.

The "Solo" varieties are bi sexual *i.e.*, they bear both male and female flowers on the same plant, unlike other varieties. Thus there are no barren plants in this variety.

States's Rice Revolution as seen in Economic Survey by Finannce Department.

—oOo—

The new strategy followed in recent years to step up agricultural productivity has, yielded fruitful results. The yield of foodgrains which stood at 1,075 kgs. per hectare in 1968-69rose to 1143kgs. in 1969-70 to 1,312 kgs. in 1970-71 and to 1,362 kgs. in 1971-72. Correspondingly, the total production of foodgrains showed an increase from 50·62 lakh tonnes in 1968-69 to 57·31 lakh tonnes in 1969-70 to 67·06 lakh tonnes in 1970-71, to 69·94 lakh tonnes during 1971-72 and to 72·02 lakh tonnes during 1972-73. During these years, there has been very little change in the area under cultivation and in some years there has been a decline in the area.

Among the foodgrains, the increase in the productivity of rice contributed significantly to the overall increase. Tamil Nadu ranks seventh among the major rice producing States in the country in respect of area under rice cultivation; but, holds the third position in rice production because of its high productivity rate. In spite of the fact that Tamil Nadu secured relatively a higher yield of 1,410 kgs. per hectare as early as 1966-67, it has substantially improved the position in the succeeding five years breaking its own record year after year to reach an yield of 1, 973 kgs. in 1971-72. Thus it is a legitimate claim that if wheat revolution is going on in Punjab, rice revolution is going on in Tamil Nadu.

There are 55 State Seed Farms in the State including the large scale Anna Pannai at Kudumiyanmalai which aim at multiplying seeds for ultimate distribution to farmers. These farms serve also as model frams.

So far as paddy production is concerned, the existing farms are able to meet the entire seed requirements. However, in respect of millets, the production of seeds was only 200 tonnes as against the requirement of 500 tonnes.

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P.O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

BALAKRISHNA TOURIST TAXIS

—*O*—

(RECOGNISED BY GOVERNMENT OF INDIA)
29, VEERASWAMY PILLAI STREET,
EGMORE, MADRAS-8.

FOR TRAVEL WITH PLEASURE AND COMFORT IN LATEST IMPORTED AIR-CONDITIONED CARS AND AMBASSADOR CARS TO ANYWHERE AT ANY TIME, CONTACT IN PERSON

Or

PHONE : - 20691 and 24962

LUXURY DELUXE COACHES ALSO ARRANGED ON REQUEST.
SERVICE ROUND THE CLOCK.

TAMIL NADU GOVERNMENT

SERVANTS' FAMILY BENEFIT FUND SCHEME

The State Government has issued orders in G.O. No. 1515, Finance, dated 3rd December 1973 for setting up of the **Tamil Nadu Government Servant's Family Benefit Fund Scheme**, keeping in view the various suggestions made by the Third Central Pay Commission as well as by the representative of the Non-Gazetted Government Officers Union and others.

Accordingly, all Government servants under Tamil Nadu Government including those in temporary and non-pensionable service, persons on foreign service and on deputation, menials paid from contingencies and persons borne on provincialised work-charged establishment and the All India Service Officers belonging to Tamil Nadu Cadres shall be required to pay a uniform rate of contribution of Rs. 10 per month, which will be deducted from their monthly pay bills and be credited to Government. No separate account will be kept in this regard for each employee as the deduction will be on a uniform basis. The contribution so made will be credited to a separate fund in the deposit section. In the case of death of a Government servant while in service, a sum of Rs. 10,000 alone (Rupees ten thousand only) will be paid to his nominee who shall be his wife/husband, minor child or children, mother or father (in that order) or in the absence of a nominee to the legal heirs of the deceased. In the case of an employee retiring on superannuation or otherwise by demitting office earlier for any reason, he will be paid the actual amount contributed by him till then together with Government contribution representing the element of interest. These amounts will be calculated in accordance with the number of years of service. The deductions shall continue throughout an employee's service except during the period of extraordinary leave. The Scheme shall come into force with effect from the 1st January 1974, *i.e.*, after the first subscription for the month of January 1974 or for the month in which an employee is recruited in the case of future recruits.

Mode of collection

A monthly contribution of Rs. 10 shall be paid by the Government servant commencing from his pay for January 1974 and it shall continue till the end of the calendar month preceding the date of his superannuation. No Contribution shall be made during the period of extraordinary leave. If a Government servant is on extraordinary leave for 15 days or more in a month, no contribution need be recovered. In respect of future entrants, contribution will commence from the beginning of the calendar month following the date of entry in service and shall continue till the end of the month preceding the date of his superannuation. The deduction shall be made from the monthly pay bills.

The pay drawing officers will be held responsible for the prompt recovery of the contribution. In the case of self drawing officers, the Pay and Accounts Officers and the Treasury Officers should watch the recovery. In respect of Government servants on deputation or on foreign service, the foreign employer should effect the recovery.

Refund of contribution

In the case of superannuation or if an employee demits office for any other reason, he shall be paid 80 per cent of the actual amount contributed by him till then at the rates indicated in Schedule I. The balance of 20 per cent will be paid after verifying the period of extraordinary leave availed of by him. In the case of Government servants working purely under emergency provisions, the repayment will be based on the schedule as in other cases. For the purpose of refunding the contribution, the total amount payable should be notionally worked out from the beginning of the calendar month in which the contribution was first commenced and the end of the calendar month prior to his date of superannuation after deducting the period spent on extraordinary leave.

Sanctioning authority

In the case of non-gazetted officers, the head of the office shall be the sanctioning authority for the refund of contribution on superannuation or payment of lumpsum benefit in the event of death of the Government servant while in service, while in the case of Gazetted Officers, the immediate superior officer and in the case of Heads of Departments the Government will be the sanctioning authority.

Persons entitled to receive family benefit:—

If a Government servant dies while in service his/her nominee who shall be his wife/husband, minor child or children, mother or father (in that order) shall be paid Rs. 10,000/- in a lumpsum in lieu of his contribution. If none of the nominees are alive, this lumpsum amount shall be paid to the legal heirs of the deceased Government servant. The nomination shall be countersigned by the Head of Office and pasted in the Service Book of the Government servant after making entries in it. It is the duty of the Government servant, thereafter to keep this nomination up-to-date. No Government servant shall be paid his/her first full month's pay after joining the service unless he/she files his/her nomination.

Table of Benefits Payable at the Time of Retirement.

Number of completed years to be calculated with reference to the inception of the scheme or the date of entry whichever is later.

Number of years of completed service at the time of retirement. (1)	*Contribution of the employee.* (2) RS.	*Government contribution* (3) RS.	*Total.* (4) RS.
1 year	120	4	124
2 years	240	16	256
3 years	360	36	396
4 years	480	64	544
5 years	600	100	700
6 years	720	144	864
7 years	840	196	1,036
8 years	960	256	1,216
9 years	1,080	324	1,404
10 years	1,200	400	1,600
11 years	1,320	484	1,804
12 years	1,440	576	2,016
13 years	1,560	676	2,236
14 years	1,680	784	2,464
15 years	1,800	900	2,700
16 years	1,920	1,024	2,944
17 years	2,040	1,156	3,196
18 years	2,160	1,296	3,456
19 years	2,280	1,444	3,724
20 years	2,400	1,600	4,000
21 years	2,520	1,764	4,284
22 years	2,640	1,936	4,576
23 years	2,760	2,116	4,876
24 years	2,880	2,304	5,184
25 years	3,000	2,500	5,500
26 years	3,120	2,704	5,824
27 years	3,240	2,916	6,156
28 years	3,360	3,136	6,496
29 years	3,480	3,364	6,844
30 years	3,600	3,600	7,200

MORE COMPENSATION FOR LAY-OFF SUGGESTED

The 24th session of the Labour Ministers' Conference unanimously recommended increased rate of compensation to workers for lay-off due to power cut and relaxation of the conditions for payment.

It suggested amendment of the Industrial Disputes Act to raise the rate from the present 50 per cent to 60 per cent of the wages and dearness allowance.

The compensation is now available only to those who had put in 240 days of continuous service in the 12 months preceding the lay-off. The conference recommended that this should be reduced to 200 days of service, not necessarily continuous.

It also agreed to the creation of a Central Gratuity Fund and set up a Committee to work out details.

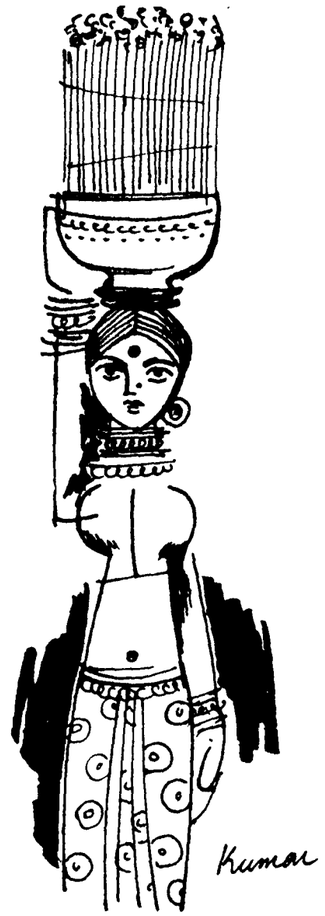
The conference agreed to raise the present wage limit of Rs. 400 per month to Rs. 500 for purposes of the Payment of Wages Act.

It accepted the demand for setting up a welfare fund for beedi workers. The money will come from a cess on employers at the rate of 25 paise per Kg. of beedi tobacco.

The conference generally approved the recommendations of the Committee on automation that it could be introduced in education, research and scientific institutions. In the case of industries, if there is no agreement on introduction of automation between the management and workers, the matter should be decided by the State Government.

The Centre would have this power in the case of industries having units in more than one State. The Centre was also authorised to widen, in consultation with the States, the list of industries where automation could be introduced.

The conference expressed concern at the growing rate of accidents in industrial units and stressed the need for greater attention to safety measures.



BEWITCHING FESTIVALS OF TAMIL NADU

By R.L.

The Tamil Calendar is studded with festivals. Almost every month some festival or other is being observed in temples and households. Most of the communities and religious groups observe them with great zest. Festivals enliven the social life and provide opportunities for artistic expression. They are occasions when women prepare artistic designs (kolums) on their doorsteps and in their courtyards. Flowers of variegated hues are strung together with astonishing artistry which adorn the pretty coiffures of graceful women. They embellish their hands with lovely patterns made of Renna paste. Lamps in copper and bronze in wonderous shapes and sizes, revealing superior craftsmanship are taken out and lit on these occasions which add an enchanting beauty.

The festivals of Tamil Nadu are as variegated as they are enchanting. Yet, no two festivals are alike. Some of them are purely pastoral reflecting as they do the simple joy of peasant life. Some others are rooted in tradition and are woven around interesting episodes in our mythology.

A festival is an occasion for gaiety and mirth. It may be a harvest festival like Pongal celebrated in January (Thai) or the floating festival or car festival or the Navarathri which is a colourful event. The idols of Gods and Godesses and other dolls are arranged in tiers with an aesthetic sense. It provides an occasion for a social meet. Women and children dressed in their best impart colour and enchantment to the festival. Tamil Nadu is converted into a fairyland during the nine days of this festival.

Rooted in Tradition and woven Round Mythologies.

EERIE FLAMES OF KARTHIGAI LAMPS

Karthigai Deepam, the festival of lights, celebrated in November-December is a festival of great beauty and charm. Hundreds of little earthern lamps are placed in a row in every house, the village turned into a little fairyland of lights. Little tongues of flame dancing before the gentle breeze leave an enchanting impression in the mind. Friends and relatives dressed in their best visit each other's houses to exchange greetings. Sweets are exchanged and songs sung and dances held to enliven the event.

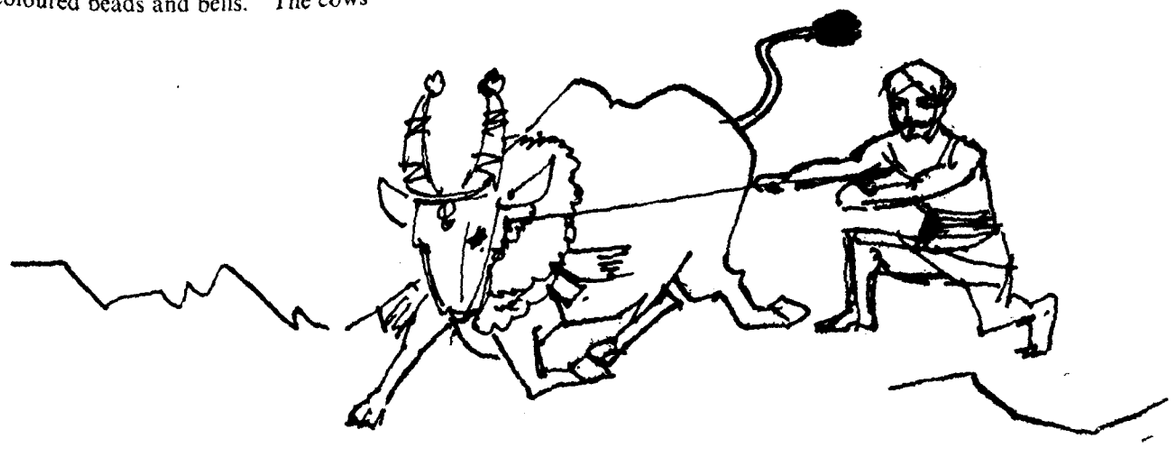
Take in a festival when you come to India, No land demands so much of its legends, or, in celebrating the past bedecks the present so marvellously.

PONGAL

Pongal is the national festival of Tamil Nadu. Celebrated for four days commencing from the last day of Margazhi, Pongal is a festival of thanks giving when the peasant worships the Sun, the Earth and the Cattle for all their bounties. The first day of the festival called Bhogi is spent in feasting and merry making. On the second day which is Pongal, he worships the Sun. Sugarcane and turmeric, sheafs of paddy and newly prepared jaggery, vegetables and dhals are all devoutly offered, the members of the family joining in the worship. On the third day the cow is worshipped. The farmer paints the horns of his bulls and cows in rich colours and covers the horns with shining metal caps and decorates them with gay coloured beads and bells. The cows and bulls which are thus gaily decorted are led out in procession to the beat of drums, pipe horns and music. In Madurai and Ramanathapuram, a kind of bull fight, called the "JALLIKATTU" is held. Bundless of currency notes are tied to the horns of ferrocious bulls and unarmed young men try to rest the bundles. In days of old rich mirasdars would rear bulls especially for this occasion and whoever tames the bull would get the hand of his daughter. This practice is no more now. Rice made into coloured balls are left in open terraces and courtyards for the birds.

On the last day, "Kannum Pongal" men, women and children of all ages dressed in colourful clothes visit the elders to pay their regards and respects. In villages, the families go to the river banks, cook and eat the meals in the open. They sing and dance the Kummi and the Kolattam and enjoy themselves. In towns and cities, dressed in their best, they throng the cinema houses, exhibitions and museums. In general it is an outing for the entire family more or less a picnic.

What Pongal means to the Tamils will be seen from the way he prepares for it. He cleans the house, white washes it which gives a new look. He buys new clothes for all the members of his family. On the third day, he greets the elders. In villages, the peasant takes the vegetables from his land to his landlord and greets him and receives a token sum in return.



TAMILNADU ENDORSES FIFTH PLAN OBJECTIVES

Full Text of Chief Minister's Speech At N. D. C. Meeting On 8—12—73.

It is my privilege to present the views of Tamil Nadu on the draft Fifth Five Year Plan. I recognise that the Fifth Plan denotes an important stage in the development of the nation and its economy. The wealth of details contained in the document and the variety of suggestions made therein, cannot obviously be fully discussed in a meeting like the one we are holding today. In my view, it would have been more appropriate, if the National Development Council had been given adequate time and opportunity to discuss the various sectoral outlines that have been brought out in the draft Plan. As it is, we have necessarily to concentrate on some of the broader issues of policy only.

Tamil Nadu endorses the objectives of the removal of poverty and the attainment of self-reliance put forward in the Plan. In the achievement of these national objectives, the Fourth Plan has not been as much of a break-through as we had anticipated earlier. We should learn the lessions of the failures of the Fourth Plan, before we embark on the Fifth Plan. The actual annual rate of growth of the Fourth Plan was only 3·7 per cent, as against the target of 5·7 per cent. I hope that in the Fifth Plan atleast the target will be realised through more effective means of co-ordination and implementation.

DON'T CONTINUE ERRORS

I have always been urging that targets and plans have no meaning, so long as implementation is defective. There is a full chapter in the draft Plan devoted to implementation. But, what we look for is the physical means to implement our plans. **Steel, cement, coal, fertilisers—the basic goods which we need to implement our plans are all in short supply. To assume a large Plan and not to ensure these essential goods being available is to continue the errors of previous plans.**

Today, we do not have enough fertilisers in the country. How are we then to achieve our targets of food production? Either we should make our fertiliser factories produce more or import more fertilisers. Our fertiliser plans are producing only 11.62 lakh tonnes of nitrogen as against an installed capacity of 22.84 lakh tonnes. We recognise the problems that the Government of India faces in running these plants to full capacity; but should that mean that the farmer is to be denied fertilisers?

Steel also presents the same picture. It is difficult to get steel in the market. Supply of coal is also a problem. Many cement plants run with low stocks of coal. Is it not time that we look into the causes for these shortages of basic goods and remedy them when we talk of higher rates of growth and removal of poverty?

WHY ENCROACH?

We are told that resources are scarce and therefore crucial sectors like power have to be cut down and the States' plans are also reduced. At the same time, large outlays have been set apart for the Central sector for subjects such as Agriculture, Education and Health. In respect of agriculture, Rs. 1,946 crores amounting to forty per cent of the outlay of Rs. 4,730 crores is proposed to be in the Central sector. As against this, in the third Plan, only 16 per cent i.e. Rs. 110 crores out of a total of Rs. 690 crores was in the central outlays. Afterall, agriculture is a subject in the State list and the increase in the Central sector is inexplicable. Similarly, in Education, nearly Rs. 500 crores out of Rs. 1,700 crores is now in the Central sector. I cannot also understand how in a subject like Health, there should be nearly Rs. 250 crores or thirty per cent of the total outlay in the Central sector. **When there is a planning process and the State Governments and the Central Planning Commission work together, I do not see why there should be Central schemes and Centrally-sponsored schemes in areas which are part of State responsibilities. I plead most emphatically that these outlays should be transferred to the State plans and that there should not be any Central Sector Schemdes in subjects which are definitely of the nature of State Plan Schemes.**

I now quote from the memorandum of West Bengal Government to the Finance Commission. I quote "**The sharp increase in Union expenditure on State subjects shows how Central control over State subjects is increasing in extent and intensity, and how the State Governments are being correspondingly deprived of the money to perform their Constitutional responsibility..... Such control over State schemes is now exercised in such great detail that the execution of schemes is greatly hampered.....This is introducing diarchy, pure and simple, in the administration of State subjects. In fact, it is worse than diarchy because, the Central Government does not assume any responsibility in the matter which remains under the Constitution and also in fact squarely on the State Government.**" I am quoting not my friend Thiru Sidharth Sankar Ray, but Dr. B.C. Roy writing in 1956. The trends have worsened over the years with the growth of Central sector and Centrally-sdonsored schemes.

CAUTION ON POWER PROJECTS

I now turn to the core of the Plan, namely, Power, Irrigation, Mining and Manufacturing, Transport and Communications. We believe that that the provisions made for thees sectors are in totally adequate. Specifically, in the field of power, there has been a serious crisis in recent years which has hampered all economic activities in the country. In the light of this, we have to review the provisions made for development of power in the Fifth Plan. Unless more power projects are immediately approved and implemented in time, there will continue to be shortage of power for the next ten years. It has to be pointed out that decision making in this sector has always been slow and has to be reviewed. So far as Tamil Nadu is concerned, the only new thermal project, which has been cleared, is Tuticorin. Our projections show that even with Tuticorin, we will continue to have a shortage of nearly 25 to 30 per cent of our demand during the next ten years. In spite of repeated requests, the Government of India and the Planning Commission have not seen it fit to give us clearance for the Mettur Thermal Project or for another nuclear project; Nor has any provision been made in the present draft for the Neyveli second mine-cut and the associated 1,000 MW station. This is a matter of great concern to us.

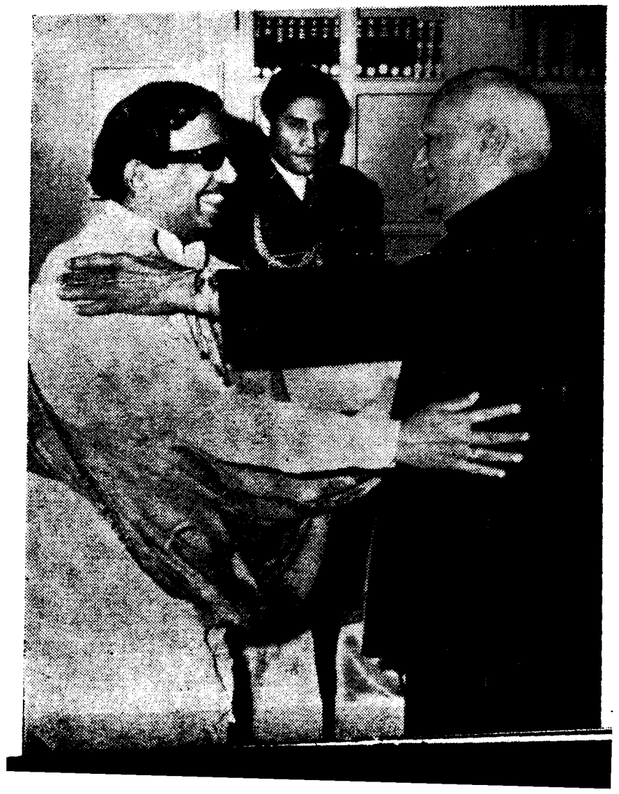
The various projections that have been put forward regarding the resources would seem to assume that prices and wages would remain constant. Even between the time of publication of the approach document and now, there has been nearly a twenty per cent. increase in prices. While we are talking about the same monetary magnitude of the Plan, the real Plan is getting smaller. **If we do not succeed in controlling the increase in prices during the Fifth Five Year Plan, our real rate of growth will be substantially lower than what we are projecting. I would earnestly plead with Planners to concentrate on stabilising prices in the economy. The various monetary and fiscal measures at the Centre indirectly lead to increase in prices. But it is we in the State Governments who have to face the consequences of the price rise. We do not have any of the attendant benefits which Centre gets through deficit financing or increased excises.**

One of the factors responsible for price increase is the very high excise imposed by the Centre. The way in which excises have been increased by the Central Government from time to time, increasing prices of basic goods like petrol, steel, cement, is also instrumental in worsening the price spiral. One cannot help feeling that the Government of India has been ignoring the impact of its taxation on the present price situation. Recently, for the ostensibly good purpose of containing the consumption of petrol, the Government of India increased its excise. The direct impact of the price increase was large, but even more disturbing was the indirect price increases which were set in motion. The draft Plan before us points out that the increase of taxes proposed in the Plan will contribute to not more than a three per cent of increase in prices. I am afraid this is an under-estimate. While this may be the direct increases in prices, there is a multiplier effect and the ultimate increase of prices at the consumer level is bound to be far larger. I would like to urge that the scope for reducing the price level by reduction of taxes, especially indirect taxes on commodities of mass consumption, should be explored by the Government of India For this purpose, I had suggested in the last meeting that there should be an enquiry body. I would like to reiterate the suggestion.

Taxation as a means of raising resources has led us to a contradiction. More taxes lead to higher prices and higher wages and a cycle of further increases. Tax evasion also goes on increasing. We must, therefore, look at the whole problem of raising resources for a larger plan from the point of view of a radical transformation of our economy. We should adopt a socialist approach to this question and bring all production of basic consumer goods under the commanding control of Government.

There is no indication in the draft Plan about the criteria on the basis of which Central assistance is to be distributed between States. The decisions of the Government of India on the recommendations of the Sixth Finance Commission are also not yet known. In the absence of these, it is difficult for us to assess what our plan profile will be. **I can only express the hope that the unfair treatment meted out to our State in the previous plans will no longer continue and fairness and justice restored in the financial allocations to Tamil Nadu.**

C. M. Greets President During Delhi visit.



TAMIL NADU STEEL PLANT

.....Guess What?

The Continuous Steel Casting Plant at Arkonam near Madras is Tamil Nadu Steels. It is a testimony to the benefit of an essentially socio-economic co-operation without any strings. Arkonam Steel Plant was established with the Soviet collaboration by Tamil Nadu Industrial Development Corporation Limited (TIDCO), an entirely Government-owned concern. This "House of Steel" at Arkonam portrays what Indo-Soviet collaboration in socio-economic spheres can contribute to the industrial future of the country. TIDCO is a dynamic institution sponsored by the Government for the purpose of accelerating the development of industry in Tamil Nadu. TIDCO took a right decision to build a plant for making billets to meet the growing demands of the 37 re-rolling mills in Tamil Nadu. These re-rolling mills were working far below their capacities owing to the shortage of billets.

Technology, Most Modern for adaptation in India :—The search for collaboration on the part of TIDCO in setting up a Steel Plant to manufacture billets was quite meaningful. After visiting various countries the team, which went in search of collaboration, found that Continuous Steel Casting was the modern method and that Soviet Technology was most suited for this. Soviet technology and expertise in the field have won worldwide appreciation. This finding of the delegation led to an official approach to the Soviet Union for collaboration in establishing a continuous Steel Casting Plant. Soviet Union agreed to assist in setting up this plant and contracts were signed with M/s. "MACHINEXPORT" of Moscow for the supply of basic machinery required for the plant and to provide the technical know-how.

Distinguishing Features and Benefits: —How the Soviet specialists worked hand in hand with the ordinary workers at the Steel Plant impressed the Indian workers and the comradeship between the qualified Soviet experts and the ordinary workers was something that excelled the concept of socio-economic equality. The first steel was smelted in the Electric Arc Furnace on October 14, 1971, which was the starting point of the continuous success of the plant. It is noteworthy that the concast installation was commissioned in record time.

The Arkonam Steel Plant was inaugurated by the Chief Minister of Tamil Nadu on 14th April 1972. It is encouraging to note that commercial production in this unit started from 1st July 1972. Arkonam Steel Plant has many special features. This plant is able to use scrap steel that normally goes to waste. It is pertinent to mention that the Electric Arc Furnace with a capacity of 25-30 tonnes used at Arkonam Plant is the biggest fully automated and mechanised Arc-Furnace in India. This can produce 50,000 tonnes of billets a year and this can be doubled to one lakh tonnes per year with the addition of one more 25 tonne electric furnace. What is more, the 4-strand concast installation used here is the only one of its kind in India. This is equipped with allround automation and instrumentation. For operational facilities, there is also a closed circuit TV. Quality tests are conducted

at several stages of the production of the billets in the well equipped laboratory attached to the Plant.

The benefits which flow from the operations of this Steel Plant at Arkonam are obvious in the context of the rapid development of industries in Tamil Nadu. Particularly for the re-rolling mills, the Arkonam Steel Plant provides a great assistance. This plant also serves the development of the industrial complex in this area. Soviet assisted projects in Tamil Nadu like Neyveli Thermal Power Station, Mettur Hydro-power Station and the Surgical Instruments Plant at Madras, provide a striking evidence of the benefits of Soviet assistance to develop the basic and essential sectors of the industrial economy.

A Promising Outlook :—The present programme of the Directors of TIDCO to expand the production and also to change the product-mix with addition of high value added items provides an indication about the bright potentialities that lie ahead before this vital plant in a vital sector. The proposed expansion will double the melting capacity to one lakh tonnes which is in keeping with the casting capacity. The resiliency of the plant is obvious from the fact that within a month of the lifting of the power cut in Tamil Nadu, the Arkonam Steel Plant had been working at 50% of the rated capacity as against 35% achieved during January-February 1973. That the break-even point of this plant will be reached when the plant works at 60% of its rated capacity is an important fact worthy of note. The production of high carbon billets which are in great demand at reasonable prices is a promising prospect. What is more, it will be easier to reach the rated capacity production after reaching the break-even point, when profitability will be quite impressive. There is already good demand reported for the products of this Arkonam Plant.

The observations made by the Chief Minister of Tamil Nadu on the occasion of the commissioning of the Arkonam Plant have spotlighted the outstanding benefits of Soviet collaboration. The distinguishing features of Soviet assistance are the low rates of interest on the credit offered under deferred rupee payment, the absence of any foreign exchange problem, and the absence of any political strings. It is obvious that in a rapidly rising cost-structure of projects everywhere, India's industrial development would receive greater fillip with more and more projects coming up with Soviet aid on a relatively low cost and easy payment system. Quality with low cost and easy rupee payment, constitute the distinguishing features of Soviet cooperation for India's Industrialisation.

—By A. R. SUNDARAM.

INTENSIVE CAMPAIGN FOR THE DEVELOPMENT OF SMALL SCALE INDUSTRIES IN DHARMAPURI DISTRICT.

The Directorate of Industries and Commerce, Government of Tamil Nadu, conducted an "Intensive Campaign for the development of Small Scale Industries in Dharmapuri District," from 10—12—1973 to 16—12—1973 in collaboration with the Small Industries Service Institute, Government of India at Madras. The Tamil Nadu Small Industries Development Corporation Ltd., Madras, the State Bank of India and other Nationalised Banks. The object of the campaign was to make available all the assistance rendered by the above mentioned agencies to the Small Scale Entrepreneurs, on the spot under one roof.

During the Campaign, the officers of the above mentioned agencies rendered all assistance, such as giving advice for starting suitable small scale industries in the district, registration, technical advice and guidance, processing of applications for financial assistance, hire purchase of machinery, issue of esseentiality certificates for import of scarce raw materials and machinery, etc. The officers of these Institutes will also visit the existing small scale units in the district and offer technical assistance for expansion, diversification, etc. This campaign is expected to boost industrial development of Dharmapuri District which has been classified as Backward Area. Industries set up in the district are entitled to the central subsidy of 15 per cent on the fixed capital investment, and financial assistance on concessional terms.

The campaign was inaugurated by the Collector of Dharmapuri District at 10-30 a.m. on 10—12—73 at Dharmapuri. On this day cases relating to Dharmapuri and Palacode taluks were covered. Similarly on subsequent days the other Taluks were covered till 15—12—1973.

The Tamil Nadu Agro-Industries Corporation.- The Tamil Nadu Agro-Industries Corporation was established in 1966 with the twin objectives of encouraging industries which will help the growth and modernisation of agriculture, animal husbandry, pisciculture and poultry farming and encouraging food processing industries. It is now the sole agency for distributing imported tractors. The Corporation has already sold 2,145 tractors so far besides taking up the distribution of power tillers recently. A modern workhop at a cost of Rs. 5·82 lakhs is being constructed at Guindy for the manufacture of farm implements. This unit is expected to commence its production from 1973-74. With the idea of regulating the quality and price of the pesticide chemicals marketed, the Corporation started the formulation of certain chosen chemicals in the current year. Another important contribution of the Corporation is the relief it is giving to the unemployed technical graduates and diploma holders. Under this scheme, the Corporation is giving training to the employed but technically qualified persons to enable them to start Agro-Service Centres.

ELECTRON CONDUCTS SEARCH FOR INFORMATION

Leningrad. The collection of seeds at the disposal of the All-Union Plant-Growing Institute, situated in this city, is a real treasure for selectionists. But how to select quickly the needed specimen with strictly definite features, if there are 300,000 specimens and the number of features, in the description of each specimen amounts to 200. Leningrad mathematicians have entrusted the role of a pilot in this ocean of informative combinations to a computer which makes the selection in a matter of minutes. This gave a start to the creation of a single computing centre in Leningrad with an automated system of search for information accumulated by the city's agricultural research centres. Computers will collect and store information on most different problems as, for example, on methods of protecting plants against pests, genetics, selection of farm animals, etc.

THE NEW SKYLINE OF RANIPET

With the promotional assistance provided by Tamil Nadu Government through its State Industries Promotion Corporation, Ranipet, 80 miles from Madras, bids fair to become a beehive of industries. With an authorised capital of Rs. 5 crores, the SIPCOT, as it is familiarly known, is an amalgam of senior officials of the Government of Tamil Nadu Industries Department and reputed industrialists of the State. Around the "know-how" of this team a layer of competent team of technicians, engineers of various branches, Chartered Accountants, Cost Accountants and administrators has been formed to make the SIPCOT truly dynamic.

The motto of this Public Limited Company is to speed up the formation of medium and major industries in Tamil Nadu, particularly in the backward and most backward areas of the State in partnership with the progressive entrepreneurs. Industries Minister Thiru S. Madhavan, after his extensive tour all over the world and after seeing many industrial complexes in various places, has decided to develop "growth centres" all over Tamil Nadu, particularly in the most economically backward areas in the State. Ranipet is one among the selected industrial locations to start with.

GROWTH CENTRES

As far as Tamil Nadu is concerned, the industrial development so far has been concentrated in a few centres like Madras, Coimbatore, Salem-Mettur belt area and more recnetly, Tirunelveli and Tuticorin areas. As a result, vast areas of the State is mostly neglected and a trauma of imbalance is steadily creeping up in these neglected areas. The infrastructure facilities and package of concessions offered attract some of the most sophisticated industries to choose these "growth centres" for their expansion projects and new ventures.

The inauguration of SIPCOT industrial complex at Ranipet on 15th November, 1973 will mark a significant era in the annals of history of industrial growth in Tamil Nadu. The diversification of industries all over Tamil Nadu is not only balancing the economic growth of the country; but at the same time also acts as an attracting agents for entrepreneurs outside our State to come and invest their capital and entrepreneurial skill in our soil. The industrial complex now emerging at Ranipet in North Arcot District is located in an area of over 712 acres site, just 2 Kms. away from Ranipet Town. It is situated in the Walajapet Municipality on the north bank of Palar river, comprising a population of few thousands of people. Once it was a British Contonement and large Cavalry section was maintained there. Once a place of minor importance has now received a greater prominence by the setting up of this huge industrial complex.

Ranipet, once a tiny dot on the industrial map of Tamil Nadu, has now become a key place of industrial vision. It is one of the constituents of a town group consisting of Ranipet, Arcot and Walajapet municipalities and is centrally located and well served by a network of roads and rail communication. The site located for industrial complex is right on the National Highway from Madras to Bangalore. This site was bought in the year 1963 and was kept idle for a long time. This Industrial Estate apart from enjoying road and rail connections, is also under the confluence of Palar and Ponnai rivers which has a potential of 4.5 million gallons of water per day. A sum of Rs. 46 lakhs has been spent to tap an initial potential water resource of 2.5 million gallons and this will gradually be stepped up to 4.5 million gallons of water per day. A separate 110/11 K.V. sub-station is being constructed by the Tamil Nadu Electricity Board on a plot within the industrial complex to take care of power requirements for the industrial units. A separate 1.5 Kms. railway line will also be constructed along the industrial sight connecting with the Ranipet railway station.

To facilitate the workers who are working under the canopy of this growing industrial complex, the Tamil Nadu Housing Board has decided to start construction of housing colonies in a contiguous areas of about 52 acres of land. Provisions for constructions a hospital, school, Community Centre, play ground and Park have been made for the betterment of the people who are likely to reside at this housing colony.

Besides open services, drainage facilities have also been provided for the disposal of treated effluent discharged by industrial units. An administrative building is being constructed to house the Administrative Office of the SIPCOT. A post office; a branch of the bank, Fire Station, etc., will also be constructed within the area.

DIVISION OF INDUSTRIES

This industrial horizon is divided into many zones, one each for heavy industries, chemical industries, electronic industries, medium scale industries and small scale industries. There are 62 plots spread over an area of 514 acres. Entrepreneurs will have a wide choice of plots of varying sizes depending upon their requirements.

An area of 72 acres has been set apart for the development of an Industrial Estate for Small Scale Industries Development Corporation (SIDCO) planned to construct 150 sheds which will be made available to small scale industries on easy payment terms.

To start with, the foundation stones are being laid for 5 major industries. Among them is Tamil Nadu Chromates and Chemicals Limited as a joint sector project promoted by TIDCO in collaboration with Thiru K. K. Mohideen and his associates at an estimated cost of Rs. 1.7 crore. This project will manufacture B.C.T. powder, sodium dichromate and sodium sulphate required for tanning industry.

In the implementation of this project, the services of a highly qualified Project Manager with over 12 years' experience in the manufacture of Sodium Dichromate, Basic Chromium Sulphate Tanning powder, Sodium Sulphate and other chromium compounds have been secured, technical equipment requirements determined, design drawing and specifications and raw materials requirements worked out and a detailed, techno-feasibility and viability report prepared for the appraisement of the Project by the Financial Institutions.

Binny Limited, Madras, which is already in the manufacturing field of the above chemicals for its captive consumption, has been appointed consultants and on its experts' certification, orders were placed with reputed indigenous manufacturers for the technical equipment.

Sodium Dichromate is largely used in the finished manufacturing units, for the processing of chrome tanned leathers for footwear, clothing, gloves, etc. India is very rich in animal population being the single largest holder of livestock in the world. India's leather industry's exports occupy the fifth place in the exports from India and Tamil Nadu's share of it is more than 70%. Since a decade, with the demand for wet blue skins and hides increasing, chrome tanning of hides and skins has considerably increased and with it has increased the consumption of Sodium Dichromate and Basic Chromium Sulphate in liquid and powder forms. The patterns of exports in view of the declared policy of the Government of India, is now rapidly changing from semi processed leathers such as wet blue and E.I. tanned skins to finished leathers, chrome tanned of high quality.

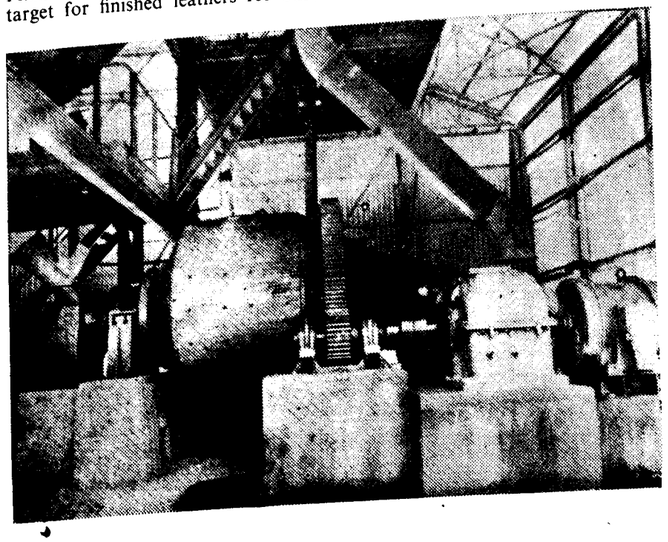
This has also been recently emphasised by the Task Force on Small Scale Industries of the State Planning Commission. An export target for finished leathers for our country as a whole and Tamil Nadu in particular for 1974-75 has been set at Rs. 100 Crores and Rs. 41.25 Cores respectively. Taking into account the finished leather production in the country and the increasing use of the chemical in other industries as well, there is great demand for Sodium Dichromate and the present production will be inadequate even to meet the needs of the industries in the country.

Sodium Dichromate is also used in mineral khaki dyeing (textile industry) corrosion inhibition in cooling towers, metal treatment, manufacture of chromium chemicals and pigments and synthetic detergents.

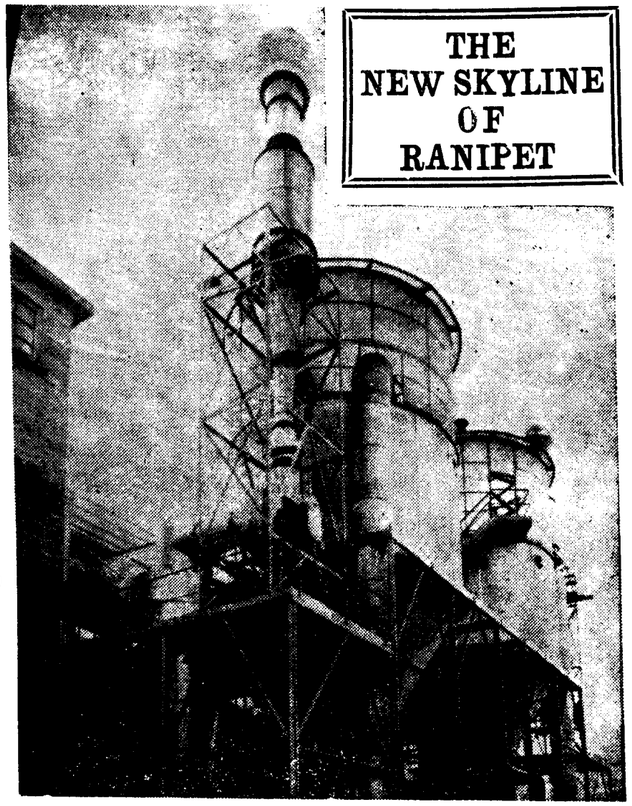
The anticipated demand of Sodium Dichromate during the Fifth Plan period of 1975-80 is estimated at 20,000 tonnes per annum and that of Basic Chromium Sulphate will be of the order of 19,000 tonnes per annum. Sodium Sulphate, a by-product of the Sodium Dichromate manufacturing process, is in short supply and its demand in Calcutta alone is expected to be of the order of 2,900 tonnes per annum.

Foundation stone was laid for Ultramarine and Pigments Limited to be set up at an estimated cost of Rs. 1.50 crores to produce synthetic detergents and five other industries.

Government has decided to start a series of industrial complexes throughout the length and breadth of Tamil Nadu in course of time with the able assistance of SIPCOT which will be an epoch making prosperity in industries in the annals of history of Tamil Nadu.



THE NEW SKYLINE OF RANIPET



With the promotional assistance provided by Tamil Nadu Government through its State Industries Promotion Corporation, Ranipet, 80 miles from Madras, bids fair to become a beehive of industries. With an authorised capital of Rs. 5 crores, the SIPCOT, as it is familiarly known, is an amalgam of senior officials of the Government of Tamil Nadu Industries Department and reputed industrialists of the State. Around the "know-how" of this team a layer of competent team of technicians, engineers of various branches, Chartered Accountants, Cost Accountants and administrators has been formed to make the SIPCOT truly dynamic.

The motto of this Public Limited Company is to speed up the formation of medium and major industries in Tamil Nadu, particularly in the backward and most backward areas of the State in partnership with the progressive entrepreneurs. Industries Minister Thiru S. Madhavan, after his extensive tour all over the world and after seeing many industrial complexes in various places, has decided to develop "growth centres" all over Tamil Nadu, particularly in the most economically backward areas in the State. Ranipet is one among the selected industrial locations to start with.

GROWTH CENTRES

As far as Tamil Nadu is concerned, the industrial development so far has been concentrated in a few centres like Madras, Coimbatore, Salem-Mettur belt area and more recnetly, Tirunelveli and Tuticorin areas. As a result, vast areas of the State is mostly neglected and a trauma of imbalance is steadily creeping up in these neglected areas. The infrastructure facilities and package of concessions offered attract some of the most sophisticated industries to choose these "growth centres" for their expansion projects and new ventures.

The inauguration of SIPCOT industrial complex at Ranipet on 15th November, 1973 will mark a significant era in the annals of history of industrial growth in Tamil Nadu. The diversification of industries all over Tamil Nadu is not only balancing the economic growth of the country ; but at the same time also acts as an attracting agents for entrepreneurs outside our State to come and invest their capital and entrepreneurial skill in our soil. The industrial complex now emerging at Ranipet in North Arcot District is located in an area of over 712 acres site, just 2 Kms. away from Ranipet Town. It is situated in the Walajapet Municipality on the north bank of Palar river, comprising a population of few thousands of people. Once it was a British Contonement and large Cavalry section was maintained there. Once a place of minor importance has now received a greater prominence by the setting up of this huge industrial complex.

Ranipet, once a tiny dot on the industrial map of Tamil Nadu, has now become a key place of industrial vision. It is one of the constituents of a town group consisting of Ranipet, Arcot and Walajapet municipalities and is centrally located and well served by a network of roads and rail communication. The site located for industrial complex is right on the National Highway from Madras to Bangalore. This site was bought in the year 1963 and was kept idle for a long time. This Industrial Estate apart from enjoying road and rail connections, is also under the confluence of Palar and Ponnai rivers which has a potential of 4.5 million gallons of water per day. A sum of Rs. 46 lakhs has been spent to tap an initial potential water resource of 2.5 million gallons and this will gradually be stepped up to 4.5 million gallons of water per day. A separate 110/11 K.V. sub-station is being constructed by the Tamil Nadu Electricity Board on a plot within the industrial complex to take care of power requirements for the industrial units. A separate 1.5 Kms. railway line will also be constructed along the industrial sight connecting with the Ranipet railway station.

To facilitate the workers who are working under the canopy of this growing industrial complex, the Tamil Nadu Housing Board has decided to start construction of housing colonies in a contiguous areas of about 52 acres of land. Provisions for constructions a hospital, school, Community Centre, play ground and Park have been made for the betterment of the people who are likely to reside at this housing colony.

Besides open services, drainage facilities have also been provided for the disposal of treated effluent discharged by industrial units. An administrative building is being constructed to house the Administrative Office of the SIPCOT. A post office; a branch of the bank, Fire Station, etc., will also be constructed within the area.

DIVISION OF INDUSTRIES

This industrial horizon is divided into many zones, one each for heavy industries, chemical industries, electronic industries, medium scale industries and small scale industries. There are 62 plots spread over an area of 514 acres. Entrepreneurs will have a wide choice of plots of varying sizes depending upon their requirements.

An area of 72 acres has been set apart for the development of an Industrial Estate for Small Scale Industries Development Corporation (SIDCO) planned to construct 150 sheds which will be made available to small scale industries on easy payment terms.

To start with, the foundation stones are being laid for 5 major industries. Among them is Tamil Nadu Chromates and Chemicals Limited as a joint sector project promoted by TIDCO in collaboration with Thiru K. K. Mohideen and his associates at an estimated cost of Rs. 1.7 crore. This project will manufacture B.C.T. powder, sodium dichromate and sodium sulphate required for tanning industry.

In the implementation of this project, the services of a highly qualified Project Manager with over 12 years' experience in the manufacture of Sodium Dichromate, Basic Chromium Sulphate Tanning powder, Sodium Sulphate and other chromium compounds have been secured, technical equipment requirements determined, design drawing and specifications and raw materials requirements worked out and a detailed, techno-feasibility and viability report prepared for the appraisement of the Project by the Financial Institutions.

Binny Limited, Madras, which is already in the manufacturing field of the above chemicals for its captive consumption, has been appointed consultants and on its experts' certification, orders were placed with reputed indigenous manufacturers for the technical equipment.

Sodium Dichromate is largely used in the finished manufacturing units, for the processing of chrome tanned leathers for footwear, clothing, gloves, etc. India is very rich in animal population being the single largest holder of livestock in the world. India's leather industry's exports occupy the fifth place in the exports from India and Tamil Nadu's share of it is more than 70%. Since a decade, with the demand for wet blue skins and hides increasing, chrome tanning of hides and skins has considerably increased and with it has increased the consumption of Sodium Dichromate and Basic Chromium Sulphate in liquid and powder forms. The patterns of exports in view of the declared policy of the Government of India, is now rapidly changing from semi processed leathers such as wet blue and E.I. tanned skins to finished leathers, chrome tanned of high quality.

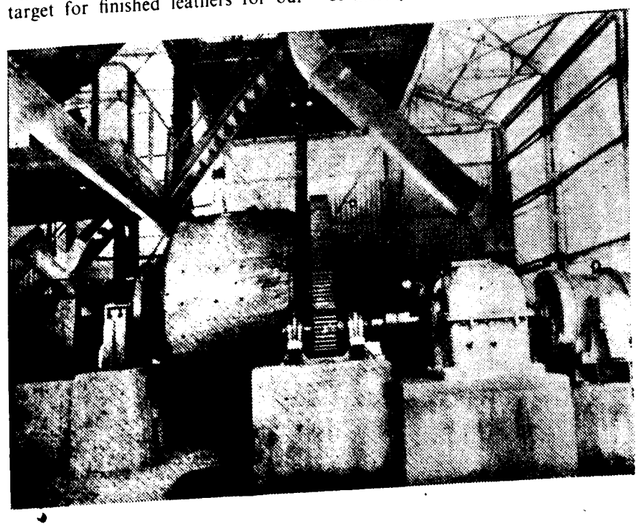
This has also been recently emphasised by the Task Force on Small Scale Industries of the State Planning Commission. An export target for finished leathers for our country as a whole and Tamil Nadu in particular for 1974-75 has been set at Rs. 100 Crores and Rs. 41.25 Cores respectively. Taking into account the finished leather production in the country and the increasing use of the chemical in other industries as well, there is great demand for Sodium Dichromate and the present production will be inadequate even to meet the needs of the industries in the country.

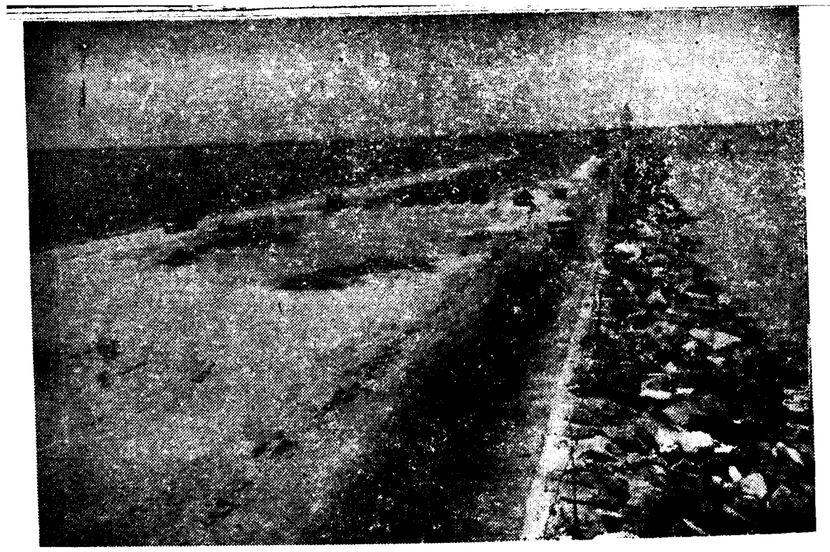
Sodium Dichromate is also used in mineral khaki dyeing (textile industry) corrosion inhibition in cooling towers, metal treatment, manufacture of chromium chemicals and pigments and synthetic detergents.

The anticipated demand of Sodium Dichromate during the Fifth Plan period of 1975-80 is estimated at 20,000 tonnes per annum and that of Basic Chromium Sulphate will be of the order of 19,000 tonnes per annum. Sodium Sulphate, a by-product of the Sodium Dichromate manufacturing process, is in short supply and its demand in Calcutta alone is expected to be of the order of 2,900 tonnes per annum.

Foundation stone was laid for Ultramarine and Pigments Limited to be set up at an estimated cost of Rs. 1.50 crores to produce synthetic detergents and five other industries.

Government has decided to start a series of industrial complexes throughout the length and breadth of Tamil Nadu in course of time with the able assistance of SIPCOT which will be an epoch making prosperity in industries in the annals of history of Tamil Nadu.





THE TUTICORIN PORT BECOMES A DEEP SEA HARBOUR

The deep sea harbour coming up at the site of the sheltered waters of the Tuticorin port will change of the Southern tip of Tamil Nadu. It will alter the economy of three districts, and Tuticorin itself has already attracted heavy industries costing nearly Rs. 300 Crores.

The history of Tuticorin Port dates back as early as 123 A.D. when Ptolemy of Greece described Tuticorin as a flourishing trade centre, engaged in maritime trade with Western and Eastern countries. The maritime trade expanded during the Portuguese and Dutch periods and finally during the regin of East India Company, it reached its zenith. Tuticorin Port is ideally situated, sheltered against cyclones by the island of Ceylon in the east and Adam's straits in the north-east, thus providing calm and tranquil sea with a tide range of three feet only.

FIRST PIER IN 1863

The first pier of Tuticorin port was constructed in the year 1863 and today, the port of Tuticorin is the largest intermediate port of India, handling over one million tonnes of cargo per annum. However, the port is an open roadstead, the anchorage being situated six miles off shore to the east of Hare island in deeper waters and cargo is handled by freighters plying between ship and shore, which involves wastage of time and also material. Hence, the necessity of developing the port into a major harbour with alongside facilities was felt for a very long time for the economic development of the region and prosperity of the people. After detailed survey of traffic by National Council of Applied Economic Research and study by the Intermediate Ports Development Committee, it was decided to construct a deep sea Harbour, off Hare Island, six miles south of the existing port, which was found to be an ideal location for the harbour with minimum cost.

The Government of India sanctioned the preliminary project scheme in the year 1963 and provided an allotment of Rs. 5.00 crores in the Third Five Year Plan. But even at the end of the IV Plan, the harbour has not come into full use though the work has gone ahead with a provision of Rs. 21.76 crores since 1969.

CAN EARN ITS COST IN SHORT TIME

The harbour project envisages the construction of a four-berth deep sea, artificial harbour with 30 ft., draft at the first stage, with provision for deepening to 35 ft. draft at a later stage. It has been assessed that there will be a traffic of 2.235 million tonnes, on commissioning, consisting of :

Coal : 0—60 Million tonnes

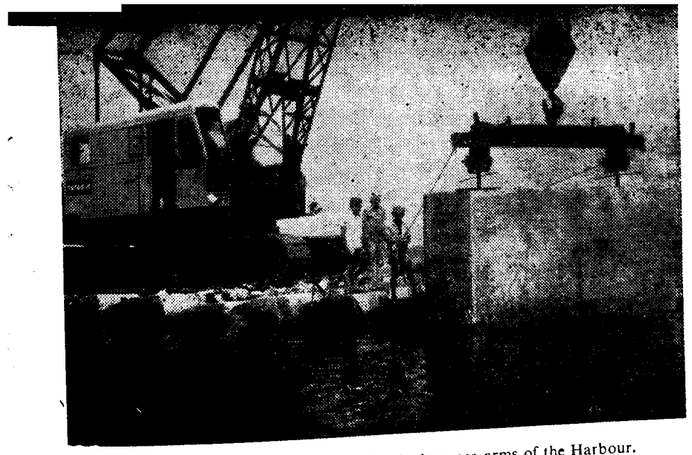
Salt : 0.55 Million tonnes

Cement : 0·45 Million tonnes

General Cargo—0.545 million tonnes

Fertiliser—0.090 million tonnes.

The traffic will build up to 3.510 million tonnes three years after commissioning and 4.420 million tonnes 8 years after commissioning and the project will be in a position to repay the capital with interest in a few years after the harbour starts earning.



Huge dressed stones are lowered for the long sea-arms of the Harbour.

The design of this major harbour at Tuticorin has been finalised based on the model studies conducted at the Central Water & Power Research Station, Poona. It will be an artificial deep sea harbour with rubble mound type parallel breakwaters, north and south, including eastern arm with a length of 4142 meters and 3797 meteres respectively, projecting into the sea at a distance of 1275 metres apart with an entrance of 122 metres width.

The rubble mound type breah waters are being constructed with core stones weighing 10 to 500 kg. wrapped with armour stones weighing 1 ton to over 8 tonnes. The core stones are conveyed by road from Thattapparai and other quarries at a distance of about 26 KMs. from the Harbour site and armour stones are conveyed by road and rail from Ambasamudram at a distance of 96 K.Ms. The marine terminals proposed will be in the form of alongside wharf adjoing the eastern arm of South Breakwater to cater to 4 berths located in the natural deeper waters at a distance about 3,000 metres, from shore and the connection between the whaft and the shore is by means of road and railway links laid over the reclaimed approach arm adjoining South Breakwater. In the initial stage, the harbour is designed to cater to 30' draft ships in all the 4 alongside berths. However, the foundations of the Wharf wall for the end two berths (salt and coal) will be taken deeper to accommodate 2 Nos. 35.' draft vessels, if required, at a later date.

The shore works comprising construction of staff quarters, roads and bridges, water supply sewerage and electricity and railways access to harbour were completed by 1965. The North and South Breakwater have been completed to LS. 2954 metres and LS. 3696 metres in all respects. Orders have been placed for most of the port handling equipments and harbour crafts. An oil jetty is also coming up on the North arm at a distance of 2950 metres.

INDUSTRIAL GROWTH IN THE HINTERLAND.

Tuticorin has got a rich hinterland with the Districts of Madurai, Kanyakumarai, Ramanathapuram, Tirunelveli and Southern Taluks of Tiruchirappalli, to the extent of 16,000 sq. miles. Tuticorin is well connected by roads, radiating to all the important places and railway lines for 525 miles in these four districts. With record performance in the carriage of goods, the trade in the hinterland is brisk, energetic and quick. In view of the high concentration and purity of salt in Tuticorin, the possibilities of large scale manufacture of salt and export of salt to Japan are being explored and will be accomplished shortly. Setting up of salt-based industries and the location of Fertiliser unit as part of the Southern Petro-Chemical Complex which have already been started are to bring about rapid industrialisation of the area immediately. As on date, the Tuticorin Fertilizer Complex is the largest in the World and is coming up so fast that it will go on stream by middle of 1974. Once the Harbour is completed, further new industries in and around the area will develop by leaps and bounds and expand the trade to a great extent. The Atomic Energy Department is building a Heavy Water plant here. The area has attractive an industrial investment of more than Rs. 380 crores already.

With the completion of Sethusamudram Project, Tuticorin Harbour will gain importance all the more, being the first harbour nearest to Indian Ocean on the East Coast, with all the facilities of watering bunkering and repairing.

R.P.R.O.
Tirunelveli.

MY IMPRESSIONS OF OTHER COUNTRIES

F. V. ARUL I. P.,
Inspector-General of Police,
Tamil Nadu.

FOREIGN TOURS

I have had the privilege of visiting several foreign countries in the course of my work as Director, Central Bureau of Investigation, New Delhi and also as a Member of the Executive Committee of *Interpol*. My first trip abroad was in the year 1968 when I visited Teheran, the Capital of Iran, to attend the 37th General Assembly Session of Interpol. Teheran is a very modern city and is popularly called the Paris of the East. It has many beautiful buildings as well as the most modern supermarkets. The country's rate of economic growth has averaged 9per cent each year. To any visitor there are visible signs of affluence and progress all round.

During my visit I took the opportunity of visiting the Golestan Palace, State Bank Vault where the Crown Jewels are kept and also the Centre for Zurkhaneh. The Golestan Palace is a magnificent structure and its interior decoration is breathtaking. The ruling dynasty in Iran is over 3,000 years old and they have over the years adorned the Palace in the most opulent manner. The collection of Crown Jewels is also a wonderful sight to see. It includes the famous Peacock Throne which Nadir Shah took away from India several centuries ago.

The visit to the Centre of Zurkhaneh was very interesting and left lasting impressions. Zurkhaneh means " House of Strength ". It is more than just a sports club. It is a cultural institution in the broadest sense of the word. It is a place where the young men of Iran are trained not only to develop their bodies to a peak of physical condition but also to strive for moral and religious purity.

I also took the opportunity of visiting a prison in Teheran. It was a model of cleanliness, neatness, humane treatment of inmates and of positive efforts to rehabilitate the prisoners.

Visit to Mexico

My next visit to a foreign country was in October 1969 when I visited Mexico City to attend the 38th General Assembly Session of Interpol. This Session was held in the magnificent Government Conference Centre and was inaugurated by the Prosecutor-General of Mexico who said that crime constitutes a social problem both at the national and international levels, that the technical progress achieved by man in a noble effort to eliminate poverty has also served to make crime international and he hoped that Interpol will be of great assistance to all nations in checking such anti-social activities.

During the course of the conference I took the opportunity of visiting the Mexican Museum which is one of the best in the world and also attended a performance of Mexican folk dance. Mexico is a country that is rich in musical and dance tradition, each region having a distinct style in which its music and dances are performed. To really understand and appreciate the life and culture of a nation, a tourist must examine its music and dance, for in Mexico, as in any other country, the true character and sentiments of the people is most often expressed in its musical and dance forms. To make it effective the dance performance was presented as part of an integrated study of Mexican history, geography, music, art and folk lore. It was truly an enjoyable performance and one was able to appreciate an integral part of true Mexican heritage. One cherished and enjoyed it because it reflected the soul and spirit of Mexican culture.

India's Contribution

The following month I had the privilege of visiting Paris which is the Headquarters of Interpol. The occaion was the International Symposium on Crime Prevention Problems. The Interpol Headquarters is accommodated in a new building at St Cloud which is 16 miles from Paris. In response to the request of Interpol Headquarters to all member-countries to make a contribution to the new building, I took the opportunity of presenting on behalf of the Government of India an exquisite representation in ivory of Sri Krishna's famous philosophic discourse on the battle field of Kurukshetra. The ivory model which was executed with superb artistry by an artisan from Trivandrum bears the following famous lines of the Geeta on the concept of duty and the suppression of evil :—

"For the protection of the good,
For the destruction of the wicked and
For the establishment of righteousness,
I come into being from age to age"

Paris is of course one of the most beautiful cities in the world with scores of historic buildings. As one passes these buildings the past history of France comes up before one's mind. In this sense, Paris is an etenally fascinating city.

Nepal-A Synthesis of different ethnic and Cultural Elements

The following May I had a good fortune of visiting Nepal in order to co-ordinate police efforts to prevent the transport into Nepal of stolen motor vehicles from India.

Nepal is an ancient country with a rich cultural heritage. Its two great religions are Hinduism and Budhism. It has always been an independent sovereign kingdom, cherished and protected by a galaxy of illustrious Kings. It runs for a distance of nearly 500 miles from east to west on the northern border of India and its breadth varies from 90 to 150 miles from north to south. It falls naturally into three zones, the Southern Terai with large tropical forests, the central hilly region in which the valley of Kathmandu is situated and the northern part which is the culminating point of the Nepalese scene containing the mighty Himalayas which include Mount Everest and several other famous peaks such as Kanchenjunga, Dhaulagiri, Annapurna, Makalu and Lhotse. These are the most famous mountain ranges in the world, ever attracting mountaineers and sightseers from all parts of the world. Even as we conferred with our Nepalese colleagues a Japanese mountaineering team was in the process of making a successful bid to climb the world's highest peak.

Nepal has a population of nearly 11 million people consisting of a variety of races and tribes, speaking different languages and dialects. They wear different costumes and ornaments at different places. In the north and east live the Bhotias, Tamangs, Rais and Sherpas, in the centre the Newars, in the west the Gurungs, Kerantis and Magars and in the Terai, the Dhimals and Tharus. Nepal is in effect a synthesis of different ethnic and cultural elements woven together into a harmonious entity. Nepalese is of course the national language.

One appreciates the great beauty of the Kathmandu valley as one files into the Capital city. The latter of course is the biggest city in Nepal with a population of about half a million. The city is on an elevation of about 4,500 feet and has a salubrious climate. It is also known as Kantipur and was established in AD 723 by King Gunakama Deva. The word "Kathmandu " is said to be derived from " Kasthamandap ", a Pagoda structure which is believed to have been built from the timber of a single tree. Despite its ancient origin, the capital has assumed a look of modernity and is a great tourist centre.

At Brussals—The seat of the European Common Market

In October, 1970, I visited Brussels in order to attend the 39th General Assembly Session of Interpol. Brussels is the seat of the European Common Market and is also the capital of Belgium which is composed of two distinct regions, the northern known as Flanders where Flemish is spoken and the southern called Wallony where the people speak French. In the social sense, the Belgians are extremely polite and handshaking is their speciality which is said to have originated in medieval times as an assurance that one's right hand carried no weapon.

On the outskirts of Brussels is the battlefield of Waterloo where the Duke of Wellington defeated the French Armies under Napoleon. This battlefield is preserved as it was in 1815 and is a tourist centre.

In October this year I visited Vienna in order to attend the 42nd General Assembly Session of Interpol. Vienna is the capital of the Republic of Austria and can look back on nearly 2,000 years of history. Founded in AD. 50 as a Roman Army Camp, it suffered badly during the Dark Ages before being rebuilt. In 1276 the Habsburg dynasty came to power and ruled till 1918. During unsuccessful attacks by the Turks in 1529 and 1683 Vienna stood firm as a bulwark of the west.

Vienna a City of Arts

Vienna is a European metropolis with a great but living tradition of learning. The city, whose ancient University has produced no less than twelve Nobel Prize-winners, has made notable contributions to the advancement of science ; for example, the Vienna medical school, Viennese child psychology, the psycho-analytical work of Sigmund Freud and the technical discoveries of Viennese engineers. In addition to the University, Vienna has eight colleges and academies of university status that enjoy a world-wide reputation.

Vienna is perhaps even better known as a city of the arts. It harbours a contemporary school of painting, artists of international renown, a number of prominent authors and playwrights, as well as leading theatrical experts. The Viennese stage maintains a standard that bears comparison with the best anywhere else in the world. Life in the Austrian capital is influenced, above all, by music and this applies equally to the classics, to the dodecaphonic school, to the Viennese waltz and the sentimental local songs. Past and present melt into one when considering Vienna's role in the realm of music.

N. C. C. Day was celebrated throughout the State on 30—11—73. Governor takes Salute in Madras.

THE TAMIL ARASU WISHES ALL ITS READERS

AND WELL-WISHERS

A HAPPY NEW YEAR AND PONGAL.

Despite these achievements
Rising Population Raises Problems

SURELY YOU CAN
PLANNING YOUR FAMILY

PARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

Registered No. M. 8676-A

BRING TO LIGHT THE GOOD THINGS OF LIFE

BUY TAMILNADU RAFFLE TICKETS

FIRST PRIZE

Rs. 1,00,000

(For each series)

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

63rd DRAW DATE: 11-1-1974

Cost per Ticket Re.1/- only.

Issued by Director of Information & Public Relations, Government of Tamil Nadu, Madras-600009

All correspondence should be addressed only to the Director of Small Savings (Raffle), Madras-600002.

Khadi Kraft – a trusted name for khadi and village industries articles

KHADI KRAFT offers a wide range of articles-artistic handicrafts to essential commodities. Available at over 200 Khadi Kraft Branches all over Tamil Nadu and Pondicherry.

Khadi Kraft is Elegance Par Excellence.

TAMIL NADU KHADI & VILLAGE INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.

For retail and whole-sale, contact Khadi Kraft at:

KURALAGAM	36C, ANNA SALAI	MADURAI MAIN ROAD	AVANASHI ROA
MADRAS-600001	MADRAS - 600002	TIRUCHIRAPPALLI	COIMBATORE
Phone : 29684	Phone : 81954	Phone : 3814	Phone : 35051

R.K.NO. 82/74. P.

Tamil Arasu

Vol. IV FEBRUARY 1974 Issue 8

CONTENTS

	PAGE
Tamil Nadu Legislature Pays Tributes to Periyar	4
Republic Day Celebrations	6
Governor outlines measures	19
Cobras the Hooded Terrors	29
The Terror of Criminals	35
Pongal Tourist Trade Fair	43

‡ ‡ ‡

TAMIL NADU TEAM WINS N.C.C BANNER FOR THIRD YEAR

The National Cadet Corps of Tamil Nadu and Pondicherry have won the All India Inter-Directorate Championship Banner for the third time in row. The contingent from Tamil Nadu won the first position in six events and came runners-up in most of the other events in a series of 17 events.

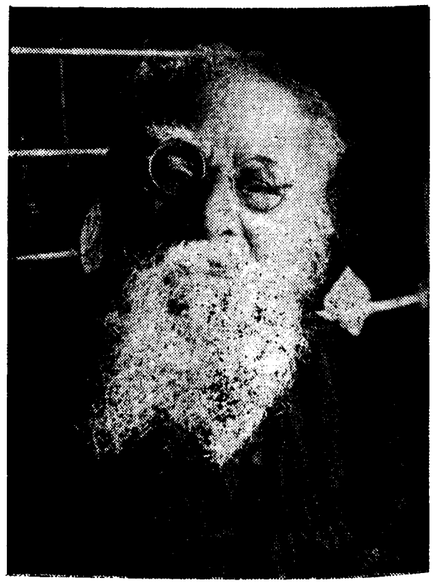
The Commander of the Tamil Nadu NCC contingent was Prema Kamath, Senior Under Officer, who was also adjudged the best Senior Girl Cadet.

Prime Minister Thirumathi Indira Gandhi gave away the awards on Sunday at a rally marking the Silver Jubilee of the N C C Of the 17 prizes, Tamil Nadu and Pondicherry cadets bagged seven, Assam three, Madhya Pradesh two and West Bengal, Bihar, Orissa, Karnataka and Uttar Pradesh one prize each.

Addressing 2,000 boys and girls, the Prime Minister said that enemies outside and weaknesses inside warranted strong and united action from the youth.

Tamil Nadu Governor taking the Salute at the march past held at Marina in connection with the Republic Day Celebrations.

TAMIL NADU LEGISLATIVE ASSEMBLY PAYS TRIBUTES TO PERIYAR



Dr. V.R. Nedunchezhiyan moved a resolution in the Legislature to condole the death of Periyar and said :

" The demise of Thanthai Periyar at the age of 95 is a wound that cannot be erased by time. For over 60 years in the past, he worked hard for the uplift of Tamil Nadu in addition to the attainment of progress and prosperity of Tamilians as a whole coupled with social reform and revival and restoration of their rights. Because of these he was affectionately called Thanthi Periyar by one and all and as a corollarry he had earned an eternal and affectionate place in the hearts of all and sundry in Tamil Nadu.

"By his earnest and sincere participation in the programmes of the Congress from 1914 to 1925, he set an example for others in the public service.

"Periyar was one among the trio who built up the Congress as pillars of that organization in the early years of its growth in the South, the other two being Thiru Vi.Ka and Dr. Varadarajalu Naidu.

"WE HAVE BECOME MUCH POORER" GOVERNOR'S TRIBUTE TO PERIYAR

At the outset, I would like to refer to the sad demise of Periar E. V. Ramaswami. In his death, we have lost a valiant freedom fighter, a fearless social reformer and a crusader against social oppression and inequity. His was a life totally dedicated to preaching the gospel of rationalism and to bettering the lot of the poor and the down-trodden. If the social confidence of to-day has become sensitive to man's inhumanity to man and if the hold of antiquated customs, ceremonies and superstitions over the people has been eroded it is, to a great extent, due to the untiring efforts of Periyar spread over half a century. We have become much the poorer by his passing away.

"The man who started and headed first the Kadhi Board in Tamil Nadu was Thanthai Periyar.

" When Rajaji started an Ashramam at Tiruchengode as a complement to the one run by Gandhi at Sabarmathy, the same was declared open by Thanthai Periyar. In the early years, he not only took active part in almost all agitations started by Gandhi but also he made all the members of his family including his wife, sister and aged mother plunge themselves into the national freedom struggle.

"Not only this. He stood head and shoulder above others in exposing the evil effects of ignorance and superstitious beliefs existing among the common mass of this country. He advocated social reform against heavy odds. He worked hard and relentlessly for the eradication of social distinction and discrimination and tried hisutmost to make us think of the oneness of mankind as a whole."

Chief Minister's Homage

Speaking on the resolution, Dr. M. Karunanidhi, Chief Minister, paid tributes in glowing terms to Thanthai Periyar. The Chief Minister spoke thus :—

"All the members of this House belonging to all parties have associated themselves with this condolence resolution moved by Dr. V.R. Nedunchezhiyan, Leader of the House. Not only Tamil Nadu, but also the whole rationalist world had suffered a loss in the demise of that great leader.

A stalwart of Freedom struggle

"Periyar acclaimed as the South Indian Socrates is no more in our midst. But his ideals, principles and rationalistic thoughts are still alive. A fit tribute to him could be paid only through respecting, following and toiling for his ideals.

"Periyar was one among the stalwarts of freedom struggle in Tamil Nadu. He was the founder of the Self-Respect Movement. He fought for the right and uplift of the depressed and the backward class people. Above all, to the surprise of all, he worked hard for the Hindu-Muslim unity and amity in Tamil Nadu. The world is well aware of all these facts.

"All the speakers in their speeches drew out the fact that Periyar had converted his life into a battle field for the eredication of caste system. Though he did not take and evince lesser interest in political and economic spheres, he showed more interest in the social sphere. The Government of Tamil Nadu last year passed an enactment legalising his rationalistic ideals.

"Tamil Nadu Government have given legal shape and substance to the noble principle that all have equal access to worship and performance of puja before God. The enactment enables all, irrespective of their distinction in caste, to become archakas in temples. But that law was taken to the Supreme Court which has nullified the operation of the enactment by its judgment.

Amendment of constitution

"Sending away the foreigners out of the country alone would not tantamount to living in an independent country. On the other hand, the real enjoyment of independence means putting an end to the barriers of differences based on hatred and evil motives and caste among mankind. So Periyar started, as his last and final effort, the agitation that the Constitution should be so amended as to make it fit in with the contents of this enactment in spirit and letter. But before the fulfilment of the ideals of his last agitation, he passed away. That remained as a thorn in his heart. Without taking away that thorn from his heart, we have burried the mortal body of Periyar. Plunging ourselves into activities to take the thorn away is tantamount to accepting in toto the salient principles behind the agitation that Periyar wanted to start as a last one in his public career. On the occassion of passing this condolence resolution, I would like to appeal to the Union Government to bring in an enactment that will pertain to the whole India giving effect to the last and cherished wish and will of Periyar with a view to root out casteism in our midst.

"As has been pointed out by Thiru K.T.K. Thangamani, memorials may be in the shape of installation of his statue or running a library in his name or erection of a Mandapam in his honour. But the real memorial to him would be our striving to fulfil his cherished aims and goals."

The condolence resolution characterising Thanthai Periyar as an illustrious and unique leader of the State and one of the chief architects of the freedom movement who strove hard to usher in a casteless society and worked tirelessly throughout his life as the father of the Self-Respect Movement for the removel of superstitious beliefs in society was adopted in the Tamil Nadu Legislative House on 17th January, 1974. Almost all leaders of the parties represented in the House spoke on the condolance resolution paying high tributes to the departed leader in glowing terms.

PRESIDENT'S MERITORIOUS SERVICE MEDAL FOR TAMIL NADU POLICE

This year as many as 200 Police Personnels including a woman head constable from Kerala have been awarded the President's Police Medal for meritorious service. Among them 9 belong to Tamil Nadu Police Force and Fire Service. They are :

(1) Thiru Kalpathi Venkatachalam Subramaniam (Superintendent, Officiating;

(2) Thiru Nallaswamy Govindaraj (Commandant—Officiating);

(3) Thiru Arni Dharmapala Lakshmi Chandran (Reserve Inspector and Store Keeper—Officiating);

(4) Thiru Shanmugha Gounder Rathnam (Inspector—Officiating);

(5) Thiru Natesa Mudaliar Deivasigamani(Sub-Inspector—Officiating)

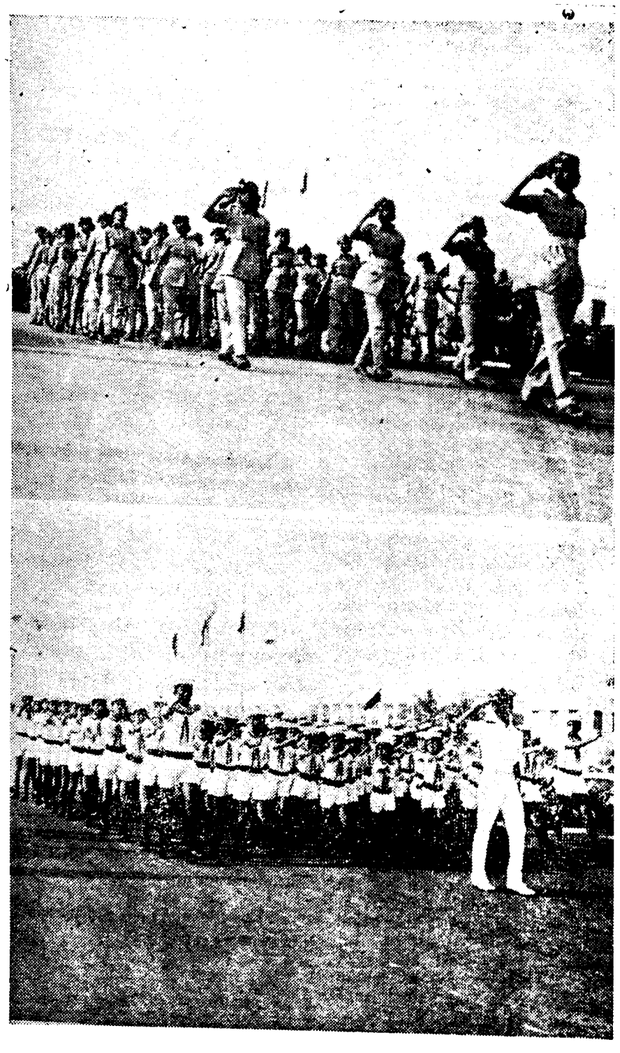
(6) Thiru Natarajan (Head-Constable, No. 2108);

(7) Thiru Rangasamy Naidu Ramaswamy (Head-Constable No. 783);

(8) Thiru Appa Goundar Subbian (Leading Fireman, No. 919, Officiating) and

(9) Thiru Nadamuni Murugesan (Fireman No. 203);

REPUBLIC DAY CELEBRATIONS IN MADRAS CITY



In clear contrast to the Republic Day Celebration in the previous years this year the Republic Day was celebrated in a simple, subdued but sedate style in recognition of the acute economic crisis that the whole country is experiencing. In Tamil Nadu, like elsewhere in the country, there was an absolute note of austerity in the Republic Day Celebrations.

At the main function on the Marina near the Gandhi Statue in the South Beach area, Thiru K. K. Shah, Governor of Tamil Nadu, unfurled the National Flag at eight o' clock in the morning and took the salute at a ceremonial march-past in which contingents of the armed forces, Railway Protection Force, Ex-Servicemen, City Police, Mounted Police, Special Police, N.C.C., the Home Guard, St. John's Ambulance, Prosperity Brigade, Scouts and Guides and the Fire Service took part. The recently-formed Women's Wing of the City Police was the new entrant to the saluting base this year. Due to fuel shortage, there was no fly-past of Air Force this year.

The wholly Tamil Culture-oriented eight tableau pageant was simple but striking in appearance and attraction. Besides the Chief Minister, Dr. M. Karunanidhi, his cabinet colleagues, counsular representatives, officials and prominent citizens a large mass of people turned up and lined on both sides of the road to witness the march past and the procession of colourful floats. The highlights of this year's programme was the presentation of folk dances by artistes from Thanjavur, Tirunelveli and Chingleput districts as also those belonging to the Police Force. Eight decorated floats carrying the folk dancers entertained and enthralled the large gathering on both sides of the road with Karagam, Kavadi dances, dummy horse show, Puliyattam, Kummi, etc.

An hour-long children's rally was staged at the Rajarathnam Stadium in which more than 2,000 primary and middle school children from Corporation and aided schools in the city took part. Labour Minister Thiru K. Rajaram presided and distributed prizes. Mylapore division, North Madras and South Madras won the first, the second and the third prizes respectively.

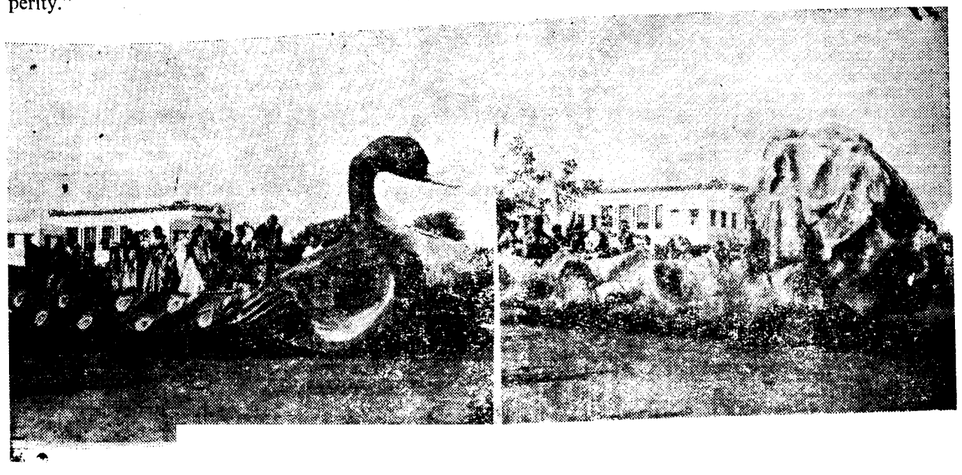
Governor's Reception

In the evening, the Governor and Thirumathi Shah gave a reception at Raj Bhavan, Guindy, which was attended by a large gathering including the Chief Minister, his cabinet colleagues higher officials and 200 voters selected at random from the electoral list.

Governor's Appeal

In a Republic Day broadcast the Governor appealed to the people as follows. " Let us, on our Republic Day, take a vow that neither frustration nor impatience, nor personal rivalry will succeed in disturbing our equanimity and that we will do everything in our power to strengthen the forces of integration and develop an urge for collective strength and wisdom. The more we work hard with a sense of discipline and unity, the more hearths will glow with cheer and satisfaction. I have no doubt that Tamil Nadu will provide ideals to tide over difficulties and resourcefulness to build up prosperity."

Top : Karagam Dance performed by the Police Department.
Middle : Dummy Horse Show Exhibition by the Department of Industries and Commerce,
Bottom: Left: Kummi arranged in the tableau by the Department of School Education
Right : Nadaswaram Performance in the tableau by the Public Works Department.



TAMIL NADU PROVIDES IDEALS FOR THE COUNTRY TO BUILD UP PROSPERITY

The text of the Republic Day broadcast of the Governor of Tamil Nadu is given below.

On this happy national day, I convey to you all my warmest greetings.

The country is passing through very trying times due to national and international developments. The whole structure of economic policies for development with stability and for growth with social justice, has to be examined in the light of the problems posed by these developments.

At a time when indiscriminate violence all over the world adds to restlessness and calls for sober counsels, extra effort will have to be made to maintain balanced attitude, multiply production, provide better opportunities to the neglected and avoid violence. We will have to begin from the top. We will have to make our public life an ideal institution where dispassionate discussions become possible, where anxiety to help replace anxiety to score and where healthy traditions provide inspiration and guidance to the rest of the country. The gap between the younger generation and the leaders in public life has to be closed as swiftly as possible. It is time a new approach to divert their unbounded energies to productive purposes is adopted.

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

It has been, and will continue to be, the policy of this Government to take all such steps as may be necessary to free the State economy from the vagaries of the monsoons to the extent possible, by enhancing irrigation potential, by stepping up power generation from non-hydel sources, by transmitting power to every nook and corner of the State and by providing assured water-supply for drinking purposes in all needy areas, consistent with the resources available, both physical and financial.

While water and power are critical inputs for stepping up agricultural and industrial production, to provide which we have taken and will continue to take all possible steps, there are many constraints, which operate in the field of agricultural and industrial production. Thanks to the integrated approach adopted by our Government in co-ordinating and making available all the necessary inputs simultaneously, the Green Revolution has been ushered in and the State now has a marginal surplus of foodgrains.

The imposition of power cut, coupled with the sharp increase in cotton price last year, had led to acute scarcity of yarn and phenomenal increase in its price, causing considerable hardship to the weavers. The Government of Tamil Nadu were able to ensure adequate supply of yarn at reasonable rates to all the weavers in the co-operative sector, by pooling the yarn produced by the co-operative spinning mills and the mills taken over and run by the Tamil Nadu Textile Corporation. The problem of adequate supply of yarn to weavers outside the co-operative sector, however, continues to cause concern. Steps are being taken to tackle this problem also.

In spite of all that has been done on the agricultural and industrial fronts, the problem of poverty and unemployment continues to cause us grave concern. Our Special Employment Programmes including the Crash Scheme for Rural Employment, Youth Service Corps, Special Apprenticeship Training Scheme and Half-a-million Jobs Programme for the educated unemployed, would generate about 40,000 jobs. Labour intensive programmes like minor irrigation, house building and road-laying and road improvement, taken up under the Plan Schemes, would also generate considerable employment opportunities.

The cause of the poor and the down-trodden has always been dear to us and it provides the driving force for our Development Plans. For the uplift and advancement of the Scheduled Castes and Backward Classes, the Government propose to spend Rs. 91.50 crores during the Plan period, inclusive of the Plan provision of Rs. 24 crores. The massive Slum Clearance Programme, involving construction of 3,000 to 4,000 tenements per year, to house the slum-dwellers, would continue. Under this programme, which is being implemented in Madras City by Slum Clearance Board and at Coimbatore, Madurai, Tiruchirapalli, Salem, Thanjavur and Cuddalore by the State Housing Board, 15,470 tenements have been constructed in the city and about 5,000 tenements have been constructed in the six other towns which I have just mentioned.

To assist capital formation and conserve our exlsting resources, Small Savings Movement plays a very significant role. Savings are all the more necessary at the present juncture when we are fighting against the inflationary tendency and are anxious to bring down the prices. The Government of India have introduced very attractive schemes. The securities and the savings accounts under the small savings schemes suit the needs of every type of investor, big or small, regularly employed on monthly salary or self-employed. Even children can cultivate the habit of thrift which will stand them and the country in good stead when they grow up. Tamil Nadu gets a share of the collections made in the State for its own development plans. Both the Central and State Governments are highly interested in the progress of the savings movement which should be made a people's movement. Tamil Nadu has already shown spectacular results under some of the schemes. I would appeal to the people of Tamil Nadu on this occasion to make the scheme a success.

Let us, on our Republic Day, vow that neither frustration nor impatience, nor personal rivalry will succeed in disturbing our equanimity and that we will do everything in our power to strengthen the forces of integration and develop an urge for collective strength and wisdom. The more we work hard with a sense of discipline and unity, the more hearths will glow with cheer and satisfaction. I have no doubt that Tamil Nadu will provide ideals to tide over difficulties and resourcefulness to build up prosperity.

The Chief Minister declaring open the Kalaivar Aranganam.

KALAIVANAR ARANGAM

Kalaivanar Arangam was declared open on 29th January, 1974 by Dr. M. Karunanidhi, Chief Minister, with Dr. V. R. Nedunchezhiyan in the chair. The Minister for Public Works also participated in the function. A large number of people attended the function.

Kalaivanar Arangam, located in a spacious and sprawling area in the Government Estate, is a welcome addition to the theatrical world of Madras City. Designed with the last word in modern techniques and reconstructed at a total cost of Rs. 27 lakhs, the Arangam contains all the modern facilities and amenities.

A WELCOME ADDITION TO THE THEATRICAL WORLD

Fully air-conditioned, the theatre in total comprises 1,040 seats besides provision for a canteen. The stage is 70ft. into 40 ft. wide and provisions have been made to screen 70 M.M. films for which two cinema projectors have been installed in the Arangam. The inside walls have been decorated with the fine specimen of artistic skills. Around, the Arangam spacious areas have been set apart for parks and parking facilities.

Kalaivanar Arangam is expected to serve the public well at a daily rental cost of Rs. 750 which is comparatively very economical.

Read

Tamil Arasu

For accurate and authentic news of Tamil Nadu.

Single copy Re. 0·40.

Annual subscription Rs. 5·00.

THE SILAPPADHIKARAM

SOUND AND LIGHT SPECTACLE—
A UNIQUE ENTERTAINMENT
AT TOURIST TRADE FAIR

This is nothing but a theatrical
Experience with a difference—
There are no actors here.
The spectacle is basically a
Synchronization of sound and light.
This is the first son-et-Lumiere ever
Mounted in Tamil Nadu,
By the Department of Tourism,
Govt. of Tamil Nadu,
Unsing Indigeneous talents.
Sound is pre-recorded on tape
While powerful spot lights follow
The invisible characters as they
Seem to move from one
Place to another. Even colours
change—appropriate
To every nuance of the
Story unfolding before you.
All this is achieved by
Sophisticated electronic
Equipment—so that words,
Music, light and sound
effects are all fused here in
this very unique kind of
entertainment.

—Special feature articles on the Pongal Tourist Trade Fair along with pictures are published at pages 43 to 50.

PENSION FOR STATE'S PUBLIC SECTOR STAFF

Revolutionary Measure starts in Tamil Nadu

The promise made by Tamil Nadu Chief Minister Dr. M. Karunanidhi, on the remarkable occasion of the midnight session of the Assembly called in Commemoration of the 25th Independence, Silver Jubilee Celebration the Tamil Nadu Government had started extending its liberal and good hearted policy of giving share in the public sector ownership to the workers. Now the pensionary benefit is extended to all the employees in the six State Transport Corporations.

The text-of the Chief Minister's speech on the occasion detailed the scheme as follows :—

There are Hundred thousand buses running in this Country. Out of this 35,000 buses are in the Public Sector run by 47 different Undertakings. We in Tamil Nadu run 3,500 vehicles in the Public Sector and employ 35,000 workers. Our workers form 10% of 3.5 Lakhs of workers employed in the Public Sector Transportation Industry as a whole. The Pension Scheme, I am announcing today would effect 35,000 transport workers and their families in Tamil Nadu. It would give them meaningful social security in their old age. It would give security to their families.

The basic difference between the retirement benefits enjoyed by a Transport Worker at present and the retirement benefit to which we are making him eligible under the Tamil Nadu Liberalised Pension rule is as follows :

At present the worker contributes 8—1/3% of his salary and the employer contributes 8% and he gets this amount with interest at the time of retirement. In addition, he gets a gratuity at the rate of 0·5 a month's pay for every completed year of service subject to a maximum of Rs. 24,000/-. Under the Tamil Nadu Liberalised Pension Rules the employee will contribute his portion of the Provident Fund at 8—1/3% and he would get it back with interest at the time of retirement. In lieu of employer's contribution at 8%the employee is paid a pension of 3/8th of his pay at the time of retirement. For every Rs. 100/- drawn by the employee at the time of retirement he would get a pension of Rs. 37·5 per month. If the employee for some reason dies in service his family would get the pension minimum of which is Rs. 50. If an employee dies after retirement even then his family would get a pension in certain scales the minimum of which is Rs. 50. The benefits under the Tamil Nadu Liberalised Pension Rules are obvious. That is the reason why 3 Lakhs of Government employees in Tamil Nadu consider their pension and retirement benefits as their inalienable birth right.

There is also another difference between the Contributory Provident Fund and the Pension. Under the present system, when an employee retires, the Corporation cuts off all connections with him by granting a lump sum amount while the pension system the Corporation retains the relationship with him by continuing to look after him throughout his life and continuing to look after his widowed wife and minor children even after death.

When worker participation in the equity capital of Public Sector Corporation was announced by me, we were making the beginnings of a new movement by giving the worker partnership in industry. Here again, we are making the beginnings of another movement by making the worker eligible for pension and all the other retirement benefits like other regular Government employees.

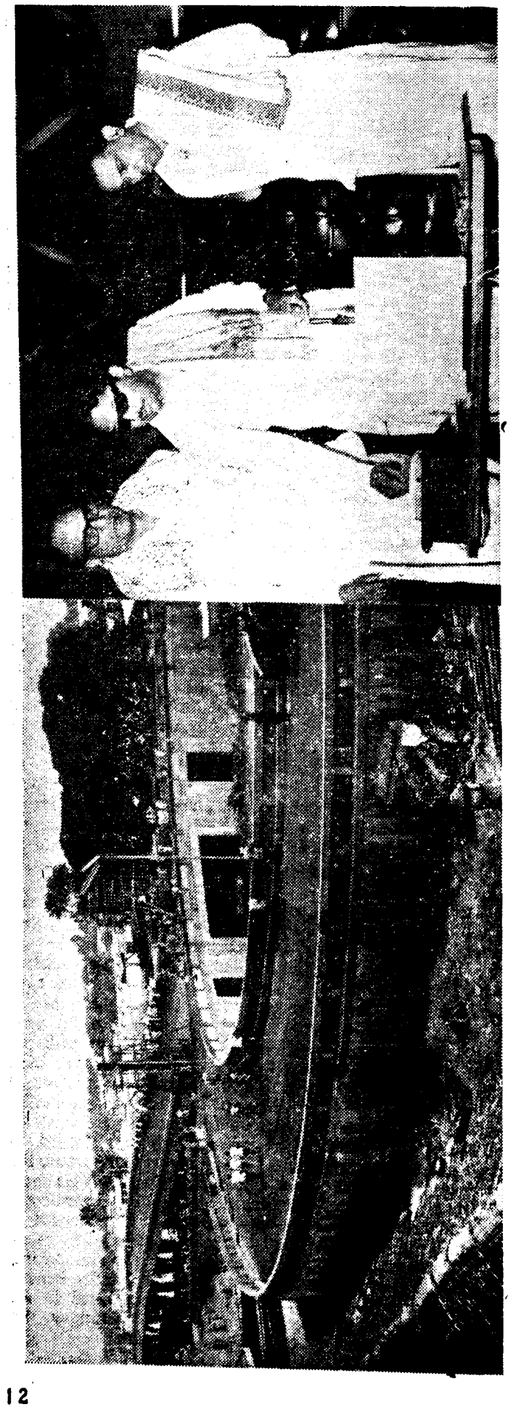
We are the first State in India to do so in the Public Sector:

We believe not merely transport workers in Tamil Nadu but Transport workers in the Public Sector all over the country would welcome this gesture of my Government. In granting pension rights the Government is giving the worker one more measure of social justice long overdue. If this would set a trend in Indian Industry as a whole both in private and Public Sector and make the beginnings of a new movement to give better social security in the form of pension to the worker no one would be happier than the political party and the Government which I have the honour to lead.

You are aware that historically, the services rendered to the King or the country were recognised by grant of land. Then came the system of giving cash pensions for life of the individuals. While this was a pattern of rewarding services to Governments, private industry rewarded the services rendered by employees by giving them a lump sum amount at the time of retirement. The Railway Companies established by British were the earliest to begin this practice. Initially such payments were voluntary. Subsequently Contributory Provident Fund was made compulsory. Government when it entered in business and organised industries followed the example of the Private Sector by giving the Government employees in Industries Contributory Provident Fund instead of giving them pension as it did to Government Servants. The effect of this historical accident will have to be reversed. I am making the beginning today.

In advanced countries like the United States every worker is governed by a Social Security System which is something like the pension that the Government Servant in India gets. In the United States, it is the obligation of every employer to deposit with the State a percentage of the salary of the employee out of which the State gave the employee a pension after his retirement, or in case of his death to his widow.

You must have all heard that the Government recently introduced Family Benefit Fund Scheme for all its employees. This scheme briefly is that every employee contributes Rs. 10 for the creation of a fund out of which in case of death of an employee while in service the family will be paid Rs. 10,000. If the employee retires in the normal course the amount he contributed along with the accumulated interest will be returned to him. This is a sort of insurance for the employees family. This was introduced for all Government Servants recently by Government of Tamil Nadu and welcomed by every one. I have pleasure in announcing today that the same Family Benefit Scheme is being introduced in all the Transport Corporations of Tamil Nadu.



THE UNIQUE OVERBRIDGE AT AVANASHI ROAD FOR FREE FLOW OF TRAFFIC IN COIMBATORE

The Avanashi road over bridge declared open on 10-1-73 has certain important characteristics, distinct from others. The Avanashi road which passes through the heart of Coimbatore City is a part of the National Highway. The Railway track that crosses the Avanashi Bridge is not an ordinary track. It has both a Broad Gauge and a Metre Gauge track and so trains on both the Broad Gauge and the Metre Gauge pass over this track. For this reason, therefore, the pressure of traffic between Coimbatore Junction and Coimbatore North over this track is greater than would have been otherwise. As a result of this density of traffic on the Railways, the level crossing gate, which has been in existence at this site had to be closed quite frequently. Apart from this, this level crossing is not situated at any remote corner of a City, but right in the heart of it with the result that the density of road traffic is high. For these reasons, the movement of trains also been hindered owing to the existence of this level crossing, apart from detentions to the road users and the road vehicles.

The necessity for an over bridge at this level crossing has long been recognised. 1971 witnessed the planning of this over bridge and ever since that decision was taken, the work has been accomplished most expeditiously. The set up of this over bridge has unusual characteristics. It has two tiers ; an over bridge for fast moving vehicles and a sub-way for slow moving vehicles, apart from pathways for the pedestrian. The width of the first tier is 12 metres and of the sub-way 7 3/4 metres. The total cost of the bridge is Rs. 44 lakhs, of which the Railway's portion is Rs. 10 lakhs. This is the first over bridge in India which combines an over bridge above the track and a sub way below the track.

In the matter of construction of over bridges in lieu of level crossings, the Railways have certain responsibilities ; likewise the Highways department has also certain responsibilities. The construction of the portion of the over bridge which lies within the Railway limits is the responsibility of the Railways and the construction of road approaches on either side of the over bridge is the responsibility of the Highways department. Experience has shown that the Railways complete their portion of the job pretty fast and have to wait for the completion of the Railway's portion of the job before the road over bridge could be commissioned. There are many reasons why such a situation arises. It may be due to difficulties in acquisition of land through which the structure have to be put up, sometimes the matter is taken to Court, but in Tamil Nadu such delays have been effectively minimised. Along with the Railways the Highways department also complete their portion of the job. In a few cases the Railways complete their portion of the job a little faster and in other cases the Highways department complete their portion of the job earlier. In Tamil Nadu area, it is gratifying to note that there is a healthy competition between the Highways department and the Railways and with the close understanding and co-operation of these two departments, it has been possible to complete the work on a number of schemes for road over bridges at the Railway inter-sections. It is for this reason that in respect of certain road over bridges the Railways have entrusted even their portion of the work to the Highways department. As certain technical aspects of the work have to be executed in close co-ordination between the Highways department and the Railway department, it is considered much more expedient if the entire work is entrusted to one agency. The over bridge on the Avanashi road at Coimbatore, which is being declared open today, is a symbol of such close co-ordination between the Railways and the Highways department. Although the Highways department were entrusted with the execution of the over bridge portion within the Railway limit, the Railways had a tremendous job to do in the matter of collecting from different locations, girders, cribs and sleepers and transporting them to Coimbatore in time and erecting them at site in order that the works undertaken by the Highways department could be expeditiously completed. The work in regard to the girdering the erection of the abutments for the sub-way, was undertaken by the Railways and completed very fast.

Hurdles in the path of progress.

When the work on this over bridge was in progress, there were many difficulties in the day-to-day movement of trains over this section. The tracks had to be interfered with. Therefore trains had to be regulated on either side. Engineering blocks had to be given. At one time the public of Coimbatore were apprehensive that the Railways may find it difficult to pass trains via Coimbatore and that they might divert the traffic via Podanur and Coimbatore North. But, our Engineers displayed considerable dexterity and speed and accomplished this difficult task within ninety days and without any averse impact on the movement of rail traffic between Coimbatore and Coimbatore North.

We have received representations from a number of places for construction of road over bridges in lieu of level crossings on the Highways. The Railways and the Highways intercept at a number of places. The number of such level crossings in Tamil Nadu alone will be about 2,700. In Tamil Nadu Andhra, Karnataka, Kerala and Pondichery States which the Southern Railway serves, there are about 5,000 such intersections. On the Indian Railways there are 42,000 such level crossings. Some of these level crossings are manned and others are unmanned, depending upon the density of traffic. Wherever the density of traffic warrants it, we consider proposals for the provision of road over bridge or subways. Since there are nearly 42,000 such level crossings throughout the length and bredth of the country, it is not possible to provide such facilities at all these level crossings immediately. The process of selection of only the very important level crossings is inescapable and in this process of selection, the Railways are guided by the views and recommendations of the State Government. One of the main difficulties in undertaking such projects for road over bridges is our budget position. In the conditions of today a road over bridge would cost anything from Rs 10 lakhs to Rs 40 lakhs depending on the nature of the project. The over bridge which has to be constructed on the Beach Road in Madras will cost nearly one crore of rupees. Since such projects will prove beneficial to the public, the Railways and the Highways department participate jointly in all such efforts.

PROCEDURE

In the past as a few years ago the accepted procedure was that the portion of the road over bridge above the Railway track would be met from the funds of the Railways while the cost of the construction of the approaches on either side would be met by the Highways department. There has been a certain changes in this formula and now the Railways and the Highway department share the cost equally. While the Railways meet their portion of the cost from their budget, the cost so far as the Highways is concerned is borne from a fund controlled by the Central Government. Even the contribution to this fund is totally by the Railways. A certain percentage has been fixed for distribution to each State Government for such purposes from this fund. I am happy to say that the Tamil Nadu State Government have fully utilised this fund for putting up a number of road over bridges at important level crossings in Tamil Nadu.

Other construction works nearing completion

During the Fourth Plan period work on five road over bridges have been completed at such level crossings in Tamil Nadu. Work is nearing completion on four more. We have commenced work this year on three more over bridges and 14 more over bridges have been planned. Given the same degree of co-operation between the Highways and the Railways, I have no doubt that the work on these 14 road over bridges would soon be completed and they would be commissioned for traffic in the very near future.

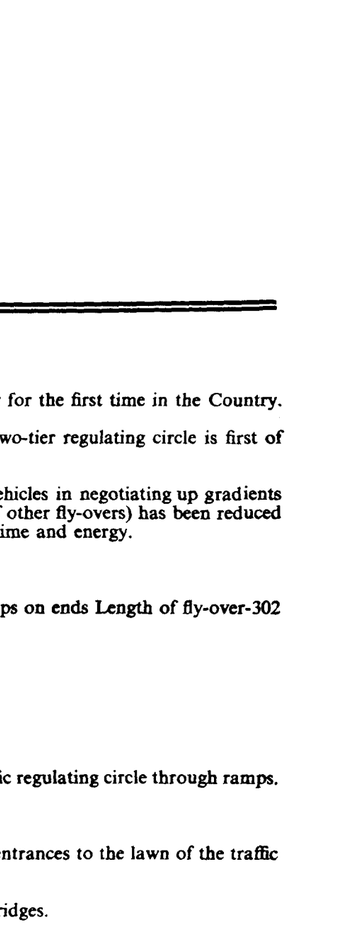
SPECIAL FEATURES OF THIS OVERBRIDGE :

1. Adoption of flat slab decking for fly-over for the first time in the Country.
2. Fly-over combined with subway with a two-tier regulating circle is first of its type in India.
3. The tractive effort of the slow moving vehicles in negotiating up gradients to a height of 6.5 metres (as in the case of other fly-overs) has been reduced to 3.0 metres in this scheme—savings in time and energy.

BRIDGE DETAILS :

I FOR THE MAIN HIGHWAYS :	
(*a*) for fast moving vehicles :	A four-laned FLY-OVER with flat slab decking over columns and ramps on ends Length of fly-over-302 metres ; width 12 metres ; spans 32.
(*b*) for slow moving vehicles :	A two-laned subway 7.3 metre width.
II FOR THE TWO BRANCHING ROADS OF :	1. Srinivasa Theatre Road and 2. Goods Shed Road
(*a*) for fast moving vehicles :	I. A regulating circle for the use of straight and turning traffic. Diar 60 metres ; width 10 metres
	II. Vehicles to ply over the existing branch roads and to join at the traffic regulating circle through ramps.
(*b*) for slow moving vehicles :	Through subways, one for up and another for downgoing vehicles.
III FOR PEDESTRIANS :	Pedestrian foot-paths on the service roads and on the ramp sides, with entrances to the lawn of the traffic regulating circle.
	Foot bridges on either side of the railway line by the side of service bridges.
IV SERVICE ROADS :	On either side of the existing side portions of the road on Avanashi side with a service bridge.
	COST OF THE SCHEME :Rs 44 Lakhs

(A sketch of the Bridge is at page 17)



Anna Salai before and after construction of subway.

HIGHWAYS RESEARCH IN TAMIL NADU

Tamil Nadu can be rightly proud to have been the first State in the Indian Union to start and possess a Highway Research Station, exclusively devoted to testing and research on highways. The primary object of the Highways Research Station is to conduct research so that highway transportation can be made more safe, expeditious, economical and comfortable.

The activities of the Highways Research Station can be broadly grouped under:

1. Soil investigation for roads and bridges;
2. Testing and Research on materials used in road construction as soils, aggregates, concrete, bitumen, etc.;
3. Conducting load tests on foundations of bridges and completed bridges to assess their strength characteristics;
4. Research for drawing standards and specifications for roads, and use of road building machinery;
5. Design and fabrication of instruments for road tests;
6. Studies on road characteristics under different tarffic conditions, incidence of accidents, road safety devices and road statistics;
7. Dissemination of results of research through Research Records, pamphlets, etc.;
8. Technical Advice and assistance;
9. Training of road technologists and engineers and
10. Consultive service to other departments and States in India.

IMPORTANT ACHIEVEMENTS

A road unlike a building, runs for several miles and if maximum economy should be achieved in its construction, the import of foreign materials should be reduced to a minimum and maximum use should be made of the locally available materials. The immediately available material for use on the road is the local soil itself. **Thus Tamil Nadu was one of the earliest States in the Indian Union to go in for use of locally available soils, soil admixtures as gravel-sand or sand-clay etc., or soils with small percentages of cement, lime, bitumen added to them, in road construction.** The time old method of using costly soiling stones indiscriminately has given place to the scientific use of stabilized soil. Some of the earliest roads so constructed are :

1. Tuticorin—Tiruchendur road via—Mukkani;
2. Ramnad—Mandapam road;
3. Kovalam—Mahabalipuram road and
4. Vedaranyam—Kodikkarai road.

Some of the earliest specifications in the country on soil stabilization were also drawn in the Highway Research Station at Madras.

At present for all National Highway works the subgrade soils and locally available soils are systematically sampled and tested and designs of pavements are made on the basis of these results. Use of low grade aggregates like laterite,

lime stone, etc. in road construction are being studied. Aggregates, which are hydrophilic in nature and which are considered to be unsuitable for black top works, can be advantageously used by adding suitable additives.

For a long time in the past, only river sand has been used as fine aggregate in asphaltic concrete works. The possibility of being sea-sand as fine aggregate was established by research and testing and in almost all the bituminuous concrete works executed in the Madras City, only sea-sand was used resulting in considerable economy. Similarly, methods for the use of fly ash in soil stabilisation and in cement mortar and cement concrete have also been evolved.

RESEARCH ON NEYVELI LIGNITE TAR FOR ROAD PURPOSE.

The briquetting and carbonising plant of Neyveli produces a large quantity of crude lignite tar as a by-product for which no outlet has been envisaged except as a fuel oil.

A research study undertaken in Highways Research Station has established the possibility of utilising the crude lignite tar as a road binder. It was found that a cheap and stable road binder (tar) could be obtained by suitably processing the lignite tar. In the current context of acute shortage and uncertain supply of petroleum crude, remarkable savings in foreign exchange can be achieved if such a local tar binder is tapped in our State. It is therefore most appropriate that the recommendations made by the Highways Research Station for the installation of a pilot plant for the study of commercial manufacture of this product in collaboration with the Neyveli Lignite Project at State level be taken up seriously. With the demand from the State for opening of a second mine in Neyveli for power production, the potentialities for the development and perfection of the commercial production process are also immense. Further, besides obtaining the road binder, there will also be other valuable by products out of this process.

PAVEMENT EVALUATION STUDIES

The adequacy or otherwise of existing pavements of many roads for the present and future traffic conditions have been investigated by (1) structural examination of the pavement and study of the engineering characteristics of its components, and (2) deflection measurements using Benkelman beam apparatus.

As a result of extensive studies using the second method, the weak and strong stretches in a road have been assessed without breaking open the road pavement and testing of the materials. By using the Benkelmen beam in N.H. 45, N.H. 7, and N.H. 47, suitable overlays have been suggested for strengthening the pavements to requisite standards. Further, deflection studies will also help us in arriving at more scientific, rational and objective basis for allotment of funds for maintenance of roads.

LOAD TESTS ON BRIDGES

Methods have been developed for assessing the carrying capacity of bridges by conducting full scale load tests on them. When the problem of conveying the heavy plants from Madras Harbour to Neyveli along the Napier Bridge was posed, the Research Station conducted a load test on the bridge and formulated a procedure for the safe movement of the abnormal load. Similarly, a load test was also conducted at Coleroon bridge at Tiruchi on behalf of the Kalpakkam Atomic Power Project. Just now a load test is to be taken up at the over bridge newly constructed at Coimbatore.

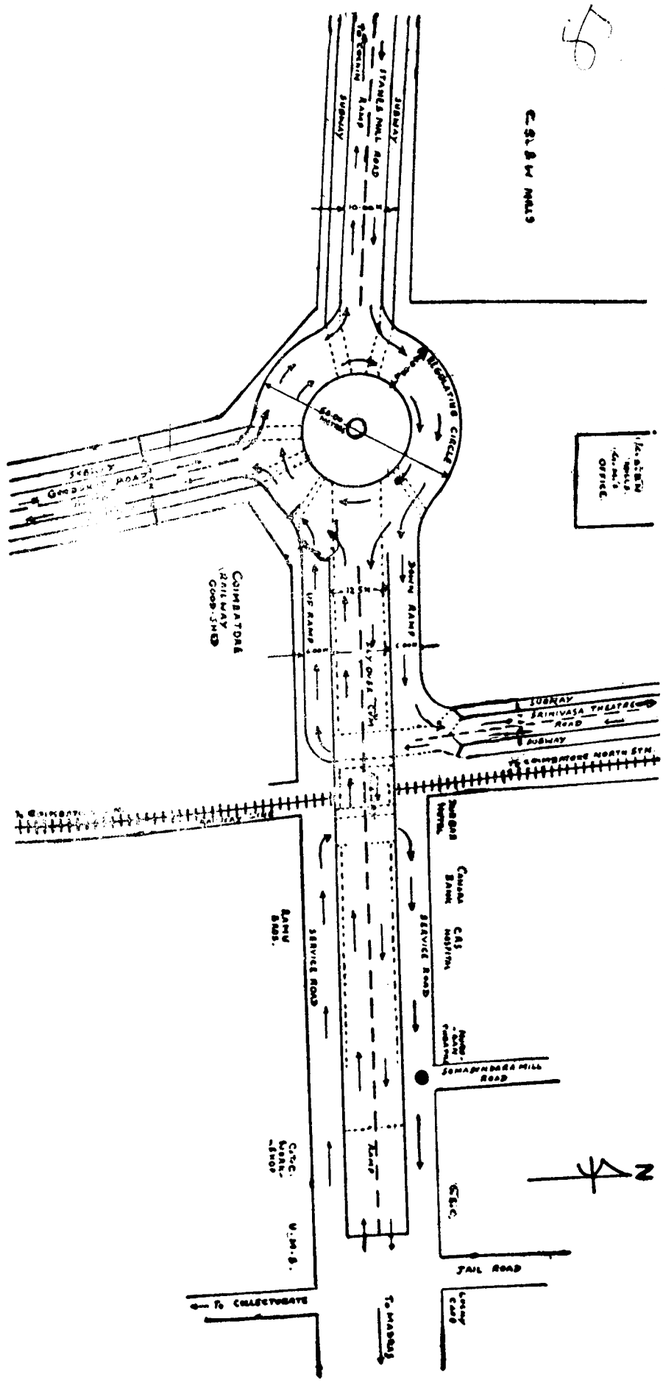
Many of the bridges that were constructed in the past were arch bridges. As a result of load tests conducted on a number of arch bridges, it is now possible to distinguish between the really weak bridges from the stable ones.

Research and investigations have shown the immense possibilities of the use of precast constructions for culvert and minor bridges, which may not only reduce the cost of construction but may drastically reduce the time of construction and the great inconvenience caused to the public in taking to diversions for long periods.

TRAFFIC STUDIES

Traffic studies have assumed a tremendous importance in recent times. A heavy intensity of fast moving traffic would warrant a high type of pavement and the number of lanes of the pavement would also have to be suitably increased and the geometrics improved. In order to improve the existing traffic facility extensive research is called for. Even though several studies have been conducted in advanced countries in this direction, they have to be judiciously modified to suit the mixed traffic pattern of our country with the existence of both fast moving and slow moving vehicles. The Highways Research Station is actively seized of the current traffic problems and has a Traffic Cell exclusively engaged on this study. Again, Tamil Nadu is the only State having a separate Cell for traffic studies. The traffic control measures undertaken by the Research Station by way of lane marking, installations of automatic traffic signals, traffic control signs now obtaining in the city as well as in important district head quarters in the State etc. are a result of the studies conducted on the existing pattern of traffic flow.

C B R Test at Kumbakonam—Kodavasal Road.



The Traffic Cell has taken up several studies in matters relating to traffic congestion, parking problems, accident prevention, pedestrian movement, etc. Some of the important activities in this direction are traffic surveys, origin and destination studies, cost-benefit studies, accident investigation, transportation needs for selected locations and regional transportation study taken at the instance of the National Council of Applied Economic Research.

The Highways Research Station also undertakes testing work for private industry and other departments of Government's Central Intelligence, State Vigilance on various aspects as mix design and foundation problems, quality of work, etc., and the charges made are a source of revenue to the Government.

Line sketch shows the Avanashi Road over bridge cum-subway which is recently inaugurated by the Chief Minister of Tamil Nadu.

The approximate figures of revenue received in the year 1972-73 is Rs. 2·91 lakhs as against the total budget of Rs. 5·81 lakhs for the scheme works in High-ways Research Station for the same year.

TRAINING AND INFORMATION SERVICE

Training courses of various kinds have been implemented for staff of the department and post graduate students of educational institutions have conducted research for their thesis requirement in the Highways Research Station.

Besides conducting research and finding solutions for the day-to-day constructional and maintenance works, the Highways Research Station is actively engaged in sharing the research experience and in the dissemination of knowledge through active participation in and conducting seminars and symposia on

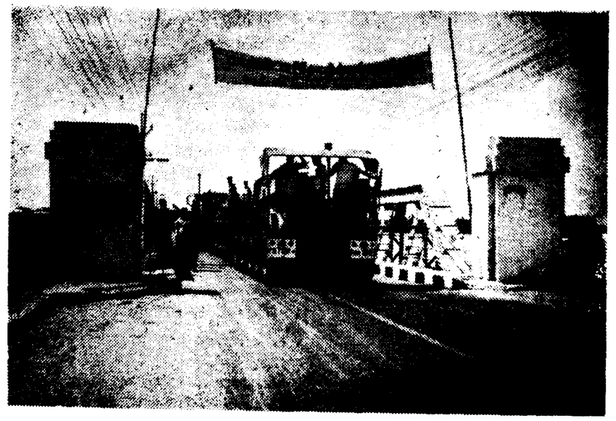


Photo shows the Load Test on Coleroon Bridge at Trichy.

various aspects of Highways Engineering throughout the country.

FUTURE TREND AND NEEDS

While the highways research done in Tamil Nadu may be said to be impressive for any State in a developing country as India, much more needs to be done. Research and testing are the eyes and ears of progress and these are continuous processes. With the undertaking of a big road development programme for villages as well as for intercity travels and with the policy of nationalization of the bus transport, roads and road transport form a system and for an economical establishment and efficient functioning of this system, many factors need a constant study and reappraisal. In this task highways research in India in general and Tamil Nadu in particular, has to address itself to many questions and seek answers by earnest efforts. Some of these are

1. How are our techniques of soil and site investigation to be improved and the organizational set-up tuned, so that works are done to proper quality within estimated cost and in time?;

2. What are the pavement requirements of our rural roads in the different parts of the State with different soil, rainfall and water conditions?

3. What are the methods for the maximum use of local soils, low grade aggregates and industrial waste products and by-products as fly ash, Neyveli lignite tar, etc. in road construction?

4. What is the level of mechanization we would have to go in for constructions of our various classes of roads from National Highways to village roads and what is the employment potential thereof?

5. How are we to train engineers, technicians, operators and skilled workers to fit in with the changing pattern of road constructions techniques and equipment usage?

6. What is the place of precast constructions for culverts and minor bridges so that cost and time of construction are reduced?

7. What should be the set up for a continuous study of the existing and changing traffic patterns and a prediction of future traffic requirements to solve problems of congestion before they arise? and

8. What is the interaction between the roads and the road transport systems in the State?

In addressing ourselves to these questions and others not listed out, it is obvious that there is a dire need for us to undertake concerted scientific studies and analysis on each one of them. Towards this end, the activities of the Highways Research Station have to be both developed and enlarged in close co-operation with the construction and maintenance staff. Proposals are on hand to start regional laboratories at headquarters of National Highways Circles and to have well organized testing units so that materials could be tested in quick time and various types of data collected from each Circle for further processing at the Highways Research Station. This will enable undertakings of field experiments and research on a wider scale than what has been possible now.

By

E. C. Chandrasekaran,

Chief Engineer, Highways.

Photo shows Benkalmen Beam Deflection Test.

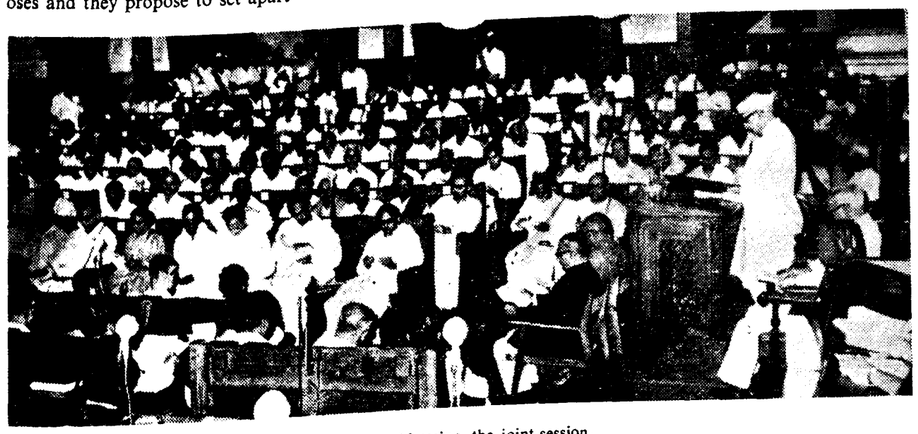
WE SHALL FREE THE STATE FROM THE CLUTCHES OF MONSOON VAGARIES

GOVERNOR OUTLINES MEASURES

Text-address of Thiru K. K. Shah Governor of Tamil Nadu to a joint session of Legislature on 17—1—74.

It has been, and will continue to be the policy of this Government to take all such steps as may be necessary to free the State economy from the vagaries of the monsoons to the extent possible—by enhancing irrigation potential, by stepping up power generation from non-hydel sources, by transmitting power to every nook and corner of the State and by providing assured water-supply for drinking purposes in all needy areas, consistent with the resources available, both physical and financial. The per capita availability of cultivable land being only about half an acre with an average annual rainfall of 30" to 40" and an irrigated area of only 40 per cent of the total, there is compelling need to develop and manage our water and power resources prudently to keep our population in reasonable comfort, even if this means making a massive investment of our scarce resources in these fields. The Government have been utilising a major portion of their plan resources for these purp oses and they propose to set apart as much as Rs. 548 crores for expenditure in these vital sector. The allotment for power is expected to be Rs 326 crores ; for irrigation, Rs 129 crores and for urban and rural water-supply, Rs 93 crores—out of the total outlay of about Rs 1,200 crores proposed in the Fifth Plan.

Hon'ble Members are aware that Tamil Nadu has practically exhausted all its major sources of irrigation, but there are still some smaller sources left untapped or under-utilised which, if harnessed properly, could provide insurance against floods and drought at least in some areas. The suggestions of some of the Members to provide for irrigation schemes in drought prone areas have been taken note of and as many as 14 schemes at a total cost of Rs 15.90 crores have been formulated for these areas. Besides these, 19 new medium schemes in other areas, at a total cost of Rs 15 crores, have been included in the Fifth Plan.



Governor addressing the joint session.

Massive Renovation of Irrigation system

Most of the irrigation systems in our State have developed over time, without adequate regulatory arrangements. A massive programme of modernising the various irrigation systems is proposed to be undertaken in stages. Improvements to Periyar channels will bring in a new area of 23,000 acres under cultivation, besides stabilising 8,000 acres of existing area. For construction of new tanks and improving the existing tanks, a provision of Rs 30 crores is being made in the Fifth Plan under the Special Minor Irrigation Programme. A new programme of our Government to be taken up for implementation in the coming year relates to minor irrigation tanks vested with Panchayat Unions. These tanks number around 27,000. A large number of these are located in former Zamin areas and have suffered neglect for years. It is proposed to take up the renovation and standarisation of these tanks by stages and for this, a provision of Rs 15 crores has been made in the Fifth Plan. It is also proposed to sink 10,000 filter-point wells, 12,500 tubewells, 4,000 bores in existing open wells and to deepen 10,000 open wells during the Fifth Plan period, Having exhausted most of the resources in regard to surface water, our attention should naturally turn to a scientific assessment of the available ground water resources and their utilisation. We have taken steps in this direction also.

We have reached a stage of national economic development when we have to think in terms of exploiting the water and power resources on a regional basis. Last year, I had suggested the formation of a Western Ghats Development Corporation to exploit the untapped water, power and other resources in this region. The Deputy Chairman of the Union Planning Commission recently convened a meeting of the representatives of Maharashtra, Kerala, Karnataka, Tamil Nadu and Goa to discuss the co-ordinated development of the Western Ghats. It is hoped that the Government of India will pursue vigorously this important suggestion.

The lack of mineral and other resources in the State has made it imperative that adequate power should be made available to help the local industries to enable them to process raw materials and "intermediates" obtained from other regions. Similarly, we need more power to run agricultural pumpsets. An idea of the extent of dependence on electric power in the State may be had from the fact that well over 6.5 lakhs pumpsets and about 6,500 factory establishments, both big and small, accounting for more than 50 per cent of the State's total output., are dependent on electric power. Further, the demand for power is growing at the rate of 12.5 per cent per year. The present effective capacity for power generation is only 1,371 MW against the required capacity of 2,010 MW, leaving a deficit of 639 MW. This gap might widen to 2,189 MW by 1978-79, if we do not make any additions during the Fifth Five-Year Plan.

The Plan provides for an outlay of Rs 326 crores for power, out of which, a sum of Rs 180 crores is for generation, Rs 90 crores for transmission, and Rs. 50 crores for rural electrification. The Government have plans to take up even small hydel schemes. They also propose to take up pumped storage schemes like Kadamparai, mainly to meet the peakload demand. The main drawback of our hydel system is that major schemes like Mettur and Periyar are tied up with irrigation despatches. They, therefore, suffer from inherent limitations in becoming firm generators of power. Even though the installed hydel capacity is of the order of 1,224 MW, the reliable capacity is about 775 MW only. The need for buttressing our power generation programme with thermal power plants is obvious. We have proposed two thermal projects for inclusion in the Fifth Plan, one at Tuticorin and the other at Mettur. You would be happy to learn that the Central Government has cleared the Tuticorin project. The benefits of this scheme to the extent of 400 MW are likely to accrue before the end of the Fifth Plan. Even if all the power likely to be generated during the Plan period from continuing as well as new schemes is taken into account, there will still be a gap of 1,185 MW at the end of the Fifth Plan.

What price Neyveli?

In this context, we should also take note of the current oil crisis and the need for tapping other fuel resources for generating power. This brings into sharp focus, the case for further development and exploitation of the Neyveli Lignite Mines. **It takes seven to ten years for an open-cast mine of this kind to be fully developed. Even if we start to-day, more power will be generated at Neyveli from the second mine cut only during the Sixth Plan.** Keeping all these factors in view, we have been emphasising the need for initiating work on the second mine cut at Neyveli and for establishing a second thermal station with a capacity of 1,000 MW. The Government of Tamil Nadu consider that immediate sanction of this project is crucial for the well-being of the State and I would request the Union Government to take an early favourable decision regarding this. The commissioning of the Kalpakkam Atomic Energy Plant has been unduly delayed. Originally scheduled to be commissioned in 1970-71, it is now expected to be commissioned only by 1977-78. The expansion programme of the Atomic Plant should be taken up simultaneously, as any delay would only worsen the power situation in the State in the years to come.

Hon'ble Members are aware that the Government have undertaken a massive programme of extending water-supply to urban and rural areas. Out of a total of 2 Municipal Corporations, 99 Municipalities, 13 Townships and 626 Town Panchayats in the State, water-supply has been extended to both the Corporations, 87 Municipalities, 8 Townships and 71 Town Panchayats. Water-supply Schemes are under execution in 3 Municipalities and 37 Town Panchayats. In rural areas, we have already constructed about 72,600 wells and 5,700 overhead tanks and ground level reservoirs. It is proposed to take special steps to tackle the needs of problem areas, like endemic tracts, in the Fifth Plan period. As regards Madras City, work is in progress on the Veeranam Project, which will bring 40 million gallons of water per day. The scheme is likely to be completed in 1975. **I wish to mention here the significant agreement reached between Tamil Nadu and Kerala regarding the supply of Siruvani water for Coimbatore town which has been under discussion for long. This agreement which is the outcome of understanding between neighbouring States will be a shining example of inter-State co-operation. This scheme, which is estimated to cost about Rs 10 crores, would bring in ultimately 23·5 million gallons of water per day to Coimbatore and other wayside towns and villages.**

Green Revolution

While water and power are critical inputs for stepping up agricultural and industrial production to provide which we have taken and will continue to take all possible steps, there are many constraints, which operate in the field of agricultural and industrial production. You will appreciate that thanks to the integrated approach adopted by our Government in co-ordinating and making available all the necessary inputs simultaneously, the Green Revolution has been ushered in and the State now has a marginal surplus of foodgrains in relation to our needs. In 1973-74, our foodgrains production was originally estimated to be around 74 lakh tonnes. This estimate is now in jeopardy on account of the difficulties anticipated in securing adequate supplies of fertilisers and pesticides. Against 3.15 lakh tonnes of 'nitrogen' needed in 1973-74, supplies have totalled to only 2.3 lakh tonnes. There is a shortage of D.D.T and B.H.C. also. We have requested the Government of India to take immediate steps to increase the indigenous production of fertilisers and pesticides and to import additional quantities of these vitally needed commodities.

Industrialisation

Few will dispute the fact that Tamil Nadu will have to depend more and more on rapid industrialisation to improve its over-all economy. With this in view, we have done our best as regards industrial investment through the Tamil Nadu Industrial Development Corporation. We have proposed to expand the capacity of Tamil Nadu Cements from 4 lakh tonnes to 7 lakh tonnes per annum at a cost of Rs 14 crores and to diversify the line of manufacture in the Continuous Casting Plant at Arkonam at a cost of Rs 5.6 crores. So far as Joint Sector Projects sponsored by the Corporation are concerned, work is going on at a pretty rapid pace on the massive fertiliser project coming up near Tuticorin, with a production capacity of 1,100 tonnes of ammonia and 1,600 tonnes of urea per day. The project is likely to be completed by June 1974. **Preliminary work is also under way in respect of tyre, television, sodium hydrosulphite, borax, soda ash, salt and pharmaceutical projects.** We have also requested the Central Government to approve the establishment of another big fertiliser plant in the joint sector in Tamil Nadu. The State Industries Promotion Corporation is also assisting entrepreneurs in setting up medium industries, particularly in backward areas of the State, by giving a package of incentives such as underwriting equity, provision of term-loans, interest-free sales tax loan and developed plots. The Corporation is also promoting an industrial complex at Ranipet. The Corporation's promotional activities have so far catalysed an investment of about Rs 37 crores, creating direct employment for over 6,000 persons. **The Government have also proposed to set up, during the Fifth Plan, eight new Sugar Mills.**

Handlooms

The Government are giving all the support they can, to the Handloom industry in the State by way of organising and strengthening the co-operatives, by ensuring timely supply of quality yarn at reasonable rates through the Co-operative Spinning Mills and by granting substantial rebate on the cloth sold by the co-operatives. A provision of nearly Rs 18 crores is proposed to be made for development of handlooms in the Plan. All these would be effective, if the Centre reserves certain items for exclusive manufacture by Handlooms and makes suitable arrangements by timely supply of essential raw materials. The imposition of power cut, coupled with the sharp increase in cotton price last year, had led to acute scarcity of yarn and phenomenal increase in its price, causing considerable hardship to the weavers. **The Government of Tamil Nadu were able to ensure adequate supply of yarn at reasonable rates to all the weavers in the Co-operative Sector, by pooling the yarn produced by the Co-operative Spinning Mills and the mills taken over and run by the Tamil Nadu Textile Corporation.** The problem of adequate supply of yarn to weavers outside the co-operative sector, however, continues to cause concern. Steps are being taken to tackle this problem also.

Central Investment :

While this State has done its best to promote industrialisation, the Central must come forward to make substantial investments in industries in the State. In 1973-74, the Centre has allocated only Rs 40 crores for this State, out of a total of Rs 1,500 crores for the whole country. This trend towards a decreasing share of Tamil Nadu in Central Industrial Projects, needs to be reversed. A sum of Rs 19,200 crores has been ear-marked for the Central Sector in the Fifth Plan. It is hoped that a reasonable share of this amount will be invested in Tamil Nadu. Unless this is done, further development of the State will be seriously handicapped. The following new projects should be considered by the Centre for being taken up in the Central Sector :—

1. Second mine-cut at Neyveli.
2. Expansion of Kalpakkam Atomic Plant.
3. Setting up of another nuclear Plant at Tuticorin.
4. Intensification of oil exploration in the Cauvery basin and off the coast of Tamil Nadu.
5. Conversion of Madras-Tuticorin railway line into broad-gauge.
6. Implementation of Sethusamudram Project.
7. Construction of a mass transit system in the Madras Metropolitan Area.
8. Establishment of a shipyard at Tuticorin.
9. Establishment of Defence Industries.

In spite of all that has been done on the agricultural and industrial fronts, the problem of poverty and unemployment continues to cause us grave concern. Our Special Employment Programmes including the Crash Scheme for Rural Employment, Youth Service Corps, Special Apprenticeship Training Scheme and Half-a-million Jobs Programme for the educated unemployed, would generate around 40,000 jobs. Labour intensive programmes like minor irrigation, house guilding, and road-laying and road improvement, taken up under the Plan schemes, would also generate considerable employment opportunities. However, it would not be

possible for the State Government alone to provide jobs for every one. Job opportunities on a much larger scale would emerge, only if middle class entrepreneurs are encouraged to save and invest. This is precisely what our Chief Minister has been emphasising repeatedly. It is with a view to enthusing such persons to take to industries that we have been suggesting to the Central Government, the reorganisation of the income-tax structure, which would also minimise the evils of unaccounted money. It is to be sincerely hoped that the Central Government would act on our suggestion.

Plan for Prosperity

The cause of the poor and the down-trodden has always been dear to us and it provides the driving force for our Development Plans. For the uplift and advancement of the Scheduled Castes and Backward Classes, the Government have proposed to spend Rs 91.50 crores during the Plan period, inclusive of the Plan provision of Rs 24 crores. The massive Slum Clearance Programme, involving construction of 3,000 to 4,000 tenements per year, to house the slum dwellers, would continue. Under this programme, which is being implemented in Madras City by Slum Clearance Board and at Coimbatore, Madurai, Tiruchirappalli, Salem, Thanjavur and Cuddalore by the State Housing Board, 15,470 tenements have been constructed in the City and about 5,000 tenements have been constructed in the six other towns mentioned.

The draft Fifth Plan has been prepared by various working groups in consultation with the State Planning Commission. Preliminary discussions have taken place with the Central Planning Commission regarding the size of the Fifth Plan. We expect the size of the Plan to be fixed only after further discussions are held regarding Central assistance for the Plan. Meanwhile, a series of discussions regarding the size of the Annual Plan for 1974-75 have been held and the latest indications given by the Union Planning Commission are favourable. We expect that, we may be able to have an Annual Plan for 1974-75 of the order of Rs 150 crores.

Sixth Finance Commission

In this context, I must mention the award of the Sixth Finance Commission. We had hoped that the earlier trend of rewarding extravagance and penalising prudence will be reversed. We had also submitted proposals towards evolving a new federal financial structure. Unfortunately, the Sixth Finance Commission has continued the traditional line of filling gaps of States, without reference to the tax effort put in by them in relation to their State incomes.

As a result, out of Rs 11,578 crores available for allocation among the States, we have been given only Rs 626 crores, which works out to only 5.4 per cent. It is unfortunate that the Finance Commission has not chosen to reimburse our losses arising on account of prohibition which is being enforced in pursuance of the constitutional directive. We have also not been given any share in the grant meant for upgrading standards of administration, education and health facilities.

One positive aspect of the Sixth Finance Commission's Report which needs to be welcomed is the rescheduling of debt recommended by the Commission and accepted by the Government of India. We are to obtain a relief of nearly Rs 87 crores on this account during the Fifth Plan period. This is gratifying to us particularly because of the fact that Tamil Nadu has been in the forefront among the States requesting such rescheduling.

The Government of Tamil Nadu had requested the Sixth Finance Commission particularly to take into account the specific consequences which the Central Pay Commission's recommendations would have on the State Governments. Unfortunately, the Sixth Finance Commission has not built up in the structure of devolution of grants and taxes provision for the impact of such revisions of pay and allowances as may become inevitable as a result of the impact of the Central Pay Commission's recommendations. We have reiterated before many Commissions including the Sixth Finance Commission the urgent necessity to evolve a national wage price policy. The present situation in which, different sections of the people performing similarly arduous jobs under Government or under nationalised institutions, are remunerated unevenly is bound to lead to friction and frustration. We hope and trust that the Government of India will in consultation with the State Governments, try to evolve arrangements to bring about a national policy in this matter.

Before I conclude, I wish to mention the very large increase in the anticipated number of repatriates from Sri Lanka during the coming years. In fact nearly 57,000 families are expected to come over during the next five years The expenditure needed to rehabilitate them would be of the order of Rs 60 to 70 crores. While we welcome the return of our kith and kin from other countries, we have also to recognise the suffering and dislocation for these people. They should be properly looked after and jobs provided for them so that they do not feel that they are unwelcome in their country of origin. Besides, their return to India is a consequence of agreements reached at the national level. I do hope and trust that the Government of India will continue to treat the rehabilitation and welfare of these repatriates as national responsibility and help the States to provide adequate facilities for them.

The country is passing through very trying times due to national and international developments. Industrial production has been considerably handicapped by the credit squeeze imposed by the Reserve Bank of India. This tends to increase rather than decrease the pressure on prices. This policy deserves to be reconsidered. The fuel crisis, sparked by the recent developments in the Middle-East has made the situation more difficult than before. The whole structure of economic policies for development with stability, for growth with social justice has to be examined in the light of the problems posed by these developments. The Government of Tamil Nadu feel that the situation is grave enough to call for a meeting of Chief Ministers so that the policies both for the short and long terms can be formulated and implemented to meet successfully these challenges to our nation's progress.

I look forward with great pleasure to your deliberations. I have no doubt that they will be conducted with a high sense of duty and responsibility and in a spirit of cordiality and mutual tolerance.

Vanakkam.

HOUSING BOARD IS EXTENDING HOUSING SCHEME FOR ALL HOUSELESS

The fact that the Housing Board has built 25,000 houses and allotted 41,000 plots may appear impressive, but the Tamil Nadu Housing Board is conscious of the fact that it has not touched the fringe of the housing problem in the State. The number of houses required to be built or replaced is 42.80 lakhs. This will require Rs. 4,280 crores. The housing problem is rendered all the more complex because of the fact that more than 80% of the population form the economically weaker section and are not in a position to buy a house even on instalment basis. It is to cater to the needs of these people that the Housing Board is striving to formulate new schemes.

The foremost among these schemes is the special low cost housing scheme.

Under this scheme, all those with a monthly income of not more than Rs. 350 per month could obtain a house costing Rs. 10,000/-, excluding the cost of land. The balance is to be paid in 20 years in monthly instalments which work to Rs. 50/- to Rs. 90/- depending upon the size of the house. As a gesture of goodwill towards these sections, the Housing Board has agreed to forego 50 percent of its normal centage charges. This will benefit each individual to the extent of Rs. 600/-. It is expected that finance will be available to the Board for the scheme at a very low rate of interest. As acquisition of land involves delay, it is advised, to begin with, that a group of 20 to 25 persons in any village or town who desire to have houses may themselves buy the land required and hand it over to the Housing Board so that the house construction could be started by the Board straightaway. The Board has also initiated proceedings to acquire sufficient lands so as to enable it to launch such schemes throughout the length and breadth of the State in due course. The Housing Board is very happy to record that the response to this scheme has been very enthusiastic. The Housing Board has so far framed for construction of over 3,500 houses at a cost of over Rs. 3 crores. It is hoped to build at least 1,000 houses in each of the Districts of Tamil Nadu every year during the Fifth Five—Year Plan. The outlay on this project will be Rs. 60 crores. It is also satisfying to note that hundreds of workers in the industrial establishments situated in the outskirts of the City have come forward to take advantage of the scheme. Workers who have applied to be included in the scheme belong to Ashok Leyland, Royal Enfield, Facit India, Century Flour Mills, Food Corporation of India, B. & C. Mills, Union Carbide, Hindustan Teleprinters, Indian Airlines, etc.

Another special scheme intended solely for those who are unable to find the means for paying for the initial deposits for the purchase of houses is the Save-A-Rupee-A-Day Scheme now in operation. The Housing Board, in collaboration with the Syndicate Bank and the Indian Bank, has made arrangements to collect at the doors of the intending depositors, a rupee a day or the multiples thereof. At the end of each month, the money thus collected will be credited to the depositors. The accumulation of these deposits at the end of 5 years will be utilised for buying a house or house site. The banks while making over the collection together with the accrued interest to the Housing Board, will also advance a sum of equivalent to three times the total collection. About 1,200 persons have been enlisted in the scheme so far.

For the weavers who are adversely affected on account of market conditions of yarn, the Government of Tamil Nadu has a special housing scheme, under which, each weavers will be allotted a house-cum-loom shed costing about Rs. 5,000/- on the same terms as the Special Low Cost Housing Scheme. 560 houses at Thanjavur, Erode, Coimbatore, Madurai and Salem have been taken up. More schemes in other places are in the shape.

The Housing Board has recently executed a housing scheme for Ex-Servicemen in Kovaipudur. 66 houses have been constructed at a cost of Rs. 5.83 lakhs.

For the repatriates from Burma and Ceylon, a scheme for the construction of 407 houses at Thanakkankulam at Madurai at a cost of Rs. 16.28 lakhs, has been sanctioned. Of these, 200 houses have been completed and the others are being taken up.

TAMIL NADU HOUSING BOARD PHYSICAL PROGRESS

	L.I.G.	*M.I.G.*	*T.N.G.R.*	*Slum*	*S.I.H.S.*	*L.A. & D.*	*S.L.C.*
Physical ..	4,718	2,855	5,610	12,008	802	41,346 Plots	—
Financial (in lakhs) ..	492.75	829.07	718.51	1003.06	43.64	1,859.17	19.46
Programme for 1973—'74							
Physical (under Construction) ..	1,622	890	1,206	1,908	20	—	1,437
Financial (in lakhs) ..	142.95	253.05	146.52	74.29	2.95	200.04	76.60
V Five Year Plan Programme		*L.I.G. & S.L.C.*	*M.I.G.*	*T.N.G.R.*	*Slum*	*S.I.H.S.*	*L.A. & D.*
Physical		8,100	4,630	7,536	9,780	2,750	27,020 (Plots)
Financial (in lakhs) ..		1,450	1043	967	645	204	1707

The Government have proposed recently to build hostels for the Backward Class and Scheduled Caste students at a total cost of Rs. 2.00 crores, through the agency of the Housing Board. This scheme will benefit over 10,000 students who are at present accommodated in very insanitary and inconvenient houses. This is in addition to the efforts taken by the Harijan Welfare Department for building similar hostels for the Harijan students.

In building houses for those belonging to the Low Income Groups it is the endeavour of the Government and the Board to make them as economic and inexpensive as possible consistant with strength, durability and minimum needs of comfort and convenience. For this purpose, the Housing Board has been adopting modern technique and improved designs. The proto type of a pre-fabricated house costing only about Rs. 3,000 which could be erected in a matter of 2.3 hours has attracted countrywide attention.

Another process which has vast scope for application is the guniting method of pre-fabricated houses which saves not only in the cost of the construction by as much as 20 to 25 percent but also helps in the conservation of scarce materials such as cement and steel and valuable time. The Housing Board proposed to popularise this type of construction which has stood the test of time at Bombay.

In formulating the housing schemes, it is the aim of the Government and Tamil Nadu Housing Board that the benefit of these schemes should accrue more to the economically weaker section than to the higher income groups. It is in fulfilment of this object that nearly 7,000 house sites in Madras City alone have been allotted to artisans such as mechanics, carpenters, barbers, tailors weavers, washermen and the like for whom the provision of house sites will not only serve to rehabilitate them physically but also socially and economically. With the aid of HUDCO, it is proposed to built houses on plots sold out to these artisans. 275 houses are under construction and it is hoped that the demand for construction of houses will grow.

The efforts of the Housing Board to provide house sites for these classes supplement the massive drive that the Tamil Nadu Government has made to distribute all the available Government land to the landless poor in the State and to confer homestead fights on those who are living in Kudiyiruppu lands.

In Thanjavur District, a special scheme costing Rs. 75 lakhs for providing house sites of 2 cents each with other environmental amenities for over 34,000 families is under implementation. It is expected that by the end of March 1974, this work would be completed.

The availability of land and funds are the two bottlenecks in the way of speedier implementation of the housing schemes. The Tamil Nadu Government is considering the ways and measures for

surmonting the problems connected with the land acquisition. In regard to finance it should be acknowledged here with thanks for the financial assistance offered by HUDCO. LIC and some of the nationalised banks like the Syndicate Bank and the Indian Overseas Bank. It is hoped that other nationalised banks who have deep roots in this part of the country, will also like to associate themselves in the noble cause of providing better housing for the masses.

RESUME OF WORK IN LAST 25 YEARS

In Tamil Nadu, the first step taken in the direction of providing houses and house sites to the public may be said to be the creation of the City Improvement Trust for Madras City in 1945. Before this, the Government was associated with the housing activities to a very limited extent by providing financial assistance to the public for the construction of houses, through Co-operative Institutions. Between 1945 and 1952, the C. I. T. with its very meagre financial resources was able to acquire vacant lands in Mandavalipakkam, Moubreys Road, Kodambakkam, Kilpauk and Mambalam, develop them and sell house sites to the public. Some houses were also built and offered to the public for sale, on hire purchase. The advent of the First Five Year Plan gave fillip to housing activity in the entire country. The Slum Improvement Scheme, S.I.H.S. and L.I.G. were introduced in the First Plan period followed later by M.I.G., L.A. & Development Scheme, Rental Housing Scheme, Village Housing Scheme, Plantation Labour Housing Scheme and Rural Housing Scheme, in the subsequent Plans. The C.I.T. Madras, was one among the earliest organisations in the country to avail themselves of the financial assistance offered by the Central Government, under these schemes. Till its merger with Tamil Nadu Housing Board in April, 1962 the C.I.T. had sold over 2,000 house sites, constructed 750 houses for rent or sale on hire purchase and cleared several slums and provided open developed plots and house sites to 2,000 families.

The Tamil Nadu Housing Board, soon after its establishment, coinciding with the commencement of the III Five Year Plan extended its activities through out the State. The Coimbatore Housing Unit, Madurai Housing Unit, Tiruchy Housing Unit, Vellore Housing Unit, and Salem Housing Unit were formed in that order, as and when necessity arise to intensify the work in these regions.

In the III Five-Year Plan period (1961 to 1965) the Housing Board invested Rs. 1,139.19 lakhs for the construction of 1,336 L.I.G. Houses, 572 M.I.G. Houses, 1,260 tenements for Slum Dwellers, 336 Quarters for Government Servants and 50 houses for Industrial Workers.

In the non-plan period of 1966-69 the Board spent Rs. 996.21 lakhs and built 1,126 houses for L.I.G., 489 houses for M.I.G., 4,746 tenements for Slum Dwellers, 2,566 Quarters for Government Servants and allotted 3,400 house sites to the public and 4,000 sites to the Artisans.

During the four years of the IV Plan the amount invested by the Housing Board has been Rs. 2,246.83 lakhs. 1,300 houses were allotted to the L.I.G., 1,204 houses to the M.I.G., 3,446 tenements for Slum Dwellers were constructed. For Government servants, 2,342 quarters were added. Industrial workers were provided with 664 houses. The general public were allotted about 16,000 house sites and nearly 3,000 Artisan were given house sites.

During 1973—74 work on 1,622 L.I.G. houses, 890 M.I.G. houses, 1,206 T.N.G.R. Flats, 1,980 Slum tenements are in progress throughout Tamil Nadu.

During the V Five Year Plan the Board has programmed to spend over Rs. 600 lakhs, to build 8,100 L.I.G. houses, 4,630 M.I.G. houses, 9,780 tenements for Slum Dwellers, 7,636 Quarters for Government Servants and 2,750 Flats for Industrial workers.

V211m, N70
N74.4

It is the [illegible] the Housing Board to provide [illegible] citizen of Tamil Nadu a house o[illegible] his own to suit his needs and taste [illegible] also well within his means, so that [illegible] may live in contentment and with respect. It is hoped that this ideal will be achieved in the next decade.

69693

WORKS IN SALEM AND DHARMAPURI DISTRICTS

Completed		*No. of tenements*	*Amount (in lakhs)*
Judges Bungalow, Salem	T.N.G.R.	200	25.00
Mettur ..	,,	60	7.08
Namakkal ..	,,	60	7.08
Dharmapuri ..	,,	102	14.65
Judicial & Revenue	,,	47	13.50
Krishnagiri	,,	92	13.42
Narayanasamipuram	Slum	82	5.40
Nalukalmandapam	,,	66	4.38
Annadanapatti	,,	68	4.45
Erumapalayam	Slum ODPS	282	9.50
Ponnammapet	,,	89	3.20
Court Road	,,	162	15.91
Gosha Hospital	Slum	400	29.80
Nehru Nagar	,,	252	18.40
		1,429	161.77

Works in Progress		*No. of tenements*	*Amount (in lakhs)*
Judges Bungalow, Salem	T.N.G.R.	92	10.30
Krishnagiri	,,	20	3.00
Mettur	L.I.G.	60	11.50
Sandaipet	Slum	180	13.14
Gandhi Nagar	,,	180	13.14
Gunduchetti Eri	,,	216	16.15
Dharmapuri	S.L.C.	146	14.61
Kumarapalayam	,,	63	5.36
Ammapet Salem	,,	18	1.44
Namakkal	,,	114	11.08
Uthangarai	,,	35	3.46
		1,124	103.18

Future Schemes	*Extent in Acres*	*Amount in lakhs*
1. Land acquisition scheme at Salem	437	154.00
2. Land acquisition scheme at Dharmapuri ..	63	25.00
3. Land acquisition scheme at.. Tiruchengode	50	15.00
4. Land acquisition scheme at Ercaud ..	100	45.00
5. Land acquisition scheme at Krishnagiri ..	100	40.00
6. L.I.G. houses at Mettur ..	30	5.00
7. L.I.G. houses at Ambedkar Nagar ..	81	13.00
8. L.I.G. houses at Dharmapuri ..	54	8.00
9. M.I.G. houses at Mettur ..	32	8.00
10. M.I.G. houses at Dharmapuri ..	26	7.00
11. Slum tenements at Allikuttai Eri	360	29.00
12. Slum tenements at Andipalli Eri	528	39.00
13. Judges Bungalow, SalemT.N.G.R.	72	10.00
14. T.N.G.R. Flats at Attur ..	60	7.00
15. T.N.G.R. Flats at Hosur ..	60	8.00
16. T.N.G.R. Flats at Uthangarai ..	40	6.00
17. T.N.G.R. Flats at Dharmapuri ..	28	3.00
18. S.I.H.S. Scheme at Mettur ..	84	7.00
19. S.I.H.S. Scheme at Salem ..	210	20.00
20. Jumma Majid Salem Deposit ..	239	17.00
21. Police quarters at Salem (Deposit)	228	35.00
22. Police quarters at Dharmapuri (,,)	93	16.00
	750	517.00

2,225 Tenanst

Secretary General Kurt Waldheim (Centre) is shown with Mr. Rafael M. Salas (left), U.N.F.P.A., Executive Director who was entrusted with full responsibility for world Population Year activities and Dr. Antonio Carillo—Flores, Secretary General of the World Population Conference are seen in the photograph.

THE U. N. O. CELEBRATES THE WORLD POPULATION YEAR.

++*++

Population increases in a geomatric proportion whereas resources supplied by nature are increasing in arithmetic ratio. The time has come to take necessary steps and save the world from population menace.

THE RATE OF INCREASE OF POPULATION.

It took more than 1,800 years for the world's population to increase from 210 million to one billion. The second billion required about a century and a quarter, and the third only 30 years. It is now taking only 15 years to add the fourth billion. If present growth rates were to continue, the current population of more than 3·6 billion would double in 35 years, and by the end of this century it would be increasing at the rate of a billion about every eight years.

The average population growth of the world at large is 2%. Many underdeveloped countries are burdened with a rate of 3·5% or more. The population growing at 1% doubles itself in 70 years ; at 2% it doubles in 35 years; at 3·5% it doubles in only 20 years. The world cannot afford this. For if there is any thing certain about the population explosion, it is that if it is not dealt with reasonably, it will in fact explode ; explode in suffering, explode in violence, explode inhumanity.

POPULATION GROWTH ENDANGERS ECONOMIC DEVELOPMENT.

To put it simply ; the greatest single obstacle to the economic and social advancement of the majority of the peoples in the world is rampant population growth. The solution of the population problem is in no way a substitute for the more traditional forms of development assistance; and for economic infracture; and for agriculture; aid for industrialisation; aid for education ; aid for technological advance. The world needs investment capital for a whole gamut of productive projects. But nothing would be more unwise than to allow these projects to fail because they are finally overwhelmed by a tidal wave of population.

It is by half a dozen criteria, the most delicate aid difficult issue of our era—perhaps any era in history. It is overlaid with emotion. It is controversial. It is subtle. Above all it is immeasurably complete. It is the tangled problem of excessive population growth. It is not merely a problem, it is para-

dox. It is at one and the same time an issue that is intimately private—and yet in escapably public. It is an issue characterised by reticence and circumspection—and yet in desparate need of realism and candose.

The world is not aware of the consequences or repercussions of the population explosion. Are there any measures on the way to check it up. Most of the nations in the world have taken it up officially and they are implementing birth control programme with courage and cent percent hope. Even the world bodies like U.N.O. and World Bank are showing great interests in making a check on the population explosion or population bump. The U.N.O. has announced the year 1974 as a World Population Year.'

WHAT IS WORLD POPULATION YEAR?

The short answer is 1974. It is the year dedicated by the United Nations to evolving a World Consensus on population matters. The year's high point is August, 1974, when the World Population Conference will be held at the Congress Centre in the heart of the Bucharest. About 3,500 people are expected to attend the conference. This is the first global inter-governmental meeting to be held on population. Dr. Antonio Carrillo—Flores, as Secretary General of the World Population Conference will bring together national delegations to formulate that consensus, which hopefully will lead to a world plan of action, to deal with the Population Problem as it manifests itself in its varied forms in different areas of the world.

POPULATION VERSUS RESOURCES

To arrive at a generally acceptable consensus as such a complex and sensitive matter, it is necessary that people everywhere should be aware of the real dimensions of the population situation, not only in their own countries, but in those of others—the relationship between population growth and resources—the relationship between population growth and economic development planning and the relationship between population structure and the prospects for basic social needs such as schools, food supplies, medical services, housing and employment. Briefly the question between people and the content and quality of their lives in the foreseeable future.

The United Nations has assigned this task of generating, heightening and sustaining worldwide awareness to Mr. Rafael M. Salas, Executive Director of the U.N. Fund for Population Activities (UNFPA). In his approach to this formidable assignment, Mr. Salas has identified certain basic guidelines the most important of which is that World Population Year Programme should be nation-oriented ; that is sensitive to particular national differences of need, attitude and emphasis. In order to give the required, substance and direction to these nation based programmes and to facilitate the necessary correlation between national efforts and the services of UNFPA, Mr. Salas appeals to every concerned country to establish National Commissions charged with the responsibility of managing World Population Year activities as proposed by Mr. Kurt Waldheim, Secretary General of the United Nations.

To help to develop this awareness, which is the purpose of the World Population Year, Roberto Rossellini, one of the great masters of the cinema, proposes to make a film, stating the dimensions of the population situation "as information and not as a propaganda." Indian poet and journalist Dom Moraes has been commissioned by UNFPA to write a popular book on population. This is one of several projects sponsored by the 'United Nations Fund for Population Activities' to stimulate international interest in population problems during World Population Year, 1974. To gather material for his book, Moraes has travelled in Asia, Africa, Latin America and Europe. He is not a population specialist or demographer but through personal investigation, he intends to create a narrative that will move the reader along with him from indifference to commitment. Many books have been written with demographic facts and figures. But the Moraes book is meant to be something very different. Moraes is writing about people—parents, family planners, intellectuals, doctors and Moraes himself. The first chapter of his book is on India.

The Moraes book is one of many special projects being supported by UNFPA to generate interest in population as part of world population year, 1974.

The UNFPA has established a World Population Year Secretariate to intimate and co-ordinate a worldwide programme on population designed to accomplishing the undermentioned objectives :

(*a*) To improve knowledge of and information on the facts concerning population trends and prospects and the relevant associated factors ;

(*b*) To sharpen awareness and hightened appreciation of population problems and their implications by individual governments, non-governmental organisations, scientific institutions and the media ;

(*c*) To provide effective education, family life and reproductive functions through formal and other educational systems ;

(*d*) To stimulate discussions and thinking on alternative policies, promotion of demographic consideration in development planning and development policies and programmes in the population field which individual governments might wish to undertake ;

(*e*) To expand international cooperation in population field and supply increased and suitable technical assistance to countries desiring it and in accordance with their needs.

Word Population Year involves several inter-related levels of activity. International, National, Local and Individual. The success of the World Population Year depends on all sections of Society.

—S. MUTHURAMALINGAM.
Asst. Editor (F.P.)

Read

TAMIL ARASU

For accurate and authentic news of Tamil Nadu.

Single Copy Rs. 0·40

Annual subscription Rs. 5·00

COBRAS — THE HOODED TERRORS

By
T. S. N. MURTHY

Being the instant killer, the cobra has become an object of awe, fear and veneration. Endless tall tales and misbliefs have been woven around cobra. In this article, the natural characteristics of the cobra are detailed.

xxx

Known as Nag everywhere the recognition of a Cobra is not a difficult task for an Indian. It is the most notorious killer and its very name chills the blood of those who have never seen a snake in their lives. With its hood expanded and head raised above a foot or so from the ground, its awe inspiring hissings and death dealing powers, the Cobra is the instant killer snake to be reckoned with. It is no surprise that we continue to hold this serpent as an object of awe, fear and veneration. There are actually two varieties of this infamous snake in India - the common Cobra and the rarely seen King Cobra or Hamdryad. Despite the abundance of other poisonous kinds such as Kraits and Vipers, these two snakes alone have become 'Stars' because of their killing powers and close association with Indian mythology. A volume could be written on these celestial snakes which gained immortality in Hindu legends. Of course, the endless tales and misbeliefs associated with these deadly serpents is a legion by now though the majority of the stories are beyond the tests and canons of scientific scrutiny.

PORTUGESE EXPLORERS

Early Portugese explorers visiting the orient encountered a strange snake that could expand its head into a dilated hood and they called it "Cobra de Capello" meaning a hooded snake. Its fame spread so rapidly that the word "Cobra" which in Portugese means a snake was very soon absorbed in Western European language. But then the Portugese explorers were actually referring to the common Indian Cobra only as they were ignorant of the fact that Africa is the real home of these vicious reptiles and contains double the numbers found in Asia.

HOOD

Undoubtedly the hood is the most impressive and distinctive characteristic of these snakes. It is formed by the expansion of the neck into an umbrella when the animal is excited or provoked. There are two definite color markings on the hoods of Indian Cobras—the "spectacled" or binocellate variety is the commonest and the second variety with an oval spot surrounded by a white circle is restricted to Bengal, Bihar, Orissa and the Eastern Himalayas. Yet a third variety with a plain hood occurs in Rajasthan, Punjab and parts of Gujarat.

The origin of the spectacle markings on the hood of common Cobra is legendary and dates back to the hoary past. One story is that these markings are but the imprints of the feet of young Krishna. Young Krishna while playing with his friends in his village river was attacked by a huge snake Kaliya which had been polluting the river and became a threat to the village at large. But playful Krishna vanquished the snake and in so doing he left the impressions of his feet on the snake's head which are passed on to its descendents and since then Lord Krishna came to be known as 'Kaliya Mardan.'

Another belief is that Lord Buddha during his wanderings in India had to cross a desert, fell asleep in a scorching sun exhausted and without a shade. It is said that a passing Cobra took pity on the holy man and spread umbrella like hood over him whilst he had a sound sleep. Buddha woke refreshed and saw the Cobra still protecting him, and as a mark of appreciation, placed two fingers on its hood. Perhaps this story has led to the belief that if a Cobra raises its hood around an innocent sleeping child, the child is sure to attain name and wordly fame.

LEGENDS

The Cobra is so much interwoven with Hindu religion that it is not to be wondered at that the destruction of this serpent is deemed to be an act of sacrilege on the part of a devout Hindu.

Lord Siva wears a necklace of Cobras. He gave salvation to a Cobra that worshipped him along with an elephant and a spider and thus the snake is closely associated with the origin of the famous Siva temple at Sri Kalahasti in Andhra. According to another legend, when the odean was churned (Amrita Manthan) by Gods and Demons for obtaining Amrita, the liquor of immortality, the huge Cobra Vasuki's services were availed of when it was made a churn rope round the Meruvu Hill. As was visualized by Lord Vishnu, there was some wrangling among Gods and Demons as to who would pull the head and who the hind end of the mighty serpent and it was resolved that only Gods were entitled to pull head end. But in the course of the great operation-churning, the snake grew restless and became indisposed when it started emitting out large amounts of deadly poison which nearly endangered the lives of all Gods. But Lord Siva prevented the destruction of Gods by gulping the terrible poison and retaining it in his throat. Thus he came to be referred to as "Neelakhanta."

Lord Vishnu relaxes on a seven hooded Cobra—'Adiseashu' and that is why he came to be known as 'Seshasayi.' This eternal serpent represented in Hindu mythology as supporter of the world is said to have accompanied Lord Vishnu in Avatars on earth. Accordingly, Lakshman, Sriram's brother and Balaram, Lord Krishna's brother are supposed to be earthly human guises of this holy snake.

Even the seven hills of Tirumala, the well-known pilgrim centre in Andhra which is the abode of Lord Venkateswara, are referred to as the divine heads of this serpant. The Lord of holy Palni in Tamil Nadu, Subrahmanyaswamy, is always worshipped with his companion Cobra.

BELIEFS AND FANTASIES

Cobra is subject to many other curious beliefs and fantasies. The snake is worshipped by all Hindus. Fasts are observed by womenfolk in some parts of India on Nag Panchami day because the Cobra is believed to have the powers of making the barren women fertile. Cobras found around people's houses are supposed to be the ancestors of the occupants who will protect the residents from ill luck and harm. Another erroneous belief is that the Cobra, of all snakes, is so vindictive that it waits even days to wreak its vengence on its offender.

BITE

Though its bite is fatal, even the deadly Cobra when encountered or disturbed seeks safety always in flight. It raises its head and expands the hood only as an act of self defence. When preparing to strike it raises about half of its body into the air, spreads out the hood and sways the body from side to side. It is a blood chilling sight when the snake puts out its deadly fangs and bites and the bite is so quick and sudden that one cannot follow. The Cobra seizes its victim and holds on till the poison takes effect, sometimes biting over and over again.

NOT CHARMED BY MUSIC

It is not true that the Cobra is charmed by music. Cobras, like all other snakes have no ear openings and have lost most of the intricate apparatus that is essential to hear speech and appreciate music. Snake charmers are aware of this deficiency in Cobras and that is why they move their pipes about while they play showing their 'foot-work.' Thus the common belief that the Cobra "dances" to the music of its Charmer's pipe is not correct; the snake merely follows with its eyes and head the swaying movements of its charmer's instrument.

COBRA VERSUS MONGOOSE

The common idea that Mongoose, the deadly foe of this serpent is immune from snake poison is far from truth. The fact is Mongoose and such other snake killing animals are protected by thick coats of hair or rubbery hides which prevent the poison from getting into their blood stream. However, if a lethal dose of a Cobra's venom is injected into the mongoose, it succumbs.

In a combat with a snake, a mongoose counts entirely on its quickness. The mammal waits for the right moment when its crushing teeth pierce the neck of the Cobra.

Another belief that the mongoose eats a herb or root to counter-act its adversary's poison is equally unfounded. Cobra venom is full of neurotoxins that attack and paralyse the nerve centres of the victim.

IMMUNITY

Even the incredible Indian Snake Charmers who tame Cobras cannot escape death from a Cobra's strike. Most often they remove the deadly fangs of the Cobra. Some of them develop immunity by injecting themselves with increasing doses of venom.

But they are wise enough to take care of themselves. The best of the snake charmers are dedicated to their 'art' and their knowledge of collection and taming etc., of these snakes are their 'trade secrets' which are passed on only totheir descendents.

MALE COBRA

The harmless Rat Snake (Dhaman) is considered in many parts of India to be a male Cobra because of its ferocity, size and aggressive spirit resembling the real Cobra to some extent which mistaken belief brings it nearer to death at the hands of innocent people. But tht fact that the Cobra and the Rat Snake are entirely of different kinds breeding separately is little known. The accidental occurrence of the real Cobra and that of the Rat Snake in the same locality is believed to be their pre-planned honeymooning and should any one happen to see by some mischance the so called imaginary pairing of these two snakes, he is sure to lose his eye sight!

KING COBRA

The King Cobra (Handrayad) is the largest and most frightening of all poisonous snakes of the world as its size, strength, highly neurotoxic nature of its venom make it one of the most dreaded snakes in the world. It can attain a length of nearly eighteen feet and is rarer than the common Cobra and keeps to jungle. It is a cannibal and feeds mostly on other snakes including Cobras and of its own kind.

A copious literature was written to show that this snake frequently shows a most aggressive spirit. Unauthentic records say that it attacks unprovoked and particularly it chases human beings when disturbed in courtship or when its nest is approached. Some other reports say that even elephants have succumbed to its bites.

SPITTING COBRA

The most interesting of allCobras is the Cape Cobra of South Africa which earned a bad reputation for it spits out its venom. The Righal or 'Spitting Cobra' as it is popularly known, it spits its venom when excited with considerable accuracy up to a distance of eight feet. Whether the aim is deliberate is not known. The poison so ejected is not fatal but causes irritation and if it hits the eyes it causes terrific discomfort and sometimes blindness but not death.

Thus the Cobras continue to hold their place despite the fact they are destroyed because of their killing powers and highly useful skin for manufacturing fancy articles. Yet they are unique because they are worshipped and associated with countless legends woven about them.

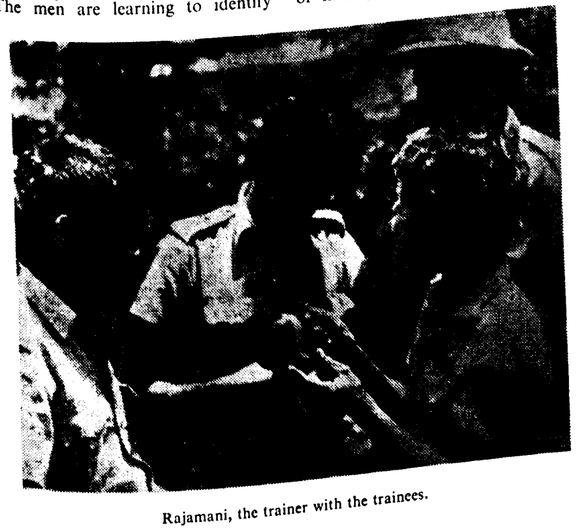
TRAINING OF FOREST DEPARTMENT STAFF AT THE MADRAS SNAKE PARK

Nature and habits of Rat Snake is explained to the trainees.

A proposal was put forward by the Forest Department that some of its staff should be trained in snake handling and care at the Madras Snake Park. The proposal was accepted, and in the month of September, 1973, four members of the Forest Department staff are being trained by one of the expert snake handlers and catchers of the Park.

The first week of training deals with the familiarization with the common snakes of Tamil Nadu, including the venomous species. The men are learning to identify them on sight, how to handle them without causing injury, and also the basics of snake-care, that is, keeping the cages clean, watering them, and feeding.

The second week is capture training in the field. This will include practical field training in finding snakes in their most likely habitats, their habits, various snake signs (shedded skins, faces) what they feed on, when they are most likely to come out, and their mating habits. They will learn the skill of finding and catching non-venomous snakes and later on the venomous ones. This requires great concentration practice and skill to avoid accidents.



Rajamani, the trainer with the trainees.

In the last two weeks the men will learn how to handle snakes at the Park, their care, and the treatment of snake-bite. They will learn the basics of cage design, wall height, ventilations, provisions for water, vegetation and the dangers of using wire netting and other abrasives. Minor ailments of the snakes will be dealt with, they will learn to treat eye infections, canker mouth, compacted bowels, ticks, and about the segregation and release of sick snakes. Basic snake anatomy will be gone through, and the identification of species by scale counts. Lastly, a very important subject, the men will be taught about snake-bite and how to deal with it. The effects of the venom of different species will be discussed, first aid techniques, and an introduction to the medical treatment of snake bite.

Since the fear of snakes is so widespread (but really unnecessary) it is hoped that the Snake Park will eventually make such courses available to all Forest Department staff and even extend it to the police, military and medical men, all of whom would greatly benefit and pass on their knowledge to the public.

—NINA CHATTOPADHYAYA,
27, 2nd Main Road, Gandhinagar, Adyar, Madras-20.

AN IDEAL GOLF COURSE AT OOTY

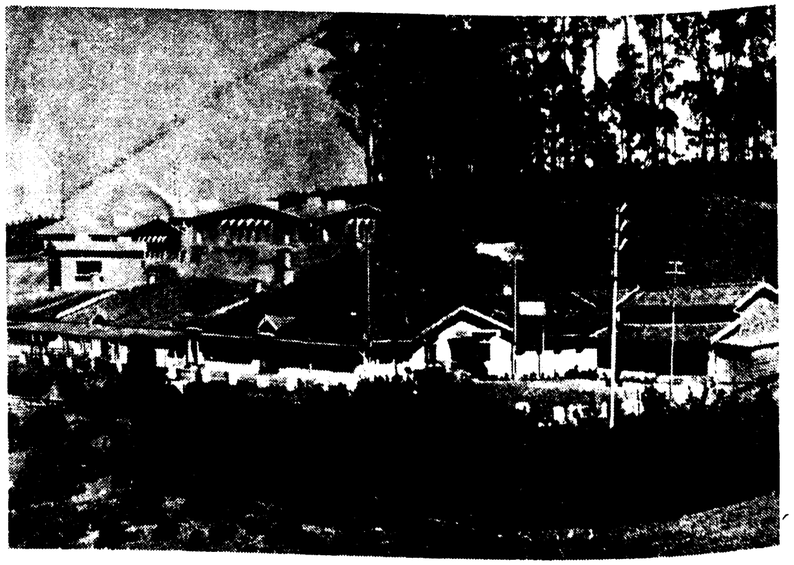
Known as one of the world's best few golf courses, 193-acres golf links at Ooty has very few equals in India.

Gymkana in its earlier days drew its membership mainly from the British service officers and Biritish civilians with a sprinkling of a few Indians from the erstwhile princely States and so on. After Independence, the privilege of membership was extended to new classes of the community. Being a gymkana, stress was always given to the promotion of sports and outdoor activities. At present the membership stands at 255. The Club as an Institution has believed in propriety, correct behaviour, good sportmanship, removal of prejudice and differences based on birth, particularly in a democratic age and promotion of good relations among members drawn from different sections of society. The aims of this club are fulfilling admirably.

In the earlier years there was provision of tennis courts and the golf course with browns only. This was often the venue of the United Planters Association of Southern India annual sports meet. Commencing from the year 1929, a system of pumping water from the Municipal stream in the valley with a Blakes Hydram mechanical pump, a storage tank and feeder pipes was installed by Messrs. HARRISONS & CROSFIELD LTD., Coimbatore and the browns gradually changed to greens. This was later changed to an electric motor pumping system from 1970.

This Club's 18 hole golf course is located at a height generally of 7,400 ft. with a par of 70 over 6,207 yards. The golf links are laid out over an area of 193 acres of the Ooty WENLOCK DOWNS. The scenic beauty of the course with valleys, backdrop of mountains, natural vegetation and clear blue sunny weather is breath-taking and has been immensely appreciated by foreigners and our own countrymen alike. The Club has been holding regular Summer and Autumn meets in April/May and Sept. Oct. respectively for a long time and some of the cups/trophies competed for include the Khairagarh Cup, the Club Cup, M. C. Muthiah Silver Salver, Chalmers Cup, the Sun Lager Cup for gents and ladies, the Calcutta Cup, the Dunlop Shield, Holdsworth memorial Cup, Windle Cup, Nilgiris Cup, Jodhpur Cup and so on. This course has also been the venue for the open amateur Golf Championship of Southern India and various meets of the Addicts Golfing Society of Southern India. For the past few years teams from WEST GERMANY, HANAU Golf Club have been participating in the Autumn Golf Meets of this Club, thus creating an international atmosphere of goodwill and understanding besides promoting tourism for our country. We propose to enlarge the scope for such multi-national meets.

The Course is backed up by a suitable Club House with all the usual indoor recreational facilities provided. Sensing a long felt need, the Club recently constructed 4 Cottages, to cater to the requirements of golfers requiring an ideal golfing holiday plus a sojourn in an excellent climate in sublime surroundings. These Cottages are nearing completion and are being superbly furnished with all modern conveniences.



Ootacamund Gymkhana Club with newly constructed cottages in the background at Ooty, Nilgiris.

NEW PRICES FIXED FOR SUGARCANE

A substantial increase in the cane price to the cane growers-suppliers of co-operative sugar factories for the current year (1973-74) was decided at a meeting presided over by the Minister for Industries, Thiru S. Madhavan and attended over by the representatives of the cane growers and cooperative sugar mills. It is estimated that the extra commitment for all the cooperative sugar factories would exceed rupees two crores. The increased prices range from Rs. 93.50 per tonne to Rs. 101.00 per tonne. Increases in the case of individual factories range from Rs. 5 to Rs. 15 per tonne. The factory-wise prices are as follows :—

Name of the Mills	*Increased price (Rs. per tonne)*
1. Ambur ..	101.00
2. Madurantakam	95.30
3. Amaravathi' ..	95.30
4. Salem ..	95.30
5. Kallakurichi ..	93.50
6. National ..	100.00
7. Dharmapuri ..	93.50

The increased prices would be provisional and subject to review at the end of the sugar season. A substantial portion of the profits earned by the Mills will be passed on to the growers in the form of incentive cane price. The additional prices now decided upon would be adjusted against the prices arrived at based on the principle of profit sharing. Whatever amount that may be further due would be paid at the end of the season. Similarly, if the review reveals excess payment already made recoveries would be made.

Government hope that with the substantial incentives now offered, cane growers would extend their utmost cooperation and ensure the successful functioning of the sugar cooperatives in the State.

—oOo—

THE SUCCESS OF THE PANDYAN CO-OPERATIVE SUPER MARKET, MADURAI.

The Pandyan Co-operative Super Market, Madurai with a series of new service oriented features has not only established the price trend in the city, but also boosted monthly average sales from Rs. 1 lakh to Rs. 8 lakhs.

It not only sells goods with a minimum profit margin, but also aims at satisfying the customers with courteous service and unadulterated commodities.

The Super Market is satisfied with a mere two percent profit on rice and edible oils and 3% profit on pulses. Ten women are engaged each day to clean the pulses before they are neatly packetted in celophane bags.

NEWS AT A GLANCE

'Gada Cloth' is attracting the poorer section of the society. As against the market price of Rs. 3/- per meter the super market sells this cloth at Rs. 1.05 per meter. Some three to four bales of this cloth is sold each day at the rate of a maximum six meters per buyer.

The nominated body under the Chairmanship of Mr. Annapathy Soundarapandyan gave a new look for this Super Market by the end of 1973. Prize schemes introduced for those buying goods for Rs. 25/- and above and One per cent on the-spot discount for the members are some of the features which have brought the Super Market to win the race against profiteers.

'A' class membership today has shot up to 12,600 from 252 and 'B' class members 71,520 from 7151. Membership fee for 'A' class is Rs 50/- and for 'B' class Rs. 10/- only.

—Source F.P.O. Madurai

—oOo—

NEHRU PRIZE LAUREATE FELICITATED

"This studied and balanced book written in a lucid and flowing style helps our people to understand the various aspects of Soviet life. It helps to widen the horizon of knowledge of our people and really a worthy addition to our literature. This is another new effective weapon in the arsenal of the progressive forces who are striving to strengthen the growing friendship and cultural and literary contacts between Indian and Soviet people" declared Shri N.D. Sundaravadivelu, Vice-Chancellor, University of Madras at a function held on 8-1-74 to felicitate Prof. S.N. Chokkalingam, Managing Director of the Text Book Committee, Tamil Nadu, who had been awarded 'SOVIET LAND' Nehru Prize' for his Travelogue "Soviet Nattil Nan Kandathum Kettathum". The Vice-Chancellor also congratulated New Century Book House, the publishers of this book who had amassed a record harvest of 26 awards for their publications including 5 Nehru Prizes.

Many Tamil writers and publishers participated in this representative gathering and congratulated Prof Chokkalingam. Mr. L.V. Sorokin, Vice Consul and Head of the Information Branch of the USSR Consulate General in Madras in his speech explained the various aspects of the Soviet Land Nehru Awards scheme. These awards which are dedicated to the memory of Jawaharlal Nehru are given every year to the best literary and journalistic works which are devoted to the cause of Indo-Soviet Friendship. He informed that Government of India also has instituted award for the best literary and artistic creations by Soviet writers and artists. "In the last eight years" Mr. Sorokin told, "over 70 distinguished writers and about 40 children have won the top Nehru Award prizes and visited Soviet Union". He urged the writers to create new literature and build bridges of understanding and trust between Indian and Soviet people.

Thiru R. Perumal, Joint Director in the Effice of the Director of Public Instruction, Prof. Poovannan, Head of the Tamil Department, Vaishnava College, Thiru Al. Valliappa, President, Children Writters Association, Thiru Vaithanna and Thiru K. Ramanathan noted Tamil writers spoke felicitating the author. ❋

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P. O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival ;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

the living past

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

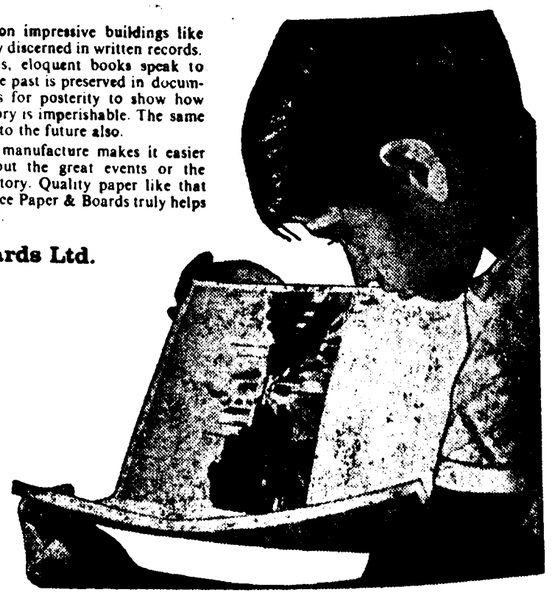
Modern paper manufacture makes it easier to write or read about the great events or the mighty makers of history. Quality paper like that produced now by Seshasayee Paper & Boards truly helps the study of the living past.

Seshasayee Paper and Boards Ltd.

Pallipalayam, Salem District, S. India

SPB

The Watermark of Quality



PDSSPB 777,

THE TERROR OF CRIMINALS

The Police Dog cannot be replaced by anything says the I. G. in this interview with Tamil Arasu.

Q : How did the idea of Dog Squad for Crime Detection work originate and when was initiated in our State ?

It was during the tenure of Thiru T. G. Sanjeevi Pillai, I.P., the then Inspector-General of Police, Composite Madras State, that it was decided to form a Dog Squad for the State modelled on the one functioning in the Scotland Yard (U.K.), to improve the techniques and Standards of Crime Investigation by the Law Enforcement Agency with the ultimate object of improving the detection rate without leaving it to chance. The Dog Squad was founded with one S.I. and 6 P.Cs. and 6 locally acquired Alsatian and other South India breeds. The Kennels were initially located in the compound of the C.I.D. Office and later transferred to the Control of the Commissioner of Police, Madras City in 1953. The City PoliceKennel building was completed in 1957. We have a manual for the Dog Squad. The City Police Dog Squad at Madras is under the administrative control of the Commissioner of Police, Madras City. It functions under the direct supervision and control of the Deputy Commissioner of Police, Crime, Assistant Commissioner of Police, Crime (Genl.) and the Administrative Inspector of Police, Crime Branch, Madras City. For administrative convenience the Dog Squad forms a wing of the Central Crime Branch, Madras City. The Kennel has a sanctioned strength of 1 S.I., 3 H.Cs., 1 Gr. 1 P.C., 7 P.Cs., 2 Dog Boys and 10 dogs. There are 24 rooms. The present strength of the Kennel is 1 imported German Alsatian, 3 Alsatians, 5 Dobberman Pincher and 1 Labrador Retriever.

Q : How many dog types does our Madras Police Dog Squad comprise ?

Alsatian, Dobberman Pincher and Labrador Retriever are the usual breeds that are found to be fit for police work in this State. Presently we have similar kennels at Madurai and Coimbatore. The Madras Kennel caters to the needs of the City, South Arcot, North Arcot, Chingleput (East) and (West), Thanjavur District, Pondicherry, Andhra Pradesh and Railway Police.

Q : Is pedigree given any great weight in the selection of police dogs ? Why ?

Pedigree is given due importance for selecting the right type for police work as the behavioural trends, health conditions and the physique largely depend on pedigree.

Q : It is said that it is more difficult to train a dog handler than a dog itself. How did the Police solve this problem ? Has it sufficient number of efficient handlers ? Any special steps taken to train dog handlers ? How are these personnel chosen ?

It is true that training a handler is far more difficult than training a dog. It is not that every one can become a handler however much he may be a dog lover and eager to become a handler. Certain prerequisites besides genuine flair for the work like love for dogs ; patience; intelligence ; tact and presence of mind, ability to communicate his ideas to the dog and reinterpret the dog's actions ; commanding power, excellent physique, proper handling, being young, energetic and a good sportsman are essential for a dog handler.

Normally the recruiting ground for the handlers is from the Armed Reserve, from men who have put in about 3 to 5 years of service and studied up to S.S.L.C. A circular is sent for obtaining willingness from P.Cs. as and when vacancies arise and selections are made after a personal check up of the individuals and their records. We always have a reserve strength to supplement vacancies, emergencies and other contingencies. A handler is given training in theory and practice for about 3 months and only after that he is entrusted with a dog if he is found fit. If he is not fit, he is sent away.

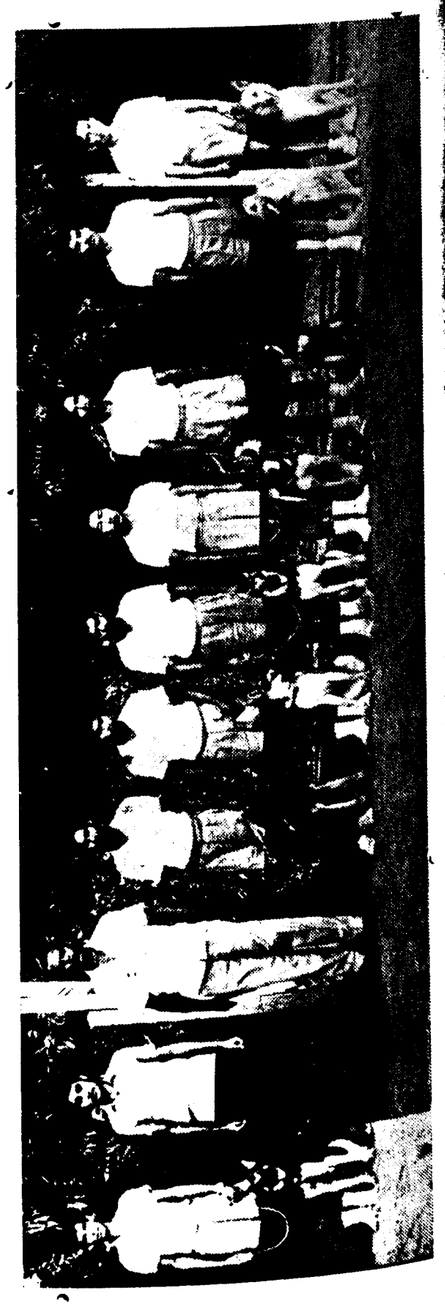
Q : With the present advances in the Laser Ray and Electronic aids to Forensic Science, is the dog as infallible and irrefutable as before ?

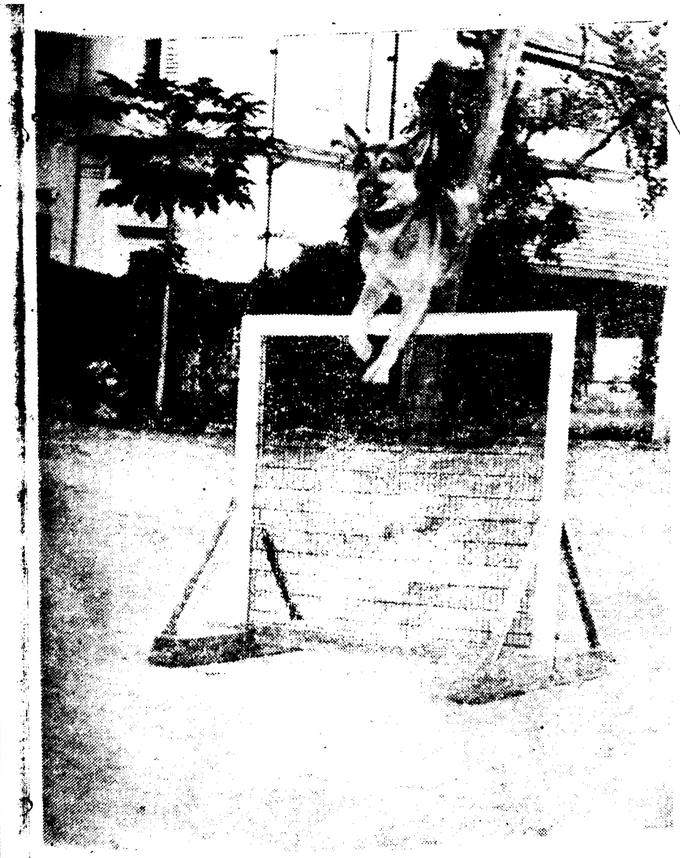
The dog's work is essentially based on scent. It is only a circumstantial or corroborative piece of clue to check up and ensure correctness of the line of investigation. It is only an aid to investigation.

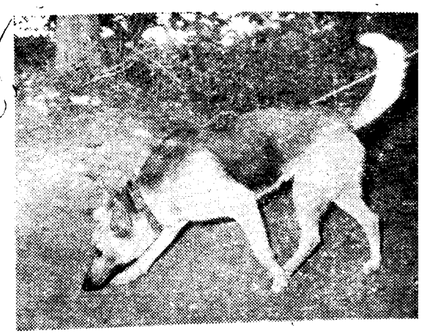
The fame of the Madras Police Dogs has travelled round India with the result that many states have sent their handlers for being trained here.

Photo above shows M. C. P. dogs with their efficient handlers.

Photo Below shows the Assam Police dogs which have come here for training and third from extreme left is Mr. Kanniyan, Sub Inspector of Police, Crime branch, Madras conducting classes for handlers.







The feculties of smell, hearing and physical mobility are developed to a very high degree in certain species of dogs which render them extremely useful for war and police purpose,

Photo left : Dogs are given training for high jumps which are at least two feet more than the ordinary human capacity.

Photo above : Dog is given training of taking scent from the ground.

Above : Dogs are given training in how to protect and safeguard things from the thieves.

Above : The culprit is captured by the dog and is in full command of the situation.

The use of the Dog cannot be the subject matter of evidence in Court as it may amount only to ' hearsay ' evidence. Where the scent on the scene is kept undisturbed and when the culprit has not gone away by train or bus or other conveyance and where the culprit abandons his personal properties, the scent work is more reliable. The Dog's work is only an aid to investigation which has to be interpreted intelligently and the dog cannot be replaced by anything; it is unique in its field.

Q : Is Police dog as useful in the detection of infringements of Laws against narcotics as in crimes against person and property? Are there different methods in chasing or in apprehending the two different types of criminals by the Police dog?

We have just made a beginning to train dogs for the detection of narcotics and drug traffiicking for Customs, Central Excise, and Explosives Department and it is too early to assess the result of its usefulness.

A trained dog can arrest a fleeting person with ease as it can touch speeds of 30 to 35 miles per hour as against an average man's 10 to 12. It can also clear obstacles 5 to 6 feet in height which is atleast two feet more than the ordinary man's capacity and lastly it can overcome all human opposition to arrest.

On the detective side for good results, it is essential that the scene of occurrence is not disturbed as any disturbance results in the super imposition of diverse scents at the scene which naturally handicap the animal. Again when the dog comes to work it is imperative it is not distracted by a trailing crowd as this confuses it.

Q : Isour State a pioneer in respect of creation of Dog Squad and have we established any supremacy in this respect? So far how many states have deputed their dogs and dog handlers to undergo training in the Madras Police Dog Unit?

The Tamil Nadu Police has many firsts to its credit with pioneering work in many fields, but nothing has been more spectacular than the establishment of the first Police Dog Squad ever in India, in 1951. We have trained Detective Dogs for West Bengal Police, Bihar Police, Army, Andhra Pradesh Police, Kerala Police, Southern Railway, Madhya Pradesh Police, Orissa Police, Haryana Police, Assam Police, Utter Pradesh Police, Madras Port Trust, Buckingham Carnatic Mill and Dunlop, Presently 12 dogs and 12 handlers and two Sub-Inspectors of Assam are undergoing 6 months training.

Q : What is the All India Duty Meet? And are there any competitions designed for Dog Squad in these A.I.P. Duty Meets?

Every year a Duty Meet is conducted in one of the capitals of the State by rotation and it is organised by the I.B. Oral, written and practical tests are conducted for police officers and men representing the different States on Finger Prints, Foot Prints, Photography, lifting and packing, Police portrait and observation, Revolver and Rifle shooting, First Aid, Wireless, etc. to improve the standard of investigation. Each State sends two teams consisting of the rank of Inspectors and below. Individual prizes and championship shields are awarded to winners. We are proud to state that the Tamil Nadu Police have successfully retrained the championship shield for the 6th consequtive year. This is an all time record.

Various methods of training dogs.

Q : Are there any statistics about the number of cases pursued with the help of Dog Squad, and the number of successful detective work done by them?

	1970		1971		1972		1973	
Head of Offence	*No.of calls.*	*No.successful.*	*No.of cals.*	*No.successful.*	*No.of calls.*	*No.successful.*	*No.of calls.*	*No.successful.*
Murder and murder for gain ..	10	7	24	19	23	15	30	17
Dacoity Robber..	--	—	3	1	1	1	126	48
House Breaking..	39	19	52	19	80	33	91	12
Other cases ..	7	1	48	9	90	15	4	2

SCIENCE IN CRIME DETECTION

By
S. VENUGOPAL RAO
Director, Institute of Criminology and Forensic Science.

The impact of science and technology on every field of human activity is phenomenal and it is no wonder that the resources of science are increasingly requisitioned in the detection of crime. The application of science in this particular field is a thrilling experience beyond the perspicuity of the most brilliant of the amateur detectives whom we come across in fiction. The criminal in the modern world is more sophisticated and scientifically equipped than his forebears in the past. To find him and to bring him to book, old techniques have to give place to new ones, strengthened and refurbished by the fruits of scientific research. I will indicate briefly here the philosophy and rationale of criminalistics, which is merely a term of usage for the application of science to criminal investigation.

Crime is essentially a hostile act against society—a manifestation of social aggression in an individual or a group of individuals. It represents in some manner a breakdown of the stability of the social structure which we are trying to maintain and uphold through the machinery of law. Consequently, crime transforms itself into an act which has to be prevented in the first instance, and, if this is not possible, detected with a view to finding the persons responsible for it and dealing with them according to the law of the land. Criminal investigation thus becomes a primary task of the police. In this task, which at times appears forbidding and difficult, the investigator has to requisition all the resources and assistance which he can command from society and this includes science and technology.

Investigation :

The process of criminal investigation consists of observation of facts and establishment of evidence which will single out the offender and bring him to justice. In court, the facts and evidence will be dissected for the last time and judged in accordance with the rules laid down by the law. The entire structure of scientific investigation is based on the simple and well-known fact that a criminal leaves unwittingly physical traces at the scene of his crime of alternatively, picks up other physical traces on his person which are apparently very trivial details. These may be called clues which signify the presence or action or a movement. A clue is an apparent sign which tends to establish a fact without constituting irrefutable proof. A painstaking investigator has not only to collect clues at the scene of crime, but also try to fit them into the pattern of the crime. The conclusions that he may arrive at on the basis of the observations of these clues may be sometimes true but there is also a possibility that they could be misleading, confusing and even downright contradictory to which the so-called eye-witnesses say or other circumstances point out. This is where science can and does play a vital role. Because facts by themselves cannot be analysed straight away on presumptions based on human credulity and predilictions, they have to be examined objectively and impartially using highly scientific and technical methods and drawing fully on the resources of the physical chemical and natural sciences. The scientific expert at this stage becomes an important pivot in the process of criminal investigation. While the investigator, through observation and interrogation gathers clues and elicits facts, the responsibility of the scientific experts is to establish *prima facie* evidence i.e. evidence based on clues which is the rsult of scientific elaboration and in which various forms of reasonings are used to establish a link between the facts observed. Evidence so established has the supreme advantage of being objective and impartial, based purely on facts.

Thus the combined task of the investigator and the scientific expert consists of detecting, understanding and piecing together the clues with a view to fitting them into other elements of investigation—the whole constituting the final proof of crime. The object of scientific criminal investigating is to arrange all the elements which previously appear to be isolated and unconnected that they form a coherent whole and their relation to the crime becomes clear.

Finger Prints :

We may take for example, fingerprints. It is established through years of scientific research that the possibility of two persons possessing the same fingerprints are almost nil. While there may be a chance in a million of two finger prints of different individuals tallying, the probability that such a coincidence does not occur is almost an absolute certainty according to accepted theories of probability. This is how the scientific expert established probabilities in the identification of material evidence and reaches almost absolute certainty about the presence of a particular person in question. Scientific methods or techniques by themselves cannot point out the perpetrator of a crime but by and large the scientific techniques establishes the identity of such a person and what is more important, clear an innocent person of the crime even if the investigation points an accusing finger at him. Witnesses may lie but scientific evidence can provide irrefutable evidence of a person's guilt or innocence.

Forensic science or criminalistics is not a science by itself. It is a happy combination of all the sciences enriched by the pooled knowledge in different fields and by the adaptation of divergent scientific technique, with only one object and that is to find the truth. The benefits of this scientific knowledge and experience have to percolate to every investigating officer because in the ultimate analysis it is he who has to keep his eyes open and observe tell-tale clues of physical evidence however apparently trivial at the scences of crime. It may be a chance finger print; it may be a fragment of wood, or a torn piece of cloth; it may be an indented tool mark left behind while breaking open a lock, or an imperceptible drop of blood on the sleeve of a murderer. It may be a single strand of hair clutches in a death struggle or a very innocuous document whose secrets can be seen under an ultra-violet of infra-red light. By themselves they are trivial and isolated pieces of evidence.,but they assume an importance beyond comprehension if they can be connected and fitted into the mosaic of crime.

THE FISHING INDUSTRY IN U.S.S.R.

(A Brief Profile)

The fish industry of the USSR is a well-developed branch of Soviet economy. The heavy industry built up and developed under Soviet power completely changed the material base and technical equipment of the fisheries.

Flotillas of the latest model vessels, equipped with refrigeration facilities, constitute the core of the Soviet fishing fleet. Fishing vessels are not solely engaged in catching fish. Over 80 per cent of the catch is processed into semi-finished products, various tinned products, fish meal, etc., right aboard the fishing ships.

Oceanographic research performed by Soviet scientific institutions was of paramount importance in developing the country's fisheries. This research resulted in proposals for the rational organization of fishing.

The economic importance of internal reservoirs grows year by year. The USSR has a tremendous number of such reservoirs—some 12,000,000 hectares of man-made lakes, 24,000,000 hectares of lakes and 800,000 kilometres of rivers. Pond-fish farming is likewise making rapid progress. It expanded 1·8 times in the first two years of the current Five-Year Plan (1971—1975) and will have grown 2.7 times at the completion of the Five-Year period.

The production and delivery of live and frozen fish, fish fillets, semi-finished products, and smoked and dried fish to trade establishments is to be stepped up in the 9th Five Year Plan. This task is being successfully fulfilled.

Special Measures

Special measures are taken to conserve, reproduce and rationally utilise fish resources. These measures are elaborated on the basis of wide-ranging research carried out by institutes for fishing studies, set up in various fishing areas of the country. The USSR has special laws on conserving fish resources and regulating fisheries. This is done with the sole aim of securing the rational utilization of our fish resources, and providing better conditions for fish reproduction.

Industrial fish breeding is carried on in all of the country's major basins and reservoirs.

The USSR does much in the way of acclimatization of fish, *i.e.*, their transfer to new habitats, and breeding of various species in newly built reservoirs.

The long-term plans for expanding reproduction of fish resources envisage work on the artificial breeding of salt-water species and of other marine animals.

Compensation for Damage Done

The USSR legislation includes provisions for compulsory compensation for any damage inflicted upon fisheries, thus ensuring the protection of fish resources in the Soviet inland reservoirs. Special fish channels, fish lifts and fish locks are constructed, for example, on newly built dams. Facilities to let Atlantic salmon, eels, sturgeon and other species of fish reach the head water of dams for spawning, are now successfully operating in the USSR.

A special device, of an entirely new type, for channelling fish through the dams has been built in this country for the first time in the world. This device is not built into the dam. It is a floating fish collector, equipped with two self-propelling containers, which transport the fish from the tail water to the head water of the dam via the general shipping locks. It can be located in the best possible place in the dam tail water to attract the fish.

Conditions favourable for fish reproduction are established in the reservoirs—any changes in their water level take due account of the fisheries' interests, and artificial spawning grounds are built in them. Special devices are also introduced when irrigation schemes are built, so that fish roe, small fry, larval and mature fish should not get into irrigation canals. Construction work on a unique device for rational distribution of the water flow is nearing completion in the delta of the Volga. It is intended to regulate the Volga flow in a way that would ensure sufficient water for the spawning grounds, even in the years when the water level in the river is low.

Work on averting water pollution has been intensified. For example, large allocations have been made for a complex of measures to decrease the dumping of sewage and improve sewage-control facilities in the main fishing basins, including the Caspian and Azov seas, and Lake Baikal.

In other words, the Soviet state attaches paramount importance to the work on increasing the country's fish resources. The Chief Administration for the Protection and Reproduction of Fish Resources and the Regulation of Fishing incorporated in the USSR Ministry of Fisheries has been established especially with this aim in view. The administration employs over 15,000 specialists inspectors, icthyologists and fish breeders. It has a special fleet and various means of transportation at its disposal.

World Ocean Resources For Generations To Come

At present the Soviet Union, other states and many international organizations are expressing great concern about the conservation and rational utilization of living marine resources, and about controlling the pollution of their environment. According to assessments made by both Soviet and foreign researchers, the biological resources of the World Ecean permit increased fishing there. However, we must always remember that the generations to come should also be able to benefit from the ocean's wealth. Isolated steps taken to achieve these ends by any single country cannot, naturally, yield substantial results. Only concerted action by all the interested states can be instrumental in coping with so complex a task as the conservation of the ocean's biological resources. No wonder that the number of international conventions and organizations dealing with the problems of fisheries has been growning throughout the last few years.

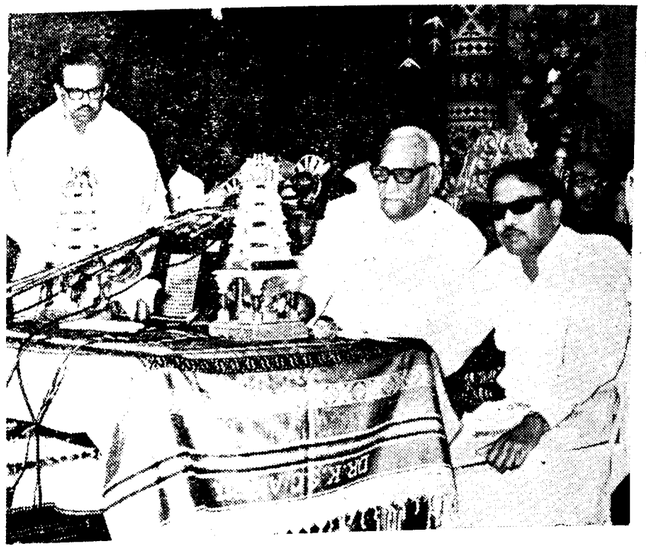
The USSR has signed more than 50 conventions with foreign countries on fisheries ; it takes part in the work of a number of international organizations and commissions, and renders assistance to many countries in the organization of fisheries. In all its activities the USSR advocates the rational utilization of biological resources on the basis of scientific recommendations and forecasts.

Soviet representatives initiated and supported the adoption of measures for the conservation of fish resources, including the limitations imposed on the herring catch in the northern Pacific and Atlantic, and the arrangements for controlling the catch of ground-fish species and salmon on the high seas. The USSR is doing everything it can to secure rational utilization of the world ocean's biological resources so that they shall always remain an important food source.

(Abridged) ("Moscow News")

Photo shows the Motor boat of the Kransy Oktyabr Fishing Co-operative (Kamchakta) returns with a rich haul of Crabs.

PONGAL TOURIST TRADE FAIR IN MADRAS



The President Thiru V. V. Giri with the Chief Minister and the Education Minister at the inaugural function.

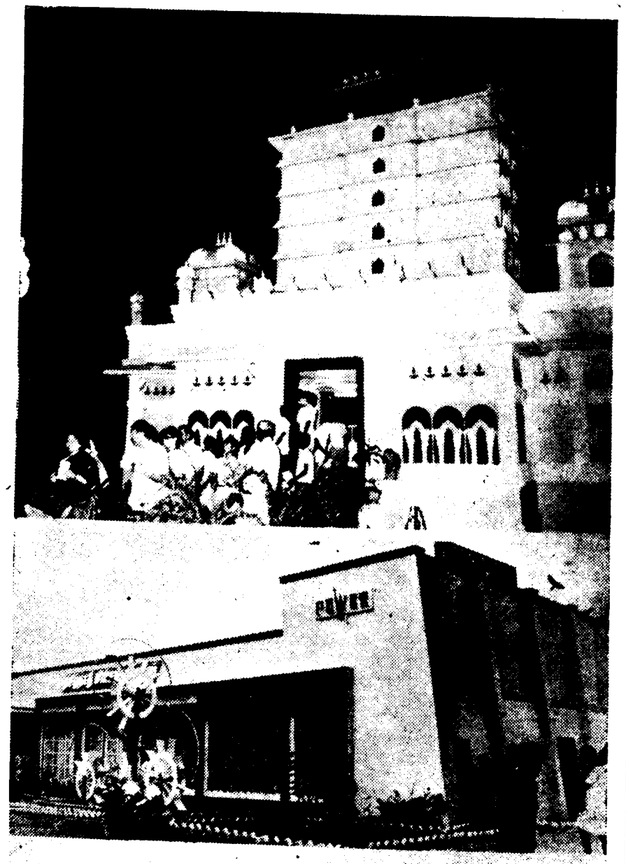
One of the two 32 feet high typical village deities at either side of the entrance.

The celebration of Pongal Tourist Festival is one of the many steps taken by the Tamil Nadu Government towards bringing more tourists down South. Because, Pongal is a major festival of the region which reflects the culture and traditions of the people, in this part of the country. Pongal also incidentally comes in mid-January every year during the tourist season of October to February. Last year the festival was extremely successful. Foreign tourists have applauded our efforts. This year the festival has been organised on a grand scale in all Tourist Centres of the State such as Madurai, Tiruchi and more impressively in Madras. A special feature of the festival in Madras is the Pongal Tourist Trade Fair organised by the Tamil Nadu Tourism Development Corporation at the Island Grounds at Madras.

A Fair with A Difference

This is a fair with a difference. It is a tourism-oriented Fair. At the main entrance are two village dieties of 32 ft. height which greet the visitors with village drummers on either side. Next comes an array of temple pillars. The whole facade of the entrance was done by the staff of the College of Arts and Crafts. On passing the pillars there is the plaza of a little pond, waterfalls, lawns with lighting arrangements adding charm to the atmosphere. Around the plaza runs a mini-train.

Various organisations, institutions, departments, etc. are participating. Central and State Government departments like Directorate of Advertising and Visual Publicity, Southern Railway, Public Works, Industries, Fisheries, Forest, Information and Public Relations Department, autonomous bodies like Air India, India Tourism Development Corporation, Bharath Heavy Electricals, Coffee Board, Co-optex, Khadi and Village Industries Board, Electricity Board, Housing Board, Water and Drainage Board, Hoteliers, Banks and several private business houses have put up their pavilions. There is also a shopping arcade. These pavilions will highlight the progress of the State as well as the various aspects of Tourism development. Arts and Sculptures of Tamil Nadu, the ancient musical instruments will be on display. An artistes village with the craftsmen at work will be the highlight of the Fair.



A Typical Tamil Model Village

On the model of the Thai Model Village put up at Bangkok, a Typical Tamil Village has also been set up. In this place all the activities of a village including folk dances can be witnessed at one place. It will not only be a major attraction for foreign tourists but also for us.

Cultural programmes in the open air auditorium include daily fashion parade at Co-optex pavilion, a mini Sound and Light' spectacle on Silappathikaram, Multivision presentation of Tourist Sports of Tamil Nadu and India, free Tourism feature films daily have also been provided. Other attractions include a mini zoo, amusement park, museum of clay models of Orissa crafts-men, etc.

The Fair is planned for 42 days from 7th January to 17th February, 1974. Arrangements have also been made for the celebration of the Pongal Tourist Festival at important tourist centres like Madurai, Tiruchi, Kanyakumari and Mahabalipuram. The popular rural sports of Jalli Kattu at the Nehru Stadium, Madras, was arranged for the first time this year. A Committee had been appointed at Madurai to select the bulls and catchers. The catchers and the bulls selected by the Committee alone were admitted to the Jalli Kattu. Special arrangements had been made with the Railway authorities for bringing the bulls and catchers to Madras and for their return. Jalli Kattu was conducted at Madras under the joint aegis of SPIC Animal Husbandry and TTDC for two days on 20-1-1974 and 22-1-74 SPIC has donated a sum of Rs.40,000 for the conduct of the Jalli Kattu at Madras, of which Rs. 30,000/- is being handed over to Minister (Tourism and Education) on 2—1—1974 as part payment. The SPIC also presented a huge trophy to the best catcher and the best bull. Silver medals were awarded to the second and third catchers and the bulls.

Picture: Top:—Prototype of Poompuhar exihibited in the Pongal Tourist Trade Fair by the Department of Information and Public Relations

Middle:—Electricity Board Pavilion at the Fair

Bottom:— Indian Railway Pavilion

Five Judges had come from Madurai to select the best catchers and the best bulls. About 40 catchers and 40 bulls took participation in the Jalli Kattu.

This year's Pongal Tourist Festival has been planned in such a way that the foreign tourists visiting Tamil Nadu will be able to witness the various aspects of our culture and traditions. Unfortunately the dislocation of flights of Indian Airlines has considerably affected the flow of tourist traffic to Tamil Nadu. Nevertheless the celebration will get wide publicity abroad the benefit of which will be felt next year.

The Fair was inaugurated by the President of India at 10-00 a.m. on 7—1—1974.

* * *

HILL STATIONS IN TAMIL NADU

Kodaikanal : Next to Ooty, Kodaikanal is a charming hill station of sylvan grandeur on the Southern West of Upper Palani Hills at an altitude of 2,343 metres (7,688 ft.) in the Western Ghats. It is 120 Kms. from Madurai.

Ooty : Popularly called the Queen of Hill Stations, it is the chief hill station of the South in the Nilgiris range of hills. Here the rugged beauty of Eastern Ghats merges with the wooded loveliness of the Western Ghats. The moods of Ooty change with every season. The highest peak in the South, the Dodabetta (2,670 metres) is in Ooty. Indo-German Agricultural Project functions here to improve the farming practice here. The Hindustan Photo Films Factory is also here. Golf and racing are also available. Coonoor and Kotagiri are two nearby hill stations. It is 89 Kms from Coimbatore.

Yercaud : A pretty hill station with a cool climate said to be one of the most equable in the world. Situated at an altitude of 1,500 metres (5,000 ft.), this is the hill station where you don't feel the biting cold of the winter. What is more it is less expensive. It is 32 Kms from Salem.

The Fashion Show Conducted at the Pongal Tourist Trade Fair By Co-optex

What is Jallikkattu ?

Jallikattu is not mere sport. It is a festival.

The people who organise Jallikattu are perhaps not aware of the real significance of the gala show in which the entire village participates.

This is not to be confused with Manjavirattu which is observed on the Mattu Pongal Day.

Jallikattu is usually arranged for fulfilling a vow—a vow not taken individually but a whole village. When it is affected by drought or visited by some natural calamities, people offer to celebrate pongal or arrange a Jallikattu or, in some villages, arrange dramas (or Therukkuthus).

There is nothing unusual about it. A German village, Oberamergau, following a similar vow, even now stages a Passion Play (depicting the life of Jesus) once in four years. It is a big tourist attraction. Tickets are sold out in advance. The players observe strict celebacy for six months, like those going to Sabarimalai here.

The people who organise Jallikattu are the decent drones of the village. Only these people have the leisure and the capacity to organise them. The local bigwigs are behind them and help them with money and other requirements.

The date is fixed in consultation with the local pujari (temple priest) who is supposed to derive inspiration from God Himself.

After raising the necessary funds, the leaders start out in small groups to invite the people who have the bulls. It is a hobby with some rich rustic landlords to raise such animals and to maintain them at considerable cost as a matter of prestige. It is like keeping a race horse now. The invitation is made personally by the organisers taking with them to each invitee betels (half a bundle), nuts (a handful) and a bunch of plantain fruits. This goes on for about fifteen days till sufficient number is invited.

The importance of a Jallikattu depends on the quality of the bulls which particpate. As in horse racing, here also the pedigree of the bull and prestige of its owner play a very important part.

The next step is to prepare the village for the festival. The main street is decorated with fully covered Pandals. All the carts are arranged on either side of the street, to prevent the bulls running as they like. Men, women and children sit on these carts, which are quite safe from the spectators' point of view. At one end of the street is the stockade. Behind that the bulls are collected and brought one by one into the stockade and let out through an exit.

The headman sits on a platform above the stockade along with important people of the village. As each bull is brought into the stockade, he throws a very thin white cloth (sometimes partly red coloured), one cubit in length, the value of which in those days was just two annas (thirteen naye Paise). This is the only gift to the owner. The cloth is tied round the horn and the animal is let out on the main street. The tacklers stand on either side of the exit gate and bounce on the bulls and try to untie the piece of cloth. Some animals won't run but stand and tackle the tacklers with unusual ferocity. Such animals earn a name " Nintru Kuthi Kalai" (bull which goes without running) and the man who tackles them, earns just fame. No monetary benefits are involved. However, some rich and proud owners may tie a sovereign or a gold chain round the horns as a challenge, and the tacklers, if they can, take them.

It is an occasion to invite guests from neighbouring villages. And all of them arrive in their own carts, which are specially decorated. The men and women are colourfully dressed. Small shops spring up selling flowers, sugarcane, murukkus and country plaintains. It is a field day for village Romeos and Juliets. Starched sarees, withering jasmine soaked in sweat and neem oil add special flavour to the atmosphere.

Drummers and folk artists with their numerous noisy instruments come to the village from the surrounding areas. They wait at the village border, where the bulls are decorated with colourful jari clothes, specially parepared for the occasion. Each bull is held by two ropes on either side by two men, as if to impress the uncontrollable nature of the animal. The owner and his attendants are taken in a procession with music. They are entertained to a feast at a common place. The bulls are kept under some shady tree for the visitors to watch and admire. This is something like the preview of race horses at the paddock. Again they are taken in a procession to the stockade ground to be stripped of all the decorations. The letting out of animals will start in the afternoon, actual hour depending on the number of animals received.

It is really a problem to each the bulls which run through the whole street. With no strings whatsoever, they roam about that village and the neighbouring areas for days and the owners and their men employ all sorts of tactics to catch them. It will be the talk of the place for days and also as exciting as a tiger hunt, without its dangers.

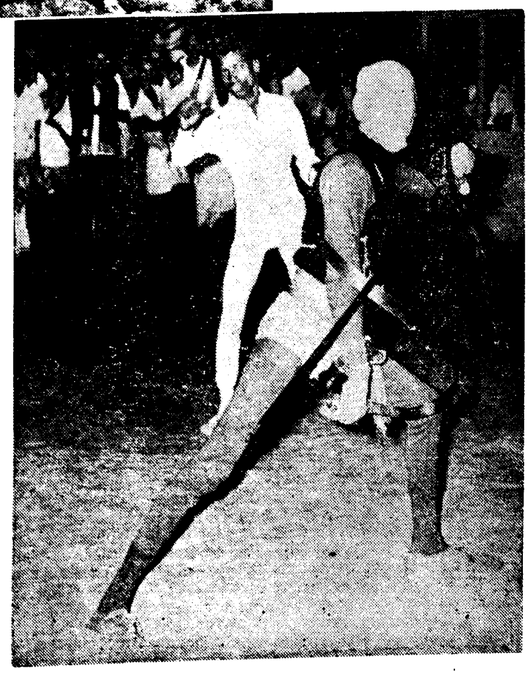
If arranged like this, the show will definitely not be disappointing to the local visitors and foreigners. And there will be no occasion for the comment : " This is a wild and gruesome sight." It may be true of Spanish bull fights.

Jallikattu is really an attractive festival which can be used for tourist promotion. Only the right kind of villages must be selected and enough protected seats provided for foreign visitors who are not familiar with this sort of sport. A dozen villages in Madurai and Ramanathapuram districts can be developed with this idea in view. Urangampatti near Melur, Siravayal bear Karaikudi and Araliparai have been famous for Jallikattu.

The bulls raised by the landlords, though mainly intended for participating in Jallikattus, served as stud bulls of the village, maintaining the quality of the breed. The temple bulls of the village (mavericks) also served this useful purpose. But at modern times, we have to resort to fantastic schemes to improve quality of animals.

JALLI KATTU

A scene from Jalli Kattu staged in Pongal Tourist Fair in Madras. In Jalli Kattu or bull-fight the ingenuity and intelligence of human being is matched against those of well-bred bull. A daring venture on the part of the catcher, one often takes the hard risk of his life in this rural sports of Tamils.



SWORD SHOW

The Collapsible sword is an ancient innovation of Tamil Nadu. It is a coiled sword which when wielded properly can help keep many at bay. It was staged at Pongal Tourist Fair.

JALLIKATTU—

A GALLANTRY SHOW IN TAMIL NADU

With the co-operation of SPIC and the Department of Animal Husbandry, the Tamil Nadu Tourism Development Corporation organised Jalli Kattu at Madras on two days 20—1—1974 & 22—1—1974, at Nehru Stadium.

Jalli Kattu is a rural sport of Tamil Nadu held especially in the Southern Districts of Madurai, Ramnad and Tirunelveli during the Pongal Festival as a gala event.

References to Jalli Kattu are found in ancient Tamil Literature. The person who wins in the Jalli Kattu is often sought by the Maidens of the village in Matrimony. There are innumerable instances of such events in the Tamil Literature.

The Jalli Kattu is held on a chosen day when the whole village assembles at the main thoroughfare of the village and the bulls are let out one by one with decorations or with a towel tied to the horns of the bulls. Young men standing in a row on both sides of the road chases the bull and catch hold of the horn and take off the towel tied to the horn and take off the towel tied to the horn with money sometimes. There are variations of this nature of sport.

Some animals won't run but stand and tackle the tacklers with unusual ferocity. Such animals earn a name 'Nintru Kuthi Kalai' (Bull which goes without running) and the man who tackles them, earns just fame. No monetary benefits are involved. However, some rich and proud owners may tie a sovereign or a gold chain round the horns as a challenge, and the tacklers, if they can, take them.

It is an occasion to invite guests from neighbouring villages. And all of them arrive in their own carts, which are specially decorated. The men and women are colourfully dressed. Small shops spring up selling flowers, sugarcane, murukkus and country plantains. Starched sarees, withering jasmine soaked in sweat and neem oil add special flavour to the atmosphere.

Drummers and folk artistes with their numerous noisy instruments come to the village from the surrounding areas. They wait at the village border where the bulls are decorated with colourful jari clothes, specially prepared for the occasion. Each bull is held by two ropes on either side by two men, as if to impress the uncontrolllable nature of the animal. The owner and his attendants are taken in a procession with music. They are entertained to a feast at a common place. The bulls are kept under some shady tree for the visitors, to watch and admire. This is something like the preview of race horses at the paddock. Again they are taken in a procession to the stockade ground to be stripped of all the decorations. The letting out of animals will start in the afternoon, actual hour depending on the number of animals received.

It is really a problem to catch the bulls which run through the whole street. With no strings whatsoever, they roam about that village and the neighbouring areas for days and the owners and their men employ all sorts of tactics to catch them.

In view of the risks involved in this game, to the catchers as well as the spectators, the TTDC has arranged barricades at the Nehru Stadium so that, no harm is caused to the spectators. The only person who is likely to be injured is the catcher and he being trained expert, he knows the tricks of the game and will always escape with light injuries, if at all.

For the first time in the history of Madurai City, a Jalli Kattu was held during January, 1973, in the urban atmosphere of Madurai and due to unprecedented crowds blocking the passage of the bulls, some persons were injured and fortunately there were no fatal cases. Seeing the arrangements made at Madurai, extra precautions have been taken at Madras to conduct Jalli Kattu as a real sport of interest both to tourists and the lay-public. The game has great potentials of being developed as a bull fight of Tamil Nadu to attract foreign tourists. Only with this view the sport is now taken for the first time to the City of Madras.

Arrangements have been made inside the stadium to barricades the place where actual Jalli Kattu was held. The spectators sitting around the Stadium will have a clear view of the event, just like witnessing a foot-ball match or a cricket match. It is hoped that this being the first time such a grand sport is arranged under the auspicies of Department of Tourism depicting the glory of Tamil Nadu, the public will avail of this rare opportunity and witness the Jalli Kattu on both the days of January 20th and 22nd.

As this sport is native to Madurai and Ramnad Districts, a screening Committee at Madurai consisting of the Officials of the Animal Husbandry Department, the Information Department and the Public also co-operated in selecting the bulls and also the catchers from both the districts of Ramnad and Madurai. They have succeeded in selecting 38 best possible bulls and 40 catchers of repute.

All the bulls were loaded at Madurai in a special Express Goods Wagons on 17—1—1974 and they reached Madras on 18—1—1974. As the bulls and the catchers are brought from such a long distance and the public of Madras should not also be disappointed, the sport is arranged for 2 days, so that, a large number of people can witness.

The Southern Railway authorities at Madras and also at Madurai had taken a keen interest in conducting Jalli Kattu at Madras and have helped in arranging special accommodation in the trains leaving Madurai for the owners, catchers and attendants to reach Madras on 18th January ; and also to move the goods wagons of the bulls expeditiously to Madras.

Precautions have been taken *en route* for checking the bulls by the Doctors of the Animal Husbandry Department, so that, they reach Madras safely. During their stay at Madras they were looked after by the Doctors of the Animal Husbandry. The S.P.C.A. is also taking interest in the up-keep and the maintenance of the bulls. ❋

Pongal Tourist Festival Celebration at Tiruchirapalli. From 16th January to 22nd January, 1974.

The important aspect of the Celebration at Tiruchirappalli was the emphasis given to the rural forms of entertainment and games and the participation by Foreign Guests who were presented with mementos.

The Daily programme was devided into two parts. One consisted of the rural games and folk dances and the other of presentation of classical music, dances and dramas. Kabadi games were held every day. Women's Teams played for four days and men's teams for four days. There was the exhibition of Silambam Fencing, boxing, etc., and Cockfight and Ram fight.

The foreign visitors were accorded an affectionate reception and they were presented with icons so that they can cherish the memory of their visit to Trichy and their participation in the Pongal Tourist Festival Celebrations here. Over eighty such Tourists were honoured this way.

The Collector of Tiruchy, Thiru M. Vaithialingam, I.A.S., took personal interest in the planning and organisation of this Festival which was attended every day by not less than 3000 persons and on certain days, more than 5000 persons.

TOURIST OFFICER,
Tiruchy-1.

Stream of foreign visitors are flowing every day at various tourist places as a result of the Pongal Tourist Festival in Tamil Nadu.

PONGAL TOURIST FUNCTION SHOW

RURAL SPORTS STAGED At TIRUCHIRAPPALLI

KARAGAM

On the eve of Tourist Week celebrated at Tiruchirappalli the performance of the rural sports of Tamils such as Karagam (top), Kavadi (bottom left), Dance (bottom right), etc., were conducted in such a fine manner as to attract the tourists from alien land. A large number of foreingners attended the functions besides the multitude of local populace.

KAVADI

DANCE

EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NA

SURELY YOU CAN BY PLANNING YOUR FAMILY

DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

Regd. No. M. 8676-A

PONGAL SPECIAL

NOW!
TAMIL NADU RAFFLE
TREATS YOU...
TO PONGAL POTS OF
PROSPERITY!

Fantastic Prizes for
Spectacular Gains.
Like never before.
This time it's your time...

12,450 PRIZES Rs. 31,00,000 in eight series

SPECIAL PRIZES
FIRST PRIZE Rs. 5,00,000
SECOND PRIZE Rs. 2,00,000
(Common to all series)

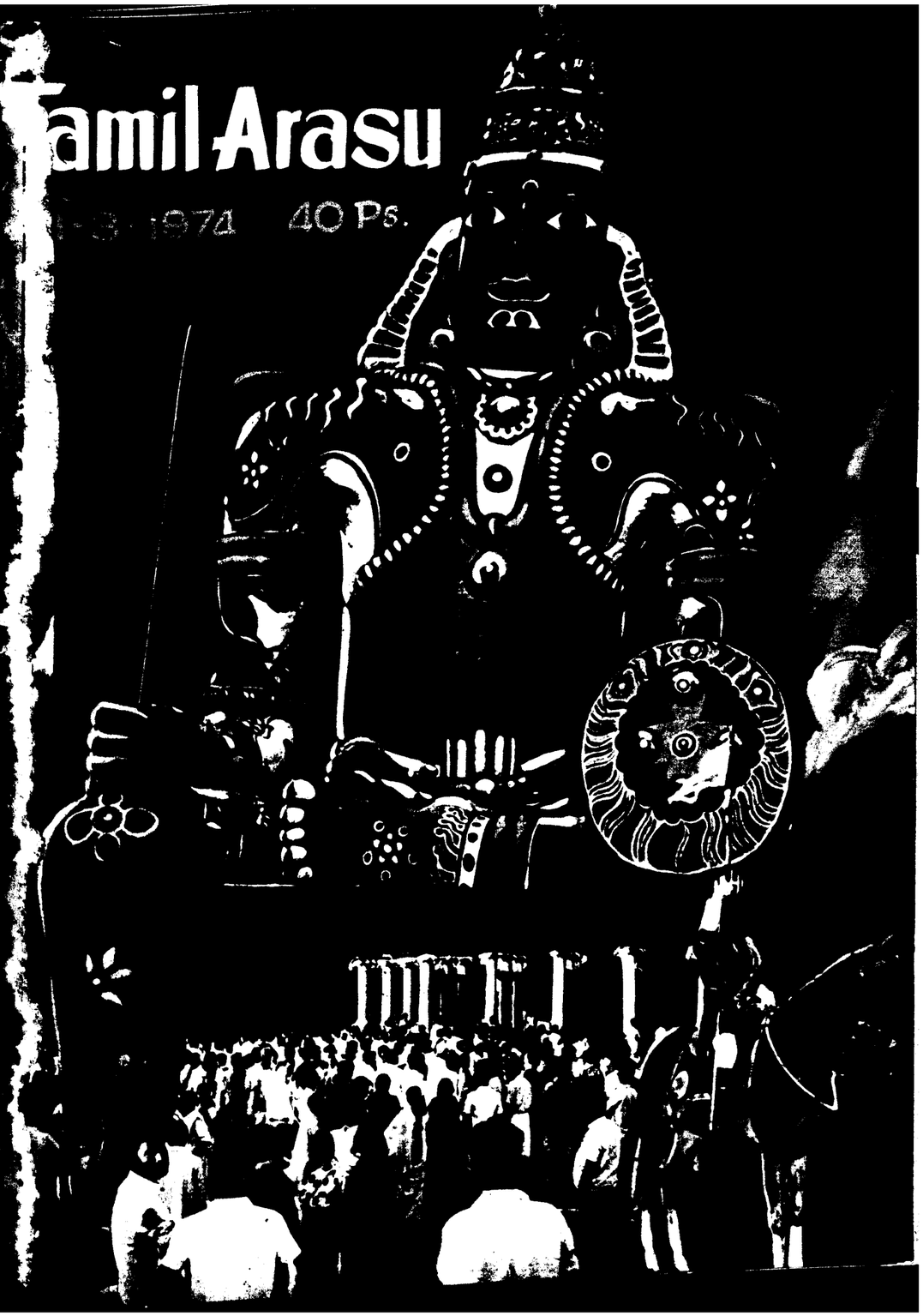
IN ADDITION, FIRST PRIZE OF
Rs. 1,00,000 (For each series)
& THOUSANDS OF ATTRACTIVE PRIZES
Cost Per Ticket Re. 1/- only.

PONGAL SPECIAL
BUMPER DRAW
26-2-1974

Issued by Director of Information & Public Relations,
Government of Tamil Nadu, Madras-600009

All correspondence should be addressed only to the
Director of Small Savings (Raffle), Madras-600002

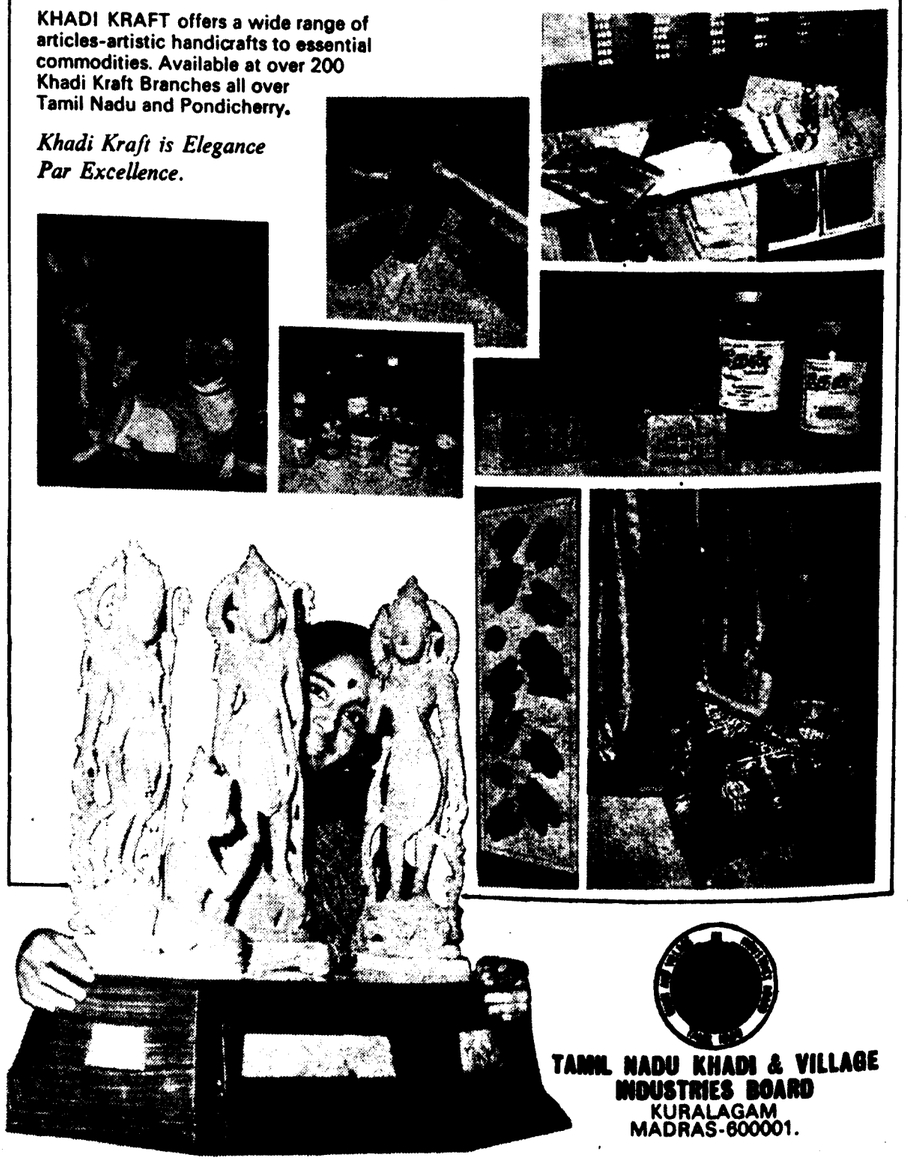
EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL
AND PRINTED AT THE TAMIL ARASU PRESS, GOVT. ESTATE, MADRAS-600002.



Khadi Kraft – a trusted name for khadi and village industries articles

KHADI KRAFT offers a wide range of articles-artistic handicrafts to essential commodities. Available at over 200 Khadi Kraft Branches all over Tamil Nadu and Pondicherry.

Khadi Kraft is Elegance Par Excellence.



TAMIL NADU KHADI & VILLAGE INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.

For retail and whole-sale, contact Khadi Kraft at:

KURALAGAM MADRAS-600001 Phone : 29684	36C, ANNA SALAI MADRAS - 600002 Phone : 81954	MADURAI MAIN ROAD TIRUCHIRAPPALLI Phone : 3814	AVANASHI ROA COIMBATORE Phone : 35051

Tamil Arasu

Vol. IV MARCH 1974 Issue 9

CONTENTS

	PAGE
We believe in doing our best for the State	4
Duties and status of Co-operation Extension Officers defined.	7
The Police Force is the watchdog of democracy	8
Physical Medicine and Rehabilitation for the physically handicaped	12
Safflower and its uses	22
Systems of Physical Education	31
YMCA College for Physical Education	35
Why do birds migrate ?	43
Tamil Nadu marches ahead in sugarcane cultivation	45

THE EYE OPENER

CERAMICS EXHIBITION AT RAJAJI HALL

The Department of Industries and Commerce, Chepauk Madras-5 is holding from 25th February 1974 to 12th March, 1974 the 9th Annual display and sales of art and utility ceramics.

The items on display and sales are products manufactured at the Clay Toys Unit at Perambur and Art Pottery Unit at Vridhachalam. These are two small training institutions which impart one year training to 15 students having aptitude in art. The Artists engaged in these units not only impart training to the students but also evolve new designs. There are more than 1,500 designs so far evolved in art and utility items including over 300 new designs produced during 1973.

The Department of Industries and Commerce, by holding these annual exhibitions, have been able to generate an interest in public for art ceramics and for new designs in utility items.

"WE BELIEVE IN DOING OUR BEST FOR THE STATE"

C. M.

Dr. M. Karunanidhi, Chief Minister, highlighted the following points in his reply to the debate on the Governor's address in the State Assembly on 28th January, 1974.

"The Governor's address starts with a melancholic note in regard to the passing away of Thanthai Periyar, a great leader of Tamils, a frontline leader in the rationalist movement and above all, a social reformer par excellence among the galaxy of social reformers in India, thereby respecting the memory of the departed leader. Extending and expressing respect alone would not do. On the other hand, we must spend our time and energy within our capacity to root out from this land the religious-oriented caste-ridden evil habits—a principle he cherished all along his public life. And to put an end to these ignominous and insidious practices, we must resolve in unanimity and as one man to give a deep burial to the supertitious beliefs prevalent in our society.

The Chief Minister cited the following "successes" of Tamil Nadu Government in securing sanction for projects :—In the National Development Council deliberation on Draft Fifth Plan held in Delhi in 1970, I emphasised in my speech that unless and until the Salem Steel Plant—the long-felt request of the people was sanctioned, I would withhold my consent to the Plan on behalf of the people of Tamil Nadu. I do not cite this as a matter of pride but to bring to limelight the fact that only after vigorous and virulent argument with the Centre we got the immediate sanction for the Salem Steel Plant which was subsequently inaugurated by the Prime Minister herself.

"The Veeranam Project, though not a Central Project, was got sanctioned after one years relentless "fight" with the Centre for the same.

"None should forget the fact that a number of times the State Ministers and officials flew to and fro between Madras and Delhi to meet the Central Ministers and the Prime Minister so as to put them in clear and vivid perspective of the technical feasibility and necessity of the Tuticorin Thermal Power Plant in the interest of the State, as also the fact that only after the arduous journey and intelligent arguments with the Centre the scheme was got sanctioned.

"So also the Rs. 100 crores fertiliser complex under the banner of Joint Sector at Tuticorin—the first phase of its work has already been put on stream—has been got sanctioned from the Centre only after strenous argument and stubborn fight with the Union Government.

"With regard to the scheme of Second Mine cut at Neyveli, we have put forth our pleas many a time. And it is not good forgetting this solid fact. No sooner was the news that the Second Mine-cut at Neyveli was not included in the Draft Fifth Five Year Plan appeared in the news papers than our official emissaries were sent to Delhi. I also contacted the Central Government through telephone. After that, we have unanimously adopted a resolution in this august House requesting the Centre to include the scheme in the Fifth Five Year Plan. And the Minister Thiru K. Rajaram took the resolution in person to Delhi and presented it to the Prime Minister on the same evening. Not only this. Subsequently in the National Development Council meeting held at Delhi on 9—12—1973 I emphatically pointed out in my speech that the future of of Tamil Nadu won't be prospreous if our power generation schemes are not planned well ahead. On this statement of mine, Union Minister Thiru Dhar spoke thus :—

"I would assure the Chief Minister of Tamil Nadu that as far as the expansion of power based on lignite is concerned, this matter has been discussed by the Finance Minister and by me with the Ministers from both the Federal Republic of Germany and also the German Democratic Republic who have great experience in exploitation of low grade coal as we have in the case of Tamil Nadu. I would also draw his kind attention to the series of meetings we have had with the Chief Minister, with his officers who have been very coooperative in ensuring that nearly a thousand megawatt of power is established at Tuticorin and for this, it will be recalled we have taken into account the supply of coal by the sea route, through considerable distance at considerable cost. We have also taken into account the establishment of Kundah and Solaiyar Projects. I mention this in order to ally apprehensions, if there was any room for it, for my distinguished friend, Mr. Karunanidhi, that in the matter of development, he need have no apprehensions whatsoever from us, from the Planning Commission, because in his case, and if I may say so, in no other case, I always have an enquiry or two which I receive from the Prime Minister."

"The Deputy Chairman of the Planning Commission, Union Minister Dhar said these words in the National Development Council having faith in us. Not only this. On 1st January, 1974 Thiru Madhavan and I expressed the same opinion in the Planning Commission meeting. After that, the situation has improved much instilling hope in us to the extent that the Planning Commission has come around to okay the scheme. The reason for raising all these points here is to bring to the Assembly the truth about how many times we have approached the Centre for these schemes, and how the Centre feels about our way of approach, praise us and give consideration to our requests.

"The State has secured approval for the Rs. 5 crores Pamban Bridge from the Centre only after intense argument. So I am in dutybound to point out here that there is no slackening nor dearth of efficiency in our way of approach.

Fifth Plan outlay

"Following this, prominent reference has been given to the Fifth Five Year Plan in the Governor's address. At the outset we desired to have the Fifth Five Year Plan outlay at Rs. 1,532 crores and advanced our arguments in support of this outlay. After studied and stubborn argument with the Planning Commission we have submitted draft Fifth Five Year Plan envisaging an outlay of Rs. 1,200 crores. As has been pointed out in the Governor's address, in our discussion with the Planning Commission on 1st January 1974 the Planning Commission pointed out to us that the plan allotment for the first year of the Fifth Five Year Plan would be in the order of Rs. 108 crores. But we argued with the Planning Commission that as we are implementing plan schemes to the extent of Rs. 126 crores in the current year itself, the lesser amount allocated to the first year of the Fifth Five Year Plan is not acceptable to the State. In the National Development Council meeting, I along with the Chief Ministers of Karnataka and West Bengal took strong exception to the circular of the Planning Commission stating that the first year allocation of the Fifth Five Year Plan for the States would be kept at the scale of allotment prevailing in the current year and argued that the same scale of allotment for the first year of the 5th Plan as in the last year of the 4th Plan would retard the tempo of economic activity. And so I pleaded for an allotment of at least Rs. 200 crores. Still, I am confident that the State would be allocated to the tune of Rs. 150 crores for the first year of the 5th Plan.

"Next to it, the Governor's address refers to the Sixth Finance Commission. Here an opinion was expressed to the effect that the State has not presented its case in clear perspective with the Sixth Finance Commission and that we have lost the ways and means facilities that we should get from the Sixth Finance Commission. In this connection, I would like to place before you some of the salient points the State Government placed before the Sixth Finance Commission.

In the memorandum submitted to the Sixth Finance Commission the State has suggested the points :—

that instead of the Finance Commission and the Planning Commission dealing separately with the financial requirements of the State, the Finance Commission itself should solely look into the financial requirements of the State ;

that the States should not be differentiated ad nauseum on the basis of backwardness and instead the Centre should formulate a minimum need programme on an all India basis to help the backward areas ;

that the per capita income should not be held as the basis to distinguish and differentiate the States into well-developed and backward ones ;

that the State's mineral resources must be taken into account and

that aids should not be offered to the States having deficit in budgetary estimates without taking into account the tax efforts the States have taken to close the gap in their budget as it would induce the States to prepare and present deficit budgets without making proportionate effort to tap the tax resources to fill up the deficit.

"I believe it is better to quote the exact words that the State had advanced with the Planning Commission.

"The Planning Commission is aware that we had been, amongst the leaders in additional mobilisation during the Fourth Plan. In fact, our efforts in relation to our per capital income, is the highest in the country, and out of a total additional mobilisation of Rs. 1,058 crores and odd, our State records nearly Rs. 159 crores. Unfortunately, the result of this has been that we have suffered at the hands of the Finance Commission, which rewards a State in direct proportion to its revenue gaps."

Fertilizer Distribution

"Speaking on the Governor's address, members expressed their opinion vehemently about fertilizer. Though the subject would seem to be dull and drab to the members, I wish to deal with the matter of fertilizer situation in some detail.

"According to the present set-up of fertilizer distribution, imported fertilizer is classified as pool item as against the indegenously produced fertilizer being categorised as non-pool item' Taking into account the actual requirements of the States, both pool and non-pool fertilizers are being allotted to them every six month in lumpsum quantity by the Centre demarcating a full year into Kariff and Rabi seasons.

"On account of wide—spread publicity and propaganda more and more farmers are inclined to take to application of fertilizers in their field. And as time rolls by, more and more lands are brought under plough. In this light the States' fertilizer requirement for 1973-74 was estimated to be in the order of 3 lakhs tonnes. Against this, the State received only 1.80 lakh tonnes of fertilizer.

"In accordance with the decision of the State Government all the pool fertilizers are being distributed through the Thanjavur Co-operative Marketing Federation and the Tamil Nadu Co-operative Marketing Federation with effect from 1st April 1973. Against the State's demand of 1 lakh 6 thousand tonnes of pool fertilizers for the Rabi season i.e., from July 1973 to January 1974, only 48,837 tonnes were sanctioned to the State. Out of this, the State received 33,907 tonnes only. As many as 3,027 Village Cooperative Loan Societies all over the State distribute the pool fertilizers to the farmers through a card system issued and supervised by the District Collectors. I don't say that wrong is not committed at one or two places in the distribution of pool fertilizers. For that matter we should not take it for granted that the misdeed done at one or two Village Co-operative Societies are the order of the day all over the State.

"As regards the non-pool fertilizers, they are issued to the agriculruists through as many as 6,428 retail dealers. For the Rabi season in 1973-74, as against the total allotment of 60,000 tonnes by the Centre, the State received non-pool fertilizers only to the tune of 45,278 only. Still a balance of 24,000 tonnes is as yet to be received from the Centre in this respect. In the supply of non-pool fertilizers, as much as 2/3 is distributed through the private fertilizer dealers, over whom the State has little jurisdiction to control or check the malpractices committed by them. Thiru Marimuthu asked whether the State has no power to control them. Of course, the State has certain limited power. And I want to point out those powers here. Here the Honourable members raised the point that fertilizer to be sold at Rs. 55 per bag is being sold at different prices varying from Rs. 110 to Rs. 150 in the open market. In this respect Tamil Nadu Government has written a letter to end the malpractices committed by the retail dealers of non-pool fertilizers. I wish to read the passage of that letter.

"The entire pool stocks of fertilisers are now being distributed only through the two Co-operative Federations functioning in this State, namely, the Tamil Nadu Co-operative Marketing Federation Limited, and the Thanjavur Co-operative Marketing Federation Limited. These Federations will distribute the fertilisers secured by them, only on the strength of the identity cards, issued to the ryots ; and such a course is expected to minimise any malpractices on the part of the Co-operatives. But, it has been found difficult to exercise an effective check on the distribution of non-pool stocks by the private dealers, who get their supplies, from the marketeers of the indigenous manufacturers, resort to all sorts of malpractices such as black-marketing, transporting outside the State, etc. Such malpractices are on the increase day by day especially in respect of Urea, which is in great demand. Unless the State Government are equipped with the necessary powers to requisition stocks from the producers and private dealers in an emergent situation, when such a course is warranted, it may prove difficult to ensure a proper distribution of non-pool fertilisers and thereby meet the seasonal demands of the ryots at the right time, and at the notified prices. Section 3 of the Essential Commodities Act, 1955, enables the Central Government to control the price, to regulate supply etc. Section 5 of the Act deals with the delegation of these powers to the State Government.'

The Centre's reply to our request was received on 7th January, 1974 which runs as follows :—

"In this connection, another point that has to be reckoned with is that under 1966 decision of the Cabinet, private manufacturers have been given freedom of marketing in order to invite more capital into the industry. We feel that all this and vigorous action under the Fertilizer (Control) Order will be sufficient to deal with most of the malpractices at present. The Government of India regret their inability to agree to your request to delegate powers of requisition and distribute fertilisers held with private manufacturers."

Thiru K.T.K. Thangamani said that the present law can be advantageously used against such offences as many other States take advantage of it in arresting such malpractices. Under the Fertilizer (Control) Order 1957, the State can verify the accounts of the private dealers in fertilizers, check adulteration, if any, in the stuff, and ensure distribution to the genuine farmers. These powers have been delegated to the District Agricultural Officers. But the State has no power to confiscate the fertilizer from a seller indulging in malpractices. Nor has it authority to direct the retail dealers to issue fertilizers only to those who have been issued with fertilizer card by the State Government. Not only this. Under the present act, action can be taken only in the premises of the retail dealers and nothing can be done to divert the stock of the defaulters to the Co-operatives for fair distribution. Moreover, the State has no power to enter the fertilizer manufacturing centres to verify whether adulteration is being done there itself except filing cases against the retail dealers. So we ask for those powers to the State.

"Under the Fertilizer Control Order, we have filed 96 cases in 1971-72, 243 cases in 1972-73, and 179 cases upto 30th November, 1973 in the current financial year. We have been taking action against wrongdoers and to go still further with vigour, we ask for more power from the State. But I am in dutybound to put the matter in clear perspective that the Centre has given its outright reply to the effect that so as to make the manufacturing units earn enough money to plough back into their business the decision now in effect had been taken in 1965 itself.

"The Centre sanctions only half of what we have asked for and then issues to us still lesser quantity. Further as much as 60 per cent of non-pool fertilizers is to be diverted to private dealers for distribution. This principle should be changed. Given this change of policy and principle for good, the State could ensure fair distribution of the available fertilizers to the actual users."

‡*‡‡*‡

DUTIES AND STATUS OF CO-OPERATION EXTENSION OFFICERS DEFINED

In the Administrative Reforms Committee Review Committee meeting held on 20th December, 1971, there was a discussion on the duties and responsibilities of the Extension Officers (Co-operation). The urgent need to form small Farmers' Cooperative Irrigation Societies in the villages, in the light of the new loaning discipline which came into force as a result of the International Development Association Agreement was stressed in the meeting. It was also decided in the meeting that the Extension Officers (Co-operation) should devote their entire time and energy in this vital task and achieve targets fixed by the Head of the Co-operation Department. Further in the present organisation set-up of the offices of the Panchayat Union Councils, there is a separate branch called production Branch among other Branches in each Panchayat Union Office and in the light of the existence of this new Branch the question of adding some more new functions to the Extension Officers (Co-operation) was also given some thought. Having regard to these aspects. The Director of Rural Development has got prepared for the approval of the Government a revised job chart for Extension Officers (Co-operation) in consultation with the Registrar of Co-operative Societies. The Government accept it and in partial modification of the orders issued in the G.O. first read above, they issue following orders:—

I. STATUS AND CONTROL :

(*a*) The Extension Officer (Co-operation) will be under the full administrative control of the Panchayat Union Commissioner. On all administrative matters, the Extension Officer (Co-operation) shall seek the advice of the Panchayat Union Commissioner and shall abide by his orders.

(*b*) He will be under the technical control of the Deputy Registrar. On technical matters the Extension Officer (Co-operation) shall seek the advice of the Deputy Registrar, through the Panchayat Union Commissioner and shall abide by his orders.

(*c*) The Extension Officer (Co-operation) will be subject to all other general rules applicable to other Extension Officers including matters relating to office discipline, arrangement of tours, attendance at meetings, preparation and submission of diaries and all other matters generally applicable to other Extension Officers.

(*d*) In matters of correspondence and other office routine work, he shall follow the procedure prescribed from time to time.

(*e*) The Registrar of Co-operative Societies shall be the head of the Department at the State Level and the Deputy Registrar shall be the concerned District Officer in relation to the Extension Officer (Co-operation).

II. Duties :

1. The Extension Officer (Co-operation) shall be responsible for the formation and development of Co-operative Societies in block areas. He shall educate the people in the block about the ideals of co-operation and the objectives of the various kinds of co-operative institutions, make them co-operative minded and ensure that the various co-operative institutions are worked by the people in such a way as to realise their objectives and confer the maximum benefit on the members.

2. He shall participate in all the special functions organised to propagate the ideals of co-operation, for example Membership week, All India Handloom Week, All India Co-operative Week, etc. He shall concentrate on increasing the membership of the Co-operative Societies, and educate the ryots in observing the formalities to obtain credit and other facilities from the various co-operative institutions.

3. He shall impart in-service training to the Gramasevaks in order to educate them to attain sound knowledge of principles and practice of co-operation.

4. He shall participate regularly in the Panchayat Union Council meeting and apprise the members of the various activities undertaken in the Panchayat Union in the field of Co-operation and enlist their co-operation propagating the ideals of co-operation.

5. He shall canvass and process loan applications to be sanctioned by Co-operative Land Development Banks.

6. He shall attend to mobilisation of deposits on behalf of Co-operative Banks.

7. He shall activise the Lift Irrigation Co-operative Societies already registered as well as organise new lift irrigation Co-operative Societies and take steps to draw up schemes for these societies and process loan applications.

8. He shall organise Agro-Engineering and Service Co-operative Centres and assist them to function successfully.

9. He shall assist the District and Taluk Co-operative Unions in collecting their subscriptions and enabling them to function effectively in spreading cooperative education.

10. He shall arrange the preparation of Agriculture Credit Loan applications according to the targets fixed for the agricultural credit soceities in Block and get them sanctioned.

11. He shall attend to admission of all agriculturists as members in the Agricultural Credit Societies and the Integration of credit with marketing in the Block.

12. He shall attend to timely supply of fertilisers and pesticides.

13. He shall develop the marketing society serving the Block.

14. He shall check fertiliser accounts of Co-operative Societies in the area every month.

15. He shall organise Co-operative Societies.

16. He shall assist the Rural Housing Societies in the preparation of loan applications and help them to get type designs for house, Lay out plan, etc.

17. He shall inspect four credit societies every month and each Agricultural Bank once in a half year and also Rural Housing Societies in the Block once in a half year.

18. He shall attend periodical inspection of non-credit co-operatives.

19. He shall supervise the construction of godowns by the Societies.

20. He shall attend to disposal of arbitration references.

(Contd. on page 8)

The Police Force is The Watch - Dog of Democracy

I offer my warm congratulations to the recipients of the President's Police and Fire Services Medals and Police Medals. I am glad that the meritorious services of the officers and men of the Police Force receive this public recognition.

A TRYING PERIOD

We are passing through an important but crucial formative period of our history when foundation for democratic norms and future prosperity will be laid. This is a very trying period and unless everyone of us looks upon this period as a period of personal trial and makes his personal contribution irrespective of what others do, in accordance with the demands of the times, we cannot emerge successfully. I am laying stress on this aspect because when storms are rising, emotions are let loose and frustration takes grip, it is difficult to control temper and exercise restraint in dealing with crude exhibition of temporary impulses, but if this situation is not handled tactfully and firmly, it is likely to develop into a catastrophe. Friends in charge of law and order therefore have a very hard time to handle situations which erupt from time to time on account of either whipped-up compulsions or momentary impulses. **To the extent those who are in charge of law and order—especially the Police Force—are able to generate confidence in the masses that everything that they do is in the interests of the people themselves and the police force is not guided by either personal considerations or political, administrative and economic compulsions, they will be able to exercise sober influence.**

EXERCISE MINIMUM VIOLENCE

It is therefore said that that police force is the best which exercises minimum violence. This sentence is not intended to convey that if necessary no violence should be used but is intended to convey that the sobering influence exercised by the police is so important that occasions to use force rarely arise. Their presence psychologically creates an awareness in the minds of even the worst of elements that in their presence they must behave and that their presence is intended to ensure the best of democratic traditions. **This can only happen if each one of us remembers that in a democracy each one of us has to exercise the restraint of a master and the obedience in a military force. From this point of view, the police force in Tamil Nadu, by and large, except for a few incidents here and there, it must be admitted, is trying its best to rise to the healthy tradition of watch-dog of democracy.**

The fact that at the recent All India Police Duty Meet at Cuttack, they won, for the fifth year in succession, the first prize in the Scientific Aids to Detection, shows how dedicated their work has been. It is not only intellectually that the Police force in Tamil Nadu has made a name but in other sports they have exhibited their skill and strength by winning 11 gold, 7 silver and 4 bronze medals and have won the championship. This is an all-India all-time record and I will be failing in my duty if I were not to congratulate the winners and wish the Police force more laurels in the future.

MODERNISATION OF POLICE FORCE

The State Government had done well in finding money to modernise the police force in Tamil Nadu. Introduction of computerization of crime records and provision of teleprinters in each district headquarters will go a long way in early detection of crime. The fact that an officer of the rank of Superintendant of Police designated as Assistant Inspector-General of Police II and Public Relations Officer is functioning shows their anxiety to develop public relations. The fact that they are running 31 Boys Clubs in the slums of urban area of the State of Tamil Nadu proves that the rigour of law is sought to be sobered by sympathy and understanding. It is this type of work which psychologically creates a feeling in the masses that the Police are their benefactors and are prepared to go out of their way to help the people.

It is unfortunate that the volume of property crime has gone up. That shows that the country's health is subjected to more pressures as a result of sporadic eruptions. I have no doubt that the Police force will exercise more vigilance and their usual sympathetic understanding exercises better influence.

I will be failing in my duty if I were not to mention two important investigations to the credit of the Tamil Nadu Crime Branch C.I.D. The organised gang which was responsible for a series of murders by posing as customs officers was not only unearthed but valuable property was recovered and every member was arrested. This danger has been nipepd in the bud once for ever. Another high credit for the C.I.D. is the unearthing of the activities of the inter-State counterfeiters. It is more creditable because the arrest of the counterfeit gang took place before the counterfeit notes could be circulated.

(Governor's speech delivered on the occasion of Police Medal Parade on 14th December, 1973).

(Page 7 continuation)

21. He shall attend to registration of amendments to by-laws of village credit societies.

22. He shall conduct statutory and other enquiries in societies except those which are prima facie intended for investigation of frauds leading to prosecution.

23. He shall conduct enquiry into complaints against the Co-operative Societies in the Block.

24. He shall assist to the Societies in the collection of overdues.

25. He shall attend to submission of periodicals relating to co-operatives to various Officers and maintenance of registers connected with the periodicals.

26. He shall maintain a permanent register in the form prescribed, if any and record the details of achievements in regard to co-operation in the blocks.

MEDAL PARADE 1973 RECIPIENT

Sitting : From left to right :— Thiru F.C. LANGTON, Dy Supdt. of Police, Excise,; Thiru. T. DORAIRAJ, D.S.P., C.I.D. Madras (*Retired*) S.B.; Thiru. M.V. MOIDUNNI, Dy Commandant on O D in Southern Railway as Assistant Security Officer ; Thiru. S.M. DIAZ, I.P.S. Inspector-General of Prisons ; Thiru F.V. ARUL, I.P. I.G. of Police ; Thiru A. MURUGESAN Supdt. of Police, Special Branch II C.I.D. ; Thiru. A.K. RAMANATHAN, Divisional Fire Officer (*Retd.*) ; Thiru. G. DURAIRAJAN D.S.P. Vigilance and Anti Corruption ; Thiru. R. RAJASINGH Dy Supdt. of Police.

Standing 1st Row : From left to right :— Thiru D. CHRISTANDOSS Dy Supdt. of Police and Assistant Commissioner of Police, Traffic ; Thiru. K.K. NAIR, Dy. Supdt. of Police P.R.S. Vellore ; Thiru. V. RAMDOSS Dy. Supdt. of police, and Assistant Commissioner of Police, A.R. Madras city ; Thiru. S. MOTHA Dy. Supdt. of Police, Tamil Nadu A Special Police, Ist Branch Tiruchi ; Thiru M. NARAYANAN, Inspector of Police ; Thiru. A. VENKATARAMA SUBBIAH Inspector of Police Vigilance and Anti corruption.

Standing IInd Row : From left to right :— Thiru. K.G. GOPALAKRISHNAN, S.I. OF Police ; Thiru. A.R. RASHEED, Station Fire Officer ; Thiru. S. SUDALAIMUTHU, S.I. of Police ; Thiru. S.S. PAPPUSEMAR H.C. 1107 M.C.P. ; Thiru P. GOVINDARAJAN, H.C. 790, Chingleput District ; Thiru G.R. KUPPUSINGH S.I. OF Police, Food Cell C.I.D. ; Thiru. M. DURASAMI P.C. 712 Ramnad ; Thiru. K.M. CHOKKALINGAM, P.C. 382, Thanjavur District ; Thiru. R. VIJAYARANGAM, P.C. 654, South Arcot (*Retd.*) ; Thiru M. RANGANATHAN, H.C. 2094, Salem.

BY BURNING IT UP!

For the first time in India, BHEL, Tiruchi is installing a Chemical Recovery Boiler that utilises black liquor, a cyclic waste, as a cost-saving fuel and which, in the process of burning, gets converted into a valuable original chemical. Accent on safety against possible furnace explosion — which is almost inherent in this fuel — is a special feature of this boiler. Plus it offers advantages of high performance, economy in operation and minimum maintenance. Reduces the chances of loss of ignition.

BHEL has specially designed this boiler for the Nagaland Pulp and Paper Mills Ltd. In collaboration with Combustion Engineering Inc., USA, one of the world's largest suppliers of Chemical Recovery Units for the Pulp and Paper Industry

Power to the people

Bharat Heavy Electricals Ltd
(A Government of India Undertaking)
High Pressure Boiler Plant
Tiruchirapalli 620 014

Registered Office:
15-20 Kasturba Gandhi Marg
New Delhi 110 001

A DECADE OF SERVICE FOR THE PHYSICALLY HANDICAPPED

Of late, the rehabilitation of physically handicapped and mentally retarded has gained importance, thanks to the concerted efforts of a few voluntary agencies and dedicated men in medical service. They have succeeded, to some extent, in kindling human interest in the welfare of this section and spotlighting the inherent potential of the handicapped for resurgence in life. Dr M. Natarajan is one of them who has opened new areas of employment for the physically handicapped.

Dr. M. Natarajan, Orthopaedic Surgeon and Principal of Medical College, is the Founder-Director of the Artificial Limb Centre, Madras, the first of its kind in India which has made inventions in limb-fitting and this Centre has broken new grounds in social and economic rehabilitation. Credit for diversifying the work of this Centre and shifting the emphasis on rehabilitation of the handicapped as a constituent of society goes to Dr. M. Natarajan whose deft hands heal not only patients of bone-diseases in India but also Asia.

It is estimated that over one lakh of physically handicapped persons of both sexes are in Tamil Nadu which include children suffering from poliomyelibo, cerebral palsy or congenial deformities. The road and industrial accidents, not infrequent and unconnected with a fast developing industrial society, also increase the victims of physical handicaps. Till 1963 when the Madras Artificial Limb Centre was set up, the amputees from the South had to go to Poona for fitting limbs and braces. The civilians had to wait for a long period, exceeding over two years, in the register and stay for two months at Poona as the Poona Centre is mainly meant for the Army personal. Poor and children could not afford for, a patient will have to spend nearly Rs. 1,500/- to get the limb, whether it is artificial leg or mechanical hand. As a result, many physically handicapped patiently submitted themselves to the agony of handicap and remained as burden on their families. Their handicap, they thought, was divine wretch and could not regain the "paradise lost." To retrieve them from such mental decadence was set up the Madras Artificial Limb Centre. A boon to the common man, this Centre was God-send.

The Artificial Limb Centre, Madras, is well-planned and scientifically organised. The workshop of the Centre fabricates the components, using the indigenous raw materials like the Kashmir Willow Wood and Kerala Red Cedar and Polyester Resin, adopting the latest techniques. The Bio-Engineer of the Centre is assisted by trained craftsmen and techniciens, three of them being physically handicapped. The workshop, accommodated in two rooms, has units engaged in various processes making appliances and spares as well as carrying out research in designing and developing pieces and foot and leg forms suited to Indian style like squatting and moving in kitchen without boot. The "Madras Foot" for artificial limb is designed by this Centre and it is more flexible, mobile, showing and helps the patient to squat resting on the buttocks and the external appearance is pleasing as if the amputee has regained the near-natural physical powers. The "Walking School" attached with the Centre trains the patient in the use of braces, foot-pieces, etc., and helps walk as freely as possible. The service of this school under a social worker is really appreciable.

V. PARANJOTHI M.A. D.J.,
Scrutiny Officer,
Information and Public Relations Department.

The Centre has so far fitted up 3,000 limbs. At present every month 28 amputees, on an average, are being fitted up with limbs and discharged. All patients from all sections of the society in the State and all over India come to the Centre for limb fitting.

The Artificial Limb Centre studies in detail the the history of each amputee, including socio-economic aspect, emotional behaviour suitability for fitting the limb as well as the employment potential. The Orthopaedic Surgeon, Medical Officer and Medical Social Worker make out respective case study reports for final examination of the Director. If found fit for limb or orthopaedic appliances, the prescription is given and further work is done by the concerned unit. The process of limb- fitting is so scientifically arranged and follow-up is carefully done.

The Director of the Centre is happy that the Government of Tamil Nadu have subsidised the cost of limbs fitted to the poor and over Rs. 45,000/- are spent normally by the Government in this respect. The railways also issue passes for the patients and their attendants from and to the Centre.

A unique feature of Madras Artificial Limb Centre is that a large number of amputees are replaced in gainful employment and many have gone back to their original jobs. The Centre itself acts as Employment Bureau for the Handicapped. The Vocational Rehabilitation Division is staffed with well-trained personnel including the Vocational Counsellor, Statiscian and Evaluator and Social Workers. The employment potential of the handicapped is fully investigated, and the aptitude, social background, temperament and skill of the persons are studied to depth before a live-register is prepared by vocational rehabilitation division. The employment sources in industry, trade and government are tapped for placing the physically handicapped persons. To the surprise of many offers of employment reach them from the personnel department of private industry. This new venture of the Centre has the creditable record of service, and if the Central Governments and also the trade public come forward, to the extent possible, to support the vocational rehabilitation of the disabled, the handicapped may rest assured of social security and see the rays of hope to eke out their livelihood through sweat and strain.

The response, however, is not encouraging since society still holds the view that the physically handicapped is not a viable human unit of production. A new approach to this problem of placing the handicapped in remunerative work is to be undertaken carefully, and the Madras Artificial Limb Centre has embarked upon a new experiemnt called "Self-employment."

PHYSICAL MEDICINE AND REHABILITATION

FOR THE PHYSICALLY HANDICAPED

Top:— Electro—Myographic study to find out the condition of muscle and nerves.

Middle:— Finger exercise to improve hand functioning.

Bottam:— Mennels apparatus to improve the movement of shoulder joint.

Physical Medicine is relatively an young and a new speciality in the field of Medicine. This is also now known as the 3rd phase medicine the preventive medicine, curative medicines being 1st and 2nd phases.

The usefulness of this speciality was realised during the 2nd World War. During this war the injured persons were treated in the Physical Medicine Centres and they were put back in the field much earlier than what happened during the First War. Further these centres rehabilitated severely injured persons, such as injury to the back bone and spinal cord resulting in the loss of power in lower limbs or in all four limbs and helped them to lead a useful life as a productive member of the society. These severely injured persons were negelected and lead a miserable life till death prior to the establishment of the Physical Medicine Centres.

These Centres originally existed only as Physiotherapy Centres where there were only paramedical personnel trained in physiotherapy.

Later the need for the leadership of doctors specialised in this speciality of Physical Medicine has been realised as the diagnosis and evaluation of various diseases and disabilities have become essential. So these centres have been converted into Physical Medcine Centres and these centres now function under the doctors specialised in Physical Medicine.

These centres now assume the responsibility of evaluation and treatment of various diseases. This speciality treats the various diseases of the locomotor system. For example :—

(1) In children—

(*a*) Anterior poliomyelibo otherwise known as infantable paraly sis. This disease mainly involves children. This is caused by minute organism known as virus. This affects the spinal cord that is the main pathway of the nervous system and results in the loss of power in the limbs. This is a preventable disease. But once it affects, it cripples the children very badly. These children after the treatment in the Physical Medicine Centres largely improve the power.

(*b*) *Cerebral Palsy*.—This is due to birth defect. This affects the brain and results in the loss of power in the limbs and sometimes speach and intelligency are affected. Such of these children are rehabilitated in these Centres.

(2) *In young adults*—

(*a*) Amputtes,

(*b*) Paraplegics mainly after injury to the back bone and the spinal cord.

(*c*) Fractures—After the immediate treatment of fractures these centres help to build up the muscle power and improve the mobility of the joints so that the people will be up and about in a short living.

Prof. M. NATARAJAN,
Principal,
Madras Medical College.

(3) *Middle age*—

Arthritis.—The arthritis is a progressive and crippling disease. The cause for the arthritis is not known. All the rheumatic diseases that involve the joints and sometime the patient's with back ache, shoulder stiffness are all treated in these centres.

(4) *Old age groups*—

(*a*) *Stroke*:—The stroke to the patient's lose the power of one side of the limbs. These patients have to be rehabilitated.

Apart from these various other diseases including the nervous and the brain and also some of the chest complaint in old age group or in asthmatic patients all require treatment in these Centres.

The Physical Medicine Centres have 2 important sections.

1. Electrodiagnosis and evaluation and

2. Treatment.

1. *Electrodiagnosis*:—Electro-Miography is a recent tool to diagnose the various paralytic conditions as Electrocardiogram, Electro Encophalogram is in the diagnose of heart condition and brain condition respectively.

Evaluation of the various disabilities is very important in presenting treatment and follow up or progresis.

The treatment followed in these Centres are :

1. Internal energy
2. External energy.

The internal energy will improve the strength and bulk in various muscles and bring about mobility in the joints. This is achieved by various types of exercises, massage and manipulation.

The external energy is obtained from :

(*a*) Heat
(*b*) Electricity
(*c*) Ultrasounds
(*d*) Water
(*e*) Ultraviolet Rays

The photo shows
above : Fabrication Prospthesis
Centre: (Left) Stump excercise
(Right) Wax bath
Below :
(Left) An amputee riding bicycle
(Middle) Walking on the even floor
(Right) Climbing up and down steps

The various treatment followed in these Centres are not new. The massage is afterall is instinct. The uses of electricity and ultraviolet Rays and exercise are all known to us even three thousand years ago. But now these treatments are scientifically followed after a correct evaluation of the disabilities.

Hydrotherapy :—

It is under water exercise. Hence the power of buoyancy of water is used for various exercises after proper evaluation. The doctor is guiding the therapist to chart out the exercise programme. This is useful to improve power in paralysed muscles as in anterior polyomybis and cerebral paralysis and improve joint movement in Rheumatism.

In the process of rehabilitation various other modalities are also utilised. The important one is occupational Therapy where certain jobs are prescribed in the treatment and improve the muscle power. Further it becomes essential in certain cases to fit with appliances or prostheses to promotes the ambulation. So a separate limb Fitting Centre is an essential link to these Physical Medicine Centres.

An artificial limb Centre which fabricates all types of artificial limbs and orthopaedicappliances, fit them on patients and train them in their use, is a part of this department. There is auntcthe physical medicine specialist Dr. K. Janardhanam who is the limb fitting surgeon of the Centre and looks after the medical and physiotherapy parts while the engineering part is looked after by a bioengineer, Mr. A. Balakrishnan.

There is also a social vocational services section under a trained vocational counseller, Mr. S.T. Markandeyan, which imparts social and vocational assistance to the disabled patients. Thus a complete team of rehabilitation exists in the department to impart a programme of "total rehabilitation" to the patients.

There is a full fiedged Physical Medicine Department in the Government General Hospital, Madras. Dr. I. S. Shanmugam, Specialist. is the head of this department. There is also another Centre namely Andhra Mahila Sabha at Adyar.

The usefulness of this therapy is reorganised by the Government and there is a programme with the Government to open Physiotherapy and brace Centres in various Districts and Taluk Headquarters Hospital.

A PIONEER INSTITUTION FOR MENTALLY HANDI—CAPPED IN MADURAI

The institution for the mentally handicapped children at Madurai is one of the pioneering ventures in the history of social service organisation of this country. Thiw institution was started only recently to take care of the mentally handicapped children and for their education, training in simple carpentary, tailoring, gardening, poultry keeping, diary farming, etc. and for the ultimate rehabilitation of these unfortunate young ones. The services rendered by the institution is so noble and note-worthy in that that it aims to shape these young people to become useful citizens of the country.

The strength of the institution at present is 16 of which five students are non-residents. The Collector of Madurai District, Thiru R.A. Seetharam Das—the patron of this institution known as 'Anbagam'—has granted land to put up permenent building and Rs. 8,000 through donations from village panchayats.

This institution managed by a committee of active workers is being supported by the liberal contributions and grants from the Government. The institution has a permanent building of its own and the dedication of the building was made by His Excellency, the Governor of Tamilnadu on 11.12.73.

The students of this institution are engaged in playing carrom and most of the time they spend in listening music. They are also entertained by conducting periodical film-shows by the Field Publicity Department.

Field Publicity Officer Madurai.

THE TAMILNADU CO-OPERATIVE HOUSING SOCIEY LIMITED, NO. X-406, MADRAS-7.

" Venkataswamy Vagheesam Nilayam,

No. 14, Ritherdon Road, Vepery, MADRAS - 600007.

Telegrams: "HOUSEBANK " Post Box No. 486 Telephone No. 30800

President :
THIRU PALANIVEL RAJAN, B.S., B.L., M.L.A.,

Vice-President :
THIRU P. KASTHURI PILLAI

Treasurer :
THIRU S. PALANISWAMY, M. A.,

—oOo—

Authorised Share Capital	—	Rs. 2·5 crores
Paid up Share Capital	—	Rs. 2,09,07,300
Loan outstanding against Primary House Mortgage Societies and Building Societies		Rs. 12,40,07,729

Long term Loans for Construction of new houses, additions and improvements etc., repayable in twenty years are granted to individuals through the Primary House Mortgage Societies and the various types of Building Societies in Tamil Nadu for the following purposes.

		MAXIMUM INDIVIDUAL LOAN
1. Construction of new houses	—	Rs. 25,000
2. Improvements, additions and alterations to the exeisting houses		Rs. 10,000
3. For minor repairs	—	Rs. 1,000

P. K. PATHMANATHAN, B.A., H.D.C.,
Joint Registrar and Secretary.

Kidwai and Nehru awards for the Scientists of Tamil Nadu

Dr. V. Santhanam, Project Coordinator (cotton) and head of the Regional Station of the Indian Agricultural Research Institue, Coimbatore is one of the 10 agricultural scientists and Research Workers who received the Rafi Ahmed Kidwai Memorial Awards on 15th December 1973 at New Delhi.

The Rafi Ahmed Kidwai Memorial Award was instituted by the Indian Council of Agricultural Research to encourage the Agricultural Scientists and Research workers for their outstanding work and contribution in the field of agricultural research. The award carry a cash prize of Rs. 10,000 each.

Dr. P. Vidhyasakaran, Assistant Professor of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore and Dr. P. Richard Masillamony, Lecturer in Viroloy, Madras Veterinary College are among the four post-graduate students in Agricultural and animal husbandry who received the Jawaharlal Nehru Awards for the year 1972.

The Jawaharlal Nehru Award was instituted by the Indian Council of Agricultural Research in 1969 to provide incentive to post-graduate students to carry out research of a high order. The value of the award is Rs. 5,000 in cash and a medal each.

The Rafi Ahmed Kidwai Memorial Prize for the biennium 1966--67 has been awarded to Dr. V. Santhanam, jointly with Thiru R. Krishnamourthy, for his significant contributions in Plant Breeding with special reference to cotton.

Dr. Santhanam, who is an outstanding cotton breeder of the country, is now the Project Co-ordinator of the All-India Co-ordinated Cotton Improvement Project. He was instrumental in introducing the concept of a plant type and quick maturity in the cotton breeding programme for off-season cotton cultivation in rice fallows and also distributed early-generation hybrid material to several Research Centres in the country. One of his significant contributions is the development of extra-long-staple Egyptian type of cotton suitable for import substitution which has long defied acclimatization under Indian conditions. Varieties like " Sujata " and " Suvin, " which have come out of the work at the Regional Research Station, Coimbatore, are the first cottons evolved in India which can spin 100's and thus offer good scope for halting the import of the extra-long cotton into the country. Dr. Santhanam in addition to his original scientific contribution has provided able leadership for the development and release of several new long staple varieties of cotton which have since taken the country towards self-reliance in cotton production.

Dr. Santhanam is the author of more than 100 publications, which include a booklet on breeding procedures for cotton.

The Jawaharlal Nehru Award was given to Dr. P. Vidhyasekaran for his significant contribution in the field of physiology of disease resistance. He studied the physiology of two ragi varieties, one highly susceptible and the other moderately resistant to the fungi.

Helminthosporium nodulosum and **H. tetramera,** with a view to gain an insight into the mechanism of disease resistance. A detailed analysis of chemical constituents of healthy and diseased leaves, at different stages of growth of the plants and at different levels of disease incidence, revealed differences in respect of several constituents and physiological activities. A sharp increase in respiration was observed in the resistant as compared to the susceptible variety when they were infected. There were differences also in the amounts of particular amino acids and enzymatic activities. Their interactions were studied and their relationship to diseased and healthy conditions of the varieties were brought out by him. Total sugar content of the leaves was found to have relationship with disease resistance, the resistant variety having a high sugar content. Spraying glucose sugar, significantly increased sugar content of the leaves and this was reflected in a decrease in disease intensity, thus confirming the relationship between the disease and sugar content of leaf.

The status of the varieties in respect of mineral contents, such as sodium, calcium, magnesium, sulphur, iron and copper was examined and their relationship to susceptibility or resistance to the disease was brought out by Dr. P. Vidyasekaran.

His research work has contributed useful knowledge on the nature and mechanism of resistance to **Helminthosporium** in ragi.

The Jawaharlal Nehru Award for outstanding post-graduate research in Agricultural Sciences for the year 1972 was awarded to Dr. P. Richard Masilamony for his significant contributions in the field of veterinary microbiology.

For his Ph. D. degree research work, Dr. Masillamony studied reo-virus infections in bonnet monkeys (**Macaca radiata**) to advance knowledge of the pathological potential of these viruses for man and animals. In cell-culture studies with reo-virus type 3, he showed by application of fluorescent antibody techniques, that the virus was actually contained in the inclusion bodies and that the virus particles contain both double and single stranded ribonucleic acid which, as reported by other works, is a characteristic of reo-virus types 1 and 2. Dr. Masillamony conducted fundamental studies on the isolation of virus after oral-nasal inoculation to find out pathogenecity and rate of elimination. He gathered valuable information on these aspects and found that as early as 3 days post-inoculation the earliest in the autopsy series, titratable virus was found in tonsils, trachea, lungs and in the small bowel, mesenteric lymph nodes, and liver. While the post-inoculation virus was obtained from spleen and kidneys it could not be recovered from pancreas, heart, cerebrum or cerebellum. Observations indicated that histologic changes were not prominent in tissues other than the gut wall. Monkeys were found to develop homotypic haemagglutination inhibiting humoral antibody in high titres that were maintained virtually unchanged for at least another 5 weeks. The haemagglutination inhibiting reo-virus antibody patterns were studied which were found to resemble those for Influenza A and Dengue antibody patterns.

The research carried out by Dr. P. Richard Masillamony has contributed richly toward elucidating the characteristics of reo-virus in causing pathological changes in human and animal infections. The reserach was conducted at the Department of Microbiology, Christian Medical College, Vellore under the guidance of Dr. Ruth M. Myers, formerly Professor of Microbiology, Christian Medical College, Vellore.

—oOo—

The Award Recipients with the Agriculture Minister and the Vice-Chancellor of the Agricultural University.
Left to right Standing:— Dr. Rangasamy V. C. Dr. P. Vidyasekar Recipient of Nehru Award, Tamil Nadu. Minister for Agriculture: Thiru S. P. Adithanar, Dr. Santhanam and Dr. Krishnamoorthy, Recipients of Kidwai memorial Awards and P. Richard Masillamony, Recipient of Jawaharlal Nehru Award.

AN APPEAL TO THE SCIENTIST.

The Agricultural Minister Thiru S.P. Aditanar, urged the scientists to evolve a paddy strain which could be harvested in 90 or 95 days, instead of the present duration of 105 days of kuruvai paddy. If this was evolved the agriculturists of Thanjavur could raise two crops to the full extent of about 13 lakhs acres. At present they raised two crops in about 4 lakh acres only. If this was made possible, Thanjavur district could become a "rice-bowl" for the entire country, the Minister Said.

Thiru. Aditanar offered a cash award of Rs. 10,000 to any scientist who evolves a quick-growing variety of tree capable of producing 40 to 45 tonnes of fire wood per acre per year.

Thiru S.P. Aditanar, said if such a tree was developed it would be possi- to run the thermal stations in the ble State without depending on coal from North India and tackle the problem of power shortage." ☙

A MODEL PANCHAYAT WITHOUT AGRICULTURAL INCOME.

Thirunagar is a peculiar village panchayat on the outskirts of Madurai City in Tamil Nadu. It has no agricultural lands like other Panchayats and its annual revenue is about Rs. 62,000 from various sources.

There are 620 houses in this Panchayat and nearly 40 percent of its 4,200 population are those retired from service and settled down in this village which is known for its calm atmosphere and healthy climate. Six hours a day protected water supply to the residents, a net work of forty feet roads connecting the eight main streets, and lighting up the roads and maintaining a beautiful park including a 5.5 acre play ground are some of its commitments.

This Village Panchayat has ten educational institutions—five of them are nursury English medium schools, one high elementary school, and two high schools for boys and girls —in addition to this, there is a Secondary Grade Teachers' Training School and a Co-operative Training School.

The Seethalakshmi Trust spends several thousands of rupees a year on the residents of the Thirunagar Panchayat who benefit through the girls high school run by the trust and the maternity home..

The maternity home was started in February, 1973 and since that day 200 children have been born in this home and about 75 tubectomy operations have been conducted by its Family Planning Wing during the year 1973. The trust spends Rs. 25,000 a year on the maintenance of this maternity home which is run on charities.

There is a Consumer Co-operative Society functioning in this Panchayat with all the 420 house holders members.

The Panchayat is served adequately by the nationalised Pandyan Roadways Corporation city buses.

All said, Thirunagar Panchayat made its mark in other fields too—it contributed Rs. 51,000 the maximum contributed by any single Panchayat in Tamil Nadu, towards the National Defence Fund. It is a wealthy Panchayat too, having invested about 3 lakhs in the Centre and State Government Loans. And with all its commitments by virtue of its claim as a model Panchayat, the cash balance in its coffers is Rs. 3 lakhs.

BIGGEST STONE BUILT TANK IN TAMIL NADU

At Madurai in Tamil Nadu, famous float festival is held every year at Mariamman Tank. This tank which is 1,000 ft. long and 950 ft. wide is said to be the biggest stone built tank in the South.

King Thirumalai Nayak who ruled Madurai in the 17th century initiated this float festival as a part of his birthday celebration. The float is a colourful festival when the idols of Goddess Meenakshi and Lord Sundereswarar are placed in the decorated float and drawn inside the tank by devotees. At night the float and also the tank bund are beautifully lit with oil lamps and coloured lights. Thousands of people gather at the Mariamman Tank during the festival and while paying homage to the reigning deities the people aso remember king who gave this cityl a beautiful temple. It attracts thousands of tourists a day from abroad and inland.

Field Publicity Officer,
Madurai.

SUCCESS STORY OF ANIMAL HUSBANDRY DEVELOPMENT UNDER M.F.A.L. DEVELOPMENT AGENCY SCHEME IN SALEM DISTRICT

The Marginal Farmers and Agricultural Labourers Development Agency operating in Valappady and Peddanaickanpalayam Block Development areas of Salem district has extended creditable service in the Animal Husbandary which has produced a very good impact in that area. The details are :

(*a*) **Landless Labourers** : Upto 30—6—1973, 1,263 units of Ewes ; 701 Units of Stud Rams and 546 Units of Poultry have been supplied to the landless labourers against the loan of Rs. 1,99,049.

(*b*) **Sub-Marginal Farmers** : 1,483 units of milch animals and 157 units of Poultry have been supplied to sub-marginal farmers against the loan of Rs. 12,61,125.

(*c*) **Marginal Farmer** : For Marginal Farmers, 1,141 units of milch animals and 106 units of Poultry have been supplied against the loan of Rs. 11,04,179.

The entire scheme of Animal Husbandary for the supply of milch animals and poultry have been modified and put into operation recently with the addition of sheep breeding for Sub-Marginal and Marginal Farmers. As per the revised schemes, Rs. 3,800 will be extended as loan to each beneficiary for the purchase of 2 milch and one heifer, Rs. 2,400 will be given for poultry for the establishment of a Poultry Unit consisting of 100 birds and Rs. 2,150 for the purchase of 40 ewes and one ram.

Establishment of a Milk Chilling Unit and opening of Milk Collection Centre.—A sum of Rs. 1,46,250 was extended to the Salem Co-operative Central Bank as a long term loan for the purchase of a chilling plant for storing milk collected and for a van for the collection and transport of milk from the project areas. This agency had paid 1/3 of the loan amount as subsidy. 20 milking centres have been established in the project area and nearly 1,500 litres of milk are being daily collected through the lorry provided, stored and sent to various places like Madras, Erode, etc.

Field Publicity Officer,
Govt. of India, Salem.

EXPERIMENTS ON SCHOENITE—AN INDIGENOUS POTASH FERTILISER

The potash salt extracted from the brine is called schoenite of potash, and its chemical formula is K_2SO_4. $MgSO_4$, $6H_2O$. At present a private company in Tuticorin is producing schoenite of potash from salt bitterns on the basis of a process developed by the Central Salt and Marine Chemicals Research Institute, Bhavanagar. According to the National Research Development Corporation of New Delhi schoenite of potash contains 22-24 percent of potassium, 10—12 per cent of magnesium, 48—50 per cent of sulphur and less than 2.5 per cent of chlorides. It contains not only potassium but also other micronutrients such as magnesium and sulphur.

A. Pot culture studies :

Groundnut requires large amount of potash, which is now being supplied as Muriate of Potash. Schoenite being an indigenous potash fertiliser was tested along with Muriate of Potash on groundnut. The initial trials were conducted in pots for three years (1967-69). The results indicated that Schoenite had the same effect on the yield of Groundnut as Muriate of Potash. Analysis of the soil samples at the end of three years of trial were also carried out for different soil characters like soil reaction, salinity, available nutrients, exchangeable cations and sulphate. The results indicated no accumulation of salt, or appreciable changes in soil PH by the use of Schoenite. Similar was the case in respect of available nutrients. There was a tendency for the exchangeable calcium to increase with no adverse accumulation of sulphate in the Schoenite treated plots.

B. Field Experiments :

Field experiments were conducted between 1970—'72 with three levels of K_2O as Muriate of Potash and as Schoenite. The experiment was conducted in the same field during the three years and the random allocation of different treatments remained the same, to study the continued effect of application of Schoenite. Reproduced below is the yield obtained for the two types of K carriers at the present departmental recommendation of K_2O (i.e. 51 kg/ha) for summer crop.

Yield of Groundnut pods (in Kg/ha)

	Years			
	1970	1971	1972	Mean yield
(*a*) Muriate of Potash	2010	1572	2696	2093
(*b*) Schoenite	2072	1695	2715	2161

The results confirmed the previous finding that schoenite is as good as Muriate of Potash as source of K_2O in Groundnut nutrition. No marked difference in the soil chemical characteristics could be observed even after three years of continuous application of schoenite.

Other effects of schoenite on Groundnut :

There are indications that the incidence of tikka is minimised in the Schoenite applied plots, perhaps due to the effect of Magnesium.

RESULTS OF DISTRICT TRIALS

Sl. No.	*Block*	*District*	*Variety*	*Yield obtained Kg/ha as. Muriate of Potash*	*As Schoenite*	*Difference Plus or Minus compared to M.P.*	%
1.	2.	3.	4.	5.	6.	7.	8.
1	Vridhachalam.	South Arcot	TMV. 7	296	472	Plus 176	59
1	Tirupathur	North Arcot	,,	710	745	Plus 35	5
3	Salempatti	Salem.	,,	708	792	Plus 84	12
4	T.V. Malai	North Arcot.	,,	560	620	Plus 60	11
5	Cuddalore.	South Arcot.	POL. 1	660	900	Plus 240	36
6	Tindivanam	South Arcot	TMV. 10	312	376	Plus 64	20
7	Chengam.	North Arcot	TMV. 7	568	596	Plus 28	5
8	Arakonam.	North Arcot	,,	440	480	Plus 40	9
9	Barguar.	Dharmapuri.	,,	448	520	Plus 72	16
10	Kancheepuram	Chingleput.	TMV. 2	340	316	Minus 24	7
11		Salem.	TMV. 2	520	590	Plus 70	13
12		North Arcot	TMV. 9	300	360	Plus 60	20
13	Vellore.	North Arcot	TMV. 7	604	632	Plus 28	5
				6466	7399		
			Mean ::	497	569	Plus 72	14%

C. District Trials :

With a view to test the findings of the Research Station in the farmer's holdings spread over different locations, observation plots were laid out in 1972. There were thirteen centres in the districts of South Arcot, North Arcot, Salem, Dharmapuri and Chingleput. Schoenite was compared with Muriate of Potash at the same rate of K2O per acre. The results are given in the previous page.

The results obtained clearly indicated that Schoenite application to Groundnut has resulted in increased yields

Effect of continuous application of Schoenite.

Doubts have been expressed that continuous application of Schoenite which contains 8% of Magnesium, will result in Magnesium accumulation in the soil to a toxic level.

The studies at Regional Agricultural Research Station, Tindivanam, have indicated that in plots applied with Schoenite, there has been decline in the exchangeable Mg. content instead of an increase as expected. Further that application of Magnesium at the rate as containecd in Schoenite even for several years reach the toxic level is only theoriti cal possibility.

SALIENT FEATURES OF SCHOENITE

1. It is an indigenous potassic fertiliser.

2. For Groundnut which is huge potash feeder Schoenite is a good substitute for Muriate of Potash—an imported fertiliser.

3. Schoenite can replace Muriate of Potash thereby saving valuable foreign exchange.

4. Schoenite also supplies sulphur which is an essential element for Oilseed crop.

5. The presence of Magnesium in schoenite will be an additional advantage in minimising tikka disease incidence.

Additional Director of Agriculture, Tiruchirappalli.

THE BEST HIGH SCHOOL IN TAMIL NADU

T. V. S. High School, Madurai in Tamil Nadu has been adjudged as the best High School for the year 1970 in the State by Bharathy Acadamy. T. V. Sundaram Iyengar Educational Institutions, co-educational in character, are situated on a beautiful campus right in the centre of the posh T.V.S. Colony, just 5 Kms. south of the temple of divine mother Goddess Meenakshi.

WELL-EQUIPPED MUSEUM

An excellant and well equipped museum maintained by the T.V.S. Primary School, the T.V.S. High School and the T.V.S. Lakshmi Higher Secondary School is the pride of the campus. A collection of rare specimens of birds, mammals, reptiles and other typical fauna of South India such as the cunning fox and the timid wild cat and freaks of nature of an unique variety like the twin headed chick. That is the T.V.S. School museum at one glance. The Headmaster of this High School Thiru S. Ramasamy is the receipient of State Award for 1970 as the Best Teacher.

The aim of the school is to train and equip the young for a "full life and enlightened citizenship." With a view to achieving this lofty aim, instruction is "child and activity centred through provision of varied opportunities to drawn out the best in each student."

The day begins with an impressive prayer-meet. A Kural is explained daily and the next day it is recited by selected pupils. A noble and worthy thought of some eminent person is introduced every Monday and the pupils are required to expatiate it in the coming days of the week. A planned programme of moral instruction is followed with success. For slow learners and for those who lack proper study facilities at home, free supervised study classes are proving a great boon. Special emphasis is laid on attention to co-curricular activities.

The schools are well equipped with fine buildings with up-to-date amenities, well-furnished laboratories, a good library with 9,000 volumes, housed in a separate spacious block with facilities for reading, an extensive play field with an 800 metre cinder track, the only one of its kind in South India, audio visual aids and provision for the study of arts and crafts.

SAVINGS SCHEME

This school is the pioneer in this part of the country in implementing the unique scheme known as "The Lakshmi Students Small Savings Scheme"—a scheme which has become very popular now-a-days, thanks to the appreciation extended to the scheme by the State Government. Regular pass-books are issued to this school children and there are at present more than 2,000 accounts covering fixed deposits worth Rs. 23,000/- besides a cash account of Rs. 25,000/- in Savings Bank.

PRACTICE IN ROAD SAFETY RULES

It is only in the fitness of things that this T.V.S. House, the pioneers in road transport in Tamil Nadu, nay, India, thought of putting a Children's Traffic Training Park, similar to the Shell's Park at Madras, very near our schools, at a cost of nearly two lakh rupees. The park helps to train in road sense, not only our school children but also the pupils of other schools in the city.

"A good education is a sound investment for the nation and it is a factor of production."

Field Publicity Officer, Madurai.

A NEW VARIETY OF PADDY FOR TAMIL NADU

Tamil Nadu stands foremost in the matter of average yield of rice per acre in India and this is due to the coverage of a large area under improved methods of farming. Intensive cultivation of high yielding varieties was started in the year 1965, when the Chinese variety 'Taichung Native-1' was introduced in India. It was during the same year, the popular variety 'ADT.27' developed by the rice breeders of Tamil Nadu was released for large scale cultivation. 'IR.8', 'IR.5,' 'IR. 20,' 'IR. 22' and 'IR. 24, are subsequently introduced in India from philipines. Among them 'IR. 8' is considered to be the best in yield. Utilising 'IR8' and 'Taichung Native. 1' as donor parents, Paddy Breeding Station, Coimbatore came out successful in developing three high yielding strains namely 'Co. 33' 'Co. 34' and 'Co. 35' which were released for cultivation in Tamil Nadu under the popular names 'Karuna', 'Kanchi' and 'Cauvery', respectively. Among the other varieties introduced, and tried, 'Ponni, 'Jaya', 'Padma', 'Kannagi' and 'Triveni' are popular among farmers.

Research on the development of newer varieties of Paddy to suit the different agro-climatic zones of Tamil Nadu, is being pursued intensively at the Tamil Nadu Agricultural University. Variety 'Bhavani' was released by this University as a Pongal gift last year. This variety comes up well through out the year and is very much liked by farmers because of its high yielding ability even at lower level of fertilizers. The next release during the year was strain 'Co. 36', which is also a strain of high yield potential but this comes up well only when grown in the samba season.

The new variety 'Vaigai' (Co. 37) that is now released is also a strain developed at Paddy Breeding Station, Coimbatore from a cross between 'Taichung Native. 1' and 'Co. 29'. It is similar to strain 'Kanchi' in duration and it comes to maturity in 115-120 days after sowing. The plants are semi-dwarf in habit and grow to a height of 90 cms. or three feet. At low and medium level of fertilizers it yields 15 to 19% more than 'Kanchi'. It is more resistant to blast, blight and green leaf hopper and it yields about 2.25 tonnes per acre. Its rice is slightly finer than 'Kanchi'.

"Vaigai" is recommended for cultivation in the districts of Coimbatore, Salem, Madurai, South Arcot, North Arcot and Ramanathapuram and can be grown in Kar, Swarnavari, early Samba and Navarai seasons. It can be cultivated in the Vaigai river project areas and being insensitive to photoperiod it can be grown throughout the year.

'Vaigai' paddy has performed well in several other States in India and is found to possess wide adaptability making it fit for cultivation under varying seasonal and climatic conditions. Hence, there is good scope for this variety to spread in Tamil Nadu.

It is estimated that 'Vaigai' can be cultivated in about 3.5 lakhs of acres in Tamil Nadu and this will result in an additional production of about one lakh tons of food grains every year. By cultivating Vaigai, farmers get a net profit of 250 to 300 rupees per acre over Kanchi, without incurring any additional expenditure.

Source :

Dept of Agrl. Botany, Tamil Nadu Agricultural University, Coimbatore, 641003.

——oOo——

TEACHER IS A PROGRESSIVE FARMER

Kallampatty is a village in Madurai District of Tamil Nadu. Village Population is 1,700 and 400 children are studying in the Higher Elementary School. Cent per cent of the population are actively engaged in agriculture. There is one Credit Society with 410 as its members and the annual turnover Rs. 2.5 lakhs. There is no arrears in the year end from the members and are very prompt in payment. To the credit of the village a milk union is successfully functioning with 200 members.

Thiru M. Arjunan, B.A., B.T., is a teacher belonging to this Kallampatty village. He is a young man of 36 years who has 5 children and accepted family planning. He is a progressive farmer also. He has 3 acres of wet lands in this village. He sets an example to others in the field of agriculture. As an educated man from the village he adopts modern techniques in this field. Out of his school time he directly engages himself in the operation of agricultural field activities with his better half too. He has cultivated I.R. 8 in his field and the recent yield was 3,500 Kgs. per acre. This is set to be highest in Melur Panchayat Union area. According to this he saves Rs. 1,500 net per acre and he has so far invested more than Rs. 10,000 in various savings schemes of Government. He closely follows the advices of Agricultural Department.

Field Publicity Officer Madurai.

——oOo——

MULTI-PURPOSE USES OF SAFFLOWER

Safflower is a minor oil seed crop of India, but it occupies 75% of the world acreage. For centuries its culture was confined to regions of India, where the flowers were used as a source of dye for clothing and food. Synthetic dyes have now largely replaced it, and it is grown mainly for the production of oil. The utility of the crop is multifold as a vegetable and edible oil for home, as a drying oil and dye for trade, as a feed to poultry and cattle, as a manure to soil, as a forage crop to work animal and as a natural fence against trespass.

Edible oil :—Safflower seed contains 30% oil. The oil is normally very pale yellow in colour which after bleeching may become light in colour. The colour is probably associated with carotenes or other pigments in the oils. Carotene content has been reported as 12.8 mgm. per litre which is considered high for the seed oils examined. The edible uses of safflower oil are well known in those areas where the crop is indigenous.

The use of safflower oil in more sophisticated societies is recent. It is now commonly found in many food products, including cooking oil, margarine, salad dressing, frozen desserts and speciality breads. Filled milk, imitation creams, imitation eggs and similar products are also produced with this oil.

The oil is becoming more popular as an edible oil in many countries, since it has a high degree of unsaturated fatty acids. From medical research reports, it is seen that the high linoleic acid present in safflower oil, has some therapeutic value in preventing artherosclerosis, a circulatory system disease. It is also responsible in reducing the cholesterol content of the blood serum. The oil can be used for adulterating ghee and sesame oil and in the preparation of "Macassar" hair oil. The so called "sweet oil" of Bombay is obtained by crushing a mixture of groundnut, sesame and safflower seeds. Charred safflower oil is used in the treatment of sores and rheumatism, and the seeds are considered to be diuretic and a tonic.

Industrial uses :—The oil is a drying oil, intermediate between soyabean and linseed oils in total unsaturation. The industrial uses were mainly in the field of protective coatings, for which its unique high linoleic acid content enables the oil to form fast drying non yellowing films, with low wrinkling and resistance to dew damage characteristics Its excellent colour and heat bleaching characteristics enable safflower oil to be used where ever light coloured and products are desired. Exterior house paints based on safflower oil remain essentially white, compared to colour, changes in linseed oil paints which shows a marked increase in yellowing when in shadow. Varnishes and ready mixed paints manufactured in India containing modified safflower oil were superior to those formulated with linseed oil.

R. KULANDAIVELU, M.Sc. (AG.,)
&
V. S. SHANMUGASUNDARAM M.Sc. (AG.,) *Tamil Nadu Agricultural University, Coimbotore-3.*

From safflower oil an Indian product called 'Roghan' is prepared which is used for preservation of leather and the production of waterproof cloth. 'Roghan' is a geltinous material and is obtained by heating the oil for two hours to approximately 300 degree centigrade and then pouring the hot oil into cold water. This is used as glass cement and as a fixing material for ornamental stones and tiles.

Meal and Flour :—Safflower meal from undecorticated seed is a useful animal feed for cattle and sheep, but is less suitable for poultry and pigs owing to its low energy content. Partially decorticated meal is suitable for ruminants and with lysine and methionine fortification for poultry also. The floor obtained by basic removal of oil and hull is light coloured, bitter and has considerable potential as a human food supplement in protein deficient diets. It has been suggested that the hulls, which are usually of little value could be used in the production of furfural, abrasives, or for insulation and fillers.

Dye:—'Carthamin' the red dye extracted from its floral parts is used for colouring silk and wollen fabrics. By suitable treatments carthamin can be made to produce a variety of red colours, the most common ranging from cherry to red. It is now used to colour cosmetics, food including confectionation, artificial flower and liqueurs. In Gloucestershire such large quantities of the flowers were used to colour sausages and cheese that it has considerable purgative effect. In India the florets are added to rice, bread and pickles to give them an attractive colour. Saffron rice is served on ceremonial occasions and in making offerings to Gods. It was said by Arabs that the florets have a diaphoretic properties and was used by them to promote sweating to cure fever. The tubular florets are commonly used as an adulterant for true saffron or as a less costly substitute.

Forage :—Safflower is considered as a green fodder or silage crop for drier regions where other fodder crops would produce, but small amounts of feed. Grazing can be commenced when the crop is established in about eight weeks after sowing. Yield of 4,500 kg. of green material have been obtained in India where it is relished by cattle especially in the young stages.

Green Vegetables :—The young leaves are eaten as a vegetable side dish with curry or rice. In India and Burma the leaves and thinnings of the less spiny varieties are used as a vegetable. A brew made from the foliage is said to prevent abortion and barren condition dreaded by Indian women.

Released by :
Communication Centre, Tamil Nadu Agricultural University, Coimbatore-3.

MUSHROOM CULTIVATION

For farmers who are familiar with the cultivation of crops, the very idea that mushrooms also can be cultivated, may appear revolutionary and exciting. Many people, especially in villages would have tasted a variety of delicious mushrooms collected from fields and forests during rainy season. A few mushrooms can be cultivated in the farm to get supply all round the year. This will also augment farm income and the raw materials for the cultivation are available in any farm.

Mushrooms are fleshy plants belonging to the fungi group. They live in decaying organic matter. The absence of green colouring matter called chlorophyll distinguishes fungi from higher plants. Mushrooms are the commonest and most conspicuous of all fungi. In fact, Mycology referring to the science of the study of fungi was derived from the Greek word mykes meaning mushrooms. Ancient Greeks and Romans considered these as food of the Gods. Mushroom refers to the conspicuous umbrella shaped fruiting body emerging from an extensive underground net work of root-like structures called mycelium. In forests this underground mycelium may live in a place for many years and produce mushrooms year after year. The common varieties have short thick stem and umbrella-like fleshy cap. On the under surface of the cap are many thin sheets of flesh which radiate from the stem towards the margin of the cap. The seeds called spores are produced on these sheets, blown away by wind and grow into new mushrooms. An average sized mushroom may produce about 200 crores of seeds of about 1/2,500 of an inch in diameter.

While many of the mushrooms growing wild are edible, some are highly poisonous and are sometimes called toadstools. There is no completely safe way of distinguishing between edible and poisonous mushroom by an ordinary man. Only a specialist can do it. Some of the superstitions to distinguish poisonous mushrooms by blackening of silver spoon and onions are not correct. It is said that one can make the mistake of taking a poisonous mushroom as edible only once! Some of the wild edible mushrooms are morels, horsemushroom, puff balls, honey agaric, oyster mushroom, etc. The royal agaric or Caesar's amanita was the favourite of the Roman emperor Nero. These edible mushrooms vary in size. Some puff balls may grow to a diameter of even 4 feet. While many are white, some are brightly and attractively coloured. In the Himalayas *Morchella* species grow wild in plenty in forests and apple orchards and are collected by villagers, dried and sold to get good income. In Uttar Pradesh, wild truffles are eaten. One of the deadliest mushrooms is Destroying

R. JEYARAMAN,
Head of the Dept. of
PLANT PATHOLOGY,
Tamil Nadu Agricultural University, Coimbatore.

Angel. Another mushroom **Amanita muscaria** is poisonous only when eaten in large amounts and is chewed by natives in Siberia to produce hallucinations. The French were the first to grow mushrooms 300 years ago. At present mushroom cultivation is a flourishing industry in U.K. and the U.S.A. where the annual productions are 40 and 60 million pounds respectively. The two mushrooms grown all over the world are the temperate mushroom (**Volvariella** species). The former is cultivated on compost made from wheat straw in cool places having a temperature of 16 to 18 degree centigrade and requires good skill and much capital investment. But the paddy straw mushroom is simple to grow in the plains of Tamil Nadu and does not require much capital investment. It grows well at 30 to 37 degree centigrade. But it does not grow well when the minimum temperature drops below 24 degree centigrade. The method of growing this mushrooms has been standardised at the Plant Pathology Department, Agricultural Colleges and Research Institute, Tamil Nadu Agricultural University, Coimbatore and is described here. The spawn of the fungus which serves the purpose of seed material is produced in the laboratory and supplied to the interested growers.

The bed is prepared in a protected shady place preferably under a roof—A platform of bricks or wooden planks about 1 ft. high, 3 ft. square is prepared. For one bed about 40 kg. of good, stiff paddy straw is necessary. It is tied into small bundles 3.5 to 4 ft. long and 10 inches diameter weighing 1 kg. and soaked in a tank of water for 12-16 hours. Eight bundles are placed in two layers in the same direction. The spawn is divided into bits of 1" and placed 4" apart all around the bed 1" form the edge. A spoonful of red gram powder is sprinkled over each spawn piece. Another 8 bundles of paddy straw is placed over this layer, perpendicular to the first layer and the spawn applied as before. A third layer is then placed and spawn applied. Then the bed is covered with a layer of straw bundles, pressed firmly by hand and watered with a rose can. Two bottles of spawn are required for one bed. The bed is covered with white transparent polythene sheet and watered daily just to keep it moist but not sudden. The mushrooms appear in 10—13 days and continue for 4 to 5 days. A second crop may appear after a week. After that the beds should be removed. A bed may yield 2 to 3 kg. of mushrooms.

The mushroom contains about 90% water, 3% protein, 5% carbohydrates, small amount of fat and mineral salts. Both stem and cap are edible and so no part is wasted unlike many vegetables. This is too delicate to transport to distant markets.

ADDED INCENTIVES AND IMPETUS

PROVIDED TO THE ACCELERATED PROGRESS IN VILLAGE HOUSING PROJECT.

A roof over head is an indispensable must for all and sundry irrespective of the climes or climates they are living in. But India presents a pathetic picture in as much as millions living in villages do not own houses. Even if some of them own houses, they are either far inadequate in terms of modern and hygenic facilities or vulnerable to hazards of fire or floods. The Government, which stands dedicated to 'Rural Uplift' on egalitarian and socialistic principles, desires to improve the living conditions of the villagers, extending facilities to build houses for them, both by the Government and by the people themselves. With this sound object in view the Village Housing Project was formulated and it lays greater stress on houses being built on 'self-help' basis i.e. the owner themselves availing loan facilities from the Government and adding to a small degree their own efforts and resources.

The Rural Housing Cell, inaugurated in the year 1958, has been functioning continuously for the last 15 years. Although the grant of loan has been on very liberal terms, the scheme had not been adequately availed by the public. It can be seen from the figures given below that the physical achievement and financial outlay had not been substantial. Over a period of 14 years i.e. till March, 1973, only 3704 houses have been completed availing loan amounting to more than Rs. 120 lakhs as detailed below.

Year	*Amount spent in lakhs*	*No. of Houses Constructed*
1960	2.50	—
1961	8.53	131
1962	7.27	555
1963	9.71	536
1964	9.56	521
1965	5.59	235
1966	4.14	75
1967	5.35	58
1968	8.10	214
1969	13.29	200
1970	6.24	218
1971	9.03	240
1972	13.56	309
1973	20.22	412
1974 (Annual)	72.00	1800
1975	100.00	2500

The need and necessity for the enlargement and effective implementation of the Village Housing Project is enormous. In this article the details of the scheme are given in a comprehensive manner.

Conscious of the enormous need for housing in villages and of the inadequacy of the plan allocation, the Chief Minister sanctioned Rs. 50 lakhs from the Welfare Fund with a programme to construct 1,200houses. The plan allocation for the year 73-74 was also increased to Rs. 27 lakhs and further revised to Rs. 46 lakhs. Thus, very nearly a crore of rupees has been allocated to further the programme of Rural Housing Programme to complete 1800 houses in 73-74. The allocation for the next five year plan is also quite promising. Already a sum of Rs. 100 lakhs has been indicated for the year 1974-75 which is hoped to be substantially increased by widening the scope of Village Housing Project Scheme. It is hoped that about 2,500 houses will be completed in 1974-75.

The need of housing in rural areas is very large and there is a long way to go. So a vigourous impetus has been given to this problem in addition to providing various incentives such as liberal loan facilities, engineering specification in the shape of model types of houses etc. to the village folk so as to lure them to avail themselves of the benefits of the scheme in right proportion.

Liberal Loan Facility

This scheme is operated throughout Tamil Nadu excluding municipal areas. The farthest village from the town is the most welcome. The scheme does not discriminate any class or community. The conditions to be satisfied by those, who opt to avail loan, are very liberal and simple. Loan can be availed for new constructions and improvements. The Scheme is helpful when people are rendered houseless in times of flood and fire hazards.

The applicant should own a piece of land suitable for house construction with an extent of not less than 5 cents and in exceptional circumstances not less than 3 cents and free from encumberance. The size of land (i e. length and breadth) should be in such proportion as to accommodate a plan acceptable to the department. The applicant should be capable of repaying the loan over a period of not more than 20 years either in monthly or annual instalments. The applicant shall raise the building upto plinth level and produce non-encumberance certificate to become eligible to receive the first instalment of loan.

Mode of Payment of loan.

The maximum amount of loan is Rs. 4,000/- per individual. The rate of interest chargeable is 6 % which is the lowest, levied by the Government. The period of repayment is not more than twenty years. Any one desiring to opt for a shorter period of repayment can do so. Loan is disbursed in four instalments. The loanee is expected to plough in his/her resources to raise the building upto floor level which is not less than a foot above the proposed ground level around the house. At this stage the first instalment of Rs. 1,000/- is disbursed. Availing this amount the loanee may raise the building above floor level. When the construction reaches the level of window still, the second instalment of Rs. 1,000/- is disbursed. This enriches the loanee with sufficient and more, fund that he raises the construction to roof level in a few days. At this level the third instalment of Rs. 1,500 is disbursed enabling him to buy roof timber, tiles, etc. and engage labour for fixing them and plastering outside of walls. Then the fourth and final instalment of Rs. 5,000 is disbursed with which the loanee completes plastering inside flooring, white washing, colour washing, painting, etc.

Process for repayment of loan.

The loanee is expected to complete the building within a period of one year from the disbursement of first loan. The repayment will be scheduled to commence eighteen months after the disbursement of the first instalment or six months after the disbursement of the final instalment whichever falls earlier.

The loan is disbursed by the respective Union Commissioner. The first instalment is disbursed only when the prospective loanee produces legal documents to establish ownership of land and also no-encumberance certificate to establish that the site under reference is free from encumberance. The loan shall be repaid in a period not exceeding twenty years, from the day scheduled for repayment. Repayment of loan is collected by the Tahsildar of the Revenue Department and accounted for.

Any loanee failing to abide by the conditions cited above, will be subjected to enforcement of penal action and summary recovery under 'Revenue Recovery Act'.

Technical Help.

Type designs are available with this Department. The loanees may avail them free of cost. Should they desire to have their own plans they may furnish them to the Section Officer, Rural Housing Cell of the area and get them approved. The plans should be got marked on ground only by the staff of the Rural Housing Department, and execution should follow plans strictly. Subsequent additions and alterations during the course of construction, shall be got approved by the Section Officer, Rural Housing Cell, prior to execution.

The foundation particulars regarding depth and width and nature of building materials to be utilised etc., will be advised by the staff of this department taking into account the site and local conditions. By and large, the loanees are advised to use minimum quantity of cement, restricting its use only to damp proof course and plastering of walls and floors and to eleminate use of steel, brick, etc. Rough stone, Mud mortar, Lime Mortar and Country Wood shall be liberally used.

The construction shall be undertaken by the loanees themselves. The Rural Housing Department offers technical guidance free of cost. Model houses are being constructed by the Rural Housing Department and made available to people who are willing to buy them.

Procedure for Availing Loans:—

Any one who desires to avail loan under this scheme shall apply to the respective Panchayat Union Commissioner, who then verifies the correctness of the particulars furnished by the applicant, with the help of the village officers, and recommends the same, if satisfied, to the Divisional Engineer, Rural Housing Cell, Madras, making a copy to the respective District Collector. The Divisional Engineer, Rural Housing Cell, then accords Preliminary Approval authorising the applicant to go ahead with the construction. The applicant shall approach the Section Officer, Rural Housing Cell, and undertake construction. When the building is raised upto ground level, the Section Officer, Rural Housing Cell and for the Panchayat Union Commissioner will report to the Divisional Engineer, Rural Housing Cell, requesting sanction of loan. The Divisional Engineer shall then issue 'Proceedings' sanctioning loan authorising the Panchayat Union Commissioner to disburse the same. The Panchayat Union Commissioner receives certificates from Section Officer, Rural Housing Cell at different stages of works i.e., the first at floor level the second at window still level, the third at roof bottom level and the fourth when the roof has been fixed outerfaces of walls plastered.

Recovery of loan is effected over a period of 20 years, charging an interest of 6 % only per annum. Recovery is commenced eighteen months after the date of payment of first instalment or six months after the date of final instalment which ever falls earlier.

Read

Tamil Arasu

for accurate and authentic news of Tamil Nadu

Single copy Rs. 0·40

Annual subscription Rs. 5·00

SIXTH STATE LEVEL PONGAL SPORTS

AT TIRUCHIRAPPALLI

Sixth State Level Pongal Sports was held at Tiruchirappalli from 16—1—1974 to 18—1—74. The first three State Level Pongal Sports were conducted at Madras and the fourth and the fifth Pongal Sports were conducted at Madurai and Vellore respectively.

The venue for the Sixth State Level Pongal Sports was set at Tiruchi. There are 12 members in Tiruchi District Sports Council. The Collector Thiru M. Vaithialingam, I.A.S., is the President for the District Sports Council and Thiru B. Perumalsamy, Superintendent of Police, is the Vice-President. The Chief Educational Officer, Miss A. Meenakshi is the General Secretary for District Sports Council. It was decided to conduct the Annual Pongal Sports at Kajamalai Stadium.

The following sports and games were conducted during the Sixth State Level Pongal Sports— 1. Foot Ball, 2. Hockey, 3. Basket Ball, 4. Volley Ball, 5. Kabbadi, 6. Ball Badminton (Fives) and 7. Track and field events in 100 M., 400 M., 800 M., 1,500 M., 3,000 M., Bread Jump, High Jump, Shot Put (16 Lbs.), Javelin Throw. All the Districts in Tamil Nadu had sent their team and nearly 1,000 persons participated in the festival.

A Drill item staged in the sports meet

Collector of Tiruchirappalli delivering his welcome address.

The inaugural function was held at Kajamalai Stadium on 16—1—1974 in a grand manner. A grand route march was conducted by Lt. Col. DeZouza, Commandar, N.C.C. Group Head-quarters, Tiruchirappalli. All sections of general public also participated. The march was enthusiastically conducted and it stimulated inner feelings of the Tiruchirappalli district people. The whole Tiruchirappalli town was decorated with welcome arches, festoons and flags, and it bore a festive look all along. The Hon'ble Minister for Education and Tourism, Dr. Nedunchezhian inaugurated the function and the Hon'ble Minister for Local Administration, Thiru Anbil Dharmalingam presided over the function.

The Colleetor Thiru M. Vaithialingam, I.A.S., arranged the function in an attractive manner with the co-operation of almost all the Heads of Departments.

The Final Day celebration was also conducted on 18—1—1974 in a grand manner. Thiru M. Vaithialingam, I.AS., presided over the function and Mrs. Pushpa Vaithialingam distributed the prizes to winners. Thiru M. S. Mani, Vice President, Khadi Board and Thiru M.S. Venkatachalam, Secretary, Spinning Mills delivered valuable speeches.

Mrs. Vaithialingam wife of Tiruchy Collector distributing prize for the winner.

The Tamil Nadu STATE SPORTS COUNCIL AND ITS GENERAL SET-UP

The Tamil Nadu State Sports Council founded in the year 1957 is a Statutory Body charged with the task of promoting sports and games as also taking of steps to develop the sports skills of the youngsters, sportsmen and champions. It consists of 31 members of whom 17 are selected from the Moffusil at the rate of 1 from every district. Of the 17 members from the city, 9 are official members and 8 are non-officials nominated by the Government and they will hold office for 3 years. The Education Minister Dr. V. R. Nedunchezhiyan is the President of the Council.

Apart from this, every district has its own District Sports Council. In the districts the Collector is the President and the District Superintendent of Police is the Vice President respectively of the District Sports Councils. Regional Inspectors of Physical Education act as the General Secretary and Chief Educational Officer as the honorary treasurers of the District Sports Councils.

Finance :

Rs. 10 lakhs has been granted this year by the Tamil Nadu Government for the annual running expenditure of the State Sports Council. In addition, a sum of Rs. 63,000 has been sanctioned for Pongal sports. *Ad hoc* provisions are made by the Government for the construction of stadium in each district. Whenever the Sports Council comes out with a good plan for constructing a new stadium anywhere in the State the Government is always ready to sanction Rs. 1 lakh per stadium and the Government of India will also offer about Rs. 50,000 for the same. The balance has to be borne by the public or the rest has to be met by the Tamil Nadu State Sports Council. There has always been enough enthusiasm in all districts and thus almost all headquarter towns in our State have their own stadium, of them all built and declared open during the last five years. Special mention may be made of the Kancheepuram stadium for which fabulous sum was collected by the drive and enthusiasm of the then Collector, Thiru Seetharamadas. As an adjunct of the stadium a Public Hall was also constructed which will finance the maintenance of the stadium.

Now there are about 9 district stadia at the following Towns, *viz.*, Tiruchi, Vellore, Nilgiris, Kanchi, Cuddalore, Salem, Coimbatore, Madurai and Nagercoil. As for as the City is concerned, the City Corporation has provided about 76 paygrounds, among them the Nehru Stadium at Park Town, Kannappar Thidal play ground at North Madras and Nungambakkam Recreation Centre are the biggest in the City. Pride of mention can be made of the Indoor Stadium at Egmore which is the venue of many All-India Competitions for in-door games.

Incentives :

In recent days, the Tamil Nadu State Sports Council has taken active interest in making as many good atheletes as possible by giving cash-incentives to the youngsters. At the College level, the State Sports Council is granting Rs. 300 as scholarship every year to ten men students and women students per head. At the school level scholarships of Rs. 150 is granted per head per year to 10 High School boys and girls and also 3 Anglo Indian boys and girls. Apart from this 10 outstanding athletes of both men and women are also given a stipend of Rs. 300 per head every year. Besides stipends were also given to the sportsmen who voluntarily come forward to undergo training in the Nethaji Subash Training Institute (National Institute of Sports) at Patiala, sponsored by the Government of India.

All-India Rural Sports Meet :

The State Sports Council helps about 22 State level associations, controlling games and sports for the purpose of selecting outstanding champions, and sending them to participate in the national and zonal tournaments. The Council is providing money for staging of South Zone competitions and All-India level competitions. It sent round qualified coaches to the universities, Colleges, Schools and Clubs for giving advanced training and in finer techniques.

The council celebrates its 6th Pongal year last month by organising and conducting competitions in Football, Volley Ball, Kabaddi, Hockey, Badminton from the lowest level of local administration to the upper most State level. Starting from the 374 blocks, 90 municipalities, 8 townships and 2 Corporations the Sports Council extracts outstanding athletes in various fields. The selected candidates will have to compete with the 46 Educational Districts and 14 Revenue Districts and finally to confront with their State-level comperes. Finally selected athletes will be sent to confront All India Rural Sports Tournament. The total expenditure estimated for this purpose of conducting sports at various levels ranges between Rs. 1.80 lakhs and Rs. 2.20 lakhs.

Distinction of Fishermen Boys :

The Council is equally interested in conducting swimming competition and sent 7 fishermen to confront the Rural Swimming Meet. Of the seven events conducted, the fishermen boys won 7 first prizes and 6 second prizes and 5 third prizes.

The Council also conducted the 8th All India Civil Services Athletic Meet between 31st January 1974 to 1st of February, 1974 at Madras.

The Council will be conducting the Vth All India Rural Sports Tournament at Salem between 15th and 16th February, 1974. It also helps the Department of Education at all levels for the conduct of Republic Day Tournaments.

The Council's enthusiasm provides thousands and thousands of youngmen and women to develop their skills and brighten their athletic prospects. The Council develops not only " Healthy Mind in a Healthy Body " but also tie up the international relations, on firm grounds, through the sports exchanges between nations such as U.S. and U.S.S.R.

Services of Coaches available to all Schools :

The services of coaches in the various games and sports are available with all the District Sports Councils and the State Sports Council at Madras. There are coaches in Athletics, Tennis, Table Tennis, Basketball, Hockey, Football and Cricket in the City of Madras itself. Physical Directors and the Physical Education Teachers of the Institutions could easily hand over talented players and athletes to such coaches for training him her in finer points. Then only they will be able to concentrate their attention in improving the Physical Fitness of the larger student-body.

Not all the Institutions could get the services of the coaches during a specific period. Not all the Institutions have their own playgrounds also. The Corporation of Madras maintains 76 playgrounds all over the city and they have even appointed playground Instructors and playground Attenders to many of these grounds. If some of the Institutions around such grounds could join to-gether, draw out a programme and requisition the services of the coaches to train the youngsters, after obtaining the necessary permission from the Corporation of Madras for the use of the grounds, it will be possible for the Council to allot coaches. This initiative on the part of the Institutions concerned will go a long way to improve the talents of the youngsters, provide enough work for the coaches and also put the Public playground to the optimum use.

The Institutions need not spend anything on the coaches. They need provide only the equipments required and place the services of the games peons at the disposal of the coaches (in turn) during the coaching classes.

S. S. ✱

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P. O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival ;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

TAMIL NADU AND SPORTS

The photo shows hurdles competition between U.S. track team and Indian Athletes.

The individual achievements of athletes have become points of national pride ; the number of prizes of a country can score at the Olympics is looked upon with the same wonder that is associated with achievements in fields like science and space technology. So much so, it is no wonder that when India is looking for prizes in the Olympics the search has to be make for athletic talents and endurance at the grass-root level. For instance, the National Institute of Sports when it sends out its talent-scouts, these scouts look out for promising athletics from our more durable and more sturdy rural youth for ' building ' them into national athletes ; recently a batch of fishermen boys of Nochikuppam near Santhome, Madras were sent all the way to Delhi and Patiala to exhibit their process in swimming. All this may sound like a repetition of the Cindrella Story : but this is what is happening all the time in our sports and athletic world.

The photo shows Barry Meclwce of the U. S. track and field team won the triple jump event clearing 15·38 metres.

In our State, under the regions of the Tamil Nadu Sports Council, stadia have come up in almost all District Headquarters. The leadership of the Collector is availed enthuse local sports and also to collect funds for building these stadia. In addition rural sports are conducted at State level enabling rural youth to compete and win prizes. This has become an annual feature ; this year the State level meet was held at Tiruchi during Pongal week.

Apart from nurturing our Sports talents through Schools and Colleges, we have to throw our Sportsmen to the influence of eminent athletes of other nations. This is easiest done in International Competitions ; but only the pick of our talents can compete in these events. To bit the process of other national sports stars against our own youth, we have what is called visiting teams in the sports field. Last year such teams visited Madras both fromU.S. and the U.S.S.R.

A 15 member athletic team (11 athletes and four officials) from Soviet Kirghizia which arrived in Delhi on September, 24 under Indo-Soviet Cultural Exchange Programme came to Madras on October, 2. The team has its Master a number of Master of Sports (International Class).

The first Indo-Soviet Athletic ' Test ' took place on Spetember, 26 at the National Institute of Sports Patiala. The Second Test was held at Jullundar on September, 30 the third was held on October, 3 and 4 at Madras in the Rajarathinam Stadium and the final at Delhi on October, 5.

The visiting team was composed of six and five female athletes of whom the majority were short and long distance runners.

An American track and field team began a week long demonstration and training programme in Madras on November, 19.

The five-member team, accompanied by a coach was composed of champions handpicked by the United States Amateur Athletic Union (A.A.U.) America's ruling amateur athletic body. The team's tour was sponsored by the U.S. Department of State.

WHERE DO OUR ATHELETES STAND VIS-A-VIS WORLD STANDARD ?

Dr. Robson moses, Principal of Alagappa College of Physical Education, Karaikudi explains in this article where Indian atheletes stand in the field of games and sports vis - a - vis world standard.

Alagappa College of Physical Education in Alagappapuram, Karaikudi, is the scene of unusual activity. Principal Dr. Robson Moses is convinced that : "Physical education is the only subject which contributes to all the objectives of education : promotion of health and growth, social efficiency, economic efficiency, international understanding, cultural appreciation and recreational competency."

He recalls that the city of Eugene on the West Coast of America is known as the jogging capital of the world. There, young, old and entire families jog every day. For the people of Eugene this is not physical education but heart and lung exercise. It is simple and everyone can do it, says Dr. Robson.

Dr. Robson says, that "the average American is no full-time jock-strapping gymnast. There is nothing in the American it has that requires regular calisthenics. So, in tests requiring gymnastic ability, the American may score poorly. But ask him to swim, run, jump or bat a ball, he will be right with you. Americans like competitive sports".

Alagappapuram is grooming itself on the lines of Eugene, stressing the meaning and importance of physical fitness. In its campus, it has many centres of learning starting from the Montessori level to engineering and physical education, from a certificate course to one leading to a master's degree. The land, the buildings and facilities perpetuate the memory of one of India's outstanding philanthropists and educationists, Dr. Alagappa Chettiar.

Yogic exercise positions or asanas is part of the physical education programme in Indian colleges. It is held in the second term during the monsoon season as it can be taught indoors. The main advantage of yoga is to improve flexibility, to discipline the mind and to develop vital capacity.

American universities are offering yoga as one of the service course programmes in physical education. "What I observed in the U.S. was very useful for my dissertation," says Dr. Robson. He was the first Indian to receive a doctorate from Oregon University.

Dr. Robson regrets that physical education and sports and games have a low priority in India. For a population of about 550 million we have only 55 physical education colleges and institutes in India.Ten of them are situated in Southern India catering to a population of 134 million. We have only one physical education teacher to about 1,000 students and even more.

He noted that the approach in the U.S. is entirely different. They have no category of physical education teachers as such. Some of the classroom teachers are qualified physical education teachers. Some of them work as coaches for which they are paid extra allowance. They have a separate budget for physical education and a separate budget for competitive programmes.

ROBSON'S APPRECIATION ABOUT INDIAN SYSTEM

Dr. Robson admits that India has taken the best of the American system in the professional preparation of physical education teachers in India. The pioneering efforts of the Y.M.C.A. College of Physical Education and people like Dr. Henry Grey and Mr. M.C. Buck have left an indelible mark in India's progress in this regard.

Dr. Robson feels that a solid foundation for physical education should be laid at the elementary school and all teachers there should have some training in physical education and the value of sports and games. In the Punjab, he notes, they have introduced sports as a subject in schools offering scholarships to those attaining certain standards.

Those students who show progress can be grouped and imparted more intensive and scientific training. He wants to see sports activities organised from the village level, then to district and State levels. "Through such competition", Dr. Robson says, "an attempt can be made to start schools exclusively for sportsmen for national championships and international competition."

Dr. Robson wants building of hospitals, medical colleges and clinics to be matched by building of playgrounds, parks and recreational centres which are the lungs for the community. Such facilities should be well administered and properly used. He says, "A healthy nation is an asset, a sick nation is a liability."

SYSTMES OF PHYSICAL EDUCATION

Since the time of the ancient Greeks, we have felt that there was a close relationship between a strong vital mind and physical fitness.

—JOHN F. KENNEDY

The history of physical education from very early times right down to the present is a thrilling story of enthusiastic and conscientious effort on the part of many noble pioneers, but is also a story of many colossal blunders. Perhaps the greatest mistake of all has been the failure to regard man as a whole, the mistake of dealing with him purely as a physical being, the failure to realize the necessity for a psychological approach, the mistake of putting the person into a programme of standardized activities instead of providing activities according to the characteristics and interests of those who were to participate in them. Such mistakes have led to a narrow conception of physical education, to rigidly formalized and standardized artificial exercises and SYSTEMS OF PHYSICAL TRAINING for mere body building and posture training. Such mistakes have delayed for too long the development of a desirable broad conception of education of the whole-man by means of comprehensive programmes of meaningful physical activities catering to and influencing man physically, mentally, morally, and socially. Much valuable time and effort have been wasted in quarrelling over systems, activities, and exercises. A willingness to subject all activities and programmes to the acid tests of sound principles, a willingness to select activities according to the nature, interests, and needs of participants, might have enabled our earlier pioneers of physical education to have made greater progress in a shorter span of time. In India, too, progress has been retarded by the same narrow conception that physical education is built only on anatomical and physiological principles, and by the failure to realize the necessity for building on psychological and sociological principles also. Illiterate drill masters, mass drill subjective activities, and lack of status for physical education are some of the landmarks of a narrow conception.

Various systems of Physical Education.

Artificial System such as the German System, the Danish System, the Swedish System, etc., have held and still hold the centre of the stage for many promotors of physical education. All such systems have their good points, but they are not sufficiently comprehensive to cater to all the interests and needs of boys and girls, of men and women. They fail utterly to shape men to be good citizens of any social order. standardized system can be sufficiently comprehensive to do this, for while it may contain and practice some of the truths that are conducive to good living, it cannot possibly contain all the truths. Therein lies the folly of slavishly following a particular system or of being bound to any special set of exercises. The futility of depending solely upon a

H. C. BUCK M. A., M. P. E.,

Former Adviser to Government of Madras or Physical Education.

system is that all systems are built upon the assumption that man is merely a physical being, a thing to be exercised, ordered and regimented. Systems leave out of account of fundamental truth that man is also endowed with emotions, with desires for self-expression, with a personality, with interests which need to be understood and satisfied. The Physical Education over the merits or demerits of Yogic Asanas, or of Suryanamaskars, or of the various Dundahls and Bhaskie, or as to whether Indigenous Activities and Indigenous Games should be introduced to the exclusion of all foreign activities. But such procedure will be no more helpful today in developing a new world order than has been the unfruitful quarreling over systems and exercises down through the long periods in the earlier development of modern physical education. We will, on the other hand, have to be broad-minded, and calmly attempt to determine the place and the value of activities for the programme in the light of scientific and educational principles, and not by their place of origin or traditional usage. Activities must merit and justify a place in the programme by all the tests of all the principles, in the full realization of our ambition for a new order which is certain to call for extraordinary men and women. We must then come to the point of considering some of the things which need to be done by physical education to fit men and women for a reformed social order.

We need to dedicate our lives unreservedly to service for and with the boys and girls who are going to be the men and women of the new order. Inspite of many obstacles, inspite of poor salary scales, inspite of the poor status given to physical education, we have greater opportunities for influencing lives that come to most other people. We should cherish this opportunity. We should also be frightened by it. The responsibility is great. We come into contact with boys in all their primitive desires expressed most fully through physical activities. We may help youth to control those primitive desires and to direct them constructively into right channels, thus building good character. Or we may make the grave mistake of actually aiding and abetting the boy in his displays of lack of control of the fundamental urges, thus using physical activities, as a means of destroying character. The physical education teacher who ever-lastingly insists on his or her pupils observing the spirit of the rules has this idea of character building through play. The teacher who withdraws his pupils from a match because they are losing or because the referee's decisions were not according to their liking is not helping boys to control primitive urges and is destroying rather than building character. The new world orders must be one that respects and obey rules. There is no more satisfying work in this world than that of help-

ing boys and girls to discover the high values of self-discipline. Any sacrifices that as physical education teachers make in this effort are worth remarking.

Educational Institutions must willingly and conscientiously give greater opportunity for physical education to succeed, and to physical education teachers more scope for doing effective work.

When we look back twenty-four years to the then barren programmes of drill and gymnastics under the leadership of illiterate drill masters, and compare that with the improved type of activity and the higher quality of leadership in evidence today we have no reason to feel that the situation is utterly hopeless. At the same time, we have not many reasons for congratulating ourselves, for the goal has not yet been reached. Much remains to be accomplished. Public opinion must be educated and stimulated in favour of scientifically correct and educationally sound physical education directed by highly educated and specially trained leadership. Parents and teachers must be brought to appreciate physical education for its real values. Headmasters and Principals must give to physical education the same status as to general education and physical education teachers must be given the time, the place, and equipments and the status that will enable them to educate and to shape lives by means of well selected and adequately conducted physical education activities.

We have seen progress in some directions, and that is commendable. The Government of Madras and the Department of Education deserve the highest praise for the requirements introduced regarding the qualifications of physical education teachers, the number of teacher per pupil population, the types of periods to be conducted, the conducting of tests in fundamental skills and games, the keeping of registers and records, and for the improved requirements in physical education for girls and women. But we cannot and should not depend upon legislation alone for progress. We must continue to shape opinion and eventually bring educational institutions to give physical education its rightful place, not because of legislation, but because of their implicit faith in its values.

> *The world is only beginning to that the wealth of a nation consists more than anything else in the number of superior men that it harbours.*
>
> —*WILLIAM JAMES*

The sad part of the story is that in spite of requirements in various aspects, inspite of considerable faith, in spite of some noticeable progress, the time-tables for physical education in far too many institutions are no better to-day than they were twenty-five years ago. The traditional practice of postponing all physical activities until the end of the day usually results in mass drill or mass play as a bad substitute for physical education, creates a bad attitude towards physical education, makes it impossible for physical education teachers to work with small groups, makes good coaching impossible, makes it impossible to develop skills or improve ethics, and does not provide sufficient real work for the physical education teacher. This practice cannot be honoured with the name of physical education. If we accept the belief that physical education has a very real part to play in determining a new and better world order the whole school day will be so re-organized that pupils will report for physical activities classes in small groups in a sufficient relay of periods to permit of actual teaching, to enable teachers to provide suitable and adequate experiences for all pupils, so that the outcomes from physical education may truly be considered as on a par with those from the other educational experiences. Our aim must be to provide daily physical education periods for all pupils, in each period not more than 30 to 40 pupils per teacher, a sufficient number of qualified teachers to permit of many such small divisions, ample play areas, and adequate equipment.

I venture to express the opinion that the present faulty organization and lack of time tables for physical education will not enable this branch of education to make any contribution of great value to the new world order. The very best programmes of physical activities that could be devised and the most capable physical educators in the world are doomed to failure if pupils are not permitted to participate in groups small enough to enable teaching to be done, and if they cannot participate sufficiently often to reap the benefits which come only by repeated experiences

In promoting and in conducting competitions we must put forward every effort to maintain and improve the spirit of play.

Due to improved organization for competition, to improved leadership, and to improved refereeing we see much less bad spirit displayed in competitions to-day than was apparent twenty-five years ago. But we are not yet perfect. Still there are incidents of which we must be ashamed. During this very year of 1941, I have been flooded with letters from people, who, finding it difficult to accept defeat gracefully, hoped to be able to obtain statements which might support their protests against referees and their claims for re-play of matches. It is apparent that there is much room for improvement in attitudes, much yet to be learned about the real purpose of games, much to be taught about the spirit of the game and about the correct meaning and application of the term sportsmanship. When some teachers and promoters of competitions still have that peculiar attitude of mind which places the emphasis on winning rather than on the spirit of play, which makes it difficult for them to accept defeat without blaming the referee and others, we cannot expect sportsmanlike attitudes from players and spectators. Unfortunate incidents in major as well as in minor tournaments might be avoided if more leaders realized the colossal harm that is done to the characters of players in permitting wrong attitudes to prevail. One thing is certain, attitudes, desirable or undesirable, are bound to be developed. It should be our business as physical educators, therefore, to see to it that the attitudes developed as the result of our efforts may be desirable ones. If we permit or encourage protests againsgt referees, and rebellion against rules and authority, we are most certainly helping to develop undesirable attitudes of disorderliness, lack of discipline, lack of self-control : attitudes of revolt and rebellion. **To develop the desirable attitude of respect for rules, respect for authority, the attitude of orderliness and self-control we must inculcate in our pupils the awareness that the most important thing in play is not whether one wins or loses, but HOW one plays the games**? A desirable world order will have little place for those who demand that all decisions must be made in their favour.

I am of the opinion that we must come to the point of placing much less emphasis on Inter-School and Inter-Collegiate Competitions and much greater emphasis on the physical education programme for the other 90 per cent within the school. The Competitions between institutions have their values and and should be retained and improved because of these. But when major effort, time, major expenditure and major facilities are devoted to catering to the small 10 per cent who play on representative teams and the remaining 90 per cent are neglected, it means that physical education is not promoted for its highest values. It means that, once again, the desire to win distorts the view, causes us to see things disproportionately and makes it practically impossible to develop good health and good social conduct in the whole body of students. A programme that aims to give us a better social order must provide for all, must provide experiences for large numbers on such a wide scale that it may develop good social conduct in the masses, and not merely for a select few. The physical education programme for the entire student body instead of being a lifeless neglected one must form the foundation-stone for our Inter-institutional competitions. The representative teams should merely be the outgrowth or flowering of a good programme of activities for all. The programme for all must be as attractive and enjoyable as the Inter-Schools Competitions and aim to make a good athlete of every boy, rather than to be satisfied with a small handful of fairly good athletes at the expense of the many, and with no foundation for future growth and selection. If the experiences provided for players on the representative teams have all the values claimed for them, it seems reasonable to expect that the same sort of valuable experiences should be provided in as great a measure for the other students also.

Realizing that we learn what we practise we must see to it that the experiences provided are such as call for the practice of those qualities that are most desirable. In order to teach fair play we must provide ample opportunities for practising fair play, opportunities for discovering that playing fair is more satisfying to all concerned than is cheating. If we permit cheating we succeed only in teaching cheating. In other words, it is our duty and our privilege to so teach that the practice of good qualities such as fair play, honesty, respect, co-operation, loyalty, etc., may be found the most satisfying and that the undesirable practices may be found annoying. We cannot teach morals and ethics by lecturing about them. Only as we provide experiences and guidance in the practice of desirable conduct will desirable conduct be learned, and it must then be practised over and over again until it becomes a lifelong habit.

> *What a disgrace it is for a man to grow old without ever seeing the beauty of which his body is capable.*
>
> —*XENOPHON*

In full realization of the fact that Physical Education will never make its fullest and richest contribution to the life of India until we have closely co-ordinated with it a thorough-going Health Education programme, every possible effort must be put forward to ittroduce and effectively carry on Health Education in every educational institution.

By Health Education we do not mean the mere traditional study, recitation and examinations of hygiene, text-book knowledge. We know now that knowledge is of value only as it is applied in everyday life. This certainly is true of the knowledge of hygiene. Therefore, health education of today must consist of a comprehensive set of experiences in health practices leading to healthful living. Such a Health Education programme must be composed of Medical and Physical Examinations, Health Service, Health Supervision, and Health Instruction. The Medical and Physical Examinations discover for us the facts which should guide us in some aspects of our Physical Education programme, and in all aspects of our Health Education work. Without the findings which can be had only by thorough and regular Medical Examination we are working blindly and not scientifically The Health Service programme is largely the follow-up on the Medical Examination and consists of corrective and remedial measures, preventive and immunizing measures, first-aid treatment, dispensary and sick-room care, etc. Health Supervision is necessary to help students to apply healthful living to every corner of their environment. Its purpose is to discover any violation of the rules of Hygine and Sanitation in Living Quarters Mess Halls, Class Rooms, Playgrounds and Compounds generally, to rectify the defects and to help students to put the rules of health into actual practice. Health Instruction and Health Guidance aim at much more than teaching and learning facts about health. They form a process of providing not only knowledge but also such a variety of experiences in healthful living that the outcome may be attitudes, habits and skills ensuring personal and community health.

For the benefit of any who may have the notion that physical exercise alone will build strong bodies we particularly stress the claim for the inclusion of health education. Bodies cannot be developed without proper feeding as well as exercising, and so it becomes essential to pay careful attention to the whole problem of diet and nutrition. Health cannot be maintained and promoted in environments detrimental to health nor by people of faulty health habits, even though they may have exercise habits. Exercise without proper attention to the fundamentals of hygiene and sanitation will be harmful rather than beneficial. Thus, our plea for Health Education as a necessary co-partner with Physical Education. The new world order will require particularly healthy people. Physical Education alone cannot produce them.

We must turn our attention to research work in the field of physical education and health education. Little or nothing of this sort has yet been done in India although other countries have done much and have thereby made valuable contributions, not only to their own countries but to the whole world. There are many special studies which need greater attention for the robustic constitution. The Y.M.C.A. College of Physical Education has been searching for ways and means of making it possible for some studies to be made by men who may be sufficiently interested and capable of carrying them out. We have faith that some day the way will be opened. ❋

AN INTERVIEW WITH DR. J. P. THOMAS

Very recently a team of world's outstanding Russian gymnastiasts and the U.S. coaches visited in a month's gap to Tamil Nadu camped and conducted coaching classes for our athletes for about a week in Madras. Sportsmen from distant places attended the week long function. Dr. J. P. Thomas, The Principal of Y.M.C.A. College of Physical Education also attended the function. As the head of the College of Physical Education he is being interviewed by the Tamil Arasu representative with a curiosity to know about his views on Russian and American athletes and how he feels about the Indian talents in the world of sports and games. Herein he suggests some measures to improve our standards to the international heights.

Q. What is your assessment about the American Athletes ?

A. The purpose of the visit of the American Athletes is more a Cultural Exchange programme rather than for mere competition with the Indian Athletes.

They were athletes of outstanding ability and added to that what impressed me most was their ability to impart instructions under the guidance and supervision of their Chief Coach Mr. Godslove. They were able to talk freely, discuss pattern of training and also help wherever they can to the large number of Indian athletes who gathered for their instruction.

Q. To what extent this track and field team will be of use to our athletes ?

A. I do not think that all our athletes have reached their maximum level of excellence and there is still hope for improvement; perhaps by this exposure to highly trained athletes, most of them, I am sure, will be inspired to work more intensely and also to look for higher levels of performance.

Q. What is your opinion about the Russian Athletes ?

A. The Russian Athletes who visited us recently were specifically intended to compete with Indian athletes, and as such we have had no opportunity to look into their pattern of training or diet, or exercise, etc. as we had the opportunity with the American Athletes.

Q. Do you think that the Russian Athletes, are superior to American Athletes ?

A. In terms of their performance there is nothing to choose between.

Q. Can you throw light on their demonstration ?

A. We were glad that they catered to the needs of our athletes at Rajarathnam Stadium and along with that they were able to visit the Y.M.C.A. College of Physical Education and the Don Bosco Athletic Club and put up demonstrations with explanations. This was of real value to the budding athletes.

Q. Have you got anything specific to say about ?

A. I noted something very-uniqe with the Coach, Mr. Godslove He had always time enough to attend to the needs and necessities of his athletes and I remember distinctly while one of their athletes in the 110 m. Hurdles who was measuring the distance in between the Hurdles rushed upto Mr. Goldslove and and asked him to check on the measurements. In the meantime, I called on the technical surveyor and had the distance measured to my satisfaction. The Coach in the midst of his busy conversation with the dignitaries who were coming in to attend the Competition politely excused himself and went straight to measure the distance himself, and then called the athlete and gave a gentle tap in his shoulders and said to him 'It is okay Joe'. This I thought must be the relationship between the athlete and the Coach and depicts the involvement of both towards excellence.

Q. Having seen both the Russian and American Athletes do you find any difference in the method of training our athletes and those who came from abroad?

A. American athletes spend more time in training—sometimes 4 to6 hrs. a day and our athletes, I think do not spend that much time due to their involvement in so many other daily routine. Intensity of training is an essential factor and the skills have to be built in a slow and steady manner, and this again cannot be achieved overnight without adequate effort.

Q. Does your College possess facilities to follow up the type of American programme ?

A. We have to make an all out effort to tap the talents and group them together and see of the intensive training these exceptional group can be provided under technical leadership.

Perhaps, the Sports Schools as it is followed in East European countries may be the answer by which outstanding youngmen in a particular game or sport is selected and are admitted for academic purposes in selected Schools where they can continue to be in training under special leadership and make this as an integral part of any scholastic or club work. This needs Government support and I am sure that any enlightened Government will not lag behind for a scheme like this.

Q. Is there anything very new about the training programme?

A. I must say that there are no secrets and also modern physiological studies have indicated that the muscular system and the Cardio-respiratory systems of the athletes have to be well coordinated if per formance is to be increased or continued for longer time.

There is enough leadership in India and it is for our athletes to avail of opportunities. What is required is an exposure of our budding athletes to this necessity.

Work, Work can produce results.

Our youngmen need not be ashamed of the sweat and toil they put on the fields. Their efforts are bound to pay high dividends.

Q. What else can be provided to Indian athletes to improve their standards ?

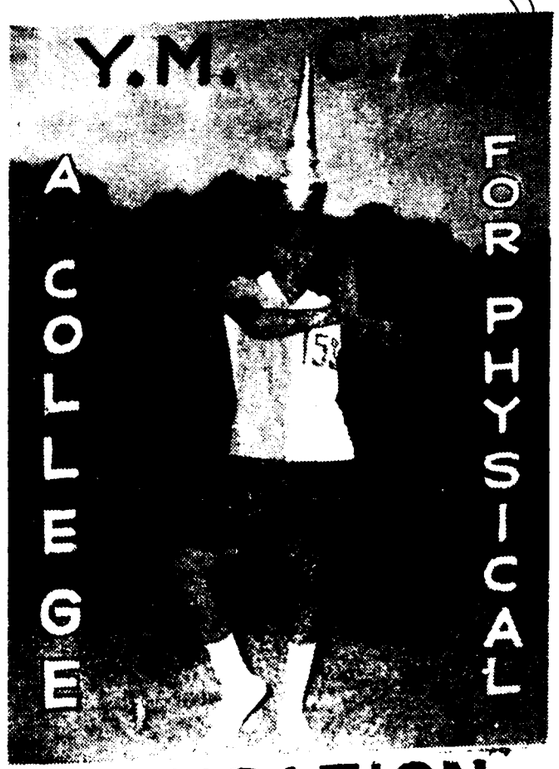
A. (1) Systematic training and periodical check on their performance ;

(2) Constant competitions ;

(3) Public encouragement and recognition and lastly an assurance to the athletes that the society will look after their future if they can bring glory to the State or his country through sports.

Q. Does Y. M. C. A. College provides such facilities to its students to improve their standard?

A. Y. M. C. A. College of Physical Education provides every conceivable type of facilities to its pupils for a better standard.



EDUCATION

The College of Physical Education, Saidapet was given an 80-acre site vacated by the Agricultural College when it moved to Coimbatore from Madras. It was taken by the then Principal of the College under almost duress ; but it has since proved a blessing, for you can't imagine such a vast campus so ideal for a residential college devoted to all kinds of sports in the heart of the metropolis.

This is one of the 54 colleges of physical education in India and there are three such colleges in Tamil Nadu, including the one at Saidapet. The other two are located at Karaikudi and Coimbatore. One striking feature is that students from Punjab predominate ; the Principal says that though there are four physical education colleges in Punjab, there is still a large unsatisfied demand in that State. The pressure on the Saidapet college is none too easy either, because for the 400 seats it has to offer, over 10,000 applications are received. One of the current students is Mr. Shimre an M.L.A. from Nagaland.

Kabaddi : This village sports has gained All-India importance and large-scale tournaments are conducted in it ; the college offers training in this sport to all its students.

Wrestling : The college has three 'Malcoms,' one in the traditional Indian style fixed to the ground, and two others, one a hanging Malcom and another a cane Malcolm ; the Principal claims that the cane Malcolm particularly gives very fast reflexes to the trainee and calls for extreme agility of muscular action. "We have been losing championship in wrestling mainly because we did not give enough devotion to muscle power in our wrestlers as we did to brawn power.

Yoga : This is compulsory to all students because of its capacity to give and build up the power of resistance in practitioners. The College authorities have selected a few of the yogas as conditioning exercise to all men and women students. It is not popular in schools because there is no thrill of finish in yoga. Though it is an excellent form of exercise it is not popular with students because it does not convey the merit of winning prizes in it for skill.

Karagam : There is nothing like karagam for teaching posture ; it comes so naturally to our women who carry heavy loads on their heads and still walk erect without a care, gaily conversing with each other and nodding from side to side with complete abandon.

Mass Drill : There is nothing like the mass drill to give the trainees

Physical training taught to students in weight lifting and wrestling, the most popular games among the rural population in India

FOLK DANCES and Karagam of Tamil Nadu are regularly practiced as they impart postural grace and fluid movement of limbs so essential in competitive sports.

KHABADI a popular game among the rural populace is taught to the students.

instant reflexes and obedience to a single command. This was perfected in Germany to instill mass patriotism and national upsurge. Our own system has been an amalgam of the Swedish, and American systems superimposed on Indian athletic genius. This has been largely developed by Mr. H.C. Buck the first Principal of the College.

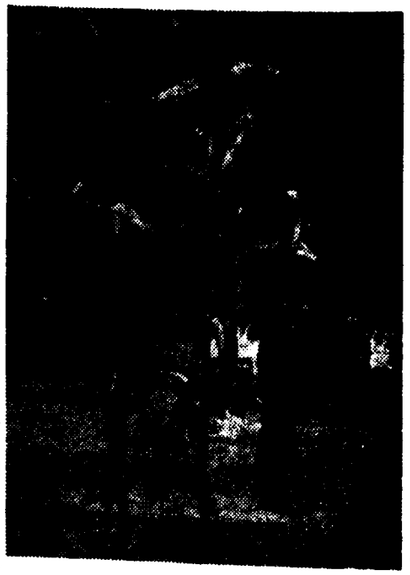
PURPOSE OF SPORTS

Eastern : To distill human strength into speed and skill and to elevate mankind's mind above the weakness of reward and recognition is the sole purpose of sports.

Greece : If you want to be strong run ; if you want to be handsome, run if you want to be wise, run. 200 years later Horace said : If you don't run when you are well. you will have to run when you fall ill.

PHYSICAL EDUCATION

Physical Education forms an important part of the modern programme of general education. It includes physical activities and sports of all kinds designed to improve posture, physical development, and general fitness and health. Physical education also provides fun and recreation. Programmes in physical education cover a wide variety of activities.



The students of the Y.M.C.A. College trim and conditioning their body with a variety of exercises.

Many high schools also include calisthenics, gymnastics, and various fitness tests in their physical-education programmes. Instructors teach health and safety, including the principles of hygiene, nutrition, and general physical care. Sportsmanship is also emphasized, along with desirable personality traits and character qualities. Many high schools have organized intramural sports programmes, as well as varsity competition between schools.

Physical education is one of the newest subjects in the modern educational programme. But it is one of the oldest forms of education. Physical training has always been fashioned to the culture of the people and of the age. For example, the Spartans stressed physical training in order to make better soldiers. During the Renaisance, physical education was encouraged as a necessary part of developing a complete personality.

The Swedish system attempted to increase the physical development of young persons. This system of exercise stressed postural position, or positions that were fixed and held by command and signals. The Swedish system spread throughout the world, and is recognized as the best method for developing weak muscles and correcting faulty posture among large groups of youths. Later, the stall bars, balance beam, the swinging pole, vaulting, the long horse, and the buck were added to the Swedish system.

History shows that man played even in the earliest times. He gradually organized his play into games, and, as civilization developed, his games or sports developed. Early societies used sports to train people for survival and for war. Then, as people learned to live together more peacefully, sports festivals developed.

The Olympic Games became the most outstanding of the early sports festivals. These Grecian games started in 776 B.C., and included many events such as the javelin throw that are still part of the Olympics. Sports developed slowly during the Dark Ages and Middle Ages, but grew in the Renaissance and Reformation periods.

Educators finally recognized the importance of sports in the total education of boys and girls, and play and exercise became part of the school program. *

Basket Ball and Hockey coaching imparted to students.

BASKET BALL : The game was introduced in India through Y. M. C. A. College of Physical Education. Mr. C. C. Abraham, the former Principal of the College, was the founder of the Basket ball Fedaration.

HOCKEY : India's national game - Hockey - receives greater attention. The Y.M.C.A. College Prof. M. Narendanjit Singh, the former national player, gives coaching in hockey.

Photo below shows

WOMEN'S ACTIVITES (left)

The women students are separately trained and their activities are attened to their physical and mental build-up. They use light apparatus in varieties of forms and shapes.

PYRAMIDS (right)

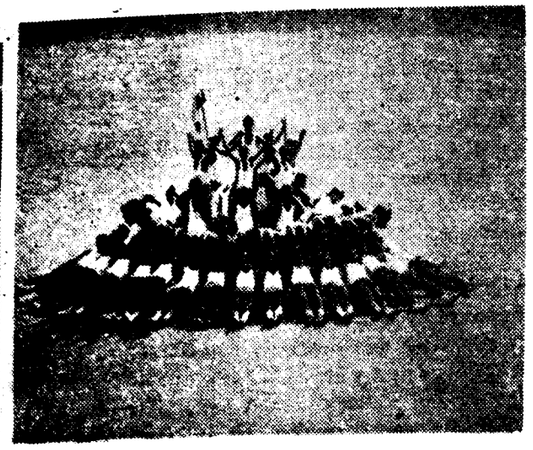
Pyramids are the part of gymnastic work where the weak and the strong, the tall and the short and the hefty and the lean can be involved effectively. This provides room for imaginative involvement of small group. A pyramids on a flower pattern is shown in the picture.

PHYSIOTHERAPY

Sports medicine is a new branch of science which is becoming increasingly popular with medical men. Injuries to the athletes are of a special type and they need both preventive and curative devices ; so that injury is reduced to the minimum and the recovery is made possible rapidly. In this venture physiotherapy plays a significant role. The College has a separate Department of Physiotherapy and the college doctor is an advanced specialist in sports medicine.

FIRST AID

First Aid Training is provided as a regular course of instruction and every student must pass the St. John's Ambulance First Aid Test before graduation. Their work involves constant administration of aid to the injured and as such this course has very practical value.



Coaching In Swimming Imparted To Students Of Both Sexes

Coaching in swimming is provided to both boys and girls. The Y.M.C.A. College of Physical Education is the first College of its kind to have a swimming pool of its own. The swimming pool is utilised to their best advantages by the students of the college as well as the public. Here swimming competition is not unoften conducted for men, women and boys. Every student has to take a swimming test as part and parcel of their training. The pictures sideway bring out the swimming coaching imparted to male students of the College.

The Y.M.C.A. College girls are given training in Karagam dance. Karagam is popular in several districts in Tamil Nadu. It provides the best means of training in posture for our girls. Apart from this it is a folk art peculiar to Tamil Nadu which requires rejuvenation.

Folk dances vary from State to State in India. Each type has got its own speciality and uniqueness. These dances are mostly carried out with a view to keep the body slim. Y.M.C.A. being an All-India institution conducts classes on folk dances of various types to its students from Kashmir to Kanyakumari and from Nagaland to Bombay.

Photo middle :

The joyous Bajra of Punjabis after the harvest is shown.

Photo below :

Shows the Gujarat pot dance for girl students.

GANDHI STADIUM AT SALEM

With the inauguration of the newly built Gandhi Stadium at Salem on 11th January, 1974 by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu, the long-felt need of the people of that area has been duly met. Constructed in a spacious and sprawling area of 15.06 acres of land in the vicinity of the Cobbler Lake in Salem at a total cost of Rs. 9 lakhs, the Stadium contains modern facilities both for the outdoor games such as Football, Volley ball, Basket ball, etc., and for the indoor games such as Table Tennis, Carrom, Chess, etc. Apart from these, separate rooms have been constructed for players, coaches, teams and office. Bathroom facilities and accommodation for as many as 3,000 visitors have zlso been provided in the Stadium.

Inaugurating the stadium, the Chief Minister announced a lump sum Government grant of Rs. 5 lakhs towards the Stadium construction fund and he assured the Committee that one lakh rupees would be paid immediately.

In short, the opening of the Stadium has opened a new bright chapter in the annals of the sports lovers of that area.

Fourth all India Rural Sports

The Fourth All India Rural Sports was held in the Mahatma Gandhi Stadium, which is newly constructed in the heart of the Salem City. The sports tournament was held from 13th February, 1974 to 16th February, 1974 in which more than 1,200 boys and girls from 20 States participated.

The function was inaugurated by the District Collector Thiru C. Chellappan, I.A.S. The Hon'ble Thiru. Ram Nivas Mirdha, Union Minister in the Ministry of Home Affairs had performed the opening ceremony of the Tournament.

The games like Foot-ball, Volley-ball, Kabaddi, etc and sports items like Wrestling and Athletics were held continuously from 13th February, 1974 to 16th February, 1974 which were more interesting and enchanting.

The concluding function of the Fourth All India Rural Sports Tournament was held on 16th February, 1974 at 4-00 P.M. Hon'ble Thiru K. Rajaram, B.A., Minister for Labour, presided over the function. General P.P. Kumaramangalam, President, All India Council of Sports performed the closing ceremoney of the Tournament.

Prizes had been distributed to the winners and Athletics Champions. Tamil Nadu Team won Foot ball and Kabaddi.

Among the members of the sports council the following are the persons who took active part and vital role in constructing the stadium :

1.	Thiru C. Chellappan, I.A.S., Collector, Salem,	Chairman,	Salem District Sports Council.
2.	Thiru E.R. Krishnan, M.P.,	Member,	"
3.	Thiru K. Jayaseelan,	Member,	"
4.	Thiru Sampasivam, Chief Education Officer	Secretary / Treasurer	" "
5.	Thiru Arumugham, Agri. Income-tax Officer	Member,	"
6.	Thiru R.T. Parthasarathy	President,	"

—D.P.R.O—Salem.

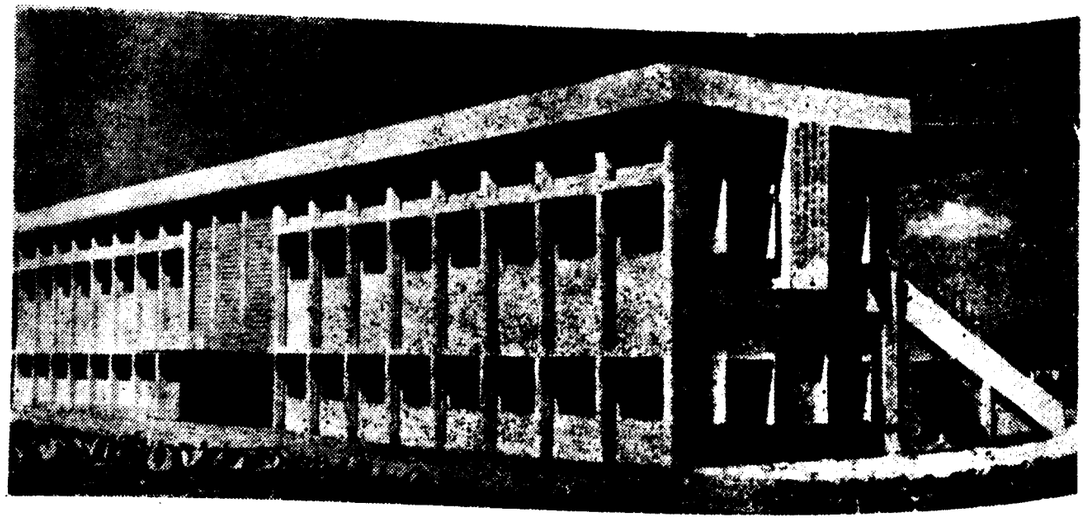


Photo shows Gandhi Stadium at Salem with its front view

The Eighth All-India Civil Services Athletic Meet In Tamil Nadu

Photo above shows the discus - throwing competition for women.

Photo below shows the running competition for men athletes.

The VIII All India Civil Services Athletic Meet was inaugurated by the Governor. Thiru K. K. Shah, at 9-00 a. m. on 31st January, 1974 at Rajarathinam Stadium, Egmore, Madras.

The Athletic Meet was hosted by the Government of Tamil Nadu at the request of the Central Secretariat Sports Control Board.

It has attracted 22 States and Central contingents consisting of above 400 athletes - Men and Women. Competitions were conducted in 21 events for Men and 9 events for Women.

Twenty three teams from All over India participated in the Eighth All India Civil Services Athletic Meet held at Rajarathnam Stadium Madras on 31st January and 1st February '74. The March past and inauguration function commenced at 9 A.M. ; the best performance in the March past went to the Bombay Team and the second place was secured by our Tamil Nadu Civil Services Team.

After the March past function, the various events were started by about 9.30 A.M. In the second event itself i.e. **Pole Vault** our Tamil Nadu Civil Services Team was able to win **a Gold Medal.** The successful participant was Thiru Perumalswamy, B.E., Coimbatore District. He won the **Gold Medal** with a performance of 3.40 Metres. In **Triple Jump** our Tamil Nadu Civil Services Team won a **Silver Medal.** The successful participant was S. Alexander of Salem District. He won the **Silver Medal** with a performance 13.06 Metres. In the afternoon session also he was able to bring laurels to our State by winning the **Bronze Medal** in the **Long Jump** with a performance of 6.00 Metres.

On 1st February, 1974, forenoon session Thiru Prabhakaran of Madras City was able to win the **Silver Medal** in the 10,000 Metres run. In the afternoon session Thiru. T. Rajendran of Madras City got the **Fourth** Place in **High Jump**, Thiru Kuppuswamy got the **Fourth** Place in 1,500 Metres run and Thiru K. Thirumalai of Salem District was able to win one more **Gold Medal** for our State Civil Services Team by winning 400 Metres Race. **His timing of 51.2 seconds is equal to the National Record in the All India Civil Services Athletic Meet** so far. In the 4 x 400 Metres Relay Race, our Tamil Nadu Civil Services Team represented by Thiruvalargal K. Thirumalai of Salem District, Joseph Tagore, Chandraraj and Gnaratanam of Madras City got the Fourth Place.

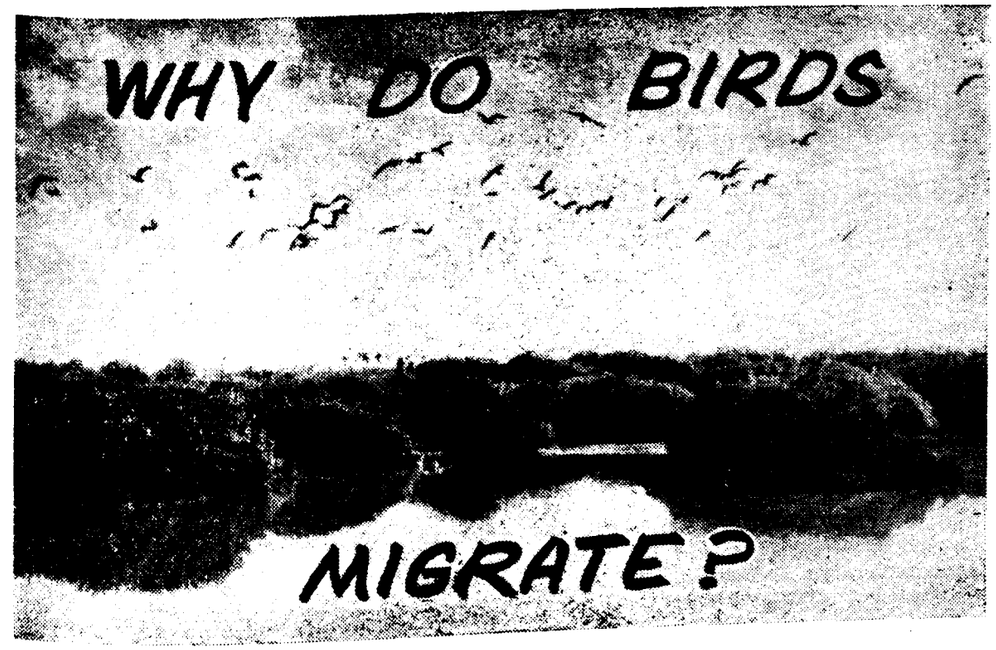
TAMIL NADU WINS TWO GOLD MEDALS ALONG WITH NUMEROUS SILVER MEDALS

Regarding the performance of other teams in the Meet, special mention should be made about the Bombay Team and the Regional Sports Control Board Team, Madras. Thiru Thankaraj of the Regional Sports Control Board Madras won the sprint events (100 Metres and 200 metres) in great style. Thiru Kesar singh of Delhi won the Championship. His performance in the 10,000 Metres, 5,000 Metres and 1,500 metres race was superb. The prize distribution was made by Education Minister Dr. V.R. Nedunchezhiyan. The participants were given a reception by the Organising Committee on 31st January, 1974 and 1st February, 1974. They were also taken for sight seeing to Mahabalipuram and also to the Pongal Tourist and Trade Fair. The entire Meet was conducted in a grand manner. Thiru. C. Ramadoss General Secretary, Tamil Nadu Sports Council, who took the overall Supervision of the above Meet did a thorough job of it. Thiru. T.D. Sunder Raj I.A.S. and Thiru. K.S. Sundaram, I.A.S. both of Public Department, Government of Tamil Nadu were in charge of conducting the above Meet successfully.

Thiru Krishnamoorthy and Selvi Kunjammal were in charge of coaching our Tamil Nadu Civil Services Men and women Athletic Teams respectively and their able guidance was helpful to the Athletes in winning so many prizes in the above meet.

The State Athletic Team comprised the following :—

Madras City Thiruvalargal. 1. I.J. Augustine, 2. Joseph Tagore 3. Chandraraj, 4. R. City Babu, 5. Chinnadurai 6. Kuppuswamy, 7. Prabhakaran, 8. P. Jayaraj, 9. Gnarathinam, 10. D.J. Moses, 11. T. Rajendran, 12. N. Kamalanathan, 13. Baburajan, 14. M. Kumar, 15. Silvi A.D. Stella, 16. Selvi M. Ranganayaki, 17. Selvi B. Saraswathi, 18. Selvi. Violet 19. Thirumathi Prema, 20. Thirumathi Muneer Unnisa. **North Arcot District**—21. Lurdhuswamy, 22. G. Ramachandran, 23. Thiruvengadam, 24. P. Govindaswamy, **Chingleput District**—25. V. Subbarayalu, **Tiruchirapalli District.**, 26. Thiru P. Anbanandam, **South Arcot District.**, 27. P. Jayapau **Salem District.**, 28. K. Thirumalai, 29. S. Alexander, 30. K.K. Ramaswamy, **Tirunelvelli Dt.**—31. Shanmugasundaram, 32. M. Paramasivam, 33. J.C. Manickaraj, **Dharmapuri District.**, 34. A. Murusgan, 35. P. Krishnan, **Tanjore District.**, 36. Kaliperumal, 37. S. Pitchai, 38. Swaminathan, **Coimbatore District**—39. Perumalswamy, **Kanyakumari District.**, 40. Soundara raj, 41. **Tirunelveli District**, A. Murugiah.



In May, 1822 in Mecklenburg, Germany, a stork was caught which had a long arrow embedded in its neck. Such an arrow was unknown in Europe. Experts established that the arrow was of African origin. That was the first concrete evidence of a fact that is well-known today, namely : birds migrate in winter to warmer climate from Europe to Africa, for instance.

Naturalists knew that the birds disappeared to warmer places in winter but no organised study was made of their movements. The first successful attempts in this direction showed that in order to obtain answers to questions puzzling ornithologists, it was necessary to coordinate efforts, if possible, on a global scale. The mass ringing of birds was the first step which began in Russia in 1910.

Between Kaliningrad (formerly Konigsberg) and Klaipeda in the Baltic area there is a long, narrow sandy ribbon of land which stretches for 60 miles. On the 17th mile of the highway which runs the length of the spit, an unusual sight can be seen. To the right and left of the road, huge nets looking something like gigantic butetrfly nets stretch out. They are approximately 300 feet long and 60 feet high and in spring and autumn whole flocks of birds are trapped in their mass as they fly down the narrow corridor of land. Some days as many as 5,000 birds are caught. Orinithologists from a nearby biological station established by the Zoological Institute of the U.S.S.R. Academy of Sciences study their habits and ring them.

"The number of" winged birds "in the world constitute tens of millions. Various birds fly to escape the cold. Each spring the migrants return home. So far the explanation is not known. There are many such enigmas that arises with banding. So far as the mysteries are concerned, it is now up to the ornithologists to unravel them."

The location of the station was not chosen arbitrarily. On a good day close to a million birds fly over the spit in the first four hours after sunrise. The fly-over of a hundred or so varieties of birds continues till noon and sometimes till evening And for the scientists it is enough if a few specimens of each variety are snared. Similar work is carried out at different stations in various parts of the country. There is a centre in Moscow which coordinates and directs the work across the country.

The number of " winged rings " in the world constitute tens of millions. Perhaps one-hundredth have been traced and so in both hemispheres the " start " and " finish " of hundreds of thousands of birds has been mapped and arrows indicate where various birds fly to escape the cold.

UNSUAUL SPEEDS

At one time it was thought that in a 24 hour period migratory birds covered distances of between eight and 20 miles. Ringing has considerably revised previous estimates. Starling No. 326574 was ringed on the Kurshskaya spit and 24 hours later was snared in Belgium—a distance of 750 miles. It was discovered that small birds which fly at night cover an average distance of 200 miles at a time.

The flight usually takes between five and ten hours and after two night flights running the birds rest for three to five days.

Birds that fly during daylight hours travel more slowly.

Migratory routes do not lie only over land. The golden plover holds the record for non-stop flights over water—it flies from Alaska to the Hawaiian Islands, a distance of 2,500 miles across the Pacific Ocean and does it in 50 hours. The cruising speed of this long-distance marathon flight can be worked out to average 50 miles an hour.

INDIVIDUAL HABITS

Birds can be divided into three categories ; settled (one-fifth of all birds in the world) ; migratory (also one-fifth) ; and nomad (three-fifths). When winged nomads are not raising young, they leave their nests and can be spotted quite far from home.

It is interesting that some birds prefer walking to flying when they set off on a trip. The wild turkey, for example, travels on foot, although it is forced to take to the air when crossing rivers.

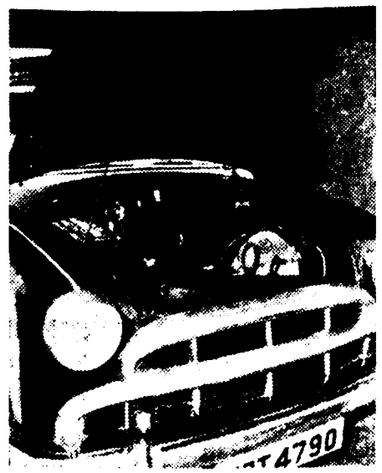
The loon escapes winter by swimming. It travels down Siberian rivers to the Taimir peninsula, there turns west and round Scandinavia and through the North Sea eventually reaches the Baltic. However, "sailors" and "infantry" are rare birds. The majority take to the air.

Each spring the migrants return home, to the north. Close on their heels the birds of the southern hemisphere turn up, not to weave nests and raise fledglings, but to escape the southern winter.

All summer long, from July through to September, thousands of sharp-beaked petrel settle along the shores of the northern seas. In autumn, together with the Siberian native birds, they head south. The Siberians find sanctuary in China and India, but the story petrel is not tempted by any forenig paradise—it stubbornly continues on its way home to Tammania. There it hatches its fledglings. Once they are strong enough, the birds set course north. First they travel along the shores of Japan and the Kurile Islands towards Kamchatka, the Alcutians and Alaska, then swing down the west coast of North America as far as California where they turn to the open sea, towards Tasmania and the nests abandoned in the southern autumn, and thus conclude their famous "Pacific Ocean loop." When they arrive at the cliffs of Tasmania, each couple settles into the nest it built and occupied months before. How do they locate them ? And why do they fly so far ? The simple answere is that. There is plenty of fish and food much closer.

So far, the explanation is not known. There are many such engimas that arose with banding. The winged rings have at least charted the migratory routes of birds. So far as the mysteries are concerned, it is now up to the ornithologists to unravel them. —Source: USSR. *Information Branch.*

A GADGET FOR PETROL SAVING



In keeping with the dictum, "necessity is the mother of invention", the unavoidable rise in price of motor spirits and the threat of its scarcity have given birth to a new gadget that is going to be a boon to motorists.

The "Petrol Saver" as it is called has been devised by an automobile engineer, Mr. S.N. Chari in collaboration with Messrs. Alegendran Tractor agencies in Madurai city.

This is a simple gadget that has already been tried out on a taxi and the results, according to the taxi owner driver, Mr. Sivaraman, is that there is a forty per cent saving on petrol consumption and there is a noticable improvement on the pick-up too.

The petrol saver, to give this result, is installed in such a position that it sucks the air and the moisture from the engine and the radiator and helps to reduce the flow of petrol without affecting the speed and general functioning of the engine The gadget is priced at Rs. 300/- and according to Mr. Alegendran, it could even cost a little less when the demand for it increases and when it is massproduced.

Field Publicity Officer, Madurai.

Tamil Nadu Marches Ahead In Sugar Production

SUGARCANE - PREPARATION OF SETTS FOR SOWING. S.1

SUGARCANE - HARVESTING STAGE. S.19

Today, sugar has become a must for all ! To provide a balanced diet, 2 ounces of sugar will have to be supplied per capita per day. Taking the daily per capita requirement of sugar as 2 ounces to the people of Tamil Nadu, it is estimated that a quantity of 9.95 lakh tonnes will be required by the end of Fifth Plan (1978—79) and 10.94 lakh tonnes by the end of Sixth Plan (1983—84). Bansil, P.C., in his book "Agricultural Planning for 700 millions" recommends a sugar constituent of 2.5 ounces per day to provide a balanced diet to an average person. Calculated on this basis, a quantity of 12.44 lakh tonnes will be required in 1978-79 and 13·67 lakh tonnes in 1983—84.

Tamil Nadu accounts for about 7 per cent of the total area under sugar-cane in India and for about 8 per cent of the production expressed in terms of gur.

With a production of about 3 lakh tonnes of sugar per annum, Tamil Nadu accounts for 1/12 of the sugar produced in India. The present production of 2.99 lakh tonnes of sugar and 5.92 lakh tonnes of jaggery (total 8.91 lakh tonnes) is just sufficient to meet the requirements of Tamil Nadu, calculated on the basis of the per capita per day requirement of 2 ounces.

But during the year 1970-71, only 1.80 lakh tonnes of sugar and 3.9 lakh tonnes of jaggery were consumed in Tamil Nadu, leaving a surplus of 1.19 lakh tonnes of sugar and 2.02 lakh tonnes of jaggery. The surplus at present is exported outside the State.

PER CAPITA CONSUMPTION

The annual per capita consumption of sugar in India is 5.8 Kgs. (supplemented by jaggery). The per capita consumption in Tamil Nadu which was 4.4 Kgs. during 1972—73 is likely to increase, in view of the increased industrial activity and agricultural production, resulting in a higher purchasing power with the people, to 9 Kgs. by 1983—84, supplemented by 6 Kgs. of jaggery.

The total consumption of sugar in Tamil Nadu was 1.28 lakh tonnes in 1960—61 and 1.80 lakh tonnes in 1970—71. The per capita consumption of sugar which was 3 Kgs. in 1950—51 increased to 3.8 Kgs. in 1960—61 and 4.4 Kgs. in 1970—71 Over the last ten year the per capita consumption increased by 0.6 Kg. as against 0.8 Kg. over the previous decade. To supplement sugar, jaggery is consumed extensively in Tamil Nadu. The per capita consumption of jaggery was 11 Kgs. in the year 1950—51 and 10 Kgs. in 1960—61 and 1970—71.

It would be seen that a total quantity of 14 kgs. of sugar (including jaggery) was consumed in 1950—51 and a quantity of 13.8 Kgs. in 1960—61 and 14.4 Kgs. in 1970—71. The total quantity of sugar (including jaggery) consumed varied from 13.8 Kgs. to 14.4 Kgs. over the past 20 years.

Jaggery consumption has been of the order of about 10 Kgs. per capita per annum during the last 10 years (1961 to 1971) despite the increase in consumption of sugar.

REQUIREMENT OF SUGAR AND JAGGERY

With the increased production and availability of sugar, a corresponding decline in jaggery consumption is likely during the ensuing period. The per capita consumption of sugar and jaggery in 1983—84 will be 9 Kgs. and 6 Kgs. respectively. Based on the above assumptions, the demand projections for sugar and jaggery are worked out and furnished.

To produce 3.20 lakh tonnes of sugar and 6.40 lakh tonnes of jaggery and to meet the need of seed, etc., 112 lakh tonnes of sugar-cane is required in 1973—74. The sugar-cane requirement in 1978—79 is estimated to be 136 lakh tonnes and 163 lakh tonnes in 1983—84 to produce the above projected quantities of sugar and jaggery. The details of cane required are furnished at the top.

Based on the above requirements, it is proposed to increase the area under sugar-cane from 2.98 lakh acres in 1972—73 to 3.20 lakh acres in 1973—74 as against the targetted area of 2.60 lakh acres. It is estimated that by the end of Fourth Plan (1973—74) the target of 11 alkh tonnes in terms of gur would be achieved.

22 YEARS OF PROGRESS

The area under sugar-cane which stood at 1.25 lakh acres in Tamil Nadu during the year 1950—51 increased to 2.98 lakh acres in 1972—73. The sugar-cane production expressed in terms of gur which was 3,30,000 tonnes in 1950—51 reached 9.96 lakh tonnes in 1972—73.

JAGGERY PRODUCTION

About 30 per cent of the cane cultivated is now being utilised for sugar production and about 60 per cent of it is utilised for the manufacture of gur.

ESTIMATED REQUIREMENTS OF CANE IN LAKH TONNES

Year	*For Sugar*	*For Jaggery*	*For seed and other purposes*	*Total*
(1)	(2)	(3)	(4)	(5)
1973—74	37.00	64.00	11.00	112.00
1978—79	67.00	55.00	14.00	136.00
1983—84	103.00	44.00	16.00	163.00

To produce the above requirements of cane, the area under sugarcane is to be extended and the yield per acre is to be stepped up as detailed below :—

Projection for area under cane, yield per acre and total production

Year (1)	*Area under cane (acres)* (2)	*Yield per acre (tonnes of cane)* (3)	*Total estimated production (lakh tonnes of cane)* (4)
1973—74	3,20,000	35.0	112.00
1978—79	3,63,000	37.5	136.00
1983—84	4,07,500	40.0	163.00

PROJECTIONS FOR REQUIREMENT OF SUGAR AND JAGGERY

Year	*Per capital consumption in kg. per year.*	*Requirements (lakh tonnes)*			
		Consumption.	*Export*	*Total*	*Interms of cane*
(1)	(2)	(3)	(4)	(5)	(6)
A. Sugar					
1973—74	4.7	2.03	1.17	3.20	37.00
1978—79	6.7	3.21	2.70	6.00	67.00
1983—84	9.0	4.74	4.51	9.25	103.00
B. Jaggery					
1973—74	10.0	4.31	2.09	6.40	64.00
1978—79	7.7	3.69	1.81	5.50	55.00
1983—84	6.0	3.16	1.24	4.40	44.00

The estimated production of jaggery is 6.04 lakh tonnes in 1973—74, 5.50 lakh tonnes in 1978—79 and 4.40 lakh tonnes in 1983—84. With regard to jaggery, the projected supply after meeting the demand in full would leave 1.24 lakh tonnes for continuing the trade in jaggery with other States and for export.

SUGAR MILLS

Due to the intensive cultivation of sugar-cane, several sugar mills have come up in Tamil Nadu during the last decade in private and co-operative sectors. There are at present 17 sugar factories in Tamil Nadu. Out of 17 sugar factories, 7 sugar factories are run by the coperative sector and 10 factories are run by the private sector Out of 10 private sugar factories, one factory called 'Palar Sugars Limited' is not working.

The sixteen working factories have a total installed crushing capacity of 21,840 tonnes of cane per day (Licensed capacity 29,600 tonnes). The nine private sector factories have a total installed capacity of 13,140 tonnes of cane per day (licensed capacity 16,150 tonnes) and the seven factories in the co-operative sector have a total installed capacity of 8,700 tonnes of cane per day (licensed capacity 9,700 tonnes).

Besides seven Co-operative Sugar factories which are already under production, three Co-operative Sugar factories, one in Coimbatore and two in North Arcot District, are in the formative stage. If these are commissioned, the total number of Co-operative Sugar factories in Tamil Nadu will be 10 and the licensed cane crushing capacity will be 13,450 tonnes per day.

In addition, eight more sugar factories would be set up over the next ten years period. The tentative location of these factories may be around the following places.

1. Budalur
2. Pattukkottai
3. Attur
4. Dharmapuri
5. Chengam
6. Srivaikuntam
7. Periyakulam
8. Tiruvellore

Position of sugar factories and their present capacity and proposed capacity by 1983-84.

Factories	*Present crushing capacity in tonnes of cane per day*	*Capacity proposed by 1983-84 in tonnes of cane per day.*
(1)	(2)	(3)
A. Existing factories :		
1. The Maduranthakam Cooperative Sugar Mills Ltd., Padalam, Chingleput district ..	1,000	2,000
2. The Ambur Cooperative Sugar Mills Ltd., Vadapudupet, North Arcot District ..	2,200	2,250
3. The Kallakurichi Cooperative Sugar Mills Ltd, Moongilthuraipattu, South Arcot District ..	1,250	2,000
4. The Salem Cooperative Sugar Mills Ltd., Mohanur, Salem Dt.,	1,000	2,000
5. The Amaravathi Cooperative Sugar Mills Ltd., Krishnapuram, Coimbatore District ..	1,000	2,000
6. The National Co-operative Sugar Mills Ltd., Alanganallur, Madurai District. ..	1,000	2,000
7. The Dharmapuri District Cooperative Sugar Mills Ltd., Palacode, Dharmapuri District ..	1,250	2,000
Total under cooperative factories.	8,700	14,250
8. E.I.D. Parry Ltd., Nellikuppam, South Arcot District ..	2,200	2,750
9. Cauvery Sugars and Chemicals Limited, Pettaivaithalai, Tiruchirapalli District ..	1,000	2,000
10. Decan Sugars and Abkkari Company Ltd., Pugalur, Tiruchirapalli District ..	1,500	2,000
11. South India Steel and Sugars Ltd., Mundiyampakkam, South Arcot.	1,500	2,600
12. Aruna Sugars Ltd., Pennadam, South Arcot District ..	2,000	2,000
13. Sakthi Sugars Ltd., Appakudal Coimbatore District ..	2,000	4,000
14. Mudura Sugars Ltd., Pandiyarajapuram, Madurai Dt., ..	240	1,000

The final location of these factories should be decided by an expert body after proper study of various factors.

The existing sugar factories in Tamil Nadu at present are not working to full capacity. The sugar industry is operating at two thirds of its effective capacity, resulting in loss of production. There is scope for expansion of the crushing capacity of the existing factories. Expansion has already permitted for an additional quantity of 10,360 tonnes per annum. By the end of Sixth Plan (1983—84) the crushing capacity of the factories existing and the three factories licensed would be 41,500 tonnes a day.

The eight new factories to be set up in the Fifth and Sixth Five Year Plans would have a crushing capacity of 16,000 tonnes per day by 1983—84, bringing the total capacity of cane crushed in Tamil Nadu to 57,500 tonnes a day. The details of expansion and crushing capacity of the existing and new sugar factories are furnished below :

SUGAR PRODUCTION

The production of sugar in Tamil-Nadu which was only about 28,000 tonnes in 1953—54 reached a level of 2.97 lakh tonnes in 1971—72. The annual production for sugar in Tamil Nadu is estimated to be 3.4 lakh tonnes in 1973—74, 6 lakh tonnes in 1978—79 and 9.25 lakh tonnes in 1983—84. The estimated production of sugar besides meeting the demand of Tamil Nadu will leave a sizable quantity for export to other states.

The sugar industry could operate for longer duration economically if the demand of raw material is fully met with cane of good quality through out the season. Under the agro-climatic conditions prevalent in Tamil Nadu, the sugar industry should be able to work for atleast 240 days in a year. The managements of the sugar factories should devote more attention to planning, cultivation and development of cane to ensure adequate supply of quality cane, which is the principal raw material. The cane growers should be regarded as the back-bone of the sugar industry and the factories should do everything to maintain cordial relationship with them and improve their economic and social status.

15. Kothari Sugars Ltd., Kattur, Tiruchirappalli District ..	1,500	2,500
16. Thiru Arooran Sugars Ltd., Vadapathimangalam, Thanjavur District ..	1,200	2,000
17. Palar Sugars Limited, Melpatti..	400	400
Total under private factories ..	13,540	21,250
(1)	(2)	(3)
B. Factories licensed and under construction :—		
18. Vellore Cooperative Sugar Mills Ltd. ..	1,250	2,000
19. Tirupathur Cooperative Sugar Mills Limited ..	1,250	2,000
20. Coimbatore Cooperative Sugar Mills Limited ..	1,250	2,000
Total ..	3,750	6,000
C. New factories proposed :—		
21. One factory in 1976—77 ..	1,000	2,000
22. One factory in 1977—78 ..	1,000	2,000
23. One factory in 1979—80 ..	1,000	2,000
24. Do	1,000	2,000
25. Do ..	1,000	2,000
26. One factory in 1980—81 ..	1,000	2,000
27. Do ..	1,000	2,000
28. Do ..	1,000	2,000
Total ..	8,000	16,000
Grand Total ..	33,990	57,500

HIGHER PRICE FOR CANE

"Private sugar mills in Tamil Nadu have agreed to pay increased prices for cane, the increases ranging from Rs. 7.80 to Rs. 14.40 per tonne over the statutory price fixed by the Centre for this season."

Honourable Minister for Agriculture Thiru Si. Pa. Aditanar announced this after discussions with representatives of cane-growers and private sugar mills.

The new factory-wise prices are : EID-Parry Rs. 90 (against Rs. 80.90 notified by the Centre). Cauvery Sugars Rs. 92.50 (Rs. 80), South India Steel and Sugars Rs. 91·60 (Rs. 83.80), Aruna Sugars Rs. 95·30 (Rs. 81.90), Sakthi Sugars Rs. 102.90 (Rs. 88.50), Kothari Sugars Rs. 100 (Rs. 85.60), and Thiru Arooran Sugars Rs. 92.50 (Rs. 80).

Prices in respect of Deccan Sugars and Abkhari Ltd., Pugulur, and Madurai Sugars Ltd., will be finalised after further discussions.

The additional commitment to the factories on account of the increased prices will be about Rs. 4 crores.

It has been agreed in principle to evolve a formula for sharing profits between the management and cane-growers to be applied on a long-term basis commencing from the current sugar year.

SUGAR RESEARCH INSTITUTE

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

SUGAR-CANE DEVELOPMENT SCHEME

The object of the scheme is to carry out intensive propaganda to educate the ryots in improved methods of sugar-cane cultivation. Quarantine, primary and secondary nurseries are raised in cultivators' holdings with a view to saturate the entire areas under sugar-cane with pure, healthy and disease-free short crop material.

SUGARCANE - SHOOT BORER. S.7

In order to encourage the use of such short crop seed material, subsidy is given by the Government of Tamil Nadu through the Department of Agriculture, to the growers who raise the nurseries and also to the cultivators who transport the seed materials from the nurseries to their own fields. The implementation of the scheme has resulted in most of the area under sugar-cane being covered with improved Coimbatore varieties.

Manurial demonstrations are conducted and subsidy of Rs. 50 per demonstration plot is given.

Hand operated and power sprayers are made available to the cultivators on reasonable hire charges.

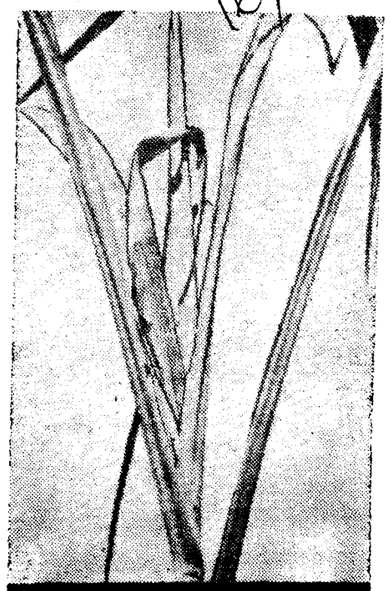
Under biological control, breeding and releasing of parasites are done in the following seven parasite breeding centres :

1. Kancheepuram.
2. Ambur.
3. Gobichettipalayam.
4. Lalgudi.
5. Melur.
6. Vridhachalam.
7. Kallakurichi.

The quality and quantity in the production of sugar-cane is affected due to availability of inadequate water during summer months. Under the Sugar-cane Development Scheme, sugar-cane growers are therefore advised to take advantage of the crash programme of the Government of Tamil Nadu for sinking of well in the different districts and to provide regular irrigation during summer months.

With a view to encourage cane growers to go in for higher yields of sugar-cane and this increase production, crop competitions are held at State, Taluk and Factory levels and prizes are awarded every year.

Sugar-cane zonal farms are run to find out the suitability of different varieties of cane for the different factory zones and to formulate the best agronomic practices for each area. The sugar factories provide necessary land and other facilities while the department of Agriculture provides the technical staff for conducting the experiments. The Government meet the expenditure on



SUGARCANE - TOP SHOOT BORER S.9

the staff while the factories meet the cultivation expenses.

SUGAR-CANE ROAD DEVELOPMENT SCHEME

The object of the scheme is to form and improve the roads in and around the various sugar factory areas to ensure easy and quick movement of sugarcane from the fields to the factories. It is of utmost importance that sugarcane harvested in the fields is transported to the factories and crushed in the shortest time possible. If the time lag between the harvest and crushing is more than 24 hours rapid deterioration sets in, in the sucrose content of the cane resulting in avoidable loss of sugar to the factory as well as the nation. Therefore, a portion of the Sugar-cane Cess Fund collected from the Sugar Factories is diverted every year for the development of roads. An increased allotment of Rs. 50 lakhs was made in the Budget for 1972-73. The Special Engineering Cell for the Sugar-cane Road Development Scheme functioning with headquarters at Madras is having four subdivisions at Bhavani, Panruti, Tiruchirappalli and Dindigul for the execution of road works in the various sugar factory areas.

SUGARCANE - TOP - ROT DISEASES, VARIOUS STAGES. S.6

The question of formation of a separate circle for attending to the works under sugarcane development as well as other road works under the Cauvery Command Complex is separately under the consideration of the Government of Tamil Nadu.

With a view to ensure that the road works executed under the scheme are in good condition to facilitate uninterrupted free flow of sugar-cane traffic, the Government of Tamil Nadu have entrusted the maintenance of the road works executed under the Sugarcane Road Development Scheme to the State Highways Department and the expenditure thereon will be met from the Sugarcane Cess Fund. A provision of Rs. 50 lakhs has been proposed under the Sugarcane Road Development Scheme for 1973-74. The target for 1973-74 is to form and improve road to a length of 40 kilometres.

Thus, the Government of Tamil Nadu is taking necessary steps to increase the production of sugar, the essential commodity of all !

R. M.

SUGARCANE - TESTING WITH REFRACTO - METER FOR MATURITY S·17

TAMIL NADU WON THE FIRST PRIZE IN ALL INDIA BANANA COMPETITION

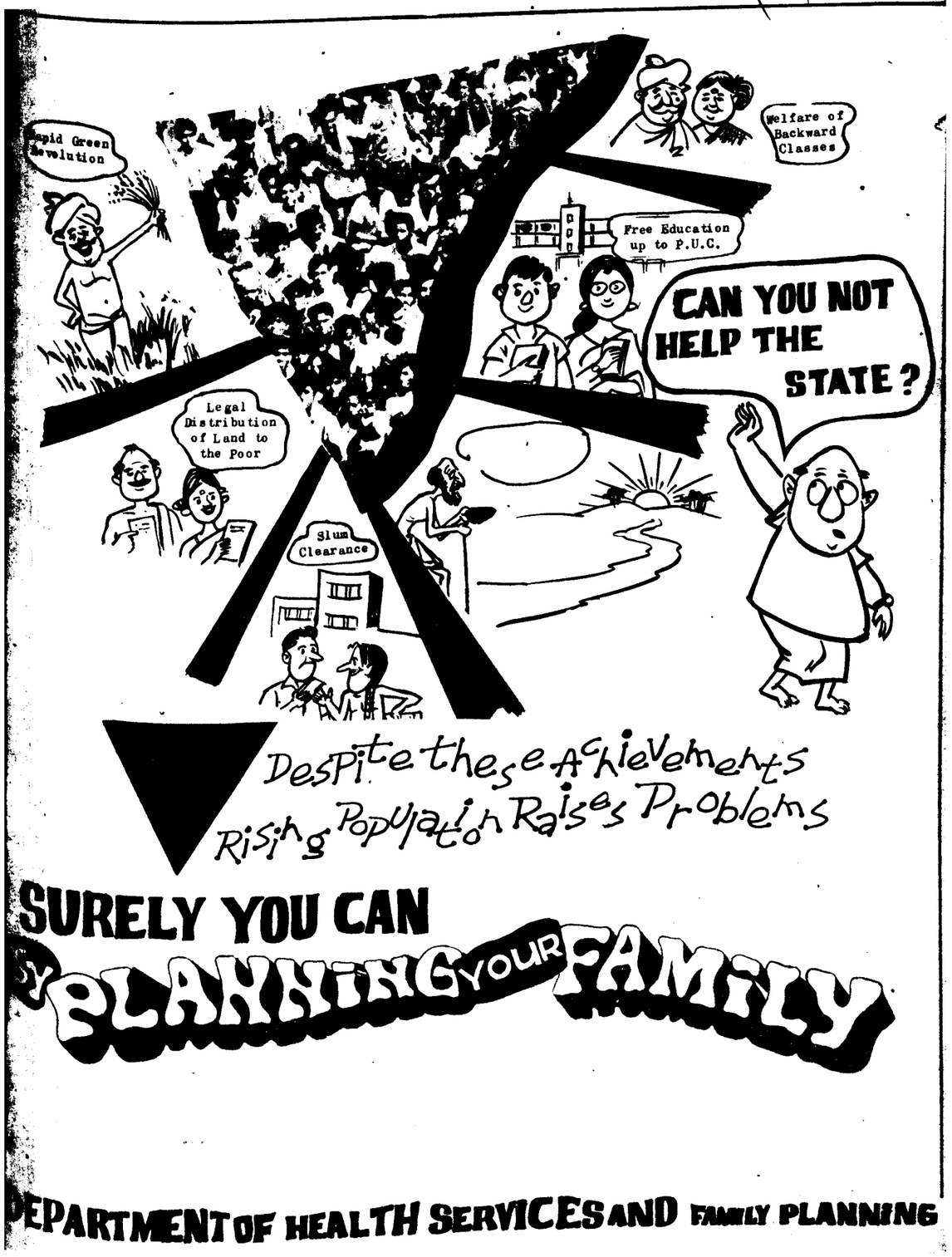
Dr. Kalaignar M. Karunanidhi, Chief Minister of Tamil Nadu looking at the special shield awarded to the Government of Tamil Nadu, shown by Thiru. A. Venkatraman, Director of Agriculture, Madras.

In the All India Banana and Miscellaneous Fruits Show, 1973 held at Trivandrum (Kerala State) on 8th and 9th December, 1973, Tamil Nadu State sponsored several farmers as competitors and also competed directly through the State Model Orchards and Fruit Research Stations at Kanyakumari, Pechiparai, Periakulam and Thimmapuram.

Out of the 104 competitors fielded against 274 total competitors, Tamil Nadu secured 14 first prizes, 15 Second Prizes and Special Award for the Best Aggregate points obtained by States.

Highlight of the success is that Tamil Nadu bagged the FIRST Prize for all the major varieties of Bananas such as POOVAN, RASTHALI, DWARF CAVENDISH, ROBUSTA, HILL BANANA, MONTHAN and also GUAVA.

The Government Orchards of Tamil Nadu secured awards in the share of I and II Prize totalling 5 in number.



1-4-1974
40 Ps.

Regd. No. M. 8676-A

Tilt the balance in your favour

KARAGAM—A popular Folk Dance of Tamil Nadu.

BUY TAMILNADU RAFFLE TICKETS

FIRST PRIZE

Rs. 1,00,000 (For each series).

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

64th DRAW DATE: 28-3-1974

Cost Per Ticket Re. 1/- only.

Issued by Director of Information & Public Relations, Government of Tamil Nadu, Madras-600009

All correspondence should be addressed only to the Director of Small Savings (Raffle), Madras-600002

DIRECTOR OF INFORMATION AND PUBLIC RELATIONS, GOVERNMENT OF TAMIL NADU, MADRAS-600002

Khadi Kraft – a trusted name for khadi and village industries articles

KHADI KRAFT offers a wide range of articles-artistic handicrafts to essential commodities. Available at over 200 Khadi Kraft Branches all over Tamil Nadu and Pondicherry.

Khadi Kraft is Elegance Par Excellence.

TAMIL NADU KHADI & VILLAGE INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.

For retail and whole-sale, contact Khadi Kraft at:

KURALAGAM MADRAS-600001 Phone : 29684	36C, ANNA SALAI MADRAS - 600002 Phone : 81954	MADURAI MAIN ROAD TIRUCHIRAPPALLI Phone : 3814	AVANASHI RO COIMBATORE Phone : 35051

P

R. N. No. 248/74.

Tamil Arasu

Vol. IV APRIL 1974 Issue 10

CONTENTS

	PAGE
Tamil Nadu Budget for 1974-75 reflects full mabilsation and prudent management of resoures ..	4
Feature articles on Handloom industry in Tamil Nadu ..	19
Residues of pesticides in some vegetable crops ..	59
Plastic and Roconstructive surgery in the Government Stanley Hospital ..	61

Tamil Nadu Resources Fully Mobilised and Prudently Managed.

3694/55

8/4/74

HIGH RECOVERY RATE OF POLIO CASES IN CHILDREN'S HOSPITAL

The Children's Hospital is able to report an 86 per cent recovery in respect of 3,591 cases of polio afflicted children treated by the hospital during the 3 years ending with 1972. This study was based on cases of acute polio-myelitis treated both in the out-patient and in-patient wards of the hospital. Other interesting data collected, show that :

Poliomyelitis has occurred in certain cases of children who have received immunisation from general practitioners. On enquiry, it was found that it is more likely due to poor storage of vaccine by the general practitioners.

The incidence is high in the areas where low or middle class people live in very crowded conditions, that is, 15 to 20 tenants in one big old house with common bathroom facilities, as in Anna Salai, Perambur Barracks, Vepery and Kodakmbakkam. The incidence is lowest in places where upper and upper middle class people live, as in Anna Nagar and Shenoy Nagar. The disease is more common in lower middle and middle income group.

Tamil Nadu Budget Reflects Full Mobilisation And Prudent Management Of Resources

Speech of Dr. M. Karunanidhi. Chief Minister, presenting the Budget for 1974–75 to the Legislative Assembly on 4th March 1974.

This Government, following as ever in the footsteps of Anna and true to the spirit of the Kural which says :

" Benevolence seeks no return. What does the world give back to the clouds ?"

feel privileged to place this Budget before the people of Tamil Nadu.

The nation is facing a serious economic crisis characterised by severe shortages, bottlenecks in production and uncontrolled inflation. The common man faces shortages of essential commodities needed for his daily life. The economy has been afflicted by inadequacy and lack of timely deliveries of industrial raw materials, minerals, oil, fertilisers, etc. Until this economic canker which has appeared at the national level is tackled, it will be difficult to prevent its spreading into our State also. In this situation of uncertainty, the evolution of long-term policies, drawing up of plans and their implementation have all become extremely difficult. We have, several times before, urged that a Chief Ministers' Conference should be convened immediately to discuss the complex problems that have arisen on account of the failure of economic management at the national level. On behalf of Government of Tamil Nadu, I had, on earlier occasions, in the meetings of the National Development Council made a number of suggestions regarding this.

FIFTH FIVE-YEAR PLAN— FACING MASSIVE EROSION

The question is how best the Fifth Five-Year Plan could be formulated against this background of stresses and strains and uncertainty. While it is a fact that a Draft Plan for Rs. 53,411 crores has been approved by the National Development Council, the physical content of the plan is being eroded day by day due to price rise and shortage of raw materials. The main levers of economic planning, monetary and fiscal policy which help to control the price level are solely operated by the Central Government. If inflation is not contained, exhortations to implement a massive plan may remain only as empty slogans and result in the emergence of the very plan holiday which we all wish to avert.

The fact that the Centre has not so far been able to approve the Fifth Plan of Rs. 1,532 crores drawn by us for our State would appear to support this apprehension. This draft plan keeps in view the objectives formulated by the State Planning Commission for our Perspective Plan. We have had discussions with the Centre several times regarding the size of the Fifth Five-Year Plan. The quantum of open market loans and institutional finance are all determined by the Centre. Besides, the Central Government should allocate a specified amount of financial assistance for the Plan. But till date, the issue regarding the amount of Central assistance as also the quantum of loans for the States has not been finalised. **It is in this background that I regret it has not been possible to present before this House the final draft of our Fifth Five-Year Plan.**

The House is aware that the State Plan represents only a part of the level of total developmental activities in the State. The Central and private sector investments are equally, if not more, important. We have been pleading, time and again, that apart from approving a large State Plan, Tamil Nadu should also be given a fair share both in Central projects and also in the investment by the private sector. **Tamil Nadu has so far been denied its reasonable share in the very heavy Central investments in Industries and Transport.** We have requested on several occasions that this injustice should be redressed at least during the Fifth Plan period.

WHAT ABOUT SECOND MINE CUT AND SETHUSAMUDRAM ?

In the draft Fifth Five-Year Plan of the Central sector, no new schemes have been provided for our State. This has been pointed out by me in the last meeting of the National Development Council. **It is a pity that there has been considerable delay in taking decisions in respect of the Neyveli Second Mine Cut and the associated 1000 MW Thermal Plant, the Sethusamudram Project, the new fertiliser projects, new oil refineries, to mention only a few of the many projects pressed for by us.** In the recent session of the National Development Council, both the Prime Minister and the Planning Minister promised that our plea will be considered favourably and an early decision taken on these and other schemes. I hope and trust that these projects will find a place in the final draft Fifth Five-Year Plan.

Whenever we put forward our request for a fair share of Central assistance as well as in Central investments, Central officials and the representatives of Central financial institutions come up with the strange argument that Tamil Nadu is an advanced State and hence, it does not need any special Central assistance. They have taken this stand by reckoning only such indices as per capita income as also the high level of expenditure that we incur on such sector like Education and Health. I have already explained many times that it is not proper to equate our march towards planned development as having actually attained the goals and on this false basis deny us reasonable financial assistance.

SIXTH FINANCE COMMISSION IS A DISAPPOINTMENT

The present procedures for sharing financial resources between the Centre and the States cannot be deemed to be satisfactory. While we were eagerly hoping that the Sixth Finance Commission will set right this state of affairs, I must confess that its recommendations have been disappointing. The only welcome feature in its recommendations is that relating to the rescheduling of debts. In every other respect, our State has not derived any advantage from this report. Under the guise of upgrading the standards of administration, the Finanace Commission has awarded very liberal devolutions to certain States by grouping them as backward States. In this process we have been treated unfairly. The principle adopted by the Sixth Finance Commission of giving grants to States which have been relatively miserly in their expenditure on social services, will only help to aggravate, in the long run, the existing disparities between the States. **The only " reward " that States like ours, which have mobilised resources to the extent possible and prudently managed its development activities, has been a denial of a fair share from the common pool of finances by using the statistics of our development to give additional assistance to other States.**

ANNUAL PLAN, 1974—75 OF UNCERTAIN SIZE

The size of the Annual Plan for the next year, which is the first year of the Fifth Five-Year Plan, has not as yet been finalised. I have discussed this with the Deputy Chairman of the Union Planning Commission. We have protested against the approach of the Government of India of pegging the Central assistance for next year at the current year's level. Besides, we are facing a serious short fall in our revenues due to re-introduction of prohibition, particularly since the Finance Commission has not come forward to make good this loss. If in the context of the sharp decline of our resources, the next year's Plan assistance from the Centre is also only at the current year's level the size of the next year's Annual Plan has necessarily to go down.

On this basis, the Planning Commission has suggested that in 1974—75, the size could be Rs. 109 crores to Rs. 118 crores, while even in the current year we are implementing a Plan of the size of Rs. 129 crores. We pointed out that we cannot, on the one hand, step up the national Fifth Five-Year Plan to Rs. 53,411 crores from the Fourth Five-Year Plan outlay of about 25,000 crores and on the other hand, keep the next year's Plan size at less than the current year's level. Our discussions with the Centre give us hope that higher assistance may be forthcoming and that as a result, in 1974—75 we may be in a position to implement a Plan of the size of Rs. 150 crores.

What we face today is
a Plan that has not yet been finalised—

a Plan, massive in conception—

a Plan that may be eroded in implementation, and what is more,
an economic situation clouded by uncertainties.

In spite of such a discouraging situation our Government have, to the extent possible, mobilised additional resources, geared up the administrative machinery and are venturing to implement development schemes with the aim of keeping alive the flame of welfare in our State in the present and in the future. In this task of socio-economic development, we will spare no pains to utilise to the maximum extent the wholehearted co-operation of the people of Tamil Nadu.

AGRICULTURE—TROPICAL FRUIT RESEARCH PROJECT

The Budget Estimates make provision for the core sector of agricultural development under several heads. The provision for agricultural development in 1974—75 including schemes implemented by the Directorate of Agriculture, otlays on minor and major irrigation, subsidy to the Electricity Board to meet losses on agricultural pumpsets and other related items, comes to roughly Rs. 68.81 crores. Over and above this, we have been fully availing of the sources of institutional finance for the development of agriculture.

MORE POWER TO THE STATE IN FERTILISER DISTRIBUTION

In respect of institutional finance, we will distribute a sum of Rs. 17 crores towards long-term credit and Rs. 81 crores towards short-term and medium term credit in 1974—75. The Budget includes provisions for establishment of a Tropical Fruit Reserach Institute, establishment of a State Agricultural Training Institute at Anna Pannai, Kudimianmalai, expansion of research schemes and formation of a State Farm Corporation. Besides, a sum of Rs. 1 crore has also been set apart for development of roads in and around sugar factory areas.

The high yielding variety programme will be stepped up to cover 67.93 lakh acres in 1974—75. As already pointed out in the Governor's address, the availability of necessary inputs for agriculture such as fertilisers and pesticides, has been far below our expectations and requirements. We have to meet the shortages and high prices which arise in these circumstances. We have requested the Government of India to empower us to control the distribution of at least the fertilisers produced within this State. Unfortunately, the present policy of the Government of India, leaving the distribution to a major extent in the hands of private marketeers, comes in the way of an efficient distribution policy. **I reiterate my plea to the Government of India that, in the context of national and international shortages of fertilisers, the Government of India should not lose any further time in reconsidering their approach to this problem and delegating to State Governments the power to control distribution of the entire quantity of fertilisers.**

ANIMAL HUSBANDRY AND FISHERIES

A sum of Rs. 5.26 crores has been set apart for the schemes of Animal Husbandry. Besides, we have made a provision of Rs. 5.32 crores for the development of Fisheries. The Tamil Nadu Poultry Development Corporation set up by the Government has started functioning and has expanded its activities. This Corporation has also opened up employment opportunities to about 500 educated unemployed youths. **Twenty-five additional veterinary dispensaries will be started in 1974-75.**

Production of milk has been increasing as a result of the expanding activities of the Tamil Nadu Dairy Development Corporation and the Department of Milk Production and Dairy Development. The "Operation Flood" Programme will continue to be implemented and Rs. 3.80 crores will be spent on these schemes in 1974—75.

The daily supply which stood at about 69,000 litres of milk in the month of January 1972, has now increased to 1,05,000 litres on account of this programme. Besides, it is worth pointing out that under this scheme, about 6,000 persons, mostly villagers, have been granted loan facilities and thus employment opportunities have been created.

The boat building programme under the Fisheries Department has been progressing well. **In order to provide for further expansion of the commercial activities of the Fisheries Department to the fullest extent, the Government have decided to form a Fisheries Development Corporation. Boat building, distribution of boats, and certain other activities of the Fisheries Department will be entrusted to this Corporation.**

IRRIGATION—7 NEW SCHEMES

An amount of Rs. 30.83 crores has been set apart in the Budget Estimates for development of irrigation. Provision has been made for taking up the following schemes:—

Improvements to Periyar Channels in Madurai and Ramanathapuram districts.

Excavation of upper right side canal from existing pick-up channel at Sathanur anicut in North Arcot district;

Formation of reservoir across Varadhamanadhi in Aykudi village, Palani taluk, Madurai district;

Formation of reservoir across Vattamalaikarai Odai, Dharapuram taluk, Coimbatore district;

Formation of reservoir across Varattupallam near Kakkaiyanur village, Bhavani taluk, Coimbatore district;

Formation of reservoir across Gunderipallam, Gobichettipalayam taluk, Coimbatore district and

Formation of a reservoir across Gundar in Shencottah taluk, Tirunelveli district.

We are also setting apart Rs. 4.51 crores for the Special Minor Irrigation Programmes under which currently 725 works are under execution. Apart from this, the Budget provides Rs. 11.44 crores for maintenance and repairs of irrigation sources.

Several irrigation tanks taken over under the Zamindari Abolition Act which have been entrusted to Panchayat Unions are in a state of bad repair. A sum of Rs. 50 lakhs has been set apart for a special scheme for bringing these tanks to standards so as to benefit agriculturists.

KUDIMARAMATH—P.W.D. TO TAKE UP

The Government have been deeply concerned about the levels of maintenance of irrigation channels under the kudimaramath system. In many cases where kudimaramath work on channels has been entrusted to Panchayats, the work has not been attended to properly for several years due to the reluctance on the part of the agriculturists to meet their share of the contribution for these works and also due to the fact that the ceiling on costs, Rs. 250 per acre, was not sufficient. From 1971, the Government have been implementing a scheme of executing directly through the Public Works Department kudimaramath works on channels covering more than one Panchayat in Thanjavur district. The Government have examined the question of extending this to all the districts and have decided that in the first phase, **kudimaramath works all over the State in respect of channels covering more than one panchayat will be directly executed by the Public Works Department. The cost of the works will be shared in the ratio 4 : 3 by the Government and the ayacutdars.** Necessary legislation is being undertaken to enable the Public Works Department to execute these works and to collect the contribution from the beneficiaries. It is hoped that as a result of this measure, kudimaramath works on channels of a total length of about 4,000 kilometres will be executed and it is hoped that this will help to restore these important supply channels. I hope the House will welcome this measure which will benefit a large number of agriculturists in the State.

CAUVERY DISPUTE

The Cauvery river sustains the Cauvery irrigation system which has been established and developed from ancient times in our State. It is the backbone of our agriculture. We have been patiently hoping for a favourable response to our reasonable stand that water from this source should continue to be available to us, as safeguarded by the 1924 agreement. However, a final decision on this issue has been getting delayed for long. The Fact Finding Committee set up by the Centre, consequent on the meeting of the Chief Ministers of Tamil Nadu, Karnataka and Kerala, has submitted its report. I have written to the Government of India requesting that an early decision be taken on the report.

DELAY IN SANCTION OF OUR POWER PROJECTS WILL RESULT IN SERIOUS ECONOMIC REPERCUSSIONS

However, in spite of all these achievements, during the past three years on account of inevitable shortages of power, we have had to face difficult problems in the industrial and agricultural sectors. We have been representing to the Central Government about the need for sanctioning a thermal power plant at Mettur and Tuticorin and also a 1000 MW thermal plant at Neyveli. So far, the Centre has given permission only for the Turitocin Thermal Plant. However, our pleas for the second mine cut at Neyveli and the associated power plant have not been accepted. Nor has our request for a thermal plant at Mettur been accepted so far. We have also been representing to the Centre regarding the urgent need for starting new hydro-electric projects in the Western Ghats and at Hogne kal.

Ther per capita consumption of electricity in our State which was 98 units in 1967 has reached 133 units now. This shows the increasing success of our efforts in meeting the needs of our people, in developing our industry and our agriculture. The rural electrification programme which we announced in 1969 is going on in full swing. **I am happy to announce that so far electricity has been extended to 97 per cent of the total of about 60,000 ellavigs and hamlets in the state. Out of about 24,000 Harijan colonies, electricity has been given to about 23,000 colonies. Government are bearing the cost of consumption of power for street lighting in these Harijan colonies.**

OUR PERIL IGNORED

Our daily requirement of electric power is 235 lakh units. Out of this, 50 per cent is consumed by industries, 25 per cent by the agricultural sector and the balance by other sectors. The total generation within the State including the supply from Neyveli is only 196 lakh units. Hence we have a shortage of 39 lakh units. In order to make this up, we are forced to purchase power at a relatively high cost from the neighbouring States. Since the requirements of these neighbouring States have also been going up day by day, there is a widening gap between our demand and the availability of power. In spite of this detailed justification of our requirements, the Government of India has been under estimating our needs and delaying sanction of the power projects. I wish to point out that this will result in serious economic repercussions both in the immediate future and in the long run.

When we make up the shortage of power to the extent possible by purchasing from neighbouring States or from other sources, we are forced to pay a higher price. The cost of power that we purchased from Kerala in 1969 was 5 paise per unit. But now it is 8 paise. Similarly while in 1969, the cost of power that we purchased from Neyveli was 5.9 paise, now it is 8.48 paise for a part of the supply and much more than that for the balance. The ultimate cost of extending power to the villages works out to 20 paise per unit, including the cost of conversion of H. T. to L.T., whether it be the power produced by us or bought from other States. As against this, our tariff for the agriculture sector is very low compared to other States. In order to reduce the losses, at least to some extent, the Tamil Nadu Electricity Board has announced certain increases of surcharge. I would like to add that this enhancement will not apply to the agricultural sector and to domestic and street lighting.

HANDLOOM

The Government have provided Rs. 2.01 crores for the relief of handloom weavers. Apart from this, we have been assisting the Handloom Weavers' Co-operative Societies in various ways. It is worth nothing that as a result of our efforts, the Tamil Nadu Handloom Weavers' Co-operative Society (Co-optex) has increased its turnover to Rs. 12 crores in the current year from the level of Rs. 9.17 crores in 1972—73. We have taken action to ensure its further expansion in the coming years. The Government have also sanctioned an interest free loan of about Rs. 1 crore at the rate of Rs. 100 per person as relief to handloom weavers who had suffered for want of work on account of non-supply of yarn. I am happy to state that the Government have decided to comply with the request of the weavers and to write off this sum of Rs. 1 crore.

The spinning mills of Tamil Nadu produce nearly 1/5th of the total cotton yarn in the country. The power of distributing the yarn produced in our own State is vested not with us but with the Textile Commissioner of the Government of India. The quantity of yarn produced in the Co-operative Spinning Mills and the other spinning mills under the control of the State Government would be just sufficient to meet the requirements of the weavers in the Co-operative Sector in our State. But we are not in a position to meet the complete requirements of the weavers outside the co-operative fold. It is our avowed policy to seek a permanent solution to the problems confronting the handloom industry.

In this context, the Santhanam Committee has made some useful recommendations. The important recommendations are : procuring yarn from the mills and distributing it to the weavers at controlled rates,

bringing the weavers outside the co-operative sector into the co-operative fold to ensure the distribution of yarn, reserving the production of items like dhoties, saries, towels and blankets exclusively for the handloom sector and controlling the use of unauthorised powerlooms. Government have accepted these recommendations and are taking steps to implement them. I have also addressed the Prime Minister on this issue.

INDUSTRIES

Policies and procedures relating to exports and imports, credit, industrial licensing and financial institutions are all under the control of the Central Government. It is against this background that the persistent efforts of the State Government and the good progress made in various ventures in the private, public and joint sectors in our State have to be judged.

TIDCO (Tamil Nadu Industrial Development Corporation) has made substantial progress in establishing industries in the public and joint sectors. The public sector cement factory at Alangulam is now going through an expansion of its activities from 4,00,000 tonnes per annum to 7,00,000 tonnes per annum. Action is also being taken to increase the capacity of the Arkonam Steel Plant from 50,000 tonnes to 1,00,000 tonnes per annum.

The Tuticorin Fertiliser Complex which has been started in the joint sector at a cost of Rs. 85 crores will commence fertiliser production shortly. Letters of intent have been secured for projects in the joint sector like electronic instruments, caustic soda, fishing trawlers, dyes and chemicals, refractories, etc. These are at various stages of implementation.

SICK INDUSTRIAL UNITS

The members will be happy to note that a large number of industrial units which had been sick due to industrial recession during 1967—69 and which were revived due to the efforts of the State Government have now turned the corner. One of these firms, the Textool Company at Coimbatore, is now producing goods worth Rs. 3 crores a year. Similarly, LASCO Alloy Steels Company in Dharmapuri district, which was dormant, was revived by the efforts of the State Government and is now producing very valuable alloy steles. The Sakthi Pipes and Southern Structurals, which suffered seriously on account of financial and marketing difficulties, and hence were closed, have been subsequently brought under the management of the State Government. The Government have adopted the policy of inducting professional management into these organisations and have also helped by giving guarantees and pumping in finance wherever needed. **As the next stage of these operations, the abovementioned four companies, *viz.*, Coimabotre Textools, Dharmapuri LASCO Alloy Steels, Sakthi Pipes and Southern Structurals, will be nationalised with the concurrence of Government of India. We hope that the Centre will give early clearance for this.**

SUGAR PRODUCTION ONLY IN STATE SECTOR

Thirteen sick textile mills which were taken over by the State Government were brought under the control of the Tamil Nadu Textile Corporation. Over 10,000 workers are now employed as a result. The State Government and the Tamil Nadu Textile Corporation have had a major role in putting the finances and the management of these concerns on a proper footing. It is now understood that the Government of India proposes to nationalise these 13 textile mills. **It is my duty to emphasise that in the event of these 13 mills being nationalised, all these mills should be under the control of and in the owernship of the State Government.** The fact that these sick mills have been revived under the efficient management of this State Government is again worth recalling here, and reinforces my stand.

Our Government's policy continues to be one of encouraging industrial development in the small scale sector. The State Small Industrial Development Corporation has expanded its activities and during 1974—75 it is expected to have a turnover of Rs. 8 crores.

The State Industries Promotion Corporation of Tamil Nadu (SIPCOT) has so far given assistance to 153 industrial units involving a total capital outlay of Rs. 42.67 crores. Mention may also be made of the successful development of the Ranipet Industrial Complex. The Government propose to undertake the development of more such centres in backward districts. Besides, the Industries Department has undertaken the development of an Electronic Estate at Salem and a developed plot estate for electronic and electrical instruments in the coastal area adjoining Madras. The project for the establishment of a salt-based industry in Tuticorin and Ramanathapuram coastal areas is being developed.

SUGAR PRODUCTION ONLY IN STATE SECTOR

Government have taken a policy decision that hereafter new sugarfactories will not be permitted in the private sector but started only in the public sector where provision will be made for the inclusion of cane growers as share-holders. **We have made a special provision of Rs. 1.5 crores towards purchase of machinery for sugar factories.**

The exemptions given for sugarcane lands were cancelled in 1971 under the Land Ceiling Act introduced by us. I wish to bring to the notice of this House the fact that an extent of 3,421 acres of lands owned by Thiru Aruna Sugar Mills has been taken over by the State Government and is being brought under the Tamil Nadu Sugarcane Farm Corporation. In addition, the extent of 3,097 acres leased to this sugar mill will also be brought under this Corporation.

While we continue to implement a number of projects for industrial development, a large number of proposals are awaiting clearance from the Government of India. Several new projects proposed by us such as the Oil Refinery at Tuticorin, the Petro-Chemical Complex at Manali, the New Fertiliser Plant at Cuddalore, projects for Nylon and Seamless Pipes, are awaiting Government of India's approval. The Governor has already pointed out in his address the meagre share given to the State of Tamil Nadu in Central sector industrial projects. We have emphasised again and again that Tamil Nadu is ideally suited for the location of defence production industries from the security point of view. We hope that the Government of India will consider favourably our request for locating in our State new units for defence production.

HEALTH SERVICES AND FAMILY PLANNING PROGRAMME

The Budget Estimates for 1974—75 provide for an expenditure of Rs. 48.34 crores on Health Services and Family Planning Programmes. This is inclusive of Rs. 4.2 crores set apart for buildings for Medical and Family Planning Services. In continuation of the policy pursued for the last two years, 40 more Panchayat Union Dispensaries will be provincialised in 1974—75, bringing the total number of such provincialised dispensaries to 102 from the year 1972. Some of the schemes for which provision has been made in 1974—75 are—

90 bedded hospital at Tiruppur; 100 bedded hospital at Madurai; Golden Jubilee Block at Vellore; 160 bedded ward at District Headqarters Hospital at Erode and 100 bedded hospital at Rajapalayam.

Further a sum of Rs. 33.92 lakhs has been sanctioned for the first stage of works in the Anna Cancer Institute at Kancheepuram.

We have also made provision for extending X-Ray facilities in taluk and non-taluk hospitals, appointment of specialists in district headquarters hospitals, relieving unemployment among nurses, decreasing work load among nurses by creating 200 additional posts, construction of additional buildings for Dharmapuri, Nagapattinam and Kumbakonam hospitals. We have undertaken a master-plan for the development of the Government General Hospital in Madras at a total cost of Rs. 56 lakhs and a provision of Rs. 22 lakhs has been made towards this in the Budget Estimates for 1974—75. Besides, in the coming year, 150 additional posts of Assistant Surgeons will be created.

SIDDHA SYSTEM IN ALL TALUK HOSPITALS

In order to encourage the system of Indian Medicine, it is proposed to open Siddha dispensaries in 20 taluk and non-taluk hospitals. We have also proposed to open a Homeopathy Medical College in Madras.

The Medical department continues to render its services for the free eye-camp project started in 1972. Under this scheme, so far, eye sight has been restored and free spectacles supplied to 62,265 persons.

We have set apart a sum of Rs. 6.51 crores for Family Planning programmes, in spite of the fact that Government of India have sharply reduced the assistance for this programme, by providing additional allocation from State funds.

EDUCATION

The provision of Rs. 110.15 crores for Education for the year 1974—75 as against Rs. 10.59 crores provided for in 1956—57 is an eloquent testimony of the abiding interest the Tamil Nadu Government have been evincing in the progress of education. Out of 60.24 lakhs of children in the age group 6—11, nearly 54.38 lakhs (90.2 per cent) are in schools. The corresponding percentage for the age group 11—14 is 52.3 and for the age group 14—17 is 33. Our chief task in the next five-year plan period will be to draw to the schools those children, who for various reasons, have been unable to join the schools till now.

About 2.39 lakhs teachers are now in charge of imparting instruction to the 76 lakhs of students in the schools. It is most gratifying to note that there has been considerable improvement in the teacher-pupil ratio, which is now, on an average, 1 : 34.

During 1973—74, nearly 10,000 teachers were appointed under a special scheme over and above the normal additional appointments made from year to year. Although the Government of India issued instructions that the teachers appointed under this special scheme should be paid only half pay, the State Government have come forward to meet the balance of expenditure from its own revenues and are paying all these 10,000 teachers at the full scales of pay. It is hoped that the appointment of these additional teachers will contribute significantly to toning up the quality of instruction in the schools.

Tamil Nadu has attained signal success in its task of extending educational opportunities to children from the under-privileged sections of society, who were hitherto denied opportunities for educational advancement. The primary task now facing us is to improve the quality of instruction. This cannot be achieved by the efforts of Government alone. It is only the concerted efforts of students, teachers, parents and educational experts, that can help us to attain this objective. As far as the Government are concerned, steps have been taken to revise and improve the syllabus, and to train teachers in new and innovative methods of instruction. Government have also sanctioned the setting up of a Science Institute, as a separate wing of the State Institute of Education, to concentrate on the progress of Science Education.

With a view to enthusing teacher to work with greater zeal and devotion, the pay scales of teachers have, during the last few years, been considerably improved, and a number of concessions have been granted to improve their working conditions. During the year 1973—74, as many as 573 part-time craft instructors have been given full-time jobs and scales.

Out of the 2.39 lakhs of teachers in our State, over 80,000 are working in Aided Schools. It has been one of their long-standing demands that these teachers should be given statutory protection for their service conditions. **The Tamil Nadu Private School Regulation Bill, which was introduced and passed in the State Legislature last year, while ensuring reasonable protection for the service conditions of teachers, will at the same time encourage the private managements to run the schools efficiently.**

Of the 178 Colleges in our State, 51 are directly managed by the Government and 127 are Aided Colleges. Rules for the disbursement of grants to the Aided Colleges have been codified and put on a sound basis and this pattern, which has been introduced since last year, has been widely welcomed by the private college managements.

Of the 178 colleges, 104 are affliated to the Madras University and 74 to the Madurai University. Educational experts have expressed the view that the optimum number of colleges to be affliated to one University, should not exceed 30 to 40. On this basis, it would be necessary to set up one or two new Universities in Tamil Nadu, where only three Universities are now functioning. It has been stipulated that new Universities should be set up only with the concurrence of the University Grants Commission, set up by the Government of India. The Government hope that the University Grants Commission will take note of the fact, that, while there are a few other States with a large number of Universities, Tamil Nadu has only three Universities, and will give their concurrence to the setting up of new Universities in Tamil Nadu.

STATUTORY PROTECTION TO TEACHERS IN AIDED SCHOOLS

The generalist Universities, which have to devote their attention to the various faculties of general education, are not able to do full justice to, and devote specialised attention required for, the growth of Engineering and Technological Education. In this view, **the Government of Tamil Nadu have been, for the past few years, urging the constitution of a University of Technology to which all Engineering Colleges will be affliated. It is depressing and discouraging to note that although this proposal had been scrutinised by more than one Committee set up by University Grants Commission, concurrence has not yet been given to set up this University.** We note that a neighbouring State, which embarked on this, long after we took the initiative, has already succeeded in setting up a University of Technology without the concurrence of the Government of India. We cannot in the circumstances escape feeling that it is only those who are meticulous about following the rules, that are penalised, and subjected to needless handicaps and hindrances. I hope that the Government of India would find a solution to this problem soon, and give their concurrence for the setting up of a Technological University in Tamil Nadu from the year 1974—75.

WELFARE OF HARIJANS AND BACKWARD CLASSES.

I hope and trust that both the teachers and students of our State will appreciate the Government's liberal outlay of Rs. 110 crores, which has been made with the sole object of promoting the future welfare of the student community, and will co-operate in ensuring that the community enjoys to the fullest measure the benefits of this large investment.

POOMPUHAR AND PANCHALANKURICHI

In reviving Poompuhar, the ancient Chola town lost to the sea, we are fulfilling the ideals so dear to the heart of Anna—of preserving and fostering the tradition and history, arts, culture and civilisation of the Tamils. Our achievement and continuing efforts in this direction have won encomium of many, even foreigners. An amount of Rs. 6.5 lakhs has been spent so far on this project.

We have excavated the ruins at Panchalankurichi and restored the ramparts and forts of Kattabomman's time and recreated a spectacle vibrant with history as a tribute to the memory of that great hero of Panchalankurichi, who fought gallantly for his motherland and braved death with a smile on his lips. In his honour, a suitable monument is also being raised at a cost of Rs. 5 lakhs.

We are renovating the temple at Mylapore dedicated to Tiruvalluvar, who placed before humanity a code of universal conduct through his immortal Kural. It is also proposed to raise a fitting mermoial to Tiruvalluvar in an extent of 80 grounds at Nungambakkam lake area, with the object of spreading the message of Kural to the four corners of the world. We have sanctioned a sum of Rs. 10 lakhs initially for this.

WELFARE OF HARIJANS AND BACKWARD CLASSES

The outlay on the Welfare of Harijans and Backward Classes in 1974—75 will be Rs. 16.06 crores. The Harijan Housing Corporation, which was announced by me in the last budget speech, has been set up. The delay in setting up of this Corporation was due primarily to the fact that financial institutions and banks from whom we expected financial help have dragged their feet in considering our request for financial help. Under these circumstances, Government decided to start this Corporation by providing from State funds Rs. 1 crore in 1973—74 and another sum of Rs. 1 crore in 1974—75. **This Corporation will undertake development of housing facilities for Harijans especially in lands acquired by the State already for this purpose. In the first stage, 100,000 houses will be constructed as part of a phased programme extending over a period of five years.**

SECURITY AND SOCIAL WELFARE

This Government have always stood in the forefront in promoting social welfare, especially of those who are at the bottom of the social ladder. In addition to the welfare schemes of restoring eyesight to the blind, rehabilitating the leprous beggars, and eliminating hand-drawn rickshaws, this Government have now embarked upon the scheme of giving a new lease of life to the physically handicapped. As a first step towards implementing this welfare measure of providing security and succour to them without allowing it to remain merely as a slogan, the Government have undertaken a survey of the physically handicapped in order to gather the relevant details. Vigorous followup action on this is being taken.

The Pension Benefit Scheme of the State Government benefits only the Government employees and teachers. Certain private sector companies are also extending pension benefits to their employees. But a major portion of the public do not have any pensionary benefits. This Government, which have always been concerned with the welfare of the public, especially the lower salaried class, is now introducing a new pension scheme for them. Under the scheme there will be an opportunity for everyone to get pension by giving a regular monthly contribution. **As an example, if a 30 year old person contributes a monthly amount of Rs. 10, he would be entitled to get a monthly pension of Rs. 100 from the age of 55 till death.**

MONTHLY PENSION SCHEME FOR THE AGED PEOPLE

Under this scheme, provision has been made for the refund of principal and interest to the dependents of the subscriber in the event of his death, provided he has been making his monthly contributions regularly. Other measures of assistance to them are also under examination. Detailed procedures regarding the scheme are being formulated and the scheme will be commissioned in the course of a month or two.

NUTRITION AND CHILD WELFARE

Government continue to show keen interest in child welfare. So long as there is disparity in the facilities and opportunities afforded to children of affluent families and those coming from the poorer strata, we cannot establish a socialist society. Equal opportunities for growth should be provided to all children irrespective of the circumstances of the families from which they come. Child welfare is therefore the primary obligation of a socialist society. Keeping this in mind, we intend implementing an integrated programme for the development of children in 1974—75. Under this programme 10 integrated children's development projects will be established. **One thousand more child welfare centres will be established under this scheme. This will be in addition to the existing 2,639 child welfare centres. As part of the package, medical supervision and nutritious diet will be provided to children attending these centres.**

Several diseases which affect children can be prevented by ensuring nutritious diet. The high incidence of mortality of children before they attain the age of five can be prevented to a considerable extent by attending to nutrition and medical facilities. In view of this we have been providing nutritious food to children, expectant and nursing mothers. **This programme already covers a total of 5 lakh persons and is planned to cover 6 lakhs in 1974-75. A sum of Rs. 3.3 crores will be spent in 1974-75 on nutrition and child welfare programmes.**

The nutrition programme for industrial labour which is being implemented in our State is among the first of its kind in the country. In this scheme, nutritious food material made available by CARE is cooked and supplied to the pregnant and lactating women and preschool children of workers' families to supplement their daily food. At present the scheme is in force in 92 factories and plantations covering about 23,000 beneficiaries.

7,200 HOUSES IN 74—75 AT RS. 8. CRORES

Our efforts for the expansion of housing, which is one of the basic needs of the people, have been complimented by many observers. The Housing Board will undertake works to the extent of Rs. 8 crores in 1974—75 and complete 7,200 houses. In addition to this, the Tamil Nadu Co-operative Housing Society will be distributing loans around Rs. 8 crores in 1974—75. The progress made by us in this sphere will be evident if we compare this with the total amount of Rs. 3.7 crores which was spent on housing facilities through both these institutions in 1968—69. Besides these, a sum of Rs. 54 lakhs has been set apart in the budget for Police Housing Schemes and Rs. 80 lakhs for house loans to Government servants. The assistance which we expected from the various financial institutions including banks for the Special Low Cost Housing Scheme, announced in the Budget in 1973—74 and initiated this year, has not been forthcoming. Nonetheless, the Government have started building 1,417 low cost houses. Further development of this programme will depend on the availability of additional funds from the Life Insurance Corporation of India and from HUDCO.

SLUM CLEARANCE

The number of tenements constructed by the Tamil Nadu Slum Clearance Board since its inception till December 1973 is 11,092. It is expected that 4,378 tenements will be constructed in 1974 before March 31st. Another 4,200 tenements are planned to be constructed in 1974—75. I am happy to announce that under this scheme, which was begun in 1970—71, before the end of March 1975 a total number of 19,670 tenements will be ready for occupation with all facilities. The Housing Board has also undertaken substantial slum clearance programmes. **So far, the Housing Board has cleared the slums and built 7,412 tenements in eight mofussil towns. A sum of Rs. 4.75 crores is being set apart for the programme of slum clearance and slum improvement in 1974—75.**

RS. 40 CRORES FOR RURAL ROADS

This State has been a pioneer in the task of development of our villages, which form the backbone of the nation. The House is aware of the various programmes that we have undertaken to bring water, power, schools and roads to the various villages of the State. We have given the highest importance to rural development.

INTEGRATED PROGRAMME FOR CHILDREN'S WELFARE

We have undertaken the rural roads programme for connecting with the main road every habitation with a population of more than 1,500. Towards this, a sum of Rs. 3 crores is being spent in1973—74 and an equal amount has been provided in the estimates for 1974—75. The total cost of this programme is now estimated to be Rs. 40 crores. In the present financial situation, it is expected that the scheme can be fully implemented within a period of 10 years. **The cost of connecting villages with a population of between 1,000 and 1,500 is expected to be an additional Rs. 25 crores. It has therefore been decided to take this up at the next stage.**

SUBSTANTIAL PROVISION FOR INTEGRATED RURAL DEVELOPMENT

We are providing money every year to Panchayat Unions for maintaining and improving local roads. As against a sum of Rs. 1.19 crores per year provided so far, the Government have decided to increase this provision to Rs. 2.19 crores. This amount will be spent through the Panchayat Unions.

In my last Budget Speech, I had announced that an integrated scheme of rural water-supply at a cost Rs. 40 crores has been taken up. This scheme is being implemented vigorously by the Tamil Nadu Water-supply and Drainage Board. TWAD will implement water-supply schemes which are to be taken up in 2,230 habitations in endemic area and in 4,960 villages where there is no water-supply at all at present. A provision of Rs. 2.5 crores has been made for grants to TWAD for undertaking schemes in these areas in 1974—75.

In spite of the efforts taken in the last five years to provide water-supply in various rural areas, there are 11,814 habitations with inadequate water-supply. The problems of water-supply in relation to these areas will be tackled by the Directorate of Rural Development through Panchayat Unions. Towards this, a provision of Rs. 1.77 crores has been made in the Budget for 1974—75.

Substantial provision has been made in the Budget for grants and loans to the Panchayat Unions which are recognised to be the principal agency for rural development. **The total amount of grants and loans to the Panchayat Unions provided for 1974—75 comes to Rs. 21·67 crores. This is in addition to the sum of Rs. 39.23 crores set apart for elementary education and being spent through the Panchayat Unions.**

DISTRICT DEVELOPMENT CORPORATION

I had earlier announced that a District Development Corporation should be set up for each District to take charge of the development programmes in the district and implement them properly and expeditiously and raise the requisite resources for this purpose at the district level itself by suitable non-tax measures. The idea has been welcomed by administrators and economists alike. As a first stage, it is proposed to set up District Development Corporation in the districts of Ramanathapuram, Coimbatore, Dharmapuri and Thanjavur under the chairmanship of the Colectors concerned. Arrangements will be made to provide Rs. 2 crores as the Government contribution towards the share capital of these Corporations.

URBAN DEVELOPMENT

Sufficient funds have been provided for urban development. As part of our emphasis on urban development, a sum of Rs. 1.13 crores as loans and grants will be given from the State funds for the improvement of urban roads. Out of a total of two Municipal Corporations, 99 Municipalities, 13 Townships and 626 Town Panchayats in the State, water-supply has been extended to both the Corporations, 87 Municipalities, 8 Townships and 71 Town Panchayts. Water-supply Schemes are under execution in 3 Municipalities and 37 Town Panchayats. In 1974—75, we have arranged for funds of the order of about Rs. 20 crores including the expenditure on Veeranam Project through the Tamil Nadu Water Supply and Drainage Board.

REVIVAL OF MARITIME GLORY OF TAMIL NADU

A municipal Finance Enquiry Committee has been set up to study the requirements of Municipal finances.

The Madras Metropolitan Development Authority was set up in December 1973. The House may recall that I had announced in the Budget Speech for 1973—74 the decision of the Government to set up Marai Malai Nagar. Action is underway for acquiring lands and establishing various infrastructural facilities at Marai Malai Nagar. The MMDA is also undertaking the development of an urban node at Manali.

An Expert Team from the Government of India which visited Madras recently has accepted our proposal for establishing a tube railway for improvement of mass transit in Madras. The Government of India should take an early decision on this and provide the necessary funds quickly.

The problem of Madras metropolitan areas is getting more and more complex as time goes on. We have requested the Government of India to assign adequate assistance to us for tackling this problem. We have repeatedly emphasised that Madras is not merely the headquarters of a State. It is a centre of regional economic activity. It is only appropriate that the Government of India which derives substantial revenues from this city should also set apart adequate amounts from its resources to ensure the city's development. The Central Government should come forward to give substantial assistance to Madras for metropolitan development as they have done in the case of Bombay and Calcutta.

Members of the House are aware that the State Transport Department and the nationalised transport undertakings are performing well, and have earned praise from one and all. The private transport undertakings which have been taken over by Government are being administered efficiently and are earning reasonable profits. We have also augmented their fleets. The State Road Transport Department has also stepped up its activities.

In order to further develop transportation facilities, a shipping corporation wholly owned by the Government of Tamil Nadu will be set up. It will called "Poompuhar Shipping Corporation." This Corporation will start functioning with an authorised share capital of Rs. 5 crores. A sum of Rs. 1 crore has been set apart for this In the first instance, the ships will be used to handle coal traffic for our thermal stations. **In the long run, we hope that our vessels will be on the high seas all over the world, earning the State fame and glory. This venture will be in the spirit of the great sea-faring traditions of ancient Tamil Nadu.**

SOLICITOUS CONCERN FOR THE WELFARE OF LABOURERS

For industrial and agricultural development, the removal of transport bottlenecks is indispensable.

On account of the sustained efforts of this Government, one of the longest and most modern bridges in the country, *viz.*, Tirumanur bridge linking Tiruchirappalli and Thanjavur districts, has come into being.

Another massive bridge linking Musiri and Kullithalai is coming up in fulfilment of the long-cherished aspiration of the people in that locality.

The Anna fly-over in Madras, which has reduced traffic congestion considerably, is one among three of its kind in India.

The two-tier Tiruvalluvar bridge at Tirunelveli and the three-tier Coimbatore bridge are among the best designed and well constructed bridges in the country.

LABOUR WELFARE

The Government's labour policy continues to be one of solicitous concern for the welfare of labourers. As an example of this policy, I may cite here the pioneering scheme of labour participation in management in the Transport concerns in the public sector and also extension of the Pension scheme to about 35,000 transport workers.

Wages profits and prices are all inter-connected. I have at many meetings of the National Development Council emphasised the need for a national wage-price profit policy.

Our plan to implement the participation of labour in Government companies requires certain modifications in Central enactments. We have written even in the last year to the Central Government about this and I have personally addressed the Prime Minister emphasising the need for implementing this programme immediately. I wish to point out that the Government of India's clearance for this has not yet been given.

Government had appointed a Committee for fixing minimum rates of wages for various classes of employment in agriculture and employment ancillary to agriculture. Government have accepted the recommendations of the Committee and minimum rates of wages have also been notified. Government have sanctioned the grant of financial assistance to meet the legal expenses of trade unions in respect of proceedings in the High Court. As mentioned by me in the last year's budget speech Government have sanctioned the creation of three Labour Legal Advisory Cells with a view to rendering necessary assistance to workers and smaller trade unions by giving them advice on the procedure to be followed for securing relief and connected matters.

A Labour Welfare Fund has been constituted with an initial amount of Rs. 5 lakhs. Welfare centres have been started with this fund.

It has been proposed to extend the E.S.I. scheme to the following new areas during the year :—

1. Madras suburbs (Adyar and Nandambakkam).
2. Karur.
3. Melur.
4. Athur.
5. Ambur.
6. Karamadai.

our plan schemes and on the other evolving special schemes for employment. We have nevertheless fully implemented all such special programmes as have been put forward by the Government of India to mitigate the problem of unemployment. Under the centrally sponsored, Half a-million job programme as have been put forward by the Government of India schemes costing Rs. 6.6 crores have been sanctioned which are likely to create about 35,000 jobs. In addition, we have from our own funds created the Youth Service Corps and have so far provided employment opportunities to 4,576 youths in rural areas.

BENEFITS TO GOVERNMENT SERVANTS

Government have, over the last 3 years, substantially improved the pay and service conditions of Government employees, including teachers. The recommendations of the Second Pay Commission have been implemented fully. Subsequently, realising the existence of certain anomalies in the Pay Commission's Report, Government set up a One Man Committee to look into these anomalies and the grievances putforth by certain associations. The recommendations made by this One Man Committee have also been accepted

INCREASED DEVELOPMENT WORKS FOR EMPLOYMENT OPPORTUNITIES

The problem of unemployment among both the educated and the uneducated has been aggravtaed by the present economic situation. Employment opportunities can increase only if the tempo of plan activities increases. I wish to emphasise that it is possible to solve through increased development works in rural areas and other labour intensive industries. The basic lacuna in our planning strategy is indicated by the fact that on the one hand, the Central Government has been reducing the assistance for by the Government and are being implemented. Besides this, Government have sanctioned increases in D.A. rates as and when the need arose. Subsequent to the pay revision in October 1970, three D.A. revisions have so far been sanctioned. It has been estimated that the total annual commitment on account of these pay revisions, revisions in dearness allowance and the implementation of the One Man Committee's recommendations would be more than Rs. 50 crores.

A SPECIAL FAMILY BENEFIT SCHEME FOR GOVERNMENT EMPLOYEES

A Special Family Benefit Scheme has been introduced with effect from 1st January 1974 for Tamil Nadu Government employees in order to supplement the benefits now available under the State Government pension-*cum*-gratuity scheme. Under this scheme an employee will be contributing Rs. 10 per month throughout the period of his service. In the event of the death of an employee, while in service, a sum of Rs. 10,000 will be paid to his family. In the case of employees retiring on superannuation or demitting office for any reason, he will be paid the actual amount contributed by him along with the Government contributions representing interest. The scheme is applicable to all Government servants including those on temporary and non-pensionable service. Teachers of aided educational institutions and employees of local bodies are also eligible for this scheme.

We had made certain requests to the Sixth Finance Commission regarding revision of pay and dearness allowances in connection with the continuing rise in prices. The Finance Commission had rejected our request for giving grants to cover the commitment towards pay revision on the ground that the pay scales obtaining in this State were higher than those obtaining in other States. There are however considerable disparities between the pay scales of our employees and those obtaining in the offices of the Central Government and the Central Public Sector. These disparities have increased further on account of the Central Government's implementation of the recommendations of the Central Pay Commission. We had represented to the Finance Commission that it would not be possible to cover these disparities from the State's resources alone and that the Central Government should give necessary assistance for this. It is disappointing that the Finance Commission has rejected our requests We had also represented that the Central Government alone should take up the responsibility of meeting the financial commitment on account of revision of dearness allowances undertaken from year to year. Even this request has not been accepted by the Finance Commission. Under these circumstances, we have to depend on our own resources for revision of pay and dearness allowances of our employees and teachers.

However, in keeping with our policy of improving the welfare of our staff and teachers, we have come forward to increase their Dearness Allowance by Rs. 10 per month with effect from April 1974. The additional commitment on account of this will be Rs. 6 crores per annum.

FOOD POLICY LEADS TO LOWER PRICES

For the proper effective implementation of the plan, the administrative set up needs to be suitably improved and procedures modified to suitthe changing times. The Administrative Reforms Commission, constituted in 1971, has so far submitted seven reports to Government. The Commission is expected to complete its work by the end of June or July 1974. The Government have taken decisions on the recommendations of the Commission relating to Rural Development and Local Administration Department, Public Works Department and Revenue Department. Details of the recommendations made and decisions taken will be placed before the House at the time of discussing the relevant Demands for Grants.

So far as rice and other food grains are concerned, Tamil Nadu is marginally surplus. However, the production of pulses and oilseeds has not been adequate. Thnks to the pragmatic and purposive food policy adopted, Tamil Nadu is in a relatively better position in regard to food prices, even though prices elsewhere in the country have risen and supplies have become difficult. For the sake of helping the poorer sections, Government continue to run fair price shops in the city of Madras and Coimbatore town, as well as in Kanyakumari district. The levy system of procurement of foodgrains from the dealers continues to be implemented.

This year, we have spared 50,000 tonnes of rice to the Central Government, after meeting the needs of our State. Further, we have sent rice to the extent possible, 40,000 tonnes, to the States of Kerala, Karnataka, Gujarat, West Bengal and Maharashtra. We have also sent to various States 22,000 tonnes of millets. **As a result of the effective food policy adopted by the Government, the price rise in Tamil Nadu in respect of foodgrains has been restricted to 27 points only, whereas at the all-India level the rise has been of the order of 64 points. Even today, our foodgrain prices are 50 points lower, compared to the All-India price index.**

We are doing our best to ensure supply of essential commodities at reasonable prices. By a judicious mixture of control measures, adequate and timely procurement of foodgrains, strengthening of the public distribution system and building up of adequate buffer stocks, we are doing all that we can to keep the prices under check.

Hon'ble Members may be interested to know the stand of our Government on the issue of prices. Regarding this, I would like to draw your attention to the exposition given by Anna in the Budget for 1967—68 :

" By virtue of the powers vested in it such as those under entries 36 to 38 in the Central list under the Seventh Schedule of the Constitution relating to issue of currency and foreign exchange, the Centre is fully accountable for inflation and deficit financing. The responsibility for rise in prices due to these factors is thus squarely with the Centre. The Centre has consequently also to assume responsibility for control of prices. Though the State Governments have to suffer from the impact of rising prices due to the policies of the Central Government, the Indian Constitution has not vested the States with necessary powers to control the prices and set right the situations."

Under these circumstances, we are doing whatever is possible and lies within our power to control prices.

REVISED ESTIMATES- 1973—74, BUDGET ESTIMATES, 1974—75

In the Budget Estimates for 1973—74 we had anticipated a revenue surplus of Rs. 49 lakhs. As against this, the Revised Estimates for the current year anticipate a deficit of Rs. 4.84 crores. Though the receipts had increased from Rs. 465.56 crores to Rs. 468.00 crores we are faced with a deficit on account of increases in the expenditure from Rs. 465.07 crores to Rs. 472.84 crores. The increases in revenue have occurred under several heads. There have also been decreases in receipts under some heads of accounts. The receipts under " Commercial Taxes " and " Motor Vehicles Tax " and Other Taxes and Duties have increased while the receipts by way of Central assistance for both plan and non-plan schemes have decresed. As against the amount of Rs. 62.54 crores, anticipated earlier by way of Central assistance, we now estimate that we will get only Rs. 41.15 crores. This has been due to decreases under assistance expected for State Plan Schemes and towards Family Planning Programmes and also on account of Central Government having totally rejected our requests for assistance, towards flood relief. Increase in expenditure had been mainly on account of Dearness Allowance increases granted in October 1973 and implementation of certain new Central Sector Schemes (for example, Half-a-million Job Programme).

A perusal of the Budget Estimates for 1974—75 will show that as against a receipt of Rs. 470.69 crores the expenditure is Rs. 483.25 crores in the Revenue Account, resulting in a revenue deficit of Rs. 12.56 crores. The receipts under State Excise Duties which may be Rs. 45 crores in 1973—74 will decrease to Rs. 17.89 crores in 1974—75. The Sixth Finance Commission has not taken into account the loss that we will be incurring on account of the next stage of re-introduction of prohibition in August 1974. We have also not been given any other assistance by the Sixth Finance Commission. We have therefore to face a large revenue deficit. A Capital outlay of Rs. 56 crores, loans and advances of Rs. 36 crores and repayment of Rs. 39.67 crores to Central Government have been provided for in these Budget Estimates.

RATIONALISATION OF COMMERCIAL TAXES

Including the revenue deficit of Rs. 12.56 crores the total deficit under all accounts is Rs. 22.42 crores. In order to make good this deficit and to ensure that the development of the State is not hampered, we have undertaken certain measures to mobilise additional resources. The Union Planning Commission has also indicated that we should raise additional resources for the Plan. Keeping this in mind, we have adopted certain taxation and other measures for mobilising additional resources. These proposals are in line with our policy of taxing those who have the capacity to pay. It is anticipated that we will account of these measures. Hence the overall deficit will be reduced to Rs. 12.42 crores and the revenue deficit to Rs. 2.56 crores.

SPECIAL OFFICERS' RECOMMENDATIONS

Government have examined the recommendations of the Special Officer appointed by them for the rationalisation of procedures relating to Commercial Taxes and have taken certain important decisions thereon.

A long-standing request from the trade and the public has been for changing the multi-point sales tax to single point. The Special Officer has recommended that it may not be possible to effect this change for all commodities and that we should expand the existing list of goods coming under single point tax by including a few more commodities which are at present taxed under multi-point system. After examining his recommendations, Government have decided to bring 59 more commodities under the single point system of taxation.

The single point rates have been fixed, keeping in mind the total tax burden now levied under the multipoint system at various stages. We have also kept in mind the objective of raising resources by increasing the taxes on certain commodities which are used by the affluent. At present, a commodity may be subjected to a 3.5 per cent rate of tax at 2 or 3 stages. The total effective tax may vary from 7 per cent to 10.5 per cent. With this in view, by and large, the single point rate has been kept below the level of 7 per cent. However, rates of 10, 15, 25 and 30 per cent will be levied on certain luxury items and commodities used by the affluent. A statement placed on the table of the House today indicates the various rates.

I wish to bring to the notice of the House that a 3.5 per cent single point levy is to be levied for pulses and edible oils which are under the multi-point system subject to an effective tax of 7 per cent.

Firewood, cattle feed and glass bangles were till now being taxed under the multi-point system. I am glad to announce that these will now be completely exempted from tax.

At present a single point tax of 24 per cent on imported liquors and 12 per cent on other liquors excluding toddy and arrack is being levied. These tax rates are now being raised to 25 per cent. The single point rate of tax will be 30 per cent for commodities which come under the description of " Arishtam."

The single point rates on various commodities mentioned above will come into effect from today itself through a notification under section 59 of the Tamil Nadu General Salex Tax Act.

One important decision under these measures of rationalisation relates to the exemption limit. In the Budget for 1967-68, Anna raised the exemption limit from Rs. 10,000 to Rs. 15,000 in order to provide relief to small traders and to protect them from harassment. In the Budget for 1972-73, this limit was raised from Rs. 15,000 to Rs. 25,000

We Ever Remain Vigilant To Protect The Weak And The Lowly

Now, in order to give further relief to small traders this limit is being increased further to Rs. 50,000. The traders having a turnover up to this limit will be exempted from the purview of sales taxation. I am sure the trading community, in particular the samll traders, and the public will welcome this measure. 40,000 small traders will benefit by this. In order to make good the loss of about Rs. 2 crores resulting from this decision and also as a measure of additional mobilisation of resources, the surcharge of 5 per cent which is being levied on traders having a turnover above Rs. 10 lakhs is being raised to 10 per cent. I am sure the House will agree that this is in line with our policy of taxing those who can afford to bear the burden.

As regards Entertainment Tax, there are at present three types of taxes, the taxes levied by the State Government, the surcharge levied by Municipalities and Panchayat Unions and the recent surcharge levied by the Government. Government have decided to integrate these three taxes and bring them under a single enactment. This will not add to the tax burden. The existing taxation procedures will be simplified. A formula for sharing the proceeds of this tax among the Government, Municipalities and Panchayat Unions will be evolved in such a way that the existing shares of each will be safeguarded. This is only a measure of rationalisation of the Entertainment Tax structure and will not have the effect of raising the prices of tickets in cinemas.

RATIONALISATION OF MOTOR VEHICLES TAXATION

Two types of taxes are being currently levied on Motor Vehicles. Under the Motor Vehicles Taxation Act, 1931, tax is being levied on the vehicles on the basis of seated and standing accommodation and permitted daily mileage. Besides this, under the Tamil Nadu Motor Vehicles (Taxation of Passengers and Goods) Act, 1952, a tax is being levied on stage and public carriages and goods vehicles on the basis of the collection of fares and freight. It has been decided to consolidate these two taxes and rationalise the tax structure. I wish to give here the salient features of this measures of rationalisation. As regards the stage carriages, the separate rates for sitting capacity and number of standees will be abolished. Besides, it is proposed to dispense with the present method of taxation on the basis of permitted daily mileage and instead to impose the following revised rates based on the type of stage carriage and area of operation:

Category	*Rate of Quarterly Tax*
	RS.
(1) Vehicles plying within Madras Metropolitan area	50
(2) Other town services ..	80
(3) Vehicles plying in other areas	120
(4) Express buses ..	140
(5) Spare buses—75 per cent of the highest rate paid by the permit holder.	

These rates will be levied on the basis of passenger capacity.

As regards goods vehicles, it is proposed to reduce the number of slabs from the existing 19 slabs to 7 slabs. Omni buses plying as Contract carriages will be placed on par with express stage carriages. Omni buses authorised to ply as Luxury Tourist Carriages will pay half this rate.

On account of this, the bus fares will be permitted to be increased only within certain limits and without causing hardship to the public.

NEW RAFFLE CERTIFICATE SCHEME

I wish to announce a new Raffle Certificate Scheme. Under this scheme, the face value of Raffle Certificates of Rs. 10 and Rs. 100 will be issued. The receipts by way of sale of these certificates will be kept in deposit by the Government for a period of 2 years and returned to the certificate holders at the end of this period. During this two year period, there will be six draws. Every certificate holder, has a chance of getting a prize in any of the six four-monthly draws. At each draw, there will be 112 prizes for the 100 Rupees Certificates and 222 prizes for the 10 rupee certificates. In all, Rs. 43 lakhs will be distributed as prizes.

There will also be two special prizes, one of Rs. 5 lakhs for the Rs. 100 series and one of Rs. 2 lakhs in the Rs. 10 series. The Special prizes will be given only in the last draw. I trust that the people of Tamil Nadu will welcome this as a new measure of savings.

PLANS AND PROGRAMMES OF THIS BUDGET ARE OUR ACHIEVEMENTS

We have dedicated ourselves as a Government to the tasks of

fulfilling our promises to the people to help the State of Tamil Nadu to prosper—

translating into concrete action our socialist programmes, without just paying lip service to them—

Ever remaining vigilant to protect the weak and lowly in society even as the eyelids protect the eye.

To the catalogue of the achievements we have placed before the people during the last seven years, we as a Government are privileged to add the plans and programmes of this Budget.

TRANSFER OF CERTAIN GOODS FROM MULTIPOINT TO SINGLE POINT TAXATION

In the First Schedule of Tamil Nadu General Sales-Tax Act, 1959, transfer of certain goods from multipoint to single point have been given effect to as follows :—

(*Statement referred to by the Chief Minister in his Budget Speech* 1974—75.

Name of Commodity	*Prpopos-ed Rate of Tax*
(1)	(2)
Oil cakes	3.5%
Edible oils	3.5%
Machine made matches ..	3.5%
Pulses and grams ..	3.5%
Machinery	5%
Charcoal and Leco ..	5%
Laurel oil	5%
Timber and Bamboo ..	5%
Lemongrass oil ..	5%
Hosiery goods made wholly of cotton	5%
Readymade garments ..	5%
Cashewnut and Kernel ..	5%
Sewing machines and embroidery machines ..	5%
Bricks and tiles ..	5%
Aerated waters ..	5%
Ice	5%
X-ray apparatus ..	5%
French Coffee ..	7%
Drugs and Medicines other than Arishtam ..	7%
Printing Inks ..	7%
Welding Electrodes ..	7%
Rolling Bearings ..	7%
Pumpsets	7%
Arecanut including seeval	7%
Chinaware nad porcelinware	7%
Glass and Glassware ..	7%
Tinned, Canned and Bottled goods ..	7%
Water Meters.. ..	7%
Brake fluid	7%
Industrial Gas ..	7%
Ethyl alcohol and denatured spirit ..	7%
Acids	7%
Stainless Steel articles ..	7%
Paints, etc.	7%
Oil engines, parts and accessories	7%
Opticals	7%
Razor and Razor blades ..	7%
Plywood, etc. ..	7%
Asbestos cement products	7%
Leather goods ..	7%
Papers and Boards ..	7%
Rail coaches and Railway Wagons	7%
Bolts and nuts ..	7%
Hosiery goods (other than cotton)	7%
Wooden furniture ..	7%
Pressure lamps ..	7%
Pressure cookers, etc. ..	7%
Playing cards ..	9%
Synthetic rubber products	9%
Rubber products ..	9%
Pure silk cloth other than handloom ..	10%
Steel furniture ..	10%
Linoleum	15%
Marble and marble articles	15%
Pile carpets	15%
Ceramic and Mosaic tiles, etc.	15%
Lifts	15%
Molasses	25%
Arishtam	30%

The detailed description of the commodities mentioned above are contained in the Notification to be issued under Section 59 (1) of the Tamil Nadu General Sales Tax Act, 1959.

ADDITIONAL SURCHARGE ON POWER CONSUMPTION

At present a surcharge of 15% over the tariff rate has been levied from 1—2—1973 (*Vide* G.O. Ms. No. 130, P.W.D., dated 1—2—1973).

There are various factors now operating towards a steep increase in the cost of power. The cost of power supplied by Kerala has gone up from 6 paise per unit in 1972—73 to 8 paise per unit for spuplies over 100 MU. The power purchased from Neyveli will have to be paid at 8.48 paise for the year 1974—75 and this is subject to an escalation clause. The rate for power generation from oil firing at Neyveli is likely to be much higher. Further, the cost of coal has gone up as a result of increase in transportation cost. While on the one hand, the cost of power generation is increasingly mounting up, the Government have to make power available to the agriculture sector at a concessional rate of 12 paise and 11 paise, even though the cost of power at this Low Tension end works out to more than 20 paise per unit. The need for recouping at least a part of the losses is apparent.

It has now been decided by the Government to levy an additional surcharge of 15% on all sectors except,

(1) L.T. Supply to domestic consumers and domestic bulk supply ;

(2) L.T. Supply to street lights and

(3) L.T. Supply for agricultural purposes.

In other words, the present surcharge of 15% in respect of H.T. and L.T. industrial and commercial loads including the date from which the above enhancement of surcharge will take effect will be from the date of meter reading taken on and from 1st April, 1974.

O.P. RAMAN,

Minister for Electricity.

BUTTERFLY FOR A BETTER CHANGE

Genuine Conjeevaram, Kumbakonam and Arni Silks;

Crisp hand-woven Cottons;

SAREES, DHOTIS, LUNGIES, TOWELS AND FURNISHING

BUTTERFLY WEAVES THE LATEST FASHIONS !

Butterfly's Ready-mades include :

"CLASSIC" Shirts and Exotic SILK KNOT Ties.

Ideal for any age, taste, budget or style.

BUTTERFLY IS HANDLOOM !

Co-optex
HANDLOOM FABRICS

Free Eye Camps— THANJAVUR PLAN

Cent per cent coverage of Cataract Patients

The Blind are considered a burden to the society because they have lost their eye sight. Blindness robs the poor of their capacity to earn their livelihood. The blind persons are neglected totally in the rural areas and they have to find their comforts in the lonely corners of their household.

Thanks to the Dr. Karunanidhi Free Eye Camps, so far 42,039 have gained their eye sight by availing the free medical aid in the eye camps. Emboldened by initial successes, we are venturing upon a new project by which we propose to launch a cent per cent coverage of the people afflicted with cataract. This is a formidable task indeed ! Especially in a country which is beset with the problems like dearth of sufficient number of Ophthalmologists and the required equipments. Moreover, we found it extremely difficult to transport the patients to the eye camp site for preliminary screening and for admission etc. More than 80 per cent of the patients were found unfit for cataract operation. For they had many other eye ailments which do not come under the purview of cataract. So, Thiru K. A. NAMBIAR, I.A.S., (then Collector of Thanjavur,) struck upon a plan of educating the basic Extension Workers in the art of detecting the possible cases of cataract. With a view to give cent per cent coverage, the following stages are gone through :—

In the first stage about 40 to 50 Basic Extension Workers like Grama Sevaks, Grama Sevikas, Maternity Assistants, Youth Corps Volunteers, etc., are given a briefing at Rajah Mirasdar Hospital by Dr. E. T. SELVAM in the method of detecting possible cases of cataract and in rejecting others. Thus the initial training was imparted to about 250 basic workers at the Rajah Mirasdar Hospital at the rate of about 50 per Union (*viz.*, Thanjavur, Thiruvaiyaru, Budalur, Orathanad and Thiruvonam). About 60 workers were trained in addition in Thanjavur Municipal area.

The people so trained go to the villages or to the Wards allotted to them and make door to door contact and enumerate the cases afflicted with cataract and issue White Cards on the spot to the patients to be screened by the ophthalmic team.

The Panchayat Union Commissioners are asked to check not less than 20 per cent of the cases enumerated by the Extension Workers just to ensure that there is no error of omission or commission is committed. After the enumeration work is over the Panchayat Union Commissioner or the Municipal Commissioner concerned will prepare an inventory for the entire local area showing the details about the patients afflicted with the cataract. A copy of the inventory work will be sent to the Collector and Revenue Divisional Officer for reference.

"POET BACON"
Thanjavur.

About 10 teams of Ophthalmologists assisted by Para Medical Staff will visit every Panchayat or the Ward and fix date and hours continuously till the entire area is covered. In the village, the Ophthalmologists will make preliminary screening of all the patients who have been enumerated by the basic Extension Workers and issued with the White Cards. Such of those cases, which are found fit of operation wiol be issued with Yellow Cards on the spot by the Ophthalmologist Team. Thus everybody who has got a suspected case of cataract has the benefit of being screened by the Opthalmologists at his very door. Padmashri Dr. G. Venkatasamy, the reputed Eye Surgeon of Madurai, is sending 6 teams of dedicated Ophthalmologists and Dr. E. T. Selvam of Rajah Mirasdar Hospital, Thanjavur 4 teams. It is expected that these 10 teams will comb up the entire Thanjavur Division in a week covering 6,43,987 population.

The chief merit of the enumeration is that workers who have to take this enumeration work should certify that other than the cases enumerated, there is no one else affected with cataract in the area allotted to them.

The fourth and last stage is the Free Eye Camp at Thanjavur Medical College Hospital which takes place from 17—3—1974 onwards. During the camp, every effort have been made to bring each and every case issued with Yellow Card. Dr. T. S. Selvakumaran, B.A., M.B.B.S., M.S., Principal, Thanjavur Medical College ; Dr. Desakavalan, Superintendent, Rajah Mirasdar Hospital; Dr. D. Bhupathi, M.D., Superintendent, Thanjavur Medical College Hospital and Dr. E. T. Selvam are putting forth their best co-operation for the successful conduct of the camp.

The salient features of this missionary venture are the following :— Even unripe cases of cataract will be operated by adopting the latest technique. Some cases may have to be operated after a few months ; even such patients are issued with Yellow Cards and follow up action is taken up. We do accept that there may be a shortfall of one per cent in the coverage. Yet we are proud to launch this humanitarian venture and have the satisfaction of trying this new project in Thanjavur Division.

Our sole aim is that there should not be even a single poor person who is deprived of the free eye treatment in Thanjavur Division. Of course cataract grows with age in most cases. Also one redeeming feature is that any person gets cataract only once in his life-time. Incidence of cataract is felt in the age group past 55. If this new project is successfully implemented, there may be only a handful of cases in the coming years to tackle. These new cases in the coming years can be tackled easily without much effort.

The unit of operation which shows cent per cent coverage is promised a commendatory letter preferably by the Hon'ble Chief Minister Dr. Kalaigner Karunanidhi and also three cash awards of Rs. 100/-, Rs. 50/-, and Rs. 25/- for the best three basic level workers.

Cent per cent coverage of cataract patients is a formidable task indeed. Of course this is a challenge to our brain and brawn.

Mills : 156
Managing Director Residence : 126 } Phones Tindivanam
Chairman Residence : 252

Tel : "NOOL" TINDIVANAM

THE SOUTH ARCOT DISTRICT CO-OPERATIVE SPINNING MILLS LIMITED

SARAM P.O. TINDIVANAM TALUK, S. A. DT.,

Spinners of Quality yarn
Counts spun : 40s, 60s, 80s, and 100s in Hanks and Cone.

FOR SHARES CONTACT MANAGING DIRECTOR

P. V. ANGAMUTHU, B.A.,
Managing Director

G. RAJARAM, M.A.,B.L., M.L.A.
Chairman

ARMY RECRUITMENT: TAMIL NADU HELPS AREA WIN THE SILVER TROPHY

Lt. Col. S. Ayaswamy holding proudly the Silver Trophy awarded for the best Recruiting Zone in the country for 1973.

A now tropy has been introduced during 1973 for the first time by Army Headquarters, NEW DELHI to be awarded to the best Recruiting Zone in the country based on the following merits.

(*a*) eradication of corruption
(*b*) best recruits provided to the Army and Navy
(*c*) interior regions so far not visited by the organisation been visited and facilities extended to join the services
(*d*) good documentation.

Based on the above Recruiting **Zone Bangalore** which looks after the Andhra Pradesh Tamil Nadu, Kerala and Karnaka for the purpose of recruitment has been adjudged the best zone in the country and a Silver tropy has been presented by Lt Gen **NS NAIR, PVSM** on **28 Feb 74** at NEW DELHI at a very impressive ceremony to the **Zonal Recruiting Officer BANGALORE Lt Col S. AYASWAMY** a Tamilian by birth whose nativity being Rajapalayam in Ramanathapuram district. He was specially sent to DEL DELHI to receive the tropy. The Adjutant General Lt Gen NS NAIR, PVSM and Brig RP SAIGAL the Director of Recruiting spoke very high of the work done in the last 20 months by **Lt Col S. AYASWAMY** and the personnel of his Recruiting Officers located in all the four States so as to eradicate corruption and to improve public relation so as to ereate confidence in the minds of the public about this organisation. The first winner of this tropy is Recruiting Zone, BANGALORE **comprising** of Andhra Pradesh, Tamil Nadu, Kerala and Karnataka commanded by Lt Col S. AYASWAMY.

WITH BEST COMPLIMENTS FROM :

The South India Co-operative Spinning Mills Ltd., No. X295

Post Box No. 1

INDUSTRIAL COLONY, PETTAI POST, TIRUNELVELI-627010.

The Pioneer Co-operative Spinning Mills in Tamil Nadu in the Co-operative Sector catering to the needs of the Handloom Weavers.

Manufacturing all Cotton yarn 20s to 120s, both Carded and Combed.

1. Installed spindles 29696, 1600 doubling spindles, one conewinder.
2. Licencend for expansion upto 50,000 and work under progress.
3. Gross funds and reserves exceed - Lakhs.

Telephones :
Office : 284 and 884
Residence : 764

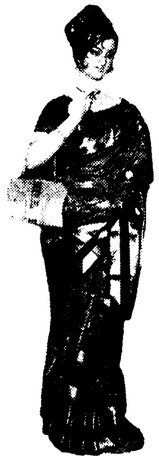
Telegram :
"COOPSPIN"
TIRUNELVELI

R. ARUMUGAM, B.A.,(Hons.), B.L.,
Chairman

M. THIRUNAVUKKARASU, B.Com.,
Managing Director

HANDLOOM

GLORIOUS PAST GIVES IT VITALITY FOR SURVIVAL



The handloom is an industry which had earned for our country much renown and most of our gold in the past ; for till the 19th century our textiles were sold in most foreign countries. Over the last 150 years it had adopted many of the innovations ; for one thing it had discarded the hand-spun yarn, the fly-shuttle has become universal, the old native dyes for which we were justly famous are gone, and instead our handloom cloth producers use chemical dyes, mercerising of yarn and sanforising of cloth are also resorted to by our handlooms to stay in the market, Before the advent of all these changes, though spinning and weaving were done by hand, a high degree of proficiency and perfection was attained in the production of cotton fabrics. Dacca mulsins have been famous for centuries. Arni in Madras and Masulipatam in Andhra also produced muslins which could be compared with those of Dacca.

It is stated that the political upheaval in the country resulting in the fall of the Moghul Empire deprived the handloom industry of its patronage and led to its ruin. A foreign traveller of those times says : " The collapse in the cotton industry had indirectly affected trade in all its branches by stopping the circulation of money and the cultivators can no longer reckon on the manufacturers who in the days of their prosperity were won to buy up their surplus grain and even to lend them money when they were in arrears of taxes. This has led the cultivators to the hard necessity of relinquishing their grain to and thus became prey of remorseless usurers." (Hindu Manners, Customs and Ceremonies by Dubois.

Out of the ashes of the hand-spun handloom industry grew a new handloom industry which utilised fully mill-spun yarn. The inherent vitality of the industry was thus exhibited by this survival in the face of adversity and a capacity to adopt the new raw materials and devices provided by the industrial revolution heralded in distant countries. The Madurai Ditrict Gazetteer records that the Pandyan Kingdom had trade even with the distant parts of Rome, Greece and Arabia and this is abundantly testified by the classical writers of Greece and Rome, by the literature of the Sangam Age as well as by the large number of Roman coins of that time found in and around Madurai. Saliyur, Neleynda, Kumari and Korkai are mentioned as important ports. From these ports went forth large vessels laden with cotton and silk fabrics of exceptional fineness and to these ports they returned bringing back with them great quantities of coins, linens, glass, copper tin, lead and wines and liquors of all sorts. These records merely go to show the many centuries of tradition behind our handloom cloth and its survival as an important adjunct of our economy is not merely by sufferance.

Therefore it is no wonder that the Santhanam Committee, (The Expert Committee on Handloom Industry) asserts : " The most important issue of Indian economy are employment and production of goods of mass consumption. In both these respects, handloom weaving occupies a special position, which deserves to be carefully safeguarded." The Committee also said : " As the problems of the handloom industry were urgent it was essential to finish the investigation and finalise the Report as quickly as possible." The Committee began its work on 28th September, 1972 and finalised its report by February 1973. Orders regarding the acceptance of the Committee's Recommendations were issued by the Tamil Nadu Government within a few months thereafter. Thus there is an awareness to protect and foster this ancient industry from all its ills on the part of the Government of Tamil Nadu. There are about 5.56 lakhs handlooms (a little over 25 per cent of the number in the country) with nearly 20 lakhs of people depending on them. With an annual production potential of the value of Rs. 50 crores, this industry occupies an important place in the economy of the State.

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

The Tamil Nadu Handloom Weavers' Co-operative Society Limited (Co-optex for short) established in 1935 has over the years managed to infuse confidence in the handloom industry in the State by its dynamic and aggressive sales campaigns of handloom cloth in India and abroad. In this it has lived up to its objective of organising and promoting the Handloom Industry in Tamil Nadu on a commercial basis. For this purpose, the handloom cloth and yarn must be procured, marketed and services rendered to its member organisations on a stupendous scale utilising all the talents employed by the sophisticated multi-crore investment mill sector of our textile industry.

At present the Society's turnover comes to Rs. 15 crores. To establish and expand cloth sales beyond Rs. 15 crores, the owned funds of the State Society should

THE ROLE OF CO-OPTEX IN FOSTERING HANDLOOM

be strengthened further. Co-optex has already taken steps to call further share capital by requesting Government of Tamil Nadu and Primary Weavers' Co-operative Societies.

MANAGEMENT

In discharge of its functions, the society has been enjoined by its Bye-law to act on sound business principle and prudent commercial practices. The Committee of Management has been superceded by Director of Handlooms and Textiles on 15—3—71, in consultation with Board of Directors of Tamil Nadu State Co-operative Bank Ltd. The general superintendence and directions of the affairs of the State Society is entrusted to a Special Officer who is functioning under the control of Director of Handlooms and Textiles.

AREA OF MARKETING

The area of marketing of Co-optex handloom cloth is as follows :

a.	Selling Units in Tamil Nadu	248
b.	Selling Units outside Tamil Nadu	99
C.	Agencies	25
	Total	372

The above units have been grouped under 11 Regional Marketing Offices to achieve span of control and unity of command in the administration.

PRODUCTION AND SERVICE UNITS

In discharging its functions of promoting handloom industry, the State Society runs following production and service units under its control.

a.	Dye Factories	3
b.	Weaving Factory	1
c.	Collective Weaving Centres	6
d.	Godowns	14

The Society's purchase as well as sales have been going up from year to year and in 72—73 sales totalled Rs. 116 lakhs while purchases were of the order of Rs. 702 lakhs. The sales for the period from July 1973 to December, 1973 have been increased to Rs. 876 lakhs as against Rs. 595 lakhs during corresponding period in 1972. The sale figure of Rs. 867 lakhs was more than annual turnover of 797 lakhs for 1971—72. This figure stands out as a most significant event in the history of Co-optex.

DISTRIBUTION OF YARN

Due to spiralling of prices of various counts of yarn, the Textile Commissioner of Government of India imposed Cotton Textile Control Order to control the distribution and prices of yarn. The organisation have been authorised by Director of Handlooms and Textiles to purchase and distribute yarn to the handloom weavers in our State. As a result the society has effected yarn sales to the extent of Rs. 19 crores for the year 1972—73 and our turnover for the period from July, 73 to December, 73 amounts to Rs. 20 crores. As an instrument of Government policy, the State Society has played a notable role in fulfilling the needs of handloom weavers in Tamil Nadu at a time when the entire country was passing through yarn crisis. ✱

The Expert Committee on Handloom Industry in Tamil Nadu

TERMS OF REFERENCE

The terms of reference of the Expert Committee are as follows:—

(*a*) To make quick assessment of the immediate problems faced by the Handloom Industry in Tamil Nadu and suggest measures for the healthy and sound development of the Handloom Industry with special reference to :—

(*i*) the price and distribution policy in regard to raw materials required by the Handloom Industry ;

(*ii*) the regulated distribution of yarn to the Handloom Industry ;

(*iii*) the steps to improve marketing of handloom goods within the State and to other parts of India ;

(*iv*) Steps to increase export to foreign countries of handloom products and review existing facilities ;

(*v*) reservation of production of certain varieties of cloth exclusively for handlooms ;

(*iv*) a review of the existing financial arrangements for production and sale of handloom goods and

(*vii*) provision of financial assistance to the Handloom Industry;

(*b*) To draw up a realistic programme of action to be taken for the development of the Handloom Industry and for the welfare of handloom weavers and

(*c*) To consider any other attendant or ancillary matters in regard to the above and to suggest suitable measures.

THE RECOMMENDATIONS ACCEPTED BY THE GOVERNMENT

Almost all the recommendations of the Committee relating to the policy on Handloom Industry have been accepted by the Government. They are :

(*i*) that the procurement and distribution of handloom supplies should be taken over by the State Government ;

(*ii*) that the handloom weavers and producers of handloom cloth should be registered and brought under the control of the State Government ;

(*iii*) that independent weavers may be organised under Service Co-operative Societies for supply of cotton yarn and raw materials.

(*iv*) that composite mills and powerlooms should be prohibited from producing certain varieties reserved exclusively for handlooms ;

(*v*) that setting up of unauthorised powerlooms should be effectively arrested in future and

(*iv*) that a comprehensive legislation to implement the major recommendations should be enacted.

The Government have already taken steps to implement these recommendations as detailed below :—

The Government have already accepted the recommendation regarding the procuring and distribution of handloom supplies by the State and reservation of certain varieties of cloth exclusively for handlooms. Our Chief Minister has written to the Prime Minister in August, 1972 itself, requesting that the State Government may be empowered to control the prices of yarn and regulate the distribution of yarn at fair price. The Chief Minister had also pointed out the lacuna in the existing Textile Control Order regarding reservation of certain varieties of handlooms and had suggested that if the handloom are to be effectively protected competition from the powerlooms and mills, the entire production of Dhoties, Sarees, Towels, Bed-sheets and Bedcovers should be reserved exclusively for handlooms without stipulating conditions regarding width of the borders and the like. It has also been suggested that the reservations policy should be extended to the entire country and the State Governments should be given the powers to check and stop the entry within their States of the fabrics produced, if any, in other States in violation of these orders. These suggestions were again reiterated in another letter in February, 1973 to the Prime Minister from the Chief Minister. The Government of India's decision on these vital questions are still awaited.

Regarding the recommendation that independent weavers may be organised under Service Cooperative Societies for supply of cotton yarn and raw materials, action has been taken to form these Service Cooperatives.

Regarding the arresting of setting up of unauthorised powerlooms, the Government have already initiated action in this regard. Connections to new powerlooms are being given only with the specific approval by the Electricity Board and not by its field officers in the normal course. The Government have also proposed to amend the Electricity Act to ensure that a valid permit is obtained from the proper authorities before connection is given to new powerlooms. It has also been proposed to amend the Tamil Nadu Panchayats Act to make obtaining a permit a prior condition for Panchayats to give licence for running powerlooms.

Regarding the registration of handlooms the Government have already taken steps to conduct a detailed survey of all the Handlooms in the State through the Directorate of Census, Government of India. The Government are also considering the enactment of separate suitable legislation for ensuring the proper distribution of yarn at reasonable prices to the weavers and also to reserve exclusively certain varieties for handlooms. ✱

Thathiengarpet

WEAVERS CO-OPERATIVE SOCIETY LTD.,

THATHIENGARPET P.O., TIRUCHY District

Registered : 18-4-1940

Started : 13-5-1940

Branch : **23-A, Panchavarna Swamy Kovil Street,**

WORIUR, TIRUCHY-3.

(Started : 19-10-1970)

Best place for 100s & 120s Handloom Dhoties with and without lace. Angavasthrams and Sarees are also available.

K. RAMALINGAM
President

Recommendations Of The Expert Committee On Handloom Industry in Tamil Nadu

The Handloom Industry being a decentralised industry has been facing problems relating to raw materials, finance and competition from the organised textile mill industry. A situation has now arisen in our State warranting immediate measures to solve the various problems faced by the Handloom Industry, particularly in respect of availability of adequate finance and supply of essential raw materials required by the industry and marketing of the finished goods.

The Government consider that an Expert Committee should immediately be constituted to study the various problems faced by the industry and suggest suitable measures to solve these problems. The Government, therefore, direct that an Expert Committee be constituted with the following persons as Members :

Thiru K. Santhanam—*Chairman*;

Thiru R. Kanakasabai, Chairman, Tamil Nadu State Co-operative Bank Limited, Madras—*Member*;

Thiru. M. P. Nachimuthu Mudaliar President, Chennimalai Weavers Cooperative Society, Chennimalai, Erode Taluk—*Member*;

Thiru. R. Arumugam, Joint Director of Handlooms and Textiles —*Secretary* and

Thiruvalargal S. Kanakarathinam, and K. V. Srinivasaraghavan—*Assistant Secretaries*.

The work of the Committee was inaugurated by Thiru S. Madhavan, Minister for Industries and Commerce on 5th September 1972. The Committee's Office was opened on 16th September 1972 and the actual functioning started on 28th September 1972 and decided to tour the principal centres of handloom industries in Tamil Nadu to know about the real facts and the working condition of the weavers. The Committee also decided to visit Bombay, Surat, Mysore, Kerala and Andhra Pradesh in order to study some special matters relating to handloom industry. Thus gaining lot of facts and figures about weavers and the handloom industry, the Committee sit together and lay out the following recommendations as a means to save the industry from its back wardness.

(1) The handlooms play a vital role in the economy of Tamil Nadu by providing useful and skilled employment for nearly 10 per cent. of its workers and producing many varieties of cloth which are liked by the people.

(2) It should be assisted and protected both against mill cloth and cloth produced by decentralised powerlooms.

(3) Protection and assistance should be given to handlooms in the co-operative sector as well as those outside. For such protection and assistance, the handloom weavers and producers of handloom cloth should be registered and brought under the control of the State Government.

(4) The weavers' co-operative societies and the Tamil Nadu Handloom Weavers' Co-operative Society should continue to receive special assistance.

(5) The office of the Director of Handlooms and Textiles and the regional offices should be adequately expanded and a Handloom Board formed for the above purposes.

(6) Together with the preservation and expansion as far as possible of the handloom industry, the welfare of the handloom weavers should be given equal importance.

(7) For all these purposes, an adequate non-lapsable Handloom Fund should be created.

(8) Comprehensive legislation for all these purposes should be enacted.

Every weaver should be registered and a pass-book supplied to him in which all issues of yarn, production of cloth by him, wages, advances, recoveries, savings and other particulars should be duly entered.

The following classes of producers should have a statutory obligation to register the weavers working under them :—

(1) Weavers' Co-operative Societies ;

(2) Small producers who control not less than three and not more than 25 looms;

(3) Medium producers who control more than 25 and not more than 100 looms and

(4) Big producers who are financiers and control more than 100 looms.

Producers will include those who run factory type of production with weavers working under them for wages. For independent weavers, they should be enabled to attach themselves to the nearest supply centre for the purpose of registration.

At the headquarters of every region, lists of all the registered producers mentioned above should be kept with details as may be prescribed. It should be obligatory on them to send quarterly reports to the regional authorities in prescribed forms.

Where independent weavers are more than 20, they may be organised into service societies for supply of yarn and other raw materials.

The following rules may be adopted for the recognition of associations and federations of handloom weavers and ancillary industries :—

(1) No producer can be a member of more than one such association. This refers only to general association of producers and does

not imply that a producer cannot also be a member of a functional association like that of dyers, bleachers, etc.

(2) Every such association should formally apply for recognition by the Handlooms Directorate giving full details of its members, together with its registration number and looms.

(3) Together with the application for recognition, it should file signed declarations of all the members authorising the association to represent to the Directorate the complaints and needs of its respective members.

(4) While the lists of producers will be maintained at the Regional Officers, the lists of recognised associations will be kept at the headquarters.

It is essential that the Handlooms Directorate should keep a list of ancillary industries like dyeing, bleaching, printing, calendering and other finishing agencies and arrange for supplies and technical assistance that may be required.

Handloom Supplies

The procurement and distribution of handloom supplies should be taken over by the State Government in the following order :—

(*i*) Cotton yarn ;
(*ii*) Dyes and chemicals ;
(*iii*) Art silk ;
(*iv*) Silk and
(*v*) Zari.

To ensure that supplies are regular and adequate, it is necessary for the Government to have atleast two months stock of all the raw materials and arrange for regular monthly arrivals to replace the stocks issued to the producers. For this purpose, the whole State may be divided into seven regions comprising the administrative jurisdiction of the present six Assistant Directors of Handlooms and Textiles with headquarters at Salem, Coimbatore, Tirunelveli, Madurai, Kancheepuram and Tiruchirapalli and a new region formed with headquarters at Tiruchengode. Central godowns at each of these seven regional centres should be constructed as early as possible. The regional offices of the Department of Handlooms and Textiles should also be situated by the side of the central godowns so that the regional officer will automatically function as *ex-officio* General Manager of the godown. In the light of experience, other sub-godowns may be established ; but there should be two sub-godowns for silk at Kumbakonam and Arni and a sub-godown at Aruppukottai for art silk.

The Directorate of Handlooms and Textiles should undertake this work directly under Government auspices and after matters have been normalised for atleast two years, the work can then be handed over to an autonomous Handloom Supplies Corporation to be formed.

It is necessary to ensure that the range of variations of prices of yarn and other supplies should be reduced to the minimum possible. Arrangements may be made from year to year and this year should be calculated from 1st January to 31st December.

85 per cent of yarn of 60s counts and above and 75 per cent. of yarn of less than 60s counts produced by the co-operative spinning mills and the mills run by the Tamil Nadu Textile Corporation should be in the form of hanks and earmarked for the Government to be distributed among the yarn godowns accounting to the needs of each region.

20 per cent of the yarn below 60s and one-third of the yarn of 60s and above may be acquired or requisitioned from the mills in the private sector in Tamil Nadu.

Yarn will be purchased from the mills at the prevailing market price less a reasonable and agreed wholesale commission.

Till the godowns are constructed, the entire supplies of yarn required should be brought under State control and distributed in accordance with the directions of the Handlooms Directorate. The existing arrangements of supplies to co-operative societies through the branches of Tamil Nadu Handloom Weavers' Co-operative Society may be continued.

To meet the situation created by the recent drastic power cut, the only effective remedy is to requisition the entire stocks of yarn of the current production at fair prices and ration the same to all the consumers of yarn. The claims of handlooms should have due priority.

Arrangements should be made by the State Government with the State Trading Corporation and the Import Controller for the import of dyes and chemicals which are not available in India. There should be no objection to the Government of Tamil Nadu arranging with the present private importers for the required supplies ; but, if they prove unreasonable, the Government of Tamil Nadu should seek direct import licences for those supplies which cannot be obtained through the State Trading Corporation. In respect of the dyes and chemicals, which are available in India, the Government of Tamil Nadu should enter into contracts with the producing firms for supply at such prices as may be fixed by the Government of India or at the best negotiated prices with suitable discounts for large scale purchases.

The Government of Tamil Nadu should impress upon the Government of India to have maximum and minimum sale prices of silk yarn fixed in consultation with the Government of Mysore.

The entire raw silk needed for Tamil Nadu should be purchased by a Government agency located in Bangalore.

The silk bought by the purchasing agency should be sold to the silk weavers' co-operative societies and the private silk producers at the same prices, charging a reasonable and agreed wholesale commission to cover the cost of the purchasing agency, packing, transport, delivery and other expenses.

The Government of Tamil Nadu should take over the entire quota of art silk allotted for Tamil Nadu and have it distributed through the godowns. The principles of price stabilisation recommended for cotton yarn may also be applied to art silk yarn.

Compulsory registration of zari merchants on the basis of certificates is most essential.

State Government should consider the question of establishing a purchasing office in Surat itself

The Zari Manufacturing Unit at Kancheepuram may be established soon.

Arrangements for testing random samples of zari and ensuring that they conform to the certificates should be made at Kancheepuram and Kumbakonam.

Co-operative Spinning Mills

The expansion programmes of co-operative spinning mills should be completed as soon as possible with the main objective of supplementing the needs of the handlooms and areas near the mills.

Co-operative spinning mills should have the necessary equipment to produce combed yarn to the extent required. In one or two of the mills, a section may be opened for spinning the staple fibre.

It may be considered in consultation with an expert whether the present arrangements in the co-operative spinning mills for yarn testing have to be amplified.

Every co-operative spinning mill should be a viable unit and should make enough gross profit.

It may be considered whether the cotton waste from all the co-operative spinning mills may not be pooled and a waste cotton spinning unit should not be added to one of the co-operative spinning mills.

The co-operative spinning mills may make arrangements for the production of Double Hank Cross Reeled yarn and steps may be taken to popularise it among the handloom weavers in this State.

Spinning Mills under the Tamil Nadu Textile Corporation

There should be close co-ordination between the co-operative spinning mills and the mills under the Tamil Nadu Textile Corporation.

Mills in the private sector

The Handloom Board may enter into agreements with the mills in the private sector so that they may make necessary arrangements to produce the required counts and quantities of yarn in hanks.

The Tamil Nadu Government may again approach the Reserve Bank of India to have the cash credit limit raised from 25 to 40 per cent.

In respect of cloth procured by the apex society from the primary societies, the bills should be discounted immediately by the District Co-operative Central Banks. The District Central Bank should credit the society with the amount and debit the Tamil Nadu State Co-operative Bank which should in turn debit the account of the apex society.

A weavers' society's share in the co-operative spinning mills should not exceed 10 per cent of its paid up share capital, and the excess of such investment in the spinning mills should be refunded to it by the Government by taking over the shares of the primary societies or the Government taking shares in the capital of the primary society concerned equal to the amount in excess of 10 per cent of the paid up share capital.

The primary societies should charge 7 per cent over cost price for their supplies to the apex society, 12 per cent on the sales effected to the wholesale merchants and 15 per cent on retail sales. Both wholesale and retail sales will, as at present, be subject to the rebates of 3 and 5 per cent respectively during ordinary days and 10 per cent during festival periods. So far as export varieties are concerned, the primary societies should be free to increase the profit margin to such an extent that the goods can bear. The Handloom Board should have the power to allow variations from these norms for sufficient reasons.

Ready-made garments, pillow-covers, etc., may also be included in the system of allowing rebates.

The present maximum limit of purchase for Rs. 100 a day for allowing the normal rebate may be increased to Rs. 250/-.

Cadres of Managers and Accountants of the personnel of the societies should be formed and these should be operated by a Committee consisting of the President of the State Apex Society as Chairman and representatives of the Tamil Nadu Handloom Board and the Tamil Nadu State Co-operative Bank as Members.

The Manager and the Accountant, if any, should be made fully responsible for the financial and business transactions of the society.

The existing priorities of appropriation of the net profit may be re-arranged as follows :—

(*i*) Reserve Fund ;
(*ii*) Bonus to Members ;
(*iii*) Bonus to staff ;
(*iv*) Dividend on share capital ;
(*v*) Honorarium to Directors and
(*vi*) Common Good Fund.

In the case of weavers' co-operative societies in which the reserve fund is not less than the paid up share capital, the annual appropriation from the net profits to the reserve fund, may be reduced to a minimum of 10 per cent and maximum of 15 per cent, while it may be as at present for the others. The weavers' societies should be free to utilise in their business their reserve fund and other reserves, without the need for any specific permission from the Registrar.

The provision of bonus to members may be raised upto a maximum of 40 per cent of the remaining net profit after allocation to Reserve Fund.

The bonus to staff may be paid as at present i.e. any amount specified in the Rules or in the by-laws subject to maximum of three month's basic pay of the employee concerned.

The maximum rate of dividend on share capital may be raised to 9 per cent as already recommended by the Committee on Co-operation.

The Co-operative Development Fund and the Co-operative Education Fund may be combined into one fund called Co-operative Development and Education Fund and annual appropriation to this fund may be not less than 5 per cent and not more than 7 per cent of the net profit. The new combined fund should be maintained by the Tamil Nadu Handloom Board instead of the Tamil Nadu Co-operative Union.

The balance, if any, may be appropriated towards the Common Good Fund.

The responsibility of the audit should be transferred from the Registrar of Co-operative Societies to the Tamil Nadu Handloom Board.

Weavers' societies which are working at a profit should pay one-tenth of one per cent of the value of their production (i.e. 0.01% as audit fee and societies which are working at a loss should pay one-twentieth of one per cent (i.e.0.005%) as audit fee.

Every society may be inspected by the Inspector of either the Handloom Board or the District Co-operative Central Bank atleast once a month.

The industrialweavers' co-operative societies should be encouraged to produce special varieties particularly meant for export.

Experimentally some common worksheds may be put up by the primary societies where the members can instal additional looms.

Annual retirement of one-third of the number of directors should be given up and the entire board of a society should be elected for a term of three years.

Special and concerted efforts have to be taken to insulate co-operative societies from political or outside interference.

Tamil Nadu Handloom Weavers' Co-operative Society

The apex society should scrutinise the performance of each of its sales depot and decide which depot deserves to be maintained on a permanent basis and which is not essential.

The balance sheet and profit and loss account should be prepared for each selling unit and be subjected to careful scrutiny. There should be special registers of stock of goods which are more than one year old.

The efficiency of the sales management side of the apex society and its emporia requires to be carefully scrutinised and it should be free to draw persons from the private sector both for employment in the head office and in different emporia. Incentive by way of bonus linked up with sales should be given to the sales staff on par with that obtaining in leading textile undertakings.

The apex society should concentrate more and more exclusively on its primary function of marketing of handloom cloth.

Credit Sales of handloom cloth to Government servants

The Government of Tamil Nadu should simplify the procedure involved in the scheme relating to the sale of handloom cloth to Government servants on credit basis to ensure speedy payments to the apex society.

Government may give to the apex society one month before Deepavali an advance of not less than three-fourths of the amount of the previous year's sales to the Government servants.

All co-operative societies, urban, central and state co-operative banks may be instructed to adopt this scheme of credit facilities to their employees for buying handloom cloth. Credit sales may be extended to all persons who can produce a bank guarantee that the value of the cloth will be paid within two months from the date of sale.

The State Government and the local bodies should purchase their requirements of cloth from the apex society or its branches.

It should be obligatory on the part of the apex society to take not less than 50 per cent of the production of every primary society if offered by the latter.

The Reserve Bank of India should be requested to give a cash credit to the apex society of 50 per cent of the previous year's sales.

For fixing its sale price, 15 per cent over the purchase price paid to the primary societies may be charged by the apex society in respect of all cotton goods produced from out of yarn of 40 counts or less; for cotton cloth of above 40 counts and art-silk goods 20 per cent and for silk goods 25 per cent may be charged.

The apex society may seek the co-operation of the apex societies in the neighbouring states of Mysore, Andhra Pradesh, Kerala and Pondicherry for establishing joint sales depots.

The present 85 days during which the special rebate of 10 per cent is given may be distributed as follows :—

(1) 30 days ending with Deepavali ;

(2) 25 days starting three Days before Christmas and ending with Pongal ;

(3) 15 days including the Handloom Week and the Tamil New Year's day and

(4) 15 days ending with Independence Day on August 15.

The apex society should co-operate with the Handloom Export Promotion Council and the Export House of the All-India Handloom Fabrics Marketing Co-operaive Society.

The apex society should co-ordinate the manufacture of ready-made garments with their sales so that not more than two or three months sales should be in stock at any time. Every effort should be made to ensure that prices of the garments sold by the apex society are competitive so that they may sell readily.

The supersession of the Board of Directors of the apex society should not continue to long periods. Democratic management of the apex society may be restored as early as possible.

Election to the Board of Directors of the apex society should be held once in three years for the whole board and not by annual retirement of one-third of the number of directors.

The audit of the apex society and its sales depots may be done by chartered accountants.

Private producers

Supply of yarn and other raw materials to the registered private producers should be subject to the proper submission of reports and willing acceptance by them of verification of weavers and inspection of cloth produced by the Handloom Inspectors.

The private producers should be entitled to obtain technical assistance and guidance from the technical officers of the Handloom Board.

The Tamil Nadu Handloom Finance and Trading Corporation Limited

Steps should be taken to reduce the rate of interest charged by the Tamil Nadu Handloom Finance and Trading Corporation and make the loans available to a large number of small producers.

The Tamil Nadu Government should try to persuade the Reserve Bank of India provide funds for this Corporation at the same concessional rates allowed to the co-operative sector. If it refuses to do so, the State Government should provide the funds at similar rates. If possible, the Corporation may be enabled to float debentures guaranteed by the State Government or in the annual floatation of public loans by the State Government, the needs of the Corporation may be taken note of.

The present system of giving fixed term loans may be replaced by the system of cash credit as in the case of co-operative societies.

The Corporation may function through the District Co-operative Central Banks who can act as agents of the Corporation for this purpose. There is no objection if instead of the Co-operative Central Banks, the Finance Corporation prefers to work through the State Bank of India or any other nationalised commercial bank.

Handloom Co-operative Market

A co-operative market exclusively for handlooms may be established in Madras on the lines of the co-operative textile market at Surat. The Tamil Nadu Handloom Finance and Trading Corporation Limited and the Tamil Nadu Handloom Weavers' Co-operative Society may jointly sponsor such a venture.

The membership of the market may be left open to all the handloom producers and weavers co-operative societies not only in Tamil Nadu but also in all the States.

Export Promotion

The Tamil Nadu Handloom Board should keep in close touch with the Handloom Export Promotion Council.

There should be a special Liaison Officer for export in the Handloom Board.

The Government of Tamil Nadu should insist on the inclusion of the representatives of the handloom industry in Tamil Nadu in every delegation sent by the Handloom Export Promotion Council and the Government of India. It is also desirable that one or two special delegations are sent abroad annually by the Tamil Nadu Handloom Board to publicise specifically the handloom goods produced in this State.

When cotton yarn, silk and other materials are in short supply, exporters should be given top priority in order to retain foreign customers.

Fullest use should be made of the facilities available at the Institute of Handloom Technology, Salem and the weavers' service centres of the All India Handloom Board in producing new varieties and designs.

Encouragement may be given to the exporters from this State who show the best performances.

The allowing of 2 per cent rebate on the F.O.B. value of goods exported from the Madras Port may be extended to the Tamil Nadu Handloom goods exported from any port in India.

A full-fledged laboratory which can issue certificates relating to quality of yarn, texture of weaving, fastness of colours and other particulars may be established at a suitable place in Tamil Nadu.

Attractive advertisements of our handloom goods should be made in Indian hotels frequented by tourists and at the airports.

Re-organisation of the Handlooms and Textiles Department

While the existing division of the State into regions is appropriate, the Salem region is too heavy area. It may be split into two with one region with Salem and another with Tiruchengode as headquarters.

There should be a Tamil Nadu Handloom Board with a Director-General as its head, who should also be the *ex-officio* Additional Secretary to the Government in the Department of Secretariat in charge of Handlooms. Under him, there should be four Directors, the first for Administration, the second for Finance, the third for Supplies and the fourth for Powerlooms.

The Officer in charge of the region should be of the status of a Joint Director, while the heads of sub-regions may be Assistant Directors, with functions similar to those assigned to Directors at the headquarters. These Assistant Directors will be directed in their functions by the respective Directors.

Under each regional office, there should be sub-offices for registration of weavers and producers, periodical inspection of looms, quality control, enquiries relating to complaints and enforcement of Provident Fund Scheme. Such sub-offices should be set up at suitable centres at the rate of one office for about 10,000 handlooms.

When the Provident Fund Scheme comes into operation, the Director (Finance) in the Handloom Board may be in charge of it and he may be assisted at headquarters and the regions by Accounts Officers with suitable staff. The actual accounts may be kept in the District Co-operative Central Banks. The Housing Scheme may be entrusted to the Director (Administration) assisted by a Superintending Engineer with all the powers of a Chief Engineer.

The Managing Director of a Co-operative Spinning Mill should not be chosen at random or shifted too quickly. As far as possible the Managing Director should be a person who has previous experience of the work and that when once he is appointed to the post he should be kept there atleast for five years. A General Manager may be appointed under the Managing Director and he will succeed the latter to ensure the continuity of management.

All the staff of the Handloom Board other than the Director-General should be available for filling up by promotion from among the existing officers only. The non-gazetted staff should be split up into three categories, namely, (1) Administration (2) Accounts and (3) Technical.

When the cadres are formed, opportunity may be given to the staff of the co-operative Department who have put in a service of not less than one year in the Department of Handlooms and Textiles of the weavers' co-operative societies to join these cadres.

Monthly reports should be sent to the regional offices by the sub-offices and that quarterly reports may be sent by the regional offices to the Handloom Board, in order to enable efficient supervision and co-ordination of the work. The Handloom Board should publish the annual report within six months of the succeeding year, giving full details of the looms, production and other factual and financial information regarding the handlooms in the State.

There should be close touch with public opinion in respect of all matters relating to Handlooms. For this purpose, a State-level Advisory Committee should be set up with the Minister in charge of Handlooms as Chairman.

An Advisory Committee may also be attached to each region consisting of the Joint Director of the region as Chairman.

Training and designing establishment and quality control

The Tamil Nadu Handloom Board should take the fullest advantage of the training offered by the Indian Institute of Handloom Technology, Salem for the diploma course. When the students finish their course and get their diplomas at the Indian Institute of Technology, Salem, they should be automatically absorbed in the technical cadre of the Board.

The technical staff of the Handloom Board and the Managers and Secretaries of weavers' co-operative societies must be enabled to visit the weavers' service centres at Madras and Kancheepuram periodically and keep themselves acquanted with the new designs improvised there. Annually, a few persons selected from the technical staff of the Handloom Board may be enabled to visit similar centres maintained by the All India Handloom Board.

At present, there are 12 training centres run by the Directorate of Handlooms and Textiles. This scheme should be continued and expanded, if necessary.

At headquarters, there should be a person of the status of a Joint Director, who has sufficient experience of all aspects of handloom weaving and he may be designated as Joint Director (Technical). He will work under the Director (Supplies). At each regional office there should be a technical officer of the status of Assistant Director. He should be assisted by a number of technical assistants.

In the godown attached to each region, there should be a small laboratory with a competent technician in charge.

Publicity, Statistics and Reports

The Tamil Nadu Handloom Board should have a definite scheme of publicity and sales promotion.

In addition to utilising the media of advertisement in news papers and magazines, posters, painted, Boards, exhibitions, cinema and commercial radio, the Handloom Board may consider the feasibility of producing short films dubbed in different languages for exhibitions in the theaters.

All the primary societies and private producers who are producing cloth for export may be brought together through a special association with a view to have joint publicity of their products. The Handloom Board may share the cost of publicity to the extent of one-third of the expenditure involved.

The Handloom Board should publish a monthly bulletin giving figures of production and sales of all the institutions engaged in the handloom industry.

The scheme for collection of statistics relating to handloom industry now being implemented by the Director of Statistics, may be taken over by the Handloom Board.

Finance-Creation of Handloom Fund

Instead of annual budget allotment, a non-lapsable Handloom Fund should be created by necessary legislation.

An annual contribution of Rs. 6 crores should be made to the Handloom Fund, of which Rs. 3 crores should be contributed by the State and the remaining 3 crores should be obtained from the Centre specially for the promotion of handlooms or out of the general allocations made for the Fifth Five Year Plan.

Welfare of Weavers

When the Government takes a decision on the recommendations of the two Wages Committees, it should ensure that conservation and increase of total employment of weavers should be the first consideration and improvement of remuneration for such employment should come second.

A provident fund scheme involving compulsory saving for all weavers in the co-operative societies between the ages of 18 and 70 should be instituted.

The provident fund scheme should be extended to all the weavers working for all registered producers.

For independent weavers, the only practicable method is to add the contribution to the cost of the yarn.

In order that the provident fund scheme may operate successfuly, it should be put on a statutory footing. The Handloom Board should be the authority responsible for operating the scheme and the provident fund accounts may be kept in the District Co-operative Central Banks.

Housing

The loans given to the existing housing colonies may be treated as free of interest from the beginning and the interest amounts so far collected may be adjusted towards the principal due. In future, only instalments of principal should be recovered.

No colonies should be sanctioned hereinafter on the basis of recovery of principal and interest from the weavers. The colonies should be built on Government account and leased to the co-operatives at a low rate of interest. In the case of any society which is able to secure a site for a colony and plot it out for allotment to members, it may be given a loan for construction of houses and these should continue to belong to the society.

Wherever the members of a society feel that they can pay back capital and interest under the existing scheme there should be no objection to their forming a colony as at present.

In the case of industrial weavers' co-operative societies also, the colonies built should be owned either by the Government or by the society concerned and they (the houses or tenaments) should be leased to the members.

Atleast 1,000 houses divided into suitable colonies may be built for the weavers every year.

For weavers belonging to the co-operative societies living in far away villages, the Government should arrange to provide house-sites on the same conditions as are at present applicable to Scheduled Castes and landless agriculturists.

In respect of the weavers in the private sector, the registered producers should be encouraged to build houses.

The present wages advance of Rs. 25/- given by the primary society to its members may be increased to Rs. 100/-. For festivals, marriages, funerals etc., the weaver may be given an advance of his average income for one month or Rs. 200/- whichever may be less.

Weaving as a craft education should be introduced in primary and secondary schools situated in areas where weavers are concentrated.

The co-operative societies should be encouraged to give special assistance to their members to convert pit-looms *into frame looms and* put up jacquards.

Wherever a co-operative society has plans to make weaving appliances on a considerable scale and applies for the timber for it, it may be considered favourably and maximum possible concessions given.

All families of professional weavers, to whatever caste they may belong, may be treated as Backward class and the concessions now enjoyed by the Backward classes made applicable to them.

Annually, 100 scholarships may be offered to the bright boys and girls belonging to the families of professional weavers to prosecute collegiate education in P.U.C. and Degree or professional courses.

A special investigation may be made to find out the incidence of dieases special to the weavers and their families and arrangements should be made to prevent such diseases.

Protection to handlooms—Reservation and Control of powerlooms

The following varieties should be reserved exclusively for handlooms. Composite Mills as well as powerlooms should be strictly, prohibited from producing them :—

(1) Sarees ..	Coloured or white or printed with borders and made of cotton, silk or art-silk yarn or any mixture of these yarns.
(2) Dhoties ..	Do.
(3) Lungis ..	Do.
(4) Bed-sheets, Bed-covers, Carpets, Tapes and Counter-panes. ..	
(5) Plain towels with borders, turkish towels, Terry towels and Erazhu Thoruthu towels.	
(6) Crepe cloth ..	

Every powerloom owner *should* be required to affix compulsorily labels or stamps giving the name of the producer, the yarn used, etc., as may be prescribed by the Textile Commissioner so that they cannot be passed off as handloom cloth.

The production of varieties exclusively reserved for the handlooms by mills and powerlooms should be made a criminal offence liable for prosecution and punishment by imprisonment or fine or both. The sale of reserved varieties produced by mills or powerlooms or sale of powerloom cloth as handloom product should be made an offence similarly punishable with fine or imprisonment or both. The officers of the Handloom Board should be empowered for the purpose.

Grams : PULICOOP Telephone : 213

Post Box No. 4

A. 1364, PULIAMPATTI WEAVERS PRODUCTION AND SALES CO-OPERATIVE SOCIETY LIMITED

ARUPPUKOTTAI

RAMANATHAPURAM DISTRICT, TAMIL NADU.

Our Society produces fabric in a variety of colours, through expert weavers in cotton staple fibre and art silk. Available all over Tamil Nadu, Andhra, Orissa, MadhyaPradesh, Mysore and Bengal. Contact for your immediate needs to the above address.

A. SUNDARA MAHALINGAM
Vice President

M. GURUSAMY
President

G. T. RAVINDRANATH GNANAIAH, B. A. H. T. C.,
Handloom Inspector—Secretary.

Directors

A. SHANMUGANATHAN
G. ARUMUGAM
P. S. RAMASAMY
R. KANDASAMY
P. SUBRAMANIAM
S. GURUSAMY

The practice of combing handloom and powerloom products under the misleading term "decentralised sector" has done a great deal of mischief. Time has come when the two should be sharply separated and dealt with as separate sectors.

Further increase of powerlooms should be immediately stopped and a careful assessment should be made of the existing powerlooms.

Unauthorised powerlooms should not be regularised except to the extent of the quota of authorised powerlooms. The unauthorised powerlooms which are not regularised in this manner should be promptly stopped by prosecution and confiscation.

Handlooms should be protected first and foremost. This should be the all-India policy. While the existing authorised powerlooms may be allowed to function within the sphere allotted to them, their number should not be increased atleast for the next five years.

The excise duty on powerloom cloth should be brought on a level with that of mill cloth.

Strict orders should be issued to the Tamil Nadu State Electricity Board, that up-to-date lists of connections issued hitherto to powerlooms should be collected and communicated to the Handloom Board and that before any further connection is given, a certificate from the Director of Powerlooms to the effect that the powerloom has been given a valid licence should be obtained.

Excise duties, Sales Tax and Octroi

The Tamil Nadu Government should approach the Government of India to exempt from levy of excise duty all kinds of cotton yarn in hanks whether grey or bleached, multiple or single reeled.

The Tamil Nadu Government should press upon the Government of India, that, when yarn used by handlooms or handloom cloth is subject to any of the various processes, they should be free of excise duty. Exemption should be given in respect of man-made fibre yarn and silk yarn used by the handlooms from the present levy of excise duties.

The duty on powerlooms should be increased to a minimum of Rs. 100/- per powerloom for small units and proportionately higher duties for larger units.

The Government of Tamil Nadu may take up the matter with the Government of India and get D.H. C.R. Yarn treated like plain reeled yarn and no excise levy is made.

The constitutional aspect of the levy of Sales tax by certain states on the sale of handloom cloth may be examined by the Government of Tamil Nadu in consultation with its Law Department and,if necessary, the Government of India may be requested to bring the handloom cloth under levy of additional excise duty and prescribing "Nil" duty. The matter may also be represented to the present Finance Commission set up by the Government of India.

Cotton yarn in the form of hanks may be exempted from the levy of sales tax altogether.

The question of levy of octroi duties on handloom cloth by some corporations and municipalities in some States may be taken up in the National Development Council which may pass a resolution advising the State Governments to grant exemption to handloom cloth from the levy of octroi duties.

General

The State Government may take steps to nominate a representative of the handloom industry to the Tamil Nadu Legislative Council.

State legislation with the permission of the Government of India, if necessary, should be made for the enforcement of reservation of field of production for handlooms.

Summary of suggestions

The export subsidy now granted should try to equalise the expenses incured from taking the handloom goods from India to the importing countries.

The Government of Tamil Nadu may try to persuade the operators of goods transport within the State to transport handloom goods at half their normal rates. The other State Governments may also be approached to provide the same concession.

In planning the increase in cotton production in Tamil Nadu, steps may be taken as far as possible to concentrate both on the short staple and long staple cotton, while promoting the production of the medium varieties.

It is worth considering whether some common arrangement to purchase cotton for all the mills in Tamil Nadu should not be made in order to ensure that the proper quality of cotton is purchased and the prices are reasonable.

During the Fifth Plan period, another 10,000 acres should be brought under mulberry cultivation. In the extension proposed, it is desirable that 25% of the area is brought under State silk farms and the rest may be under private agriculturists.

The sericulture schemes now administered by the Department of Industries and Commerce may be transferred to the proposed Handloom Board.

The South India Viscose Limited should be encouraged to utilise a larger per centage of its pulp for production of filaments and staple fibre. It may also be persuaded to have a major part of its rayon production in hank form.

The Tamil Nadu Government may take steps to move the Government of India to convert the All India Handloom Board into a statutory body. Madras may be the proper headquarters of the All India Handloom Board.

Informal meetings twice a year between the Directors of Handlooms of Tamil Nadu, Kerala, Mysore, Andhra Pradesh States, the heads of their apex co-operative institutions and corporations and representatives of associations of private producers may be arranged.

Q227 Aruppukottai Dhevangar Weavers Production and Sales Co-operative Society Limited

ARUPPUKOTTAI, Ramanathapuram District.

Branch :
Yarn Bazaar, ARUPPUKOTTAI

"DHEVATEX"

Pavadai bits, Towels, Chinnalampatti Silk Sarees 60 counts Cotton Sarees, Kodambakkam Sarees are produced in modern designs and profusion of colours available at all "CO-OPTEX" sales emporia.

President :
M. Veeriah,

Vice-President :
K. S. Siva Sankaran

Executive Members

K. Raja Ram, K. S. Sankaran, K. M. K. S. Sankaralingam
S. N. Paramasivam, M. Sennappan

TAMIL NADU LEADS IN EXPORT OF HANDLOOM GOODS

It has been evident for some years now that Tamil Nadu's contribution to the country's total effort in the export of handlooms is considerable. The share of Tamil Nadu in the export of handloom goods has been increasing from Rs. 1.7 crores to Rs. 6 crores, comprising very nearly two-thirds of the value of all-India exports. These figures represent only cotton goods and it is known that in the export of silk handloom goods also Tamil Nadu's share is very considerable.

Considering the export effort already made by Tamil Nadu handloom sector and the scope for further expansion, the Santhanam Committee has requested Tamil Nadu Government to ensure that ships to foreign ports should sail from Madras and Cochin harbours, so that our exporters can find more space in them for exporting their goods.

According to the Santhanam Committee, the total quantity of handloom fabrics in 1969-70 for all-India was 2.7 crores of metres valued at Rs. 7.5 crores, of which the quantity exported from Madras Port amounted to 54 lakhs of metres valued at Rs. 1.7 crores. For 1970-71, the figures were, for All-India 2.8 crores metres va.ued at Rs. 7.8 crores, of which Tamil Nadu contributed the quantity of 1 crore metre of the value of Rs. 3.5 crores. In 1971-72, the total for all-India was 2.7 crores metres of the value of Rs. 9.3 crores, of which Tamil-Nadu contributed 1.5 crores metres valued at Rs. 5.8 crores. Besides these fabrics, export of cotton handloom non-fabrics consisting of carpets and durries, bedsheets and blankets and pillow covers and towels and other items contributed for the all-India Rs. 4 crores. Rs. 5.5 crores and Rs. 6.3 crores for the above-mentioned three years, of which the share of Tamil Nadu was Rs. 1.4 crores, Rs. 1.7 crores and Rs. 3 crores. Thus, it is evident that the share of Tamil Nadu in the export of handloom goods has been steadily increasing i.e., from Rs. 1.7 crores to Rs. 6 crores. It may also be added that out of silk handloom goods exported valued at Rs. 17.5 crores, Rs. 10 crores and Rs. 7 crores, the share of Tamil Nadu has been considerable, though precise figures are not available. It may therefore be taken that at present Tamil Nadu is exporting about rupees 10 crores worth of handloom goods every year and that with effort, this can be increased considerably.

The All India Handloom Fabrics Marketing Co-operative Society, Bombay and the Handicrafts and Handlooms Exports Corporation of India, a subsidiary of the State Trading Corporation of India are among the main agencies engaged in export of handloom goods. There are also other private agencies engaged in the export trade. It is a matter of great importance that the Tamil Nadu Handloom Board should have an accurate record of such agencies, the quantity exported by them together with their value.

ENCOURAGE CO-OPTEX AS AN EXPORTER

The Tamil Nadu Handloom Weavers' Co-operative Society has also been exporting directly, though on a very small scale. Efforts should be made to increase its share of exports and we do not see any objection if that society gets into contact with the private handloom producers and obtains goods from them also for export. The Handloom Board should encourage this development. This would not mean however, that any weavers' co-operative society or private producer should be discouraged from supplying goods to the other exporters of handloom goods.

The Handloom Export Promotion Council set up in Madras in 1965 is doing useful work. Among its activities are measures aimed at increasing the competitive capacity of the handloom cloth in foreign countries, participation in exhibitions in India and abroad, sponsoring trade/sales delegations to foreign countries for market surveys/promoting sales, publishing journals, brochures, Directory of Imports/Exporters etc., to keep the export trade well informed and advertising in India and Foreign newspapers and magazines to give the widest publicity to Indian handloom cloth and other publicity measures abroad. It is essential that the Tamil Nadu Handloom Board should keep in close touch with the Council and support it in every way by providing it with such information and facilities which may be required from the Tamil Nadu Government. It is recommended that there should be a special Liaison Officer for exports in the Handloom Board.

TAMIL NADU MUST HAVE A PLACE IN ALL EXPORT DELEGATIONS

We recommend that the Government of Tamil Nadu should insist on the inclusion of the representatives of the handloom industry in Tamil Nadu in every delegation sent by the Handloom Export Promotion Council and the Government of India. While the handloom producers of Tamil Nadu should participate in the all-India delegations, it is also desirable that one or two special delegations are sent abroad annually by the Tamil Nadu Handloom Board to publicise specifically the handloom goods produced in this State. Ordinarily, they should be sent to countries other than those to which the all-India delegations have been sent recently or are to be sent soon. The Tamil Nadu handloom goods are having good markets at present in Europe, U.S.A., Hongkong and Japan. Efforts should be made to maintain and expand these sophisticated markets, besides exploring new markets. In sending these delegations, the Handloom Board should act in close co-operation with the Export Promotion Council.

When cotton yarn, silk and other materials are in short supply, exporters should be given the top priority in order to retain the foreign customers. As Indian handloom goods have to compete with the mill-made goods from all over the world, any failure of supplies in a particular year may result in loss or decline of foreign markets.

TO KEEP ABREAST OF FASHION

Tastes and fashions in foreign countries are continually changing and it is necessary that our producers should promptly adapt themselves to them. For this purpose, the fullest use should be made of the facilities available at the Institute of Handloom Technology, Salem and the weavers' service centres of the All India Handloom Board at Madras, Kancheepuram, Bangalore and Bombay in producing new varieties and designs.

It will also be useful if encouragement is given to the exporters from this State who show the best performances. This should be in addition to the awards given by the Handloom Export Promotion Council annually. In this connection, we have considered the scheme of the Director of Handlooms and Textiles, Madras referred to us by the Government. We generally approve of the scheme, but we would suggest that a Certificate of Merit may be awarded to all producers, who export not less than ten lakh rupees worth of handloom goods in any year.

MORE SHIPS MUST SAIL FROM MADRAS

Though the major portion of handloom goods produced in Tamil Nadu are exported from the Madras Port, we have been informed that certain quantities of our handloom goods are also exported from Cochin, Bombay, Calcutta and other ports. We have been assured by the Secretary of the Export Promotion Council that there is no difficulty in identifying such goods from whichever port they may be exported. We, therefore, recommend that the 2 per cent. rebate on the F.O.B. value of goods exported from the Madras port may be extended to the Tamil Nadu Handloom goods exported from any port in India.

It has been represented to us that a large number of Indian ships start from the Calcutta port and by the time they reach Madras, they are heavily loaded and there is difficulty in finding shipping space for the handloom goods waiting at the Madras port. Similar complaints were made to us in Kerala that there was difficulty in finding shipping space in Cochin port. We suggest that the Government of Tamil Nadu may enquire into the matter and if there is justification for the complaints, arrange with the Government of India that some of the ships start from Madras Port and some others from Cochin.

USE S.I.T.R.A. FOR QUALITY CONTROL

Some agents of foreign importers of handloom goods require from our exporters certificates relating to quality of yarn, texture of weaving, fastness of colour and other particulars. We were told that with reference to fastnes of colour and a few other matters, certificates have to be obtained from the laboratories in Bombay. We recommend that a full-fledged laboratory which can issue such certificates may be established at a suitable place in Tamil Nadu. Ordinarily, the South India Textile Research Association, Coimbatore is equipped with the machinery to issue these certificates. Assistance may be given to that Association for installing any additional equipment that may be required. Similar assistance may be given to other institutions such as Weavers' Service Centres.

It has also been suggested that attractive advertisements of our handloom goods should be made in Indian hotels frequented by tourists and at the airports. It may be worthwhile to keep in such places samples of such goods in the same way as handicrafts are exhibited now. Brochures and pamphlets may also be supplied to such hotels and airports for distribution to foreign tourists.

Export incentives are given at different rates to different countries. They vary from 14.5 per cent to 32.5 per cent according to the types of goods and their destinations. It is necessary to take into account the freight and other charges due to distance of importing country, absence of direct shipping facilities from Madras port and consequent transhipment expenses. The export subsidy now granteed should try to equalise the expenses incurred from taking the handloom goods from India to the importing countries. We suggest that the Tamil Nadu Government may take up this matter with the Government of India and the Handloom Export Promotion Council.

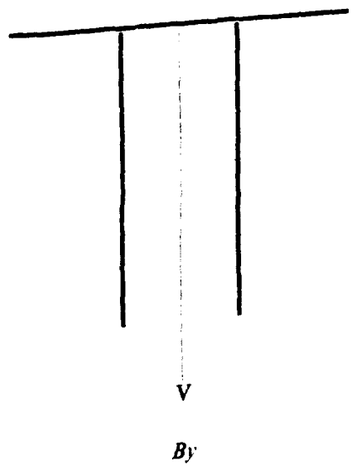
SANTHANAM COMMITTEE SUGGESTS CO-OPERATIVE TEXTILE MARKET

Among several suggestions of the Santhanam Committee is the experiment of the Co-operative Textile Market which is coming up in Surat. It includes powerlooms and millls. Over a 1,000 sets of two rooms in three floors have been constructed in a huge campus, each producer owning one set which provides for a godown, an office and a show-room. The cost of each set was stated to be Rs. 21,000/-. Producers from all over India are entitled to become members of this market. Therefore the Santhanam Committee says :—"We would like such a co-operative market established in Madras exclusivvely for handlooms. To begin with, provision may be made for 300 producers and it should be possible to provide them with a godown, an office and wholesale-cum-retail shop costing about Rs. 15,000/-. The Tamil Nadu Handloom Finance and Trading Corporation Limited and Tamil Nadu Handloom Weavers' Co-operative Society may jointly sponsor such a venture. In the campus, there must be facilities for banking, hotel and other amenities. The general plan of the Surat market can be obtained and necessary adaptations can be made to suit local conditions. We recommend this proposal for the considerationof the Tamil Nadu Government and if it is accepted, to help the scheme with free provision of the site. No capital assistance will be needed as the scheme is self-financing.

The membership of the market may be left open to all the handloom producers and weavers' co-operative societies not only in Tamil Nadu but also all the neighbouring States. The apex handloom societies in all the States in India may also be invited to become members. The management may be by a Board of Directors elected by the members, with one director each reserved for the Tamil Nadu Handloom Weavers' Co-operative Society, the Tamil Nadu Handloom Finance and Trading Corporation Limited and the Tamil Nadu Handloom Board.

THE TAMIL NADU HANDLOOM FINANCE & TRADING CORPORATION

A HELPING HAND TO HAND-LOOM WEAVERS.



By

S. Arultharumperumal, B.A. D.B.M.

Handloom Industry is the most ancient and the largest cottage industry in Tamilnadu. There are about 5.57 lakhs of handlooms in Tamilnadu with nearly 20 lakhs of people depending on them. With an annual production potential of about 50 crores worth of handloom cloth this industry occupies an important place in the economy of the State.

PROBLEMS OF THE INDUSTRY

The handloom industry has always been facing problems relating to raw materials, finance and competition from the organised textile mill industry in regard to marketing of handloom fabrics. The Government of Tamilnadu have therefore been taking keen interest in the promotion of the industry and the welfare of the people engaged in it.

FORMATION OF THE TAMIL NADU HANDLOOM FINANCE AND TRADING CORPORATION LIMITED

Of the various problems that are being faced by the handloom industry from time to time, the problem of finance is the most important one. The Reserve Bank of India have been providing funds to the handloom industry within the cooperative sector through the State Cooperative Bank and the District Cooperative Central Banks for production and marketing at 1·1/2% below the bank rate (The present bank rate being 7%). But there had been a long and persistent demand from the handloom weavers outside the cooperative sector that special arrangements should be made to provide them with adequate financial assistance. As a result of this demand, the Government of Tamilnadu set up a Corporation known as 'The Madras Handloom Finance Corporation'. This Corporation which was sponsored by the Government as a public limited company and non-banking financing institution to help the weavers outside the cooperative fold continues to render useful service to the weavers. As there is no organised effort for marketing the handloom fabrics produced by the members outside the cooperative sector, this Corporation has now come forward to help the handloom weavers in the field of marketing also. The name of the Corporation has also been recently amended as The Tamil Nadu Handloom Finance & Trading Corporation Limited.

CAPITAL OF THE CORPORATION

The authorised share capital of the Corporation is Rs. 100 lakhs divided into 10 lakhs shares of Rs. 10 each The present paid-up share capital is Rs. 62.35 lakhs as shown below :—

	lakhs (Rs.)
(*a*) Contribution by Non-Government sources ..	37.35
(*b*) Contribution by Government of Tamil Nadu ..	25.00
	62.35

The total No. of members including the Government of Tamil Nadu is 5334.

RESOURCES OF THE CORPORATION.

The State Bank of India has provided a continuous Cash Credit accommodation of Rs. 90 lakhs to the Corporation on Government guarantee for financing the loan operations. The State Bank of India has also provided another Cash Credit accommodation of Rs. 12/- lakhs for financing the trading activities of the Corporation. Besides the Government of Tamilnadu have provided funds to this Corporation by way of term loan to the extent of Rs. 15 lakhs. The Corporation has also accepted Fixed Deposits to the extent of Rs. 0.36 lakh which has been fully guaranteed by the Government of Tamilnadu.

LOAN SCHEMES OF THE CORPORATION

Individuals including artisans like spinners, weavers or enterpreneurs like master weavers or traders, partnerships or firms, bodies corporate including companies registered under the Indian Companies Act are eligible for financial assistance from the Corporation. The Corporation has formulated several loan schemes to suit the requirements of eligible borrowers and the purposes for which they will be given. The following are the types of loans normally granted by the Corporation.

Loans for period upto 18 months are available mainlyy for :

(*a*) Procurement of raw materials

(*b*) Preparatory processing such as warping, sizing, bleaching, mercerising and dyeing of yarn ;

(*c*) Production, manufacturing, processing, finishing, marketing and export of handloom, powerloom and hosiery goods and the products of other allied and ancillary industries.

(*ii*) The loan schemes of the Corporation provide for sanction of medium term loans and long term loans also for specific purposes. The loans granted by the Corporaration are normally secured by any of the following securities :

(*i*) Personal surity ;

(*ii*) Stocks-in-trade ;

(*iii*) Plant and Machinery ; &

(*iii*) Under each scheme, a ceiling has been fixed regarding the maximum amount upto which a member can borrow. Subject to this constraint, the members of the Corporation are eligible for financial assistance upto ten times of their share capital contribution. One salient feature of the loan scheme is the granting of what is called 'repeat loan'. A borrower after repaying one instalment of the loan taken by him previously can apply for reimbursement of that instalment as a loan which is termed as "repeat loan." Under this system, a member can continue to borrow upto a particular limit without any difficulty.

(*iv*) While the rate at which the Corporation is borrowing from the State Bank of India is 11%, the members of the Corporation who are getting financial accommodation from the Corporation are charged 12·1/2% interest. The turn-over of the Corporation under the activity 'loan operations' during the year 1973 amounted to Rs. 1.30 crores. The total loans outstanding as on 31.12.73 amounted to Rs. 160 lakhs

Display of handloom fabrics at H.F.T.C. exhibiting the profound nature of delicate and delightful designs and art works interwoven in their texture.

TRADING ACTIVITIES

(*a*) Marketing of Dyes / Chemicals

To start with, the Corporation has taken upon itself the task of distributing imported dyes and chemicals to the actual users with effect from December 1972. Dyes and chemicals worth about Rs. 27 lakhs were imported by the Corporation towards the end of the year 1972. The sales turnover under this category from December 1972 to December 1973 amounted to Rs. 20.26 lakhs.

(*b*) Marketing of Handloom fabrics

The Corporation has made a beginning in the field of marketing of Handloom, Powerloom and Knitted fabrics produced by the members. During the period from September '73 to December '73, the Corporation procured and marked handloom and powerloom fabrics worth about Rs 10 lakhs.

PERFORMANCE DURING 1973

The total turn-over of business of the Corporation during 1973 amounted to Rs. 1.60 crores as against Rs. 1.28 crores during 1972. The net earnings of the Corporation for the last 3 years are as follows:

Year	*Net Profit (Rs. in lakhs)*
1971	3.37
1972	6.56
1973	7.00 (Tentative)

FUTURE PLANNING

(*a*) Finance

With a view to help the smaller weavers, the Corporation proposes to implement a special scheme of concessional finance with the help of the State Bank of India. The Corporation has already submitted the scheme to the State Bank of India asking for a special Cash Credit limit of Rs. 20 lakhs. The State Bank of India have forwarded this scheme with their recommendations to the Reserve Bank of India. The concurrence of the Reserve Bank of India is awaited.

(*b*) Trading

(*i*) *Distribution of Dyes and Chemicals* :—Apart from marketing of imported dyes and chemicals, the Corporation proposes to undertake distribution of indigenous dyes & chemicals also to the actual users.

(ii) *Raw Material*—The Corporation also proposes to undertake distribution of yarn to the handloom weavers and the powerloom owners outside the cooperative sector. Details of the scheme are being worked out.

(iii) *Marketing of Handloom and Powerloom fabrics*:—The Corporation proposes to procure handloom and powerloom fabrics that are being produced by the members and market them in the domestic market as well as international markets. The Corporation also plans to open show-rooms at important business centres mainly to attend to the trade enquiries from wholesalers and foreigners.

(iv) *Pongal Tourist Trade Fair*: With a view to provide a good medium of publicity for the products of our members, the Corporation took, for the first time, participation in the Pongal Tourist Trade Fairheld at the Island Grounds, Madras. The Corporation's Pavilion which is now popularly known as 'HFTC' displayed a wide range of handloom and powerloom textile fabrics produced by the members. The Corporation assures supply of these fabrics with *right quality* at *right price* and in *right time*. This Pavilion attracted a large number of visitors including people connected with trade circles. Th Corporation's Pavilion also received a good nomber of enquiries from wholesalers and foreign tourists.

TAMIL NADU TOPS IN MEDICARE

"The people of Tamil Nadu, Punjab and Haryana were getting the best medical care from their respective governments while their counterparts in Bihar and Orissa were being deprived of their basic need of health facilities, according to Dr. Ved Prakash, the newly-elected President of the Indian Medical Association (I.M.A.)

"He told UNI here to-day that perhaps Tamil Nadu was the only State in the country which allocated the highest amount in its annual budgetary expenditure for medical care."

IN THE LABOUR FRONT

Suspension Order on Transport Employees Revoked

The Tamil Nadu Government has revoked the suspension order passed on 225 employees of the Kanyakumari branch of the State Transport Department, following an assurance given to workers' representatives by the Hon'ble Chief Minister on January 4. The cases filed against them would be withdrawn and the suspension period would be treated as leave, according to the Hon'ble Minister for Transport, Thiru S. Ramachandran.

Cement Workers to get more

The biparties wage negotiating committee for the cement industry has unanimously agreed to fix the basic wage of an unskilled worker in the industry at Rs. 260/- p.m. against the present basic wage of Rs. 61 under the second wage board.

The new basic wage, which when implemented will benefit over 80,000 workmen in the Nation's 52 cement factories, is subject to the total wage of Rs. 295-10 per month at an index figure of 227 (at current index, the total will be around Rs. 310 p.m.) awarded by the Union Labour Minister in September last year. It will also be subject to agreement on the rates of all other allowances and fringe benefits to be revised within the overall total wage awarded by the Minister following a Na-Nation-wide strike by cement workmen during mid 1972.

Long live co-operation ! Founded in 1956 Long live handlooms !

AMBIGAITEX

Q. 841 Puliyamppatti Sowdambigai

Production and Sales Co-operative Society

Limited, Aruppukottai:

RAMANATHAPURAM DISTRICT :-: TAMIL NADU.

OUR SOCIETY PRODUCES

(6, 7, 8, 9 yards) CHINNALAMPATTI SAREES

ART SILK SAREES, PAVADAI BITS

Economical in Price, highly good in quality, attractive in designs and fast in Colours all rolled in one.

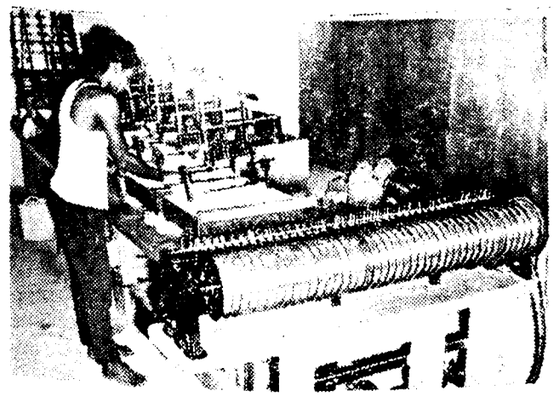
AVAILABLE AT ALL CO-OPTEX EMPORIA.

Step in to fulfil your desires.

S. SIVASANKARAN,
Vice-President

C. MEENIA CHETTIAR,
President

Directors :
V CHOKKIAH CHETTIAR
S. P. SANGAPPAN
S. S. SANKARAN CHETTIAR
M. GURUSAMY CHETTIAR
K. KANDASAMY CHETTIAR



GOOD BYE SURAT

TAMIL NADU HAS BEGUN TO MAKE GOLD ZARI

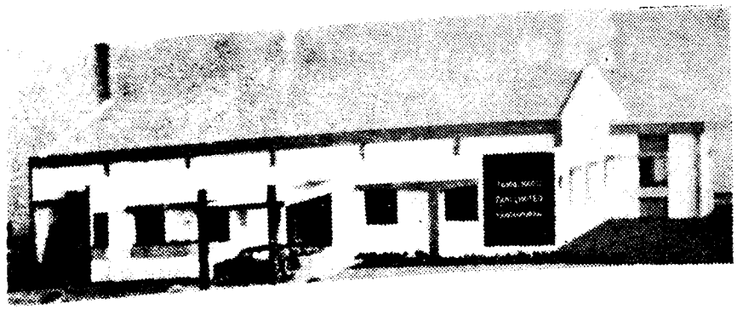
After fifteen years of waiting, the silk weaver in Tamil Nadu can weave the inimitable lace and silk sarees and other delectable wear, with gold lace produced in his own State. For, the Tamil Nadu Zari Factory, at Kancheepuram has gone into production since February, 1974. It has been a long wait indeed. Though for centuries our silk looms have been depending on outside supplies, for both the essential raw materials, *viz.*, silk as well as lace, and subjected to the consequent stranglehold of external markets, the decision to organise a Zari Factory in Tamil Nadu was thought of only 15 years ago.

With the commissioning of the Zari Factory at Kancheepuram at least one raw material is available from local production for our renowned Silk Industry. At present the Tamil Nadu Zari Limited being a Government owned Company, is making available all its production only to the co-operative sector silk looms, but already the Zari has won the acclaim of local trade circles to such an extent that private sector silk-loom owners from Kumbakonam and other silk centres of Tamil Nadu have started to converge on Kancheepuram for purchasing the Tamil Nadu Zari.

At present there are some 800 spindles at work in the Zari factory, comprising French machinery, but the spindles needed for the 15 fold expansion of the factory's capacity will all be manufactured by Textools Limited, Coimbatore. In fact Textools have already made a few frames of 40 spindles which are reported to have given satisfactory trial runs at Coimbatore. With both product and machines coming upto expectations there is nothing to stop Tamil Nadu Zaris from aiming for its full rated capacity of 12,000 spindles. At this stage it will be a Rs. 1 crore project fully capable of meeting in full all the demands of Tamil Nadu for gold lace.

The Government of Tamil Nadu have registered a public sector company named and styled as "Tamil Nadu Zari Limited" for the production of this Real Gold Zari. This company was registered as a Public Sector Company on 6th Dec. 1971 with the following persons as Board of Directors.

1. Director of Handlooms and Textiles (Chairman).
2. Deputy Secretary to Government, Finance Department.
3. Joint Secretary to Government, Industries Department.
4. Collector, Chingleput District, and
5. Managing Director, Tamil Nadu Zari Ltd., (at present Mr. Margabandu).



The Tamil Nadu Government have invested Rs. 7 lakhs as Share Capital in this venture and have further sanctioned a Short Term Loan of Rs. 2 lakhs during January, 1974 repayable after one year. The French make machinery purchased from Bangalore under the technical and commercial guidance of M/s. Textools Co., Ltd., Coimbatore and IBCON Private Limited, have an *installed capacity of 15,000 marcs* per annum which works out to roughly 1/8th of the requirement of the Silk Handlooms in Tamil Nadu. The Unit is now functioning at the Industrial Estate in Orikkai, Kan*cheepuram where the unit has been* allotted 4.73 acres of land by the Industries Department.

The Government of India have also allotted the required quantity of gold to the unit. It is estimated that the unit will provide employment opportunities for not less than 500 persons in due course when it is expanded fully. The Unit commenced its marketing during (February '74) to the Silk Weavers' Co-operative Societies to start with. The rates are competitive when compared to the Surat Market and efforts are being made to stabilise the market rate. The first batch of workers were given training at Bangalore under a collaboration arrangement with a private firm who sold their original French-made machinery.

IMPORTANCE OF ZARI TO SILK CLOTHES

Zari is a fine thread comprising silk yarn as its core, with fine silver woven round it and then electroplated with gold. This pure Gold Zari (*i.e.*,) Gold, thread is used in Silk Sarees for the borders, the Pallav and also in the body of the fabric. On an average about 1/10 of the weight of each silk saree forms the weight of the gold Zari thread used in it. The combination of pure gold zari with the Silk fabrics gives it the lustre and fine finish making it so attractive to the buyers.

Apart from the requirement of gold zari for the silk handloom weavers, the cotton handloom weavers also require Zari for the borders of finer count dhoties, upper cloth and cholie pieces etc.,

Zari is sold in terms of "MARCS". One Marc weights 245 grams. The composition are indicated below :—

SILVER	..	70 to 78%
SILK	..	25 to 28%
GOLD	..	0.5 to 1%

The making of Zari involves the following processes :

1. Dyeing, doubling and twisting of pure silk of 13/15 D and 20/22 D, purchased from Kashmir.

2. Melting of silver Ingots and turning them into long semi circular rods.

3. Reducing such long rods into coarse, medium and finally fine silver wires to 60 S.W.G.

4. Flattening of such fine silver wires.

5. Coiling the flattened silver wires around the silk thread converting into silver thread.

6. Gilding, with gold by electroplating process.

7. Reeling and packing.

TOTAL VALUE OF REQUIREMENT OF ZARI

With about 20,000 silk looms, and each Silk Handloom needing about 0.5 a marc of gold zari per month on an average, Tamil Nadu Silk weavers spend more than Rs. 10 lakhs on Zari every month. Taking the handloom sector's requirements the annual requirement is estimated at Rs. 2 crores. One marc of gold zari has a length of 18,000 to 20,000 yards and weighs 245 grams.

PRESENT SOURCE OF ZARI

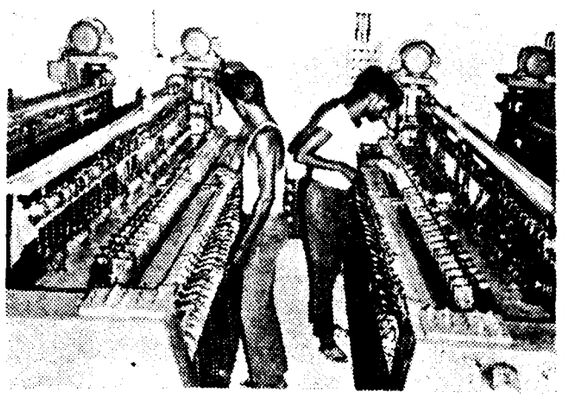
The requirements of Zari valued about Rs. 2.5 crores are now got from Surat in Gujarat State which is the main zari producing centre in the Indian Union. It is gathered that the French who settled down in Surat as early as 1,600 A.D., carried on this Zari industry and that provided the impetus for that town to develop as a traditional centre for zari manufacture.

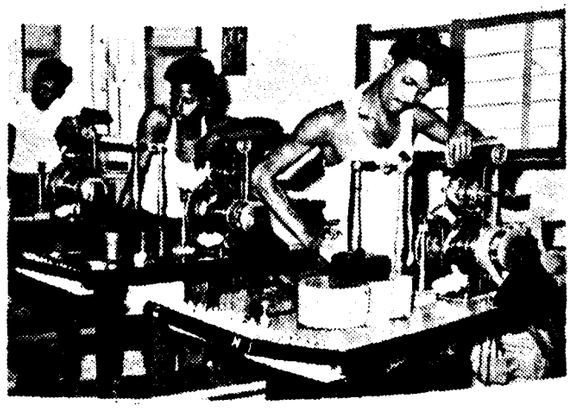
REASONS FOR SETTING UP THE UNIT IN TAMIL NADU

(*a*) The Silk Industry in Tamil Nadu cannot exist without the continuous supply of pure gold zari at reasonable prices.

(*b*) It wants Zari of standard quality to maintain its reputation.

At present, it has to get its supplies from Surat through middlemen who charge exhorbitant rate and do not also vouchsafe for the genuineness of zari. To overcome these it had been decided to start a zari making unit in Tamil Nadu. ✱





In giving a modern look and consumer appeal the Tamil Nadu handloom weaver looks up to the Tamil Nadu Co-operative Textile Processing Mills Ltd, functioning at Erode. Incidentally it is the only one of its kind in India. It was registered and started on its work on 1-2-1974 with the object of taking over the earst while Yarn and Cloth Processing Centre of the Cooptex. Its membership is open to Primary Weavers Cooperative Societies, the Tamil Nadu Handloom Weavers Cooperative Society, other Co-operative Societies, individuals and firms engaged in textiles industry and the Government of Tamil Nadu. As on date, there are 148 members with a paid up share capital of Rs. 2.42 Lakhs.

The origin and growth of the Yarn and Cloth Processing Centre is perhaps the history and growth of the Cooperative Processing Industry in South India in general and in Tamil Nadu in particular. With the main aim and object of improving the competitive capacity of the handloom fabrics vis-a-vis the mill made and powerloom fabrics which normally have better finish, appearance, lustre feel, uniformity of picks, width, etc., a plant for machine bleaching, finishing and dyeing was established by the Tamil Nadu Handloom Weavers' Cooperative Society at Erode in the year 1956-57 under the name and style of "Yarn and Cloth Processing Centre."

Machineries

The machines include conventional bleaching machines like kiers, washing machines, Chemking Machine, Squeezer and Scutcher.

Scutcher is attached to water mangle for mechanical removal of water, Drying Range, Clip Stenter, Felt Calender, Bowl Calender, and Folding Machine to complete the range.

In the years 1963-65 Mercerising Machine, Evaset Pre-shrinking hange and Stainless Steel Drying Range were added.

The plant was able to previously meet the demands of handloom sector but could not satisfy powerloom or mill section for want of a Hot Air Stenter which gives a definite and uniform final width to the cloth. The final width uniformity is a must for all powerloom and mill cloth as it has to compete with mill processed goods.

To overcome this, Hot Air Stenter has been installed in May 1972. Only after installation of Hot Air Stenter, powerloom and mill section have started sending their cloth for processing and the plant utilisation was increasing.

Capacity of The Plant

The following is the capacity of the plant :

		lakhs square metres per months
(1) Bleaching and Finishing	..	5
(2) Mercerising	..	2.5
(3) Evaset	..	2.5

Grams : Coop Mills, KARUR

Telephone off : 370, 531
M.D's House : 351

Tiruchirapalli District Co-operative Spinning Mills Limited

MALAIKOVILOOR

Post Box No. 13, Karur-639001. Tiruchi District.

Approved spindles	25,000
Installed spindles	12,000
Double thread spindles	2,400

We spin first class, high good 20s 26s 40s warp yarn 34 cone yarn 2/17 N.F. twisted yarn to meet the requirements of the Handloom Industry in Tamil Nadu.

We are installing additional 3,360 spindles and work for that has already begun.

We welcome shares from the public and Co-operative institutions to expand and modernise the mill.

For yarn and shares contact : **Managing Director**

Managing Director
M. EKAMBARAM

President
M. S. VENKATACHALAM, M.A.,B.L.,

CHOKKALINGAPURAM DEVANGA WEAVERS PRODUCTION AND SALES CO-OPERATIVE SOCIETY LIMITED

Q 213 ARUPPUKOTTAI, RAMANATHAPURAM DISTRICT.

Beautiful
Chinnalampatti silk pieces

Our Sarees are in
Modern
Up - to - date
ATTRACTIVE DESIGNS

Both in print and in embroidery, in 6, 7, 8 and 9 yard lengths as also 3 yard Pavadai pieces in multitude of colours as you like.

GOODS AVAILABLE AT ALL TIMES AT CO-OPTEX SALES CENTRES.

K. SANKARA PANDIYAN, D.H.T. H.D.C.
Special Officer.

Sick Textile Mills converted into Profitable Concerns after Nationalisation

The prospect of nationalisation of the 13 Textile mills now being run by the Government of Tamil Nadu can be a just tribute to the efficient management and profitable running of mills given up by the private sector as losing concerns. The Tamil Nadu Textile Corporation had acquired the management of 13 sick mills. These mills have an installed capacity of 3.63 lakhs spindles and 1416 looms.

The Corporation has acquired the management of sick textile undertakings in two ways. The earlier batch of seven mills was taken over by the Government of India during 1969-72 under the provisions of the Industries (Development and Regulations) Act, 1951 and the Corporation was appointed as the Authorised Controller in respect of these mills. The second batch of seven mills was taken over by the Government of India during 1972-73 under the provisions of the Sick Textile Undertakings (Taking over of Management) Ordiance, 1972 (since replaced by an Act of Parliament) and the Corporation was appointed as the Custodian of these mills. (The National Textile Corporation acts as the Custodian-General in respect of all the mills taken over under this Ordinance in the country). The following are the 13 mills thus taken over.

The Textile Corporation has been working on a profitable basis right from its inception and the profits have been rising from year to year the pre-tax profit being Rs. 2·09 crores.

According to the pattern of financial assistance prescribed by the Government of India, loans towards modernisation of plant and machinery and for working capital (margin) are to be provided to the mills by the National Textile Corporation and the State Textile Corporations in the ratio of 51:49 respectively. Financial assistance is sanctioned on the basis of modernisation schemes prepared in respect of each mill and approved by the National and the State Textile Corporations. Working capital and deferred payment loans for purchases of machinery, are also obtained from scheduled banks on the basis of guarantees furnished by the State Government or the Corporation.

Each of the mills taken over was given a firm commitment of guaranteed assistance working out to a total of more than Rs. 1 crore and placed in the control of State Officers of proven ability and probity. To begin with they were inculcated in the highest principles of management as their success would provide wages to more than 8,000 labour thrown out of employment and also redound to the credit of the Government of Tamil Nadu. The following were the principles enunciated for the success of these unit.

1. To consider first the interest of the company in all transactions and to carry out and believe in its established policies.
2. To be receptive to competent counsel and be guided by such counsel impairing the dignity and responsibility of the office.
3. To buy without prejudice seeking to obtain maximum ultimate value for each rupee of expenditure.
4. Strive consistently for knowledge of the materials and process of manufacture and to establish practical methods for the conduct of the purchasing organisation.
5. To subscribe and work for honesty in buying and selling and to denounce all forms of manifestations of commercial bribery.
6. To accord prompt and courteous reception so far as conditions will permit and to call on a legitimate business mission.
7. To respect his obligation and to require that obligation to himself and his concern be respected consistent with good business practice.
8. To avoid shady or unethical practices.

The Tamil Nadu Textile Corporation was set up in April 1969 as a wholly-owned State Government Company. The objectives of the Corporation are to take over closed or sick textile undertakings in order to ensure modernisation of machinery and equipment, adequate financial assistance for purchase of machinery and for working capital, and the introduction of sound management practices. The important social objectives of the Corporation are to provide re-employment to the workers who were thrown out of employment by closed or sick textile units and to provide good quality yarn at fair prices to the handloom and decentralised powerloom weavers in the State.

S. No.	*Name of the Mills taken over by the Tamil Nadu Textile Corporation*
(A) Under the Industries (Development and Regulations) Act	
(1)	**Om Parasakthi Mills, Coimbatore.**
(2)	**Cambodia Mills, Coimbatore.**
(3)	**Krishnaveni Textiles, Coimbatore.**
(4)	**Sri Ranga Vilas Ginning, Spinning and Weaving Mills, Coimbatore.**
(5)	**Coimbatore Murugan Mills, Coimbatore.**
(6)	**Coimbatore Spinning and Weaving Company, Coimbatore.**
(7)	**Somasundaram Mills, Coimbatore.**
(B) Under the Ordinance.	
(1)	**Sri Sarada Mills, Coimbatore.**
(2)	**Sri Kothandaram Spinning Mills, Madurai.**
(3)	**Balarama Varma Textiles, Shencottah.**
(4)	**Kaleeswarar Mills 'A' Unit, Coimbatore.**
(5)	**Pankaja Mills, Coimbatore.**
(6)	**Pioneer Spinners, Kamudhakudi.**

The Srivilliputtur Co-operative Spinning Mills Limited

SRIVILLIPUTTUR

Trade Mark: SRI ANDAL
Tex Mark No. 4870
Tel. Address: SRICCOPMILL

PHONE No. Office: 78
Factory: 148
M. D. Res.: 30

We are producing fine quality of 40s, 2/40s, 60s Carded 60s Combed and 100s Combed Yarn in hanks and 60s Carded in Cones

S. MUTHUSWAMY, B.A.,
District Revenue Officer,
Managing Director

K. CHANDRACHOODAN, I.A.S.,
District Collector, Ramanathapuram.
Chairman

OUR MOTTO... *...YOUR SATISFACTION*

Kuvagam Handloom Weavers' Co-operative Production and Sales Society Ltd.

(No. R. 983)

KUVAGAM P.O., (Via) PONPARAPPI, TIRUCHIRAPPALLI DT.

Specialists in Andhra, Venkatagiri and Calcutta Printed Sarees.

From 20 to 100 counts Towels, Dhoties, Colour Shirting Pieces, Angavasthiram, Printed Sarees with and without Zari, also from Andhra, Venkatagiri and Calcutta in different varieties are available for sales at the Cheapest rates.

KUVAGAM HANDLOOM SAREES ARE THE BEST

Branch Sales Depot: 114-A, MAIN ROAD,
PENNADAM, SOUTH ARCOT DT.

K. S. Kandasamy,
PRESIDENT

INDIA CAN BE WORLD'S BIGGEST WOOL EXPORTER

Favourable climate for sheep development, a well developed wool industry and a limited home market for woollen goods place India, in a potential sense, as the foremost exporter of wool and woollen goods. This view was expressed by some Soviet specialists connected with animal husbandry develpoment. What India needs, above all, to attain this objective is rapid development of wool production.

India was one of the traditional homes of the wool industry. Indian carpets made of wool were famous all over the world. At present India exports wool and woollen goods worth Rs. 35 crores, but it also imports fine wool worth Rs. 25 crores. Of late, the hosiery industry has come to the fore. It has a share of Rs. 18 crores in India's export, and it has unlimited prospects before it. But the inadequate supply position of wool is a break on the expansion of the industry.

LOW YIELD

This brings us back to the problem of rapid wool development in the country. India's sheep population is 42 million, out of the world's 600 million, but the average yield of wool per sheep in India is only 0.5 Kg., one of the lowest in the world. In 1972 India produced 45 million lbs. of coarse wool, of which quality wool for apparel was only 7.5 milllion lbs.

India's wool development, therefore, depends on two factors: (1) import of high-yielding varieties of sheep with fine wool and, (2) improving the local stock through cross-breeding. But India's experience has been that wool producing countries are not willing to give the best breed of sheep. The only country which has been generous in this matter is the Soviet Union, which also happens to be the biggest importer of woollen goods from India.

The sheep development department of the Ministry of Agriculture has prepared an integrated programme which envisages the setting up of eight Centrally assisted sheep farms, 85 State sheep farms and 800 sheep and wool extension centres spread over Rajasthan, Gujarat, Maharashtra, Tamilnadu, Karnataka, Jammu and Kashmir, Himachal Pradesh and U.P.

Soviet assistance to India in this field began in 1960, when it gifted to India specimens of the best cattle and sheep breeds. These were distributed to different states for research and breeding new stocks. The Soviet scientists from the Research Institute of Sheep and Goat Breeding, in particular, have been assisting their Indian counterparts in this important work.

MAJOR SUPPLIES

The Soviet Union has since supplied about 8,000 sheep, particularly the Merino sheep, the best for wool yield and quality. It can give 4.5—5 Kgs. of wool, *i.e.*, 10 times more than the Indian average. According to Indian authorities India proposes to import 10,000 more Karakul and Merino sheep from the USSR during the 5th Plan. The 5th Plan target for the production of cross-breeds is estimated at 15 lakhs.

Acclamatisation trials have already shown that the Soviet Merino of Stavropol and Groznenski breeds are adaptable in Indian climatic conditions, especially in the Himalayan pasture lands.

One such farm is situated at Daksum (J. & K.) at a height of over 2,500 metres. The farm was organised in 1971 to produce pedigree sheep and distribute them in the State. In 1971 the Soviet Union supplied 500 Stavropol Merino sheep and 15 rams. In 1972, the Soviet Union provided 700 more sheep and 30 rams. They have been under careful scientific observation.

In 1971, the first batch gave birth to 99 lambs on an average per hundred ewes. A faster growth rate is expected after full acclamatisation. The Merino also yielded on an average 4.7 Kgs. of wool per sheep. Cross-breeding has also proved very successful. The cross-breeds gave on an average 2—2.5 times more wool than the native variety.

Rajasthan is another centre where Soviet sheep are being used for cross-breeding on a big scale. The total sheep population of Rajasthan is one million and the States' wool production is 45% of India's total. **A Look at Rajasthan**, a State Government publication, says "India will discover a cheap method of improving its sheep stock with the help of the Soviet Union."

MAJOR ASSISTANCE

A major Soviet assistance for sheep development in India is expected to begin this year. A Soviet delegation is arriving this month for further discussions on the Indian request for Soviet assistance to organise two sheep (Merino and Karakul) and one goat, farms, which was made to the Soviet economic delegation which accompanied L.I. Brezhnev during the latter's visit to this country in November, 1973. The Soviet Union is expected to supply 3—4 thousand Merino, 1,000 Karakul sheep, and 200 goats for these farms, as also Soviet specialists to organise the farms.

It is necessary to emphasise here that the Karakul sheep is ideally suited to desert conditions, especially of Rajasthan and Gujarat, where millions of hectares of land remain unused. And what is more important, the fur of this sheep fetches high price in the world market, the Soviet Union being the only major supplier to the world.

It is hoped that by the end of the 5th Plan, India will be self-sufficient in finer qualities of wool. And one should also expect a faster growth in the availability of cross-breeds.

(Issued by the Information Department of the USSR Embassy in India, New Delhi.

Progress made by The Co-operative Spinning Mills IN TAMIL NADU

Of the 184 spinning mills in the State, 12 mills are in the Co-operative sector with a total installed capacity of about 2 lakh spindles. These 12 Cooperative Spinning Mills have been sponsored by the Government of Tamil Nadu with the twin objectives of supplying good quality yarn to the handloom industry at reasonable prices and also stabilising the market prices of yarn. The Government of Tamil Nadu have invested about Rs. 2 crores in the share capital of all the 12 Co-operative Spinning Mills, the total paid-up share capital being Rs. 3.63 crores. The annual turnover of the 12 Co-operative Spinning Mills alone is about Rs. 14 crores. Next to the Government, the Primary Weavers Co-operative Societies and the Tamil Nadu Handloom Weavers Co-operative Society (Apex Society) are the major share holders holding shares to the extent of Rs. 78.20 lakhs in all the Co-operative Spinning Mills. These 12 mills are producing about 4,500 bales per month of cotton yarn ranging from 20s to 100s counts. A bulk of the production of the Co-operative Spinning Mills is being distributed to the Primary Weavers Co-operative Societies in the State through the Apex Weavers Society at rates much lower than the open market rates. In fact the prices for the yarn produced by the Co-operative Spinning Mills are being determined every month by the Yarn Sub-Committee constituted by the Government. The total labour force employed in all the 12 Co-operative Spinning Mills is about 5,000.

MODERNISATION OF TEXTILE MILLS IN CO-OPERATIVE SECTOR

In view of the large stake the Government of Tamil Nadu have in these industrial ventures, senior officers of the Government have been appointed as Chief Executives of these mills. The Government have also powers of nomination of the Boards of Directors in these mills. Thus the Co-operative Spinning Mills in Tamil Nadu have been well organised with a built-in infrastructure.

The problem of modernisation in textile industry is of a vital interest to management as well as to workers, consumers and the Government. It has been recognised that unless the industry is placed on a sound and stable basis from the techno-economic point of view, it is difficult to overcome the various problems that affect the industry today. The pressure of mounting costs, increasing competition and the need for diversification have all contributed to the realisation that managements of textile mills will have to modernise ultimately. To improve the technical and organisational efficiency, like the textile mills in the private sector, the Co-operative Spinning Mills are also conscious of the need for modernisation with specific objectives of reduction of cost, improvement in quality and diversification of the existing production. A comprehensive plan of modernisation will have to be spread for some years. Priority should therefore be given to those areas where productivity and quality improvements are immediate. A few of the mills in the co-operative sector have already moved in the direction of modernisation and renovation. But still a massive programme of modernisation is quite necessary simultaneously in respect of all mills. For instance some of the conventional type of carding machines in the mills may be converted into Semi High Production or High Production type. Replacement of ordinary type of spindles with Plub Type spindles would go a long way in increasing the productivity. For undertaking a full fledged modernisation in respect of all the 12 Co-operative Spinning Mills in the State, a total financial assistance of atleast Rs. 3 crores would be required at the rate of Rs. 25 lakhs for each mill.

It is an accepted principle that only a mill with an installed capacity of 25,000 spindles can be economically more viable than a mill with the spindleage of less than 25,000. All the mills whose present installed capacity is less than 25,000 spindles have therefore received permission from the Textile Commissioner for expanding their capacity upto 25,000 spindles each.

EXPANSION OF SPINDLEAGE OF CO-OPERATIVE SPINNING MILLS

If the scheme of substantial expansion is to be taken up straight away by the individual mills, it would amount to adding 1.22 lakhs spindles over the existing installed capacity. The block capital required for installing 1.22 lakhs spindles would be of the order of Rs. 9.76 crores or say Rs. 10 crores, at the present day cost of Rs. 800 per spindle. As the Co-operative Spinning Mills in this State are of consumers type, it will be extremely difficult to raise any funds from the Weavers Co-operative Societies and other Co-operative institutions who constitute bulk of the membership. The Private capital is also equally shy. The World Bank may perhaps come forward to finance the expansion projects of the Co-operative Spinning Mills in Tamil Nadu. It would be very much helpful if the entire capital cost of Rs. 10 crores comes by way of equity as well as term loans. Probably 40% of this assistance may be in the shape of equity and the balance as term loans repayable over a period of 10 to 15 years.

COTTON DEVELOPMENT SCHEME

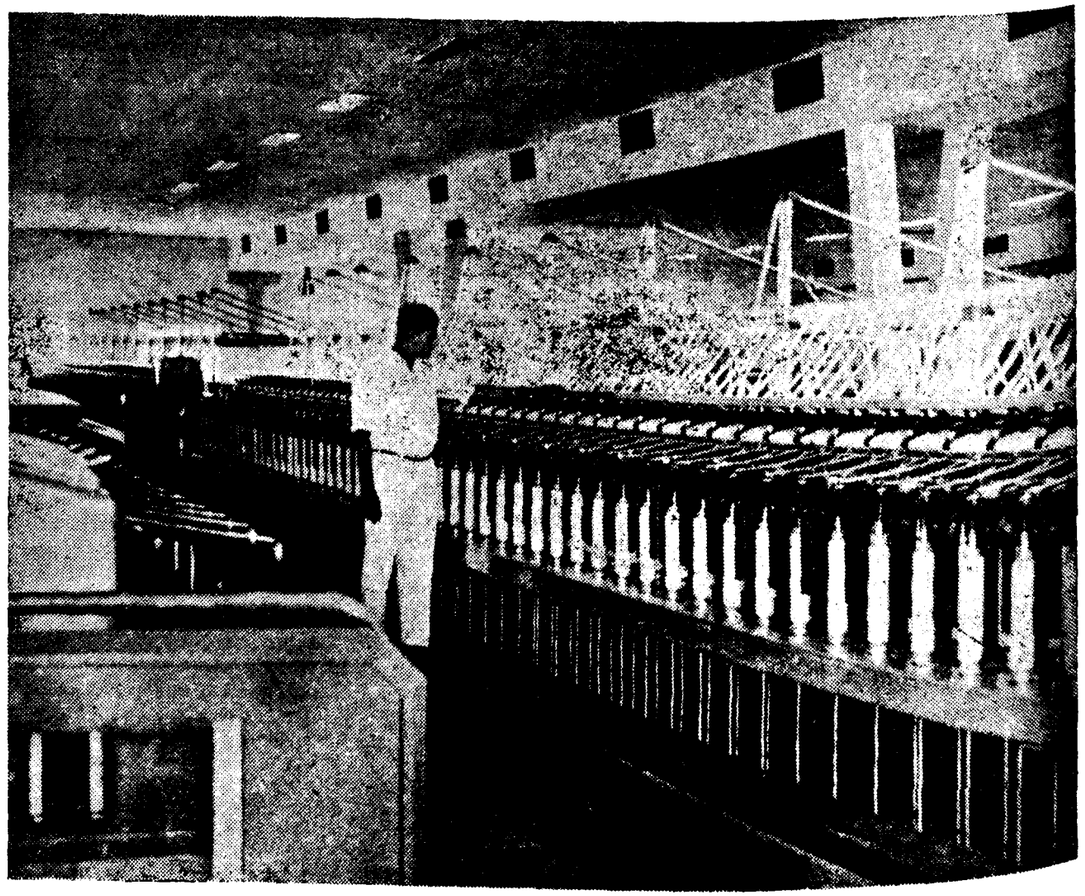
The annual requirement of raw cotton by Indian Textile industry, at present, is about 62 lakh bales, of which we produce only 56 lakh bales and the balance is met by imports costing about Rs. 85 crores in foreign exchange. Out of 6 lakh bales of imported cotton, 2 to 3 lakh bales are of extra long staple category and the remaining bales are of long staple cotton. The gap between production and

requirement of raw cotton will be much wider in 1973—74 when the projected demand would be of the order of 80 lakh bales, compared to the present level production of 56 lakh bales. There is, therefore, an urgent need for an immediate and significant break through in production of raw cotton to meet the growing demand of textile industry. Tamil Nadu produces annually about 4 lakh bales from 3.5 lakh hectares under cotton. Of this, about 3 lakh are of fine and superfine quality and about 1 lakh bales of higher medium quality and partically very little of coarse variety. But the textile industry in Tamil Nadu consumes annually about 11 lakh bales of cotton, compriising of about 8 lakh bales of Indian cotton and 3 lakh bales of foreign cotton. So far as the Co-operative Spinning Mills in Tamil Nadu are concerned, their present annual consumption of cotton is as follows— :

Local cotton	..40,000 bales
Upcountry cotton	..44,000 cbales
Foreign cotton	..16,000 bales
Total	..1,00,000bales

Out of 668 spinning mills in the Country 207 are in Tamil Nadu and we also have 24 composite mills out of 290 in the country. The spindles installed total 18 million for the whole country out of which Tamil Nadu has over 4·3 million.

At the State Level also, an immediate and significant break through in cotton production is imperative in order to achieve stability in production and provide lasting solution to the problem of raw cotton shortage. In Tamil Nadu there have been great strides in cotton research and its impact on cotton production is enormous. The superfine varieties such as MCU 4 and MCU 5 and the fine varieties like MCU 1 and MCU 2 have caused a major break-through in cotton production in the State. Of these, MCU 5 alone is expected to largely reduce the import of extra long staple cotton from the foreign countries. The other varieties extensively cultivated in Tamil Nadu are Karunganni, K7 and Lakshmi in the rainfed tracts. In fact the State Sericulture Department is implementing an intensive cotton development programme in select areas in Tamil Nadu and this scheme is being continued every year. The Intensive Cotton Development Programme has created an awakening on the progressive methods of cultivation of cotton such as plan protection measures spraying of Urea, application of optimum dose of fertilizers, etc. The effect of the Intensive Cotton Development programme is that it has led to appreciable increase in the average acre yield production from six to 8 quintals of kapas. At present this programme is being implemented in an area of 20,000 hectares . Besides MCU 5, varieties of other superior performances namely. Bharati, Lakshmi, K7 have covered over the entire protected area. The annual expenditure incurred on this Intensive Cotton Development scheme is only about Rs. 73.10 lakhs. As there is need for more and more of long staple varieties of cotton for the textile industry, it is imperative that the area allotted for such improved varieties of cotton should be increased considerably. Considering the vast area of 3.5 lakhs hectares for cotton cultivation available in Tamil Nadu, introduction of long staple varieties of cotton has to be extended to other areas under a massive programme for which financial assistance to the extent of at least about Rs. 5 crores would be required. Cotton being a commercial commodity requires lot of inputs and pest control measures, besides agronomical practice involving huge expenditure to attend an average of 10 to 12 quintals of kapas per acre. More amount has to be spent on long staple varieties like MCU 5 and Sujata. A small farmer is unable to put in so much of inputs for his cotton crop for want of resources. Further, pest control is a laborious and money consuming factor which requires time consumption, close technical supervision and guidance by expert technicians. In the circumstances, the World Bank may consider the possibility of extending financial assistance to the extent of Rs. 3 crores for supplementing the efforts of this type in the direction of cultivation of improved and long staple varieties of cotton.



An operator looking after the Pinning looms in a Co-operative Spinning Mill

Given below are the details of the co-operative spinning mills including the workers employed in them.

Sl. No. (1)	Name of Mills (2)	Situation of Mills (3)	Total amount of paid-up Capital (4) Rs.	Workers (5)
1.	Kancheepuram Kamakshiamman Co-operative Spinning Mills Ltd.	Vaiyavoor Village, Kancheepuram, Chingleput District.	22,99,000	288
2.	Madurai District Co-operative Spinning Mills Ltd.	Korutha, Pullampatti, Melur, Madurai District.	28,93,000	290
3.	North Arcot District Co-operative Spinning Mills Ltd.	Ariyur Village, Vellore-2.	21,63,400	296
4.	Salem Co-operative Spinning Mills Ltd.	Ammapet, Salem-3.	28,99,550	243
5.	South Arcot District Co-operative Spinning Mills Ltd.	Saram, P.O., Tindivanam Taluk.	20,97,000	220
6.	South India Co-operative Spinning Mills Ltd.	Pettai, P.O., Tirunelveli District	57,69,100	513
	South India Co-operative Spinning Mills Ltd. (*b*)	Pettai, P.O., Tirunelveli District.	..	184
7.	Srivilliputhur Co-operative Spinning Mills Ltd.	Srivilliputhur	26,74,225	346
8.	Thanjavur District Co-operative Spinning Mills Ltd.	Manalmedu, Mayuram Taluk, Thanjavur District.	25,22,250	238
9.	Tiruchirapalli District Co-operative Spinning Mills Ltd.	Malaikovilur, Karur Taluk, Trichy District.	23,68,000	370
10.	Tiruchendur Co-operative Spinning Mills Ltd.	Nazarath, Tirunelveli District.	21,09,995	316
11.	Coimbatore District Co-operative Spinning Mills Ltd.	Kolathupalayam	30,10,900	468
12.	Kanyakumari District Co-operative Spinning Mills Ltd.	Aramboly, P.O.	25,03,911	460

THE TAMIL NADU CO-OPERATIVE HOUSING SOCIETY LIMITED, NO. X-406, MADRAS-7.

" Venkataswamy Vagheesam Nilayam,

No. 14, Ritherdon Road, Vepery, MADRAS - 600007.

Telegrams: "HOUSEBANK " Post Box No. 486 Telephone No. 30800

President :
THIRU PALANIVEL RAJAN, B.Sc., B.L., M.L.A.,

Vice-President :
THIRU P. KASTHURI PILLAI

Treasurer :
THIRU S. PALANISWAMY, M. A.,

—oOo—

Authorised Share Capital	—	Rs. 2·5 crores
Paid up Share Capital	—	Rs. 2,09,07,300
Loan outstanding against Primary House Mortgage Societies and Building Societies		Rs. 12,40,07,729

Long term Loans for Construction of new houses, additions and improvements etc., repayable in twenty years are granted to individuals through the Primary House Mortgage Societies and the various types of Building Societies in Tamil Nadu for the following purposes.

		MAXIMUM INDIVIDUAL LOAN
1. Construction of new houses	—	Rs. 25,000
2. Improvements, additions and alterations to the existing houses		Rs. 10,000
3. For minor repairs	—	Rs. 1,000

P. K. PATHMANATHAN, B.A., H.D.C.,
Joint Registrar and Secretary.

Four different categories of members constitute the membership of the co-operative mills and they are—

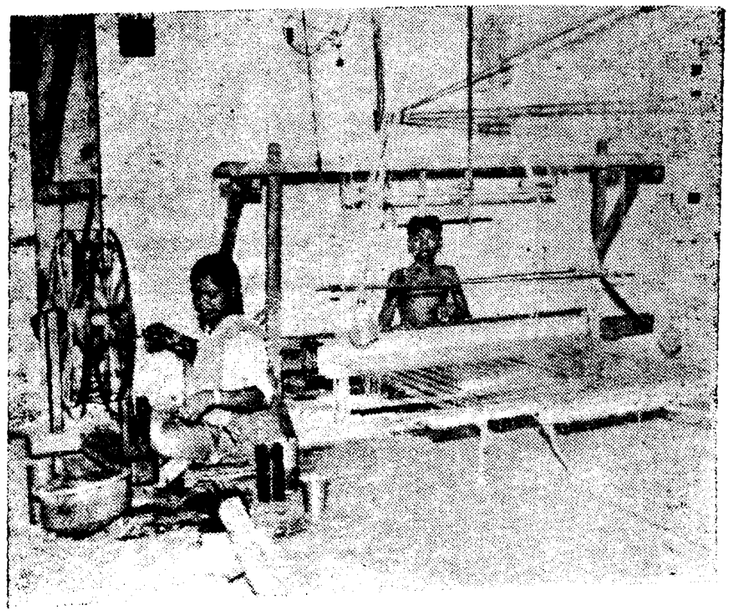
(*i*) Handloom Weavers' Co-operative Societies,

(*ii*) Other Co-operative Societies,

(*iii*) Individual members and

(*iv*) The State Government.

The equity participation by the Government of Tamil Nadu is usually 50 per cent of the total share capital.



A Weaver's family working on loom.

COTTON

The availability of cotton in the required quality, quantity and at reasonable price within is eatsy reach is the basic prerequisite for the success of a spinning mill. Availability of cotton in turn depends on the production within the country and on the imports. Due to the high cost of imported cotton, mills producing finer quality yarn limit the use of imported variety to 15 per cent, the balance being made up of 45 per cent local cotton and 40 per cent up country cotton. Tamil Nadu is heavily dependent on cotton grown outside the State.

In Tamil Nadu, there are 207 spinning mills out of 668 mills in the entire country which works out to 31 per cent. In terms of spindlage it is only 24 per cent as we have 43 lakhs of spindle out of 180 lakhs of spindles for the entire country. But we are producing only between 2.5 and 4 lakhs of bales cotton out of 52 lakhs of bales. Our cotton production is, therefore, very low and the Government has taken steps to increase cotton production atleast to meet the State's consumption.

NEW COTTON STRAIN

A new cotton strain MC 217, has been developed at the Tamil Nadu Agricultural University, Coimbatore. It is the only strain produced in India or elsewhere as a result of X-Ray irradiation and released for commercial cultivation. This strain has been identified as best suited in areas where rice of medium duration has been cultivated such as Tiruchi, South Arcot, North Arcot and Chingleput Districts. This way, the production of long staple cotton can be increased by 18,500 bales in Tamil Nadu. Also by mutation breeding, a significant reduction in the duration of this crop can be achieved thereby making this an economically attractive proposition. It is claimed that at the current levels of prices, the additional monetary benefit to the cotton growers in the four districts mentioned above would be of the order of Rs. 50 lakhs.

MARKETING OF YARN

Spinning mills being consumer co-operatives the bulk of its production is sold to the State Society at prices fixed every month by the Yarn Price Committee at the State level presided over by the Director of Handlooms and Textiles. The mills sell to the State Society at a much lower price than the market price to benefit the weavers' societies. So the creation of co-operative spinning mills has not only helped the weavers' societies to get quality yarn at a reasonable price but has also helped to stabilise the market price.

Read

Tamil Arasu

for

accurate

and

authentic

news

of

Tamil Nadu

Single Copy Ps. 40
Annual subscription Rs. 5·00

Grams : EMTEX Founded in 1954 Phone : Off. 357
Colony : 367

Q.755 Emaneswaram Weavers Production and Sales Co-operative Society Limited

EMANESWARAM
(via) Paramakudi, Ramanathapuram District

Our Society products are famous for texture and smartness, known for long wear as well. Prefer EMTEX for the better wear. Tamil Nadu Government's Training Centre for modern techniques is incorporated with our Society.

K. R. KUPPUSAMY
Vice-President

S. G. LAKSHMI NARAYANAN
President

Directors :
K. K. GOVINDAN
T. B. SUBBURAMAN
K. G. RAMAMOORTHY
T. R. GOPALAKRISHNAN
S. L. G. LAKSHMI NARAYANAN

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P. O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival ;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

Tips For The Layman To Guide A Blind Person

A feature in honour of World Disebled Day.

A blind man stands at the cross-roads, a white stick in hand, waiting for some one to help him on to the other side.

He is really at "cross-roads" for not only has he to cross the road without being hit by passing cars and other obstacles, but he also has to get his need across to the public. He stands there waiting for some one to offer him a helping hand.

Many passers-by move on without seeming to notice him. Perhaps they have noticed him but are uncertain as to how to react. They would like to help him get to the other side of the road. But how should they do this ? Should they take him by hand ? Should they hold the tip of his white stick and lead him across as one takes a dog on a leash ? They are not sure what would be the proper thing to do

THE RIGHT TECHNIQUE

In order to take a blind man successfully across the road, the best way is to offer him your arm. If he holds you at the elbow, you will find that you are standing a few inches in front of him. The movement of your body as you walk along is an indication to the blind man how he should adjust his own movements. For instance, if you step off the kerb, he will know from the movement of your body that he too must be prepared to take step down. Then again, if you take a wide step when crossing a puddle of water or may be a dirt heap, he too will realise that there is some obstacle which must be by-passed and he will react accordingly.

It always helps a blind person if you softly indicate to him the obstacles in the way. Tell him there is a dirt heap and he must take a wide stride, in order to prevent himself from stepping into it and soiling his shoes or clothes.

DON'T under any circumstances push the blind person in front of you when guiding him. Your ffort and good intention will bear little fruit if, through your mishandling, he trips and falls over some stone.

But perhaps you have inhibitions about a blind man holding your arm. If this is so, then take him by the hand. Believe me, there are few occasions on which your gesture of giving a man a hand will be more greatly appreciated.

Just in front of you, or may be just behind in the queue, stands a blind man waiting to board a bus. Step in ahead of him and give him a hand to step up. Then, place his hand on the railing and he will know which way to turn. Also it will help him to get safely on to the upper deck should he choose to sit there. You can help him further by asking the conductor to inform him when his stop arrives.

THIRUMATHI :
REHMUT S. FAZELBHOY

STEPPING INTO A CAR

Open the door and place the blind man's hand on the hood of the car. This will show him how low he must bend in order to avoid hitting his head against the hood. This is a better method than bending his head down with your hands and having him enter the car all doubled up. As he bends to enter the car, place his hand on the seat so that he knows where to sit.

Then again, if there is a step to be taken off the kerb before he can enter the car, tell him so. Otherwise, he may find himself literally stumbling into it on his hands and knees.

FINDING A SEAT

A blind man comes to see you at the office. In your oversolicitiousness, you may push him forward to place him into a nearby chair. The right way is to lead the man to the chair and place his hand on the back of it. He will then feel for the seat and sit down on it without difficulty. If you find that after he has seated himself, he is not facing you, you can request him politely to turn in the proper direction.

UP STAIRS AND DOWN STAIRS

If you are guiding a blind man on a flight of stairs, indicate whether the steps go up or down. Of course, the movement of your body will give him this information, but your words 'up' or 'down' will add to his confidence. It will also help if you indicate further by a remark, 'there are ten steps going up.'

When going up a flight of stairs or coming down, it is not necessary for you to continue holding the blind man's hand. Most staircases have banisters. On approaching the flight of stairs, place the blind man's hand on the banister and he will know immediately whether it leads him up or down. Further, the banister will also indicate to him when there is a break in the flight of stairs and also when the steps have ended.

These may appear to you to be ordinary tips, but it requires special thought to implement them wisely and well. Once you have learnt the art of guiding a blind man safely and surely, you will find that you are able to bring much joy and friendship to those who are in need of a helping hand from you.

Estd. 1936 Phone : 4915

The Woriur Devanga Handloom Weavers' Co-operative Production and Sale Society Ltd.,

No. R. 527

WORIUR, TIRUCHIRAPALLI-620003.

Producers of 100 × 100s Woriur Sarees

Sales Depot at : **10-A, Theradikadai Street, TIRUCHY-2. and 9/3, Ramakrishna Mutt Road, Mylapore, MADRAS-4.**

Powerloom 4 yards 20s Dhothies, Gada pieces also are available for retail and Wholesale

P. MURUGAN, B.Com., Handloom Officer/Secretary

P. RATHINAVELU, President

Residues Of Pesticides In Some Vegetable Crops

In the recent years pesticides of wide spectrum are being used in large quantities either as foliar spray or as soil application or as seed treatment for effective pest control measures. Many of these pesticides remain in the plant system and also in the soil for prolonged period and protect the crop for sufficiently long period. But, however, persistent residues resulting from the absorption of these pesticides by the plant system and consequential residual hazards is an important factor to be considered for various crops particularly in case of the food crops. The presence of residues of pesticides in food crops is of particular concern to everyone and there is need to study the pesticidal residues in harvested produce to make suitable recommendations to the farmer on the choice of insecticide, time and method of application to avoid toxic residue problems.

A special scheme to Study Pesticides residues in food crops.

Considering the importance of this problem, a special scheme to study the pesticide residues in food crops is at present functioning in the Tamil Nadu Agricultural University, Coimbatore since April 1973. The work during the past one year was mainly concentrated on the detection of pesticide residues on the common vegetables like brinjal, blendi, tomato and chillies which receive foliar as well as granular application of pesticides for control of major pests at the recommended dosages. The data on the residues of pesticides on important vegetable crops is given below :

Crop	*Insecticide*	*Dose*	*Time of application*	*Time of harvest*	*Residues in ppm*	*FDA admissible tolerance*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bhendi (fruits)	Aldicarb	1 kg/ha	Sowing	50th day 1st picking	0.165	0.20
	Phorate	1 kg/ha	Sowing	50th day	0.76	—
	Disulfoton	1 kg/ha	Sowing	50th day 55th day	0.765 0.537	0.75
	Carbaryl	0.1% sp.	15th 30th 45th & 60th day	24 hours 48 hours 3 days 7 days after final spraying	14.20 9.60 8.00 4.60	10.00
	Endosulfan	0.07% spray	15th 30th 45th & 60th day	24 hours 48 hours 3 days 5 days 7 days after final spraying	2.74 1.04 0.78 0.32 0.00	2.00
	Endrin	0.02% spray	15th 30th 45th & 60th	24 hours 3 days 5 days 10 days	2.5 1.0 0.7 0.5	—
	Parathion	0.025% spray	15th 30th 45th & 60th day	24 hours 3 days 5 days 10 days after final spraying	1.5 0.2 0.05 N.D.	1.0
Tomato (fruits)	Carbaryl	O.1% Spray	15th 30th 45th & 60th day	24 hours 48 hours 5 days 7 days after final spraying	14.20 8.00 5.25 4.00	10.0
	Endosulfan	0.07% spray	15th 30th 45th & 60th day	24 hours 48 hours 3 days 5 days 7 days after final spraying	4.27 2.38 2.12 1.20 0.43	2.0
Brinjal (fruits)	Aldicarb	1 kg/ha	15th day of planting	60th day of planting	0.170	0.20
	Disulfoton	1 kg/ha	15th day of planting	60th day 70th day after planting	0.820 0.580	0.75
Chillies (fruits)	Disulfoton	1 kg/ha	15th day after planting	85 days after planting	0.46	0.75

Note : Residue below FDA tolerance level is considered safe.

Bhendi : Aldicarb left residues below admissible level in fruits during first picking while in Phorate and disulfoton the residues were above admissible level. Infoliar spraying, both carbaryl and endosulfan, left residues below the admissible level within 48 hours of spraying indicating that the fruits can be safely used. Parathion left a tolerable residues after 2 days. Endrin has been found to leave some residues even after 10 days. Since endrin is zero tolerant, it should not be used on bhendi.

Brinjal : Aldicarb granule applied to brinjal left residue below the admissible level during the first harvest while disulfoton left residues only during the second picking of fruits.

Chillies : Disulfoton granules applied left residues below admissible level during the first harvest.

Tomato : Carbaryl leaves tolerable and permissible residues whereas endosulfan gets degraded to tolerable residues on the fruits after 5 days so as to be safe to the consumers.

Source : *Entomology Department and released by the Communication Centre, Tamil Nadu Agricultural University, Coimbatore-3.*

PLANT PROTECTION IN COTTON CROPS

Cotton crop is damaged by a variety of insects in Tamil Nadu, among which the sucking pests like jassids, aphids and thrips and the bollworms cause serious damage resulting in 40—50% reduction in yield. At present for the control of pest complex in irrigated cotton, the farmers invariably adopt 18—20 rounds of application of pesticides commencing from the fourth week stage of the crop at 5—7 days interval. Does the cotton crop need such a large number of insecticidal application for effective pest control and does the monetary return obtained commensurate with the cost of treatment ? If such a large number of applications is not necessary then what is the optimum number of rounds of application the cotton crop needs for effective plant protection ? To find an answer to these questions, an experiment was conducted at the Tamil Nadu Agricultural University, Coimbatore to compare the merits of 8, 10 and 12 rounds treatments on cotton crop. The standard insecticide Carbaryl was used at O. 1% strength for the control of bollworms and a systemic poison at the early stage of growth of the crop to control sucking pests. The data on the yield, cost of treatment and additional income obtained are given at the bottom.

It was found that 10 rounds and 12 rounds of treatments were more remunerative than 8 rounds of treatments but however there was no higher return in 12 rounds of treatments to commensurate with the cost of treatment, iudicating that 10 rounds of insecticidal application would be sufficient to have effective control of pests and good yield. A demonstration trial to compare the recommended ten rounds of treatment with increased number of rounds of treatments adopted by farmers has also been laid out in a farmer's field by the Department of Entomology to convince the farmer. Such a large number of rounds of application of pesticides leads to several problems like environmental pollution, insect resistance to pesticides, etc. and therefore timely application of pesticides with optiumum number of rounds of treatments will not only avoid indiscriminate use of pesticide that poses several problems and will also considerably reduce the quantity of pesticide use, particularly at the time of pesticide shortage in this country.

Number of rounds of treatments	*Cost of treatment.*	*Yield in kg/ha*	*Additional income over 8 rounds of treatment*
8 rounds (2 rounds with systemic poison at 21 days interval from 21st day and 6 rounds with Carbaryl at 15 days interval from 63rd day) ..	415	2103	—
10 rounds (3 rounds with systemic poison at 15 days interval from 15th day and 4 rounds with carbaryl at 10 days interval from 60th day and 3 rounds at 15 days interval from 105th day)	525	2280	Rs. 730/-
12 rounds (3 rounds with systemic poison from 15th day at 15 days interval and 9 rounds with carbaryl at 10 days interval from 60th day)	625	2248	Rs. 480/-

HAND INJURY UNIT IN THE STANLEY HOSPITAL

The Health Minister inspecting the ward.

A WELCOME ADDITION

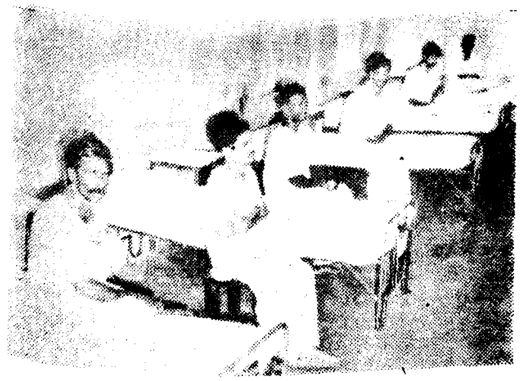
The Hand Injury Unit in the Plstic and Reconstructive Surgery department of the Stanley Hospital was declared open on 10th January 1974 by the Health Minister Thiru K. Anbazhagan with Dr. M. Narayanan, Director of Medical Education in the chair. The function was largely attended by the distinguished people in medical profession.

Inaugurating the hand injury unit, the first of its kind in the country, the Public Health Minister said the unit built at a cost of about Rs. 1 lakh was ideally located near the North Madras industrial complex and advised hospital authorities to allott beds for workers in the department so that the unit could avail of funds from the E.S.I. scheme. The Minister continued in his speech that all the hand injury cases throughout the State should be referred to the Stanley Hospital while suggesting that the specialised unit should publish their trials and observations for the benefit of the profession at large. The minister further said the State Government would help research in specific fields in medicine.

Dr. M. Narayanan, Director of Medical Education, in his presidential address, said specilised treatment facilities should not be confined to the General Hospital alone.

Dr. P.R. Ramachandran, Dean of the Stanley Hospital, while welcoming the gathering, said the hospital would shortly introduce round-the-clock service in the department. He said the Government had also sanctioned the construction of an operation theatre for the department.

Dr. R. Venkataswami in charge of the Hand Injury Unit proposed a vote of thanks.



Inside appearance of the Hand Injury Unit

This is an important landmark in the development of this department. The addition of 20 beds goes a long way in the proper management of the patients with injured hands. The Department is thankful to the Dean of our hospital, for giving all the facilities in running the Hand Injury Service in this Hospital. At present owing to the limited staff we have opened only day time service for these cases. Moreover a survey conducted recently showed that 70 to 80 per cent. of these injured hands come during the day time only. From 7 a.m. to 6 p.m. one trained Tutor in Plastic. Surgery will be available for treating the hand injury patients. During night doctors will be available on calls. With addition of a new operation theatre and more trained staff, the department will be able to give a 24 hour service not only to the injured hands but also to all the Facio-Maxillary and other injuries that will need immediate plastic and reconstructive procedures.

CASE RECORDS

Meticulous attention is paid to the maintenance of case records. All the out-patient cases are recorded in detail in the out-patient cards, They are kept in the out-patient itself in the order of the register numbers. When a patient is admitted and discharged after treatment the details of the treatment are recorded in the corresponding outpatient cards. This facilitates a continuous follow-up when the patient comes to the out-patient clinic.

Advancement In The Field Of Plastic Surgery

By

Dr. R. VENKATASWAMI

M.S., MCh. (Plastic)

Reader in Plastic Surgery

With the good background of well-acclaimed three years service on record to the public, in the linethe Plastic and Reconstructive Surgery Department of the Stanley Hospital has entered into the fourth year of its existence and service to the public at large. With extra facilities and exalted hope. With the recentaddition of a separate Hand Injury Unit which itself heralds a landmark in the annals of history of medical administrative set-up since it is the first of its kind in the country and the additional staff sanctioned in required strength, the department hopes to enlarge its scope and sphere of activities by taking newer problems which will be of service to the people at large. With the addition of a separate operation theatre for which the Government sanction has already been obtained, the departmenthopes to provide a round-the-clock service to the public.

Hand is an important organ in the body. Its value to the man is not realised till it is injured. Its role in the human body is equivalent to the eye. In one respect it is more indispensable than eye. A man may not be able to carry on his activities of daily living without his hands.

The hand has got four basic functions to perform (1) to hold larger objects (power grip) (2) to hold smaller objects (Precisin grip) (3) to perform percussive motion as is typing or playing a piano (4) to perform hook action as in lifting and carrying. These basic functions are very essential for daily activities of any human being. Hand is such a fine delicate organ that any injury to it will result in interference with the basic functions of the hand.

Hand is afflicated with very many conditions. Among them injury is of supreme importance. Because it is so common and also damages the hand very badly. Down the centuries the know-how in the management of injured hands was not known. It is this ignorance and a sort of negligence that kept the surgery of the hand in the background for a long time. From the beginning of this century surgeons were compelled to realise the value and importance of reconstruction and rehabilitation of the injured hands, because of their enormous number and this number was a direct consequence of rapid industrialisation. Large number of injured hands affected the industrial production which in turn affected the country's economy.

It is found that one in every third accident involves the hand. The only way to rehabilitate the injured hand is to do early surgical repair. This means within 6-12 hours of the accident. Then only useful function can be restored to the injured hand in as short a time as possible. This is realised all over the world and surgery of the injured hand has become a speciality.

This speciality is mainly within the fold of Plastic Surgery which has to do with restoring lost parts of the body, repairing parts that do not work properly or improving appearance.

In India with rapid industrialisation enormous number of hands are being injured. In a developing country like ours this has an important impact on country's economy. Unfortunately these victims are not given the necessary treatment for want of facilities and trained personnel.

The Government Stanley Hospital situated in the midst of industrial North Madras with the harbour complex nearby, is receiving large number of injured hands. The department of Plastic and Reconstructive surgery of this hospital took the initiative to create a good set-up to receive these injured hands in time and give the necessary treatment. The Government of Tamil Nadu quickly realised the magnitude

Wax bath

of the problem and sanctioned 20 additional beds to the department of Plastic and Reconstructive Surgery and additional staff to treat the injured hands. In this respect the Government of Tamil Nadu has led the way in the country in creating an exclusive set up for treatment and rehabilitation of injured hands. The Hand Injury Service was formally inaugurated by Honourable Professor K. Anbazhagan M.A. in 10th January 1974 with Dr. M. Narayanan M.S. Director of medical education presiding.

A separate ward with 20 beds has been opened under the department of Plastic Surgery. Many kinds of injuries to the hands are received. They are given prompt

Physiotherapist attending a patient after tendon repair.

treatment. The hand has several structures. The primary aim of this service is to make the skin wounds heal quickly with plastic surgery procedures and repair the deeper structures that are damaged. Following this, the hand is rehabilitated as quickly as possible, and the patient is made to resume his work as early as possible.

PHYSIOTHERAPY :—

This aspect of rehabilitation is done by the Physiotherapist under the direct supervision of the surgeons. The role of Physiotheraphy in rehabilitation is as important as surgeon itself. Physiotheraphy is a part of the branch of medicine called physical medicine and rehabilitation.

Heat, cool, ultraviolet radiation, ultrasound and other exercises are used in the physicalt heraphy treatment—Physical theraphy is helpful in many kinds of diseases and disabilities. For example, it is often used in poliomyelitis, various types of paralysis and muscle weaknesses, and in amputations, fractures and other orthopedic conditions. Heat is used in various forms. Applied to the body tissues, it relieves pain, improves circulation and relaxes muscles. Cold, when used soon after injury, lessens pain, hemorrhage and swelling. Ultraviolet radiation kills germs and promotes healing. Ultrasound is used to treat inflammatory conditions of the joints and nerves and painful amputation stumps. Exercise helps to maintain or improve body function and posture. It increases muscle tone, strength and endurance.

The illustrations in the following pages will give a cross section of the surgery of the hands done in the department of Plastic and Reconstructive Sur- gery of Government Stanley Hospital.

Read

Tamil Arasu

for

accurate

and

authentic

news

of

Tamil Nadu

Single Copy Ps. 40

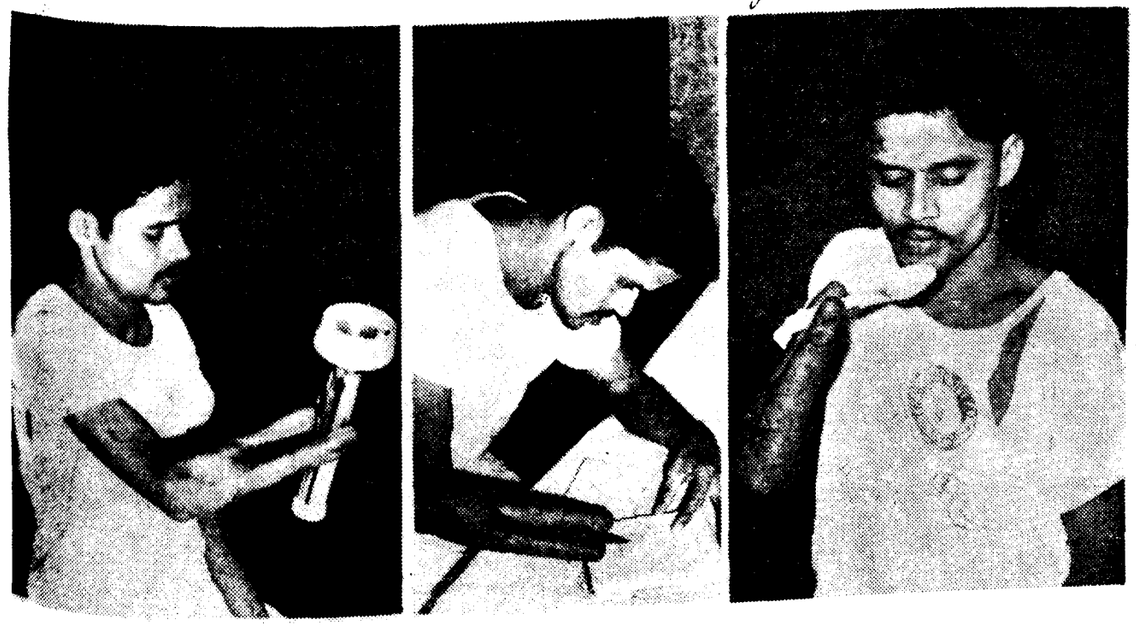
Annual subscription Rs. 5·00

A CANCER — AFFECTED LADY TREATED TO FULL RECOVERY TO HER CONTENTMENT

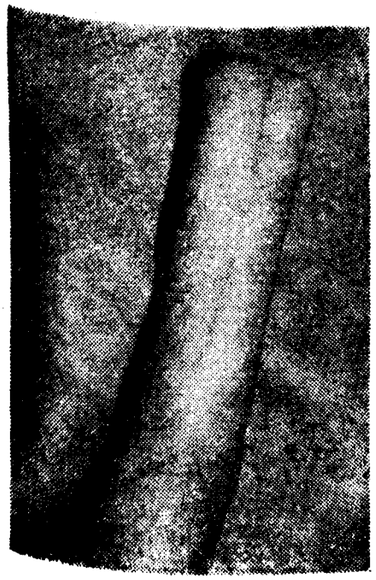
This lady came with cancer in the left thumb as seen in the picture at the bottom(right). The thumb of the left arm was amputated so as to put an end to the cancerous tumour without spreading to other parts of the body

Without thumb, the other four fingers become useless. In order to rectify this deformity, following the amputation of the thumb the index finger of the same hand was shifted to the place of the thumb and made to perform all the functions of the thumb. After physiotheraphy treatment, she is now capable of holding and handling all the objects of all sizes with her hand. The smiling face now she holds bears ample testimony to her contentment with the treatment meted out to her in the Department of Plastic and Reconstructive Surgery in the Stanley Medical College Hospital.

The appearance of the thumb with the cancer tumour in the pre-operated period.



Miraculous Recovery of Useless and Unusable Forearms to Normal Functioning



The appearance of the amputated forearm with which the patient could do no work.

Thirumalai of Salem district sustained blast injury to his right hand. He had his initial treatment for the injury at Salem where the hand was amputated. But amputation of his right hand was of no avail to him inasmuch as he could not carry on his normal work with the forearm. In other words, the remaining forearm was useless to him. After that he was treated in the Plastic and Reconstructive Surgery Department of the Stanley Medical College Hospital where the two bones of his forearm was separated in a scissors—like form as seen in the pictures above.

Now he is capable of using his forearm as Chinese Chop sticks to hold and handle both larger and smaller objects alike. His right hand, after Plastic and Reconstructive treatment, has been recovered to normal functioning with which the patient is able to hold the spoon to eat, the pen to write and to use the forearm for all his daily activities. In the matter of getting back his operated forearm to normal functioning the Physiotheraphy played not an insignificant part.

BADLY CRUSH INJURED PATIENT RELIEVED AND RECOVERED TO NORMAL CONDITION AND FUNCTIONING

Badly crushinjured while at work in a machine, Thiru Gopal was admitted in the hospital for treatment. The staff of the Plastic and Reconstructive Surgery Department shouldered the responsibility of recovering his right hand to normal condition and functions. They applieed their heart and mind to the task. Immediately his right index and middle fingers were completely amputated. Soon after admission the hand was covered with skin taken from the abdomen. In stages the skin was adjusted to the hand.

Now he is able to perform all the functions with the remaining thumb and fingers. Physiopheraphy played an indispensable part in recovering the operated parts to the normal functioning.

Read

Tamil Arasu

for accurate
and authentic News of
Tamil Nadu.

Single copy Re. 0·40.

Annual subscription Rs. 5·00.

Pre-operation period appearance.

VISIT Poompuhar

FOR A REAL INSIGHT INTO

Kaveripoompattinam, known as Poompuhar in its more fortunate days was a well laid out port town which boasted of a separate settlement for the foreigners. Much of the archaeological remains still are there for us to see.

In addition, the recently constructed art gallery is the first attempt, after many centuries, at group-sculpture for which Tamil Nadu is justly famous. In the form of group-sculpture and also in individual figures a remarkable edifice to recreate the life and times of the Tamil classic " Silappathikaram " Story of of the Anklet has come up at Kaveripoompattinam in its art gallery.

FOR FURTHER DETAILS
CONTACT:
RECEPTION OFFICER,
Poompuhar, Art Gallery
VIA SIRKALI, THANJAVUR DIST.

Khadi Kraft – a trusted name for khadi and village industries articles

KHADI KRAFT offers a wide range of articles-artistic handicrafts to essential commodities. Available at over 200 Khadi Kraft Branches all over Tamil Nadu and Pondicherry.

Khadi Kraft is Elegance Par Excellence.

TAMIL NADU KHADI & VILLAGE INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.

For retail and whole-sale, contact Khadi Kraft at:

KURALAGAM
MADRAS-600001
Phone : 29684

36C, ANNA SALAI
MADRAS - 600002
Phone : 81954

MADURAI MAIN ROAD
TIRUCHIRAPPALLI
Phone : 3814

AVANASHI RO
COIMBATORE
Phone : 35051

Tamil Arasu

R. R. No. 319/74.

Vol. IV 1st MAY 1974 Issue 11

CONTENTS

	PAGE
Poet of Revolt	4
Resolution on State Autonomy	5
Prehistoric remains in city site	11
Sea weeds of Tamil Nadu	16
How to make Backward Class But Bright Students Face I.A.S. Tests	19
Modernisation of Police Force	25
You be the Judge - Why we blame the Centre	28
About our Hill Stations	33
Iyal Isai Nataka Manram & its work	43
Indian Standard Institute	55

One of the babies is winning a prize from Thirumathi Sathyavani Muthu on 21-3-74 after a Baby Show held at Nehru Stadium.

WIN FOOD.

In view of the ever expanding requirements of cheap and standardised nutritious food for sustaining the various nutrition programmes in our country in general and Tamil Nadu in particular, achievement of self-sufficiency and development of some kind of cheap and standaridised indigenuous blended food manufactured with indigenous and locally available ingredient have assumed a great significance. The Gandhigram Institute of Rural Health and Family Planning undertook a study in association with the Indian Council of Medical Research with the primary objective of evolving low-cost protein rich food recipes for weaning infants have succeeded in developing a low-cost protein rich weaning food known as WIN FOOD with the use of locally grown food stuffs and ingredients in Madurai district. WIN FOOD is made up of the following components :—

1. Cumbu (roasted),
2. Greengram Dhal flour (roasted),
3. Groundnut cake flour (roasted) and
4. Jaggery.

After examining the various aspects relating to the manufacture and use of WIN FOOD, the Government have as a first step sanctioned the setting up of Pilot Plants by the following agencies at a total cost of Rs. 7,65,000 of which Rs. 1,65,000 is grant and Rs. 6 lakhs interest-free loan.

1. Gandhigram Institute of Rural Health and Family Planning,
2. The Tamil Nadu Agro-Industries Corporation and
3. The Khadi and Village Industries Board.

The food manufactured will be used in Special Nutrition Programme and other feeding programmes in the State.

9-MAY 1974

The Poet of Revolt

BHARATHIDASAN

[A tribute to the memory of the Poet on his Birth Anniversary on 29th April].

By

RAMA. SUBRAMANIAM

Bharatidasan (Kanaga Subburathinam, 1891—1964) a great Tamil Poet was born in Pondicherry when it was under French Rule. Having come in close contact with poet Bharathi who was then in voluntary exile in Pondicherry, Subburathinam admired his poetry and developed a personal love for him. Soon he assumed the pen-name Bharatidasan (devotee of Bharathi).

Bharathidasan is most popular among the modern Tamil poets after Subramania Bharathi. He is the champion of Tamil Renaissance and social reforms. He has produced more than fifteen poetical compositions and some prose works and a few dramas. Among them the three anthologies of his poems, **Alagin Sirippu, Kudumba Vilakku, Pandiyan Parisu** are the most important works.

His love for nature with rare sensibility is expressed in a fresh and non conventional way in **Alagin Sirippu.** Tamil is his religion and his songs on Tamil are rightly popular, as indeed they are in the best tradition of Bharathi. He looks on Tamil from the Universal point of view and calls her the world mother.

His constant themes are love, place of women, Tamil, Tamilians, Children and democracy which gives man his rightful place. The inspiration ,may be traced to Bharathis Bharathidasan goes beyond his master in his depth of force, in the breadth of his vision, in the length of his range and in the height of his poetry. Sanjivi Parvatattin Saral and Puratchi-kavi are his best.

In **Kurinji-t-tittu**, democracy is established after the king dies, but here the labour movement is hinted at, though not brought in to participate in the revolution. The country is ruined by a vile, corrupt group of pretenders parading in the garb of religion and culture.

In **Kadala Kadmiya**, poverty moves the heroes and the king himself grants freedom at the sight of the lovers attempting to sacrifice themselves for the freedom of the country in a better way than that shown in the early **Lormaravan** where the warrior sacrifices his love and life for his country.

He was a great believer in education and he speaks of compulsory education in his new democracy. **Irunda Veedu** describes how without education a house is unhealthy, full of debris and dirt and how the people therein are ugly, unhealthy, superstitious and negligent — all leading to poverty, disease and death — a portrait stranding in contrast to the happy family described in his earlier **Kudumba Vilakku**, where education, love and sense of duty reign supreme. He is interested in a happy family and bringing up children male and female. He was a believer in the great power of women and therefore it is no wonder his women characters are superior in all his respects.

In his songs he introduces the labourers, the weaver, the worker in the factories and workshops—refreshingly a new and realistic vein in Tamil Literature which had been singing in a conventional way of **Lallus** and **Kuravanji's.**

He expresses his great joy in life without any division whatsoever and working for the world ; for wealth there is common to all. He slyly points out in his **Panamum Manamum** that the social rules and structure are today based, not on human values, but on money value.

He as a great believer in Tamil Literature as an embodiment of culture as shown by his revised revisions of the great epics of Silappatikaram and Manimekalai, in his narrative poetry on the life of Kumaraguruparar and in the dramas on the lives of Satimurrappulavar and the Sangam poet **Picirantaiyar.** This last play, Picirantaiyar won the posthumous **Sahitya Akademi** award. Bharatidasan's bold trinity consisted of Tamil, Tamilians and the Tamil movement.

Reference has been made to the non-Brahmin and Dravidian movements. Bharatidasan came under this influence and developed a phobia against Brahmins and Northerns, and this colours all his writings after independence. This had affected him deeply and at that very thought he is thrown into violence. He believes in one formless God and in great men like Kumarakuruparar, Ramalinga and even Brahmins like Ramanuja, Bharathi and Paritimarkalaignar and that therefore he must be taken to be revolting against pretension. He describes Bharathi as the fire which no false religion could approach.

Picirantaiyar, a drama, combines poems with dialogues. Picirantaiyar was an ancient Tamil poet whose poems are available in **Puranaanurru, Akanaanuru** and **Natrinai**, all classical Tamil anthologies. The story ois about Picirantaiyar's friendship with the king of Chola Nadu **Koperumcholan.** While Picirantaiyar was born in Piciri, a place in Pandia Kingdom, he was serving the Pandian King. The interesting point about both of them is that they never met each other.

The play is in chaste Tamil, which has it own sweetness and style. The poems included in the play, however, are not Bharatidasan's best; Sahitya Akademi award for 1969 was awarded to him, since Bharatidasan is a great name in contemporary Tamil Literature.

Bharatidasan with his unshakable faith in the ancient Tamil culture, sings the glory of the Tamil Language with full pride and enthusiasm :

> Our life and fortune is our
> eternal Tamil! Our enemies have
> disappeared with fear and frustration
> having seen the unity and strength
> of us. O couch! convey this message to the world!

Bharatidasan has to his credit a number of love lyrics, ballads, and patriotic songs ; the fire of Bharatidasan's romantic genius burst into living flames in metrical romances like **Puratshik Kavi** (The Poet of Revolt) and **Ethirparatha Mththam.**

THE RESOLUTION ON STATE AUTONOMY

The House taking into consideration "The Tamil Nadu Government views on State Autonomy and the Rajamannar Committee Report",

Resolves that, in order to secure the integrity of India with people of different languages, civilisation and culture, to promote economic development and to enable the State Governments having close contact with the people to function without restraints and

In order to establish a truly Federal set-up with full State autonomy, the Central Government do accept the views of the Tamil Nadu Government on State Autonomy and the recommendations of the Rajamannar Committee and proceed to effect immediate change in the Constitution of India.

This resolution was passed by the Tamil Nadu Legislative Assembly 151 "for" and 24 "against".

AUTONOMOUS UNITS WILL STRENGTHEN THE UNION

Moving the Resolution on 16th April, 1974, Dr. M. Karunanidhi, Chief Minister, highlights the following points in his speech. His historical speech runs as follows :—

"We are all aware that the ruling party—Dravida Munnetra Kazhagam—has, on many an occasion, demonstrated its determination to play its full part to enhance India's might and strength and in safeguarding and securing that the integrity and unity of India are not affected in the slightest extent.

"If proof were needed of the ardent patriotism of the Dravida Munnetra Kazhagam party, it is seen in the fact of how in 1962 the Party gave up its demand for secession, how it enthusiastically took part in the preparations for defence to repel the Chinese aggressors, how it contributed Rs. 6 crores to the National Defence Fund and thus was in the forefront of all the States. Indeed the Dravida Munnetra Kazhagam party had rendered heroic service for the defence of the country imbued by the spirit of being in the very battlefield of India's fight.

"I am mentioning all these just to discourage consideration of this resolution on the basis of and with the point of view of unwarranted and unnecessary doubts.

CONGRESS SUPPORTED IT IN 1945

"In 1945, in its Election Manifesto, the All-India Congress Party had described the nature of the future Federal Constitution of India as below :—

> "The Federation of India must be a willing Union of its various parts. In order to give the maximum of freedom to the constituent units there may be a minimum list of common and essential federal subjects which will apply to all units, and a further optional list of common subjects which may be accepted by such units as desired to do so."

"Following this, in 1947, the resolution moved by Pandit Jawaharlal Nehru in the Constituent Assembly emphasized that except the powers assigned to the Union, all the other powers shall vest with the autonomous States. The material part of the Resolution runs as follows :—

> "Wherein the territories that now comprise British India, the territories that now form the Indian States, and such other parts of India as are outside British India and the States . . . shall be a Union of them all ; and the said territories, whether with their present boundaries or with such others as may be determined by the Constituent Assembly and thereafter according to the law of the Constitution, shall possess and retain the status of autonomous units, together with residuary powers."

"After India attained independence, these resolutions and election manifestos which are part of history have been either conveniently forgotten or deliberately suppressed.

"This truth was on many occasions brought out both in Parliament and the State Legislature by the Dravida Munnetra Kazhagam while it was in the Opposition ; and it has consistently pleaded for suitable amendments to the Constitution. The idea of State autonomy had also been continuously propagated in Tamil Nadu by the Tamil Arasu Kazhagam.

"In 1967 in the Election Manifesto of the D.M.K. it was stated as follows :—

> "The D.M.K. had taken upon the responsibility of seeing that no region of the country dominates another region in the name of implementing integration ;

The D.M.K. is determined to protect the rights of the States from being suppressed and to chalk out a plan for the uniform economic development of all the States ;

It shall be the endeavour of the D.M.K. to protect the interests of the States and to transfer the residuary powers from the Centre to the States ; it will reiterate the necessity to amend the Constitution for this purpose."

" Dr. Anna as the Chief Minister of Tamil Nadu, while presenting the Budget for the year 1967-68, had forcefully pleaded against the financial dependence of the States on the Centre—

" We have obviously had to take note of the limitations under which the State Governments have to function in our federal set-up. Apart from the provisions of the Constitution which are themselves weighed in favour of the Centre, the practices and conventions, which have evolved in the last fifteen years of economic planning have also tended to strengthen the role of the Central Government at the expense of the States. With the delimitation of powers as provided in the Constitution, which gives it the authority to regulate foreign trade, monetary and credit policy, the responsibility for overall direction of our economy vests with the Central Government. Through its access to the more elastic sources of revenue, including residuary powers of taxation, the Centre is in a position to syphon off a large share of the national income, leaving the States in a position where they have to depend on discretionary loans and grants-in-aid from the Centre for implementation of their plans and policies. The Centre also regulates directly through powers vested in it under Article 293 of the Constitution, and indirectly through the Reserve Bank, the terms and conditions and limits subject to which the State Governments can augment their resources through public borrowings. The provision for an objective review of the financial needs of the States at quinquennial intervals through the Finance Commissions has not in any way served to mitigate substantially the dependence of the States on the Centre in view of the various limitations on the terms of reference of such Commissions."

STATES SHOULD NOT HAVE TO DEPEND ON DOLES OF CENTRE

V

" In the concluding part of his Budget Speech, Dr. Anna observed—

" The House is aware that there is need for rethinking on the relation between the Centre and the States. I have no doubt that every on will agree on the need for placing existing relations on a satisfactory basis. No one can deny that the experience so far in regard to distribution of revenues, delimitation of powers and allocation of assistance for Plan has been such as to cause bitterness. It has become an urgent necessity to eliminate this bitterness and evolve ways and means of promoting fruitful relations between the Centre and the States. The problem I have posed need cause no apprehension or misgiving but should only provoke thought. It is my earnest desire that through mutual goodwill and understanding we should forge a fraternal and beneficial nexus."

" Again, in 1969, the last article written by Dr. Anna, in the English Journal " Home Rule " runs as follows :—

" Dear Brother,

Never have I been mad after power. Nor am I happy of being the Chief Minister of our State under a Constitution which on paper is federal but in actual practice tends to get more and more centralised. On that account, I do not, like my good friend E.M.S., declare that it is my intention to irritate the Centre or pick up quarrels with Delhi. True, a sense of determination at the appropriate stage is all important. But this should be preceded by educating the public on federalism itself. In that, dear brother, I am quite confident of your active co-operation and intimate participation.

If by being in office, the D.M.K. is able to bring to the notice of the thinking public that the present Constitution is a sort of dyarchy by the backdoor that would be a definite contribution indeed to the political world."

" On the 8th April 1967, at a Press Conference in New Delhi, Dr. Anna observed—

" It will be sufficient if the Centre retains only such powers as are necessary for preserving the unity and integrity of the country leaving adequate powers to the States. In order to distribute the powers and to suggest the method of working out the Constitution, a High Power Commission should be appointed."

" In pursuance of these observations and of my announcement on the floor of the Assembly on the 19th August 1969, a Committee consisting of Dr. P. V. Rajamannar as Chairman and Dr. A. L. Mudaliar and Thiru P. Chandra Reddy as Members was constituted by the Government on 22nd September, 1969 in order to examine the question regarding the relationship between the Centre and the States on the basis of autonomy for the States without in the least impairing the integrity of the country.

"It is to be remembered that, subsequently in 1971, in the Election Manifesto of the D.M.K., it was announced—

" Though the Constitution of India is described as a Federal one, the balance is more titled towards the Centre, and hence the States are not able to function freely in the administrative and financial spheres. Only such powers as are necessary for the Centre to preserve the strength of India should be assigned to the Centre and all the other powers should be left to the States, without impairing the ideal of a strong India ; and for this purpose, the Constitution should be amended. After the receipt of the report of the Expert Committee appointed for this purpose, the D.M.K. would seek support on an All-India level to the movement for State autonomy.

More powers in the executive and financial spheres are demanded to the States not for the mere sake of enjoying those powers. Since only the States are in close contact with the people, the State alone can serve the people up to their expectations. Hence it is that we demand State autonomy."

A FULL-FLEDGED FEDERAL SET-UP IS THE SINE QUA NON

" It will be relevant in this connection to point out that the Election Manifesto of the Mysore Pradesh Congress (O) issued in 1972 contained the following reference to State autonomy :—

" Congress will fight in a determined manner for greater autonomy for the State and against all discrimination and step-motherly treatment by the Centre."

" The Report of the Rajamannar Committee was received on the 27th May 1971. The said report was sent to the Prime Minister of India, Thirumathi Indira Gandhi.

" Acknowledging the receipt of the Report, the Prime Minister, in her letter, dated 22nd June 1971, wrote to me as below :—

" Dear Thiru Karunanidhi, I have received your letter of the 15th June with which you have sent me a copy of the report of the Centre-State Relations Inquiry Committee. Your Government will probably examine the recommendations of this report. As you know, the Administrative Reforms Commission also went into this question and has already submitted a report which is under our consideration. If the views of your Government on this matter are made available to us, they will also be taken into account. These are important issues and we intend to consult all the Chief Ministers.

With regards,

Yours sincerely,

(Sd). INDIRA GANDHI.

" In the meeting of the National Development Council held on 30th May 1972, under the Chairmanship of the Prime Minister, while explaining the policy of this Government, I said that—

LET US PRESERVE THE LUMINOUS FLAME OF STATE AUTONOMY ALIVE

"Decentralisation is particularly necessary if a large country like ours is to cope with the problems of a modern economy. It is in this sense that our demand for State autonomy should be understood—as a request for more efficient management of the country's resources, as a means to enable the Centre to be strong in areas of vital national concern, as a method of enabling the minimum demands of our people to be met in the quickest time and in the most efficient manner."

"Though we do not accept the Report of Dr. Rajamannar's Committee in full, we take the Report as the basis for the exposition of our policy in this regard.

"As it was thought that a decision on these issues of historic importance had to be taken after great deliberation, the problem was considered at different levels. The Ruling Party appointed the Chezhiyan—Maran Committee and in the light of its observations, the report of Dr. Rajamannar's Committee was analysed. The Government also considered the report of the Administrative Reforms Commission appointed by the Centre. This Government, after a deep consideration of the various opinions expressed by the several Statesmen in India on this issue and after carefully studying the position in the other countries of the world, has formulated its views on the report of Dr. Rajamannar's Committee and on the question of State autonomy and the said views have been placed before this House along with my resolution for the acceptance of the same by this House.

"In the recent meeting of the Consultative Committee on Home Affairs, Thiru Dandapani, Member of Parliament, enquired why the Central Government had not taken any decision on the healthy suggesitons made by the Rajamannar Committee on the question of re-examining the powers of the Centre and State Governments, and the Union Minister for Home Aaffirs Thiru Dikshit replied that the said Committee was appointed by the State Government and the State Government had not yet communicated its views on that report.

"In pursuance of the said reply by Thiru Dikshit and in response to the desire of the Hon. Members of this House to express their views on the Report of the Rajamannar Committee, this Government has brought forward this Resolution in order that all the State in India attain State autonomy and the Centre becomes a shining example of a true Federal Government.

"The National Flag of India flutters in the glittering sun. We lift our eyes to the high sky beyond the clouds in our attempt to enjoy the majesty of the flag. We hear the National Anthem composed by Tagore, the golden voice of Bengal. The sweet melody of the Anthem rings in our ears like the soft music of the Courtallam Falls. Yes! Our country has awoken from its slavery liberating itself from foreign domination. The epic story of our heroic struggle for liberation of India from which we emerged, holding our heads high is writ large in the history of the world.

"The imprisoned nation has become free. The door has opened. With a smile, the prisoner comes out of the iron cage. The tender tottering child eagerly leaps towards its father to embrace him after the languish of long separation. The father with boundless joy stretches out his hands to lift and kiss his child. Alas! the hands do not function! Why is this so? He has been released from the prison. What is the further obstacle? What is it that prevents him? He looks around in surprise. He has come out of the prison and he is free. Then, who prevents him from embracing the child. Nobody prevents him. When he was in prison, his hands and legs were fastened with chains. In his joy of release, he came out of the prison without removing those chains. No doubt he is free, but the chains that bind his limbs had not been removed. Man has become free. Then why should his hands and legs be kept bound? India has become free. Then, why should its libs, namely the States, be kept bound by the chains of concentration of power in the Centre?

"This is a burning question which has been before us for a long time. I bring forward this resolution to-day before this august House in the hope that it will help to quench the thirst that the question represents.

"Our Constitution is not immutable. It has been amended more than thirty times.

It is my earnest appeal to the Central Government that they should realise that implementation of these great changes in the Indian Constitution will form the basis for strengthening our country and increasing its prosperity and that it will contribute to develop the languages of the States, to preserve and protect the different cultures, to foster good relations among the States, to promote healthy relationship between the States and the Centre and to improve the economic conditions of our country. I seek you kind co-operation in this great endeavour. Moved by an ardent desire that the fruits of our freedom should be enjoyed fully by the people and keeping their welfare at heart, we, on behalf of the Government of Tamil Nadu, have kindled this luminous lamp at the centre of the stage of Indian politics. I beseech the statesmen of India to help us to keep this flame alive and assist in preserving its glow."

NEW CLASSIFICATIONS OF GOVERNMENT TRANSACTIONS FROM 1—4—1974. PURPOSEFUL CONTROL MADE POSSIBLE

All Offices under the Government of Tamil Nadu including the establishments under the control of Secretaries or Managing Directors to Government Companies, Boards and Corporations will switch over to a revised classification of all their receipt and expenditure transactions from 1-4-1974. This revised classification of Government's transactions has been so designed as to ensure not only itemwise control of expenditure but also to secure monitoring of Governmental expenditure for a purposeful review of all Governmental operations. This sweeping reform of budget classification designed as far back as 1935 was recommended by a Study Team of the Government of India and later accepted by the State Legislature's Estimzates Committee for adoption with effect from 1-4-1974.

Classification is the structural key to planned and rational Government budgeting. The accounting procedure drawn up in 1935 though slightly amended in the early sixties was still found to be inadequate. Integration of the nomenclature in both accounts and plan is the main purpose of the functional classification attempted by the Study Team for rationalising the budget classification.

The existing budget and accounts classification is largely designed to secure the basic objective of ensuring control over the appropriations made by the Legislature to the Executive and the allotments made by the departments to the subordinate authorities. The classification accordingly bears a close relationship to departments and organisations in which the transactions occur and within them in terms of inputs such as establishment charges, travel expenses, material and equipment, etc., so as to secure itemised control over expenditure. Such a framework was considered adequate for the limited functions discharged by Governments in the past. In the two decades of planned development, the functions of Government have diversified and public outlays have expanded from year to year and the emphasis has shifted from control of expenditure merely by objects of expenditure to monitoring and analysis of programmes and activities as well as control by objects of expenditure and to the extent possible an assessment of return for the expenditure incurred.

For purposeful review of the Government operations and appreciation of resource allocation at the national level; for providing a link between budget outlays on the one hand and functions, programmes and schemes of the Plan on the other hand at the same time ensuring itemwise control of expenditure, the Study Team had recommended the new system.

BRIGHT PROSPECTS FOR STONE WARE PIPES IN TAMIL NADU

The report of the Task Force on Large Industries in Tamil Nadu headed by Thiru N. Mahalingam has clearly brought out the scope for the development of the stone ware pipe industry in the State. With the increase in the constructional activity in the State the demand for stoneware pipes has been rapidly increasing. The State Housing Board has taken up construction of new colonies and housing projects. What is more, the State Government have constituted a separate Board for construction of houses for slum dwellers. Again, a separate autonomous body called the Tamil Nadu Water Supply and Drainage Board, has been constituted with a view to accelerate water supply and drainage schemes in the State. All these have resulted in creating a large demand for stoneware pipes. Besides, there is also plenty of scope for selling these pipes to the adjoining states of Kerala, Andhra Pradesh and Mysore.

The Water Supply and Drainage Board has estimated the requirements of stoneware pipes at about 10,046 tons per annum in sizes 100 mm. diameter to 450 mm. diameter.

Over and above this, the total requirements of Housing Board, Slum Clearance Board, Madras Corporation, etc., and retail demand for individual house construction is likely to exceed 17,000 tonnes per annum. Thus, the immediate requirements of stoneware pipes in Tamil Nadu will be of the order of 30,000 tonnes per annum for the next many years to come.

RAW MATERIAL

Good quality stoneware clays occur in Trichy and Chingleput districts. In Chingleput district, the clay occurrences mostly belong to the formation known as Upper Gondwana. The clay ranges in thickness from 10 to 20 feet and the deposits are main.y in Sriperumbudur and Trivellore taluks. In South Arcot District, good reserves are located mainly in Cuddalore, Tindivanam and Vridhachalam taluks. In Tiruchirapalli district this type of clay occurs in Perambalur Taluk.

There are only three factories in Tamil Nadu manufacturing stoneware pipes and their total capacity is about 22,000 tonnes per annum. It can therefore be seen that with the present demand for stoneware pipes in the market, there is a clear case for setting up additional units in Tamil Nadu for the manufacture of this product.

Out of the three units only one one is capable of making pipes upto 375 mm. However, for major drainage works the requirements will be more in larger diameter pipes *i.e.*, 300 mm., 450 mm., 650 mm., etc. Pipes in these diameters have to be obtained from North India at high prices and incurring heavy transport charges. Such purchases also result in substantial loss to the consuming department due to heavy rejections in transit. It is therefore advisable to put up plants capable of producing larger diameter pipes.

By

PROF. C.S. MAHADEVAN.

You be the Judge

Why we blame the Centre?

The Budget Proposals of Tamil Nadu for 1974—75 attracted detailed analysis by as many as 77 members who expressed their opinions on the floor of the House with their candour. On 14—3—1974 the Chief Minister replied as follows :-

" We all have noticed that the speech of the Congress (O) party, Thiru Ponnappa Nadar comprises half his own and half of Anna's words. He has all along his speech, at more than one place, profusely quoted passages culled out from the speeches of Anna delivered in this House from 1957 to 1962. I am grateful to him inasmuch as he has at least now, in accepetance of them, advanced the words of Anna for implementation by this Government, though the realisation has dawned on him too late. In this connection I wish to request him to remind us all in the next meeting of this House with what Anna, after assuming the mandle of power in this State, had said in reply to the querry raised by Thiru Karuthiruman as leader of opposition in this House.

" In that reply in this House Anna has observed thus :—" We are obliged to slowly but surely give shape in practice to those promises of ours and we have been implementing them even now." So I wish to point out here that no doubt need be entertained that this Government would give a lie to those promises put forth by Anna while in opposition.

" Both the leader of Congress (O) and one among the leaders of CPI, Thiru K.T.K. Thangamany, in their speeches, quoted a fine phrase used by Anna while in opposition to define the gamut of functions of opposition. They said the opposition party is not to sing lollaby to the treasury bench but on the other hand, to express opinions in opposition to those of the ruling party. But none should forget to take to one's heart and mind that Anna held very near and dear to his heart the principle that the duty and responsibility of an opposition is not only to praise the good things done by the party in power, but also to oppose the wrong-doings of the ruling party. When the Hon'ble members of the Congress, Anna DMK, CPI or any other party, spoke in the vein that they have not come here to sing lollaby to the ruling party, I took their derogatory and disparaging words in the sense that they were Nalangu sung in our marriages. In a marriage both the spouses would look beautiful. But in a Nalangu either party would disparage the other which act would in no way reflect the reality there. So I wish to say that I won't take it for granted that this Government bears testimony or resemblance to what the opposition members have tried to make out through derogatory expression.

V

CHIEF MINISTER'S REPLY TO CRITICISM

WHAT DOES A BUDGET MEAN?

" Some harsh opinion have been raised in general upon the budget presented in this House. This Government's budget is closely related to the salient and sound principle that it should accelerate the growth rate of the economy, that it should bring under check and control the price spiral and that it should aim at and aspire to lessen the gravity and dimension of the unemployment problem.

" While speaking on the budget, Thiru K.T.K. Thangamani and the Congress member Thiru Subramanyam described the budget as an Annual Statement of a Panchayat, a Panchayat Union, a District Development Council or a Corporate Company. I do not feel sorry for that. On the other hand, I am obliged to thank them on the ground that at least now they have become alive to the fact that a State Government is in no way in a better position than a Panchayat Union in presenting its budget. I further congratulate them on their coming around to the point of view that the State Governments, unlike the Panchayat Union Council, should grow in power and position and get strengthened so as to function as de-facto State Governments, instead of merely being de jure Governments. A State Government budget can only be based on and confined within the premises of the

Changes in the Constitution Recommended by the State Autonomy Resolution

According to the State Autonomy Resolution passed in the Tamil Nadu Legislative Assembly on 20th April, 1974 the following changes in the Constitution are recommended :

ARTICLES TO BE OMITTED

Articles 256, 257, 339 (2) and 344 (6) empowering the Central Government to issue direction to the State Governments should be omitted. Federal Government should have no such power to give directions.

Articles 154 and 258 : The provision giving power to Parliament to make laws conferring power on State and State authorities should be omitted.

Article 249 : This article, which empowers the Parliament to legislate with respect to a matter in the State List, shall be omitted.

Article 252 : This article empowering the Parliament to legislate for two or more States by consent should be omitted.

The provision regarding the reservation of State Bills for the consideration and assent of the President should be omitted. Article 254 should be so amended that in respect of matters falling within the concurrent legislative list, the State law shall prevail over the federal law.

Promulgation of Ordinance by Governor : The proviso to Article 213 (1), which makes it necessary to obtain the instructions of the President before promulgation of Ordinance should be omitted.

Emergency Powers : Emergency under articles 356 and 357 which enable the imposition of the President rule in States shall be omitted.

Article 365 : Provisions for issue of directions by the Federal Government have been omitted. Consequently, this article also has to be omitted.

FINANCIAL EMERGENCY

Article 360—The provision which empowers the President to issue a proclamation of emergency in cases of threat to financial stability or credit of India shall be omitted.

Article 312 : This provision relating to all-India services and creation of new all-India service should be omitted.

Territory of the State : It should be expressly provided in the Constitution itself that the territorial integrity of a State Should not be interfered with in any manner, except in accordance with any one of the following three alternatives :

1. The consent of the State Legislature concerned should be obtained.

2. The issue should be referred to, and decided by a high level judicial tribunal, to be constituted for the purpose with the consent of the contending parties and its decision should be binding on all the parties.

3. The opinion of the people of the area or areas concerned should be ascertained by holding a special pool.

Trade and Commerce—Article 302 : This article, which empowers the Parliament to impose restriction on trade and commerce and intercourse, should be omitted.

Article 304 (*b*) : The proviso to article 304 (*b*) which requires the previous sanction of the President for the Bills of the State Legislature, should be omitted.

High Courts : Since the legislative power relating to constitution and organisation of High Court is proposed to be transferred to the State List, articles 217, 222, 223, 224 and 224-A require suitable amendment or omission.

PARTIAL AMENDMENT

National Emergency : Articles 352 and 354 : Powers under articles 352 and 354 relating to proclamation of emergency and the consequential powers should be restricted only to war or external aggression.

TRANSFER OF POWERS TO STATES

Legislative power : The legislative powers of Parliament and the State Legislatures have been enumerated in the Seventh Schedule to the Constitution as Union List, State List and Concurrent List. These entries of legislative powers have been examined in detail and a new set of three lists of legislative powers, namely Federal List, State List and the Concurrent List, have been prepared with the object of setting up of a true federation with a Federal Government having powers only relating to defence, foreign policy, inter-State communication and currency and the States having all the other powers, including residuary power giving due consideration to the recommendations of the Rajamannar Committee.

Residuary powers : The residuary power of legislation and taxation should be vested in the State Legislatures.

Article 169 : The power to abolish or create Legislative Councils should be vested exclusively in the State Legislative Assemblies without the necessity of any Parliamentary Legislation.

The Inter-State Council envisaged in article 263 of the Constitution will be ineffective and will not serve any purpose. So an effective and efficient alternative in lieu of the envisaged one in the Constitution is suggested.

FORM

The Inter-State Council should be constituted consisting of all the Chief Ministers or their nominees, with equal representation for all the States, and the Prime Minister as its Chairman. No other Union Minister should be a Member of the Council.

POWERS AND FUNCTIONS

In respect of any action to be taken in any matter relating to defence, foreign affairs, inter-State communications and currency in so far as it affects the Centre-State relations or a State or States, the Inter-State Council should be consulted.

Similarly, the Inter-State Council should have the opportunity to discuss all economic, fiscal, monetary and financial measures undertaken by the Federal Government.

The recommendations of the Inter-State Council should ordinarily be binding on the Centre and the States. If, for any reason any such recommendation is rejected the recommendation together with the reasons for its rejection should be laid before Parliament and the State Legislatures.

Concurrent List :

Before any Bill is introduced in Parliament in relation to any entry of the Concurrent List, the Inter-State Council and the States should be consulted. At the time of introduction of the Bill, the remarks of the Inter-State Council and a brief resume of the opinions, if any, of the State Governments should be placed before the Parliament.

Power to issue directions under Article 353 (*a*) while there is proclamation of emergency should be restricted only to war or external aggression. But such directions shall be issued only with the approval of the Inter-State Council.

State Autonomy Resolution on Inter-State Council and Office of Governor

The office of the Governor is a legacy of the Birtish colonial system. The method of appointment of the Governor as provided for in our Constitution makes it an anachronism in a democratic setup. He is a functionary appointed by, and responsible to, the Central Government and as such, he could not be expected to understand the local conditions and the political situation. The expenditure incurred on the office of the Governor does not seem to square with the socialistic pattern of society. The expenditure is a wasteful one, which could well be dispensed with. The Supreme Court in Rao Shiv Bahadur Singh v. State of Vindhya Pradesh (1953 S.C.R. 1188) has held that a Minister is an officer subordinate to the Governor. Thus, the elected representative of the people in legal theory is nothing more than a servant of a nominee of the Central Government. The time is ripe for doing away with the office of the Governor.

Where the office of Chief Minister falls vacant by death, resignation, etc., under the West German procedure, the successor should be elected within a fixed period of time and if this is not done the Assembly will automatically stand dissolved. During this interregnum, it is suggested that the Chief Justice of the State may take charge of the administration till such time as a new Chief Minister assumes office. If the principle underlying this suggestion is accepted, the other details may be worked out.

The executive can be dismissed under the West German System by a vote of non-confidence called as the "Constructive Vote of nonc-onfidence." Under this provision the executive cannot be dismissed by a no-confidence motion unless it is accompanied by the selection of his successor. A system siimlar to this may be adopted here also. The Chief Minister will discharge the functions at present being attended to by the Governor. If there is any interregnum, the Chief Justice of the State will discharge the functions while there is no Chief Minister.

CITY SITE THROWS UP

Rich Pre-historic Materials In Madras Government Museum

The Madras Meseum has been making valuable contributions to the promotion of prehistoric studies right from the bengining. It is the repository of the famous Bruce Foote's collection of nearly 4,000 stone age tools of different typology —a rich source material for study by scholars and prehistorians from all over the world.

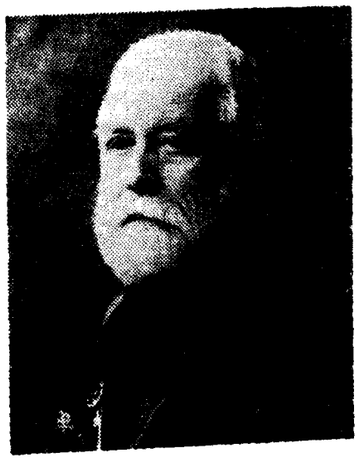
Burkitt and Cammiade threw fresh light on the stone ages of India in 1930 and further explorations and prehistoric collections were made by Thiru V. D. Krishnaswamy, Thiruvalargal F. P. Manley and Dr. A. Aiyappan in Palaeolithic sites at Attirampakkam, Nellore, Sawyerpuram and other places. In 1873 the collection excavated by J. W. Breeks in Cairn burials in the Nilgiri Hills formed a valuable addition to our prehistoric material.

The famous Adichanallur megalithic site was brought to notice by Dr. Jagor of Berlin in 1876 and excavations were conducted from 1889 to 1905 by Alexander Rea, whose collections gold, bronze, pottery and iron material of the megalithic age formed further valuable additions to the museum's prehistoric collections.

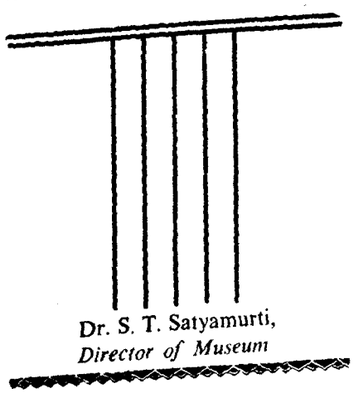
In course of time, megalithic excavations were also conducted by R.B. Branfill in Mysore, Stoney in Coimbatore, C. Cardew in Anantapur, F. Fawcett in Malabar and H.R.P. Carter in North Arcot District, and these collections were also added to the Madras Museum eventually.

OUR TRADE WITH ROME

Later, in 1940, under the supervision of Prof. G. Jouveau Dubreuil, trial excavations were conducted at



Robert Bruce —
Father of Indian Prehistory.



Dr. S. T. Satyamurti,
Director of Museum

PREHISTORIC COLLECTIONS

Arikamedu near Pondicherry and these revealed the presence of Amphorae and beads of the typical Mediterranean type. At a still later date Sir Mortimer Wheeler continued further excavations at Arikamedu and many of the antiquities from this site which are highly indicative of commercial intercourse with Rome, have been acquired for the Museum, and are on display in the Prehistory Gallery of this Museum.

Even in recent years the Museum has been active in making significant additions to its collections of prehistoric materials from South India, particularly from Tamil Nadu, both from localities in the districts and from places within the city limits. At the district level, within the last decade, the Museum had collected megalithic potteries of the Black and Red ware type from Mohanur (Salem District), burial urns and potteries from Pattakurichi (Tenkasi, Tirunelveli District), Black and Red ware potteries and bones from Kaliapuram (Tenkasi), Black and Red ware potteries from Kovur (Nellore District), broken pieces of pottery from Nandan Padai Vedu (Vellore) and pottery from the Nilgiris through G. N. Das.

It may also be of interest to mention here that within the city limits very recently a sacrophagus and a pot from Maduravayal (Aminjikarai area) were found while digging for a well and were acquired for the Museum, and even as late as the middle of Feb. 74 three specimens of pottery found in the compound of the Government Vigilance School for Girls, Mylapore, while digging for the foundations of new buildings were brought to our notice. These have been examined by our Curator, and steps are being taken

to acquire them for this Museum. Thus slowly and steadily the prehistoric collections in the Madras Government Museum are being enriched, providing valuable material that help us to reconstruct the life and culture of prehistoric man in this part of the country.

RAGHAVAN'S CONTRIBUTION

The Madras Government Museum cannot forget the services of Thiru M. D. Raghavan who as Personal Assistant to the Superintendent investigated and collected megalithic antiquities from three different sites in South India. One of these was within the Madras City in the compound of late Thiru E. R. Prudhome's known as "Fontenoi" in Halls Road, Kilpauk. These excavations were conducted by Raghavan in this site in 1934. At present, the site is all built up with new buildings and the 'Mercy Home' is now located at this site. The exacavations yielded potteries and burial urns of the Adichanallur type and a Sarcophagus of the Perumbair type. About 50 items of potteries, burials urns and a Sarcophagus with six pairs of short legs were collected from this site, and added to the Madras Museum collections.

In addition, the Museum also benefited from his work in North Malabar. Pieces of iron implements were collected from the rock-cut caves and added to the Museum collections, and of these, a few are displayed in its Prehistory Galleries. The excavations conducted by Raghavan at Sankavaram in Cuddappah District in 1935 yielded the unique Ram Sarcophagus together with about 25 associated objects such as pottery and iron pieces, etc. Most of these objects are displayed along with the remarkable Ram Sacrophagus which perhaps still ranks as one of the most outstanding exhibits in the Prehistory gallrey of this Museum.

Burial utn— Kilpauk excavation

The several prehistoric sites explored in different parts of Tamil Nadu, Andhra, Karnataka and Kerala throws up a fresh and co-ordinated story of the life of man in the prehistoric age of South India. It would not be a hope against hope if the several excavations made take us nearer to the chronological sequences of prehistoric cultures of South India before long.

Of the life of man in the Madras City prior to chronicled history, little has come to light. Among the few, who have contributed to our knowledge of the prehistory of the Madras City, the name stands out of Cammiade as the earliest, followed in later years by the joint contributions by Cammiade, Burkitt and Richards on the Ancient Soak Pits of Chetput, Madras.

As pointed out by the excavators, M. D. Raghavan and T.C. Aravamuthan in a Note contributed to the "Current Science", Vol. III, No. 3, September 1934, the existence of a prehistoric cemetery on this site had been known to a few about twelve years prior to this excavation. Among these few is Cammiade who in the course of his explorations of the Chetput site, discovered traces of an ancient village extending from the North Eastern corner of the Chetput Brick fields across the Poonamallee High Road into a part of the property now known as Landon's Gardens. Cammiade states that the site of the village was marked by a layer of broken pottery which in places was three feet deep. Here he found one well, a draw-well. Cammiade tells us that the existence of a cometery was indicated by the occurrence in situ, of a large pyriform burial urn of Adichanallur and Wynad type and by the conical leg of an earthernware legged cist, of the Perumbair type. In the neighbourhood were found a button shaped gold ornament, earthernware potteries, beads, celts and pottery fragments.

Panunde cave in North Malabar

Burial Urn — Kilpauk excavation

Thiru Prudhomme himself had collected and stored a number of pottery vessels dug up in the course of the building of his house. These include a small sacrophagus and a few pottery vessels of different types. A dominant type is the black and ardware largely found at Adichanellur, Tirunelveli District. Along with them were also a number of bricks of large dimension which appear to have been used in the construction of a well in the compound.

Unlike Perumbair, the Kilpauk site is rich in fine pottery and abounds in bowls of the black tipped ware, comparatively rare at Perumbair. The fine all black vessels of the Kilpauk site distinguish it from both the Adichanallur and Perumbair finds. The black pottery bird figurine, perhaps a votive offering, in a significant find as such figurines have not been met with in similar sites except in the Nilgiri cairns.

All that could be said about the age of the site and that tentatively, is that the pottery appears typical of that of the Early Iron Age, found at other prehistoric sites in South India, such as those at Adichanallur, Perumbair and Raigir in Hyderabad. The character of the associated finds of pottery bead and iron objects indicate that the finds are assignable to an early phase of the Iron Age of South India.

As the first discovery of the kind within the Madras City, except for the Chetput Soak Pits investigated by Cammiade, the Kilpauk excavation attracted wide spread popular interest and the Madras dailies gave wide publicity to the site and objects revealed to view. Among the many who visited the site was Prof. S. Krishnaswamy Aiyangar who expressed that the discovery, the first within the limits of the Madras City, was of profound interest.

The obvious significance of the Fontenoi site is that it has yielded us the first steps to our knowledge of the habits and customs of man in this ancient metropolis. The investigations of the last few years have steadily widened the horizones of our knowledge of prehistoric man in South India. The several prehistoric sites explored in different parts of Tamil Nadu, Andhra, Karnataka and Kerala, disconnected and disjointed as seem, yet preach a co-ordinated story of the life of man in the prehistoric age of South India. It is hoped that it will not be long before an evaluation is carried out of the several excavations takings us nearer to the achronological sequences of prehistoric cultures of South India.

—oOo—

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P. O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival ;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

Production - Oriented Training New Procedure at Tiruchi

The following special schemes are being implemented in the Government Polytechnic, Tiruchirapalli with a view to giving production-oriented experience to the presently studying students and to unemployed Engineers and Technicians.

ENTREPRENEURSHIP TRAINING SCHEME

Under this scheme certain specific machines/groups of machines available in the Institution will be let on hire on monthly rate to the Entrepreneur trainees admitted to the scheme. The scheme is being run in the Institution since May 1973. Passed-out Engineering Graduates and diploma holders, who have special aptitude for running Engineering Industries of their own, which are machineshop-oriented or welding and fabrication-oriented are eligible to join the scheme on payment of caution deposit of Rs. 500/-.

They themselves can work on machines let on hire to them or they can engage any unemployed Technical High School or Industrial Training Institute candidates selected on their own in executing the jobs offleaded to the Polytechnic by the Bharat Heavy Electricals Limited, Tiruchirapalli and other industries in and around Tiruchirapalli. The scheme aids at giving the trainees the qualities of Entrepreneurship so that after completing the schemes they become able enough to start and run their own industries with confidence and courage. The members will be permitted to work for a period of six months initially and may be extended for another period of six months, if necessary, to work with the Polytechnic machines allotted to them till such time they get suitable type of buildings, equipment and machinery of their own or on hire purchase system and through Banks in their own places with their equipment. This will also keep them usefully engaged till such time they complete all formalities in starting industries of their own.

INCENTIVE SCHEME : JOB FOR UNEMPLOYED ENGINEERS

The Scheme is started for the benefit of the unemployed diploma holders. Job orders are undertaken by the institution from the Bharat Heavy Electricals Limited and other local industries. The candidates who join the scheme get a fair income as well as very useful practical experience and skill. They become self reliant and capable of handling different types of mchines. They can earn above Rs. 200/- to Rs. 250/- a month in the scheme.

EARN WHILE YOU LEARN SCHEME

This scheme derives its importance from its absolute necessity for imparting industrial training among the diploma students and Technical High School students and its utility in making them self-reliant. The scheme is worked out in the following manner. Materials are supplied by the Bharat Heavy Electricals Limited, Tiruchirapalli for various jobs. These jobs are done by the present studying diploma and Technical High School students in the Workshops outside their study hours and during holidays. These students are trained in the technical know-how of the jobs for a few days in the beginning. They acquire necessarc skill after the initial period of training. They then produce various components to the specifications of the Bharat Heavy Electricals Limited.

Apart from earning they are encouraged to be self-employed after they pass out their courses, thus instilling hope to better their prospects in their life.

These three schemes besides offering the Engineers and Technicians scope for earning and gaining practical experience, permit the lot of idling machine hours for useful production purposes which from the national point of view, needs to be encouraged.

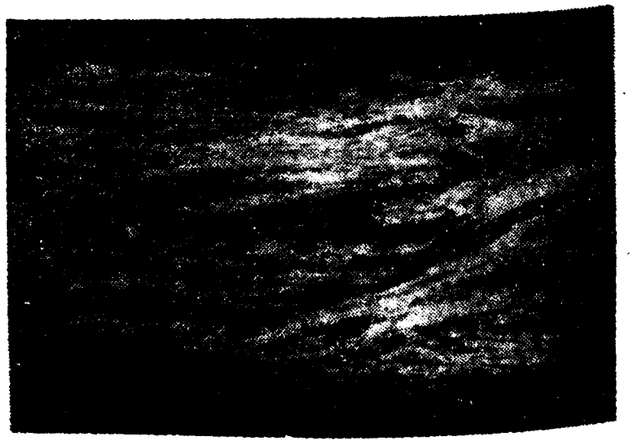
Names of the components turned out under incentive and Earn while you lean scheme and were supplied to BHEL, Tiruchirapalli and other industries in and around, Tiruchirapalli.

1. Flanges of various sizes
2. Stud belts of various sizes
3. Pins
4. Fins
5. Taper pins
6. O. P. Gland
7. Stem (Chromium Steel)
8. Valve Disk (Chromium Steel)
9. Eye Bolt
10. Hex Nuts of various sizes
11. Foundation Bolts
12. Twisting Machine Jaw
13. Steel Room Russ 40' span
14. Decoiling
15. Insulation Retainer.

Sl. No.	*Year*	*Turn over in terms of labour charges charged*
		Rs. P.
1.	1970	.. 9,810P78
2.	1971	.. 30,143.53
3.	1972	.. 35,607P03
4.	1973	.. 29,943P09

—FIELD PUBLICITY OFFICER
TIRUCHI.

USES OF SEA WEEDS AND THEIR PRESENT STATUS IN TAMIL NADU



Agar Strips

Seaweeds belong to the group of plants known as algae. The algae differ from the higher plants in that they do not possess true roots, stems or leaves. The smaller species of seaweeds are mainly filamentous, whereas some of the larger species possess certain organs that resemble roots, stems and leaves. Some of the seaweeds may comprise of a few cells but some of them are known to grow upto 200 ft. in length. Most seaweeds inhabit comparatively shallow waters but some of the red algae grow as deep as 200 meters or below. The algae are divided into 4 principal groups-blue green algae, green algae, red algae and brown algae.

Seaweeds occur in considerable quantities in various parts of the world, and are available both in temperate and tropical waters. In India the seaweeds are mainly distributed in the coasts of Tamil Nadu and Maharashtra. The seaweed resources of Tamil Nadu are abundant and occur all along the coast of Tanjore, Ramnad, Tirunelveli and Kanyakumari District extending for a distance of about 480 km. from Pt. Calimere to Cape Comorin with extensive seaweed beds in Ramnad Dist. The economically important seaweeds of our coast are the brown seaweeds, Sargassum and the red seaweeds Gracillaria and Gelidium.

The fresh seaweeds contain carbohydrates, protein, soluble nitrogenous and organic compounds, minerals, including Iodine and Vitamins. Though seaweeds have been harvested and put to a variety of uses all over the world from earliest times, the rate of growth and development of the Seaweed industry was mainly after the World War II. Some of the more common uses of the seaweeds are listed below :

As Manure

The use of seaweeds in agriculture as manure for the soil is very old and practised wherever there are rich supplies, such as Western Europe, America, Japan and China. In view of the huge bulk of the weeds, their use as manure has been confined to the coastal areas. Seaweeds are relatively high in N2 and Potash but low in P. Centent. To obtain best results it should be mixed with Phosphatic fertilizers. However, judicious combination of the manure with superphosphate has been known to yield better results with certain crops. Though they provide an excellent manure the problem of collection and transport limits its uses.

The seaweed resources of Tamil Nadu are abundant all along its 480 Km coast line. To take advantage of this resource in the economical line by the State, new impetus and incentives have been given to intensive and extensive rsearch into the use and utility of this resource, in addition to a survey undertaken by the State Fisheries Department in colloboration with the Central Marine Fisheries Research Institute and the Central Salt and Marine Chemicals, Bhavanagar. Though the pioneering work carried out in the various research stations for the preparation of agar have paved the way in setting up several Agar Plants in Tamil Nadu, the State have still a long way to go in the fuller utilisation of this cheap raw material.

As Animal Fodder

Seaweed as animal fodder has been used from the earliest times but was restricted to the coastal areas near the source of supply. In a number of countries like France, Scotland, Iceland, Norway and America fresh seaweeds have been used for animal feeds and are said to have increased the health and fertility of both cattle and poultry. For that purpose dried seaweed meal is manufactured by commercial firms in .U.S.A. Norway and Holland. For horses, cattle and poultry seaweed meal can be used upto 10% with beneficial results.

As Food for man

Seaweeds as a staple item of diet have been used in Japan and China for a very long time. To a lesser extent various species have been employed in Eruope and North America. The edible algae consists chiefly of carbohydrates, small quantities of protein, fat, ash containing Sodium and Potassium salts. Though the direct food value of algae may not be considerable they are useful because of I2 content, and other Vitamins and minerals. The fact that seaweeds have not become popular in several countries is mainly due to conservative eating habits. However, the shortage of food supplies to meet the increasing world population in the years to come will make man turn towards seaweeds also.

In Medicine

From ancient times seaweeds have been used for medicinal purposes in China, Japan and other Asian countries, for treatment of goitre, stomach disorders, rheumatisms, lung disorders etc. Certain seaweeds possess anti co-agulating action on blood. Further research on the biochemical and technical aspects may lead to increased demands for seaweeds.

In Industry

Inorganic chemicals such as Soda ash, Iodine and Potash were prepared during 18th centuary. These have now been superceded by chepper methods. In recent years seaweeds are mainly used for organic products such as agar, alginic acid, laminarain, mannitol and carrageenin.

Agar and algin are substances of commercial importance extracted from Seaweeds. Agar is a complex polysaccharide occurring in certain seaweeds like Gelidium and Gracillaria and is much needed in many industries. It is used in bacteriological work, textile, leather, cosmetic industries and medicine. Agar is invaluable as a thickening agent for ice cream, fruit jellies, sauces, etc.

Gracilaria

Alginic acid is commercially prepared from brown Seaweeds, Sargassum, Laminaria etc., Alginic acid and its salts are used as thickners, hardners, and stablizers in food, medicine, cosmetics but mainly in textiles for producing artificial fibre.

Present Status in Tamil Nadu

The pioneering work carried out in the various research stations for the preparation of agar have paved the way in setting up several Agar plants in Tamil Nadu namely in Tirunelveli, Kovilpatti, Kappalur and Madras. Imports of agar have almost been stopped due to its indigenous production. Brown seaweeds which are the main source for algin preparation is available in plenty in our coast. Ther is good scope of developing this industry in our State.

Gelidium

Realising the importance of uses of seaweeds and with a view to know the availability and distribution of the more important species, a survey has been undertaken by the State Fisheries Department in collaboration with the Central Marine Fisheries Research Institute and the Central Salt and Marine Chemicals, Bhavana gar and the results when known will be valuable. The Fisheries Technological Station Tuticorin is engaged in carrying out research on the utilisation of seaweeds available in our coast. Apart from this, culture of certain seaweeds is being taken up in Mandapam area to meet the requirements of various factories.

Although the present Seaweed industry in out country is mainly concentrated in the production of Agar there is scope for developing the other products from seaweeds. The Seaweed industry supported by the research institutions is developing along proper lines but we have still a long way to go in the fuller utilisation of this cheap raw material in our country.

WITH BEST COMPLIMENTS FROM

THE COIMBATORE DISTRICT
CO-OP. SPINNING MILLS LTD.,

Post Box No. 8, DHARAPURAM-638656.

(COIMBATORE DT.)

SPINNERS OF QUALITY
YARN IN HANKS
AND
CONES / COTTON
AND
STAPLE FIBRE

THE S.T.I. HELPS
Backward Class Students

The Special Training Institute for Backward Classes was established by the Government of Tamilnadu in 1971 on the recommendation of the Backward Classes Commission, to coach candidates belonging to the Backward Classes for the I.A.S. and Allied Services examinations.

These competitive examinations require on the part of the candidates a good command of the English language (both written and spoken), a capacity to think and express coherently on subjects of common interest, and proficiency in five/two/or three optional subjects of the M.A. or M.Sc., Standard, according as they opt for category I,II or III Services respectively.

Thousands of candidates from all over the country write these examinations. Of these only those whose performance in the written examination is above a certain prescribed standard are called for the oral test.

For example if 20,000,candidates write the examinations, from all over India, only about 500 (2.5%) are called for Interview for I.A.S., and only 1200 for Category II and III (6%)

After the Interview, candidates are ranked according to the total marks including the marks obtained in the oral test, and selection is made according to the rank and the number of vacancies in the respective services.

Thus, of the 500 candidates called for interview only about 140 may be finally selected. It would thus be clear that not even one in hundred has a chance of being selected for the I.A.S., from among the candidates who write the examinations.

Candidates belonging to the Backward Classes require coaching and hard work even for qualifying in the written test. For ultimate success, they must be given intensive training, a lot of chiselling and a good deal of grooming.

In this connection it may be remembered that there is no reserva-

But is choosy about merit

tion for the Tamilnadu Backward Classes in the All India Services as there is for Scheduled Castes and Scheduled Tribes.

The Institute, has so far trained Two batches, and the third one is undergoing training. The first and second batches of trainees, were admitted with M.A, M.Sc., or B.L. degree irrespective of their grades in the University Examinations. For the third batch a minimum performance in the University examinations was prescribed as follows :—

M.Sc.,.. 60% and above

M.A. .. 50% and above

Nature of Training Given :

Trainees are given guidance regarding the choice of optional subjects, and they are classified into different groups according to the optional subjects chosen.

The trainees are initially given some lectures on English grammer and Composition ; they are given gradual exercises in grammer and composition. As far as possible mistakes committed by the trainees are pointed out to them individually. As soon as they reach some proficiency in English composition, they are given weekly exercises in answering question papers based on the I.A.S. Model.

At the beginning of the Course, a list containing topics for Essays is given to each trainee. The trainees are required to open a note book with space allotted for each topic. As they read books newspapers and periodicals, the trainees take notes under the respective titles. Guest lectures are arranged on Specific topics. There is also a weekly group discussion class on one of these topics.

The students write an essay on one of these topics for three hours every week. The essay is corrected by the Professor of English and mistakes pointed out.

Lectures are given in Geography, General Science, Current affairs, Ghandian Thought and Indian Constitution by Competent persons. There is a weekly test, when the trainees answer a full General Knowledge Question Paper on the I.A.S. Model.

The Professors in charges of the subjects study the syllabus, and the question papers of the previous years. They give lectures whenever necessary, give assignments in other cases, and conduct periodical tests.

During the Course, the Principal interviews a student everyday for half an hour, encouraging him to talk freely in English. The trainees get practice in talking to an audience during the weekly group discussion hours. There are also periodical model interviews conducted with the help of I.A.S./I.P.S. Officers and Professors.

Physical Fitness

The Trainees are offered facilities for playing games in the evenings at the YMCA College of Physical Education. This is to keep them in top physical fitness.

THE TAMIL NADU CO-OPERATIVE HOUSING SOCIETY LIMITED, NO. X-406, MADRAS-7.

" Venkataswamy Vagheesam Nilayam,

No. 14, Ritherdon Road, Vepery, MADRAS - 600007.

Telegrams: "HOUSEBANK " Post Box No. 486 Telephone No. 30800

President :
THIRU PALANIVEL RAJAN, B.Sc., B.L., M.L.A.,

Vice-President :
THIRU P. KASTHURI PILLAI

Treasurer :
THIRU S. PALANISWAMY, M. A.,

—oOo—

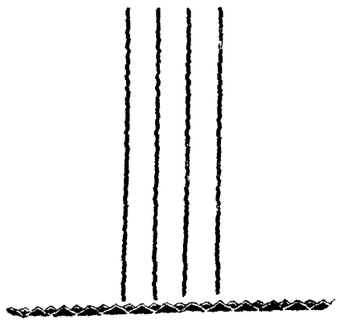
Authorised Share Capital	—	Rs. 2·5 crores
Paid up Share Capital	—	Rs. 2,09,07,300
Loan outstanding against Primary House Mortgage Societies and Building Societies		Rs. 12,40,07,729

Long term Loans for Construction of new houses, additions and improvements etc., repayable in twenty years are granted to individuals through the Primary House Mortgage Societies and the various types of Building Societies in Tamil Nadu for the following purposes.

		MAXIMUM INDIVIDUAL LOAN
1. Construction of new houses	—	Rs. 25,000
2. Improvements, additions and alterations to the existing houses		Rs. 10,000
3. For minor repairs	—	Rs. 1,000

P. K. PATHMANATHAN, B.A., H.D.C.,
Joint Registrar and Secretary.

WHAT'S SO SPECIAL IN THE SPECIAL TRAINING INSTITUTE ?



By

A "Backward class" Student.

The address reads 'Special Training Institute, No. 3, III Cross Street, West C.I.T. Nagar, Madras-35. I wonder how many people are aware of its existence. It will not be surprising if only a few know about it. I myself, who am a student of this Institute now, came to know of it only last September, after seeing the advertisement in the newspapers. I take it as a great privilege that I have been given this opportunity to write about the Institute and the valuable service it does to the youth of backward classes and thus make more people know what is really going on within the four walls of the STI.

Some people may opine that such an institution is not at all necessary. They may cite the example of the present IAS officers who have managed to get through without any such guidance. But the present situation is not the same as before. Statistical data will show that every year as many as 20,000 candidates appear for the I.A.S. examinations. The competition has been made more tough by the existence of private institutions which offer coaching to the candidates. These institutions expect one to pay through the nose and hence only the affluent candidates can afford to avail their help. So it is a godsend to the backward community students that such an institute has been established. The selected trainees are given a stipend of Rs. 80/- per month towards ; their boarding and lodging expenses. Most of the gentlemen trainees are accommodated in the Institute building itself. The rest stay at the Guindy Engineering Hostel while the women trainees are given accommodation at Presidency Women's Hostel. The latter category is given an additional amount of Rs. 15/- per month to meet their transport charges.

The coaching offered at the Institute follows an impeccable pattern. The candidates are given ten months' vigorous trainiog starting from November 15th of the year previous to the year of interview. In the I.A.S. and allied services examination, candidates have to take three compulsory papers, namely, Essay, General English and General knowledge. The first two are handled by a full-time English professor. Essay writing is no joke when we remember that a particular topic has to be developed concisely, cogently and consecutively for 3 hours. One cannot be disciplined in this art at a moment's notice. It needs practice. We are made to write essays every week. The whole week is at our disposal to collect the required material. In addition to this, a guest lecturer gives weekly lectures on topics of current interest. His lectures give us the bare outlines which we have to substantiate by our personal endeavour.

General English is an equally tough paper where a precis, a letter-writing and a comparison of two speeches should be done within three hours. The extent of the difficulty here will be evident when I confess that in the beginning it took us all the three hours to do the precis alone. We also learn to improve the standard of our English by writing such weekly assignments. This proves an asset not only for these two papers, but for all the other five papers also, because all the papers are written in English. So it is imperative that one's standard of English be up to the mark.

The General knowledge paper requires a lot of preparation. There is a professor who guides us as to how we should prepare ourselves for this paper. We are asked to read all the standard newspapers and journals which are made available to us. This paper demands that we are conversant with the current affairs and also that we have a working knowledge of science, geography and history. Our Principal handles general science and geography in such a manner that even the students of Humanities are able to understand the fundamentals. We are given lectures on International Relations and on the Constitution of India by part-time professors. Our knowledge is assessed

Selvi Menaka Christopher, M.A.

HOW BIG IS THE HELP OF S.T.I. TO THE YOUTH?

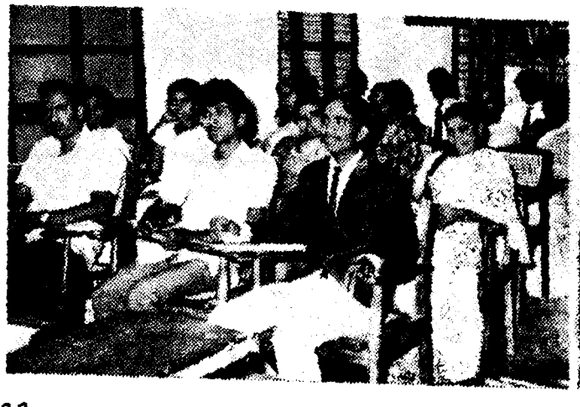
every fortnight when we take test papers on the model of the I.A.S. question paper.

Besides these three, we have to prepare for five more papers for the I.A.S. examination. Full time professors have been appointed for history and mathematics. As there is no other way but to choose subjects other than one's own all tend to choose history paprs. Two full-time professors and a part-time professor handle European and Indian history. A professor of law has been appointed to guide the law graduates. A Tamil lecturer gives valuable guidance for the Tamil paper. Other part-time lecturers ably handle the subjects of International Relations, Economics and Zoology.

It has to be remarked here that besides the valuable coaching given for the various subjects, the trainees are given opportunities to develop their personalities. Group discussions are held every week under the chairmanship of our Principal. The trainees learn to express their opinions to an audience without fear or shyness. The Principal personally interviews each trainee and in addition to testing his knowledge-gives advice as to how he should conduct himself before an interview board. To make the trainees familiar with the art of interviews, they are given model interviews by some I.A.S. Officers of the city. Thus the trainees have better chances of coming out successful after running the guantlet of these viva-voce tests.

After all that is said and done, I accept that it finally rests with us how we fare in the examination. We have been told in no uncertain terms that genius is 99% perspiration and 1% inspiration. It is perhaps the best point about this Institute that it does not try to spoon-feed the trainees. We are given guide lines only. And I can assure you that we will make the best use of it. Certainly, the money spent on us is *not* going down the drain.

In the pictures below is seen a class of the special Training Institute, while in the adjacent one some students are seen meeting the Principal with their "doubts".



MEDICAL EDUCATION IN TAMIL NADU

The Medical Education Directorate has under its control 8 Medical Colleges—3 in Madras, 1 each at Madurai, Thanjavur, Chingleput, Tirunelveli and Coimbatore. The present annual intake of students to the State Medical Colleges is 1,015. Apart from M.B.B.S., Post Graduate Degree and Diploma Courses in various disciplines in Medicine are conducted at Madras Medical College, Madras Stanely Medical College and Madurai Medical College. It is proposed to develop the Thanjavur Medical College, Thanjavur as a Post-Graduate institution by providing more facilities and introducing the Post-Graduate Courses in certain discipline in Medicine.

The B. D. S. and B. Pharmacy courses are available at Madras and Madurai Medical Colleges respectively with the number of admission of 35 for B. D. S. and 25 for B. Pharmacy. The average number of Medical Graduates who are absorbed in State Services is roughly 300 every year, while the passing of new graduates are nearly 900. So, this Government would consider the scheme to restrict the admission in Medical Colleges to the *optimum* standard prescribed by the Medical Council of India of 100 annual admissions to each Medical College and specialising proper equipment and staffing of the new Medical Colleges opened.

Further, in commensuration with the needs of the State Services and qualified teachers required to the State Medical Colleges and to render specialised treatment in District and Taluk Hospitals, it is proposed to convert the Madras Medical College into a Centre for Post-Graduate Education and Research on a par with the All-India Post-Graduate Education and Research Institutes. With this object in view, a sum of Rs. 150 lakhs has been earmarked in the Fifth Five Year Plan Budget which is to start its first year in the current budget year.

Industrial training is neither a part of the curriculam of B. Pharmacy Degree Course nor is it compulsory for those who seek Government jobs in manufacturing concerns. However, it is proposed to create 30 posts of apprentices in various manufacturing concerns and also in the King Institute, Guindy, and Government Medical Stores Depot on payment of a stipend of Rs. 300 per mensem to each Pharmacy Graduate for the period of 18 months. This will enable all those who want to take up Industrial Training to do it on a Government stipend. The Pharmacy Council requires that a Pharmacist should undergo 750 hours of training in a recognised pharmacy for registering with the Council. It is proposed to post the B. Pharmacy students during the annual vacation period to hospital dispensaries for the period of three months to provide them training in dispensing medicine. This will enable the Pharmacy Graduates to register as Pharmacists under the Indian Pharmacy Act.

It is proposed to start two Regional Units-one at Madras and the other at Tiruchirappalli-to cater to the surrounding Regional Hospitals. If these Hospital Pharmacies are established, this will not only provide more employment opportunities to the Pharmacy Graduates but also provide standard drugs to the Hospitals. To improve the Pharmacy Training in this State, it is proposed to start M. Pharmacy Course at Madurai Medical College, Madurai with the concurrence of the Madurai University.

POST-GRADUATE EDUCATION

Post-Graduate studies in D.M. Cardiology was introduced in the Madras Medical College in this year. A sum of Rs. 56 lakhs has been provided in the Fifth Five-year Plan period as a 'Master Plan' to house the various departments like Vascular Surgery, Endorcinology, Metabolism, Nephrology, Physical Medicine and Rehabilitation Services. 217 candidates have taken Post-Graduate studies in various disciplines and 233 for the Diploma courses.

ENHANCED PLAN PROVISION FOR MEDICAL AND PUBLIC HEALTH SCHEMES

Mainteance of the health of the community with adequate medical care to the people is a primary factor in a welfare state. The Government have been striving to make the Medical Services more efficient and progressive as the victory of a democratic administration relies on the sound health of the people. The general policy of the Government during the past Four-Five-Year Plans is to expand the medical facilities to all the rural areas by appointing more personnel such as Medical Graduates, Nurses, Pharmacists and Para-medical Workers, etc. In order to improve the National Health, the Government have also popularised the Family Planning methods with full vigour.

PLAN PROVISION

The Government have invested a sum of Rs. 248 lakhs during the First Five-Year Plan towards provision of Medical Services and Medical Education facilities for the benefit of the people. This has been increased to Rs. 459 lakhs during the Second Five-Year Plan and Rs. 644 lakes during the Third Five-Year Plan. In the Fourth Five- Year Plan the outlay has been stepped up to Rs. 17,31·59 lakhs. The Budget Estimate provision in the plan for 1974-75 for the State is Rs. 453 lakhs.

During the Fifth-Year Five Plan, provision to the extend of Rs. 2,104 lakhs under the State's schemes and Rs. 30.50 lakhs under the Centrally Sponsored Schemes have been proposed under various Medical and Public Health Schemes.

TAMIL NADU STRATEGY FOR INCREASED FOODGRAINS PRODUCTION

The target of production of all foodgrains (rice, millets and pulses) for Tamil Nadu during 1973-74 was fixed at 79 lakh tonnes and actual production is estimated to reach 74.10 lakhs metric tonnes. Therefore the target for production of foodgrains during 1974-75 has been reduced to 77 lakh tonnes.

During 1974-75, the emphasis will be on production and distribution of certified seeds of paddy, millets, pulses and oilseeds. The Intensive Agricultural Area Programme is now implemented in five districts of Chingleput, Coimbatore, Madurai, Tirunelveli and Tiruchirappalli. This programme will be extended to one more district in 74-75. Considerable attention will be given to multiple cropping, better water management practices and providing timely and adequate plant protection measures. Sufficient credit also will be made available through institutional sources. A beginning will be made in exploiting the economics of large scale farming by starting a State Farms Corporation which will establish large scale farms in blocks of 40 to 400 hectares in different parts of the State. Development of agro-industries in the vicinity of these farms will be encouraged.

Distribution of improved seeds

The distribution of improved strains of different varieties of paddy and millets is one of the important functions of the Agriculture Department from its inception for increasing production and for the maintenance of quality. The estimated production in 1973-74 is 3,700 tonnes of primary seeds of paddy, 10,000 tonnes of secondary seeds of paddy, 60 tonnes of primary seeds of millets and 1,828 tonnes of secondary seeds of millets (including hybrid millets) There are, at present, 55 State Seed Farms in the State including one large scale farm at Anna Pannai Kudumiamalai. The total area of State Seed Farms at present is 5,135 acres of which 3,897 acres are cultivable. During 1974-75, the seed multiplication programme is to be modified according to the revised policy. A quantity of 9,240 tonnes of certified seeds of paddy is to be produced during 1974-75. Out of this 3,500 tonnes are expected to be produced in the State Seed Farms and the balance of 5,740 tonnes are to be produced in 5 Seed Centres, viz., Villupuram, Madurai, Tiruvarur, Coimbatore and Tirunelveli in farmers' holdings under the supervision of technical staff. Similarly a quantity of 472.5 tonnes of Cholam and 112.00 tonnes of ragi will be produced in the State Seed Farms for distribution to ryots as certified seeds. As regards hybrid maize and hybrid bajra the Department is to produce 1/3 of the estimated requirements leaving the balance to private trade. The State Seed Farms are to produce 100 tonnes of maize and 625 tonnes of hybrid bajra on the departmental side in 1974-75.

State Seed Farm at Pattukkottai was converted into a multicrop Research Station with a view to study promising strains of paddy, millets and oilseeds and evolve a suitable cropping pattern for East Thanjavur District. For evolving high yielding and short duration varieties of pulses in blackgram and greengram, a scheme was implemented at Aduthurai on 9th November 1972. Studies on response of pulses to foliar application of nutrients, bacterial fertilisation, best time of sowing, control of pests and diseases and new introductions are being undertaken. The scheme of maximisation of pulses is being implemented for production of breeders seed and foundation seed in redgram, greengram and blackgram and also step up high levels of pulses production by suitable Rhizolium inoculation.

AGRICULTURAL PRODUCTION.

The anticipated production level in 1973-74 is 57 lakh tonnes rice, 15 lakhs tonnes millets and 2.10 lakh tonnes of pulses, 11.00 lakh tonnes of gur in case of sugarcane, 11.50 lakhs tonnes of oilseeds, 0.72 lakh tonnes of lint cotton. Total production in 1973-74 i.e., 97.22 lakh metric tonnes represents a 3.1 per cent increase over 1972-73 production of 94.23 lakh metric tonnes. Corresponding anticipated figures for 1974-75 will be 59 lakh tonnes, of rice, 15.670 lakh tonnes of millets, 2.30 lakh tonnes of pulses ,11.30 lakh tonnes of gur, 12.07 lakh tonnes of oilseeds and 0.76 lakh tonnes of lint cotton.

AGRICULTURAL REFINANCE CORPORATION

In 1974-75, the following Schemes as approved by the Agricultural Refinance Corporation, will be implemented :—

1. Two Coconut Schemes, one in Madurai district to cover 5,000 acres with a financial outlay of Rs. 137 lakhs and the other in Kanyakumari district to cover 3,500 acres at a cost of Rs. 122.50 lakhs.
2. A Cocoa Scheme in Kanyakumari district to cover 750 acres at a cost of Rs. 7.50 lakhs :
3. A Grapewine Scheme in Madurai district to cover 1,000 acres at an estimated cost of Rs.100 lakhs and
4. Three Cashew Development Schemes in Tiruchirappalli, Ramanathapuram and South Arcot districts to cover 5,000 acres, 15,000 acres, and 10,000 acres at an estimated cost of Rs. 20 lakhs 60 lakhs and 40 lakhs respectively.

In addition to the above schemes, the following schemes are also under consideration :—

1. Coconut Schemes in Chingleput, Tirunelveli and Coimbatore districts to cover 1,500 acres each with a financial outlay of Rs. 60 lakhs, Rs. 35.25 lakhs and Rs. 30 lakhs respectively.
2. A Geranium Scheme to cover 2,000 acres at a cost of Rs. 60 lakhs ;
3. Two Coffee Schemes in Salem and the Nilgiris districts to be implemented to cover 250 acres and 2,500 acres at a cost of Rs. 7.50 lakhs and Rs. 75 lakhs respectively and
4. Animal Husbandry Schemes like Poultry Development in Coimbatore and Salem districts each at an estimated cost of Rs. 18 lakhs, establishment of mixed Farm Units in the Nilgiris and Coimbatore districts at an estimated cost of Rs. 18.45 lakhs and Rs. 11.25 lakhs respectively.

MODERNISATION OF POLICE FORCE IN TAMIL NADU

The scheme " Modernisation of Police Force " is intended to increase the efficiency of the Police Force, and to meet the complex problems in a changing society. In this connection a good number of recommendations made by the Police Commission have been accepted by the Government for implementation. The Government of India have also sponsored a scheme for modernisation of the Police Force and for giving financial assistance from 1969 onwards. So far under the scheme the Government have sanctioned Rs. 189.25 lakhs towards purchase of vehicles, wireless equipment and scientific aids, besides recurring expenditure of Rs. 21 lakhs by way of salary to the personnel, who man those equipment, etc.

Under the scheme, vehicles, were augmented to meet the requirements of the sub-divisions, circles and Police Stations.

COMMUNICATIONS

The intension of the Government is to link all the Police Stations with District Headquarters and the District Headquarters with the State Headquarters by H.F. and V.H.F. network. As on 1st October, 1973, 300 Police Stations have been linked with their respective District Headquarters. The remaining Police Stations are expected to be linked by the end of 1975. The State Headquarters has been linked with 17 Police Districts by V.H.F. Radio network to facilitate both voice and teleprinter transmission. The Government are intending to establish a 120 channel Microwave Trunk line in the place of the present V.H.F. network consequent on the increase in traffic between State and Districts.

As on 1st October, 1973 out of 816 Police Stations, 620 Police Stations have been provided with Posts and Telegraph Telephones. Facsimile transmission facilities are to become operational between Madurai and Madras and Coimbatore and Madras shortly.

The Government have decided to equip all the districts with a scientific aids for effective maintenance of law and order and detect the crime and criminals. In that view, the State Forensic Science and Chemical Laboratory is being provided with sophisticated equipment. As many as 17 fully equipped Mobile Forensic Science Laboratory Units have been provided to 17 Police districts. These units are yielding impressive results in investigation. Photo sections have also been sanctioned to 17 Police districts. Single Digit Finger-Print Sections have been opened in 17 districts.

POLICE COMPUTER WING

The Government have sanctioned the Police Computer Wing where data on about 5 lakhs professional crimes and 3 lakhs professional criminal have been collected, recorded and incoded. Three lakhs of finger prints are also being computerised. The computerisation of crime, criminals and finger print will be of immense use to the Police in the entire State to detect crime and criminals quickly.

POLICE RADIO BRANCH

All the District Headquarters are linked with Madras which has 4 Control Stations known as Central Range, Southern Range, Western Range and Northern Range Control Stations. Besides the above, there is the Madras City Police Radio network and the Tamil Nadu Special Police Radio networks. The flood emergency stations are in Madras City, Lower Anicut, Grand Anicut, Thanjavur, Bhavani Sagar, Thekkady, Mettur Upper Anaicut, Ramanathapuram, Madurai and Tirunelveli which are used during monsoon and for communication regarding release of water from dam, etc. There are 13 Static and (43—12) 31 Sub-Divisional Stations (consequent on the provision of Radio Telephone facilities at Police Stations, Radio Stations at 12 Sub-divisions, have since been closed) along with 20 T.P. Stations, 4 V.H.F. Stations, 10 City Control Rooms and 10 Flood Emergency Stations attached to the Tamil Nadu Police Radio Network. The 31 Sub-Divisional Stations were utilised during all important festivals, bye-elections, cyclones, strikes and during the visits of V.I.Ps. and in all emergencies. At present Police Control Rooms are functioning at Madurai, Tiruchirappalli, Coimbatore, Chingleput East, Madras City, Tirunelveli, Salem, Vellore, Cuddalore (South Arcot) and Thanjavur (West). The Government have decided to open control rooms in remaining Police districts also in the State during 1974—75.

Stolen articles recovered by Police are kept on display

Phone : 39

CO-OPERATION PROMOTES PROSPERITY

The Naduveerappattu
HANDLOOM WEAVERS' CO-OPERATIVE PRODUCTION AND SALE SOCIETY LTD.

No. E. 1623

Naduveerappattu post. (Via) C. N. Palayam-607102.
SOUTH ARCOT DISTRICT.

Manufacturers of Best Hand-Loom Shirtings. Dealers in retail and wholesales at low and economical prices.
60'' 40'' × 44 / Plain shirting, Classic shirting, Lungis, and Masquito Nets, woven by highly skilled weavers using the coloured yarns dyed in our own Dyeing Factory.

Our clothes are available for purchase in almost all co-optex show-rooms in Tamil Nadu and in other States as well in India.

We feel glad to announce that we run a Weavers Training Centre to train the weavers of Co-operative Societies in modern techniques.

P. VAITHINADHA MUDALIAR, *Vice-President.*
R. P. PALANI CHETTY, *Manager.*
K. R. SELVARAJ, *President.*

Directors:

R. ARUMUGAM, P. RAJUVEL, K. VAIYAPURI, P.S. ARUMUGAN, AND A. VAITHILINGAM.

prescribed rights delegated to it and the financial resource capability it possesses.

WHICH IS A GOOD BUDGET ?

"An argument has been raised here. That relates to whether a deficit or surplus budget is good for us. In the period beginning from the dawn of 19th century lasting upto 1930, the opinion held good that preparing and presenting deficit budget was a dangerous preposition and that it would lead to price hike. After that, a diametrically contradictory view gained currency that not only was a deficit budget considered good but also that a surplus budget meant ruinous to the growth of an economy. Instead of going into these polemics, we must look at the gap between the receipt and expenditure in the budget, the actions taken to fill up the gap and the consequential effects on the economy and on the status of people belonging to the rock-bottom in the social hierarchy.

"To-day while preparing the deficit budget, the State has to bring in some additional taxation measures to close the deficit gap in the budget. But on the other hand, the Union Government, while preparing a deficit budget, takes recourse in a liberal measure to put in circulation more money in addition to the imposition of additional taxes. The Centre is invested with such enormous powers whereas the States are not.

"It must also be realised that the hike in the price level and the acuteness of unemployment problem are the direct consequential effects of the budget of the Centre. Instead, to say that the State budgets imposing additional taxes to close and contain the deficit gap as near as possible causes inflation in price trend and acute unemployment problem is out of tune with the reality.

NO ADDITIONAL IMPOST — ONLY RATIONALISATION IN TAX SYSTEM

"This Government subscribe that and stick to the taxation policy more taxes should be imposed on the capable, wealthy and well-to-do class of people and not on the weaker and poorer sections of people and that the additional imposts, instead of causing spiral in price level and undue hardships to other economic activities, should restrain them. On this basis additional imposts to the tune of Rs. 10 crores have been introduced in the budget so as to meet the budget deficit. Of these additional imposts, a sum of as much as Rs. 6.5 crores is to be derived from the rationalisation of the Motor Vehicle tax and the balance of Rs. 3.5 crores is to be realised through rationalisation of commercial taxes.

"In deference to the long-pending request of the business community, the multi-point taxation has been done away with in respect of as many as 59 items while transfering them to single-point taxation. In addition, the taxable limitation on annual turnover has been raised from Rs. 25,000 to Rs. 50,000. And there is the increase in surcharge from 5 per cent to 10 per cent which has been given effect to on those whose yearly business turnover exceeds Rs. 10 lakhs. **We have imposed additional taxes to the tune of Rs. 10 crores to adjust the budget deficit. To say that we have imposed new levies is not correct. On the other hand, we have only ushered in rationalisation in our taxation system and structure.**

FIXATION OF DEARNESS ALLOWANCE

"There are certain goods prescribed as the basis for fixation of dearance allowance. As many as 100 items considered as basic necessities of human life such as pulses and cereal varieties, oils, etc., have been listed for fixation of dearance allowance. Among these indispensable necessities marked for fixation of dearance allowance we have rationalised the tax system over 59 items. 'No' would be the forthcoming answer to the query whether the modification in tax system affects these unavoidable human needs and necessities. On the other hand, while simplifying the tax procedure for collection conveniences by bringing the goods of indispensable human necessities under single-point taxes from multi-point taxes at the existing or reduced rates, we have enhanced taxes only on the items of luxury, namely 10 percent on steel, plates, linoleum, etc., 15 per cent on polished stones and its ancilaries, carpet of big sizes, lift, mosaic tiles, etc., 25 per cent on molasses, and Indian-made liquors and 30 per cent on Aristham. I put forth all these facts simply to point out that to say that the Rs. 10 crores additional impost have affected the poor is not in order.

"To argue as if additional taxes have been imposed in Tamil Nadu alone does not hold water in the present context. With the available records and reports received by me, I wish to place before you all the budgets of other States. The Maharashtra budget shows a revenue receipt of Rs. 693 crores as against the total estimated expenditure of Rs. 728 crores, thus leaving a deficit gap of Rs. 35 crores to be met by additional imposts which is in the order of Rs. 31 crores. In West Bengal, new levies to the extent of Rs. 24 crores have been imposed to balance off the Rs. 19 crores budgetary deficit, its budgetary estimated receipt being Rs. 435 crores as against the estimated expenditure of Rs. 455 crores for 1974-75. The Karnataka budget shows a surplus of Rs. 4 crores. In spite of the surplus, the Karnataka Government has proposed to levy additional taxes to the tune of Rs. 19 crores in the budget for 1974—75. Though full details of the Punjab budget are not known to us, the available information is that that Government has imposed fresh taxes to the tune of Rs. 17 crores to offset the budgetary deficit of Rs. 21 crores. Viewed in this light, the levy of additional imposts to the extent of Rs. 10 crores to meet the deficit of Rs. 12 corres in our budget for 1974—75, its total receipt and expenditure being Rs. 470 crores and Rs. 483 crores respectively, is not high and heavy in comparison with that of other States. I am in duty bound to post the people of Tamil Nadu with this salient fact through this august House.

STATE HAS EVERY RIGHT TO PROTEST AGAINST CENTRE

"A good number of opposition members participating in the budget debate, in their speeches, have taken much pain to associate this Government with one generalised fault that the budget stands as a monument of accusations against the Union Government. But as a sparkling light in the otherwise dark atmosphere, the leader of Congress (O) party Thiru Ponnappa Nadar

spoke on the subject as follows :— "The Centre should allot the due share of the State without fail. It should not render injustice to the State in the financial allocation. If injustice is meted out to the State, the State has every right to protect, press and fight for its demand. And the State should also do that lest the Tamil society would collapse" We could not forget that these words are balm to our ears. I request the members of this august body not to take and treat the accusation against the Centre presented in the budget on par with the accusations of an M.P. raised in the Parliament in course of his speech at variance with the politics of the power-that-be at the Centre. Raising accusation against the Centre's failure to allocate the State its due share does not amount to accusing the Centre. It is necessary for the sake of protecting the interests of the 4.5 crores Tamils irrespective of their political affiliations.

" We have said to the effect that cattle feeds have been exempted from taxation and that we have already provided a temporary exemption to oils from tax levies which is still in force. But we must realise and reckon with the fact that we would get the answer 'No' to the question whether those exemptions have caused any decline in the price level of those goods. We must also keep this fact in our mind that only bigger business people have by and large reaped benefit out of those exemptions and a congenial circumstance has not as yet arisen in favour of consumers to enjoy the benefit accuring out of tax exemptions. Notwithstanding this unsatisfactory and unfavourable condition obtaining now, we have brought down the impost on oils and oil cakes to 3.5 per cent under single point taxation system as against 7 per cent levy if worked out under the multipoint taxation as at present. But in this context, we must bear in mind that the benefit out of these reduction in taxes does not accrue to the people at large.

" We could prepare a budget without deficit by effecting reduction in allocation to development schemes. But I would like to point out here and now **that a Government weeded to the principles, policies and programmes of untampered and unhampered growth of development schemes cannot but have recourse to additional imposts.**

INJUSTICE DONE TO US IN PLAN ALLOCATION

" The first year of the Fifth Five Year Plan has to begin on 1st April this year. But we read in the newspapers that the people at the Centre have not as yet come to firm and final conclusion on the Fifth Five Year Plan and that they are yet to give a final shape to the Plan document. When we read the news that three or six months may elapse before a final decision is taken on the Plan document, doubt automatically creeps in our mind whether at all we are in a position to implement the Fifth Plan in right earnest. Entertaining such doubt would not tantamount to pointing out the accusing finger at the Centre.

"At all India level a sum of Rs. Twentyfive thousand crores had been fixed as outlay for the Fourth Plan, whereas double that amount *i.e.*, Rs. 50,000 crores has been estimated as outlay for the Fifth Plan. While the outlay allocation for the final year of the Fourth Plan for our State is Rs. 129 crores, the Plan outlay sanctioned for our State for the first year out of the 50,000 crores of the Fifth Plan, is only Rs. 118 or Rs. 108 crores. Doubting whether the lesser Plan allocation to our State is not an act of injuctice would not amount to accusing the Centre.

" It is said the loan instalment amount payable by the State to the Centre to the extent of Rs. 87 crores has been postponed during the period of Fifth Plan. But this amount has been included in the first year Plan outlay for the State. It has become our painful duty to point out that the State has been dealt a severe blow in the matter of lesser financial allocation which is lesser than even the allocation made for the last year of the Fourth Plan.

" Take the Award of the Finance Commission. This is the current topic and the latest injustice to the State. It has fixed upon the basis of backwardness of the States in the matter of Education, Public Health, etc., for quantum of grants to some States. On this new basis the grant has not been given to the States of Tamil Nadu, Gujarat, Kerala and Maharashtra. Under this head U.P. has received Rs. 290 crores ; Bihar Rs. 166 crores - West Bengal Rs. 72 crores, Orissa Rs. 57 crores, Andhra Rs. 52 crores, M.P. Rs. 50 crores and Karnataka Rs. 27 crores. But Tamil Nadu, Gujarath, Kerala and Maharashtra have been denied this grant on the ground that they have incurred higher scale of expenditure on education, public health, etc., in their States. Requesting the co-operation of the opposition parties by the State in its rightful fight against the Centre to get its due share in the Grant would not amount to raising the banner of accusation against the Centre.

WHAT IS NON-PLAN EXPENDITURE?

"Thirumathi Anandanayaki raised one point that all the States must reduce the non-plan expenditure which is ever on the increase. What is non-plan expenditure? In a five Year Plan, the first year plan expenditure turns into a non-plan expenditure during the second year of the same plan period. Suppose we employ thousand teachers in the first year of the Fifth Plan. The expenditure met on this account becomes a non-plan expenditure in the second year of the Plan. If we accept the argument of Thirumathi Anandanayaki that non-Plan expenditure should be reduced then we will have to terminate the services of the teachers appointed last year. As such non-Plan expenditure could not be reduced.

"Our friend, Thiru Vadivelu, CPI member, while speaking on the budget, asked how much lands have been acquired under the Land Ceiling Act and their whereabouts. Under the then Land Ceiling Act in force which prescribed the land possession limitation at 30 standard acres, upto March 1967 the extent of lands declared as excess was 24,194 acres out of which only 16,350 acres were taken possession by the Government. But no land was released to farmers till then. And then in 1970 the ceiling was brought down to 15 standard acres from 30 standard acres plus cancellation of exemption to sugarcane cultivated lands and pasture lands, provided for in the previous Act. As on 31st January 1974, the extent of lands declared as excess was 90,284 acres, out of which as much as 20,429 acres of land could not be taken possession on account of pending suits in courts. In the case of 2,306 acres notices have already been served and they are ready to be taken possession.

" Possession has already been taken over in the case of 67,519 acres, and out of this as much as 62,387 acres have already been distributed among the lessees and the landless people. In the case of 39,970 acres, the process of distribution has been completed with the issue of Pattas to the assignees.

WHY JOINT SECTOR?

The acceptance of the concept of Joint Sector by this Government is viewed with suspicion, it seems to me. Thiru Ponnappa Nadar and the members of CPI, ADMK and other parties in this House spoke about this with particular reference to the SPIC at Tuticorin. SPIC is the first Joint Sector venture in the country. They also asked if it is not possible and feasible to have it under Public Sector. At the outset, we proposed to the Centre to run this Rs. 85 crore fertilizer concern under the public sector. But the Centre refused to give consent. It is impossible to start and run such a costly Unit by the State. Further all the financial institutions though they are under the control and guidance of the Centre seemed to be ready to extend financial assistance only if and when the Unit was started with the collaboration of private parties. The State therefore decided to start the Unit in the Joint Sector with the share capital of 25 per cent of its own, leaving the balance share capital to be shared by the private capitalists to the extent of 26 per cent and the public at large to the tune of 49 per cent. It was done with the good and sole intention to see that the whole scheme should not be left to go into the hands of the private capitalists. In this unit the State is capable of enforcing discipline on all sides with its 26 per cent share capital. Even in the Board of Directors, 4 members are the State Government nominees. I have laid bare the actual position to show that we had no other alternative against the heavy odds created by the Centre's refusal to permit the scheme under the Public Sector. And I would like to extend my assurance that the State would spare no effort to ensure perfect maintenance and running of the Unit. Already it has broken all records by commissioning the world's largest urea unit ahead of schedule.

STATE'S SHIPPING CORPORATION

The State sponsored Shipping Corporation also has come under fire. Thirumathi Anandanayaki thinks that we have decided to organise the Shipping Corporation to boost our demand of Autonomy and as a measure of confrontation against the Centre. On the other hand, Thiru Manali Kandasamy, Tamil Nadu Communist Party, has congratulated and complimented the Government on the ground that the setting up of the Shipping Corporation is a bold and adventerous step taken by the Government. Whatever it be, I wish to state that it is not an act intended against the Centre. Though we are as of right obliged to put up fight against the Centre and though we are resolute and determined in our duty to press and protest for our demands against the Centre, and though circumstances of such nature as to go against the Centre have not arisen so far, the responsibility lies more on the Centre than on the State to see that such critical situation does not raise its ugly head at any time and under any circumstance.

" Maintaining and running shipping concern falls under the jurisdiction of powers and purview of the Centre. In the meeting of the National Development Council we asked the authorities at the Centre as to why the shipping concern should not be sanctioned to the States when even the private parties are allowed to do so. On the strength of the reply of the Planning Commission, we have to-day announced the formation of " Poompuhar Shipping Corporation" for which we have allocated Rs. 1 crore this year.

" Why have we done this ? As all the owners of private shipping company belong to Bombay nearly 90 per cent of ships engaged in the transport of goods in the sea throng at Bombay. In order to lessen the concentration of ships in large numbers berthed at the ports of West Coast and to divert them to the East Coast also so as to meet the requirements of East Coast in sea trade in a wider and even scale, we have started the Shipping Corporation. It has been done more in the interests of enhancing and enlarging the spirit of integration and unity of India from Kanyakumari in the South to Kashmir in the North, instead of confining that spirit within the boundaries of Bombay and Calcutta alone.

" Further the Centre has taken a programme-based policy to enlarge the capacity of trade turnover through sea route to the extent of 90 lakh tonnes during the Fifth Five Year Plan. In support of this policy of the Centre and to strengthen it, the Tamil Nadu Government has set up the Poompuhar Shipping Corporation and not to bring fame to the name of Poompuhar nor to see the ships of the Cprporation going around the four corners of the world with the flag of a separate Tamil Nadu.

"These Corporations are brought into vogue not to give chairmanship to the ruling party people but to provide a new dimension and direction in implementation of schemes with extra financial help from Indian financial institutions.

CAUVERI PROBLEM

"Serious discussion was raised about the Cauveri problem. It was feared that the 1924 Agreement would become ineffective after the expiry date. The Agreement expired on 19th February 1974. After that the Cauveri water have not stopped overnight flowing in our region. The expiry date of the agreement does not mean coming to a close of the agreement itself on that date nor is it compulsory that a new agreement should be entered into in lieu of the old one. We approach the problem with a deeper look and serious thought in view of its importance to the whole of Tamil Nadu. And we always used to approach the Centre only with the consolidated opinion of all parties arrived at after serious discussion and debate. We never deviate from this angle of approach towards this problem.

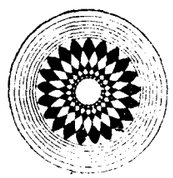
" The Centre set up many a committee on this problematic matter and the Committees have already finished their work. We exhibit much patience over this matter. I don't deny this. But our patience is to point out to others that we attach not a whee bit lesser importance to the integration and unity of the country than others.

Further, this Government is resolute and determined in this matter as it does not want to jeopardise the solution of the problem in practice through much and serious discussion. In this matter, if any dislocation took place in the water Agreement and if the Centre were to take a decision in favour of Karnataka jeopardising the interests of Tamil Nadu, not only the ranks and files of DMK, but also the whole Tamil Nadu would rise as one man against that decision. So we need not entertain any doubt over this matter. Let us hope that the Centre would render justice and let us also anticipate with hope that the Karnataka, Kerala and Tamil Nadu Governments would thrash out the differences and come to a good conclusion inimical to none. With this I wish to close my statement over this matter.

WHAT IS SOCIALISM ?

" Thiru K.T.K. Thangamani spoke in the vein that socialism is not implemented here and that mere nationalisation alone does not amount to socialism in action. I also accept that opinion. Nationalisation alone is not socialism. But we should not lose sight of the fact that nationalisation is a step taken in that direction in our onward march towards socialism. We are doing that now in stages, I have outlined at more than one place in the budget the various socialistic steps taken up for implementation by this Government. And I do not want to elaborate on this point once again here.

The Tamils have entrusted to us to carry out some tasks on their behalf. So notwithstanding the differences in politics and principles among us, I request one and all that they should, putting aside all the differences — political, ideological etc— among us , strive to encourage and enthuse us."



New Bill Promises Real Protection To Hand-looms

The Bill introduced by Industries Minister Thiru S. Madhavan in the State Assembly earlier this week, (April 8—12) to control production, sale and distribution of textiles to protect handloom products, is an effort to insulate the large decentralised weaving sector in Tamil Nadu against periodical and violent fluctuations in the price of raw materials and the onslaught of the organised sector, it is stated.

The bill, which envisages powers for the Director of Handlooms to ban sale of certain textiles made in the mills or powerlooms in the State is to make up for the non-implementation of the reservation of production for the handloom sector.

It is explained that since 1952, Tamil Nadu has been pleading for special protection for the handloom industry which employs a large section of poor and lower middle class artisans. The Centre had notified that it would reserve production for the handloom sector. But this had not been implemented effectively.

With growing unemployment the State Government is keen on keeping this avenue of employment open. In the present economic conditions in the country, this protection is considered absolutely essential and urgent.

The bill seeks to ensure that all dhotis and saris are produced in the handloom sector. At present only certain types of dhotis and coloured saris are reserved for this sector. The bill also wants other textiles like towels and bedspreads reserved for the handloom sector. The State Government seems to feel that without the powers envisaged in the bill implementation of any reservation is not possible.

Industry shares the view that even though the State has a big portion of the spinning mills in the country, very often the mills and handlooms are in crisis due to lack of organisation in the market. Mills often produce the counts that are most profitable and handlooms buy their requirements of special varieties of yarn at high open market prices. At times mills are at the doors of the handloom sector and vice-cersa. The bill wants to do away with this uncertainty.

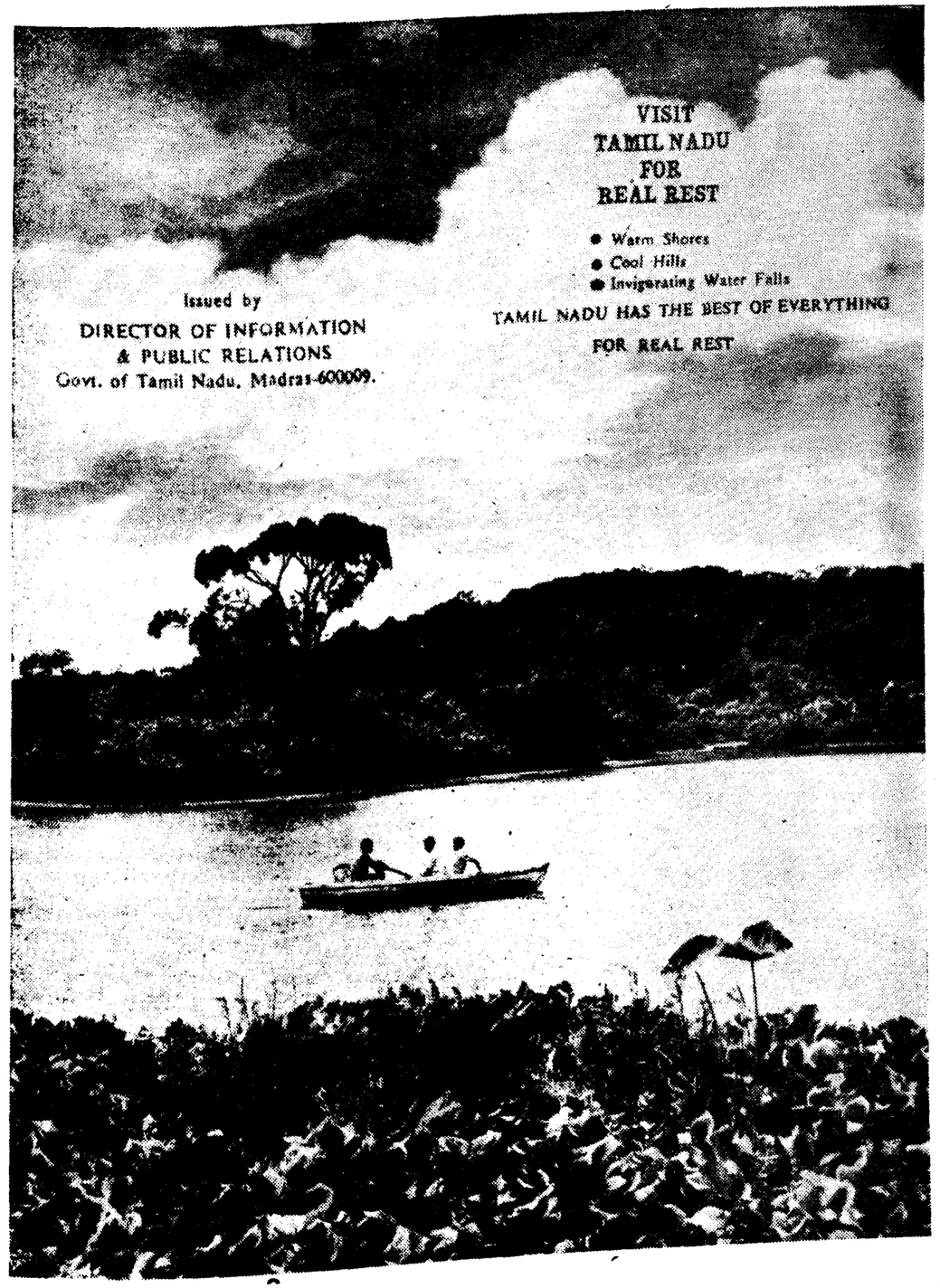
Among other things, the blil seeks to prevent sale of mill or powerloom cloth inside the State. It is pointed out that the handlooms not only produce artistic goods, but they are now equipped to weave mixed fibre cloth as terylene and terricot. They are unable to compete with composite mills.

The State's concerted actionseems to have stemmed out of the fact that reports of several committees in the past have not been implemented. The Santhanam Committee report has not any reaction so far from the Centre, which has appointed on its own, another *ad hoc* committee. Chief Minister Thiru M. Karunanidhi had in the past year represented to the Prime Minister the plight of the handloom industry and demanded immediate action. There has so far been no response to these representation.

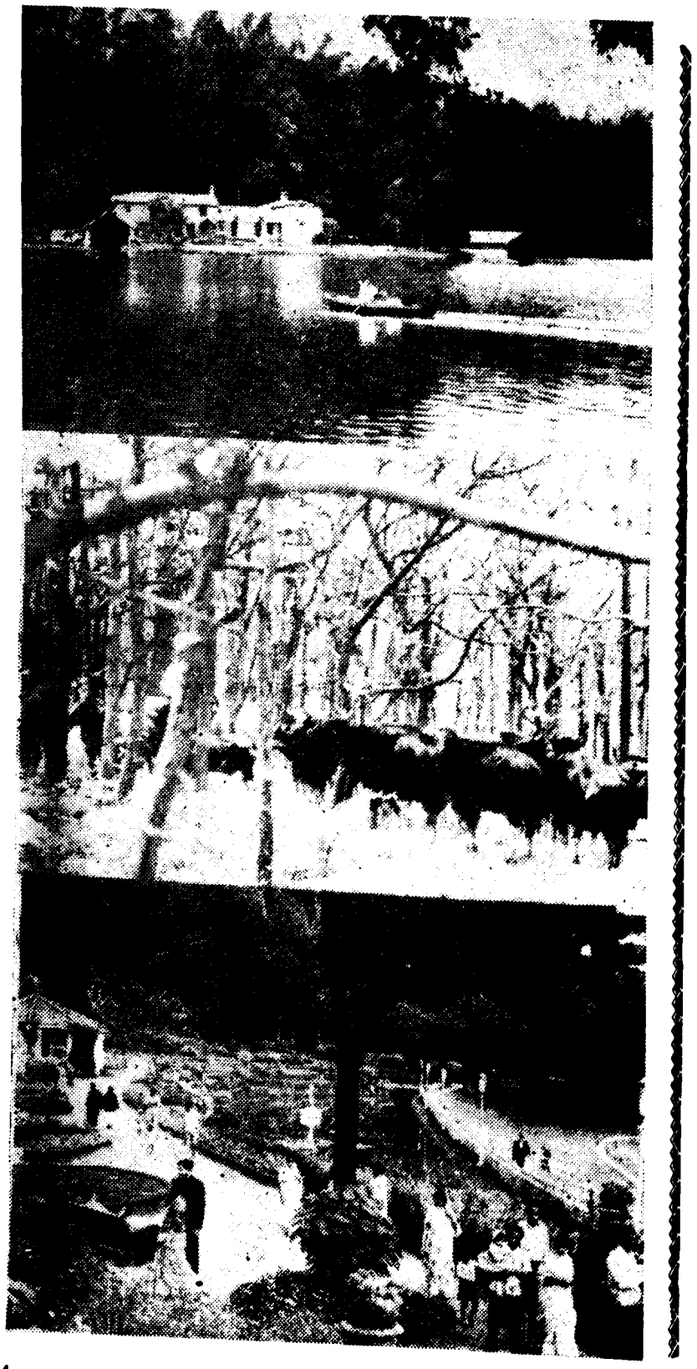
The present bill is described as an effort to undo the effect of past inaction and to work out a steady policy to help the handloom industry.

—Indian Express

Tamil Nadu Welcomes You to a Bouquet of Three Hill Resorts.



The Many Faces of Ooty That Charm Us All



Tamil Nadu can rightly be proud of having more than one hill station in its three hill ranges on the Nilgiris, the Palani and Servaroyan. A fourth hill station is to be developed at Yelagiri in North Arcot District.

One of the loveliest hill resorts of the world is the whole of the Nilgiris Plateau, itself the meeting point of Western ghats and the Eastern ghats. Comprising 2,072 sq. kms. (900 sq. miles) Nilgiris or the Blue Mountains is the nature's paradise in Tamil Nadu. Here the rugged beauty of the eastern ghats merges with the wooded loveliness of the Western Ghats.

The Chief hill station of Tamil Nadu, Ootacamund popularly called Ooty and the smaller ones namely Coonoor and Kotagiri are in this hill range.

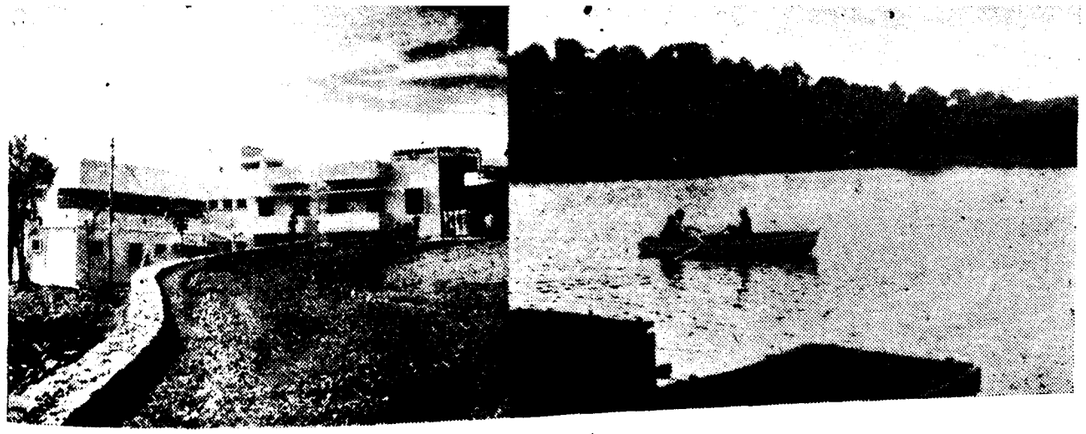
ALL THROUGH THE YEAR

Ooty can be visited throughout the year. The most enjoyable period is from March to June. During this period the sunbathed Ooty presents an atmosphere of ethereal beauty. But that is only one aspect. The moods of Ooty change with every season. If you visit after June you can witness the freshness of the rain bathed Ooty with a refreshing candour of its own.

Dodabetta (2,670 m.) the highest peak in the South, the big lake, the Botanical Gardens, Indo-German Agricultural project, tea plantations are a few of its attractions. Cairn hill, Avalanche, Mukerti peak, Pykara dam are a few excursion spots around Ooty.

Mudumalai Wild Life sanctuary is another major tourist attraction of Nilgiris. It is about 64 kms. from Ooty on the Ooty-Mysore Road.

Visitors who prefer a milder climate choose to stay on the lower heights at the nearby hill stations of Coonoor and Kotagiri. Both possess charm and abound in places of interest.



Yercaud Tourist Bangalow and lake

Sim's park, Lamb's rock, Lady Canning's seat, Dolphin's nose, Ralhiah Dam, Loz falls are some of the attractions of Coonoor. Kodanad view point, St. Catherine falls, Rangaswamy Pillar and rock are some of the attractions of Kotagiri.

Oooty and the Nilgiris is noted for Coffee and Tea plantations. Potatoe is the major crop of the district. The Indo-German Nilgiris Development Project is functioning here since 1968 to modernise farm operations of the hill area. The Hindustan Photo Films Factory is situated at Ooty. The district is also noted for its hill tribes the Todas and the Badagas.

YERCAUD

Yercaud in Salem District is a quiet restfull hill resort on the Servaroyan hills (Shevaroy Range). Yercaud and Servaroyan hills as a whole can be proud of many surpassingly beautiful scenic and panoramic views. It is a pretty hill station with a pleasant cool climate said to be one of the most equable in the world. Situated at an altitude of 1,500 m. (5,000 ft.) its temperature never rises above 85 degree F. or falls below 50 degree F. This is the hill station where you don't feel the biting cold of the winter. With such a salubrious climate Yercaud can be visited all the year round and is less expensive than any other hill station. Yercaud is an hour's drive from Salem.

Lady's seat, Killiyur falls, Bears cave, Cauvery peak and the lake are some of Yercaud's attractions.

SEE KODAI AND LIVE

It is generally felt that the hill stations are meant for the well-to-do. But in a welfare State, this view is anarchronistic. The bounties of nature are open to all, whether rich or poor, old or young. It becomes the moral responsibility of the society at large to provide facilities enabling the have not also to enjoy the gifts of nature. Kodaikanal being one of the charming hill stations the people in and around Madurai District should have an opportunity to visit this place, as a new proverb goes " See Kodai and live " in the place of old saying " See Naples and die ".

Serious thoughts are being given from various sources to the prospect of improving this station with more and more amenities to the maximum advantages of the visitors.

In addition to the various organisations like, Missionaries and others, the Government in the year 1971 convened a conference of non-officials interested in Kodaikanal improvements and various departmental officials in order to draw up a master plan.

The conference after deliberation drew up a Master Plan. The plan contains various suggestions for the all round improvement of Kodaikanal. Based upon the suggestions contained in the Master Plan, the Government have already initiated action and have brought out the following important improvements.

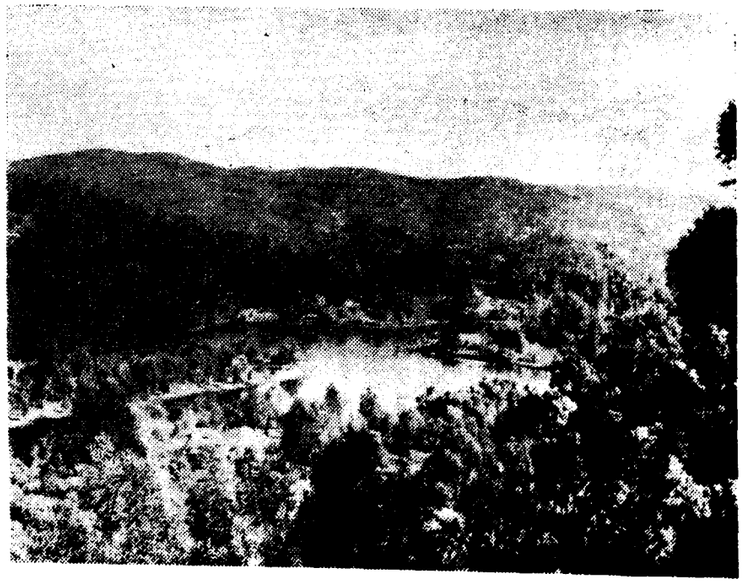
(*i*) For providing accommodation to the tourists, the State Tourist Department has acquired the Y.M.C.A. Compound comprising of 7.84 acres with all the 8 buildings on it and a new Tourist Bungalow complex has been functioning since 1972 at the Y.M.C.A. buildings Fern Hill Road, Kodai.

(*ii*) Foundation stone has been laid for the construction of Town Hall complex at an estimated cost of Rs. 8 lakhs with provisions for recreation, library, conference hall, information centre, etc.

(*iii*) The Government have also sanctioned a sum of Rs. 44.48 lakhs for the provision of comprehensive water supply scheme to Kodaikanal.

All efforts are being put forth by various departments for implementing the recommendation contained in the Master Plan and no doubt within a reasonable space of time, Kodaikanal will grow a more useful and more attractive and enchanting hill station, occupying a unique position among the hill stations of India.

K. R. THANGAVELU,
District Development Officer,
Madurai.



THE INEFFABLE CHARMS OF KODAIKANAL

Kodaikanal is the charming hill station affectionately called as " The Princess of Hill Station " standing amidst the sylvan grandeur on the southern crest of the upper Palani Hills at an elevation ranging from 5,850 ft. to 7,700 ft. Its lovely lake and bracing air greet the visitors on arrival. The wooded slopes, mighty rocks, enchanting waterfalls, etc., would delight the visitor. It is charming to see giant green shoot up to the sky all along the ghat roads. Plants and shrubs in myriad colours are a feast to the eyes. The area is studded with flowers during April and May with thousand varieties in all shapes.

THE LAKE AND SHOLA

The greatest attraction of Kodaikanal and it's proud asset is its beautiful lake. Nature had really been prolific in providing such a beautiful lake, exuding peace and tranquility exerting and almost hypnotic influence. The lake spreads over an area of 60 acres and skirted by a 3 miles tarred road.

BOAT CLUB

The Boat Club takes a predominant place in Kodaikanal. The boating activities had been claiming foremost attention from the beginning of the visitors, who live in congested towns and villages in thousands. The Boats are a special source of attraction. There are private boat houses owned by Indian Club, etc. By boating a visitor gets relaxed.

BEAR SHOLA FALLS

This is a beautiful falls and a delightful spot for afternoon tea or Picnic.

COAKERS WALK

It runs along the steep southern face of the Kodai Basic and commands a wonderful view of the plains as far as Madurai City.

FAIRY FALLS

This is a beautiful falls having a bathing pool at the bottom of the falls. A best place for Picnic.

PILLAR ROCKS

These rocks are three imposing boulders about 400 ft. in height behind which are shady places for Picnics and below these boulders are several caves and chasms.

BERIJAM LAKE

This lake supplies drinking water to Periakulam Town. It is of special attraction to anglers. The scenery around here is beautiful.

THE SILVER CASCADE

This is a beautiful falls which shines like silver at night times during moon fortnights.

DOLPHIN'S NOSE

This is a flat project rock from where one needs a good nerve to look at the yawning chasm below.

PERUMAL LAKE

The height of the peak is 7,329 ft. The peak is shrouded in mist. It commands a forest view to be seen at Kodaikanal.

SEMBAGANUR POST OFFICE

It became famous in 1947 for being the tidiest Post Office in India. The tidiness is seen even today-.

BRYANT PARK

Bryant Park is situated in the centre of the town and close to the lake.

KURINJI ANDAVAR TEMPLE

This is a beautiful temple. From this one can see Palani and Periyakulam Taluks.

ASTRO PHYSICAL OBSERVATORY

This observatory is situated at a height of 7,688 ft. This is the only one of its kind in India which has done a good deal of original work in solar and Astrophysical fields.

The Summer Showers Of Kodai Are **Delightful**

Potatoe is the main crop in the upper Palanis, while Coffee, Banana and Orange are the main crops in the Lower Palani. Orchards (Plums, apple, pears, peaches, strawberries, pine apple, jack and lemon) abound.

Vegetable like Cabbage, Cauliflowers, carrot, peas, beans, turnip, chow-chow are grown profitable here. Honey is gathered in large quantities in Thandikudi.

Apart from this Dr. Kalaignar Stadium is being constructed at Kodaikanl at a cost of Rs. 5 lakhs. Hon'ble Minister Thirumigu K. Raja Ram has laid the foundation stone. A Community Hall at a cost of 2 lakhs is under consideration. A Tourist Bungalow for middle class tourists containing 400 rooms is also being constructed by Palaniandavar Temple Devasthanam.

There is also a proposal to link Palani and Kodaikanal at a cost of Rs. one crore. This scheme is being implemented by Sri Palaniandavar Devasthanam.

(Edited by Thiru P. Subbiah, District Public Relations Officer, Madurai).

Reputed as one of the three best Hill Stations in the world, it has developed into quite a sanatorium and is often visited as a health resort. Situated at an elevation of 7,500 ft. Kodaikanal with its many lakes, caseades, rocky escarpment cool nights is suited for a quiet rest house from Gopurams and Mandapams.

Kodaikanal is 70 miles from Madurai by road which is easily the best way of getting there (the nearest rail road—Kodaikanal Road is 50 miles away on the main line from Madras). It is also a highly scenic way ; the climb-up through the Western Ghats to Kodai, at an altitude of over 7,000 ft. runs through Coffee plantations and forests.

HISTORY

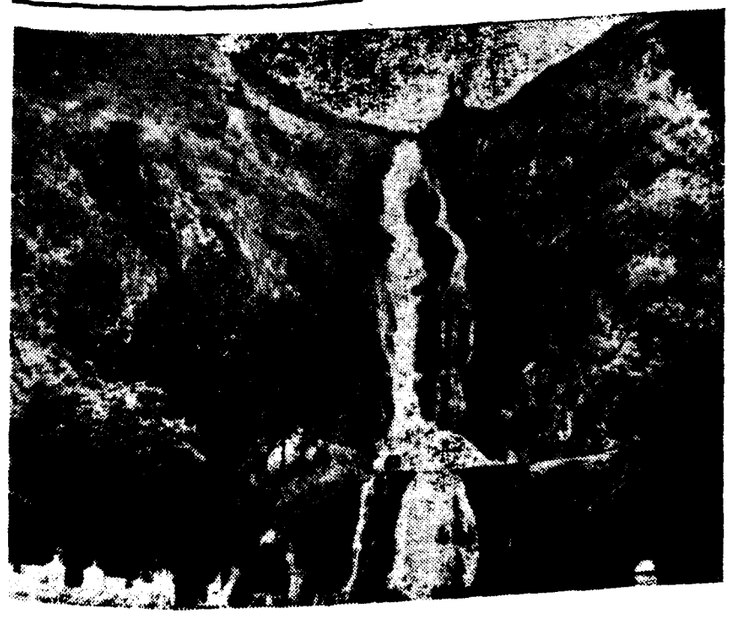
Europeans first discovered this spot in the Palani Hills. The settlement of Kodaikanal owes its origin to an accident. In 1838 so many of the American Missionaries of Madurai were compelled to take sick leave and go to Jaffna (The then summer resort) that the Mission actually proposed to purchase a special vessel to carry the invalids and convalescents backwards and forwards. This idea was eventually abandoned in favour of the suggestion that a sanatorium should be established on the Sirumalai (Famous for hill plaintains). Two Bungalows were Built there ; but their occupants suffered so much from fever that in January, 1845, The Palanis were examined as an alternative site. In June of the same year two bungalows were begun at the foot of Kodaikanal and completed in October of the same year. Not long afterwards Mr. John Blackburn (Collector of Madurai) built a small bungalow for himself at the top of Adukar pass and was soon followed by many imitators. Their discendants still flock to Kodaikanal for the two months season beginning in mid April, when vacationers can count on both a temperate climate and twelve hours of sunshine every day.

It is not just the weather that brings them to Kodai. In 1860 Mr. Vere Henry Levnge was appointed as Collector of Madurai and he held his post until 1867 and then retired and settled down at Kodaikanal. During his later period he took interest in developing enormously the station. He put a finishing touch on the landscape by damming a stream to form an exquisite lake raminiscent of Switzerland, with a three mile promenade around it. Boating on the lake is one of the popular pastrines in Kodaikanal.

In regard to climate Kodai is considered to be one of the best hill stations in India. The mornings are always bright the only exceptions being days when cyclone storms pass over the place. Of all hill stations in India, Kodai records the lowest maximum in summer and the biggest minimum in winter. While snow is unknown, ground frost occurs not infrequently during winter months, *i.e.*, December to February.

Almost every month it rains in Kodai. Of the mean annual rainfall of 65 inches, nearly one half is received during the months of September to December. Summer showers are now and again accompanied by hail stones.

—S.M. SANKARALINGAM, B.SC.,B.L.
Tourist Officer, Madurai.



Silver Cascade Falls

KODAIKANAL THE LAND OF THE SUMMER SHADE

By
A. V. Jeyechandrun,
Information Officer, Madurai.

Photo by Raj. Pub. (Tourism) Dept.

Kodaikanal, means the Land of the Summer Shade. And, Kodaikanal lives up to its name, for every summer, it beckons all who are weary and tired to put life in them and send them back with a zest for life. The sylvan setting of the town and the picturesque sights of the hills surrounding it are such that not many summer resorts in Tamil Nadu can compete with it. The salubrious climate and other delights at Kodai are the very elixir of life and this fact has been realised and experienced by the regular " visitor" to Kodai. A fortnight in Kodai keeps weariness away for a whole year. Hence Kodai has become a must in the life of so many.

Reached from the Kodai Road Railway Station it is 50 miles away traversed by a Ghat Road with several hairpin bendsrunning through rugged forests and breath-taking sights. The lovely hill of Kodaikanal rises a little over 7,000 ft. above the mean sea level and provides a great thrill climbing it.

For sights Kodaikanal has no match. The bewitching views of the low country and the Yanaimalai hills in the west, the grandeur of the Palani hills, the verdant setting of the plains that spread for miles and miles vanishing into the horizons are unparallelled. No wonder Kodaikanal has come to stay as the best hill station to choose in Tamil Nadu.

Wherever you turn your eyes in this hill you come across nutmeg, cinnamon & pepper-vine growing wild and orange trees, lime trees, citron and sago being cultivated. The harmonious mixture of nature, both wild vegetation and dressed up gardens of the Bungalows and Estates that abound Kodaikanal, makes a mosaic pattern of fantastic colours. You can choose one of the several points from where delightful sights are witnessed. Here are some ; Prospect point, Vembadi Shola Peak, Dolphin's Nose, Pillar Rock, Coaker's Walks and Perumal Peak. Here at these spots you lose yourself and slip into a state of wakeful forgetfulness. Coming out of it you come into a different realm of consciousness.

Water falls here are innumerable. Bear Shola Falls, Glen Falls, Silver Cascade, Fairy falls are some. Sheets of water cascading through a labyrinth of courses admist shrubs and pebbles suddenly fall from the periphery of a rock : the silver screen of water descending makes one stand and stare.

But much more attractive than these falls is the Kodai lake. A boat club run by a board of management offers you a boat at very nominal charges and sitting in a cosy corner either you can row it or hire a person to do it. Boating in the still waters of the lake amidst shadows of venerable trees all around, the holiday makes one obtain a soulful experience. You slip into the holiday mood of your own, the boat of life sailing on a lake of joy.

Much more than the boat ride, a walk around this lake which takes you 3 miles is an experience of a different order.

Kodai puts on a gay appearance, its natural beauty supplemented by artistic facelift by festoons etc., put up during summer festival held to synchronise with the season May-June every year.

The clubs here, English, Indian, Boat and Golf throw open their doors also for temporary members.

For the pious Hindu there are a few temples : Mariamman, Vinayaka, Murugan and Kurinji Andavar, the last built by an English woman who became the devout Hindu wife of the Philonthoropic Ceylonese, Sir, Ramanathan. From this paradise a view of Palani Hills is obtained.

There is a Mosque at Blissvilla and for Christians there are nine Churches. In this city of gaiety and beauty there is a place for the religion too. Are not " all things bright and beautiful, all creatures great and small, all things wise and wonderful " made by the Lord God.

Two Information Centres, Kodaikanal Tourist Bureau and Township Office, Kodaikanal, can be visited.

Sweet is the lore which nature brings
Our Meddling intellect
Misshapes the beauteous forms of things;
We murder to dissect.
Enough of Science and art ;
Close up these barren leaves ;
Come forth, and bring with you a heart,
That watches and receives.

KODAIKANAL

— A HILL STATION AT ITS CROSS ROADS

By
Capt. D.V.P. Raja, M.A., DSSA.
Director
Madurai Institute of Social Work

Kodaikanal is one of the best health resorts in the Southern part of the Indian Sub-Continent. The cumulus clouds, the steamy mists, the silver streams, the greenish fields, the thick forests, the unfailing breeze, steep rocks, the beautiful lake projecting towards Perumal Malai and the Gymkana Road, and, above all, the simple and saintly people will surely convince anybody that it is an ideal place and a heaven on earth.

Kodaikanal is located on the Palni Hills at an altitude of 7,300 ft. on the Eastern extension of the Western Ghats. It is some 75 miles west of Madurai and is the only hill station which makes us acceptable throughout the year.

HISTORICAL BACKGROUND

Both the upper and lower Palani Hills have historical background. The oldest reference to these hills are also found in the Kodaikanal Survey Report made by Lieutenant Ward in 1921.

Though Kodaikanal as a hill station can boast of a history of 150 years its surrounding villages and other settlements lay claim to a rich past which dates back to thousands of years. Kodai Hills are described in ancient Tamil literatures like Ettuthokai, Pathupattu. Many of the ten Idylls (Pathupattu) like Melai Pattukudam, Kurinchipattu, and Purumbanatrupadai contain elaborate accounts of the mountains with emphasis on Kodai Hills.

In Puranaanuru, it is said that one of the seven Kings, by name Porunan, who fought against Pandian Nedunchezhian, was the king of these hills and the Kodai Hills were called after his name Porunan Mamalai which later changed itself into Perumal Malai (Perumal Hills).

The neighbouring village Poombarai was once very famous for its thirteen days festival celebrations. The temple of the local deity—Poombarainathar was said to have been built by Chera King—Cheran Senguttuvan. Another village, Vilpatti, is said to be associated with Ramayana. There is a saying that Lord Rama started his crusade against Ravana from that place.

In the 19th Century, the English and American Missionaries who were working in the southern districts wanted to have a hill station to escape from the scorching heat of the summer months. After great difficulty, the present Kodaikanal was founded and for many years the development of this place was very slow though the then Madras Government and other officials were much interested in developing it. Only in the beginning of the 20th Century Kodaikanal marched towards its fullest development.

After independence the European and American population thinned to the minimum. The Indian Population filled up the vacuum. Their main occupation became agriculture.

CLIMATE

Temperature here, as is to be expected at places of high attitudes within the tropics, is cool and fairly uniform throughout the year. Monthly mean temperature ranges narrowly from a minimum of 55 to 75 Nights in January and February are cold reaching to 40PF, with frost frequently forming in the valleys. March and April are milder both during the days and at nights but there are frequent afternoon showers particularly towards the close of April. In May (India's warmest month) the winds swing to the Southwest, and the heat in the hills is often relieved by torrential rains in the afternoons. June and July are often rainy, while August and September can be fine, warm and pleasant if the South West monsoon was early and short. There can be frequent mists, and drizzle if the monsoon was delayed. In late October the winds revert to the northeast bringing damp, chilly weather. By early December, the rains are over and the weather clear and bright.

The climate of Kodaikanal is considered to be exceedingly good, and salubrious all through the year. Kodaikanal is too lofty to be visited by the ordinary malarious fever common to hill stations and having a much drier air and more equable temperature. For these reasons Kodaikanal is a health resort and not merely a refuge from heat of the plains.

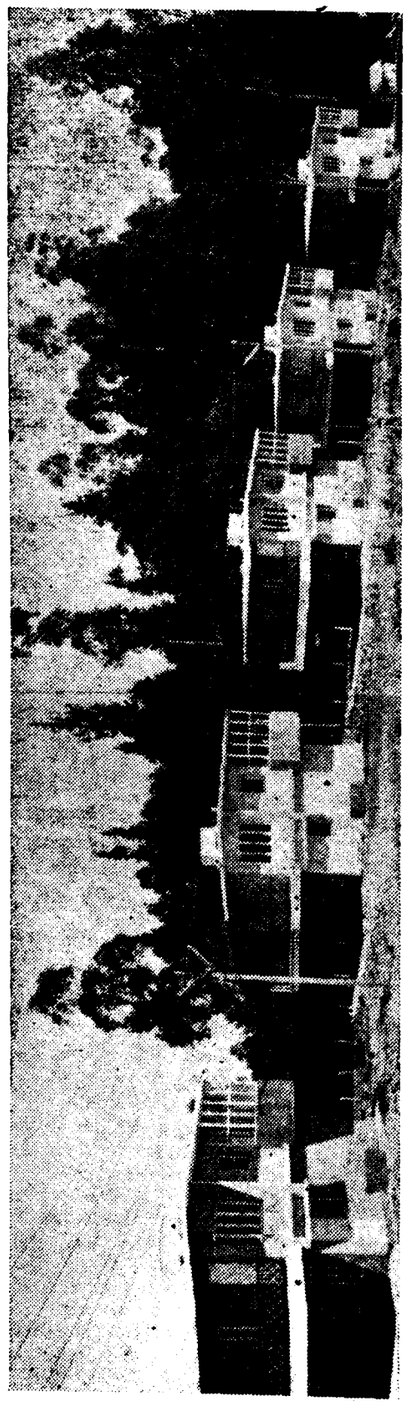
Today, Kodai stands at cross roads. The Socio-Economic survey conducted by the Madurai Institute of Social Work openly revealed the following noteworthy features :—

(*i*) 51% of the population expressed their desire of having Small Scale and Cottage Industries started.

(*ii*) Though 72% of the population were using the medical resources of the Government hospital here, they fully felt that the hospital needed rapid expansion in all facets to fully serve the purpose for which it was intended. It will not be out of place to mention here that with the march of time, the facilities of the Mission Hospitals and SKIPPO are showing a proportionate development ;

(*iii*) About 91% of the population expressed the desire to see the Transport and the Postal Communication aspects developed. Since vegetable produce had to be transported from interior villages to the heart of the Township, it was desired by many that the Government should be approached to increase the overland transport facilities.

It is an accepted fact that due to the endeavours of the Township Office on one hand and Voluntary Social Welfare Agencies like COR SOCK (Coordinating Council for Social Concerns in Kodaikanal) on the other, the Township is showing rapid marked development. The day is not far off when the Township will, due to its development, expand itself, and stand on its own making Kodaikanal the Supreme Hill Station of India.



THE MINI COTTAGES OF OOTY

The Tamil Nadu Housing Board has constructed ten Mini cottages at Ooty. The Mini cottages are located in a calm locality in Finger Post near the Golf links at a distance of about 3 K.M. from the heart of the City. Each Cottage consists of two independent suites, one at Ground floor and the other at First floor. The suite at Ground floor consists of one bed room 10'x12', one dressing room 6'x6', one toilet room and a Car Porch. Two beds with mattress and pillows are provided in the bed room. A dining table with two chairs and teapoy are provided in the dressing room. The flooring is covered with coir mat; water heater of 30 litre capacity is fitted in the toilet. In the first floor suites, two beds with mattress and pillows and a dressing table are provided in the bed room. Two garden chairs and a teapoy are provided in the private sitout room. The flooring is covered with coir mat. Water heater of 30 litres capacity is fitted in the toilet.

Two woolen blankets are provided per bed. Room heaters are also provided on request, at the rate of Rs. 10/ per day per heater. The rent per suite is Rs. 30/- per day during the months of March to September. The rent during the remaining months will be Rs. 15/- per suite per day. Catering facilities are also provided for the convenience of the occupants.

Outstanding Artistes of Tamil Nadu Honoured.

The Tamil Nadu Iyal Isai Nataka Manram, an autonomous body entirely financed by the State Government, has been doing valuable work in fostering the arts of dance, drama and music. Besides playing host to international troupes visiting Tamil Nadu under the Cultural Exchange Programme of the Government of India, the Manram has also been encouraging the production of original plays and sponsoring the visits of cultural troupes from Tamil Nadu to other States. The Manram has also been honouring eminent artistes with 'KalaiMamani' awards.

The Manram has drawn up plans for preserving and developing the traditional arts of Tamil Nadu like Kuravanji, Bhagavathamela, etc. A provision of Rs. 2 lakhs has been made in the Budget for 1974—75 for this purpose. The Manram has also plans to conduct mobile exhibitions of these traditional arts and built up a library of recordings of traditional music and art.

About 259 artistes who are in indigent circumstances are receiving a monthly pension under a scheme jointly sponsored by the Government of Tamil Nadu and the Government of India. As the Government of India had regretted their inability to extend the scheme to cover more artistes, the State Government have taken on themselves the responsibility to give pensions to more artistes from their own funds. Under this State Scheme, 279 artistes have been given pensions. This will be continued during the year 1974—75, and it is expected that 75 more artistes will be benefited during the year.

The Manram selects every year talented Artistes in vocal Music, Violin, Mridangam, Nadaswaram, Flute, Dance, Harikatha Kalakshepam through an audition and extends grants for conducting performances by those artistes with a view to introduce them to the public. Since 1963, more than 400 artistes have so far been benefited under this scheme. An expenditure of about Rs. 25,000/- is incurred every year for this scheme.

It is worth mentioning that the Manram's awards are being given to distinguished artistes in folk-arts also. During the last 12 years, the Manram has given awards to about 287 artistes in music, dance, drama, films and folk-arts. This years also 30 artistes are getting Manram's Awards of 'Kalai Ma Mani'.

This award function has gained added importance by a special feature from last year. As per the valuable suggestion of our Hon'ble Chief Minister Dr. Kalaignar, the Manram is also selecting every year a few of our late-lamented artistes who had added lustre to their respective arts by their life-long service to those arts. Last year, the heirs of Thiruvavaduthurai Rajarathnam Pillai, S.G. Kittappa, M.K. Thyagaraja Bhagavathar, P.U. Chinnappa, V.A. Chellappa had received the posthumas awards. The Manram paid its respectful homage to the memory of these distinguished artistes and this year, the Manram is honouring seven such distinguished artistes who had shone as Uncrowned Monarchs in the fields of

Estt: 1941 Phone: 22

OUR FELICITATIONS TO TAMILNADU GOVERNMENT
FOR TIMELY HELP IN EVERY CRISIS TO ENSURE THE PROGRESS AND PROSPERITY OF HANDLOOM INDUSTRY!

The Attayampatti Handloom Weavers' Co-operative Production And Sales Society Ltd., S 691

ATTAYAMPATTI-P.O., SALEM DISTRICT.

Handloom Clothes bearing the mark of

"ATTAYAMPATTI"

are best of their kind in the country.

We manufacture both in handloom and Powerloom the famous Salem bordered Dhoties and Sarees in all varieties as also gada cloth in pieces using yarns from counts 20 to 100.

We solicit you to visit our Society.

K. UTHANDIKANDAR, Vice-President.
K. V. A. ARTHANARI MUDALIAR, President.
Directors:—K. A. RANGASWAMY, K. ANGAMUTHU and V. PALANIAPPAN.
N. DHALAMALAIJEEYAR, Co-operative Ex. Officio Registrar, Secretary.

SUPPORT COTTAGE INDUSTRIES

Co-operation Promotes Prosperity! *Our Motto is your Satisfaction!!*

Kodukkur Handloom Weavers' Co-operative Production & Sales Society Ltd,,

No. R 1099

KODUKKUR P.O., (VIA) MATHUR R.S.,
TIRUCHIRAPPALLI DT.

Sarees, Dhoties, Prints, Towels, Gada and Hand-kerchiefs woven in 100, 100 × 60, 60, 40 and 20 counts of yarn are sold both in retail and wholesale by us.

Our cloths are noted for fine texture and tensile strength, better appearance and long life!
Prices are competitively low and economical!

Our cloths are sold in all the Sales Depots affiliated to the Tamil Nadu Handloom Weavers' Co-op. Society (Co-optex.)

music and drama and the Manram is presenting medals to their heirs in honour of their memory.

GROUP VEENA MUSIC COMPETITION

The Manram conducts an Annual Group Veena Music Competition for the award of the Rolling Trophy of Silver Veena, **generously endowed by Thiru Bishnuram Mehdi,** former Governor of Tamil Nadu. Several Veena Arsistes are coming up through the encouragement provided thereby.

ENCOURAGEMENT TO DRAMAS

Bharathi's Panchali Sabatham, Kuyil Paattu, Jeevanamsam, Kaivilakku, Sidhar Magal, Palappazham, Appavin Aasai, Kundrudaiyan, Sevagan, Thayumanavar, Kudisaiyil Komagan are some of the best plays for the production of which Manram has given grants, to accredited dramatic troupes.

Grants are given for the production of Dance Dramas also. Best Dance Dramas like Kabilai Natakam, Tiruvilayadal Puranam, Thyagarajar, Azhagar Kuravanji have been staged by eminent artistes of Tamil Nadu with the grant-in-aid extended by the Manram.

GRANT-IN-AID TO TRAINING INSTITUTIONS

Established training institutions in music and dance are given grants for purchase of books and dance, musical instruments and for the maintenance of the Institutions. Similar grant-in-aid is being given to institutions imparting training in folk arts also.

SCHEME FOR TAPE-RECORDING

In order to preserve the rich traditions of our music and drama, for posterity and to benefit artistes from foreign countries, research scholars and students, the Manram records on tapes the musical renderings of eminent musicians and also traditional dramas rendered by accredited dramatic troupes. Manram has tape-recorded the musical renderings by Outstanding Vidwans like Thiru Chittoor Subramania Pillai, Thiru Chembai Vaidyanatha Bhagavathar, Thiru M. M. Dandapani Desigar, Madurai Mani Iyer, Semmangudi, Maharajapuram—Nadaswaram Music of Thiru Chembanar Koil Dakshinamoorthi Pillai, Thiruvavaduthurai T. N. Rajarathinam Pillai, Flute Music of Thiru Mahalingam, Gottuvadyam Music of Thiru Budalur Krishnamoorthi Sastri, Jalatharangam of Madurai Thiru Srinivasa Iyengar and Harikatha of Thiru Annaswami Bhagavathar. Besides these, the Manram has also tape-recorded the traditional dramas 'Panchali Sabatham' and 'Raja Raja Cholan.'

The Manram has also recorded on tapes the traditional drama "Sampoorna Ramayanam" for a duration of about 6.5 hours. Several accredited musicians like Messrs. Sirgazhi Govindarajan, T.M. Soundararajan, Tiruchi Loganathan, A.L. Raghavan and others have sung songs for this drama. Reputed actors like Messrs. T.K. Bhagavathi, S. V. Subbiah, S. M. Ramanathan and actresses like Tmt. Indira Devi, Tmt. S. N. Lakshmi, Selvi K.B.K. Prema and others, have taken part in this traditional Drama.

The Manram has also recorded on tapes several Lectures and Demonstrations by eminent artistes in music, Harikatha, Dance, Drama, etc.

The Chief Minister issuing the KALAIMAMANI citation to Thiru S. M. Ramanathan Drama Artist.

AID TO PUBLICATION

The Manram gives matching grants for the publication of best books on arts. In the field of music and dance, "Koothanool" by Sathanar, 'Pallavi Swara Kalpavalli', three volumes of Sri Muthiah Bhagavathar, his Tamil Kirthanas. 'Nandanar Charithra Kirtanas' of Gopalakrishna Bharathi, Kirtanas of Papanasam Sivan 'Kavadi Chindu' by Annamalai Reddiar, 'Isai Thamizh Paamalai' of Thiru Dandapani Desigar. 'Isai Mani Manjari' of Thiru Periaswamy Thooran — in the field of Drama, collection of plays of Thiru Narana Doraikannan, Thiru Ku. Sa. Krishnamurthi, Thiru B. S. Ramaiah — more than fifty art publications like these have been brought out through the grants given by the Manram.

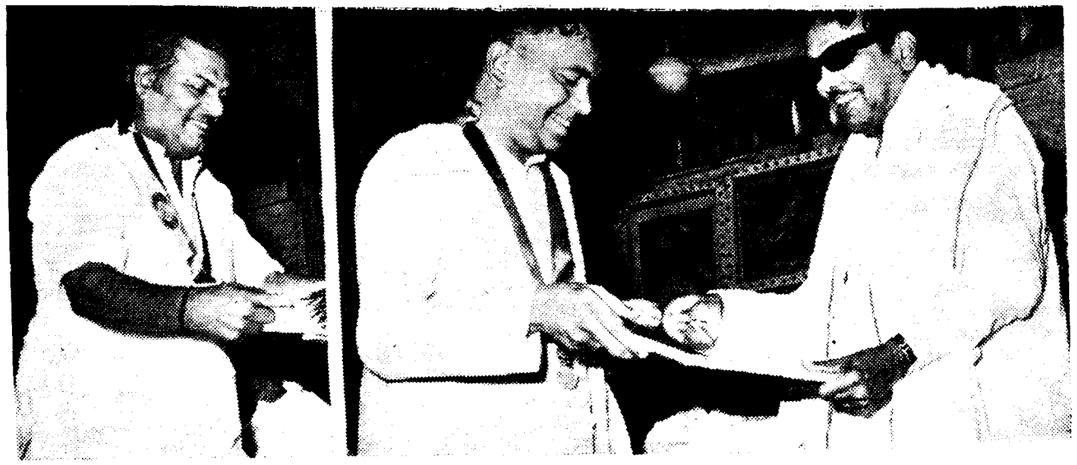
With a view to enable Western Musicians to easily understand and render our music, the Manram has programmed to publish a few songs in English Staff Notations with the preface in English, published by Chinnaswami Mudaliar in the year 1893.

The Manram has also taken up a scheme for publishing a "Who is Who' of eminent artistes who have added lustre to fine arts in the 19th and 20th Centuries by their outstanding contributions.

OTHER ACTIVITIES

The Manram arranges periodically for the demonstrations and lectures on rare aspects of fine arts by accredited experts.

Grants are given for celebration of festivals in memory of famous composers in music and savants of music, dance and drama.



The Chief Minister is seen issuing 'KALAIMAMANI' Citation to Thiru P. S. Veereppa, Film Producer (Left) and Thiru Rama Arangannal, Film Play-wright (Right)

The Chief Minister issues KALAIMAMANI citation to Thirumathi S. N. Lakshmi, Drama Actress, (Left) and Thirumathi Sikkil Kunjumani, Flute (Right). Bottom : (Right) Governor distributes medals to Thirumathi Lakshmi, Film Actress (Right).

RAILWAY CONCESSION FOR ARTISTES

The Manram issues certificates to professional artistes and troupe-recommending them for concessional railway travel to stage public performances. About 500 art troupes and 5,000 artistes are benefited every year by these concessions. At present concessional railway travel is permitted only for distances beyond two hundred miles. It will be of greater help to the artistes if it is changed as hundred miles. Free Railway Passes may be issued at least to the Award Winner Artistes for their travel throughout India for giving their performances. This will prove a lasting and useful concession to them.

CENTENARIES OF PAMMAL SAMBANDA MUDALIAR AND OTHER VETERAN ARTISTES

In commemoration of the Centenaries of Pammal Sambanda Mudaliar, C. Cunnaiah and Parithimar Kalaignar (Surianarayana Sastriar) the Manram conducted a Drama Festival and Seminar on a large scale this year. The Manram conferred Special Honour on the distinguished artistes who had portrayed successfully in his story 'Manohara' both on the stage and in the Film. A special souvenir was also brought out on this occasion.

Our fine arts are the legacy of our cultural heritage. The Manram is rendering its dedicated service for the development of these fine-arts for the past 17 years and it shall continue to do so in the coming years. ✱

THE DISTINGUISHED RECIPIENTS OF AWARDS FOR 1973—74.

The Distinguished reciepients of awards for 1973—74 :

Thiru T. M. Thiagarajan ..	.. Vocal Music
,, P. K. Viswanatha Sarma ..	.. Violin
,, T. P. Nagarajan ..	.. Mridangam
,, R. V. Pakkiriswamy ..	.. Muharsing
,, Thirukokarnam N. Ramachandra Iyer	.. Veena
Thirumathi Sikkil Kunjumani and Sikkil Neela ..	.. Flute
Thiru T. V. Arunachalam Pillai	.. Nadaswaram
,, A. K. Venugopal Pillai ..	.. Thavil
,, Suddhasatwananda ..	.. Lyrics Composer
,, Vazhuvur R. Samraj ..	.. Bharathanatya Teacher
,, Natanam Nataraj ..	.. Bharathanatyanm Artist
,, P. S. Veerappa ..	.. Film Producer
,, K. S. Gopalakrishnan ..	.. Film Director
Tmt. Lakshmi ..	.. Film Actress
Thiru Jai Shanker ..	.. Film Actor
,, Alangudi Somu ..	.. Film Lyricist
,, Rama Arangannal ..	.. Film Playwright
,, K. V. Mahadevan ..	.. Film Music Director
,, Thottakara Viswanathan	.. Play Wright
,, S. G. Krishnamurthy Pillai	.. Drama Lyricist
,, S. M. Ramanathan ..	.. Drama Artist
Tmt. S. N. Lakshmi ..	.. Drama Actress
,, Indira Devi ..	.. Drama Actress
Thiru P. S. Dakshinamurthy ..	.. Drama Producer
,, R. Srinivasagopalan ..	.. Non-professional Drama Actor
,, M. R. Nagaraja Bhagavathar	.. Special Drama Actor
Tmt. N. M. Sundarambal ..	.. Special Drama Actress
Thiru S. P. Rathina Pathar ..	.. Harmonium
,, T. M. Thangappan ..	.. Villupattu
,, Rasika Ranjana Sabha, Tiruchirappalli	.. Special Prize for Sabha

Phones : 21
42

Grams : 'MILLS'

Tiruchendur
Co-operative Spinning Mills Ltd.,
NAZARETH, TIRUNELVELI DISTRICT.

Sanctioned Spindles	—	25,000
Authorised Share Capital	—	Rs. 60 lakhs
Paid - up Share Capital	—	Rs. 38·30 lakhs
Yarn Production during 1972-73	—	Rs. 79·15 lakhs
Turnover of yarn sales during 1972-73	—	Rs. 89·08 lakhs

The Tamil Nadu Government have taken a major portion in the paid - up share capital of the mill.

Our Productions : 34 and 60 cone yarn
36, 40, 60 and 2/80 warp yarn.

G. Ramaswamy, B.A.,
Managing Director.

R. Shanmugasikamani, I.A.S.,
District Collector, Tirunelveli District,
PRESIDENT.

SALEM
CO-OPERATIVE SPINNING MILLS LTD. N. M. 1424
AMMAPETTAI, SALEM-3.

Grams : "SALCOMILLS"

Phone : MANAGING DIRECTOR 2040
OFFICE 2080

Paid-up share capital of the Tamil Nadu Government } Rs. 14·74 Lakhs

Yarn spun — 40, 60, 80, 100
2/60 and 2/100 counts both carded and combed.

Turnover of yarn sale per year — Above Rs. 80 Lakhs

Our yarns are of superior qualities spun from the best cotton.
9 per cent dividend was declared
to the share holders last year.

Value per Share Rs. 100/- **Admission Fee Rs. 2/-**

For further particulars contact the **Managing Director**

G. SHANMUGAM,
Managing Director.

T. P. ARUMUGAM,
President.

GOVERNOR'S TRIBUTES

The life of T. T. Krishnamachari is the story of individual excellance dedicated to the service of the nation. Not many can boast of such many-sided brilliance as Thiru T. T. Krishnamachari had.

We had been through stresses and strains all these 26 years on the way to progress. Evolution of an egalitarian society with emphasis on social justice is envisaged by our Constitution. It was Pandit Jawaharlal Nehru who propounded the theory of democratic socielism. T. T. K. was one of his most trusted colleagues not only as a member of the Drafting Committee of the Constitution but also of his Cabinet and rendered invaluable help in giving shape to Panditji's ideas through fiscal policies in conformity with the principle of democratic socialism. In fact, you will remember that when critics alleged that steel projects would be a dead loss in public sector, T. T. K. who was responsible for choosing the sites for the steel plants at Bhilai and Rourkela and designing the townships and plant areas, declared : "Socialism is Steel and Cement."

Proved his worth :

Whether as Commerce Minister or as Finance Minister during the various spells of office that T. T. K. held, he proved his worth beyond any shadow of doubt and demonstrated his originality, talent and ability in formulating policies with an imaginative approach and in implementing them with vigour. had the necessary drive and dynamism to get things done. He never believed in slipshod work, but was thorough in everything he undertook. He never tolerated inefficiency. It is no exaggeration to say that T.T.K. was a Karma Yogi in our public life, not only because of his practical wisdom, but because of the sense of detachment with which he functioned. To him efficiency in action was Yoga, as the Gita would put it. He was always content to be an individual, shunning limelight, propaganda and publicity. In his loneliness whenever he was out of office, he would have never felt lonely because he had diverse interests at heart which he pursued enthusiastically. T.T.K.'s store-house of knowledge was amazing. That is why he could talk with authority on his subjects. This is the secret of his success in negotiations at many a conference-table, at home and abroad. Economics was his pet subject and he himself is reported to have said that the most intellectual discipline bearing upon politics in a direct way is economics. This is a lesson for legislators who wish to equip themselves for public and parliamentary life.

Voice in High Quarters :

To T.T.K. goes the credit of having introduced innnovations in our tax structure. If only he had been destined to hold important offices longer at the Centre, he would have streamlined the complex tax structure and set right all our ailing public sector undertakings. Many unforeseen difficulties arose in the meantime and we were denied the opportunity of the benefit of the services of T.T.K. at crucial moments. Still his was an effective voice and was heard in high quarters. India will remember with gratitude that he was largely responsible for a liberal approach to the problems of planned development and for paving the way for industrial expansion. He has left a deep impression of his personality which will be a source of perennial inspiration to succeeding generations.

At a time when our economy is in the doldrums, T.T.K.'s passing away is a grievous loss. Many of us who enjoyed the warmth of his personal friendship and scintillating conversions on a variety of topics miss him badly. Patrons of fine arts will always remember T.T.K for his solid support. He did not bother whether his personal survival was jeopardised by his crusade for the cause. He believed that so long as he was on the job, every minute should be put to maximum advantage. His last message was : "You must look after this country." These simple words addressed to Thiru Kamaraj indicate how deeply worried he was and how every minute he was thinking of the Motherland. India is passing through very critical times. T.T.K. was aware of the gravity of our problems and was struggling for solutions. Let us assure him that we shall emulate his noble example of eschewing personal considerations and devoting wholeheartedly to national interests. T.T.K. will then live fir ever. I convey my sincere condolences to members of his family.

CONDOLENCE RESOLUTION PASSED AT SHERIFF'S PUBLIC MEETING

This meeting of the Citizens of Madras, convened by the Sheriff of Madras and attended by all sections of society wishes to place on record its deep sense of sorrow and grief at the sad demise of Thiru T.T. Krishnamachari, Former Union Finance Minister, at Madras on 7th March, 1974.

India has sustained a grievous loss by the passing away of Thiru T.T. KRISHNAMACHARI, who made a lasting contribution to the constitution making process and Indian fiscal history in the post independence era. He was a doyen among public servants, who embodied in himself all the intellectual graces of a profound scholar, the vision and far sightedness of a distinguished statesman, the diligence and idealism of a bold administrator and an effective parliawentarian. Ve was one of the architects of wodern India who laid firm foundations for accelerating the tempo of industrialisation and could be called the father of the public sector steel industry, National Industrial Development Corporation, Industrial Estates, Neyveli Lignite Corporation, State Trading Corporation, Industrial Development Bank of Idnaia and a host of other financial and industrial institutions. He was a connoisseur of music and art and had shed light and lustre on every one of his wide sptectrum of activities and interests in life. He was truly a great son of resurgent India and a fine example of the best in Indian Culture and heritage. Vis death has created a great void kn India's public life, which will be difficult to fill.

This meeting wishes to place on record its grateful appreciation of the unique contribution made by the late Thiru T.T.K. to the political, economic, cultural, literary and social life of India, and particularly of Tamil Nadu.

The Condolence Resolution was read by Thiru K. S. Nagarajan Sheriff of Madras.

Estd. 1955 Phone : 27

LOW PRICE ! *FINE QUALITIES !*

FAST COLOUR ! *FINER TEXTURE !*

The Singapuri Weavers' Co-operative Production & Sale Society Ltd.,

No. E. 1999

VIZHAPPALAM, KURINJIPADI - P. O. - 607302,

SOUTH ARCOT DT., TAMIL NADU.

Manufacturer of :

BEST HANDLOOM LUNGIES,
SHIRTINGS,
KERCHIEFS, ETC.

We sell both in retail and wholesale Lungies, Hand-kerchiefs, Dhoties and Shirting cloths woven in fine quality yarns of 100, 80, 60 and 40 counts. The prices are low and economical.

V. M. Palaniyandi Mudaliar,
President.

A NEW CHOLAM VARIETY WITH JUICY STALK AND HIGH GRAIN YIELD FOR SUMMER.

The new Cholam strain K4 recently released by the Tamil Nadu Department of Agriculture has a juicy stalk with high fodder as well as grain yield. The farmers have been facing a limitation with the cultivation of high yielding Cholam strains introduced in the recent years since these varieties do not yield sufficient fodder for cattle because of their dwarf nature though their grain yields are very high. The Department of Agriculture has been doing research since sometime past to evolve a cholam strain which could yield high fodder as well as grain yield. The new variety of cholam K4 is an achievement in this direction.

The districts of Madurai, Ramnad and Tirunelveli comprising the Southern Region of Tamil Nadu, have a distribution of about 50,000 hec. under irrigated cholam. Most of this area comes under cultivation during summer and the crop is sown either in Thaipattam (Jan-February) or in Chithirai-pattam (April). The local variety of this season is known as Vellai Cholam which is of only moderate yield potential. An improved strain (i.e.) K2. with better yield potential developed out of this variety in the earlier years gained considerable spread in the region, but its fodder is pithy and as such not relished much by cattle. Hence, K2 cholam was crossed with the other variety of Cholam namely Co. 18 which is juicy stalked variety but capable of coming up well only in Coimbatore region. The resultant of this cross named K4 cholam possesses juicy stalk and is capable of giving high yields of both grain and fodder. This will be a boon to the farmers in southern region who cultivate cholam both for fodder and grain.

The new strain K4 grows about 2 metres tall and matures in about 85-90 days. Its grains are pearly-white in colour and easily threshable. Its fodder quality being juicy and non-pithy is highly relished by cattle especially when cut and fed as green fodder. The grain yield potential of K4 is about 30 quintals per hec. which may go upto 50 quintals per hec. under adequate management in the proper season. The strain is capable of yielding about 100-120 quintals per hectare of dry fodder. Its grain and fodder yields are more by 10-15% than the earlier released strain of K2. Another welcome feature of this new strain is its drought resistance to some extent which is a favourable factor when considered that a summer crop often suffers water stress. The new strain is also suitable for both January-February-sowing, and April sowing, and is particularly adopted to the southern districts.

A seed rate of 10 Kg. per hectare would be adequate to have an optimum plant stand of 1,45,000 per hectare on an ideally prepared seed bed, but a higher seed rate upto 15 kg. per hectare may be adopted to secure an economic density of population on the field. Raising the crop on ridges contributes for better water use efficiency compared to planting in beds. A spacing of 45 cm. between ridges of the crop and 12 cm. between plants on the ridges has been found proper for this crop. Cholam is fertilizer—responsive and addition of N.P.K., upto 60:30:30 (Kg./ha.) level, would be found economic for K4, over a basal dressing of farm yard manure or compost at 25 tonnes/hectare. The pest and disease problems are not generally severe on K4 and may be largely avoided if the crop is sown earliest in the season, in any given locality. If these management aspects are borne in mind while raising the crop, strain K4 would come out at its best productive expression.

RELEASE OF NEW STRAINS IN PADDY, COTTON, AND RAGI BY THE AGRICULTURAL DEPARTMENT OF TAMILNADU GOVERNMENT

The following new strains in Paddy, Cotton, Ragi and Thenai have been released by the Tamil Nadu Agricultural Department.

ADT. 30 PADDY :—A dwarf, short duration, high protein strain.

ADT. 30 is a dwarf statured paddy strain evolved by the Agriculture Department of Tamilnadu with a very short duration and high protein content.

ADT. 30 is the derivative of a cross between IR. 262 x ADT. 27 developed in the Regional Research Station, Aduthurai. It has a duration of 80 to 90 days from seed to seed. The plants are dwarf, errect and compact. The rice is long bold with good quality and 11.25% protein. This variety possesses non-lodging nature, field resistance to Blast, seedling vigour and an average yield potential of 5261 Kgs./Ha. This variety can be grown in Kuruvai or Kar season (June-July) and Summer or Navarai season (December-January) in all districts.

ADT 31 PADDY

ADT. 31 is a highly suitable variety for Kuruvai in Thajavur. It is a derivative of a cross between IR. 8 and CU. 340, evolved at the Regional Research Station, Aduthurai. It has upright stem, semi-dwarf plant type, non-lodging habit, moderate dormancy and tolerence to bacterial Blight, besides synchronous flowering. The rice comes under short bold in classification. The hulling and milling percentage are 77.5% and 72.5% respectively. The rice contains 10.1% protein and its cooking quality is good. It matures in 100 to 104 days and yields on an average 6198 Kgs./Ha. and has performed better than Karikalan in field trials in Thanjavur District.

MCU 8.—A Fine Variety of Cotton for Summer Season

MCU 8, a superior cotton to replace MCU. 4 in the irrigated summer cumbodia zone of Tamil Nadu. was developed at the Cotton Research Station, Srivilliputhur. The duration of the strain is 165 days. This new variety is found to be superior in yield and quality over MCU. 4 and MCU 5, with yields of 2183 Kgs. of Kapas/Ha. This new variety is tolerent to Black arm and stem weevil. It has a staple length of 1-5/32" and the spinning capacity of about 80s High Standard count. The lint has been estimated to be superior than MCU. 4. The special feature of this new variety is that it withstands drought and this can be grown as a Winter rainfed crop also.

Estd. 1947 PHONE : 25072

For Durability & Style
Buy,

VELCO

SAREES.

Variety
Economy
Lovely Designs
Colour Guarantee
Original Quality.

Available In All Co-optex Depots & Hand-loom Houses

: All Over India :

Please Contact :—

THE VELLALORE DEVANGA WEAVERS' CO-OPERATIVE PRODUCTION & SALE SOCIETY Ltd.,

VELLALORE P.O. — (Via) Podanur — Coimbatore District.

With the best compliment from

Phone : 1101

"VELNOOL"
Spinners of Guaranteed Warp
quality 40s, 60s, 80s and 100s
Carded and Combed yarn in Hanks & Cones

THE NORTH ARCOT DISTRICT CO-OPERATIVE SPINNING MILLS LIMITED

Post Box No. 201
ARIYUR, VELLORE-632002.

We invite Co-operative Societies and members of the public to become Shareholders of this mill. For particulars kindly contact the Managing Director.

S. V. RANGANATHAN, B.A.,
Managing Director

A. L. C. KRISHNASWAMY, M.C.,
Chairman

Aerial Lines Give Way To Cable Electric Transmission Lines

293

At present, scientists of the Krzhizhanovsky Institute of Electric Power Development are engaged in the solution of problems which are of vital importance for the future of power engineering. Danill Razevig, D.Sc. (Technology), director of the institute, discusses one of the directions of advanced research carried out by them. This article in the form of an interview, suggests corrective and useful solutions to the transmission lose in power distribution which is a world wide phenomenon and problem as well.

Scientists of many countries working in the field of power engineering are devoting much effort to the development of cable electric transmission lines. Are they no more content with aerial lines ?

They are, so far. Aerial lines, however, may exhaust themeslves within the next few decades and that is why already now different solutions to the effect are being proposed.

So far, there are three solutions to the problem which seem feasible in the near future. The first is based on gas-insulation lines, *i.e.*, metal pipes filled with compressed gas. Pipes with a diameter of 200—300 mm. are adequate for volatages of 220,000—330,000 v. By raising the gas pressure inside the cable it will be possible to increase the voltage several times over.

The second type is the so-called cryoresistant cables. They are based on the property of chemically pure metals to reduce their electric resistance at very low temperatures. Power losses in these cables will be low. I believe that the cables will appear not later than 1977.

The third type is the superconductive cables. The first line of this type will be laid in the USSR in 1975—76. It will have a length of one kilometre. These electric transmission lines operate at temperatures close to absolute zero (—273 decrees C.).

Strands in these lines are made of special superconductive materials : niobium or its alloys. At present power losses during transmission constitute nearly 10 per cent of all power produced. With the new AC lines power losses will be minimized. The transmission capacity of these lines will be so high that their use in the current century is unlikely. Naturally, all types of cables mentioned above will be laid underground.

In the future, it will be possible to speak of superconductive power systems. This means that all parts of these systems, *i.e.*, generators, transformers, cables and even AC convertors will be superconductive. Furthermore, it has been demonstrated in theory that the creation of superconductive power storage batteries is also feasible.

Do you mean accumulator type installations ?

Not them alone. Power engineering is now facing the acute problem of coping with peak loads. Standby power stations are being built to operate in peak periods (one to two hours a day).

You must have heard about derivation stations : the turbines are rotated by water streams from rivers or reservoirs placed very high. These stations work in "one directions" by generating electric current. Suppose we put some special turbines for generating electricity in "rush hours" and pumping water up in the intervals. Such is the operating principle of hydro-accumulating stations, one of which is working near Kiev and the other is to be built shortly in Zagorsk.

But scientists are still engaged in searching for other ways of energy accumulation. A superconductive high-inductance coil may serve the purpose : electric energy will be "pumped" into it in underload periods.

Is it possible to stop thermal power stations polluting the atmosphere ?

It all depends upon the kind of fuel used. With gas as a less polluting agent, petroleum and mazut emit a lot of impurities, mainly sulphur. But still it doesn't mean that stations will keep polluting the atmosphere. The Institute's staff are working over purification of coal, mazut and schist. Two goals will be thereby achieved : protecting the environment and supplying the chemical industry with valuable raw materials.

Still greater hopes are pinned upon atomic fuel which is the purest. The future does belong to it. When built in industrial centres lacking fuel atomic power stations will effect a great saving on transport.

The next stage is thermonuclear reaction control. It's hardly possible to fix the time for the first ever thermonuclear station to appear, but power engineers should be getting ready to receive it from the physicists and find the ways of introducing it into the present energy system. The latter will, of course, be difficult, since thermonuclear stations will be ten times more powerful than those now functioning. The problem of power distribution to far-away consumers should also be solved now.

Thermonuclear stations will possibly be liberating a lot of heat into reservoirs and rivers. Will it result in breaking the biological cycle ?

The problem may, of course, arise if use is made of thermal energy. However, another arrangement is also possible with the energy of thermonuclear fusion transformed directly into electricity bypassing the thermal process.

Of late, much has been said of one more cheap electricity source. I mean magnetohydrodynamic (MHD) generators. Your institute is also engaged in their development, isn't it ?

Yes, it is, along with many other scientific establishments. Gas operating MHD generators have already been made. Now the task is to modify solid-fuel ones. And again we'll have to deal with the problem of protecting the atmosphere from pollution.

The future of power engineering is, no doubt, linked with extremely high temperatures and plasma installations. And we'll have to learn to control plasma, a working body new to us. *

USE ALWAYS . . .

Our
FAST COLOUR
COIMBATORE

JAWAHARPURAM SAREES

***

Specialists of :
High Class Handloom 100s Cotton
Coimbatore Sarees and Cholies

***

Available in :
All Co-optex Emporia
and Handloom House Depots

***

Enquiry Earnestly Solicited

***

Estd. : 1954 Phone No. : 26508

The Jawaharpuram Devanga Weavers' Co-operative Production & Sales Society Ltd., No. K. 1516

JAWAHARPURAM
VELANDIPALAYAM P.O., COIMBATORE-25.
TAMIL NADU

Indian Standards Institution - A mark for Consumer Protection

"I hope that more and more advantage would be taken of the work of ISI by our public sector, private sector, government and all those who may need it because that is the right thing today."

JAWAHARLAL NEHRU

The Indian Standards Institution, commonly known as ISI, was established in 1947, the year of Indian Independence, by a resolution of the Government of India, with the active support of industrial, scientific and technical organizations in the country.

AIMS AND OBJECTS

The aims and objects of the Institution include preparation of standards relating to products, commodities, materials and processes and the promotion of their general adoption on national and international level ; promotion of standardization, quality control and simplification in industry and commerce ; coordination of the efforts of producers and users for the improvement of materials, products, appliances, processes and methods ; provision of registration of standardization marks applicable to products, commodities, etc ; and circulation of statistics and other information relative to standardization.

WORKING OF ISI

The Indian Standards Institution is an autonomous body and its overall control rests with the General Council, with the Union Minister for Industrial Development as its ex-officio President. The General Council consists of representatives from industry, Central and State Governments, scientific and technical organizations, subscribing members and Division Councils of ISI. The day-to-day administration is carried out by the Executive Committee, which is advised on financial matters by the Finance Committee.

FORMULATION OF INDIAN STANDARDS

Standards are printed documents which lay down requirements necessary for the production of quality goods, such as materials to be used, dimensions to be specified, performance to be expected, workmanship and finish to be achieved, and methods of tests to be followed.

For the formulation of Indian Standards, which are the national standards of the country, ISI functions through a large number of technical committees appointed by the following nine Division Councils which are responsible for the work of standardization in their respective fields :

(*a*) Agricultural and Food Products,

(*b*) Chemicals,

(*c*) Civil Engineering,

(*d*) Consumer Products and Medical Instruments,

(*e*) Electrotechnical,

(*f*) Marine, Cargo Movement and Packaging,

(*g*) Mechanical Engineering,

(*h*) Structural and Metals and

(*i*) Textiles

On the technical committees are taken experts representing different interests, such as manufacturers ; consumers ; scientific, research and technical organizations ; purchasers; and the Government departments, who work in honorary capacity and evolve national standards by a consensus of opinion. **The Indian Standards Institution is today the biggest cooperative organization in the country contributing to Nation's economic and industrial development through standardization.**

A draft standard has to pass through a number of stages before it is adopted as a national document. During the wide circulation stage, the draft is circulated to all interests concerned, both in India and abroad, for eliciting technical comments which are considered before it is finalized as an Indian Standard.

IMPLEMENTATION OF INDIAN STANDARDS

A number of advantages accrue from implementation of standards, such as assurance of quality, ensuring safety, minimizing wastage, increasing productivity, reducing costs, cutting down unnecessary variety, and ensuring interchangeability. Indian Standards constitute ideal solutions for various recurring problems, such as manufacture, technical basis for contracts, purchase, supply, and testing.

Implementation of Indian Standards is innate in the procedure followed in their preparation in which technical experts representing different interests formulate standards through a consensus of opinion. In addition, different departments of Central and State Governments and many local bodies have taken policy decisions to adopt Indian Standards. Important industrial undertakings and purchase organizations, both in public and private sectors, have also adopted Indian Standards in their manufacturing and purchase programmes.

ISI CERTIFICATION MARKS SCHEME

For providing practical utility of standards to the ordinary consumer, the Institution is operating ISI Certification Marks Scheme under the authority of the ISI Certification Marks Act, 1952 (as amended in 1961) passed by the Parliament. Under the Scheme, licences are issued to manufacturers producing goods in conformity with the relevant Indian Standards to apply ISI Certification Mark on their products.

For ensuring the production of such goods according to the relevant Indian Standards, a scheme, under which strict quality control and vigilance are exercised at different levels of production, forms a necessary

adjunct to every licence. Regular and surprise inspections of the licencees, factories are carried out by qualified inspectors of the Institution, and samples of their products are drawn from factoriesas as well as from the open market and subjected to tests in ISI and independent laboratories.

ISI Certification Marks Scheme gives assurance to the consumer that the marked products have been tested, inspected and certified by the competent national organization and they may be purchased with the assurance that nationally approved standards of quality have been met. Besides, it also helps the manufacturer in producing goods of quality and in reaping the advantages accruing from standardization.

ISI LABORATORIES

For testing certified products manufactured in accordance with Indian Standard specifications as well as those offered by applicants for the grant of licences under the ISI Certification Marks Scheme, the Institution has set up its own Laboratory at the Headquarters. Laboratories on smaller scales have also been established at ISI Branch Offices at Calcutta, Madras and Bombay.

Besides testing, the ISI Laboratories also carry out investigational work relating to Indian Standard specifications in the light of which new, simpler, economical and less time-consuming analytical techniques are suggested. In addition, the Laboratory at the Headquarters extends facilities for training in testing products according to Indian Standard specifications.

COMPANY STANDARDIZATION

To help manufacturers in the production of quality goods, the Institution assists Indian Industries in in-plant standardization. For this, ISI organizes (*a*) training programmes, which provide detailed training in standardization methods and techniques with a thorough indoctrination in basic principles and practices ; (*b*) survey programmes, which arouse interest among the participants to organize in-plant standards activity in their respective organizations ; (*c*) conferences on management and company standardization activity through top manage ment support ; and (*d*) factory visits.

These programmes have covered a substantial number of industrial units all over the country and many benefits have accrued to them through in-plant standards activity.

STANDARDS-CONSCIOUSNESS

For ensuring widespread implementation of Indian Standards through manufacturing and purchase programmes, publicising ISI Certification Marks Scheme, creating standards-consciousness among different sectors of economy, and thus furthering standards movement in the country, the Institution takes various measures. Indian Standards Conventions are held annually at important centres in the country. In addition, industrywise conferences are organized on specific subjects with the object of discussing problems affecting these industries in relation to standardization and quality control. Besides, different public relations and puplicity media are availed of for publicising the importance of standardization to the various sectors of economy.

STANDARDS LIBRARY

The Institution has a well-equipped library of standards and specifications issued by different authorities in various countries. Besides, the library contains technical, scientific, research and other publications. Important scientific and technical journals published in different countries are also received. The library also helps in preparing bibliographies for the use of technical personnel and experts of the Institution.

SUBSCRIBING MEMBERS

All organizations and individuals wishing to avail themselves of the benefits accruing from standardization, can joint the Institution as subscribing members in any one of the different categories, namely, Patrons, Donor Members, Sustaining Members, Associate Members and Individual Members.

Depending upon the class of membership, the subscribing members enjoy a number of privileges, such as receipt, free of charge, of one copy each of ISI publications of interest to them ; purchase of ISI publications at a discount ; access to technical library of the Institution ; facility of getting information on standardization both in India and abroad and the privilege to process new subjects for standardization.

INTERNATIONAL COLLABORATION

Besides preparing and promoting the use of national standards, the Institution also furthers India's interests in the field of international standardization by close collaboration with International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC). ISI is represented on important administrative and technical bodies of these organizations. Secretariats of some international technical committees, subcommittees and working groups dealing with subjects of important to India are held by ISI. For promoting standardization activity in the ECAFE region, the Institution works in close collaboration with the standards bodies of other countries of the region, and actively participates in the work of the Asian Standards Advisory Committee (ASAC).

To help the developing countries in Asia and Africa in overcoming the shortage of experienced Standards Engineers, the Institution provides facilities for training their technical personnel in principles, procedures, methodology and organization of Standardization.

BRANCH OFFICES

For keeping close liaison with and for rendering efficient service to industry, trade and commerce in different regions of the country, the Institution has opened its Branch Offices in Ahmedabad, Bangalore, Bombay, Calcutta, Hyderabad, Kanpur and Madras.

HOW ISI CERTIFICATION MARKS SCHEME FUNCTIONS ?

Any manufacturer having the requisite production and testing facilities may apply for a licence under the Scheme, and the Institution may authorize him to apply ISI Mark on his products after satisfying the relevant conditions.

On receipt of an application, the Institution organizes an inspection of the manufacturer's works to make an appraisal of the controls exercised during production ; and the facilities available for carrying out tests on raw materials, at in-process stages of production and on the final product. After the Institution is satisfied that the manufacturer is capable of producing goods to relevant Indian Standards on a continued basis, he is given a licence to apply ISI Mark on his products. Every licence includes a scheme of testing and inspection, which the licensee has to follow strictly.

During the operation of the licence, the Institution takes steps to ensure that the goods bearing ISI Mark have been produced in accordance with the provisions of relevant Indian Standards.

(*a*) Regular and surprise inspections of the licensee's works are carried out by the Institution's qualified inspectors, random samples of the products are taken and tested in ISI and other independent laboratories. Also, records of the tests carried out by the licensee, in accordance with the testing and inspection scheme drawn up by the Institution, are checked.

(*b*) Goods bearing ISI Mark are purchased by the Institution from the market and tested in ISI and other independent laboratories.

(*c*) Complaints from purchasers and consumers about the quality of ISI-marked products are entertained and looked into ; free-of-cost replacement is arranged in respect of substandard ones.

Results of the tests carried out on ISI-marked products by the licensee on the one hand and in ISI and other independent laboratories on the other must correspond for satisfactory operation of the quality control system. If they fail to do so, causes are investigated and action taken against the licensee, as provided under the ISI (Certification Marks) Act and the Rules and Regulations framed thereunder. For *bona fide* mistakes, corrective steps are taken and the marking is suspended till improvement in the operation of the system is ensured.

ADVANTAGES OF ISI CERTIFICATION MARKS SCHEME

TO CONSUMERS

- Guarantee of quality as per Indian Standards by an independent, technical, national organization;
- Full value and satisfaction for the money spent;
- Help in making a wise and informed choice;
- Free replacement of ISI-marked products in case of their being found to be of substandard quality;
- Protection from exploitation and deception and
- Assurance of safety against hazards to life and property

TO MANUFACTURERS

- Streamlining of production processes and introduction of quality control system;
- Technical audit of quality by ISI;
- Reaping of production economies accruing from standardization;
- the market, both internal and overseas;
- Winning consumar confidence and goodwill and
- Preference for ISI-marked products by organized purchasers, agencies of Central and State Governments, local bodies, public and private sector undertakings, etc. Some organized purchasers offer even higher price for ISI-marked goods.

TO EXPORTERS

- Exemption from pre-shipment inspection, wherever admissible and
- Convenient basis for concluding export contracts

PROGRESS OF ISI CERTIFICATION MARKS SCHEME

ISI Certification Marks Scheme has made rapid strides since its introduction in 1955-56. Up to 30 September 1972, 3178 licences have been issued covering goods of the annual production value of more than Rs. 4,500 million. These licences cover a range of 610 industrial products, including the following :

- Food products, such as, baby foods, milk foods, condensed milk, biscuits, soluble coffee powder, malt extract, etc.;
- Chemical products, such as, pesticides, paints, enamelware, dinnerware, safety glass, inks, miner's safety boots and shoes, etc.;
- Engineering products like sanitary appliances, door closers, pressure cookers, gas cylinders, building mate rials, wire ropes, leaf springs etc.;
- Electrical goods like electric motors, spark plugs, welding transformers, flash lights, metal-clad switches, immersion water heater, etc.;
- Structural and metals such as steel, electrodes, aluminium utensils, brass, etc. and
- Jute and jute products ; national flag of India, etc.

Source: *The National Standards Organisation of India.*

WHAT IS STANDARDIZATION ?

Standardization is the process of formulating and applying rules for an orderly approach to a specific activity for the benefit and with the cooperation of all concerned, and, in particular, for the promotion of optimum overall economy, taking due account of functional conditions and safety requirements.

It is based on the consolidated results of science, technique, and experience, It determines not only the basis for the present but also for future development, and it should keep pace with progress.

—Definition evolved by International Organization by Standardization (ISO)

Fast Guaranteed Colours and Long Lasting
Dhotis available in 100s, 80s, 60s, Counts
Art silk (Bumber) Dhotis available at low prices.

Always ask for
THE FAMED MUSIRI SALIAR
HANDLOOM SAREES

Available at rock bottom prices in attractive colours.
We are dealing both in wholesale and retail sales

Musiri Saliar Handloom
Weavers' Production & Sales Co-operative
Society Limited No. T.R.(H)15
MUSIRI, TIRUCHI DISTRICT

V. Sankaralingam, President. **V. Vadamalai,** Vice-President. **N. Arumugam,** Executive Committee Member.

Estd. 1954

Pilladurai Handloom Weavers'
Co-operative Production
& Sales Society Ltd., R 1090
THATHIENGARPET
Thathiengarpet P.O. Musiri T.K. TRICHY (DT.)
TAMIL NADU

Manufactures of: 4, 4½ and 5 yds. Dothies, 2½ yds. Angavasthiram Plain, Pattu, and Jarigai Border in 100s and 120s. Our special latest production Dothies in 120 counts.

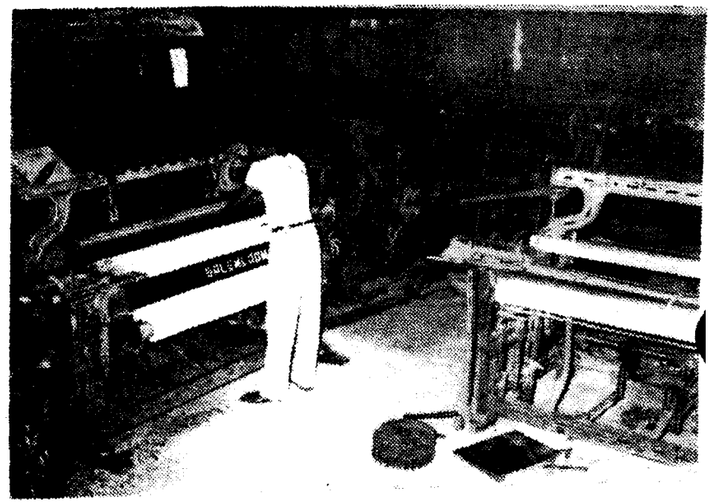
Fine Texture, Durable Quality, Guaranteed Jarigai, Beautiful Border
Upto-Date Designs

A TRIAL ORDER WILL CONVICE YOU

N. B. Rebate allowed as per Government order.

P. MURUGESAN
PRESIDENT

TRAINING AND DESIGNING FOR BETTER Hand Loom PRODUCTION



The Indian Institute of Handloom Technology at Salem run by the Government of India through the All-India Handloom Board, is a premier institution of its kind in the country. A governing body consisting of officials and non-officials, advises the working of the Institute. The Institute conducts two courses of study. One is a long-term course of three years' duration, leading to a Diploma and the other is a short-term course of four months' duration. 32 candidates are admitted to the Diploma course every year, of whom 8 are from Tamil Nadu. The expert Committee on handloom industry feels that all the 8 seats allotted to Tamil Nadu should be filled up every year and that when the students finish the course and get their Diplomas, they should automatically be absorbed in the technical cadre of the State Handloom Board and if they are not required for work of the Board they should be deputed to the weavers' co-operative societies. Their services will be particularly useful in introducing new designs and effecting improvements in the techniques of weaving. For the short-term course in the Institute, only active weavers and other artisans are taken and given intensive practical training in particular aspects of handloom weaving i.e., either in weaving, pattern-making or dyeing. There are two training sessions every year, and four candidates are taken for each session. The Handloom Board should encourage the co-operative societies to send as many artisans as may be admitted for this course. It may also encourage private producers to send their weavers for this training

As for new designs, there are two weavers' service centres of the All-India Handloom Board in Tamil Nadu — one at Madras and the other at Kancheepuram. These centres concentrate on producing new designs. It is desirable that the technical staff of the Handloom Board and the Managers and Secretaries of weavers' co-operative societies are enabled to visit these centres periodically and keep themselves acquainted with the new designs improvised there. The Santhanam Committee has recommended that annually a few persons selected from the technical staff of the Handloom Board may be enabled to visit similar centres maintained by the All-India Handloom Board at Bangalore, Bombay, Mangalagiri, Indore, Varnaasi and Calcutta.

Besides these all-India centres, special training centres are being run in Tamil Nadu in various places for improving techniques of weaving and for introducing new patterns. These centres are ordinarily attached to the primary weavers' co-operative societies and training is imparted for two months. At present, there are 12 such training centres run by the Directorate of Handlooms and Textiles and they are able to cover all the weaving areas in this State atleast once in three years. It has been suggested that this scheme should be continued and expanded, if necessary.

As regards yarn testing, it would be well for us to establish a full-fledged yarn testing laboratory. In the godown attached to each region, it is considered that there should be a small laboratory with a competent technician in charge who will be able to keep a watch over the quality of yarn arriving at the godown so that in case of defects they may be reported to the Handloom Board, which can take up the matter with the mills concerned and arrange for fuller inspection and testing.

OUR MOTTO IS YOUR SATISFACTION

Co-operation promotes national progress !

Sengundapuram Shree Sundara Vinayagar Handloom Weavers' Co-operative Production and Sales Society Ltd.,

No. R. 998

SENGUNDAPURAM P.O., (Via) JEYANKONDAN,
TIRUCHIRAPALLI DT.,

We produce and sell Handloom Sarees with and without Zari, Dhoties and cut-pieces.

Our products are also available in the Sales Depots (Co-optex) of Tamil Nadu Handloom Weavers' Co-operative Society all over the Country.

N. R. Vajjiravel,
President.

EXTEND SUPPORT TO COTTAGE INDUSTRIES

Co-operation ensures national prosperity !

Extend support to Handloom Clothes !!

Regd. : 15-3-1945

Estd. 19-4-1945

Samayapuram Kannanur Renganatha Handloom Weavers' Co-operative Production & Sales Society Ltd.,

R. No. 737

SAMAYAPURAM P. O. LALGUDI TK.
TIRUCHIRAPALLI DT.,

The world famous 100 counts Uraiyur Sarees in latest designs, 40 × 20 Dhoties of 2 yards variety and 100 × 100 Dhoties of 4 yards variety are available with us for sale.

Our clothes are noted for fast colour and long lasting.

Our products are sold in the Sales Depots (Co-optex) of Tamil Nadu Handloom Weavers' Co-operative Society throughout the State.

DIRECTORS :
S. Krishnamoorthy
T. Ramanujam
P. Govindaraju
V. S. Krishnamoorthy

T. Govindasamy,
PRESIDENT.

N. Nalluswamy,
VICE-PRESIDENT.

Poompuhar Has Come To LIFE

A THOUSAND VISITORS THRONG EVERY DAY

S. NALLARASU, M.A., B.T.
RECEPTION OFFICER,
POOMPUHAR.

"In reviving Poompuhar, the ancient Chola Town lost to the sea, we are fulfilling the ideals so dear to the heart of Anna — of preserving and fostering the tradition and history, arts, culture and civilisation of the Tamils. Our achievements and continuing efforts in this direction have won encomium of many, even foreigners," so said Dr. M. Karunanidhi, Chief Minister during his Budget speech.

The imposing edifice which has been erected on the sea-shore at Poompuhar housing a series of sculptured panels to depict the Silappadikaram, is the harbinger of a large range of more such edifices to revive the lost town of Poompuhar which in its hey-days managed to project Tamil civilisation and Tamil culture to the whole world.

Two more edifices associated with Poompuhar of yore, are likely to be in position shortly *viz.*, Ilanji Manram which is a swimming pool and Nedungal Manram, which was used for exorcising spirits in its pristine days. The new Nedungal Manram will have unique stone pillars of ravishing sculptures to arrest attention and hold anybody in the thrall of its spell.

POOMPUHAR PRAISED

The Chief Minister's claim that the project is one so dear to the heart of our revered leader Anna is borne out by what he wrote as preface to the book on Silappadikaram. "It is most appropriate that Tambi Karunanidhi should give us Silappadikaram in his own inimitable diction, under the Caption "Poompuhar". Anna was referring to the 'Tale of the Anklet' the dramatic rendering of 'Silappathikaram' by Dr. Kalaignar M. Karunanidhi, our beloved Chief Minister.

It is true that Anna is not alive now to appreciate the still more appropriate work of his Thambi in erecting the Silappadhikara Kalaik-Koodam and in reviving all the glories of Poompuhar to immortalise the grandeur of Tamil culture and the glory of the story of Kannagi. Yet, on behalf of Anna the whole world is admiring him.

"If we have anything to offer to the world as proof positive of the eminence we once held, it is the Tamil Classics, and of the Five Fine Classics, **Silappathikaram** is a gem of rare brilliance. Let the fragrance of 'Poompuhar' spread far and wide and let the world realise the glory that was Tamilagam,"— so wished Anna. And his worthy Thambi has sincerely obeyed Anna's command.

Tourists are thronging towards Poompuhar in thousands and thousands. In a single year as many as 3 lakhs had visited the Gallery paying 10 paise each. They are not only from Tamil Nadu but also from other States and other countries. They are taken aback by the excellence of the sculptural work brought out even in this age. The grandeur of the seven storeyed Kalaikoodam, and the nicety of sculptural work as revealed by the statue of Madhavi thrills anybody. They praise Poompuhar ; they praise the sculptors ; they praise the engineering personnel and above all they praise with a deep sense of gratitude the founder-architect, Chief Minister Dr. M. Karunadnihi who has brought out the latent sculptural skills in this generation, and immortalised the glories of our culture and art, and established the ancient Poompuhar.

Sons of the Tamil soil feel proud of having re-established the links with their glorious past rhrough the pristine purity of art in Poompuhar. Another source of pride is the resuscitation of the spirit of sanctity of Chastity that was respected, revered and even worshipped as reflected in Silappathikaram. Seeing that the art of Tamil Nadu is retained in the form of the Kalaikoodam, the Tamils feel encouraged and encourage us also.

Among the visitors, there are the literate, and the illiterate the enlightened and the savants and they all appreciate the work and admire the persons involved in the creation of this artistic mansion.

Fortunately the visitor's book was initiated by one visitor from France, Mr. F. Mutin, a research scholar in sculpture and architecture. He was a State Guest.

Mr. Mutin was taken round the Art Gallery and the story of Silappathikaram was narrated to him. Then he was told of the 'Tale of the Anklet'—The Play by Dr. M. Karunanidhi.

Having fully grasped the spirit of the story, Mr. Mutin made special mention of the qualities of Kannagi and Madhavi in the visitor's book. He had been visiting all the temples in Tamil Nadu and he was surprised to find that the sculptural pieces were all made so recently. He repeatedly asked whether this was made recently because he could not believe his eyes. Then he mentioned, "It is also a happy and strengthening feeling to see as soon as one enters the art gallery that India has also been able to train skilled carvers to maintain and to perpetuate what has been one of the glories of the Indian Art." He calls the Kalaikoodam "an architectural monument" and says, "It is a very great pleasure for a foreigner to find out that India owns so highly qualified designers who have been able to ally old and up-to-date architectural designs."

Appreciating the nobility of the characters, of Kannagi and Madhavi he says, "Finally the human qualities, especially Honesty and Fidelity as shown through beautifully carved stones, denote the consciousness of the Indian people who allows the augur of a bright future." He not

only appreciates the ideals of the story but he also comes to have a faith that the greatness of the characters will help in propagating preserving and perpetuating, the nobility of humanity. This appreciation and commentary of Mr. Mutin could have fully satisfied Poet Ilangao Adigal, the author of this Tamil national Epic; who has devoted this epic to the glorification of **Chastity** in particular, and to the establishment of the **Reign of Justice.**

As he came to the panel depicting the court scene in which Kannagi advocates the case of her husband and in all fury accuses the King himself and throws down the anklet that gets shattered into pieces, Mr. Mutin grasped the climax of the story and he ran back to the Execution Scene in which Kovalan is shown beheaded. Then to the Madhavi Kottam where the magnificant Statutue of Madhavi has been installed. Mr. Mutin was gazing and gazing at ' Madhavi ', and noticing that he was completely taken up by the supreme beauty of Madhavi, I interrupted his reveries : " What do you think, Sir, would have happened if this statue had life ?"

He was again surprised. He didn't answer, rather, he couldn't. Then he smiled.

" This statue had life and what happened then is the story described and depicted here," said I.

The Kalaikoodam is kept open for visitors from 9 a.m. to 7-30 p.m. on all days. People here say that a place like Poompuhar where a car could be seen only once in a blue moon, is now thundering with Tourist Buses and cars at all hours of the day and far into the night as well.

Silambu Chelvar Thiru Ma. Po. Sivagnanam, Vice-Chairman of the Tamil Nadu Legislative Council, came here by 8 one morning, visited the Kalaikoodam and recorded his impressions with his blessings for Dr. Kalaignar and his Government for constructing the Kalaikoodam.

On an average, we have about one thousand visitors daily. The number swells on week-ends and surprisingly enough we had 11,000 (eleven thousand) visitors on a particular day !

Students and teachers welcome this Kalaikoodam and pay their unstinted tributes to all concerned. Students come with pen and paper, note down the verses from Silappathikaram given under this panels that describe the portions allotted for their study. At times we pose as teachers, and the Art Gallery turns into an educational institution.

Till date (15—4—1974) about three lakhs of Tourists have visited the Kalaikoodam during the last 300 days.

After the inception of the Reception Office, steps have been taken to ply buses on new routes from Poompuhar and now buses are plying direct to Poompuhar from Thanjavur and Kumbakonam. There are frequent conveyances to Poompuhar from Mayuram and Sirkali till 10-15 p.m. every day.

Lodges and Hotels would be made available soon for the visitors.

A resting hall for them will be constructed soon.

Anna Rest House will be completed shortly. The Ilanji Manram, Nedungal Manram and Pavai Manram will all be constructed shortly. The Ilanji Manram will be an attractive swimming pool with architectural and sculptural grandeur.

It is a pleasure to welcome and take round people who come here all the way with zeal and zest to visit the historical spot, the birthplace of Kannagi, the renowned capital of Karikal Chola, the centre of commerce known all over the world and described by Ptolemy as the " Khaberis Emporium," and a major tourist abode in the days to come.

" An architectural monument "

" Magnificent Pagoda of Kannagi and Splendid sculpture of Madhavi"

" A feast for the eyes "

" An excellent contribution—words inadequate"

" . . . . Pleasure and price to see our greatness in the past"

"The visit to art gallery is simply thrilling."

These are the expressions of some of the visitors.

Let us join Ilango Adigal who adores :

" Praise unto Poompuhar !
Praise unto Poompuhar !

Visit Poompuhar that
Visualises the past !

STATUS OF INDIAN TRACTOR INDUSTRY

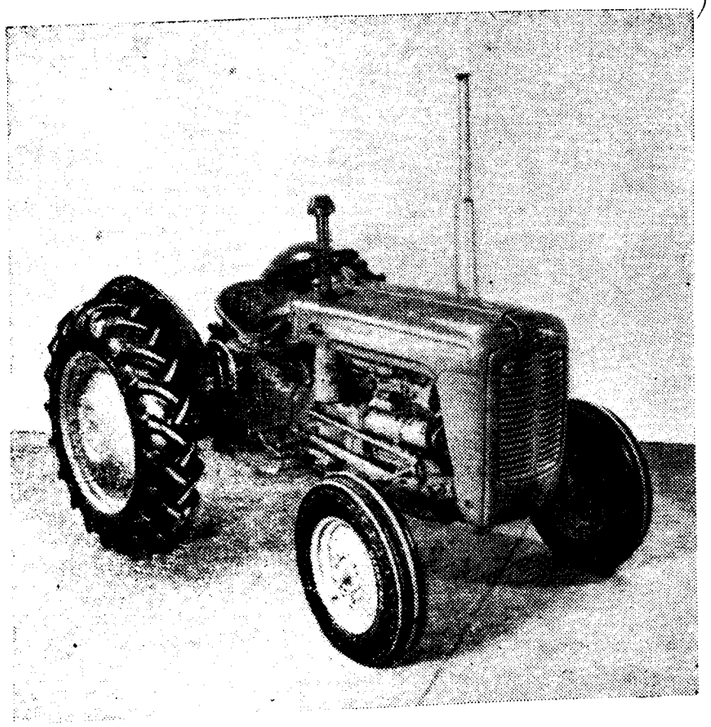
By
B. R. SULE
Consultant, Indian Planning Commission.

The tractor has secured a formidable place in Indian farming ; it has aided the green revolution ushered in by the genetic improvement in seeds.

Like so many other industries, the tractor industry in India is very young. In early sixties 5 units were established with an annual licensed capacity of 30,000 units. Since then the industry has made encouraging progress. Since its inception in the early sixties, the industry's production rose from 880 tractors in 1961-62 to 20,676 units in 1972-73. Table below gives the year-wise production of tractors and value of output during the last six years :

Year	*Production*	*Value (Rs. in lakhs)*
1968—69	15,437	2,656.50
1969—70	17,101	2,881.00
1970—71	19,535	3,584.00
1971—72	16,750	3,936.00
1972—73	20,676	4,858.90
1973—74 (Estimated)	25,000	5,875.00

The decades of the sixties saw the growth of this tractor phenomenon in Indian farming and the indigenous tractor industry has played an important role in accelerating the pace of farm mechanisation in India.



A TAFE Tractor

Out of the 17 units licenced, 7 units viz. International Tractors, Escorts, Ford, **TAFE**, HMT, Eicher and Hindustan, are currently engaged in regular production. A few more units are expected to go into production during 1974. The industry is expected to produce 25,000 units during 1973-74 as against the Government's target of 28,000 units. The target set by Government for 1974-75 is 35,000 units, which the manufacturers are expected to fulfil if the persistent bottlenecks in production are overcome by them. Although, the industry is only a decade old, the progress has been remarkable.

It is also significant to note that with concerted efforts, most of the existing manufacturers have been able to attain over 80% indigenisation.

Demand

At the instance of the Government, the National Council of Applied Economic Research was entrusted with the task of estimating the demand in order to arrive at a concise picture of likely demand. The Report of NCAER has envisaged a demand of 35,000 units in 1973-74 with a progressive rise of upto 80,000 units by 1978-79. The Task Force of Agricultural Machinery Industry has also suggested the following pattern of production of tractors :

1973—74 —	40,000
1974—75 ..	46,000
1975—76 ..	53,000
1976—77 ..	61,000
1977—78 ..	70,000
1978—79 ..	80,000

As against the estimated demand of 80,000 tractors by 1978-79, a total capacity of 1,47,000 nos. has already been licensed. Letters of intent have also been issued covering an additional 41,000 units. There is, therefore, a wide gap between the licensed capacity and the projected demand, the former outstripping the latter to a

substantial extent. There is, therefore, no need for licensing of further units in this field. On the other hand, it is essential to provide the necessary assistance for these licensed units to meet the required demand.

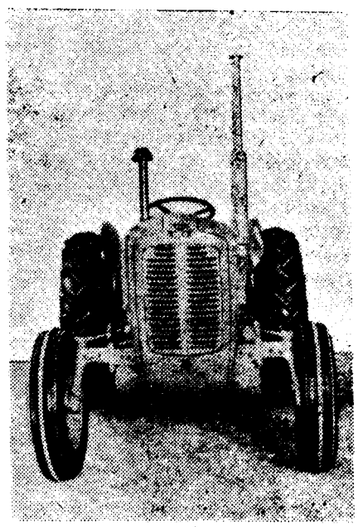
Imports

In view of very little production of tractors in the country during early sixties, the Government allowed imports of built-up tractors to meet the gap between demand and availability. As against an import of 4038 units in 1967-68, imports reached a peak level of about 20,000 units in 1971-72. Although indigenous production picked up well from 1966-67 the steady imports of tractors during the last decade have adversely affected the growth of indigenous industry, mainly due to customer preference for imported makes. Now that the industry is in a position to achieve a production level to the projeected demand, there should be no need to import completely built-up tractors even under international aid programmes. Such aid programmes should instead be utilised for imports of raw materials and critical components for existing units. Also in view of the fuel shortage, the Government should consider steps to keep the indigenously made tractors utilised to the fuller extent.

Bottlenecks

Various factors such as awareness of farmers to employ modern methods of farming, setting up of custom hiring services and liberalisation of credit facilities for purchase of tractors have improved the demand of tractors. However, though the industry has created adequate production capacity, fuller utilisation of such capacity is affected by persistent bottlenecks in production. The industry has been facing shortages of critical and vital components and raw materials, such as special castings like cylinder heads and engine blocks, forgings, engine components, fuel injection items and tyres and certain categories of steel. **The existing foundries in the country do not have adequate capacity to meet the casting requirements, especially special castings which are complicated in nature such as cylinder heads and engine blocks. Also foundries with expertise to produce these complicated castings are very few in number.**

Lack of price control on spare parts Hits the tractor industry



The ancillary industries have also to feed other industries covering automobiles, commercial vehicles and internal combustion engines, and also replacement requirements. The recurrent power shortages have aggravated the problems of the industry as well as the ancillary and small scale units. Frequent strikes and lockouts in the ancillary and small-scale units particularly of units enjoying monopoly for certain items have accentuated the shortages resulting frequent disruption of tractor production.

The Government's immediate task would therefore be the identification of the items in short supply in the ancillary field for tractor production and the creation of additional production capacity of such items either by expansion of the existing units or through further licensing. Creation of additional capacity for ancillary units will not alone solve the problems. It should be ensured that raw materials such as pig iron, special steel, etc. are also made available promptly on priority basis to such units. The existing foundry capacities for special castings should also receive Government's immediate attention so that adequate production is ensured either by expansion of existing units or creation of now units.

Pricing

Tractors have been declared as an essential commodity under the Essential Commodities Act. The distribution and the retail selling prices of indigenous tractors are therefore under Government control. The relative inflexibility of the situation works as a hardship on the manufacturers in view of the rapidly changing cost position. This is aggravated further by the fact that while the tractors are under price control, there is no regulation of prices of ancillaries in small scale sector.

Finance

Tractor industry is in the 'Core' sector. The industry is required to make heavy investments at a faster rate so as to achieve its licensed capacity in a short period. It would also require large amounts for working capital. The present 'Credit Squeeze' by the Reserve Bank has placed the manufacturers in a difficult position to meet their financial requirements. In the context of the country's need for speedier agricultural production, the tractor industry's role shold receive adequate attention and the manufacturers and ancillary units should receive priority attention to meet their financial requirements for capital investment as well as for working funds.

Similarly, farmers also increasingly depend on borrowed finance. Though some steps have been taken to liberalise credit facilitier for the purchase of tractors by farmers this sector needs still more attention. With the increase in the cost of tractor and the other needed implements and equipment to go with the tractor it is most essential that the loan limit is increased to cover the total cost of all farm equipment. Similarly, the existing margin money should be brought down to a maximum of 10% so that the farmers are able to utilise fully the credit facilities.

While determining loan amount, the size of the holding and land value are taken into account. In view of the various state legislation on ceiling on land holdings, this criteria for determining of loan should be so modified so that farmers with small holdings are also able to avail of the loan facilities. The requirement of land as additional security should not also come in the way of granting loans. Adequate steps are, therefore, necessary to improve the present credit policy to make it more liberal, simple and prompt in operation.

Other Inputs

It is estimated that the annual requirements of fuel and lubricants for farm prime movers will soon be to the tune of Rs. 300 crores to Rs. 400 crores for the current installed horsepowers exceeding ten million. In the context of present oil crisis and with the increased availability of farm tractors, the requirements of fuel and lubricants of the agricultural sector needs serious attention. Recently the Punjab Government has decided to introduce rationing of diesel used by tractor owners. This situation may spread to the other States also and will no doubt adversely affect the optimum use of tractors, and will thereby reduce the level of farm mechanisation, and also the demand pattern for tractors. It is estimated that the envisaged weekly quantum allocation in Punjab, would barely meet the requirement of a full day's operation in the ploughing season for a farmer. Also for the farmer who is burdened with procurement problems for other agricultural inputs, this would act as another hurdle in his busy season.

If, therefore, tractor users are to make full and economic utilisation of the tractors, it is most essential that fuels and lubricants are adequately made available, more particularly during the peak season.

Employment of tractors for higher agricultural production should be matched with increased availability of supporting agricultural inputs such as fertilisers and pesticides. It should, therefore, be ensured that priority is given to tractor users for allocation of fertilisers and pesticides.

In view of the industry's vital role in the context of boosting agricultural production during the Fifth Plan period, problems of the industry deserve serious attention so that the growth achieved so far through stresses and strains is sustained to achieve further progress of mechanised agriculture and its benefits to the nation.

Assembly and Machine shop of TAFE

THE MYTHS AND REALITIES ABOUT LIGHTNING

Lightning is a flash of light in the sky caused by an electrical current. The current may flow between parts of the same cloud ,between different clouds, or between clouds and the earth.

In earliest times, men looked on lightning as one of the great mysteries of nature. The ancient Romans believed that thunder and lightning were the weapons of the God Jupiter. They thought that such powerful and deadly weapons could belong only to the greatest of their Gods. Modern science has shown that lightning is really a flow of electricity formed high above the earth. If a man could find a way to use the electrical current in a single lightning flash a mile long, he could light 1,000,000 light bulbs. Benjamin Franklin showed the connection between electricity and lightning.

WHAT CAUSES LIGHTNING?

When a solid body becomes electrically charged, only its surface has a charge. But when a thundercloud becomes charged, the whole cloud has a charge. The cloud actually consists of an immense number of tiny water droplets. Each of these droplets has a charge on its surface. Thus a cloud may have a great electrical potential. If a cloud comes near an opposite electric charge, a huge spark may result. When a charged cloud comes near the surface of the earth, an opposite charge is induced on the the surface of the earth. The air that separates the cloud and the earth acts as an insulator. It resists electricity to rush together. But when the electrical potential becomes large enough, it overcomes the resistance of the air. Then a lightning flash occurs. The flash is a huge similar to that produced in the sparkling of an automobile. Scientists have found that one stroke of lightning measures more than 15,000,000 volts.

THE RIDDLE OF GLOBE LIGHTNING

The nature of common lightning was explained when the theory of electricity was in its infancy — about two centuries ago. Lightning is an electric discharge that flows along a canal formed by a strongly ionised gas.

Scientists were less successful with globe lightning : its origin is as yet obscure.

The globe lightning occurs as a hovering or flying fiiery sphere, a cluster of electric plasma, possessing a substantial store of energy of about 100,000 joules or 24,000 calories, according to the most conservative estimates. Occasionally, for reasons that are not known so far, this energy is released in one-thousandth fraction of a second. An explosion takes place that is equivalent to a few ten or hundred grammes of trotyl and is capable of making great damage. But globe lightning can also disappear in a quiet way by ejecting " sparks " as eyewitness reports say.

At the Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation of the USSR Academy of Sciences, a hypothesis has been put forward to the effect that the globe lightning originates when a considerable amount of water makes its way into the canal along which the discharge of the common lightning takes place. During recombination water molecules stick to the positive and negative ions, forming envelopes around them. These envelopes prevent the ions from combining, as they hamper their direct contact. The appearance of such water envelopes around ions has been known in solutions. But can the same thing take place in gases ? Evidently it can because a large number of similar ions bound together with water molecules have been discovered in the lower layers of the ionosphere a few years ago.

The greater part of globe lightning have been observed during thunderstorms. Like common lightning it is most often attributed to electrical phenomena. The gas medium consisting of electrically charged particles, that is cold plasma, practically does not occur under terrestrial conditions although it is extremely widespread in outer space. It must be noted that particles carrying charges of different sign attract each other, recombine and form neutral atoms and molecules in a very short time. Recombination in the duct of the common lightning finishes in approximately one-thousandth fraction of a second after the end of the discharge whereas the globe lightning can exist for scores and even hundreds of seconds

The Soviet Academician Pyotr Kapitsa suggests that the globe lightning draws its energy from a storm cloud by means of a radio emission in decimeter wavelengths. There is another hypothesis to the effect that the energy reaches the lightning via a canal connecting it with the clouds. However, these hypotheses have not been confirmed experimentally. If globe lightning had many free electrons, it would emit a powerful radiation and expend all its energy in a fraction of a second. Therefore, there is a chemical theory of globe lightning according to which it consists of the usual atoms rather than electrically charged particles.

The participation of dust particles carrying electric charges has also been suggested. But although charged dust specks really recombine slowly because of their low mobility, such theories cannot explain the small weight of the globe lightning It can freely hover in the air whereas the dust specks, even of micron size, if they are congregated in an amount sufficient to explain the energy reserves of the lightning, will have a weight close to that of a solid of the same volume.

The globe lightning has focussed the attention also on account of its unusual behaviour. Firstly, it does not rise in the surrounding cold air, secondly, and this is perhaps the most surprising fact, it retains its shape and moves. No one has been able to see a fire that has escaped from a bonfire form a correct spherical body which would hover over the ground or move along it for a few minutes. We know today this is due to the laws governing the motions of gases. It is instabilities that develop in a heated gas that make the fire look as we all know it does. If lightning is a heated gas to which its small weight points, then why does it not behave like a hot air ?

WHY GLOBE LIGHTNING IS YET OBSCURE TO OUR SCIENTISTS ?

The nature of globe lightning was explained when the theory of electricity was in its infancy—say about two centuries ago. What exactly does it mean today ?

By

I. STAKHANOV D.SC., Phys. Maths.

And, finally, the radiation. The lightning glows despite the fact that its temperature, as observation show, is not so great. It is much lower than the temperature under which ordinary air glows. The difficulties attending the attempts to bring together all this conflicting evidence have led to the claim a few years ago that the globe lightning is an optical illusion due to the effect of the common lightning flash on the eye retina.

A hypothesis suggested by this author explains why a hot lightning does not rise in the cold air: This is because the hydrate envelopes add to the weight of the ions.

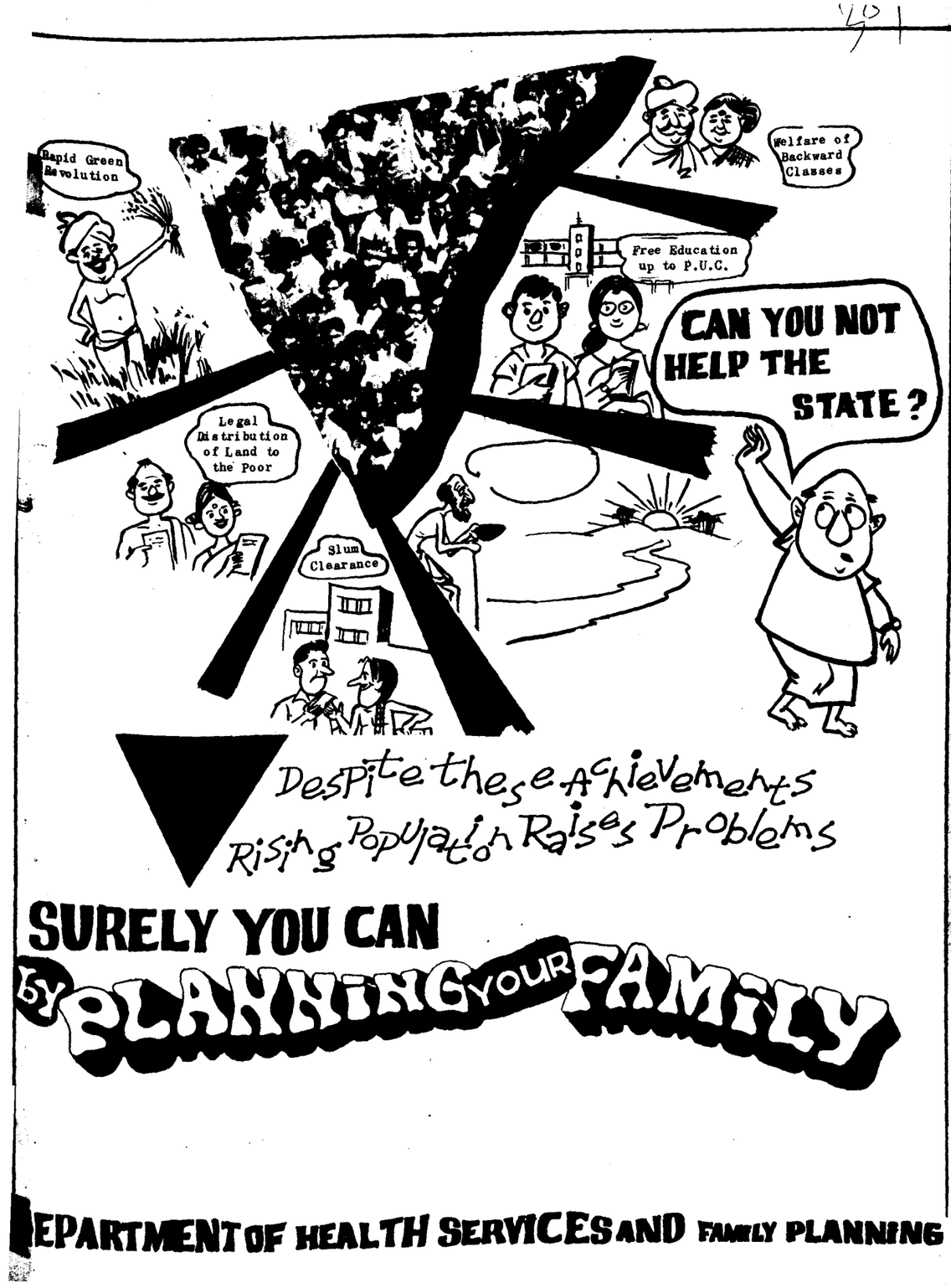
The stability of the globe lightning is explained by the surface tension forces that must be very high in a plasma. The medium-sized (10—20 cm. in diameter) globe lightning can form out of a big dewdrop that got into the thunderclap discharge canal. On the other hand, the stability of globe lightning requires, as calculations show, that the density of its matter should differ from that of the ambient air. This explains why it is met so seldom.

If globe lightning is found in the conditions when its temperature becomes higher than a certain limit (as owing to a decreased heat exchange indoors), there begins a chain reaction of the destruction of water envelopes leading to an explosion. Under ordinary conditions lightning matter slowly burns out owing to recombination. This leads to a change in density, and as a result the lightning " collapses " ejecting parts of matter which eyewitnesses believe to be sparks.

Investigations of the nature of globe lightning may have some practical importance. It is well known that many chemical reactions which do not take place in ordinary gases occur in plasma. However, under terrestrial conditions the plasma exists only under very high temperatures when many substances become unstable. If it were possible to create a dense plasma at relatively low temperatures and to contain it for a sufficiently long time, this would extend significantly the capabilities of plasmochemistry.

A pictorial folder containing 12 line drawn sketches of famous Tamil Nadu sculptures brought out by the Department of Tourism, Government of Tamil Nadu, was adjudged by a panel of Indian and foreign travel agents as one of the best publicity materials brought out by a Government Agency and was awarded the Certificate of Merit, of the Allan Currimbhoy Trophy. The sketches were drawn by the artist 'Silpi'. Shown alongside is one of the sketches the Madhavi Statue at Poompuhar Art Gallery.

With the present award, the Department of Tourism, Government of Tamil Nadu has won this recognition for the second year in succession.



VISIT Poompuhar

FOR A REAL INSIGHT INTO

Kaveripoompattinam, known as Poompuhar in its more fortunate days was a well laid out port town which boasted of a separate settlement for the foreigners. Much of the archaeological remains still are there for us to see.

In addition, the recently constructed art gallery is the first attempt, after many centuries, at group-sculpture for which Tamil Nadu is justly famous. In the form of group-sculpture and also in individual figures a remarkable edifice to recreate the life and times of the Tamil classic " Silappathikaram " Story of of the Anklet has come up at Kaveripoompattinam in its art gallery.

FOR FURTHER DETAILS
CONTACT:
RECEPTION OFFICER,
Poompuhar Art Gallery
VIA SIRKALI, THANJAVUR DIST.

1-9-1974
40 Ps.
Tamil Arasu

Khadi Kraft – a trusted name for khadi and village industries articles

KHADI KRAFT offers a wide range of articles-artistic handicrafts to essential commodities. Available at over 200 Khadi Kraft Branches all over Tamil Nadu and Pondicherry.

Khadi Kraft is Elegance Par Excellence.

TAMIL NADU KHADI & VILLAGE INDUSTRIES BOARD
KURALAGAM
MADRAS-600001.

For retail and whole-sale, contact Khadi Kraft at:

KURALAGAM	36C, ANNA SALAI	MADURAI MAIN ROAD	AVANASHI ROAD
MADRAS-600001	MADRAS - 600002	TIRUCHIRAPPALLI	COIMBATORE
Phone : 29684	Phone : 81954	Phone : 3814	Phone : 35051

P R.R.No. 431/74. 5880/SS 10.6.74

Tamil Arasu

Vol. IV 1st JUNE 1974 Issue 12

CONTENTS

		PAGE
Details of the Programme to help the Handicapped,	..	4
African Roots of Tamil Culture	..	9
Secondary Education in Tamil Nadu	..	11
The National Park for Fossil Wood	..	24
The Anaimalai Sanctuary	..	28
Do we use water wisely ?	..	37
Tamil Nadu Fire Service Department	..	39
Who are the physically handicapped ?	..	43

SECOND RAILWAY OVERBRIDGE AT MADURAI

The Rs. 29.3 lakh railway overbridge (cover page) declared open by Dr. M. Karunanidhi, Chief Minister on 21st April, 1974 is the second of its kind constructed in Madurai City within one and a half years. The overbridge goes a long way in relieving the congestion of traffic on the Madras to Kanyakumari Trunk Road near Madurai.

The overbridge is 1,576 feet long and 45 feet wide. Pre-cast concrete beams have been used in the construction of the overbridge. The overbridge has been designed and constructed in such a way as to allow separate subways for pedestrians and for slow-moving vehicles. The work on the overbridge was completed within a record time of two and a half years with saving to the extent of Rs. 3 lakhs over the estimated cost *i.e.*, Rs. 32.3 lakhs. The Railway Administration and the Madurai Corporation shared the cost to the extent of Rs. 10.96 lakhs and Rs. 10.67 lakhs respectively, and the balance was met by the Highways Department.

As has been observed by the Chief Minister in his inaugural address, the railway overbridge is named after Thiru Muthuramalinga Thevar in recognition of his services to the country.

The Two New Ministers Of Tamil Nadu Cabinet

THIRU N. RAJANGAM,
Minister for Harijan Welfare.

THIRU C. V. M. ANNAMALAI,
Minister for Social Welfare.

CHIEF MINISTER'S

FUND

CREATED

FOR REHABILITATION

OF PHYSICALLY

HANDICAPPED

SOCIAL WELFARE — Massive Programme for the Rehabilitation of the Physically Handicapped — Creation of a Special Fund thereof — " Chief Minister's Fund for the Rehabilitation of the Physically Handicapped" —Constitution of—Orders issued.

SOCIAL WELFARE DEPARTMENT

G.O. Ms. No. 396 **Dated the 18th May, 1974.**

The Government had recently ordered a comprehensive survey of the Physically Handicapped, both educated and un-educated, in our State. The survey has revealed that there are about 2.53 lakhs of Physically Handicapped persons (so defined as to include the Orthopaedically Handicapped, the Blind and the Deaf and Dumb). There has not so far been an organised approach to the rehabilitation of these disabled persons on a scale and scope commensurate with the magnitude of the problem. Government have carefully examined the various aspects of this problem in the light of the recent survey and have decided, as a first step, to launch a massive programme on an integrated and co-ordinated basis for the rehabilitations of about 25,000 poor physically handicapped persons during 1974—75 at a cost of Rs. 100 lakhs. **This unique welfare programme, which will open out to the Physically Handicapped people opportunities for a fuller and richer life, is to be inaugurated on 3rd June, 1974—the 51st Birthday of the Chief Minister of Tamil Nadu.** As in the past, the coming birthday of the Chief Minister will thus happily coincide with the memorable inauguration of yet another welfare programme of one of the most neglected section of our society — the Physically Handicapped in our State. Government consider that the active co-operation and involvement of the people is vital for the sucecss of this massive thrust for the rehabilitation of the Physically Handicapped in Tamil Nadu. Government hope with confidence that public contributions would be forthcoming in an abundant measure to sustain this noble cause.

The Government have accordingly decided that a Fund called " The Chief Minister's Fund for the Rehabilitation of the Physically Handicapped " should be constituted with immediate effect and that the amounts realised through voluntary collections should be credited to this Fund.

The resources for the Fund will be mobilised in the following manner :—

(*a*) By voluntary donations from individuals and institutions.

Hearing aid brings this child the joy of hearing herself.

(*b*) By conducting a Special Raffle, the entire proceeds of which will be credited to the Chief Minister's Fund for the Rehabilitation of the Physically Handicapped.

(*c*) Funds collected from other sources.

The moneys thus collected towards this Fund will be deposited in an account entitled " The Chief Minister's Fund for the Rehabilitation of the Physically Handicapped " in such Nationalised Banks as the Government direct. The rules for the administration of the above Fund and the audit of the accounts will be issued separately.

The Government also constitute a Committee for the administration of the above Fund consisting of the following members :—

(*i*) Minister for Social Welfare—Chairman.

(*ii*) Secretary, Social Welfare Department—Member.

(*iii*) Additional Secretary, Social Welfare Department—Member.

(*iv*) Deputy Secretary, Finance Department — Treasurer.

(*v*) Director of Social Welfare—Secretary.

Four Non-Official members will be nominated to the Committee in due course. The term of the non-official members will be for two years. The Secretary to the Committee shall be the controlling authority for purposes of countersigning the Travelling Allowance Bills of non-official members of the Committee. The Deputy Secretary to Government, Finance Department will be the Treasurer of " The Chief Minister's Fund for the Rehabilitation of the Physically Handicapped " and also issue cheques and maintain the accounts thereof.

Details Of The Programme To Help

The Handicapped

At the instance of the Chief Minister, a comprehensive ground level survey of the physically handicapped, both educated and uneducated, has been undertaken and completed recently in Tamil Nadu (details given elsewhere). The survey has revealed that there are about 2.35 lakhs of physically handicapped persons (so defined as to include only the Deaf and Dumb, the Blind and the Orthopaedically handicapped) and out of this 1.15 lakhs of persons are orthopaedically handicapped, 72.745 persons deaf and dumb and 46,118 persons blind.

It will be recalled that ever since his 48th Birthday in 1971 an attempt has been made to harness the people's natural enthusiasm to a worthwhile cause. The Chief Minister's Birthday on 3rd June has always coincided with the inauguration of several imaginative schemes for the welfare and emancipation of the helpless in our society. The 48th birth day of the Chief Minister in 1971 saw the inauguration of a massive programme for the rehabilitation of leprous beggars which has been greatly acclaimed in India and abroad. The 49th birthday of the Chief Minister in 1972 was marked by the most laudable scheme of giving sight to the sightless through well-organised eye camps. The 50th birthday in 1973 paved the way for the socio-economic emancipation of one of the most suppressed sections of our society—the operators of hand-drawn rickshaws by giving them Cyclerickshaws instead. The 51st birthday of our Hon'ble Chief Minister in 1974 is being marked by the memorable inauguration of a massive programme for the welfare and socio-economic rehabilitation of the physically handicapped in our State. Fourteen different schemes have been devised for this purpose as follows :

SCHEMES FOR THE 16-50 AGE GROUP

Apprenticeship scheme

One of the main bottlenecks that we face in the sphere of economic rehabilitation of the physically handicapped is the traditional prejudice against their employment. A fruitful line of approach would be to induce the employers to take in physically handicapped persons as apprentices.

The proposal is to recruit 1,000 physically handicapped persons at a total cost of Rs. three lakhs during 1974-75 as apprentices in a few selected departments / Government Corporations such as the Transport Department and Government Transport Corporations, the Stationery and Printing Department, Tamil Nadu Small Industries Corporation and the Kadi and Village Industries Board. Each physically handicapped apprentice would be given a stipend of Rs. 50/ per month for a period of six months subject to the condition that each such apprentice is absorbed in regular employment in the concerned undertaking on completion of his training. All applications will be collected and processed by the Revenue Divisional Officers and sent to the Collectors for consolidation and final selection. At the District level, a committee headed by the Collector with the District Medical Officer, the District Employment Officer and other officials to be co-opted if necessary, would scrutinise the applications, interview the physically handicapped persons concerned, and select the beneficiaries.

2. Training-cum-Production Workshop

One Training-cum-Production Workshop to cater to 150 physically handicapped persons will be established on the Madras-Mahabalipuram highway at a cost of Rs. 10/ lakhs. Each trainee will be paid a stipend of Rs. 100/-during the period of training.

3. Training for employment in labour-intensive industries

5,000 physically handicapped persons will be trained in the following labour intensive occupations—

(*a*) Match making ; (*b*) Beedi making ; (*c*) Handlooms and (*d*) Hosiery

Stipend will be given to each trainess at the rate of Rs. 30/- p.m. The training centres will be located in close proximity to the areas where these industries are now concentrated. A provision of Rs. 5 lakhs for this scheme during 1974-75 will be set apart.

4. Secretarial courses

It is proposed to start 20 centres for giving training in type-writing and short-hand to S.S.L.C. passed orthopaedically handicapped and deaf and dumb at a total cost of Rs. 8,80,000/- during 1974-75. During the period of training such trainee will be given a stipend of Rs. 30 p.m. Each centre will cater to 20 persons. As far as possible the centres will be run in public buildings in order to ensure that no expenditure is incurred on hiring out of private buildings for this purpose.

5. Tailoring Centres

20 Tailoring Centres will be opened during 1974-75 at a cost of Rs. 5,47,700. Each centre will cater to 20 physically handicapped persons and each trainee will be given a stipend of Rs. 30/- per mensem. The orthopaedically handicapped persons and the deaf and dumb can be productively employed in Tailoring Centres.

6. Training in the verification and sorting out of punch cards of computors :

S.S.L.C. passed 100 deaf and dumb and Orthopaedically handicapped persons will be trained in the verification and sorting out of punch cards of computors at a cost of Rs. 80,000/- during 1974-75. Each trainee will be tained for a period of four months and the trainee will be paid a stipend of Rs. 50/- each. The training programme will be organised in the Data Processing Centre, Madras.

7. Preferential treatment

Certain posts like Lift Operators will exclusively be reserved for the physically handicapped persons. The need for the introduction of legislation along the lines of the disabled persons (Employment Acts, 1944 and 1958 as in Great Britain, would be considered in our State also.

8. Opening of Special Employment Exchanges

At present only in Madras City there is a Special Employment Exchange for the physically handicapped. The extension of the existing scheme of special employment exchange in Madras City to the other Districts in the State will be considered by stages in a phased manner.

FOR THE AGE GROUP OF 6 TO 16 YEARS.

9. School for the deaf and dumb and the blind

The existing facilities for the Special education of the deaf and dumb and the blind in our State are totally inadequate. At present we have only about 15 schools for the deaf and dumb providing special educational facilities for about 1,600 deaf and dumb children as against the total number of 10,700 deaf children in the State in the age group of 6 to 16 years.

Five special schools for the deaf and dumb and 5 special schools for the blind are to be started during 1974-75 at a total cost of Rs. 6 lakhs. Since there is an acute dearth of trained teachers for the physically handicapped, an amount of Rs. 3 lakhs will be set apart for opening a centre for training special teachers for the physically handicapped persons.

10. Schools for Orthopaedically handicapped children in hospitals

Many of the orthopaedically handicapped children (especially those afflicted with polio) will have to undergo a long period of treatment involving physiotherapy in hospitals. Unless schools are attached to the hospitals, these children will not get the benefit of education in their impressionable years.

To provide educational facilities to polio affected and other orthopaedically handicapped children while they are receiving physio-therapic treatment, 15 schools during 1974-75, at a total cost of Rs. 7.5 lakhs will be started. Each of these schools will be attached to the concerned District Headquarters Hospital. In Madras City it will be attached to the Artificial Limbs Centre in the General Hospital. The details of syllabi and other matters connected with curriculam in these schools will be finalised in the light of the actual age distribution of the Orthopaedically affected children and their educational attainments.

THE AGE GROUP OF OVER 50 YEARS

11. Old age pension benefits

There are 53,840 physically handicapped persons in this age group consisting 23% of the total physically handicapped population. An old age pension scheme will be introduced in regard to this age group. The existing budgetary allocation for grant of old age pension will be increased to Rs. 150/- lakhs. This would mean giving benefit to 20,000 additional beneficiaries. Out of this increased number 10,000 beneficiaries will be reserved exclusively for the Physically Handicapped. The existing age limit for qualification for old age pensions which is at present 60 will be lowered to 55 in the case of the physically handicapped. This scheme will be applicable only to destitutes as defined in G.O. Ms. No. 73 Finance (Pension) Department, dated 22nd January, 1962.

GENERAL SCHEMES

12. Distribution of 1000 hearing aids

Almost all the deaf children from the poorer classes find it impossible to buy hearing aids because they are very expensive and is beyond the reach of most deaf children. 1,000 hearing aids (each costing not more than Rs. 300/-) will be distributed to 1,000 poor deaf and dumb children at a total cost of Rs 3 lakhs during 1974.-75. Vigorous action will be taken to develop low-cost indigenous hearing aid with local resources in order to ensure that the maximum number of deaf and dumb children get the benefit of this scheme within the over-all financial allocation approved.

13. Free distribution of wheel Chairs

The disability in the case of orthopaedically handicapped persons is often made more severe for want of mobility. In fact the easiest way to make him more mobile is by giving him a wheel chair. Unfortunately most of the orthopaedically handicapped persons will not be in a position to buy wheel chairs in view of their very high prices. Hence during 1974-75, 2,000 wheel chairs for about Rs. 15 lakhs will be distributed to poor Orthopaedically Handicapped persons who have lost the use of both their legs (each wheel chair will not cost more than Rs. 750/-)

14. Assistance to voluntary agencies

There are a large number of voluntary agencies in Tamil Nadu engaged in the noble task of rehabilitation of Physically Handicapped with a distinguished record of Service. Many of them are not in a position to expand or improve their services on account of financial constraints arising from spiralling prices. Financial assistance to such agencies in the shape of grants will be given to enable them to absorb more and more physically handicapped persons. The Social Welfare Department will scruitinise each application from Voluntary agencies on merits with reference to the existing guide-line and regulations.

A HOME FOR THE PHYSICALLY HANDICAPPED

(*a*) The total estimate of expenditure, which the foregoing schemes will entail, will be about Rs.100 lakhs The number of beneficiaries are estimated at around 25,000/-. The resources for the programme will be raised in the following manner :—

(*i*) Voluntary donations which will be credited to a Fund entitled "Chief Minister's Fund for the Rehabilitation of the Physically Handicapped".

(*ii*) The proceeds of a Special Raffle.

(*iii*) Government budgetary allocations to cover non-recurring and recurring expenditure.

(*b*) Except in regard to the Training-cum-Production Workshop Scheme, the physically handicapped beneficiaries will include equal number of men and women.

(*c*) At the Chief Minister's suggestion one of the Leprosy Beggar Rehabilitation Homes will be converted into a Home for the Physically Handicapped persons. One of the Leprosy Beggar Rehabilitation Home in Dharmapuri district will be considered for such conversion.

OTHER STATES SHOULD FOLLOW

C.M.'s Noble Gesture for Handicapped Cited

The lot of the handicapped in a poor country is particularly miserable. At a time when a large number of those who are whole and sound are unable to lead a full life because of unemployment, the handicapped find themselves in an invidious position. When they seek employment, they are often regarded with jealousy and even hatred. Though, through training, they are as fully suitable as the more fortunate for employment in most fields, employers are reluctant to utilise their services. Laws exist for the amelioration of their conditions, but they remain a dead letter. The welfare scheme which has been drawn up in Tamil Nadu to mark the 51th birthday of the Chief Minister seems to be well devised and, if implemented properly, will bring cheer to the 2.3 lakhs of handicapped people in the State.

It has been a happy idea of Mr. Karunanidhi to mark his birthday in recent years with schemes to help the poor. Earlier welfare schemes include rehabilitation of beggars, free eye camps and distribution of cycle-rickshaws to hand-rickshaw pullers. But two score years and ten in a man's life is a landmark, and this year the scheme is rightly ambitious. Costing a crore of rupees initially, it will bring solace to the handicapped persons in a variety of ways. The blind, the deaf, the dumb, the halt and the lame have all a scheme for themselves. Particularly notable is the decision to set up five schools each for the blind and deaf and the blind. The emphasis in many of the schemes is on help to the handicapped to help themselves. An engineering workshop, costing ten lakhs of rupees, is to be set up to train 150 persons in various skills.

The schemes have been formulated after much care and with much deliberation. Part of the money needed is to be raised through a special raffle. Public contributions will also be accepted. It is to be hoped that the public response will be generous. Nothing is more sad in the Indian streets than to see the lepers, the blind and the lame begging their bread. The sight is an indictment of the Welfare State which, despite its promises, has failed to keep them from destitution. **In Tamil Nadu, the State is discharging its responsibilities to a great extent. An earnest of this is the present scheme. The rest of the country can not do better than follow the Tamil Nadu example.**

—*The Indian Express Editorial dated 20th May*, 1974.

TAMIL NADU TOPS IN PER-HECTARE YIELD OF RICE AND RICE PRODUCTION

The Study of " Dynamics of Paddy — Rice System in India" conducted by the Indian Institute of Management, Ahmedabad reveals that Tamil Nadu tops the list of the States in productivity of rice per hectare. It has registered a 32.84 per cent increase in this respect between 1960—61 and 1970—71. In Tamil Nadu production has risen from 1,486 Kg. to 1974 Kg. during the period under study. Despite its being an agricultural State, Andhra Pradesh occupies only the fourth place in this regard with the yield of 1,369 Kg. in 1970—71 while Karnataka and Kerala rank second and third.

In the matter of total increase in paddy production also Tamil Nadu stands first followed by Andhra Pradesh.

PENSION

FOR THOSE WHO WERE IMPRISONED IN CONNECTION WITH THE ANTI-HINDI AGITATION

The Government have recently introduced, on the analogy of the Freedom Fighter Pension Scheme, a scheme for the grant of pension of Rs. 75/- per month to those who were imprisoned in connection with the Anti-Hindi Agitation in 1965 and in the agitations held for the merger of Tamil speaking areas in Kanyakumari and Tiruttani with the then Madras State.

The scheme applies to those participants in the agitations who were sentenced to imprisonment or were held under detention or were kept in remand for not less than **three months** or were awarded capital punishment or become permanently incapacitated due to firing or lathi-charge for their participation in these agitations. The dependants of the participants who were killed in action during these movements and the dependants of those participants who are not alive, are also eligible for pension. The pension is sanctioned in such cases subject to the following restrictions :—

(*a*) to the wife till her death or re-marriage.

(*b*) to the minor daughter till her marriage or till she attains the age of 21 years whichever is earlier.

(*c*) to the minor son till he attains the age of 18 years.

The applicant should satisfy the following conditions :—

(*i*) he/she should be a permanent resident of Tamil Nadu and

(*ii*) his/her personal income should not exceed Rs. 100/- p.m.

All the eligible persons are requested to contact the Collectors or the Tahsildars concerned for the supply of forms to apply for the pension.

HOW TO TEACH TAMIL TO THE FOREIGNER?

INTERESTING RESEARCH AT ANNAMALAI UNIVERSITY

A number of American Universities have started giving importance to the study of South Indian languages and literature. The Centre of Advanced Sutdy in Linquistics at the Annamalai University in Annamalainagar, Chidambaram, is collaborating with the Universities of Michigan, California and Pennsylvania in this work. The linquistics centre offers facilities for learning Tamil, Telugu, Malayalam, Kannada Hindi, Bengali and Urdu, and tribal languages such as Kota, Toda, Kudagu, Irula and Nilgiri.

The centre's scholars in these various languages visit the American Universities every year to share their knowledge through lectures and assist the faculty to prepare the syllabi for various levels of learning.

"Our work," says Prof. S. Agesthialingom, Director of the Annamalainagar Centre, "aims to explain the structural patterns of the Indian languages and their differences with those of English." To highlight this objective, the centre's scholars have formulated special linguistic drills and grammar lessons. They have also written textbooks to meet the needs of the American student. "These books," Prof. Agesthialingom adds, "are different from those offered to Indian students."

The American students, Prof. Agesthialingom explains, like other foreign students learning an Indian language for the first time, need special teaching materials because most of them are in older age groups. They are familiar and more accustomed to the vocabulary and grammar of their mother tongue—English—which are far different from those of any Indian language.

Prof. Agesthialingom himself spent a year (1970—71) at the Michigan University as Curriculum Studies Consultant for Tamil.

What has this linguistic assistance accomplished ?

"More than just additional knowledge," the Annamalai linguist says, "it has helped to evoke a better appreciation for the South Indian languages like Tamil on American University campuses."

According to him, linguists in the U.S. regard Tamil as a classical language like Sanskrit because of its 2,000 years of uninterrupted history and rich literature. He recalls an incident while participating in a 5,000-strong linguistic conference in Michigan in 1970. Some participating American delegates walked up to him during the intermission and remarked that after learning Tamil they were "astonished at its richness."

The Michigan University is also involved in yet another of the Annamalai centre's projects. The joint endeavour will research the historical inscriptions of ancient South Indian kings—the Cholas. Dr. Thomas Trautmann, who is on the faculty of the South Asian and South-East Asian Centre at the Michigan University, is Prof. Agesthialingom's counterpart in the study.

The Michigan —Annamalai project which is two-year old when completed will open a new chapter in the cultural and intellectual relations between India and the U.S.

AFRICAN ROOTS OF TAMIL CULTURE Rediscovered

—o—

PRESIDENT SENGHOR OF SENEGAL'S TALKS WITH TAMIL SCHOLARS

A Short Resume

BY

DR. MALCOLM S. ADISESHIAH

His Excelency Leopold Sedar Senghor, President of Senegal is the first Head of State to visit Tamil Nadu. In a one week stay in India, he spent 5 days and 4 nights in this State because the primary purpose of his visit was, as he said, "to meet the Tamil people, discuss with their intellectuals and scholars means and methods of strengthening the time-honoured and historical common origins between Negro-African and Dravidian history and culture and see something of Tamil achievements in music, dance, architecture and literature." He was the first Head of State to meet a group of Tamil scholars (including M.P. Sivagnanam, M. Varadarajan, B. Natarajan, K. Mahadevan, Meenakhisundaram, Subbiah K. Draviam, Sundaram, Asaithambi, K.K. Pillai, Badrinath, Maulvi Azad, Shanmugasundaram and some 20 others) at which the links between Tamil and his language Wolof and between Negro and Dravidian cultures were discussed. He referred to his research over 30 years into Dravidian linguistics, going back to the Harappa and Mohenjodaro scripts which demonstrated the common basis between the ancient Negro, Egyptian, Sumerian and Dravidian peoples, languages and cultures. He regretted the absence of Africa at the 4 sessions of the World Tamil Conference at Kuala Lumpur (1965), Madras (1968), Paris (1970) and Jaffna (1972) because unlike the European and North American scholars who participated in these conferences to discuss Tamil history and linguistics, Negro-African Scholars had common links with Tamil civilization. He pointed out to Thiru Mahadevan that the linking of Tamil and the proto-Dravidian, Indo—Sumerian scripts with uralo-Altaic languages by Finnish scholars was only partially helpful as the major links of the Dravidian languages were with Negro-African languages. He announced that Senegal would invite the World Tamil Conference to hold its 1978 session in Dakar at which African scholars will join with world scholars in further diffusing the heritage and greatness of Tamil language, history and culture.

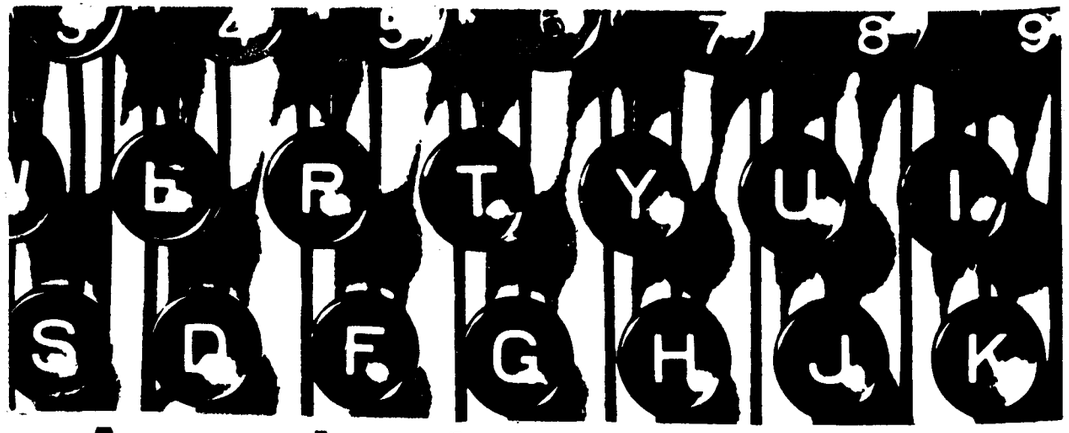
Responding to the suggestions by Dr. B. Natarajan, Thiru K.K. Pillai and Thiru M. Varadarajan, Thiru Senghor said that there is need for research not only into Dravidian and Negro-African linguistics which is being carried out by the Senegalese Professor in linguistics Cheikh Tidiane N'Diaye at Annamalai University and by Dr. Upadya in the Indo-African section of Dakar university, there is also need for research and studies into Tamil and Negro archaeology, geology, art and music, philosophy, religions and trade and commerce. He would use the Indo-Senegal cultural cooperation agreement signed last week in Delhi to arrange for an exchange of historians archaeologists, dance and music specialists, economists and philosophers to promote this urgently needed study and investigation to this multifaceted Dravidian Negro relationship.

COLOUR BAR HAS NO PLACE

In response to Thiru Badrinath's fears that the hierarchical, almost racist element, in Indian culture (wherein white is always preferred to black) might endanger the close cultural ties which President Senghor was anxious to promote, the President pointed out that Dravidian culture was a classless culture as was the ancient negro culture. As the contact of Negro culture with Arab culture brought in heirarchical elements, so the penetration of Aryan culture among Dravidian people introduced similar elements. But such unequal theories and social structures have to be discarded and are being discarded as we return to a sense of our glorious egalitarian past. It was in consideration of this kind of truth that he invited India to be represented by a delegation from Tamil Nadu at the Second World exposition of Negro art to be held in September this year at Nigeria, where the common egalitarian nature of Negro African culture like that of Dravidian culture will be demonstrated.

The President's attention was called to the danger of cultural revivalism which too much stress on Negritude or Dravidianism might involve. The President pointed out that all cultures today are both inter-related and open. The greatness of India was the confrontation of the two great cultures-Aryan and Dravidian. It was India's genius that she had at its head a great Aryan personality, Smt. Indira Gandhi as its leader, a leader who realises and recognises the uniqueness of Dravidian culture and the solid and strong contribution that Tamil people through their art and music, their government, industry and trade are making to the totality of India. As long as there is this kind of cultural confrontation and enriching dialogue, Dravidian culture like its cousin the African-Negro culture will never turn inward but will be constantly giving and receiving from others. He commended the renaissance of Tamil culture that characterises the present times.

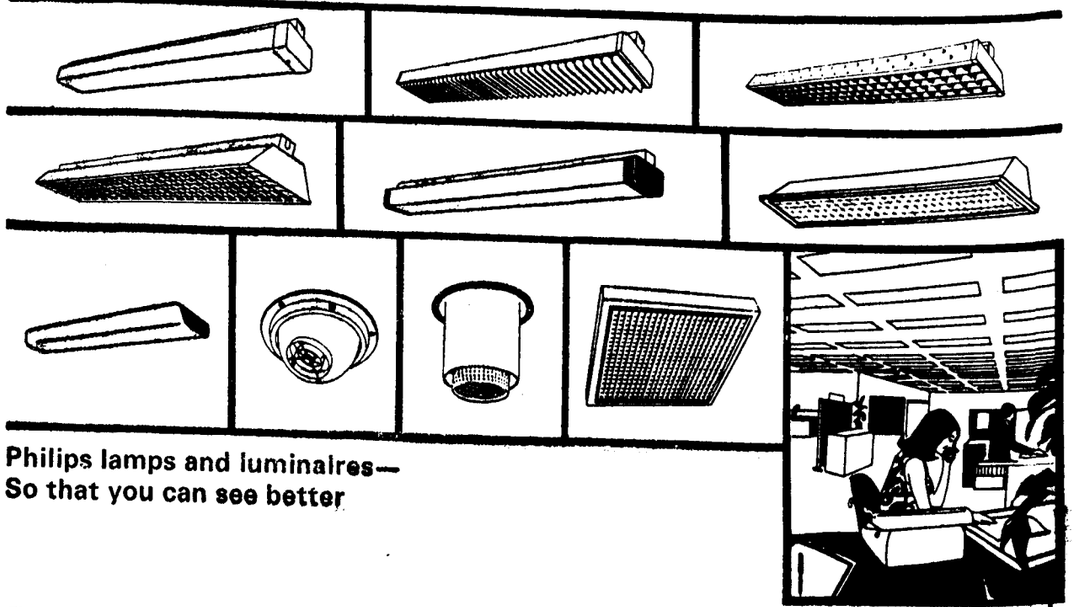
The President was fascinated in examining the classical Tamil musical instruments in which he found some fundamental similarities with those of Africa. Carnatic music as demonstrated by Thiru. Chittibabu and Bharatanatiyam as demonstrated by Selvi Padma evoked for him similar basic rhythms in African music and dance into which Arab and European influences later penetrated in the case of Africa and Aryan nuances in the case of Dravidian music and dance. The South Indian bronzes that he saw in the museum and the temple at Mahabalipuram were for him embodiments of the sensuality and sensitivity of the Dravidian people. The President's dialogue with Tamil Scholars and people brought to them a new understanding of the genius and greatness of Black people and to the President a new sense of the oneness of the great Dravidian and Negro African peoples.



Are you keeping your confidential secretary in the dark?

Good lighting plays an important role in improving your staff's vision, their efficiency, and personnel relationship. Philips have a range of reliable, high-efficiency, long-lasting lamps and luminaires for offices. Each specially designed to save on ENERGY to meet Indian conditions.

Philips indigenously manufacture the widest range of incandescent, fluorescent and mercury vapour lamps and luminaires to the highest international standards.



Philips lamps and luminaires—
So that you can see better

PHILIPS

PHILIPS INDIA LIMITED

Secondary Education in Tamil Nadu

The State of Tamil Nadu will spend a sum of Rs. 138 crores on all varieties of education in 1974—75. Some aspects of Secondary Education are discussed in this article.

The population in the age group 14—17 in Tamil Nadu was 22.38 lakhs in 1973—74. Out of this 7.39 lakhs were actually in schools in Standards 9 to 11, working out to an enrolment percentage of 33. There are 2,823 High Schools in the State.

AIDS TO SCIENCE TEACHING

The scheme for grant-in-aid to High Schools for the purchase of science equipment and setting up of science laboratories, under which Rs. 15,000 is given for equipment and Rs. 25,000 for laboratory buildings to each school will be continued in 1974—75 with an outlay of Rs. 35 lakhs to benefit 90 schools. So far, 810 High Schools have been benefited under this scheme. All the 14 mobile science laboratory vans, equipped with science apparatus for High Schools, are functioning one in each Revenue District in the State, roughly one van for more than 3 Educational districts. It is the Department's aim to extend this facility and to make available one van to each of the 47 Educational Districts in a phased manner. Three more vans were added during 1973—74 and 10 more during 1974—75.

A Pilot Project for improving science teaching in schools with UNICEF assistance has been introduced in 50 Elementary and 30 Middle Schools in the three Districts, Madras, Chingleput and South Arcot. The new science syllabus in the project was introduced for these schools in Standards 1 to 3 and Standard 6 in 1971—72, Standards 4 and 7 in 1972—73 and Standards 5 and 8 in 1973—74. To equip the teachers to implement this programme, selected graduate teachers were given orientation training, and these recourse personnel in turn gave in-service training to all the teachers of the schools where the project is working. The scheme will be extended to more schools in 1974—75 with UNICEF support.

Summer Science Institutes in Biology, Physics, Chemistry and Mathematics have been conducted every year since 1969 with the help of National Council for Educational Research and Training and University Grant's Commission for the benefit of science and mathematics teachers. Over 1,000 high school teachers have already been trained, and about 160 more high school teachers will receive re-orientation during 1974—75.

THE STATE INSTITUTE OF EDUCATION

The Government have also sanctioned the establishment of a State Institute of Science Education as a wing of the State Institute of Education, Madras. The Institute will be in charge of improvement of science education in schools, improvement of science curriculum, teacher's training programme, research, publications and extension service.

The State Institute of Education, Madras is the State-level counterpart of the National Council for Educational Research and Training and is in-charge of in-service education at the school-level. Besides conducting several in-service programmes, the Institute is also initiating research on various problmes relating to teaching techniques and curriculum development. A Primary Education Extension Centre is also attached to the Institute.

In accordance with the suggestion made in the Kothari Education Commission Report, one Model

Dr. M. Karunanidhi, Chief Minister declaring open the Dr. Ambedkar Government Arts College.

School for Boys has been opened at Pudukkottai in 1972—73, and one for girls in Madras in 1973—74. These schools which have highly qualified staff and offer residential facilities, will admit students with proved merit and talents, many of whom will be supported by scholarships.

The Kothari Education Commission also recommended the concept of comprehensive schools with a view to vocationalising Secondary Education. It is proposed to establish about ten such comprehensive schools, by developing the existing schools and providing facilities for general academic courses as well as vocational courses. Subjects like agriculture, tailoring, wood-working, radio repairing, television servicing, etc., will be introduced, to equip students for self-employment and also employment in industries. A provision of Rs. 8.50 lakhs has been made for this purpose in the Budget for 1974—75.

BUILDING PROGRAMME

Of about 2,800 high schools in our State, nearly 1,200 are badly in need of adequate accommodation. In 1974—75 a provision of Rs. 19 lakhs has been made for grants to municipal schools and aided schools and about Rs. 60 lakhs for Government High Schools and Government (Board) High Schools and for repairs to existing buildings.

SCHOLARSHIPS

School Education in Tamil Nadu is free at all stages. The award of rural talent scholarship at the rate of Rs. 1,000 per annum for each boarder and Rs. 500 per annum for each day-scholar at the rate of two per each Panchayat Union, which was introduced in 1971—72, will be continued in 1974—75 also. Besides this, generous educational concessions continue to be offered to the children of Burma and Ceylon repatriates, ex-service and defence personnel, Scheduled Castes and Scheduled Tribes, Goldsmiths affected by the Gold Control Act and political sufferers.

A pilot project for medical check-up of students was introduced in the city of Madras, for about 5,000 pupils in the Elementary and Secondary Schools in the year 1971. In the Districts of North Arcot, Salem, Coimbatore, Tiruchirappalli and Madurai, mobile medical vans with qualified physicians visit the schools and conduct medical check-up. This scheme is proposed to be extended to other districts also.

SCHOOL IMPROVEMENT CONFERENCES NET Rs. 2.54 CRORES

In order to mobilise local effort and initiative in improving the facilities in the schools, more than 500 school improvement conferences have been conducted till now and assistance in the order of Rs. 13 crores has been secured from the public. The programme is being continued vigorously, with an accent on Science-cum-Library Improvement. As a result of voluntary effort, 39 lakhs of pupils were given free uniforms at a cost of Rs. 2.54 crores so far.

TAKEOVER OF MUNICIPAL HIGH SCHOOLS

Seven Municipal High Schools were taken over by Government in 1972—73 in order to provide relief to the municipalities which were finding it difficult to run the schools. A provision of Rs. 10 lakhs has been made for the take-over of more municipal schools in the year 1974—75 and it is expected that about 10 more municipal schools will be taken over.

NATIONALISATION OF SCHOOL TEXT BOOKS

The Tamil Nadu Text-book Society which has been entrusted with the responsibility of producing and distributing text books for schools has done good work in producing books of high quality at reasonable prices. Books under the revised syllabi are being brought out by the Society in a phased programme spread over four years, from 1972—73, to 1975—76. During 1973—74, the Society printed and distributed about 232 lakhs copies of school books. **The production programme for 1974—75 envisages the printing of about 200 lakhs of copies of schools books. Non-language text-books in the minority languages of Urdu, Malayalam, Telugu and Kannada are also proposed to be brought out progressively commencing from the school year 1974—75.**

The publications of this Society are distributed through 57 approved taluk stockists supported by about 800 registered retailers all over the State. This organisation has ensured that the text-books are available at fixed price well in time to the school students.

Types of Institutions	1965—66 Number of Schools	1965—66 Number of students enrolled	1965—66 Number of teachers employed	1973—74 As on 1—8—73 Number of Schools	1973—74 Number of students enrolled	1973—74 Number of teachers employed
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Elementary Schools ..	24,641	30,57,708	88,173	26,726	37,58,331	1,06,332
High Elementary Schools ..	6,065	18,64,035	59,943	5,773	22,13,981	66,843
High Schools including Anglo-Indian, Matriculation and Schools ..	2,234	12,07,869	48,574	2,823	16,21,033	65,959

AIMS AND OBJECTS OF SCHOOL EDUCATION DEPARTMENT

The aims and objects of the Department of School Education are :—

1. To expand educational facilities.

2. To achieve cent per cent enrolment of the pupils of the age groups 6—11, 11—14 and 14—17.

3. To improve the quality of education in educational institutions by providing or assisting in the provision of adequate school buildings, adequate equipment, laboratories, libraries, additional teachers for the additional enrolment of pupils in the schools, free supply of midday meals to poor pupils and free supply of books and uniforms to the needy pupils.

4. To disseminate and promote science education in a sustained manner.

5. To implement a wider scheme of adult education.

6. To provide such incentives as may be considered necessary for the welfare of students and teachers.

7. To provide in-service training courses for the professional growth of teachers in a big way through seminars, workshops, etc., and to reform the present system of examination by introducing the Internal Assessment Scheme.

QUANTITATIVE DEVELOPMENT IN SCHOOL EDUCATION

After the formation of the Directorate of School Education as a separate department, the phenomenal quantitative development that has taken place in the field of School Education can be seen from the following :—

Out of a total education budget a sum of Rs. 94.10 crores is meant for School Education Department. In addition to this, provision under the capital budget is also made for the construction of school buildings.

To cope with the taste of increasing expansion of Education the administrative set up of the Department at the District level was reorganised in 1968—69 and the number of District Educational Officers at the educational district level, the Chief Educational Officers at the Revenue District level and the Deputy Inspectors of Schools at the Range level in 1973—74 is given in the statement below.

Further it is proposed to appoint during 1974—75, additionally 15 Deputy Inspectors of Schools and one Chief Educational Officer with supporting staff and 2 Regional Inspectors of Physical Education. The cost involved will be Rs. 3.30 lakhs.

CONTINUOUS INCREASE IN ENROLMENT

There has been continuous increase in the percentage of enrolment. It is proposed during 1974—75, to enrol additionally two lakhs of pupils under the age-group 6—11 and to appoint 4,700 secondary grade teachers to cope with additional enrolment as well as for qualitative improvement. Similarly 1 lakh of pupils is to be enrolled under the age-group 11—14 and 2,850 Secondary Grade Teachers are to be appointed. Further it is also proposed to provide for contingencies, etc., at the rate of Rs. 5 p.m. per teacher and to give an equipment grant of Rs. 500 per teacher for about 2,170 teachers.

To promote Physical Education activities in Middle Schools, it is proposed to introduce in 1974—75, a scheme for the appointment of 200 Physical Education Teachers additionally and to give grant at Rs. 400 per school towards purchasing the sports articles. Hence a sum of Rs. 5.70 lakhs is provided in the Budget.

JAYANTHI VILLAGE SMALL SAVINGS

Special Drive for Small Savings Collection was conducted in Ramanathapuram District from 16-2-1974 to 22-3-74. The collection made during the drive period exceeded the target fixed by the Government.

	Rs.
Target ..	72,65,000/-
Achievement ..	75,03,611/-

Kovilangulam village of Aruppukottai Panchayat Union has been declared as a Jayanthi Village under Small Savings Scheme. All the 742 Families of this villlage have been brought under this scheme. The villagers have deposited a sum of Rs. 41,265 during the drive period.

TEACHERS IN AIDED SCHOOLS

DISTINCTION OF TAMIL NADU

Unlike many other States, in Tamil Nadu, the State Government bear the entire expenditure on the emoluments of the teachers in aided schools also. The expenditure on salaries of teachers in all the schools in the State has gone up from about Rs. 55 crores in 1970—71 to about Rs. 80 crores in 1974—75.

The Tamil Nadu Private Schools Regulation Bill which has been passed by the State Legislature last year and is awaiting the concurrence of the President will provide statutory protection for the service conditions of aided school teachers and will at the same time encourage private managements to run their schools efficiently.

The Pension Rules for teachers in non-Government service have been successively liberalised during the last few years and Tamil Nadu is perhaps the first State to achieve parity in retirement benefits between teachers in Government and non-Government service. The teachers in aided schools have also been allowed the same leave benefits as teachers in Government service including the privilege of encashing the leave.

EXAMINATION (REFORM IN SCHOOLS)

A State Evaluation Unit was set up in 1972—73 to study the problems of improvement in methods of educational evaluation. The scheme of internal assessment of the total personality of the children which has been introduced as a Pilot Project in the 10th Standard in 250 selected Secondary Schools in 73—74 will be continued in 74—75 also to gain experience in working the scheme.

GROWTH POVERTY AND UNEMPLOYMENT IN TAMIL NADU

By

Dr. V. SOUNDARARAJAN.

"With you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."—So observed Lord Kerlin some years ago.

With this in mind, the concepts of growth, poverty and unemployment have been quantified and given in this article in a popular style.

INCOME DISTRIBUTION AND INCOME INEQUALITY

A nation's prosperity may, to some extent, be judged by its national income which is nothing but the sum total of the values of the goods produced and the services rendered. The position of our country, India, is known when we know that the average income per individual in India is only 2.3% of that of U.S.A.

This income is distributed among people ; after all, this income is generated by people. The way in which the income is distributed is called income distribution. If an individual's income is more he is called a rich man. In Tamil Nadu if we arrange the people according to their income in the increasing order, we observe that the rich 30 per cent of the people get 63.5 per cent of the total income and poor 30% get only 11% of the total income. Subdividing further the rich 10% get about 42% of the total income. Such inequality *i.e.*, lesser people getting more income and more people getting lesser income is to be reduced. What we aspire for is to produce more *i.e.*, generate more income and to see that all sections get their due share. This is what is called ' growth with social justice."

Expenditure distribution, inequality and stagnation :

In the total income, a portion is being spent by the Government on administration and social consumption such as health and education. A sizable portion is being spent by people on their food, clothing, shelter and other items. This is called private consumption expenditure. The general level of living of a person may be judged by the amount he spends on private consumer expenditure. If a person spends more, we say his level of living is high and he leads a comfortable life.

The way in which the toal consumer expenditure is distributed among people is called consumer expenditure distribution. A rough analysis of this distribution for Tamil Nadu shows that top (rich) 30% of the people spend 52.5% of the total consumer expenditure whereas the bottom (poor) 30% spend only 14.5% of the total expenditure. On comparing such distributions at two points of time *i.e.*, at 1964 and at 1970 it is quite surprising to see that there is not even a slight change in these figures. This inequality *i.e.*, minority rich people consuming more and the majority poor people consuming less remains the same for the past twenty years for all India also.

Extent of Poverty :

For the purpose of assessing the magnitude of poverty among people, poverty level has to be defined in terms of minimal level of consumption. It is considered that the private consumption of Rs. 40 per month per individual is the minimum desirable consumption standard *i.e.*, for a family of five members, a minimum of Rs. 200 is required for spending on the minimum necessities. An elementary analysis of the expenditure distribution shows that 50 per cent of people of Tamil Nadu are below poverty line at present and this has been 54 in the year 1963-64 and 52.5% in the year 1969-70. **Now there are about 22 million people in Tamil Nadu who are not able to spend even Rs. 40 per month on necessary items such as food, clothing and shelter etc.**

Unemployment :

We know from 1971 census, that the population of Tamil Nadu is 4.12 crores. A detailed demographic study of Tamil Nadu points out the fact that we have to provide jobs for two persons in a family of five on the average. Thus we have to provide jobs for 40% of the above population *i.e.*, for 16.4 million persons. This means that for keeping all those available for jobs on work, the total number of jobs in the economy should be 16.4 millions.

There are jobs held already by people which can easily be assessed.

According to 1971 census the total number of workers is 14.7 millions. When adjusted for seasonal employment and jobs held by children we find that only 85% of these correspond to full jobs, *i.e.*, in 1971, the already available jobs numbered 12.5 millions. But full job is meant a job of six to eight hours duration in a day and to last for 280 to 300 days in a year. The difference between the jobs required and the jobs available is the unemployment which is about 4 millions. This figure when updated to 1974 works out to 4.7 millions. If we allow a certain percentage for frictional employment, we need about 42 lakh jobs in Tamil Nadu to engage all those who desire to work. This may appear to be an exaggerated figure ; but this is the reality.

Prof. Dudley Seers of the University of Sussex, says that development means creating conditions for the realisation of human personality and this cannot be measured by national income. His view is that evaluation of economic development has to take into account three linked economic criteria : whether there has been reduction in

(*a*) Poverty,

(*b*) Unemployment and

(*c*) Inequality.

If there is an improvement in all these, there is a development .

Development Plan

A development plan for a nation or for a region should solve the problem confronting it. As far as Tamil Nadu is concerned we have the problems of unemployment and poverty. The plan which we formulate should provide full employment for our people and to increase the general level of living of the common man.

The level of living of people can be raised only if we increase the income and follow suitable strategies which enable all the unemployed persons to get jobs with reasonable income and the pattern of production is such that the goods required, specially consumption goods required by people, are produce adequately.

In this context it is worth noting that the State Planning Commission in its Perspective Plan Frame for Tamil Nadu for 1972—84 has suggested that the average income per individual (per capita income) of 1971 is to be doubled in the year, 1984. It is clear that generating sufficient income is a necessary condition but not a sufficient one for facing the problems. For this, the production structure should be such that it produces enough consumer goods so as to avoid price rise and produces enough jobs. Assuming that such production structure takes place we shall visualise the future.

Visualising the future :

The per capita income of Tamil Nadu in 1971 is Rs. 654 (at 70—71 prices) and if this is to be doubled in 1984, it should be 1308 in 1984. As the population of Tamil Nadu is expected to be 5.37 crores in 1984 its income in 1984 should be Rs. 7024 crores.

At present the private consumption expenditure in Tamil Nadu is 77.7 per cent of our income. This may be assumed to the same in 1984 or it may, at best, be reduced to 75%.

As it is not possible to assess the pattern of expenditure distribution in future, let us assume the same structure as the distribution of 1970 which would be the likely situation if we are to rely on the past trend. On this assumption the percentage of people below the poverty line would be about 30% in 1979 and 10% in 1984. Thus in 1984 we see that only 10% of the people will be below the poverty line and they may very well be disabled persons, destitutes, pensioners and others who are not in the stream of economic activity. Their income and living standards cannot be expected to rise with the growth of the economy in the absence of special assistance.

The number of workers in 1971 is 14.7 millions and the State income is Rs. 2,687 crores. Hence the average income per worker is Rs. 1,822. This, due to scientific development and technological improvement, is expected to rise to Rs. 2,892 in 1984. Hence for the envisaged income 1984, the number of jobs available and the number of jobs required have been calculated and given below :

We observe that in 1983—84, we may require only about 9 lakhs jobs to keep the entire labour force engaged in gainful employment. The gap of 9 lakhs may be accounted for by frictional employment and hence there will not be any unemployment in 1983—84.

Thus if the per capita income is doubled as expected and if the production structure is suitably framed we will see the smiling face of the ' Common Man.' Let us hope for the best.

		No. of jobs available (in crores)	*No. of jobs required (in crores)*	*Unemployment (in crores)*
1970—71	..	1.2479	1.6441	0.3962
1973—74	..	1.2839	1.7615	0.4776
1983—84	..	2.0560	2.1476	0.0916

OCCUPATIONAL
Information and its Importance

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

INFORMATION PROGRAMME

The Occupational Information Programme of the National Employment Service is designed to serve various purposes in man power planning, employment placement and vocational guidance. **Publications under this programme can be categorised into, information pertaining to occupations ; educational and training institutions and qualifications ; employment outlook jobs and vacancies ; and other related matters bearing on single occupation or occupational groups or related specific educational levels.** The publications so far brought out include the National Classification of Occupations ; Handbook on Training Facilities, Directory of Qualifications recognised by the Government of India, Educational and Training requirements of production process workers ; bulletins on job opportunities, occupational specifications, interview aids ; Employment outlook series ; Career pamphlets, Occupational field reviews, occupational information series, Vocational Adjustment Series and World of Work Series. Apart from the above, at the State level, Occupational Outlooks, Career Bulletins, Career Literature Series ; and translations of guides to career are issued. At the State level again, special and kadhi industry occupation surveys to assess the employment cum occupational potential of specific industries as also to assess the occupational pattern, are undertaken.

ITS PLACE IN BUSINESS AND INDUSTRY

In recent years, business and industry have greatly expanded their development and use of occupational information. Since the post-war years it is being increasingly used in employee selection, in evaluating jobs, in merit-rating in assessing skills, in comparing job contents, in determining lay-offs, and in transferring workers to new jobs with a minimum loss of skill. In an ever-changing an unsettled world, industry must be quick to switch over to new products and services. There is again the problem of technological change whereby the content of jobs must reflect new processess, new machines, and new products and services. Industrial training has occupational information as its foundation. Collective bargaining agreements contain much occupational information. Many contain provisions requiring accurate and uptodate descriptions of jobs by the employer.

NATIONAL EMPLOYMENT SERVICE AND THE OCCUPATIONAL INFORMATION

The National Employment Service operations revolve round the pivot of occupational information. It is the basis for registration of job seekers, for documentation of vacancies, for placement, for vocational guidance and for employment market information. The data collected by this Department is also used by other agencies like the National Sample Survey, the Census Organisation, the Labour Bureau, the Statistics Department, the Wage Boards, etc.

I. L. O. AND THE OCCUPATIONAL INFORMATION

The informational aspects of occupational information have been given considerable attention by the Governments of the world. Occupational and industrial classifications are of particular interest in order that census data and other occupational materials may be more easily understood and interpreted. The International Labour Organisation has emphasized vocational guidance and occupational classification, and has adopted recommendations which point out the use of occupational information.

World War II witnessed a vast improvement in the development and use of occupational information by the armed forces. During demobilization, again, occupational information, was used to provide advice to the members of the armed services.

The educational institutions of a country have great use for occupational information in individual and group educational and vocational counselling and in planning and establishing new and revised courses of study.

Perhaps the greatest use of occupational information is to counsellors and guidance workers, whether in educational institutions or in Employment Service. Their entire programme hinges very heavily on the availability of uptodate, accurate and comprehensive occupational information. They use it in every aspect of their work— interviewing, individual guidance, group guidance, career talks, career conferences, career seminars, career exhibitions, visits of industry, courses in occupations etc.

Occupational Information plays a vital role in the planning and execution of community programmes dealing with the occupational adjustment of its citizens.

Occupational Information is very important for man power planning and man power development. In fact, industry occupation matrices are constructed to determine the manpower requirements of the industry by occupations. And it is through a consolidation of the individual occupational outlooks that a superstructure of general manpower forecasting is attempted for the economy.

In the rehabilitation of the handicapped, occupational information plays a vital role. In this process, the residual physical abilities of the person are first assessed and then it is matched with the performance requirements of various jobs. In this matching, certain adjustments are made both to the ability patterns of individuals as also the performance side of jobs. In the former case it is done through prosthesis and in the latter, it is done through job-engineering. All this presupposes detailed job analysis, especially, a thorough analysis of the physical demands involved in the performance of jobs.

This listing of uses can go on and on as the subject matter is of such vital importance and has, as already mentioned in the beginning, inextricably woven itself into the very fabric of the human society. What is important to bear in mind is that when one has obtained the original data about occupations, he must place his findings in usable form for practical use depending upon the actual needs.

* * * *

PRIVATE WEEKLY MARKETS TO BE TAKEN OVER BY PANCHAYATS,

A NEW STEP TOWARDS SOCIALISM TAKEN BY TAMIL NADU GOVERNMENT.

The Administrative Reforms Commission has recommended, *inter alia*, that the Panchayat Unions may be allowed to acquire private weekly trade fairs (Shandies) and run them directly for the following reasons :

(*i*) In many villages, private individuals take on lease from the Government or local bodies, large extent of poramboke lands on which they conduct weekly village trade fairs and derive sizeable incomes.

(*ii*) If the Panchayat Unions take over such lands and run the fairs themselves directly or in the alternative if they sell the right to run the fairs in open auction they will be able to improve their finances appreciably.

The Officers' Level Committee, at its meeting held on 22—9—1973, considered the above recommendation and decided as follows :

"There are enough provisions in the Tamil Nadu Panchayats Act, 1958 for the acquisition of private markets and in the rules for the proper enforcement of regulations to govern them. The acquisition of private weekly village trade fairs (Shandies) particularly communal markets will lead to legal complications. Panchayat Unions may therefore be allowed to acquire such markets wherever possible."

The Government accept the recommendation of the Officers Level Committee and direct that, in view of the provisions already available in Section 105 of the Tamil Nadu Panchayats Act, 1958, the Panchayat Unions be allowed to acquire such private markets wherever possible. The Director of Rural Development is requested to issue suitable instructions in this regard to all Panchayat Unions.

* * * *

USE OF RAILWAY CESS FUND FOR THE IMPROVEMENT OF ROADS IN THANJAVUR DISTRICT.

Thanjavur, being a deltaic district criss-crossed by a very large number of irrigation channels, several villages become totally inaccessible during the rainy season between September and January. These months are the months when the inputs for agriculture have to be transported to the villages. They are also the months when kuruvai paddy which is the main marketable produce of the district has to be transported to the market centres for sale. So it was decided by the Government of Tamil Nadu to lay all-wealther roads throughout Thanjavur District to make road communication, less burdensome and more accessible for all types of vehicles. In view of the special circumstances prevailing in Thanjavur District in the matter of communication the Government permit as a special case the use of the cash balance of Rs. 1.27 crores available under the Railway Cess Fund in the treasury for taking up the road works in Thanjavur so as to make improvements, construction of culverts and bridges in that District.

* * * *

CROWD CONTROL BY DELUGE

A NEW EXPERIMENT TRIED IN MADRAS CITY.

A new experiment in crowd control was recently tried in Madras by directing water jets from fire engines against unruly crowds and it proved quite successful. Thus the Fire Service can help in controlling crowds in a humane way eliminating lathi charges and other more violent methods of dispersal. The Fire Service have also been of use to the Traffic Police by clearing obstructions on roads like fallen trees, crashed vehicles and collapsed walls with the aid of a specially equipped breakdown van.

HOW TO BRIDGE THE GAP BETWEEN EMPLOYMENT AND EDUCATION

By
Dr. SATISH CHANDRA
Vice Chairman
U.G.C.

The gap between educated persons and jobs has been a serious cause of concern to the educationists and the planners in India and other developing countries. The number of graduates seeking employment in India has gone up steadily. Their figures are revealing enough even though they do not include all those who are unemployed or under-employed because of reluctance on the part of many educated persons to register in the Government employment exchanges.

There are several reasons for this high figure of educated unemployment. The major cause obviously has been insufficient economic development so that sufficient number of jobs have not been created. A second reason is that proportionately there has been greater emphasis on higher education in the developing countries than on primary and secondary education.

WRONG PRIORITIES

This point has been underlined by a recent study brought out by Mark Blaugh on behalf of the International Labour Organisation office at Geneva. In this report it has been emphasised that not only higher education has been given disproportionate emphasis in the developing countries, the unit cost of higher education and secondary education as compared to primary education is far higher in the developing countries than in the developed ones.

For instance, whereas in the U.K. and the United States the unit cost on secondary education comes to 6.6 and on higher education at 17.6 as compared to one in the primary education, in the case of developing countries such as India, the cost on secondary education comes to 11.9 and on higher education at 87.9.

The implication is that the society is subsidising higher education at a far higher level in the developing countries than in the developed ones. This is one reason why there is such a rush for enrolment for higher education in these countries. This is what the ECAFE Report means by saying that there is an undue emphasis on formal, secondary education and that the unit cost is high to prepare young Asians for job or career qualification.

Several solutions have been put forward to meet the situation. One suggestion has been to restrict the expansion of higher education. However, in a country such as India, taking into account various factors, this hardly appears to be feasible. Even where jobs are not forthcoming for graduates, there has been a continuing rush for admission for university and college education on the part of those who have been denied access to higher education in the past.

The background for this is two-fold. On the one hand, college degree is a status symbol, as much in a developing country as in a developed one. Secondly, all studies have revealed that while the social benefit of higher education may be low, its return to individuals in terms of earnings continues to be high as compared to those who have received only primary or secondary education.

OPEN UNIVERSITY CONCEPT

It has been suggested that rouhgly half of those who want to go in for higher education should be enrolled in not a formal institution of higher learning but provided facilities for part-time education or education through the medium of correspondence.

The experience of an Open University in Britain has shown that the unit cost in correspondence courses is much lower than in a college or a university. On this point, there is little difference of opinion between the recommendation of the ECAFE Report and the thinking in Indian educational circles.

Vocationalisation means giving education for a concrete job, there has been a very high rate of obsolescence in such instruction in view of the rapid changes in technology. Secondly, there is a great shortage all over the world of such technologically competent people who can provide training to others.

The report of the ECAFE Panel, therefore, needs very careful consideration before we embark upon a large scale programme of vocationalisation. In any case, the question of vocationalisation is not relevant to higher education. In higher education, you can either have a professional training such as medical training, engineering training, legal education or you can have theoretical training in various disciplines.

What is really meant by vocationalisation is the attempt to provide middle level skills to people side by side with theoretical training. Even if the idea of vocational schools is accepted, it is clear that the number of people seeking jobs in the tertiary sector is so large that no programme of economic development and modernisation can hope to provide jobs for them.

NEED FOR DIVERSIFICATION

This calls attention to the problem of orienting the educated youth to traditional employment such as jobs in the small and medium scale industry as well as in the agricultural sector.

The ECAFE Report seems to be relevant in this particular aspect. Attempts have been made in India recently to diversify education so as to take account of the needs of those who would be continued to be employed in these sectors, even after they have received higher education.

The University Grants Commission has set up a number of Committees to go into this matter in detail. The present thinking is that while the essential core of a discipline should not be tampered with or diluted, there is sufficient scope for diversifying what is supplementary or peripheral to it.

A TAMILIAN BONANZA

IN 3 SERIES!

TAMILNADU RAFFLE TICKETS

TOTAL PRIZES: 7902

TOTAL AMOUNT

Rs. 10,47,000

3 FIRST PRIZES each

RS. 1,00,000

66th DRAW DATE: 12-6-1974

Cost Per Ticket Re. 1/- only.

Issued by Director of Information & Public Relations, Government of Tamil Nadu, Madras-600009.

All correspondence should be addressed only to the Director of Small Savings (Raffle), Madras-600002.

STATE AND CENTRAL Government Schemes For Helping Qualified Unemployed

With the avowed object of providing relief to educated unemployed, a number of schemes have been formulated and implemented. These schemes provide facilities for training as well as assistance to educated unemployed in setting up Small Scale Industries Units thereby making them entrepreneurs and creating further employment opportunity.

The Directorate of Industries has taken up the task of co-ordinating the efforts to improve the climate for rapid industrialisation and employment generation. The idea is to give package assistance to the prospective entrepreneurs. The Directorate is taking all possible steps to ensure that recipients of assistance under the Special Employment Schemes are enabled to commission their units with least possible delay. Assistance in respect of getting power connections, raw materials, working capital loans, Departmental and Municipal clearance, etc., is being rendered promptly and speedily on receipt of applications from the entrepreneurs. A sum of Rs. 3,55,200 was disbursed as margin money to 49 technically qualified engineers towards loan availed by them from various Commercial Banks and the Tamil Nadu Small Industries Development Corporation.

With a view to relieving unemployment among technically qualified persons, a special Apprenticeship Training Scheme was organised and a sum of Rs. 1.45 lakhs was provided in the Budget Estimate for 1973—1974 for this scheme. Under the scheme twenty-four degree holders and twenty-six diploma holders were given training in the Southern Structurals Limited and ten degree holders are being given training in the departmental units. The stipend for degree holders is Rs. 250 per mensem and for diploma holders Rs. 150 per mensem.

COMMERCIAL ESTATES

This scheme is designed to provide employment in semi urban areas and also at the growth centres developing in new industrial belts and "Green Revolution" areas. With this view 22 residence-cum-worksheds have been constructed and allotted at the following Industrial Estates :—

Ambattur, Vyasarpadi, Madurai, Tiruchirappalli, Vellore, Karaikudi, Salem, Nagercoil, Thanjavur, Pettai and Vridhachalam.

The idea of such an Estate is to build shopping-cum-residential blocks or work-cum-residential blocks consisting of shops in the ground floor with residential accommodation for the entrepreneurs on the first floor. The rents for these sheds are subsidised for an initial period of 3 to 5 years. These Commercial Estates are also expected to provide desirable service amenities to the local communities.

Twenty-four small worksheds of 1,100 sq. ft. each were constructed in the Industrial Estates, Ambattur and allotted on rental basis to technically qualified persons. An expenditure of Rs. 4.35 lakhs was incurred.

On the whole, the implementation of the above State Government scheme during 1971—72 and 1972—73 has given scope for employment of 900 persons, and 228 persons in 1972—73, comprising of Dedgree Holders and Diploma Holders in Engineering Technology, skilled and unskilled workers.

THE CENTRAL SCHEMES

During the year 1972—73, a sum of Rs. 70.00 lakhs was made available by the Ministry of Industrial Development to implement various schemes for the creation of employment opportunities to educated persons. The amount was spent on the various schemes as below :—

TRAINING

Under this scheme educated unemployed persons are helped to get training facilities in firms for a period of one year. The intention is to improve the absorption potential of the trainees and to enable them to acquire sufficient experience to start industries of their own or seek employment with a better suitability. During the training period, stipend at the rate of Rs. 300 p.m. for Degree Holders in Engineering/Technology, Rs. 250 p.m. for Science Graduates and Post Graduates in Science and Rs. 150 p.m. for I.T.I. Certificate Holders is paid. Of the stipend mentioned above, 50 per cent is being borne by the Government and the other 50 per cent by the employer industries.

A total number of 286 Engineers (comprising 166 Degree holders and 120 Diploma Holders in Engineering/Technology) were given the benefit of training under this scheme in 94 institutions in both Public and Private Sectors. A sum of Rs.79,543 was spent towards 50 per cent share of the Government in the stipend paid to these trainees.

INDUSTRIAL ESTATES

Construction of Industrial sheds of about 1,000 to 1,500 sq. ft. in the Industrial Estate at Ambattur, Coimbatore, Salem, Madurai, Ada-

yar and Guindy was taken up. Sixty sheds were constructed and all of them have been allotted. A sum of Rs. 44.18 lakhs was spent under this scheme. A portion of this amount was utilised by the Tamil Nadu Small Industries Development Corporation Limited, Madras for the Industrial Estates programme implemented by them during 1972—73 and continued in 73—74. About 300 persons start industries and provide jobs for as many as 3,000 persons.

MARGIN MONEY FOR HIRE PURCHASE OF MACHINERY

This scheme was implemented through the Tamil Nadu Small Industries Development Corporation Ltd., 418 Technocrats were assisted for the purchase of machinery on hire purchase basis involving a total expenditure of Rs. 19.70 lakhs.

On the whole, the implementation of the above scheme during 1972—73 has given scope for employment of 3,300 persons comprising Degree and Diploma Holders in Engineering /Technology skilled and unskilled workers.

The above Training Scheme implemented during 1972—73 is continued to be implemented during this year also, as "Subsidised Employment" Scheme. It is proposed to provide training facilities for a total number of 750 persons comprising of various categories of persons as detailed below :—

Degree Holders in Engineering/ Technology —250

Diploma Holders in Engineering/ Technology—300.

Post Graduates and Graduates in Science—100.

I.T.I. Certificate Holders—100

Total—750.

A sum of Rs. 10.58 lakhs was allotted for the implementation of the subsidised Employment Scheme during 1973—74.

Prospective entrepreneurs comprising of mechanical and electrical engineering have been sponsored for undergoing inplant training for a period of one year in the Central Institute of Plastic Engineering and Tools, Guindy, Madras 32 (CIPET). The trainees who number 11 at present are being paid stipend at the rate of Rs. 400 p.m. the entire expenditure being borne by the State Government. On completion of training, they will be assisted to set up industrial units either individually or as a Co-operative enterprise.

TRAINING SCHEMES FOR PROSPECTIVE MEMBERS OF TECHNICIANS CO-OPERATIVES

A number of Special Training Programmes are also being organised for the educated unemployed with a view to equipping them suitably towards setting up industrial co-operatives. During the training period, the trainees are paid stipend at the following rates :—

Degree Holders in Engineering/ Technology—Rs. 400.

Diploma Holders in Engineering/ Technology—Rs. 250.

Science Graduates—Rs. 200.

I.T.I. Certificate Holders—Rs.150

Matriculates of S.C./S.T.—Rs.100

The entire training expenditure is borne from the funds provided under Half-a-million Jobs Programme. For the year 1973—74, a sum of Rs. 10 lakhs has been allotted for implementation of various schemes under this head.

PLANTATION SCHEMES FOR UNEMPLOYED GRADUATES

A scheme for giving training to 50 undergraduates and 25 Graduates in Mulberry Plantation and Silk reeling is being implemented. This scheme involves an expenditure of Rs. 50,300.

A scheme for giving training to 90 candidates including 15 Agriculture Graduates to be employed for giving extension service facilities to Small Tea Growers in the Nilgiris district is being implemented, the expenditure involved being Rs. 96,600.

Scheme for training candidates to be recruited for the vacancies to the posts of Supervisors of Industrial Co-operatives, Assistant Supervisors of Industrial Co-operative Societies, clerks and Accountants involving an expenditure of Rupees 2,38,500 is being implemented. Fifty Graduates and 100 under-Graduates will be benefited under this Scheme.

In 1973—74, it has been proposed to form at least 25 Industrial Co-operative Societies for various services and products. Six of these have already been registered and the others are under various stages of organisation. The Industrial Co-operatives are expected to provide employment to nearly 700 technical persons, besides an equal number of skilled and unskilled workers. Organisation of Industrial Co-operative Societies for the benefit of educated women in the districts is also being planned.

TECHNICAL CO-OPERATIVES

Since it would be difficult for unemployed technicians to contribute substantially to the share capital structure of the Society, the Department of Industries and Commerce advances personal loans to the Members out of the funds allocated under State Aid to Industries to enable them to contribute the above loan towards the share capital of the Society. Some of the nationalised banks are also being approached for extending this loan assistance to the members of the technicians' co-operatives. The personal loans advanced to the members are recovered in easy instalments over a period of five years after regular commencement of work in the societies.

In addition to this, the State Government also participates in the share capital structure of the society to the extent of three times the members' contribution to the share capital of the society. The working capital requirements for these societies are normally obtained from various Nationalised Banks and Tamil Nadu State Industrial Co-operative Bank.

A sum of Rs. 18.00 lakhs has been set apart for the year 1973—74 for this scheme of equity participation.

ROLE OF SIDCO

Under the scheme for assisting the educated unemployed, a sum of Rs. 13.40 lakhs has been sanctioned to the SIDCO during 1973—74 for construction of new worksheds in the Industrial Estates for letting out to unemployed Engineers. Under the scheme to assist the educated unemployed under the Half-a-Million jobs programme another sum of Rs. 66.00 lakhs (loan of Rs. 61 lakhs and a grant of Rs. 5 lakhs) has also been sanctioned to SIDCO for 1973—74.

The following statement shows the achievements under the above schemes during 1971—72 to 1973—74 : —

EDUCATED UNEMPLOYED

	1971—72		1972—73		1973—74	
	Number of persons benefited	*Amount Spent*	*Number of Persons benefited*	*Amount spent*	*Number of persons benefited*	*Amount spent*
		(Rs. in lakhs)		*(Rs in lakhs)*		*(Rs. in lakhs)*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Margin money ..	49	3.55	418	19.70	..	..
2. Equity participation in Industrial Co-operative Societies ..	228	2.00	228	5.19	700	18.00
3. Industrial Estates ..	22 (work sheds)	4.35	..	44.18	60 (sheds)	17.00 13.40 thro. SIDCO
4. Hire Purchase of Machinery ..	900	38.00	..	..	..	..
5. Training Programme ..	..	..	286	0.79	(Shown under Half-a-Million job programme.)	
		48.00		69.86		48.40

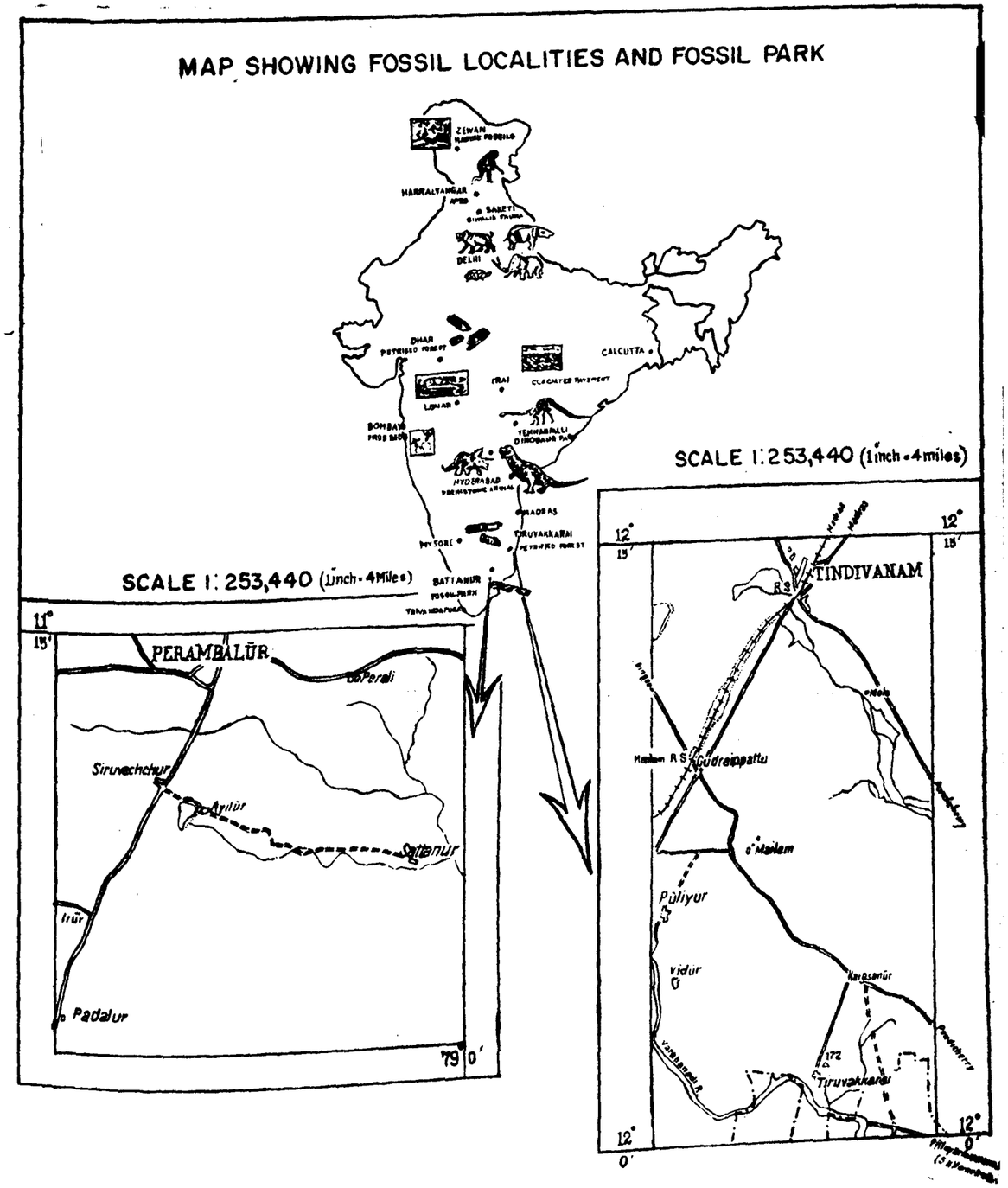
HALF-A-MILLION JOBS PROGRAMME

	1973—74	
	Number of persons to be benefited	*Amount spent*
(1)	(2)	(3)
		(Rs. in lakhs)
1. Subsidised Employment Programme	750	10.58
2. Training in—		
(*i*) Sericulture	75	0.34
(*ii*) Tea Industry	90	0.61
(*iii*) Co-operative Management	150	1.01
(*iv*) Industrial Co-operative Societies	505	2.10
3. Loans and grants to SIDCO (towards seed money, margin money and feasibility reports)	..	66.00
	Total ..	80.64

TAMIL NADU CREATES FIRST NATIONAL PARK FOR **FOSSIL WOOD**

In India, there are a number of natural monuments like the one near Saketi, Himachal Pradesh, where skeletal remains of extinct mammals and reptiles are preserved; the Dinosaur Park at Yemmnapalli in Andhra Pradesh where bones of gigantic herbivorous and carnivorous animals have been unearthed ; the Frog Beds of Worli Hills, Bombay ; and the fossil wood parks near Sattanur, Tiruchirapalli district and Tiruvakkarai, South Arcot district, Tamil Nadu. Quite a few of them are of interest not only to students of geology but also to the general public. Such gifts of nature richly deserve to be safeguarded and protected for posterity. The Geological Survey of India has been actively engaged in the task and in 1951, action was initiated in setting up fossil parks in Tiruvakkarai and Sattanur. With the active help and co-operation of the Government of Tamil Nadu, who donated the fossil-bearing areas in both the localities to the Government of India, barbed wire fencings were erected by the Geological Survey of India **and the First National Fossil Wood Parks in the country came into being.**

At Sattanur, a petrified tree trunk, 19.51 m. in length and with a maximum girth of 1.37 m. is embedded in sandstones of the Cretaceous age (100 million years). Originally it should have measured about 62 m. in length, as is evident frommarkings. Similar fossil tree trunks, measuring a few metres in length are traced along stream sections near Varagur, Anaipadi, Alundalipur and Sarada mangalam in the same area. Tiruvakkari has double attractions for tourists and visitors, by way of the Chandramouliswara temple of architectural grandeur, built by the **Chola** rulers and the spectacular fossil wood tree trunks, exposed to view by the handwork of nature. The fossil tree trunks, lying scattered on low mounds and stream sections have long been interwoven with mythology and according to local legend are the bones of a demon slain by Lord Vishnu. In fact, the fossil tree tunks do look like bleached bones. Mythology apart, it is interesting to note that even before the advent of the Scientific Age, the ancients had recognised that the fossils were unique and different from the rest of the rocks in which they occur.



FOSSILS POINT TO NEW THEORY OF EAST COAST TOPOGRAPHY

Even as far back as 1780, Mr. M. Sonnerat, an European naturalist who toured the eastern coast, wrote an account of the magnificent fossil finds. Subsequently, geological studies helped in the recognition of varied rock types and in the identification of the fossils. Dr. Birpal Sahni, an eminent scientist, identified species of **Mesembrioxylon Schmidannum** of the Coniferous Group and **Palmoxylon Pondicherriens** of the Palm Group. Some of the fossil specimens resemble **leguinossae** (pulses family), **guttiferae** (punnai family), **celastraces** and **Euphorbiacea** and the familiar tamarind tree, suggestive of the existence of these species in the pre-historic past also. As a result of the studies, the fossils have been dated and are estimated to be 20 million years old, belonging to the Miocene age according to the geologist. It is unbelievable to the common man as to how trees of such great antiquity could be preserved for millions of years and to understand this, a background of the palaeogeography of this part of the eastern coast of the country will be of help.

Geologists have traced sedimentary rocks — rocks mostly formed by deposition of sand and clay by water action — along the eastern coast from near Pondicherry in the north to Tuticorin in the south. This would necessarily mean that this strip of land was the location where rivers discharged their waters into the sea. The angular and rough nature of the sand grains of the sandstones indicate that the streams and rivers deposited their load of sediments after short runs. The association of fossil wood with the sandstones suggests that originally logs of wood were transported by streams and rivers from mountains and deposited in sea along with sand. The absence of roots, barks and branches in the fossil wood lends support to this view. Petrification of the original logs had obviously resulted by the replacement of woody cellular matter by silica, atom by atom. In this contrext, it is underlined that had the logs been dumped in swampy waters, quick bacterial action would have carbonised the organic matter. Under standably, this long-drawn out process of petrification was responsible for the remarkable retention of the anatomical and structural details of wood in spite of the complete conversion of wood into stone. The presence of fossil wood of coniferous which grow at altitudes of about 800 metres and above only, is of critical importance in that it points to the configuration of the topography of the eastern coast. Ostensibly, here along the eastern coast, luxuriant vegetation including conifers should have proliferated on high hills. Subsequently, the high hills were subjected to the relentless erosive forces of nature and the hills now traced along the eastern coast may well be remnants.

The magnificent fossil tree trunks of Tiruvakkarai, exposed to view by erosion are also remnants, but remnants of great value to be zealously guarded so that they may be seen, admired and studied by generations to come. Apart from those already fenced in, there are a number of other fossil wood occurrences near Tiruvakkarai. It is proposed to take up suitable measures to protect them also with the help of the Government of Tamil Nadu. Natural monuments are not always easily accessible, but, Tiruvakkarai with its centuries old temple and still older fossil trees is easily reached by a motorable road, branching off from the Tindivanam—Pondicherry road. It may not be too much to expect that before long Tiruvakkarai will find a place not only in the Tourist Map of Tamil Nadu but that of the country and attract more visitors.

Source : Geological Survey of India, Tamil Nadu Circle.

Ph. D. SECURED BY NAGARAJAN, M.L.A.

The Madras University conferred the coveted Ph. D. on Thiru K. Nagarajan, M.Sc., M.L.A., for a thesis on the Caterpillar, The studious traits and talents of Thiru Nagarajan get emphasised when we remember that he has accompolished his literary tour de force without compromising his obligations to his constituency of Vadamadurai and the numerous calls on his time for pubic causes and personal advancement.

Thiru K. Nagarajan, after completing his M.Sc., had put in some years service as Assistant Professor. He contested the 1971 General Election successfully at Vadamadurai. He secured his Ph. D. for his thesis on "Hisdochemical and Physiological studies on the gut-lining of some Arthropods".

Do Plants Have Emotions?

Innumerable experiments have confirmed that live plants which are in close proximity to a person respond to his joy, delight, fear and anger—to all outbursts of emotions which are quite natural even though provoked artificially by suggestion.

It might seem odd that the instrument which the Moscow psychologists employed in their experiments —the encephalograph designed to register phenomena accompanying the activity of the brain—should have been used on a plant.

In 1953 Professor Isidor Gunar, an outstanding Soviet biologist, set up at the Timiryazev Agricultural Academy a group for the study of plant irritability under Alexei Sinyukhin, a young, promising scientist. In the early stages the researchers found themselves swamped in a bog of questions. How does the plant react to irritants ?

The signal from the irritated cell to the performing one could be transmitted. The signal could travel together with changes in electric potential in about the same way as in animals. But animals have nerves. Along such "telephone wires" information spreads fast though not instantaneously. It is not borne by a flow of electrons, as in a metal conductor, but by a wave of ions-charged particles which emerge in solutions.

Signalisation System

Common origin and Common laws of evolution suggested that plants in all likelihood employ a signalisation system which is similar to that of the animal. But that was in theory.

The initial experiments seemed promising : Sinyukhin's group appeared to be on the right track. The moment the plant's roots were placed in a dilute solution of table salt the self-recorder's sensor, which was fixed on its talk, registered a sharply growing difference in potentials.

Later it became clear that changes in electric potential actually did spread along a semblance of a telephone cable—a bundle of fibres which conducted plant juices. True much more slowly than along nerves, but what was important was that the mechanism was similar. In 1970, Sinyukhin staged a crucial experiment.

"Language" of Plant Cells

Two plants are linked by special electronic instruments. When one is irritated both react, and react in identical ways as if they comprised one whole, like Siamese twins. But the link between them is not physical. It is a "telephone" link! It does not transmit irritation, but information about it, or in other words, fluctuations of action potentials. Does this mean the latter really have information vital to the plant coded in them ?

GRIGORI POLUNOV

Do plants really have something analogous to the nervous system ? Perhaps they merely appear to be insensitive to the axe and the scythe ? And only because we do not suspect that they "cry" ? Mimosa is called "sensitive" because it shrinks in response to the gentlest touch. And the dewplant immediately spots "by touch" an insect which inadvertently alights on it. It captures its prey with the aid of special motor devices.

These are examples of tactile sensations. Plants can also be said to have an "ear" : they react to music (more exactly, to rhythmic vibrations caused by a nearby source of sound oscillations). "Vision" : many flowers open their corollas under the impact of the sun's rays and turn to follow the sun. Of course, all such metaphors are questionable. But whatever the case may be, plants, which have no sense organs, perceive the same irritants as animals.

The analogy with the animal world appears to be so obvious : It is all so like the simple reflexes of animals in response to external irritants ! But are they so simple, these plant "reflexes" ?

Back in the 1920s, Alexander Gurvich, a Soviet scientist, observed an amazing phenomenon. By gradually reducing the cells of plants which found themselves in direct proximity to each other for some reason divided faster. Further investigations—with yeast, cells of muscles, the heart and the liver—led to what appeared to be an incredible conclusion : live tissue is capable of emitting ultraviolet radiation. It is weak but perceptible, being easily registered by sensitive instruments.

Particular Value

Perhaps it is too early to claim the results of the recent experiment as a discovery. It is a hypothesis, it may be said. But some conclusions already seem obvious. Most important, if a live plant reacts to processes that take place in man's nervous system, there must be something in common between vegetable and nerve cells, which are so vastly different. Possibly, they 'communicate' in kindred languages.

By registering the reactions of our green friend to adverse changes in the environment, instruments can notify people and controlling automats of the need for assistance, that conditions need improving. It will become easier to preserve forests, orchards, parks, to replenish timber resources on felling tracts and to raise the yield of farm crops.

Such self-regulation is of particular value for plant cultivation in outer space, which will pose the problem of rapid adaptation to conditions dissimilar to those on earth. Man will be prepared for mutual understanding with such totally new beings by the new trend in plant electrophysiology which has been developed by researchers in different fields in the Soviet Union.

India's Newest and Biggest Wild Life Sanctuaries is in Tamil Nadu

THE ANAIMALAI NATIONAL PARK

The Anaimalai Wild Life Sanctuary is one year old ; it lies mostly in Coimbatore District and partly in Madurai District and is the largest of its kind in Tamil Nadu. As the past systems of management were confined only to exploitation and regeneration, no thought was given for scientific management of fauna. As a result, there was considerable reduction of Wild Life in this division. Therefore, a complete ban on shooting of Wild Life has been imposed in Tunacadavu Range since 1957. Not content with this ever since, 1963, the entire Coimbatore South Division has been closed to shooting. Subsequently steps were taken in 1971 to constitute the Anaimalai Wild Life Sanctuary and eventually this was inaugurated on 21st January, 1973.

This sanctuary is situated in the Western Ghats, with an area of 900 square kilometres. Thanks to the gifts of nature this sanctuary possesses different types of forests starting from plain thorn forests to temperate forests of high elevation to make the entire Anaimalai Hills a vast panorama of scenic wonder, providing abodes for different species of wild life at different altitudes. The main forest types to be found in this Sanctuary are namely Southern cutch thorn forest, Southern tropical dry deciduous forest, Dry Savannah, forest, Southern tropical moist deciduous forest, Southern moist bamboo brakes, Southern tropical wet evergreen forest, Southern wet bamboo brakes, Nilgiri Sub-tropical evergreen forest and Southern wet temperate forest. This rich variety of forest types in a single sanctuary will speak volumes about plant life to be found here.

The Anaimalai Sanctuary exhibits also a rich and varied fauna (wild life) and most of the South Indian species are well represented. Elephants, Tigers, Panthers, the sloth bears, Gaurs, Nilgiri Wild Goats (Nilgiri Tahr), Deer, Wild boars, Wild dogs, Brown flying squirrels, the Nilgiri langurs, the Indian porcupines, the Black-naped hares etc., are observed. Among snakes mention may be made of the Cobra, the hamadryad, the keeled Viper etc. Besides, the Sanctuary contains equally rich and varied avifauna and variety of fishes in the reservoirs.

LOOK FOR THESE HAUNTS

The tourists can look for the important haunts *viz.*, the Wood House Lawn, Topslip-Sungam Ghat road, Topslip-Ulandy Valley road, Seechali road, Chinnar Extension road, Pandaravarai, Perunkundru, Grass Hills, Anaikunthi shola for observing wild life. This Sanctuary abounds in scenic spots *viz.*, Karianshola, Anaikunthi shola, Grass Hills, many water falls, wood's grave, the Centenarian (1872) teak plantation supposed to be the oldest of its kind, Panchalingam, many dams and reservoirs. There is a net-work of good roads of which some are fair weather roads. There are accommodations available in and around the sanctuary. **The State Wild Life Officer at Madras and the District Forest Officer, Coimbatore South Division at Pollachi administer the Anaimalai Wild Life Sanctuary.**

By **R. K. PONNUSWAMY**, I.F.S.,
State Wild Life Officer, Madras.

Wild Life knows no frontiers of any sort and survives in suitable habitats all over the country. It is everywhere threatened by man's increasing interference, with the balance of nature. The primary objective before us is to save our wild life—a magnificent asset and hopefully to rehabilitate it and a secondary objective is to organise our National Parks, Sanctuaries and other areas in such a way that they serve the interests of nature-study and tourism. Taking into account the crisis which we are facing, it is absolutely necessary to concentrate our resources on the creation and magnificent parks and sanctuaries.

Since the present area of our land under National Parks and sanctuaries amounts to 2.3% of our forest area or 0.535% of the total land area, there is need for establishing new parks and sanctuaries and our aim should be to have at least 4% of our total land area reserved for wild life (including floristic preserves). An attempt should be made to distribute this equitably throughout the country.

Tamil Nadu with a total land area of 1,30,357 square kilometres occupies the South-eastern part of the country with a forest area of 21,033 square kilometres and this works out to 16 per-cent of the total land area. This is rich floristically. Hydel projects and multi-purpose dams have resulted in the complete deforestation of large areas and a radical change in the character of land.

The rapid changes and destruction of habitats are the most-serious factors leading to the depletion of wild life. Apart from these factors, forest areas are much depleted due to various socio-economic causes. Therefore it is imperative to zealously preserve the existing flora and fauna. **Inspite of its greatly reduced extent, Tamil Nadu has an interesting variety of Wild Life. Having realised the importance to ensure the territorial integrity of wild life preserves Tamil Nadu is expanding the area under Sanctuaries by constituting new sanctuaries and taking necessary steps to create National Parks.** Similarly areas under forests are being expanded by extending afforestation works outside the Reserved forests. As a result there are now six wild life sanctuaries *viz.*,

1. Vedanthangal Water Birds Sanctuary—(1798).
2. Mudumalai Wild Life Sanctuary—(1939).
3. Guindy Park (Children's Park)—(1958).
4. Mundanthurai Tiger Sanctuary—(1962).
5. Point Calimere Wild Life Sanctuary (1967) and
6. Anaimalai Wild Life Sanctuary—(1973).

and nineteen waterfowl refuges in Tamil Nadu. The Anaimalai Wild Life Sanctuary which is recently constituted is the sixth and largest wild life sanctuary in Tamil Nadu. Nature has been extremely lavish in providing this sanctuary with thickly wooded hills, plateaus, deep valleys, waterfalls, rivers, streams, marshes and salt licks. The various flora and topography not only meet the ecological requirements of several species of animals inhabiting this area, and easily fill the heart of the visitors with joy.

The Headquarters of the Sanctuary is at Pollachi which lies at 40th Kilometre from Coimbatore on the State High Way. The Anaimali Wild Life Sanctuary in Tamil Nadu is situated on the Western ghats. It spreads over Pollachi and Udumalpet Taluks of Coimbatore District and partly in Kodaikanal taluk of Madurai District ; and is contiguous to Parambikulam Wild Life Sanctuary in Kerala State. The sanctuary has an area of 900 square kilometres. Out of seven Reserved Forests which constitute the Anaimalai Wild Life Sanctuary, Anaimalai Reserved Forest forms about 70% of the total area of the Sanctuary (627 square kilometres). But the entire sanctuary area is known as Anaimalai (*i.e.*, in Tamil language 'Anai' means elephant, 'Malai' means mountain) or Elephant Hills as wild elephants are predominant and found quite commonly everywhere. A pair of Hills known as Peria Anaimalai (MSL 2151 metres) (Big Elephant Hill) and Chinna Anaimalai (MSL 1888 Metres) (Small Elephant Hill) are located near Kadamparai. They look like a pair of elephants lying side by side. Thus the name Anaimalai is having different sources of origin.

Topographically the entire sanctuary area occurs on the Anaimalai Hills which are a continuation of the western ghats situated immediately south of the Palghat Gap. The northern slopes of the Anaimalai Hills descend precipitiously to the cultivated plains of Coimbatore District. The main range of the Aaimalai Hills has a general direction of north-west to south-east. **The elevation ranges from about 900 metres to 2,500 metres. The sanctuary is well drained by Amaravathi river in the eastern portion and by the Thorakkadavu, the Aliyar, the Sholayar, the Kallar, the Italiar, the Tunacadavu. The Periyar, the Chinnar and innumerable small stream in the western portion.**

CLIMATE, RAINFALL AND DAMS

Wide variations of annual rainfall, elevation and aspect have resulted in a highly variable climate. December and January are the coolest months of the year and the climate on the hills is often marred by dense chilly mists. The period starting from end of February to end of May, remains the hottest part of the year. Towards the end of May, the south-west monsoon brings welcome relief and the climate continues to be pleasant and cool until August when the monsoon abates. September again is sultry, but October and November, experience an equable climate when the North-east monsoon is in full swing in the eastern areas of Tamil Nadu. Of all the sanctuaries in India, Anaimalai Wild Life Sanctuary is having wider variation in annual rain fall among its different parts.

Besides the Amaravathi Reservoir in Udumalpet, the Parambikulam—Aliyar Multipurpose project resulted in the construction of Dams like Sholayar, Upper Aliyar, Aliyar and Tirumurti in Tamil Nadu and Parambikulam Dam in Kerala State. At present, construction of a weir across Nirar and Kadamparai Dam across Kadamparai river is in progress. **Though these projects have resulted in the destruction of a sizeable forest areas of the sanctuary, yet they provide permanent source of water for wild life ; and network of roads for the tourists.**

At the Anaimalai Elephant Camp

Picture Left: The oldest elephant is now called the I.G. of Anaimalais.

The Different Types of Forests that Occur in the Sanctuary

The great diversity in its topography, and variety in climate and rainfall, that the sanctuary embodies naturally bespeak a vegetation of wide and striking variations. The elevation varies from 350 metres in the foot hills to over 2,400 metres in the Grass Hills of Punachi range with a corresponding variation in rain-fall from just about 50 centimetres to nearly 750 centimetres. At the foot of the hills, the day temperature ranges between 23 degree C and 40 degree C and the night temperature from 18 degree C and 29 degree C. At higher elevations the temperature is naturally lower, often dropping below the freezing point in the Grass Hills during winter. The mean annual humidity in the plains is 51 percent while at higher altitudes where there is greater rain fall the relative humidity is as high as 70 per cent. These variations combined with difference of soil and aspect have resulted in a considerable variety of vegetational types.

ANIMAL LIFE INCLUDES THE RARE WHITE BISON

The Sanctuary exhibits a rich and varied fauna and most of the South Indian species are well represented. Elephants, gaurs, tigers, panthers, sloth bears, wild boars, wild dogs, porcupines, blacknaped hares, Brown flying squirrels, jackals, common langurs, the Nilgiri langurs, Pangolins, civet cats, barking deers, the spotted deers, the melanistic variety of the panther, etc., are observed. The Nilgiri Tahr or the sportsman's 'Ibex' is restricted to the grassy slopes and precipituous crags on the ridges and peaks along the high hills.

1. Southern cutch thorn forest ;

2. Southern tropical dry deciduous forests—Dry teak—forest ;

3. Dry Savannah forest ;

4. Southern Tropical moist deciduous forest ;

5. Southern moist bamboo brakes ;

6. Southern tropical wet evergreen forest ;

7. Southern wet bamboo brakes;

8. Nilgiri-sub-Tropical evergreen forest ;

9. Southern wet temperate forest.

Descriptive details of the nature of these forest types and the predominent species are given in the revised classification of forest types in India by Champion and Seth.

The Manjampatti valley of Udumalpet range is alone said to harbour the rarest animal *i. e.*, **'White Bison.'** It seems probable that what was observed as the 'White-bison' by some forest officers in the past might have been quite likely a comparatively lighter coloured gaur, or manifestation of albinism.

Among snakes of special interest occurring in the forests of this division, mention may be made of the cobra, the Keeled viper, the Anaimalai Viper, the Russel's viper and the Hamadrayad, all of which are poisonous. Pythons are plentiful in the drier tracts. There are host of non-poisonous snakes, also. Of the other reptiles, the Indian Monitor, the beautiful black and yellow tortoise are commonly observed. Crocodiles are present only along the Amaravathi and Chinnar rivers.

BIRD LIFE

The Sanctuary abounds in a variety of birds. The avifauna consists of Racket-tailed Drongo, Red-whiskered Bulbul, Black-headed Oriole, Tree pie, Grey Malabar Hornbill, Painted Partridge, Shama, Whistling Thrush, Paradise Flycatcher, Emeraland Dove, Spotted Dove, Green Pigeon, Hill Myna, Blue Jay, Jungle Babbler, Tickell's Flower-pecker, Green Barbet, Crow pheasant, Golden backed Woodpecker, the Rufus Woodpecker, Rosewinged and Blue winged Parakeets, Crested Hawk, Crested serpent -Eagle, the Grey Jungle Fowl, the spur fowl, shrins, Red-vented Bulbul, Indian Robin, Black Drongo, Purple-rumped sub-bird, Kestrel, Jungle Babbler, Pea-fowl, Baya Crested Hawk, Partridge, the common Myna, Kites, Parakeets, Blue Rock Pigeon, various fly catchers, Crested Eagle, Jerdon's Chloropsis, the Ped Hornbill, Black-naped Oriole, the Nilgiri Whistling thrush, Palni Laughing Thrush, Bonellis Eagle, Red-headed Merlin, Small Minivet, Large Barget, Nut thatches, Tits, etc.

TROUT FISHING

The Amaravathi, the Tirumutinagar and the Aliyar Dams are the only three irrigation dams in the sanctuary. The reservoirs of these three dams are frequented by a number of feathered inhabitants such as the Pond Heron, the Grey Heron, the Little Cormorant, the Large Cormorant, the Cattle Egret, White breasted King Fisher, Yellow wattled lapwing, and the common sand piper.

Cow elephant with its calves near Ambuliparai

Sambar Deer near waterfalls in Mount Stuart Block

The reservoirs abound in a great variety of fishes, the rearing of which is handled by the State Fisheries Department in most of the reservoirs, Catla, Rohu, Mrigal, Labeo, Mahseer and cat fish are some of the fishes reared. In addition to these, a great variety of smaller fishes exist naturally in the reservoirs and in the perennial rivers flowing through the forests. **The Konalar river which traverses the Grass Hills is managed by the Konalar Fishing Association. The Rainbow trout is reared in this river by the Association.**

WILD LIFE OBSERVATION POINTS

(*i*) **The Wood House Lawn :** This is a grazing ground and natural 'pen' for spotted deers from 6 p.m. to 6 a.m. The size of the herd is more or less constant throughout the year as this is controlled by 'the Forest Family Planning authorities' —cuon alpinus. (wild dogs)

(*ii*) A drive along the network of roads enables the tourists to see and admire magnificent herds of elephants and Gaurs ('Indian Bisons')

(*iii*) Pandaravarai, Kolambumalai, Umayamalai, Perunkundry of Tunacadavu range, Variayatuthitu and the Grass Hills of Punachi range are ideal abodes for Nilgiri Tahr. One has to hike a distance of 10—16 kilometres along steep slopes of these peaks to enjoy the beautiful scene of herds of Nilgiri tahr which lives in complete peace and freedom. One may even mistake them for "Cattle pens." These hills have a rare and unique beauty with their vast stretches of grass lands interspread with numerous compact sharply defined small woodlands called "Sholas."

Within the sanctuary area the following accommodation are available through Forest Department :

1. Wood House at Topslip—Two suites of rooms ;

2. Forest Rest House at Varagaliar—Two suites of rooms ;

3. Forest Rest House at Sethumadai—Two suites of rooms ;

4. Forest Rest House at Amaravathi—Two suites of rooms.

For reservation in the above Rest Houses, the District Forest Officer, Coimbatore South Division at Pollachi, Tamil Nadu may be addressed. Besides, there are a number of rest houses under the control of the Public Works Department and Electricity Board which are available for the stay of the tourists. In Pollachi, a variety of private accommodation can be hired.

(*iv*) Anaikunthi 'Shola' is home of the Lion tailed macaque and gaur. This has been preserved.

(*v*) Teak forests just before the onset of south-west monsoon put-forth new buds. At this stage teak forests invite Nilgiri langurs which feed on the merging buds. The entire teak forests will look like 'Park of Nilgiri langur.' This scene is very significant under the background of green veil of teak forests, Brown flying squirrels, Malabar squirrels are commonly seen.

(*vi*) The Amaravathi Reservoir is having plenty of crocodiles. During the summer season, though water recedes in the reservoir they find refuge in "Thoovanam Waterfall" which lies just a kilometre from the Amaravathi reservoir towards upstream.

As this sanctuary is about a year old, steps are being taken to provide more number of salt licks. Spotted deers, Gaurs, and Sambars are frequently seen in salt licks. There are also a few natural salt-licks in all grazing grounds of the wild animals.

PRIDE OF PLACE FOR ELEPHANT CAMP

A visit to the Elephant camp at Varagalai river from Topslip is a source of enjoyment and fund of delight to a visitor. In addition the camp attracts 'Bisons'; Nilgiri langurs, Malabar squirrels and flying squirrels and variety of birds. Visiting the elephants at Varagaliar elephant camp during feeding gives a very rare experience to tourists. It is delightful to see how the huge animals readily respond to the words of command of elephantmen (Mahouts and Cavadies). Young calves always play mischief and this is a source of enjoyment for tourists.

Photo left showing Hill tribe husband and wife with a child. He is working in the Electricity Board.

Photo above showing a group of hill tribes known as Gadar.

HILL TRIBES IN THE ANAIMALAI WILD LIFE SANCTUARY

There are six different hill tribes namely the Kadars, Malasars, Malai Malasars, Pulayars, Muduvars and Eravalars. Of these, the Eravalars constitute but a small minority generally restricted to the foot hills. The other five hill-tribes are spread out in different settlements. Each settlement known as 'pathy' consists of group of ten or more huts, huddled together on the banks of a stream or on an open glade within the forest. The huts are generally built of bamboo ; the walls and roof are thatched with grass and reed leaves. The Government of Tamil Nadu has constructed good houses under Social Welfare Scheme in some of the settlements which have got easy accessibility.

SCENIC SPOTS

There are many places of scenic beauty in the sanctuary which the visitors should not miss. The following will form the list of places of scenic beauty :

Karianshola : The tropical evergreen forests occur here as post-climax. It exhibits a bewildering multiplicity of vegetation. There is also an arboretum at the enterance of Karianshola and this is of botanical interest.

Waterfalls : There are a number of magnificent waterfalls in this region which attract tourists quite frequently. Water falls near Lower Punachi, near Aliyar, near Kadamparai, near Mount Stuart, Panchalingam Waterfall near Tirumurti Koil and 'Thoovanam' near Amaravathi Reservoir are worth mentioning.

Wood's Grave : An area of 80 metres long and 60 metres wide, symmetrically disposed round the grave of the late Hugo Wood in the 1916 teak plantation below the Mount Stuart Bungalow has been preserved. This was raised by the late Hugo Wood himself in 1916 by dibbling seeds and this will form in perpetuity a living memorial to him.

Oldest Teak Forests : Trials with tea planting were started in Mount Stuart in 1856 and subsequently systematic planting of teak was taken up in several regions. After the states re-organisation in 1956, the oldest teak plantation that has been retained in Tamil Nadu is the one which was raised in 1872 in an area of 2.43 hectares by dibbling seeds. This is preserved being oldest "Man Made Forest" in Tamil Nadu.

Panchalingam : This is a serene and religious spot located in the Panchalingam Waterfall. This lies about 770 metres up the Palar river from Tirumurti Temple. The panoramic view of the green valley with its serenity, the magnificent waterfall, splendid Palar river and the religious spots *viz.*, the Panchalingam and Tirumurthi temple are the sources of attraction for Pilgrims and tourists.

Anaimalai Estates.—Vast stretches of contiguous Tea Estates with pockets of Cardamom and Coffee adjoin the Anaimalai Wild Life Sanctuary. This is a special feature of the Anaimalai.

HOW TO REACH THE SANCTUARY AND WHERE TO STAY?

From the airport and the Railway junction of Coimbatore, Pollachi is accessible by State Highway. There are regular and frequent bus services from Coimbatore to Pollachi. There is also Railway Station at Pollachi on Coimbatore-Madurai line and Olavakkodu—Dindigul line. **The black topped roads *viz.*, Pollachi-Parambikulam road, Pollachi-Valparai road and Udumalpet—Munnar road are running through the Anaimalai Wild Life Sanctuary. There are regular bus services plying from Pollachi to these places. The best period for visiting the Sanctuary is from May to December.**

Mudumalai Wild Life Sanctuary An attraction To The Tourists

Gaur with Calf in Sechali Valley of Anaimalai sanctuary

Mudumalai Wild Life Sanctuary is one of the important sanctuaries in India. It is a major tourist attraction in the Nilgiris. Numerous tourists from all over the world visit the sanctuary every year. It lies in the Nilgiris district of Tamilnadu State abutting Kerala and Mysore States. It is situated at an elevation of 1,000 metres and extends over an area of 324 sq. km. Nature has been lavish in providing this sanctuary with thickly wooded hills, plateaus, deep valleys, waterfalls, rivers, streams, marshes and salt licks.

FAUNA AND FLORA IN THE SANCTUARY

The sanctuary is rich in animal life. Herds of elephants are very commonly seen in bamboo forests along the water courses. Chital population is so high that no one can miss them especially in the Masinagudi area. Sambar, though not plentiful, are available in sufficient numbers. One can also see gaur (Indian bison), wild boar, barking deer, mouse deer, Indian porcupine etc., in the sanctuary. Packs of wild dogs can be seen chasing the chital. Other animals commonly seen are malabar squirrel, flying squirrel, common langur, bonnet monkey, blacknaped hare etc. A panther and occassionally a tiger may also be seen if one has real good luck. Bears may be seen mostly in the early hours of the morning and late in the evening.

Pythons are among the advertised reptilian attraction of the sanctuary but there are a number of snakes more commonly seen, including cobras, rat snakes and the saw scaled viper. Monitor lizards are a special feature of the Masinagudi scrub where they attain a large size.

For bird watchers, the sanctuary is a paradise. Their chorus at dawn is a delight to the visitor. One can see a variety of birds such as grey jungle fowl, peafowl, spur fowl, grey partridge and quail crossing the forest roads. Shama, common iora, golden oriole and scarlet minivet entertain the visitors with their sweet melodies. Racket tailed drongo, malabar grey hornbill, malabar trogon, paradise fly catcher, nightjar, hill mynah, woodpeckers, pigeons etc., are also seen.

The sanctuary will appeal as much to people interested in the flora as to those who care for wild animals. The vegetation within the sanctuary varies from deciduous to evergreen type. In the drier localities of the sanctuary species of Acacia and Albizzia, with a low undergrowth of lantana and other thorny bushes and short grasses are seen with a sprinkling of sandalwood. In the other areas of Mudumalai, one comes across valuable timber species such as rosewood, teak, venteak, vangai etc. Screwpine can be found along the streams and streamlets. Bamboo brakes are a special feature of the sanctuary and they are found in the moist regions.

THE ELEPHANT CAMP

The Elephant camp where tamed elephants are kept is situated in the heart of the sanctuary at Theppak-

kadu. A visit to the elephant camp during the feeding time in the morning or evening is a 'must'. You can also see and enjoy the baby elephants performing tricks. Elephants are available for ride through the sanctuary. Four adults can ride on one elephant for Rs. 10/- which is exclusive of visiting charges. The rides are available at 6.00 A.M., 8.00 A.M. and 4.30 P.M. Advance booking is required for elephant ride.

MOYAR WATER FALLS

The Moyar is the main river of the sanctuary and provides perennial water, satisfying the needs of all animals, big and small, for drinking, wallowing and bathing. In places it is a deep, fast flowing river with an impressive series of cascades at the waterfall in Theppakkadu which no one should miss. The Kargudi view point is near Kargudi rest house. From here one gets a panoramic view of the country around.

ACCOMMODATION AND OTHER FACILITIES.

There are four well equipped rest houses in the sanctuary viz., Abhyaranyam, Kargudi, Sylvan Lodge and Masinogudi rest houses. The reservation for Sylvan Lodge is done by the State Wild Life Officer, Madras-6 Locally, reservation will be done subject to availability, by Wild Life Range Officer, Kargudi. The reservation for other rest houses and elephant ride is done in the District Forest Office, Nilgiris North Division, Ootacamund. Vans and jeeps are available to go round the sanctuary on payment.

HOW TO REACH THE SANCTUARY?

From the Coimbatore airport Mudumalai is accessible by good road, the distance being 160 km. The nearest railheads are Ootacamund and Mysore. Visitors can reach Kargudi by bus from Ootacamund and also from Mysore. It is 64 km. from Ootacamund and 95 km. from Mysore. Ootacamund Mysore main road runs through the sanctuary. There are bus stops at Abhyaranyam rest house and at the Office of the Wild Life Range Officer, Kargudi. Tourist buses are available during the season at Ootacamund in the months April and May for visiting the sanctuary. Regular buses also ply from Ootacamund to Mysore, to Moyar, to Gundalpet etc. via this sanctuary.

BEST TIME TO VISIT.

It is ideal to visit the sanctuary between February and June when the tall elephant grass dries up, increasing visibility considerably. The most suitable time to go round the sanctuary is between 6 and 9 in the morning and between 4 and 6 in the evening.

The rates are as follows :—
Abhyaranyam (two suites) Kargudi (two suites) and Masinagudi (three suites)

	Rs.
Single person ..	5.00
Every additional person ..	5.20
Sylvan Lodge (4 suites)	
1. For a single person ..	7.50
2. For Husband and Wife ..	11.25
3. For each son or daughter over 12 years ..	4.00
4. For each person over 12 of age other than son or daughter ..	5.00

Tent (Near Sylvan Lodge) :—Re. 1/- per person per day

Visiting Charges :—Re. 1/- per head for adults and Re. 0.50 per head for children above three years and below twelve years.

USE OF PRIVATE CARS AND VANS INSIDE SANCTUARY

Rs. 5/- per car per day and Rs. 7.50 per van will be charged for the use of private vehicles inside the sanctuary. Vehicles are permitted inside the sanctuary only at the RISK of the owner.

Camera Charge:—A sum of Rs. 2/- is charged for an ordinary still camera per day and Rs. 10/- for a movie camera per day.

FOREST DEPARTMENT VEHICLES HIRE CHARGES.

Jeep

Mini bus (10 seats)—Re. 0.25 paise per person Mini bus (20 seats) Van (20 seats) subject to a minimum of Rs. 1.50 per km.

Guide Services :—For all assistance and necessary arrangements the Wild Life Range Officer, Kargudi may be contacted (Phone Gudalur 26) At Ootacamund, the District Forest Officer, Nilgiris North Division may be contacted for information and guidance (Phone 2335). Payment has to be made in advance, to confirm reservation in the District Forest Office.

Tips to Visitors .—When out for a look at the Sanctuary's wild life, dull coloured clothes are the best and if they are the older and more "seasoned" all the better. While on an elephant ride, avoid conversation and do not project your legs beyond the planks provided for rest. Smoking is strictly prohibited during the rides. Even with all these precautions, a close look at any wild beast is largely a matter of luck depending very much on its mood and its tolerance of your promixity.

Teddy Cat near Chinnar.

Panther near Singam Ghat Road, both of Anaimalais.

UNIQUE PROBLEMS FACED IN THE DEVELOPMENT OF Hill areas

The hill areas of the Indian economy have historically been a neglected lot despite their strategic and ecological significance. In several deliberations that have been held to devise ways and evolve strategies for spurring development in the hill areas, attention has been drawn to their peculiar physiogeographical conditions, difficult climate and terrain, inadequate rate of growth, near absence of even the basic minimum of social and economic overheads, abject poverty, etc. It is often said that the hill areas lead a semi-autarchic life and have a pattern of relationship with the plains which is more in the nature of international trade than of integrated participation. It is also stressed that the resource homogeneity in the hill areas enhanced by climatic and geographical conditions has such a decisive influence on the potentialities of development that the approach to their problem has to be found largely within the regional setting of the hills.

The problems of the hills are quite different from the problems of the development of the country as a whole. The main causes for the backwardness of hill areas could be seen in :

(*a*) thin and very uneven dispersal of productive resources (yielding private incomes) in relation to the vastness of the area ;

(*b*) high cost of provision of infra-structural and social service facilities because of low density of population spread very unevently over the area ;

(*c*) lack of knowledge about resources endowment and about research and operational experience specifically relevant to the conditions and problems of the hill areas ;

(*d*) failure to identify and plan for the integrated development of these areas on the basis of priorities, norms for resource allocation, procedures, staffiing patterns and incentives and disincentives specifically evolved on the basis of local conditions, experiences and potentials and

(*e*) continuance of development schemes from plan to plan without any systematic appraisal.

CENTRAL ASSISTANCE

The Centre has been aware of these problems and even before the Fourth Plan it had assumed larger responsibilities for the hill areas than for the other areas in the country. The pattern of central assistance was much more liberal for the hill areas than for the plains, and for a number of border districts the Centre was meeting almost the entire expenditure on development schemes. In the Fourth Plan also, which otherwise lays down that the development of the backward regions is essentially the responsibility of the States, and therefore, does not provide for any additional or specific central assistance to the States for these areas, considerable incentive for making sizeable allocation to the hill areas had been offered by providing between 50% and 90% grants from the Centre within the central assistance accruing to a State on account of the expenditure incurred in the hill areas. As against this liberal proportion of grant for the hill areas for the rest of the areas the proportion of grant and loan is only 30 : 70. Apart from providing this incentive, the Planning Commission had also been urging the States to treat their hill areas as separate planning regions and to make separate provisions in their Annual Plans for these areas in the light of their problems, potentials and priorities.

Experience of the first three Five Year Plans as well as of the Fourth Five Year Plan has shown that the accelerated development of the hill areas requires much more than mere earmarking of larger allocation of financial resources. In a number of cases it has also been found that even though substantial allocations were made, these could not be adequately utilised. Even where actual expenditure matched the allocations, the impact of the development programmes taken up was neither adequate nor sufficiently wide-spread to cover the different areas and sections of the population. The main problem seemed to be the absence of planning specifically oriented to local conditions. This could lead to the formulation and implementation of programmes in consonance with topographical and agro-climatic conditions, availability of natural resources, characteristic composition of population, peculiarities of socio-cultural structure and the nature of linkages and interaction between the hill and the plain areas. This aspect is particularly important in the case of small States like Nagaland, Meghalaya, Himachal Pradesh and Assam where a sizeable portion of the population belongs to the scheduled castes and scheduled tribes. Further the carving out of a number of small units in the hill areas has created serious imbalances between natural resources and the availability of financial resources for their exploitation. With the present financial structure, many of these units find it difficult to raise adequate resources for taking up multi-purpose irrigation and power projects or the setting up of forest and other resources-based industries with their own funds. In any case, the population and size of some of these units are so small that there are obvious difficulties in taking investment decisions with reference to their requirements alone, or without considering the costs and benefits of alternative proposals for investment in other contiguous areas. In recognition of this, some work has been done for a general assessment of resources and the identification of investment opportunities and development potentials in the North-East Resources Region. Already North Eastern Regional

Council has been set up for better coordination and planning.

EXISTING PROCEDURES

It has also been observed that in the approach adopted till now for the development of the hill areas, the existing procedures and machinery of planning are oriented to decision making at the Central and State levels. As a result, the priorities adopted and the programmes launched in various areas are not in consonance with the requirements and potentials of those regions which are significantly different from other areas with regard to resource potential and the size and characteristics of the financial and human resources. In addition to this basic problem, there is also the serious problem of the availability of reliable and comprehensive statistics. For a very large portion of the hill region, the maintenance of records and the collection of agricultural statistics is at a rudimentary stage. Most of the research programmes undertaken by the different institutions have also been oriented to the problems of the plains and even where some research has been done on the problems of hill areas, the results obtained are not adequately reflected in the development schemes taken up in the hill areas. So far as the smaller States in the Himalayan region are concerned they suffer from a serious handicap of the paucity of technical personnel. While it may be possible for some States like U.P. to draw upon the resources of an institution like the U.P. Agricultural University and a large number of academic and technical institutions, States like Nagaland, Meghalaya, Assam or Jammu & Kashmir are obviously operating under serious disadvantages.

While the problems of hill areas are in a way unique and very much complicated, administrative machinery available to some of the hill States is also inadequate both in terms of numbers as well as expenditure. From time to time Expert Committees and Visiting Teams have attempted to formulate some ideas of the approach to the planning of hill areas but these have generally not proved very useful because the conclusions were based largely upon very limited direct observation. **The absence of a suitable system of data collection has also impeded the development of the areas in the Himalayan Region by making it very difficult for the States to undertake proper monitoring and appraisal of the development schemes introduced in these areas.** As a result a number of programmes which were patterned on the experience in the plains were introduced in the hill areas and have continued for a long time in spite of their not having met with much success.

NEW APPROACH

The policy for the Fifth Plan with regard to the accelerated development of hill areas has been formulated on the promise that the States will prepare separate integrated plans and programmes for their hill areas taking into account the local resources, potentialities and priorities. The Centre will provide technical and methodological assistance to the States in this behalf during the Fifth Five Year Plan. In order to promote the preparation of separate integrated plans for the hill areas, the Planning Commission have set up a Hill Area Cell, the principal responsibilities of which will be to provide methodological assistance, and to liaise with Departments and Ministries having a stake in the development of the hill areas. Further, it has also been decided that in addition to continuing favourable pattern of Central assistance and the determination of the plan size of the hill States on the basis of their esential requirements as in the Fourth Plan, additional allocation of funds will be made to supplement the funds set apart by the States from their Plan resources. It is expected that the supplementary funds which will accrue to the States for purposes of hill area development, will strengthen their economy and create pre-conditions for their successful take–off during the Fifth Five Year Plan.

Read

TAMIL ARASU

for accurate and authentic
News of
Tamil Nadu.

Single copy Re. 0·40
Annual subscription Rs. 5·00

MADRAS FERTILISERS ACHIEVE ONE MILLION TONNES FERTILIZER PRODUCTION

The Madras Fertilizers Limited (MFL) achieved the Production of one Million tonnes of fertilizers as on April 9, 1974. The Plant went into commercial production on November 1, 1971 and is now in the third year of production.

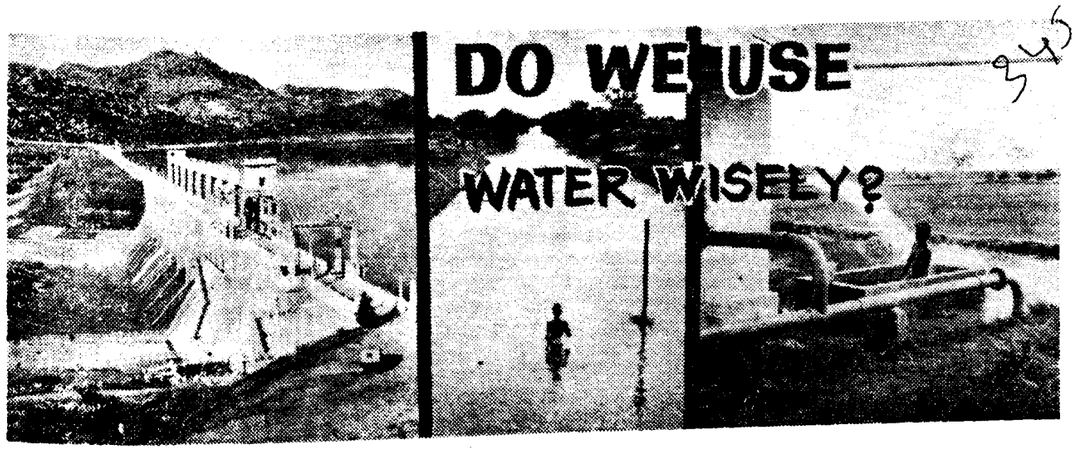
MFL ranked as the second largest producer of fertilizers in India during 1972—73, having produced 412,000 MT of fertilizers, comprising of 126,000 MT Urea and 286,000 MT NPK. The Plant attained a production of 441,526 MT of fertilizers for the year 1973—74 consisting of 173,817 MT of Urea and 267,709 MT of NPK. The cumulative production as on 9—4—1974 is one million tonnes, consisting of 372,000 MT of Urea and 628,000 MT of NPK.

The plant achieved 1.8 million man hours lost time accident free operation in November 1973, which is a good safety record.

The Rs. 65 crores fertilizer project is a public sector undertaking with Indo-American-Iranian co-operation. The Government of India holds 51% shares while the Amoco India Incorporated, a subsidiary of Standard Oil Indiana, USA holds 24.5% shares and the National Iranian Oil Company of Iran holds 24.5% shares.

The MFL fertilizer complex consists of Ammonia Plant with a rated capacity of 750 MT per day, Urea Plant with a rated capacity of 885 MT per day and NPK Plant with a rated capacity of 1,100 —1,300 MT per day.

As part of the expansion plans, the plant has signed a contract with DORR-OLIVER for construction of a third train of NPK. When this train is commissioned the NPK production capacity is expected to increase by 50% *i.e.*, by 181,500 MT per annum, thereby raising the total NPK production capacity to 544,400 MT per annum.



Water conservation is a subject of growing concern in Community everywhere. As the demand for water is increasing day by day for drinking, Industries and Agricultural purposes, the public and Government are studying ways and means of conserving the same and utilise it for the maximum benefit possible. As more than 85% of water available is used for the irrigation of agricultural lands, there is a great scope in saving water which is used for agricultural products increases ; more land inevitably will be put under irrigation. This poses a demand for additional water from supplies that are already in great demand in this State. But experience with conservation farming on irrigated land and the improvements in irrigation efficiency that has been attained by various research workers can help to meet future water problem. These possibilities are given below in this paper.

1. Reducing losses in storage and conveyance. The first big drain in the irrigation water is through evaporation and seepage from reservoirs and canals. It has been estimated that nearly 50% of the water withdrawn from the reservoir is not reaching the farm where it is used. Even in garden land conditions, about 1/5 of the water pumped is not available for irrigating the lands. In Tamil Nadu, there are about 40,000 tanks big and small. The loss on evaporation will be tremendous since ours being a hot country. Another means of water loss is transpiration by non-beneficial plants that grow along canal and stream and around the edge of reservoirs and tanks.

It is possible to increase the area of irrigation if we prevent the losses mentioned above. The seepage losses can be reduced or prevented by lining canals and carrying water through underground pipe lines. Similarly, the evaporation losses can be avoided to some extent by having monomolecules films on the water surfaces in tanks and reservoirs. Further it is possible to remove the unwanted and useless plants on the sides of canals, reservoirs etc.

By

Thiru. R. K. SIVANAPPAN

Prof. & Head of the Department of Soil and Water Conservation Engineering.

T. N. A. U. Coimbatore.

The improvements of storage and conveyance system may be expensive, but the amount of water which is going to be saved will prove worth to take up this water saving measures.

2. Improving water use efficiency by suitable irrigation method : After water is conveyed to the point of use, it must be used beneficially on the Farm. Irrigation is done by basin, check basin, border and furrow methods. The type of irrigation and the optimum size of the particular system has to be worked out for different soils and crop systems. This is true even in the case of paddy fields. Studies conducted at Tamil Nadu Agricultural University, Coimbatore on cotton crop has indicated that furrow is the best method for cotton wherein 20—30% of water can be saved comparing the other methods without affecting the yield. Similar studies conducted on grapes and banana have shown that flooding to the entire basin of the plant is not necessary and the optimum size of the basin for each crop may differ from place to place and this has to be found out in order to improve the water use efficiency.

Though the potential irrigation efficiency is in the range of 85 to 90%, if we increase the efficiency by 10% to 15% from the present level, this would increase the irrigated acreage more than one third with the available water.

3. Adopting improved irrigation method like sprinkler and drip irrigation : The method of irrigation is as old as civilization in our country. There is no improved irrigation methods though some advances in this regard have been made by advanced countries like, sprinkler and drip methods.

In sprinkler method, water is applied in the form of spray like rain. Though this method was started in 1900, this has not been adopted in our State. Sprinkler has been used in all soil types and on lands of widely different topography and slopes and for many crops. Studies conducted for groundnut and cotton crops have indicated that we could save about 30% of water without affecting the yield.

The cost of installation works out about Rs. 1,500—2,000 per acre. This method is practiced in plantation crops in the State.

The latest method adopted to conserve water is the drip irrigation. The main theme in this type of irrigation is to give water directly to each plant. This method is possible since low cost plastic tubing is available in the market. The cost of system works out to Rs. 2,500—3,000 per acre. Experiments conducted for vegetable crops at Tamil Nadu Agricultural University, Coimbatore has shown that only about 1/3 to 1/5 of the water used in the conventional method is sufficient. At the same time, the yield is increased by 10—40%. By introducing drip irrigation method, it is possible to save large amount of water which can be used to bring more area under irrigation.

4. Reducing irrigation requirements by applying the water when it needs : Irrigation requirement refer to the quantity of irrigation water per unit area of land required at the farm to adequately irrigate the crops. Climate, soil, plant, irrigation system, management factor that affect a water consumption mechanism alters irrigation requirement.

Numerous possibilities for reducing requirements exists through better crop adoption, variety selection and improvement and improved cultural practices. Water use can be reduced by irrigating the crop when it needs. Some crop can tolerate stress in the early stage of growth and others at later stages. By knowing the critical stages of growth for each crop and if irrigation is done at that time, there is possibilities of reducing water. Yet another method of reducing irrigation water is in use of varieties that inherently have a low evapotranspiration such as millet crops. Significant reduction in transpiration might be affected through plant breeding in selection to incorporate a reduction in number of location of stomates or a change in other leaf characteristics which influence transpiration.

Crop cultural practices warrant consideration in assessing possibilities for reducing irrigation requirements. The adjustments of planting dates for shorten the growing season, to avoid high (ET) Evapotranspiration in summer, selecting proper row direction, plant spacing etc. may be thought of in this direction. By proper weed control alone, the irrigation efficiency can be increased considerably.

5. Irrigation for maximum production : The aim of supplying water to the crop is to get maximum production. This does not mean that if we give, more water, the yield is increased proportionately. The yield increase depends water stress, soil structure, interaction with fertility and other various factors. Hence it becomes necessary to determine the yield response in relation to water input. Such a relationship is known as water production function. Thus effective use of water is possible only if information is available to permit estimation of the economic contribution of irrigation to crop production. It is therefore very essential to find out the water production function to each and every crop grown in the region or State so that the maximum benefit could be arrived from the available water. For example, by applying 120" of water the yield of sugarcane is 80 tonnes but by restricting water to 80", the yield obtained was 60 tonnes where the water is limiting factor, it is advisable to give 80" of water to obtain 60 tonnes instead of giving 120" of water to produce 80 tonnes. This kind of study should be undertaken in a systematic manner for all crops. This study will be very useful in years of less than normal rainfalls in order to predict the effects of water shortage of crop yields.

6. Water delivery system : More than 40% of water used is drawn from the irrigation projects in this State. The method of water delivery has definite effect on project irrigation efficiency. The application of irrigation water must be closely adjusted both to the requirement of the crop and to the available water holding capacity of the soil root zone. The method adopted in this State is the continuous flow system In this method water is wasted and this contributes to water logging in some area. The other methods which can be followed are :

(1) The demand system and
(2) the Rotation system.

In the demand system, water is delivered to the Farm at times and in quantities as requested by the water user. This system offer many opportunities for a project to encourage wise use of water and thereby higher irrigation efficiency. But this requires alert, ingeneous and flexible operational ability and good communication system.

The Rotation system is probably the most flexible of all methods. Under this system water is delivered to each farmer in sufficient quantities for a fixed period of time under prearranged schedule. By careful management, good irrigation efficiency can be recommended under this system. Our present practice of allowing water continuously may be modified in order to obtain maximum project efficiency.

To practice and follow the above methods, intensive research on water use and management is to be taken up.

Though considerable knowledge in watershed management, storage, conveyance, application of irrigation water and water use by crop has already been produced by research workers, substantial improvements in water use efficiency could be achieved only by utilising knowledge currently available. This call for programmes of education both for farmer and for personnel of irrigation and revenue departments and of extension services. Substantial improvement in water management practices in agricultural production could be achieved by suitable adptation of knowledge existing in other areas. Emphasis should be given on those research projects which will immediately benefit the farmer for using less water without affecting the yield. This is necessary for our State in view of the fact that we have already harnessed the available water.

PURE WATER UNDER OCEAN

The first European settlers in Australia noticed that the aborigines in the northern part of the country obtained water from the sea through long bamboo pipes. A similar method is still employed today yb the inhabitants of Bahrain island in the Persian Gulf, who use long reeds instead of bamboo pipes. The fact is that there are fresh water springs on the bottom of the ocean as well as on land.

THE ORGANISATION AND ADMINISTRATION OF

Tamil Nadu FIRE SERVICE Department

The Fire Service Organisation is a humanitarian service dedicated to the saving of life and property in the event of natural calamities like floods, cyclone, earth-quake and also from fire and other accidents and its services are available to the public at all times. The provincialised Fire Service came into being in 1942, when there was no Fire Service in this State except in Madras City where a small Fire Brigade was maintained by the Corporation of Madras. It is functioning as a separate permanent department from October, 1967.

Functions and activities of the Department

The activities of the Fire Service Department are primarily and mainly the prevention and extinction of fire. However, at other times, the Department also renders valuable help and assistance to the public in a variety of ways, such as protection from fire at fairs and festivals, rescue of huhuman beings and animals from collapsed structures, wells and floods and other major disasters, transportation of the sick and the injured to hospitals for immediate medical attention and aid. They also aid and assist the Public Health Department in cases of epidemics. Their services are also requisitioned by the Police during elections, riots and other bandobust duties. Besides these varied humanitarian services, the personnel of the Fire Service Department are also charged with the duty to inspect premises licensed or to be licensed under many Acts and Rules, namely, the Places of Public Resort Act, the Tamil Nadu District Municipalities Act, and the Madras City Municipal Corporation Act, the Tamil Nadu Village Panchayats Act, the Arms Act and Rules framed thereunder, the Tamil Nadu Factory Rules, etc.

Administrative Set up

The Director of Fire Service is the Head of the Fire Service Department. He controls and manages the Fire Service organisation in the State. He is assisted by an Administrative Personal Assistant at the Headquarters in Madras City.

Tamil Nadu Fire Service Week Special

For the purposes of Fire Service Administration, the State is divided into Regions as North and South, each under the charge of a Deputy Director of Fire Service, with Headquarters at Madras and Madurai respectively. Each Region comprises a few Fire Service Divisions. Each Division consists of one or more continuous revenue districts. A Divisional Fire Officer is in charge of each Fire Service Division. He controls and manages the Fire Stations in the districts within his division. Each Divisional Fire Officer has an office of his own with the requisite administrative staff. Further, he is assisted by one or more Assistant Divisional Fire Officers at his Headquarters on operational matters. The details of the two Regions, number of Fire Service Divisions in each Region, the revenue districts comprising each fire service division and the

Region	*Sl. No.*	*Name of Fire Service Division*	*Name of Revenue District Comprising the Division*	*No. of Fire-Stations functioning.*
Northern Region	1	Madras City	Madras	14
	2	Vellore Division	Dharmapuri	1
			North Arcot	7
			Salem	1
	3	Cuddalore Division	Chingleput	4
			South Arcot	6
	4	Tiruchirapalli Division	Tiruchirapalli	5
			Pudukkottai	1
			Thanjavur	1
Southern Region	5	Coimbatore Division	Coimbatore	7
			Nilgiris	2
	6	Palayamkottai Division	Kanyakumari	1
			Ramanathapuram	6
			Tirunelveli	4
	7	Madurai Division	Madurai	7
			Total	73

of fire stations functioning given in the previous page :

The Fire Station is the basic unit of the Department. The normal jurisdiction of a Fire Station extends to the Municipal, Panchayat or township limit within which it is located. It is placed under the charge of a Station Fire Officer. One or more fire appliances are generally attached to a Fire Station. Each appliance is under the charge of a Leading Fireman under whose immediate supervision and control the rest of the crews of the appliance work. Fire Stations function round the clock. Therefore, the staff attached to the Fire Station work on two shifts.

Scheme for opening of new Fire Stations

For the purpose of opening of Fire Stations the Government have approved a priority list. There are 55 towns in which Fire Stations have to be opened. In order to quicken the pace of establishment of fire stations in all the towns in the priority list, the Government have approved the proposal of establishment of single unit fire stations i.e. one Mobile Tank Unit carrying a Portable Pump as against two unit fire stations as before.

Ambulance Service

In addition to Fire Units, Ambulances are attached to Fire Stations on a suitable scale in each town. Casualities of all types of accidents are quickly removed to the nearest hospital free of charge. Even sick patients, who cannot afford to meet the Ambulance hire charges are conveyed free to hospital.

Training

The Fire Service State Training School, Madras, is the only central institution where the men and officers of this Department are given the initial training, and also refresher courses of training thereafter. The School functions throughout the year without break.

Repairs and Maintenance

This department maintains a Workshop at Madras for attending to major repairs to departmental vehicles, equipments, etc. In each of the seven Divisional Headquarters a Mobile Repair Squad functions to attend to the normal repairs to the vehicles at various fire stations in the Division.

Welfare

The Tamil Nadu Fire Service Benevolent Fund-cum-Welfare Organisation founded in 1962 is intended to render financial help to members of the force in distress and for promoting their welfare. Financial assistance is granted to members to purchase nourishing diet for themselves or their dependants, who suffer from tuberculosis, leprosy, cancer, etc., to meet the cost of college education of their children, to provide relief to the families of deceased members, to meet the funeral expenses of their dependants and also token grants to the retired members who did not avail any assistance from the fund during their Service.

FIRE PREVENTION PROTECTION AND FIGHTING IN COTTON SPINNING AND WEAVING MILLS

Introduction.—Cotton is the vegetable fibre which covers the seed of the cottonplant. It consists of almost pure cellulose and ignites and burns quickly and easily. Burning cotton gives off dense smoke and cotton is liable to spontaneous combustion, under the usual conditions. Therefore the fire problems in the cotton and spinning mills are grave and are on a large scale.

Constructions of Mills.—Generally cotton mills are of several storeys and with load-bearing walls. Modern mills are with double boarded wooden floors laid on reinforced concrete and supported on unprotected cast iron columns. The roof may be with re-inforced concrete as well. Two or more stone staircases may be found and the hoist serving the various floors with sliding or self-closing doors. Power may be from steam or electricity.

Process : (i) *Spinning.*—Cotton is fed through the bale-breaking machine into wood enclosed bins called the mixings. There it is passed by the hopper feeders into openers which repeat the cleaning and opening process ending in the scutching machine. Dust is extracted in these processes. Then the carding process takes place in which the cotton becomes a thin sliver.

(ii) *Weaving.*—Taping is a preliminary process in the weaving process where the thread is finished with size, in large steam-heated machines and then another process "drawing" is undergone by which the ends of warp threads are drawn through the healds.

Fire Risks : (i) *Cotton Storage*: —Cotton is imported in highly compressed bales of approximately 400 to 700 lbs. weight covered with jute sacking and banded with steel.

(ii) In the spinning process dust is extracted while cleaning and passed through dust chambers in the lowest floors. The dust is highly inflammable and presents therefore a high fire risk in the mills.

(iii) In the carding section, the carding machines are of great delicacy and value. There may be 200 in a room and the cotton in the carding stage also presents a high fire hazard.

Causes of Fire : (i) Sparks due to friction or foreign bodies or overheated bearing in the machines are frequent causes of fires in the cotton mills.

(ii) Electrical sparks and short circuits do also cause fires.

(iii) Human carelessness, that is careless smoking have also caused numerous fires in these mills.

Fire Protection : (i) Where cotton is handled in fine stages, the entire length and breadth of the storage rooms, cleaning section, card ing section etc., are fully sprink lered. The Sprinklers are fed by static water supplies ranging from 80,000 to 2,000,000 gallons.

(ii) A wet or a dry riser may also found in the mills.

(iii) Hose reel equipment fed by over-head tanks are not un-common in these mills.

(iv) Portable fire extinguishers are provided in addition to the sprinklers.

(v) Automatic fire doors to isolate the involved section are common provisions.

Fire Fighting .—Fires in the mills should be attacked from the inside of the building with speed and medium for fire extinction. Hand-controlled and Diffuser Branch Pipes help to save water damage. In certain sections, steam nozzles may also be installed to maintain humidity. This may also be availed of in case of fires. Salvage operations are an important item in fire fighting as much damage can be saved by covering, draining and judicious use of water. Cotton stains and shrinks when drenched in the process-completion stage. Breathing apparatus should be worn while figthing fire in dense smoke.

By

Thiru A. A. SHERIFF,

FIRE PREVENTION AT TIMBER FORESTS

It is most intriguing to note that an element of danger is invariably associated with even the most indispensable of God's creations like Fire. As the tentalces of modern science and Technology spread in every nook and corner of the world, the perils and hazards, which are the byproducts of the march towards progress, also increase at a rapid rate. Fire poses a serious threat to human efforts in the accumulation of huge piles of stock, Fire prevention thus assumes a major role in ensuring the safety of materials.

Timber stocks are the victims of many a fire accident in the country. They result more due to the negligence of the personnel in the depots rather than anything else. Sawdust chips, barks and other waste may easily ignite and so they should not be allowed to accumulate. Sawdust presents a serious hazard in the sense that burning may occur without any flame being present and all that may be visible is a darken ing of the surface and occasional glowing embers covering the surface. The real threat lies in the fact that a fire may burrow deep into a heap and lie dormant for a long time but it is bound to flame when disturbed.

The Timber yard should be kept clear of grass, weeds etc. But if it is found impracticable, such vegetation should be cut short and the cuttings cleared from the premises. Smoking is another source from which serious fire accidents results. Efforts should be taken to prohibit smoking in and around the storage area. Notices to this effect should be prominently displayed.

Heating-Lighting and Cooking :—

The use of naked flames, whether for cooking or boiling water should be permitted only in offices, Canteen and Workmen's cabins. All heating equipments must be securely and permanently fixed. If heating is by solid fuel :—

(*a*) Unless the room in which the stove is installed has a concrete floor, such stoves should stand on concrete bases atleast 6" in thickness.

(*b*) Stoves and flue pipes should not be within 2' from any unprotected wooden articles. If this is unavoidable, they should be protected either by a metal sheet with an air space of atleast 1" between the sheet and the wooden materials.

(*c*) When the flue pipes pass through any wall, partition or ceiling or roof constructed wholly or partly of combustible material, they should be surrounded by stoneware sleeves or collars with an internal diameter of not less than 2" greater than the external diameter of the flue.

(*d*) all flue pipes should be fitted with efficient spark arrestors.

(*e*) Asbestos cement flue pipes should not be used, if electrical heating and cooking equipments are used.

(*f*) they should be securely fixed either to the wall or floor.

(*g*) If the floor is of combustible material, concrete or brick base should be provided.

Petrol driven vehicles should not be left unattended near the timber storage space. The storage and handling of petroleum and other inflammable liquids and particularly, refuelling near the storage space, is extremely dangerous and should be strictly prohibited.

Buildings within the storage area should be provided with fire extinguishers. With the increasing use of electrical equipment and mechanical appliances using diesel oil and petrol, these may be special risks calling for the use of special types of extinguishers. Extinguishers for use in timber stacks should be of Soda-acid and water. They should be kept at prominent and strategic points in the area.

Much of the loss sustained in timber fires is due to unsatisfactory siting of stack, the absence of access lanes or failure to keep access lanes free from obstructions.

If, owing to delay in detection or for some other reason, a fire has become well alight, it may be that in spite of the initial efforts to extinguish it, its progress will only be arrested by a fire break of suitable width. The nature and size of firebreaks will tend to vary according to the layout of each particular site.

When Railway sleepers, logs and mining timber are staked by mechanical means and the stacking does not exceed 20' in height, fire-breaks of 60' in width should be maintained for each 50,000 sq. ft. of storage area. Above this height, wider breaks should be provided.

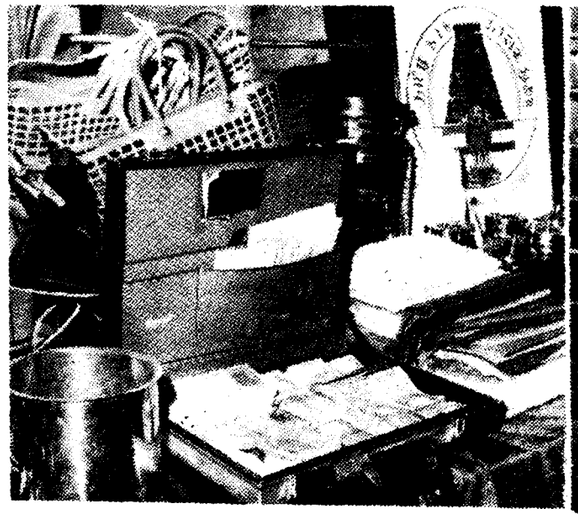
For mining timber and other forms of roundwood, firebreaks of 120' width should be provided for every 2,00,000 sq. ft. of storage area.

There should be easy access to supplementary water supplies, open water such as canals and rivers. Position of hydrants should be clear and unobstructed. There must be proper and constant maintenance of hydrants, hose, and similar equipments and steps should be taken to ensure that hydrant outlets and indicator plates are of the type in use by the local fire service.

By

Thiru C. SHANMUGAM

D.F.E,, N.F.S.C.



DETECTION OUTSTRIPS NEW MODES OF THEFT

Thieves are always alive and alert to the change of time and tide. More often than not, they prefer to be in advance of the trends of scientific and technological invention. In this connection the Tamil Nadu Police, true to its traditions of outstanding performances in the past, have done a creditable service to the department as well as the public by unearthing and bringing to limelight the new but novel modes and methods of theft in the State.

IDOL THEFTS

Idol thefts from temples are not uncommon as they fetch fabulous prices as art objects in foreign markets. In this line, a new modus operandi has come to notice recently in Thanjavur district. The culprits, with the connivance and active participation of the priest of the temple concerned, removed the original idols cladestinely and substituted cheap faked ones in their place. Five such instances of substitution of faked idols were unearthed by the staff of the Special Cell of the Crime Branch, C.I.D. between August, 1973 and January, 1974. The idols involved in these instances are Chandrasekarar and Prathoshanainar idols in Vilavaneswar temple at Thiruvaigarur, Nataraja idol in Agastheeswarar temple at Serugudi village, Somaskandarswamy and two Amman idols in the Sathiavasagar temple at Mathur, Vinayagar and Prathoshanayanar idols in Viswa nathaswamy temple at Valgudi and Nataraja and Sivakami idols in Siva temple at Thiruvidavasal. The cases are under further investigation.

PETHIDINE INJECTION MURDER

The Tamil Nadu Crime Branch, C.I.D. unearthed during the year, a dangerous criminal gang consisting of nine members under the leadership of Vaitheeswaran, a Pharmacist in Madras, who were responsible for a series of grusome murders. The culprits posing themselves as Customs or Enforcement Officers selected their victims and killed them with heavy doses of pethidine injections under the pretext of giving " truth serum " and abandoned their bodies in far-off places after removing the heavy cash which they carried. The Crime Branch, C.I.D. arrested all the nine members of the gang and recovered gold ingots valued Rs. 23,500, gold jewels, sarees, etc., wroth Rs. 45,000, cash Rs. 18,000 and seven cars and scooters all valued over Rs. 1,28,000. The case is now under trial.

Another notorious gang of wire thieves headed by Natarajan along with five associates was arrested by Tamil Nadu Crime Branch C.I.D. The ramification of this gang extended to Chingleput East, Chingleput West, South Arcot and Tirunelveli districts and a series of wire theft cases were detected.

NOVEL METHOD OF CHEATING

A novel method of cheating hundreds of youngsters on the pretext of selecting new faces for a film proposed to be produced come to the attention of the Tamil Nadu Crime Branch, C.I.D. The culprits advertised in the dailies calling for new artistes under the caption : " PUDUMUGAM THEVAI' for acting in a new picture to be produced by 'SAFIRE FILMS OF INDIA, MADRAS.' On receipt of hundreds of applications from various parts of Tamil Nadu, Karnataka, Kerala, Andhra Pradesh, Orissa and Madhya Pradesh from aspiring youngmen and women, the culprits sent out invitations informing them of the inaugural function on 16th September, 1973 at Vijaya Gardens, Madras, and made them part with a a sum of Rs. 50 each by money order. A substantial sum of Rs. 19,150 was thus collected from the applicants who received a rude shock, when they found that no such function was arranged. Six accused were taken into custody and investigation is proceeding.

A BOGUS DOCTOR

The Crime Branch, C.I.D. took into custody a youth who was practising medicine in the City with high sounding medical degrees. The culprit who was unemployed and educated upto the Secondary School level, posed himself as a doctor and started his medical practice at Kondithope, Madras under the Pseudonym Dr. R. M. Narayanan, B.S.C., M.B.,B.S., M.D., Authorised Medical Attendant, General Hospital, Madras.

Who are the Physically Handicapped ?

How many are they ?

In order to properly implement the scheme of helping the physically handicapped, a quick survey was conducted. The Quick Survey of the number and economic status of physically handicapped persons in Tamil Nadu has revealed the following facts :—

1. They number 2,34,313, of whom 135,073 are males and 99,240 are females.

2. As many as 166,210 handicapped persons are found in the rural areas, the rest numbering 68,103 only in urban areas.

The other main observations are :

(i) The incidence of handicapped population is 57 per thousand of the State population ;

(ii) The incidence of the physically handicapped varies from 29 per ten thousand in Madras to 76 per ten thousand in Tirunelveli District ;

(iii) As between males and females, the ratio of incidence is roughly 60 : 40 ;

(iv) as between rural and urban areas, the ratio is roughly 70 : 30 ;

(v) categorywise, the largest incidence has occurred in the case of orthopaedically handicapped who constitute about half of the handicapped population. About one third of the handicapped population are deaf and/or dumb and about one fourth blind ;

(vi) the incidence is more in the higher age groups. The incidence is about 50 per 10 thousand in persons below 30; 55 per 10 thousand in the age group 30-50 and it is as much as 102 per ten thousand in the age group 50 and above.

The definition of the ' Physically Handicapped ' adopted for the present survey was similar to that of the 1961 census study (of 2 districts, Madras & Chingleput) and it included under its purview the following categories — blind, deaf, dumb, orthopaedically handicapped and any combination of these.

The schedules covering the various details of the physically handicapped were prepared by the Economic Analysis and Research Division of the Finance Department. The schedule by itself was self-explanatory but a form of instructions was also sent to each enumerator to avoid ambiguities and to ensure uniformity in the collection of the data. The survey was intended to be completed in a very quick time. As a result, the work relating to the conduct of the survey had to be very much decentralised involving gramasevaks, youth corps volunteers and other village and block development staff in the case of village and town panchayats and the local body staff in the case of Municipalities and Corporations. While the Panchayat Union Commissioners and the Municipal Commissioners were assigned the responsibility of supervision at the respective levels, the District Collectors were entrusted with the overall supervision.

For all practical purposes the present survey gives broad information on various socio-economic aspects of the physically handicapped population in Tamil Nadu.

THE INCIDENCE AND EXTENT

The survey reveals that there are 2,34,313 (roughly 57 per 10,000 of the population) physically handicapped persons, out of whom 1,35,073 are males and 99,240 females. The 1961 census study of physically handicapped persons conducted only in two districts, viz., Madras and Chingleput gave a figure of 142 per ten thousand. It is stated that allowing for a 20 per cent margin of error, the true position may be that the handicapped persons may constitute 70 per 10,000 in our State.

Male and Female

As between the urban and rural areas—taking the Corporation, Municipality and Town Panchayat areas as urban and the rest as rural—handicapped population in the State is found to be more in the rural areas. There are 1,66,210 handicapped in rural areas as against only 68,103 in urban areas. If the rural and urban handicapped population are related to the total rural and urban population in the State, then the incidence of handicapped per given population is greater in rural areas than in urban areas. There are 63 handicapped in rural areas for every ten thousand of rural population as compared to 46 handicapped in urban areas for every ten thousand of urban population. In all, there are 57 handicapped persons for every ten thousand persons in the State. Similarly, if the male and female handicapped population are related to the total male and female population in the State, the incidence of handicapped among males is much higher than among females. There are 65 handicapped males for every ten thousand of male population as compared to the 49 handicapped females for every ten thousand of female population. The TABLE I gives the details of handicapped population in the State in respect of their rural, urban and male female distribution.

Incidence of the Handicapped – Districtwise

While the incidence of handicapped for the State as a whole works out to 57 per ten thousand of total population, it is found that there are wide variations as between different districts. The incidence varies from 76 per ten thousand in Thirunelveli district to 29 per ten thousand in Madras. The following districts have an incidence greater than the State average : Thirunelveli (76), North Arcot (72), the combined districts of Tiruchirappalli, Thanjavur and Pudukkottai (66), South Arcot (65), and Ramanathapuram (59). The incidence

TABLE I

DISTRIBUTION OF HANDICAPPED PERSONS : SEXWISE RURAL & URBAN

S. No.	Item	Number	Percentage	Incidence per ten thousand of respective Population
1.	**Males**	**1,35,073**	**57.6**	**65**
	(i) Rural	96,305	41.1	..
	(ii) Urban	38,768	16.5	..
2.	**Females**	**99,240**	**42.4**	**49**
	(i) Rural	69,905	29.8	..
	(ii) Urban	29,935	12.6	..
3.	Total Rural	1,66,210	70.9	63
4.	Total Urban	68,103	29.1	46

TABLE II

INCIDENCE OF THE HANDICAPPED PER TEN THOUSAND POPULATION

District	Handicapped male per ten thousand male population	Handicapped female per ten thousand female population	Total Handicapped per ten thousand population
(1)	(2)	(3)	(4)
Madras ..	30	27	29
Chingleput ..	71	51	62
North Arcot ..	61	84	72
South Arcot ..	76	53	65
Dharmapuri ..	68	46	57
Salem ..	53	33	43
Coimbatore ..	46	33	40
The Nilgiris ..	49	35	42
Madurai ..	47	34	41
Thiruchirappalli .. / Thanjavur .. / Pudukkottai ..	81	54	66
Ramanathapuram ..	69	50	59
Thirunelveli ..	88	64	76
Kanyakumari ..	85	51	68

in the following districts is below the State average : Madras (29), Salem (43), Coimbatore (40), The Nilgiris (42) and Madurai (41). The incidence in Dharmapuri district is equal to the State average. In all districts, the incidence for the male population is much higher than for the female population with the single exception of North Arcot District.

The TABLE II illustrates in detail the incidence of handicapped per ten thousand of population districtwise and for males and famales.

Incidence of the Handicapped — Categorywise :

Conditionwise, the orthopaedically handicapped comprising the categories of polio, congenital deformities and amputees form the major portion numbering 1.15 lakh which is nearly half of the total handicapped population. Next in line comes the deaf and dumb — inclusive of deaf, dumb and deaf and dumb categories — numbering about 73 thousand which constitute 31 per cent of the handicapped population. The blind category comes third numbering about 46 thousand and constituting about 20 per cent of the handicapped. For the population in the State as a whole, there are 57 handicapped persons for every 10 thousand, of whom 28 are orthopaedically handicapped, 18 deaf and/or dumb and 11 blind.

The TABLE III illustrates the pattern of distribution of the handicapped categorywise.

Incidence of the Handicapped : Age groupwise

An age groupwise distribution of the handicapped population shows that the majority of them belong to the working age group of 16—50 constituting 45 per cent. While a considerable portion viz., 23.2 per cent of them belong to the age group of 6—16, almost the same percentage viz., 23 per cent of them are in the other end of the " 50 and above " category. About 8 per cent of them belong to the age group below six. The TABLE IV illustrates the distribution of the handicapped population according to their age group and the incidence

of handicapped population to the corresponding age group of total population.

A direct relationship is noticed between the incidence of the handicapped and age. The highest incidence occurs in the age group of '50 and above' wherein the incidence is more than 10 per ten thousand population. It is 55 per ten thousand in the age group of 30—50 and 48 in the age group of 16—30. The exact population figures in the age group below 16 is not available and it is guessed that the incidence might be around 48 per ten thousand. Thus the incidence is much higher among persons aged above 30 years.

Educational Status

The incidence of illiteracy among the handicapped is found to be very much higher than the illiteracy level in the State in general. The literacy rate among the handicapped works out to about 39 per cent which is lower by about 10 per cent of the State average. Among the literates, many have not crossed the level of elementary education. Only about 6 per cent have reached the higher elementary standard, while only 3 per cent, the level of secondary education. Only one percent of the handicapped have had higher education.

Employment Status

The employment status of the physically handicapped population truly reveals that their status is much lower than the average status enjoyed by the State population in general. Only about 2 per cent of them have been employed on a regular basis while 14 per cent on casual basis and the rest of them, constituting about 84 per cent remain unemployed. Those who are employed constitute only about 16 per cent of the total handicapped while the working population in the State constitute 35.7 per cent of the total population. If the persons falling in the age-groups of below 16 and above 50 are excluded the work-participation rate among the handicapped belonging to the age group 16—50 works out to 35.7 per cent as compared to the work participation rate of 70.8 per cent in the same age group for the State population as a whole.

TABLE III

DISTRIBUTION OF THE PHYSICALLY HANDICAPPED CONDITIONWISE

S. No.	Condition	No.	Percentage to Total	Incidence per 10,000 of State population
(1)	(2)	(3)	(4)	(5)
1.	Polio	53,300	22.7	13
2.	Congenital deformities ..	25,474	10.9	6
3.	Amputees	36,454	15.6	9
4.	Deaf and Dumb ..	28,467	12.1	7
5.	Deaf	25,287	10.8	6
6.	Dumb	18,897	8.1	5
	Deaf and dumb 4+5+6 ..	72,741	31.0	18
7.	Blind	46,121	19.7	11
	Unclassified	223	0.1	..
	Total ..	2,34,313	100.0	57

TABLE IV

DISTRIBUTION OF THE PHYSICALLY HANDICAPPED AGE-GROUPWISE

S. No.	Age Group	Number	Percentage to Total	Incidence per per 10,000 persons in respective age groups
1.	Below 6 ..	19.637	8.4	50
2.	6—12 ..	32,885	14.0	
3.	12—16 ..	21,608	9.2	
4.	Sub-total (2L3) ..	54,493	23.2	
4.	16—30 ..	51.992	22.2	48
5.	30—50 ..	54,122	23.1	55
	Sub-total (4L5) ..	1,06,121	45.3	51
6.	50 and above ..	54,062	23.1	102
	Total ..	2,34,313	100.0	57

THE TAMIL NADU CO-OPERATIVE HOUSING SOCIETY LIMITED, NO. X-406. MADRAS-7.

"Venkataswamy Vagheesam Nilayam"

No. 14, Ritherdon Road, Vepery, MADRAS-600007.

Telegrams: "HOUSEBANK" Post Box No. 486 Telephone No. 30800

President :
THIRU PALANIVEL RAJAN, B.SC., B.L., M.L.A.

Vice-President :
THIRU P. KASTHURI PILLAI

Treasurer :
THIRU S. PALANISWAMY, M.A.,

—oOo—

Authorised Share Capital	—	Rs. 2·5 crores
Paid up Share Capital	—	Rs. 2,09,07,300
Loan outstanding against Primary House Mortgage Societies and Building Societies		Rs. 12,40,07,729

Long term Loans for Construction of new houses, additions and improvements etc., repayable in twenty years are granted to individuals through the Primary House Mortgage Societies and the various types of Building Societies in Tamil Nadu for the following purposes.

		MAXIMUM INDIVIDUAL LOAN
1. Construction of new houses	—	Rs. 25,000
2. Improvements, additions and alterations to the existing houses		Rs. 10,000
3. For minor repairs	—	Rs. 1,000

P. K. PATHMANATHAN, B.A., H.D.C.,
Joint Registrar and Secretary.

Nuclear Blast

Culmination of a Tough, Demanding Project

The success of Indian scientists in testing an underground neclear device is the culmination of a sustained attempt at self-reliance in this most sophisticated and highly sensitive field of technology which has gathered about itself more awe than awareness. It has been a tough and demanding project for India. By the very nature of atomic energy and by the fact that in its initial stages in terms of know-how and technology, not much was available or forthcoming, an emphasis on self reliance was natural. The atomic energy effort in India began in 1948 and has throughout been sustained by a determined though costly effort to promote indigenous technology. It has successfully bridged the gap between process know-how and industrial production. The decision of the Department of Atomic Energy to rely on its own technology was thus a bold one and speaks volumes about the confidence reposed by it in indigenous technology.

THE NUCLEAR DICTIONARY

With India having demonstrated her nuclear capability, articles on nuclear science are frequently appearing in the press. The following glossary of nuclear terms will help readers :

Activation : The process of making a material radioactive by bombardment with neutrons, protons or other nuclear particles.

Atom : A particle of matter indivisible by chemical means. It is the fundamental building block of the chemical elements. The elements such as iron, sulphur, uranium etc. differ from each other because they contain different kinds of atoms.

Atomic Energy : Nuclear Energy: The energy liberated by a nuclear reaction (fission or fusion) or by radioactive decay.

Body Burden : Radioactive material may be absorbed by the body and retained. The total amount present at any time is said to be the body burden.

Boiling Water Reactor (BWR) : A reactor in which water is used as coolant and moderator and allowed to boil in the core. Steam is produced directly in the reactor vessel under pressure and in this state can be supplied to a turbine, but will be slightly radioactive.

Breeder Reactor : Popularly a nuclear reactor which produces more fissile atoms then it burns. Strictly the term should be confined to a nuclear reactor which produces the same kind of fissile material as it burns, without specifying whether or not there is a net gain of fissile material. The new fissionable material is created by capture in fertile materials of neutrons from fission. The process by which this occurs is known as breeding.

Burn Up : The fraction or percentage of atoms in a reactor fuel which has undergone fission. Also the total amount of heat released per unit mass of fuel ; usually expressed in megawatt days per tonne (MWD).

Ceramic Fuel Elements : Usually refers to reactor fuel elements fabricated of uranium dioxide or uranium carbide. They are more resistant to radiation damage and can be used at higher temperatures.

Cladding : This term refers to a thin layer, usually of metal, which covers a solid fuel element in a reactor to prevent corrosion in the presence of the coolant, and to prevent escape of fission products. Aluminium or its alloys, stainless steel and zirconium alloys are common cladding materials.

Cloud Chamber : A device in which the tracks of charged atomic particles such as cosmic rays, *x* particles etc., are displayed.

Control Rods : Rods, plates or tubes of steel or aluminium containing boron, cadmium, hafnium or some other strong absorber of neutrons. They are used to hold a reactor at a given power level, or to vary the rate of reaction. By absorbing neutrons, a control rod prevents the neutrons from causing further fission.

Coolant : A liquid or gas which is circulated through or about the core of a reactor to maintain a low temperature and prevent the fuel from overheating. If the coolant is very hot, it can be used to give power. Common coolants are water, carbon dioxide, liquid soidum and sodium potassium alloy.

Critical : Critical is the term used to describe the condition in which a chain reaction is being maintained at a constant rate, *i.e.*, it is just self-sustaining.

Diffusion Plant : Plant for making uranium rich in the 235 isotope. The process is based on the fact that gas atoms or molecules with different masses will diffuse through a porous barrier or membrane at different rates. A large gaseous diffusion plant requires an enormous amount of electric power.

Fast Breeder Reactor : A reactor that operates with fast neutrons and produces more fissionable materials than it consumes.

Fast Neutron : Neutron resulting from fission that has lost relatively little of its energy by collision, etc. ; it has energy exceeding approxi-

mately 0.1 MeV *i.e.*, 100,000 electron volts and therefore travels at high speeds.

Fast Reactor : A nuclear reactor in which most of the fissions are caused by neutrons moving with the high speeds they possess at the time of their birth in fission. Such reactors contain little or no moderator to slow down the neutrons from the speeds at which they are ejected from fissioning nuclei.

Fertile Material : Isotopes capable of being readily transformed into fissionable material by the absorption of neutrons, particularly uranium-238 and thorium-232 ; (sometimes called source material). When these fertile material capture neuneutrons, they are partially converted into fissionable plutonium-239 and uranium-233 respectively.

Fissile : Capable of undergoing fission ; sometimes used to mean capable of fissioning when hit by a slow neutron, *e.g.*, the isotopes U///, Pu///, and Pu// are fissile. Sometimes used as a synonym for fissionable.

Fission : The splitting of a heavy neucleus into two (or very rarely, more) approximately equal fragments— the fission products. Fission is accompanied by the emission of neutrons and the release of energy. It can be spontaneous, or it can be caused by the impact of a neutron, a fast charged particle or a photon.

Flux (Neutron) : In nucleonics, the product of the number of particles per unit volume and their mean velocity, *i.e.*, it is the number of neutrons passing through one square centimeter of a given target in one second.

Heavy Water (Symbol : (D/O) : Water consisting of molecules in which the hydrogen is replaced by deuterium, or heavy hydrogen. It is present in water as about 1 part in 6,500 . It is used as a moderator in reactors because it slows down neutrons effectively and also has a low cross section for absorption of neutrons.

Hot Laboratory : A laboratory designed for the safe handling of radioactive materials.

Ion : An atom or molecule that has lost or gained one or more electrons.

Moderator : The material in a reactor used to reduce the energy, and hence speed, of fast neutrons, as far as possible without capturing them. Slow neutrons are much more likely to cause fission in a U/// nucleus than to be captured in a U/// nucleus so, by using a moderator a reactor can be made to work with fuel containing only a small proportion of U/// *e.g.*, ordinary water ; heavy water, graphite.

Neutron : A nuclear particle having no electric charge and the approximate mass of a hydrogen nucleus. It is found kn the nucki of atoms. Outside a nucleus a neutron is radioactive, decaying with a half-life of about 13 minutes to give a proton, an electron and neutrino. Neutrons sustain the fission chain reaction in a nuclear reactor.

Nucleus : The core of an atom which may be said to comprise protons and neutrons. It is very small and about 10/// cm in diameter (a millionth of a millionth of a cm). The detailed structure of nuclei is not fully known. The nucleus contains most of the atom's mass.

Plutonium (Symbol Pu) : The element No. 94, produced by neutron irradiation of U-238. Its most important isotope is fissionable plutonium-239, produced by neutron irradiation of uranium-238.

Reactor : Nuclear Reactor ; Atomic Reactor : A device in which a fission chain reaction can be initiated, maintained and controlled. Its essential component is a core with fissionable fuel. It usually has a moderator, a reflector, shielding and coolant and control mechanisms.

Reprocessing : The procedure of removing fission products from fuel before re-using it. One main aim is to remove poisons which would absorb and waste neutrons ; another is to remove mechanical stresses due to irradiation especially in the case of metallic fuels.

Somatic Effects of Radiation : Effects of radiation limited to exposed individuals as distinguished from genetic effects which also affects subsequent unexposed generations.

Power Reactor : A reactor designed to produce nuclear power.

Swimming Pool Reactor/Pool Reactor : A reactor using water as coolant, reflector and moderator, usually ten or more feet deep so that the water is also a shield for the core which comprises sets of plates suspended deep into the pool, from above the water level. Often used for study of shielding problems, *e.g.*, for marine reactors, It is usually used for research and training.

Thorium (Symbol Th.) : Element No. 90 and atomic weight 232 ; a naturally ardioactive metal, the mineral sources of which are widely spread over the earth's surface, particularly in monazite beach sands. It can be converted to uranium-233, an excellent nuclear fuel, by neutrol irradiation.

Transuranic Elements : The artificial elements Nos. 93 and higher which have heavier and more complex nuclei than uranium. They can be made by neuctron bombardment of uranium and are radioactive, *e.g.*, plutonium.

Tritium : The radioactive isotope of hydrogen of mass 3. It is very rare and can be made by the neutron absorption in lithium.

Uranium (Symbol U) : Radioactive element with the atomic number 92. Natural uranium contains both the heavier uranium isotope U///, which is a not readily fissile material, and is the parent material from which plutonium is created, and the lighter isotope of uranium, U///, which is the fission material or fuel of most reactors. In 140 parts of natural uranium, 139 parts are of U/// and one part only is U///. Uranium is the basic raw material for nuclear energy.

Van De Graaf Generator (Accelerator) : An electrostatic generator in which a high potential is produced by the accumulation of electric charge conveyed to an insulated conductor by a continuously moving belt. The potential generated is used for acclerating charged particles. Named after R. S. Van de Graaf who invented the device in 1931.

Zero-Power Reactor : An experimental reactor oeprated at such low power levels that a coolant is not needed and little radio-activity is produced.

THE GREAT IMMORTALISER

PAPER

From Homer to Hemingway,
Kalidasa to Kafka,
Shankara to Shakespeare,
Thiruvalluvar to Thoreau ....

good paper has helped
preserve and propagate
the great thoughts of Man.

SPB

The Watermark of Quality

SESHASAYEE
PAPER AND BOARDS LTD.,
PALLIPALAYAM, SALEM DIST., TAMIL NADU.

WRITING, PRINTING AND PACKING PAPERS

THE MADURANTAKAM CO-OP. SUGAR MILLS LTD.,

PADALAM P. O., CHINGLEPUT DISTRICT.

(1) Series of failures we encountered
In developing cane for our survival ;
We surmounted all in a decade
With a solemn purpose of serving the Nation.

(2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.

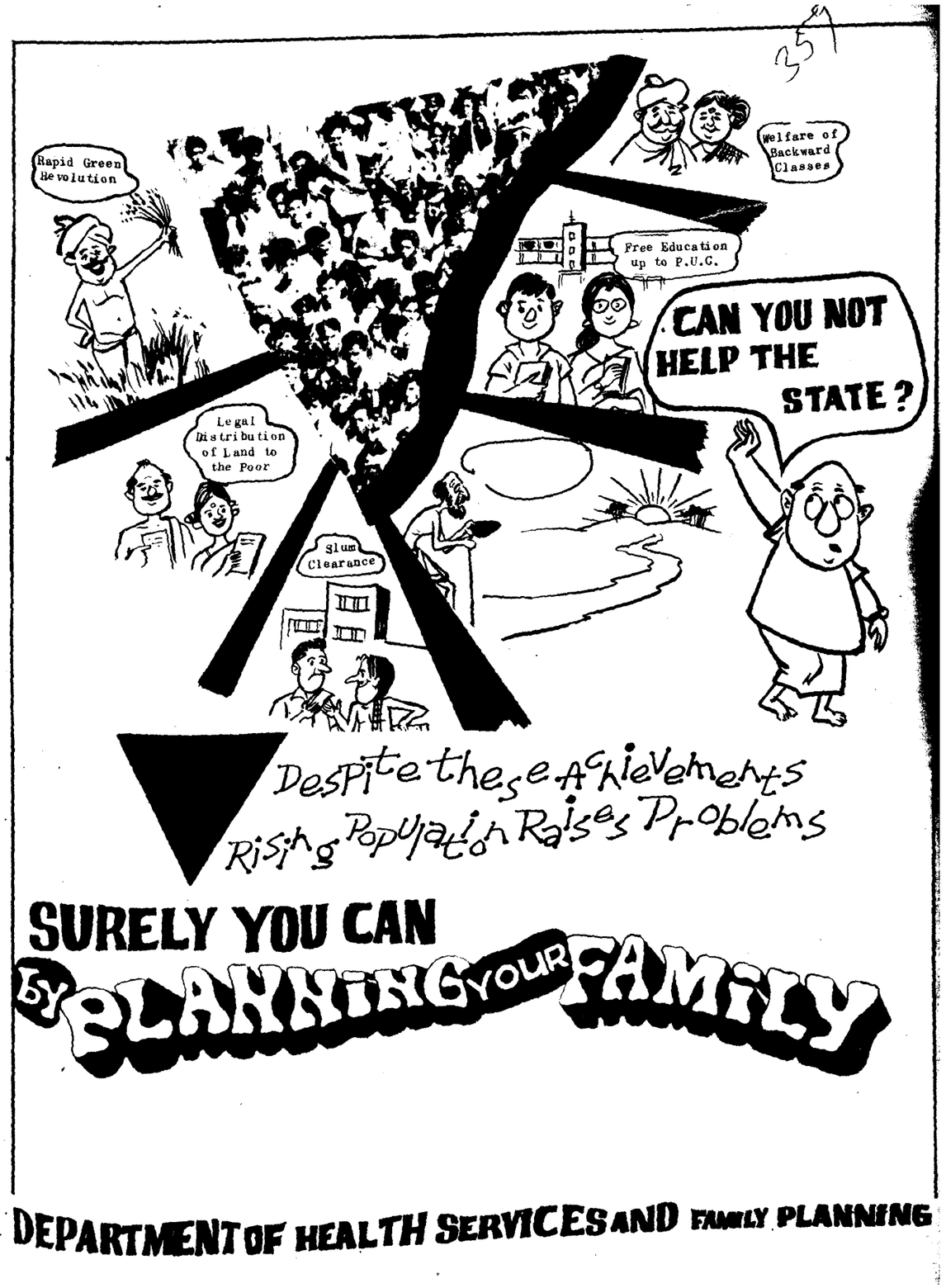
(3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.

(4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

THE TAMIL NADU CABINET AND PORTFOLIOS OF MINISTERS

With the induction of two new Ministers and the exit of Thirumathi Sathyavani Muthu, the Tamil Nadu Ministry comprises sixteen Ministers with effect from 4—5—1974. The Portfolios of the Ministers are given below :

1. DR. M. KARUNANIDHI, Chief Minister (C.M.) ..	Public, Finance, Planning and General Administration, as also matters relating to Indian Civil Service and Indian Administrative Service Officers, District Revenue Officers, Police, Elections and Film Technology.
2. DR. V. R. NEDUNCHEZHIYAN, Minister for Education (M E&T)	Education including Technical Education, Official Language, Legislature and Tourism and Tourist Development Corporation.
3. THIRU K. ANBAZHAGAN, Minister for Health M (H) ..	Public Health, Medicine, Tamil Nadu Water and Drainage Board and Town Planning.
4. THIRU N. V. NATARAJAN, Minister for Backward Classes M (BC) ..	Backward Classes, Information and Publicity, Registration, Ex-Servicemen Prosperity Brigade, Youth Service Corps, Bhoodan and Gramdan.
5. THIRU P. U. SHANMUGAM, Minister for Public Works M (W) ..	Public Works, Minor Irrigation including Special Minor Irrigation Programme Works, Highways and Ports.
6. THIRU S. MADHAVAN, Minister for Industries M (I) ..	Industries, Textiles, Yarn, Handloom, Mines and Minerals, Iron and Steel Control, Employment and Training, Companies, Law, Courts and Prisons.
7. THIRU S. J. SADIQ PASHA, Minister for Revenue M (R) ..	Revenue, Board of Revenue, District Revenue Establishment, Deputy Collectors, Commercial Taxes, Prohibition and Excise, Revenues and Waqfs.
8. THIRU SI. PA. ADITHANAR, Minister for Agriculture M (A) ..	Agriculture, Food Production, Agricultural Engineering Wing, Animal Husbandry and Agro-Engineering and Service, Co-operative Societies at all levels.
9. THIRU A. P. DHARMALINGAM, Minister for Local Administration, M (LA)	Municipal Administration, Community Development and Panchayats and Panchayat Unions.
10. THIRU MANNAI P. NARAYANASWAMY, Minister for Food & Co-operation M (F & C) ..	Food, Co-operation and Agricultural Refinance.
11. THIRU K. RAJARAM, Minister for Labour M (L) ..	Labour, Housing, Accommodation Control, Legislation on Weights and Measures, Statistics and Slum Clearance Board.
12. THIRU C. V. M. ANNAMALAI, Minister for Social Welfare, M (SW) ..	Social Welfare including Women's and Children's Welfare, Fisheries, Beggars' Home, Orphanages, and Approved Schools and Vigilance Service.
13. THIRU O. P. RAMAN, Minister for Electricity M (E) ..	Electricity, Forests and Cinchona, Legislation on Moneylending, Rural Indebtedness, and Legislation on Chits.
14. THIRU S. RAMACHANDRAN, Minister for Transport M (T) ..	Transport, Nationalised Transport Motor Vehicles Tax, Stationery and Printing and Government Press.
15. THIRU M. KANNAPPAN, Minister for Religious Endowments M (RE) ..	Religious Endowments, Khadi and Village Industries and Rural Industries Project, Milk, Operation Flood Project, and Tamil Nadu Dairy Development Corporation.
16. THIRU N. RAJANGAM, Minister for Harijan Welfare M (HW) ..	Harijan Welfare, Indians Overseas and Refugees and Evacuees, Newsprint Control, Passports and Cinematograph Act.



VISIT Poompuhar

FOR A REAL INSIGHT INTO

Kaveripoompattinam, known as Poompuhar in its more fortunate days was a well laid out port town which boasted of a separate settlement for the foreigners. Much of the archaeological remains still are there for us to see.

In addition, the recently constructed art gallery is the first attempt, after many centuries, at group-sculpture for which Tamil Nadu is justly famous. In the form of group-sculpture and also in individual figures a remarkable edifice to re-create the life and times of the Tamil classic " Silappathikaram " Story of of the Anklet has come up at Kaveripoompattinam in its art gallery.

FOR FURTHER DETAILS
CONTACT:
RECEPTION OFFICER,
Poompuhar Art Gallery
VIA SIRKALI, THANJAVUR DIST.