



Tamil Arasu

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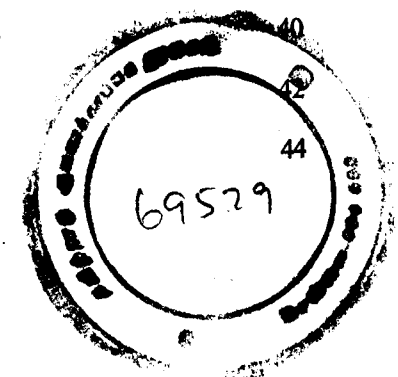
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CONTENTS

	Page
Those Twenty days	4
Raja Raja the Great	9
Tamil Studies in U.S.	11
The Historic Fort Saint George	15
Fly Ash	17
A Formidable Force	19
All the Snakes	27
Truth Drugs	29
Plant Protection	31
Come to the Succour of the Poor	35
Ice Apple goes to America	40
Thanjavur Art Plate	42
The Bracing Courtallam	44



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COVER PAGE

The statue of the Chola King Raja Raja the Great to be unveiled near the Brihadeeswarar temple, Thanjavur, with the temple in the background.

TWENTY DAYS

M. KARUNANIDHI

3. THE SPLENDOUR OF ROME.

The aerodrome in Rome has been named after Leonardo da Vinci. Leonardo da Vinci was the greatest light of Italian Renaissance; he was one of the most competent painters the world has seen; and his genius was many-sided in its splendour as may be seen from the fact that he was not only an artist and a poet but also a natural philosopher and a scientist of rare intellectual merit. A certain lawyer of Florence city, by name Sir Piero Antonio da Vinci, fell in love with the daughter of a peasant and Leonardo was the charming symbol and outcome of that union!

Leonardo was born in the village of Vinci and his native talents came to be recognised even in his early teens. The budding prodigy was placed under the tutorship of Verrocchio, the Florentine artist and soon he acquired sufficient proficiency in painting to assist his master and complete many an outstanding work of art. The "Adoration of the Kings" was among the early paintings of Leonardo and the "Virgin of the Rocks" was painted by him in Milan. "The Last Supper" was his *magnum opus* and the world still watches and wonders at the sweep of his



vision and the depth of his perception.

The wind of Renaissance swept through the continent of Europe in the 15th century and they who sowed the seeds of revolution in the realms of Literature, Painting, Sculpture and Music were masters like Dante, da Vinci, Michelangelo and Raphael. Just as Pericles was the *fons et origo* of the glory of Athens, Leonardo was the source of the effulgence of Florence. An imaginative scientist, Leonardo even designed a flying machine. And while in Milan, he prepared a blueprint for rebuilding the city on sanitary lines, with a scientifically superior system of irrigation, waterways and drainage and fortifications representing military strategy of a high order. The aerodrome in Rome, dedicated to the memory of Leonardo da Vinci, is indeed a monumental tribute to his

artistic genius and to his magnificent contributions to the treasures of his country.

Michelangelo is another name held in affection and reverence throughout the length and breadth of Italy. A contemporary of Leonardo da Vinci, Michelangelo too was among the foremost in the fields of painting, sculpture and architecture. When we stand face to face with the statues that came to life under his hands and when we look at the ancient buildings rearing their heads in proud splendour, we are ourselves reduced to graven images in astonishment, to think that these works of art are the result of human endeavour and that too of the 15th century. Michelangelo was born in poverty but before he placed his chisel aside and laid himself down to eternal rest at the age of 89, he had enriched Italy for all time to come. Italy is even now earning huge gains from tourist traffic attracted in steady stream and right through the year by his works of art. A visit to St. Peter's, that masterpiece of marble in Rome, was an experience of a lifetime for us and it was an impossible task to decide, which piece of art to look at first and for how long. It has to be mentioned here that, although modern civilisation has reached its peak in places like Rome, men and women who happen to have dressed themselves in scanty or see-through garments are not allowed admittance into St. Peter's.

As I stepped on the hallowed grounds of St. Peter's, they slung

a tape-recorder on my shoulder and the "speaker" of the instrument was inserted into my ear. I saw hundreds of tourists availing of this facility and there is a fee for use of the tape-recorder. As you walk through the church along a charted path, the tape-recorder recites into your ear a clear and comprehensive account of each object of wonder greeting your vision. The tape-recording is in the English language and for every four sentences, one sentence is about Michelangelo.

Wholesome praise is chanted—of Michel's painting or sculpture or architecture. We had only a few hours' time at our disposal to go round in the church and we could by no means be content with anything less than three days for the purpose. So much is there, of the intricacies of Art to see, mark and inwardly digest.

The cupola of St. Peter's seems to be suspended in mid-air and it challenges the very skies in its upright grandeur. The hall is





The shop selling glassware was a fabulous mansion stocked with diamonds, rubies and other gems of unrivalled splendour.

vast in dimension, without a trace of cross-beams. Marble in pristine purity speaks eloquence in the form of Virgin Mary and showers compassion on us through the eyes of Jesus. Statues numerous, smile down to us through the centuries and the sheer beatitude of their features conjures to create in us the impression that they are damsels in human form. The statues of the Popes of bygone times are set in such majesty as to kindle in us sustained feelings of spontaneous reverence.

Wondrous specimens of Art sublime are there in all the directions of the compass and one's neck aches, even if one is to

have a mere glimpse of the scene above, on the ceiling. As for the paintings and sculpture on the wall, it is a difficult task to take our eyes away from them. Hunger takes wing and flees to the region of the forgotten as long as one is in that temple of art and the more you are in the precincts, the more you feel like turning your back on the world and settling down in that sanctuary of venerated beauty, for the rest of your life.

But time, that hard task-master, is at our elbow and it reminds us of the engagement to meet His Holiness the Pope. Tearing our hearts away from that abode of enchanting loveliness, we set

out for the Vatican city. The Vatican where the palace of His Holiness the Pope is located is only a short distance away from St. Peter's. The Vatican is actually the name of a hill on the northern bank of the River Tiber. The township was set on this hill and thus did "the Vatican City" come into being. It is said that the City was constructed in the 12th century and renovated during the 13th century. The Vatican city became the place of residence of the Popes of Rome from the year 1377 onwards. The buildings in the city and the precincts of the St. Peter's church nearby have been added to and consistently beautified through the generations.

Hence we see here many a striking example of the architecture of different ages.

Michelangelo's cartoons on the ceiling of the Sistine chapel at the Vatican provide a vista of great charm. A vast library and museums add to the renown of the Vatican city. We were ushered into the palace of His Holiness the Pope who is the revered Leader of Roman Catholics the world over. After we had crossed a few halls, we were told that arrangements had been made only for me and my wife to have audience with the Pope. This piece of information came as a big disappointment to me and I suggested that even if my other companions were not admitted, an exception could be made for Dr. Abraham who belongs to the Christian faith. In a short while, a message was received that my suggestion had been accepted but I could not be oblivious of the fact that acute disappointment was mirrored in the faces of those friends who were to be left out. Although I did not tell them, I was confident that they could also be called in somehow; and accompanied by my wife and Dr. Abraham, I walked towards the Pope's audience-chamber.

His Holiness the Pope entered the room in a few seconds. Attired in pure white; and with a smile of absolute innocence on his lips and his face brimming over with grace, the Holy Father addressed us in accents soft that bespoke a heart of extreme purity and compassion. He made us

feel totally at home and after I introduced my wife and Dr. Abraham to him, he made kind enquiries about the welfare of children and other members of the family. He then proceeded to recollect the warmth of the reception accorded to him when he visited India and he conveyed his thanks once again for that reception. Reminded of Anna's meeting with him when Anna sought his kind intervention to secure the release of the Goan freedom-fighters jailed in Portugal, the Holy Father evinced happiness: and even during that fleeting instant I could sense how that happiness of the recollection stood annulled at the follow-up thought of Anna's departure from this world.

When I related the ancient historic links between Tamil Nadu and Rome, his face lighted up with the joy of fraternity that left a permanent impress on my heart. He presented a rosary to Dayalu and after enquiring how many children we had, he gave a handful of medals for the children. For my share, I received a medalion with his image printed on it. His compassionate eyes were ever searching for further gifts to us

and I availed of the opportunity to tell him that some others who came with me had to be left outside and could not have the privilege of meeting him. At once, his eyes uttered a gentle order and within a few minutes, all our friends came inside in ecstasy and paid their respects to the Holy Father.

After conversing with him for a while longer, we took leave of him. As we left the Vatican City, we kept wondering over his compassion and culture, his humility and his equipoise. Is it not because of these qualities that His Holiness is enshrined in the



The Pieta by Michelangelo, St. Peter's Church, Rome.

hearts of Roman Catholics spread throughout the world?

We had been told of a fountain in another part of Rome. The speciality of this fountain, it was said, derived from the statues installed in its vicinity. We felt that a visit to that spot would be worthwhile and when we made the trip we were not disappointed. The statues are tall and grand and the chisel has imparted an imprint of attractive mobility to them. Nearabout the statues are some fountains and a pond-like structure where the water collects and flows on. This pond is surrounded by walls of rock. Visitors turn their backs to this pond and throw coins into the water. The general belief is that this ritual would earn for them

yet another opportunity to visit Rome. Urchins of that area are always on the alert for these coins but there is a condition that no one should get into the pond. And so, these enterprising little boys have rigged up a contraption to get at the money in the pond. At the end of a fishing line they tie a small magnet and they throw the line in expert manner to attract and bring out the coins. The catch is substantial indeed!

Near this fountain is a shop selling glassware and we stepped into it more out of curiosity than anything else. The merchandise we saw was breathtaking in its variety and the articles there represented glass in all forms of permutations and combinations. A small tank

filled with water was on the shelf, with multicoloured fish swimming briskly. I went near the thing of beauty and lifted it gently, only to realise that there was neither a tank nor fish but only a piece of broad glass locking in its heart some deft designs. I desired to know the price of the piece and I was stunned to learn that it was Rs. 1000 at the prevailing rate of exchange. Without another word I replaced the article on the shelf and moved off to another section of the store. This section did not seem part of glassware mart at all. To all intents and purposes, it was a fabulous mansion stocked with dazzling diamonds and rubies and other gems of unrivalled splendour.

(To be continued)

HUMANE APPROACH TO SALES TAX COLLECTION.

In the process of collection of General Sales Tax and other Commercial taxes the Government have ordered that the assessee should not be harassed and at the same time revenue is not lost. In the case of small assessee who cannot be burdened with the maintenance of account books which are needed for proper assessment of sales tax, special provisions have been made in the Act enabling them to compound the tax due. It is enough for them to maintain purchase bills and purchase accounts only.

Rigorous check of accounts is also avoided in the case

of small dealers whose total turnover, does not exceed Rs. 50,000 in a year. Whenever evasion of tax is detected, the method of persuasion is adopted by the assessing authorities to make the assessee accept 'best of judgment.'

Research Cell

In his inaugural speech at the Conference of Deputy Commissioners of Commercial Taxes and Commercial Tax Officers held at Ootacamund in June 1969 the Chief Minister observed that one method of improving the finance was to undertake a scientific analysis of the pattern

of trade and revenue accruing from different sectors of the trade. The Chief Minister therefore suggested that a research cell should be set up for this purpose.

Accordingly, the Government have sanctioned the formation of a statistical cell for collecting scientifically processed data of production and the source of production for various commodities liable to tax under the Tamil Nadu General Sales Tax Act and Central Sales Tax Act and for preparing statistics, about the impact of tax on commodities and the pattern of movement of various produce.

Raja Raja The Great

A KING OF MANY-SIDED ACHIEVEMENTS

Arunmozhi was born to Sundara Chola and Vanavanmadevi in the Tamil month of Aippasi on the natal star Satayam. He was the second son to Sundara Chola, the first son being Aditta Karikala. An inscription in Tirunandikkarai corroborates the above date of birth. A copper plate inscription from Tiruvalankadu eulogises Arunmozhi as the incarnation of Lord Vishnu. Born with such pristine glory so as to wield his sceptre over the three worlds, the entire Chola kingdom rejoiced over his birth.

The childhood exploits of Rajaraja I might have been described in detail in a drama called "Rajarajeswara Natakam", now not extant. While young, Arunmozhi was bereaved of his father Sundara Chola and his mother followed her husband in Sath.

Sacrifice

Two women took care of prince Arunmozhi. The elderly Sembian Madevi, wife of Gandaraditta inculcated in the mind of the prince a path of devotion and righteousness in

the Saiva ancient lores. Kundavai, the elder sister of Arunmozhi took great pains in metamorphosing the young boy into a worthy monarch.

Though Tiruvalankadu and Leiden copper plate inscriptions ascribe that Aditta Karikala ruled after the expiry of Sundara Chola, it is refuted by historians that Aditta Karikala was gruesomely murdered during the last days of Sundara Chola. Contrary to popular expectations Arunmozhi sacrificed his claim to the throne and allowed his eager uncle Madurantaka to rule the kingdom.

The death of Madurantaka in 985 A.D. after 15 years of rule, paved the way for Arunmozhi to ascend the throne as Rajaraja I. Innumerable are the titles of Rajaraja I as also the queens who adorned his palace. Queen Ulagamadevi adorned Rajaraja's

Court Hall. In the inscriptions Rajaraja is referred to as Ko Rajakesari and Ko Rajarajakesari.

His conquests

The first and foremost of Rajaraja's conquests is the renowned victory over the Chera king resulting in the destruction of the



The tradition of fine arts of the chola period continues.

latter's navy at Kantalur. Muvar-Ula and Kalingattupparani record the event. The land of the eastern Chalukyas was liberated from the Clutches of Danarnavan's murderer Jatasodabhima during a battle in 999 A.D. To strengthen the bonds of friendship between the two kingdoms, Rajaraja gave his daughter Kundavai in marriage to the Chalukya prince Vimaladitta.

The Ganga Chieftains and their Nulamba henchmen were conquered next so as to strengthen the boundaries of Chola Kingdom. Kudamalai, now popular as Kudagu, and Kollam too soon joined the map of Chola kingdom. During his conquest over the eastern Chalukya region, it goes without saying that Rajaraja I subjugated Kalinga too, then a part of Vengai Nadu.

The northern part of Ceylon (Ilam) was conquered by Rajaraja I and was made a buffer zone from the evils of the Ceylon King Mahindra. His inscription in Polanmaruva, later called Jananatha Mangalam bears testimony to his heroic exploits.

In A.D. 973, a war waged against the Rashtrakuta kings, then ruling over the western exterior of Chola Kingdom, humbled their might resulting in the addition of Irattapadi Ezharai Ilakkan to the Chola Umbrella. During the last years of his reign Rajaraja I conquered

Munnir and Pannirazivam islands. In all the inscriptions relating to Rajaraja I, his victories form the first part.

Great saiva devotee

Tradition has it that Rajaraja I resuscitated from ruin the works of Appar, Sambandar and Sundarar. Once on hearing the devotional hymns, the king was overwhelmed by their charm and yearned for the manuscripts. Guided by elders like Tirunaraiyur Nambi, the king propitiated Lord Vinayaka of the same place and guided by divine hand, reached Chidambaram and made bronze replicas of the three nayanmars. On Ardhra day, the hall was opened and he found amidst white ant ruins the palm leave manuscripts.

By Lord Siva's order he appointed a learned lady from Tiruerukkattampuliyur to set the verses to proper tunes. Further he appointed Oduvars and other artists to sing the hymns daily.

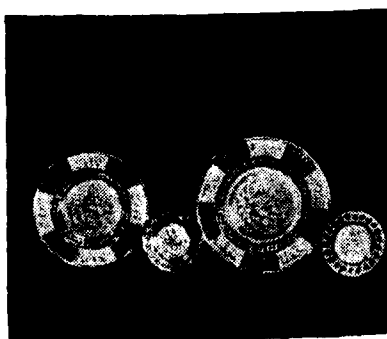
Great temple builder

The crowning stroke of Rajaraja's fame rests in his construction of a temple at Thanjavur for Lord Siva, renowned as Brihadeeswarar temple. By its stature it has acquired the epithet Dakshinameru. Indeed it is a model for temple construction of the later ages, built as it was to every syllable of the Agama and Silpa texts.

The inscriptions in the temple, apart from the sculptures, etc., render ample testimony to his munificence and important events that occurred during his reign; and verily the temple stands as a fitting tribute to Rajaraja I as Rajarajeswaram.

The paintings depicting the scene of Lord Siva overpowering Sundarar during the latter's marriage the scene of Sundarar and Chera King ascending towards Kailasa-with their flowing beards realistically portraying the long journey, are but a few of the many other themes still preserved in their pristine glory.

The administration of the temple with all its multifarious lands, cows, sheep, etc., not to speak of the bronze idols that were gifted justifies the title conferred on him as Pandita Chola. Besides, the classification of his kingdom into Valanadu, Kurram, etc., with the respective lands measured and maintained to the minutest detail deserves emulation by the succeeding generations.



NEW METHODS EVOLVED

(In an interview for the Span, Dr. A. K. Ramanujam, Professor of Dravidian Studies and Linguistics in the Department of South Asian Languages and Civilisations of University of Chicago, and this year, also Acting Director of the South Asian Language Centre of Chicago says: Any study of India's multiple traditions would be incomplete without a knowledge of South Indian Languages. The recognition of such imbalance is one reason why Dravidian studies and particularly Tamil studies are increasingly receiving attention. Recently he was awarded a gold medal by the Tamil Writers Association of Madras for his English translation of the Tamil classic "Kuruntokai". Given below is an extract of the interview)

Dravidian studies are pursued in various ways in the several "area centres" in American universities. For instance, we teach Dravidian languages at Chicago (Kannada, Tamil and Malayalam). Besides myself we have on our faculty the eminent Czech Dravidianist, Kamil Zvelebil, who has done important work on Tamil inscriptions, Dravidian Linguistics, Tamil culture and literature. His Czech translations of Tamil literature were best sellers in Czechoslovakia. And he is a Secretary General for the International Association of Tamil Studies.

Some other schools which teach Dravidian languages are Wisconsin, (Tamil and Telugu) and at the University of California at Berkeley, (I think they teach Tamil

and possibly Telugu). We also have three national, rotating summer schools every year for Indian studies where one or another of the Dravidian languages is regularly taught. This year they are being held at Seattle, Ann Arbor (Michigan) Rochester (New York). Some of the others are Pennsylvania, Michigan, Michigan State, Minnesota, Rochester, Duke, Cornell, Washington, Virginia, Missouri, Syracuse.

Collaboration with Madurai

There are also groups of colleges such as the Great Lakes Colleges which are engaged in a Co-operative Indian Civilization course, which reaches out to a great many undergraduate students in regions of America where it might not otherwise be taught.

I may also mention that the College of Wooster (Ohio) has an undergraduate year in South India, in collaboration with Madurai University. The Wisconsin College Year Abroad Programme sends students to Osmania University where they continue their Telugu. And Callison College of the University of the Pacific (California) has a sophomore-year programme in Bangalore.

We teach these languages according to new linguistic methods. We prepare and test our own teaching materials—something which has never been attempted for some of these languages before.

Another way in which Dravidian studies are promoted is by

All for one and One for all

In order to elicit in clearer terms, the Chief Minister's thesis "Autonomy for the States and Joint-rule at the Centre", a press correspondent at Bonn asked Thiru M. Karunanidhi as follows: "Are you for the principle of 'One for all and All for one'?"

The Chief Minister replied as follows: "All can have that which one is having. It would also be in order if one is having that which others are also having. But all should not be with one which others should have."

the constant addition to the libraries, of books in the four languages. For instance at Chicago, every year, hundreds—probably thousands—of books are added, keeping us up-to-date with the developments in the languages. We also get regularly the newspapers, magazines and literary journals in all the major languages.

Teaching Tamil

In addition, American universities emphasise not only teaching but also research. Research is done by both faculty and students. Scholars are sent out regularly to the areas of their study. For instance, at this time there are six or seven students from Chicago in different parts of South India working on different subjects. Some of them are historians, some anthropologists, political scientists, and some linguists.

Of course, there are also those of us who translate from the various traditions I have mentioned. I might also mention the one-year old Association for South Indian Studies, which has brought together scholars from all over the U.S. specializing in South Indian studies. Their first annual symposium was held in 1968 in Austin, Texas.

It would be really presumptuous to say that any one person promotes these studies. It is a cumulative, co-operative affair. At Chicago for the past seven years my colleagues and I have taught Tamil and we have recently added Malayalam and Kannada also.

Dravidian studies

Many of the students who take to Dravidian studies are graduate students. We also have undergraduates taking these languages and this is one of the most hopeful things happening now. These are the students who would normally have taken French or some other European language.

Of course, the number is not large, but this is the seed time. Most of these students who are with us are going to be teachers. Four of my students are teaching Tamil in four different universities now.

We get students who are squarely interested in Indian studies and who come directly to the Department of South Asian Languages and Civilizations at Chicago.

However a great many of our students are drawn from other disciplines like anthropology, linguistics, art, political science history, and the history of religions—to name only a few of the eighteen departments we draw from.

For instance, one of our students who did a study of Murugan—the South Indian deity—was a divinity student. He had learned Tamil and he came here to study the Murugan temples and the relevant classical texts.

In linguistics the greatest name, of course, is M. B. Emeneau (Berkeley, California), who worked probably for over 35 years in the field and whose Dravidian etymological dictionary in collaboration with Mr. Burrow of Oxford is a classic in the field, and his work on particular languages, the Toda for instance, is well known. Leigh Lisker of the University of Pennsylvania is another, and there are many others, for instance William Bright and William McCormack, who have published works on Kannada.

Tamil-Sanskrit relation

But I think the best is yet to be: the next generation of linguists and teachers is going to contribute a great deal. In fact, a great deal of work on subjects like Tamil syntax and Malayalam phonology exists already in the form of dissertations and will be published in the next few years.

One of the things we are trying to do—especially in Chicago—is to encourage students to do

both Sanskrit and Tamil. We have a number of Sanskrit students who know Tamil, and vice versa. For a total picture of Indian civilization and Indian linguistics we have now a doctoral student working on a dissertation on the relation between Sanskrit and Tamil with particular reference to certain texts like the 'Perunkathai' and the "Bruhat-katha", another on a comparison of Sanskrit and classical Tamil poetics.

Tamil Books in U.S.

Earlier research workers depended a great deal on material available in English. Now they are beginning to realize that these are partial and scanty, and the great part of Indian expression is not in English. For instance, if you want to study the Therukoothu of Tamil Nadu you will find probably four or five journalistic pages on the subject in English. However, even if there is no material on it in Tamil, one can go out and actually see a performance, record it and study it. The live material, the living cultural performance, is in the languages.

In Chicago, for instance we have a permanent department for South Asian Languages and civilizations. This is true of several other universities I have mentioned. Indian studies are fast becoming a part of the university scene in the United States.

Generally the books are published by the university presses although there are also commercial presses undertaking such work.

For instance, the New Directions of New York—a commercial press—has brought out the Tamil epic Silappadikaram and Harper and Row has brought out the Malayalam novel Chemmeen. The Asia Society has a very useful bibliography of Asian books translated into English and published by American publishers.

But you never can tell. Sometimes you come across unexpected audiences. 'The Interior Landscape,' my book of translations from classical Tamil, was used in a New York high school by one of the scholars who had come to South India and fallen in love with this part of the country. In a course introducing foreign literatures and cultures, he tried materials from various languages and finally found—The Interior Landscape. According to him, the students were very excited and wanted to learn all about the Tamil tradition. It is very exciting to feel that a poem written 2,000 years ago and 10,000 miles away spoke to young, fresh kids in New York.

Expanding and growing

There is great interest in translations these days, particularly in America. My Tamil and Kannada translations are probably among the first introductions to Dravidian poetry for many.

I am now working on translations of the classical Puram poets, the great heroic poems of early classical Tamil. I am also continuing my work on a collection of Tamil and Kannada folk materials, especially folk tales. I have on tape many of these

tales which I am gradually transcribing and analysing.

So one doesn't yet actually know what one's market is and where one's audience is. It is an expanding and a growing audience. There are always surprises.

To enable American students to obtain a correct picture of India's multiple linguistic traditions, we need all the different linguistic traditions to be represented, not only Sanskrit but also Dravidian traditions, and the tribal traditions which are just beginning to be explored. And not merely the classical or the written but also the folk traditions.

The recognition of this need is one reason why Dravidian studies and particularly Tamil studies are increasingly receiving attention.

Democracy

"Democracy is not a form of Government alone—it is an invitation to a new life—an experiment in the art of sharing responsibilities and benefits—an attempt to generate and co-ordinate the inherent energy in each individual for the common task. Hence we cannot afford to waste a single talent, impoverish a single man or woman or allow a single individual to be stunted in growth or held under tyranny and the Universities should, through graduates sent forth year after year annihilate the forces that attempt at aggrandisement and tyranny, fight against cant and hypocrisy and enthrone human dignity.

—Dr. C. N. Annadurai.

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EARLY GOVERNORS

BY

THIRU S. SINGARAJAN, M.A., M. LITT.,
Director of Archives.

(This is the third and concluding part of the article. The first and the second parts appeared in the August 5th and 20th 1970 issues of Tamil Arasu.)

PART III

Of the early Merchant Governors Elihu Yale has earned the rare distinction of having a University named after him for a small gift. Yale had amassed considerable wealth in India, and he spent it liberally in England. At the request of Cotton Mather in 1718, he assisted the then struggling collegiate school of Connecticut with a gift of books and pictures which realized £560. However, in the final years of his Governorship, Yale was virtually a prisoner in the Fort as he had acquired enormous wealth by lucrative trade. But his small gift to the Connecticut Collegiate School has earned for him a name better than the Egyptian Pyramid. In recognition of his munificence, the College and subsequently the University which grew out of it, were called after his name.

Governors imprisoned

A unique distinction in the history of Fort Saint George is that twice the head of the administration was deposed and imprisoned by their Councils. Sir Edward Winter the Governor from 1661-64 was accused of extravagance and partiality towards Roman Catholics. Without giving an opportunity to explain he was superseded by George Foxcroft but Winter continued Second in Council. In 1665 when Foxcroft assumed charge he found that Winter was indebted to the Company and asked him questions about his conduct. Winter was indignant at his supersession and resolved upon a bold expedient of usurping the Government. He accused Foxcroft of being a Puritan and a Cromwellian in his sympathies and of being against King Charles II. He went with armed musketeers, entered his chamber, arrested Foxcroft and his son. Final orders did not come from England till 1668 and the lawful Governor was till then in prison. It was believed that Winter even thought of giving

over Madras to the Dutch and the English thought of even abandoning Madras. It is interesting to read the order of the Governor of Bombay Island re-appointing Foxcroft as Governor in 1666 which was received in 1667 and Winter refusing to obey it. Two ships with two special envoys from England arrived at Fort Saint George, took possession of the Fort after personal guarantee to Winter for the security of his person and property. Foxcroft was released from prison and reinstated as President. He left for England in 1672.

During the second Governorship of Lord Pigot from 1775, he promised the restoration of the Raja of Tanjore which created suspicion of his motive. His relation with the Nawab also was strained as the former failed to make the remittances to the palace. This brought him into conflict with Robert Fletcher, the Commander-in-Chief. At the same time Benfield laid a claim against the revenues of Tanjore, and demanded the enormous sum of Twenty-three lakhs

of rupees for money lent to the Nawab, though he did not say how he became possessed of such a large sum. Pigot refused to allow it as he considered it fraudulent; but several of the members of the Council, being personally interested in the claim, supported Benfield, and procured a majority in his favour. The majority took action on behalf of Sir Robert Fletcher, and arranged for Pigot's arrest. As the Governor was returning from the Council Chamber in the Fort to Government House, his carriage was stopped by the Adjutant-General, Lieutenant Colonel Edington, and Captain Lysaght. Colonel Stuart, who was sitting by the side of Pigot, and of whom the Governor entertained no suspicion, stepped out of the carriage and asked Captain Lysaght to take his place. Pigot was then driven straight to St. Thomas' Mount where he was left in the custody of Mathew Horne, Major of the Artillery, who was commanding the station. The trouble into which the brave old Governor had fallen preyed upon his spirits; and with excitement and infirmity his health failed. The Surgeon at the Mount ordered his removal back to Government House on the Cooum. Pigot seemed unable to rally, and in May, 1777, he died there. He was buried in a nameless grave inside St. Mary's Church. A plain slab engraved with a cross and the words "In memoriam"

is the adequate and only memorial to mark the last resting place of a man who saw Fort St. George through a crisis in its existence, and who helped to lay the foundation of that bulwark of the Presidency, the Madras Army. His name was cleared of all imputations; and the charges made by his enemies against him of enriching himself fraudulently were amply refuted. It was in his endeavours to suppress the very fault he was charged with that he made for himself enemies.

Face to face

These struggles only remind us of the great controversies that exist in history about the personalities of those pioneers who tried to found an empire. The career of Clive is still more poignant when we read that he tried to commit suicide while he was in Madras. The humiliations that Warren Hastings suffered at the hands of his own countrymen are still greater—facing the highest Court of Judicature in England accused by eminent men like Burke, Fox and Sheridan. The history of France is no exception as could be seen from the differences of opinion between French generals and admirals during the Carnatic wars and the career of Napoleon who himself died a prisoner. Empires themselves have disappeared but the new frontiers of conquering the hearts of men have become the theme after Indian Independence.

The name of empire-builders will be forgotten but not the names of great administrators like Sir Thomas Munro (1820—27) who by his revenue and educational reforms had won a lasting name. Henry Pottinger, Governor of Madras (1853) who wrote the famous dissenting minutes in favour of Tamil as the medium of instruction in schools and colleges, Harris, the Governor of Madras (1854—59) who abolished torture in revenue and police cases and separated Revenue, Police and the Judiciary from each other and Sir Charles Trevelyan (1859—60) who organised the High Court of Madras are memorable names in the history of Madras.

Changing Times

Fort St. George which resembled a factory of the erstwhile East India Company till the other day gives a promising look for the first time now with its green carpets, tidy corridors and brisk movement of files. Time is not far off when the Tamil Nadu Secretariat will put on a 'new look' against a picturesque surrounding of the garden stretching on the banks of the renovated but proverbial 'Silvery Cooum', which the present Government has so thoughtfully taken up for renovation after the lapse of a period of more than three centuries from the time when Francis Day laid the foundations of the Fort on its banks.

FLY ASH

AS A BUILDING MATERIAL

A seminar was held in Madras at Rajaji Hall from 3rd to 5th August 1970 to promote the use of Fly Ash which is a waste product in Thermal Power Stations.

A waste becomes a utility product

The quantity of flyash available in India at present is about 30 lakh tonnes per year. Neyveli Thermal Station alone throws out about 130,000 tonnes of flyash and Basin Bridge about 35,000 tonnes per annum. The Ennore Power Plant adds another 3 lakh tonnes of flyash annually. Some useful disposal for this large quantity of flyash has necessarily to be thought out; otherwise, it may cover up large tracts of useful land and create unhygienic conditions in the surroundings. If suitable avenues of utilisation of flyash are established, considerable economy in several industries may be effected.

The use of ash in construction has been known since the time of the early Roman Empire. Volcanic ash mixed with lime formed the chief mortar for many of the structures raised in ancient Rome. In America, all the flyash produced is consumed in the construction of buildings, dams, roads and also used in reinforced concrete structures. In India its use is not yet popular, because the potentialities of flyash have not been sufficiently understood.

The research undertaken in different laboratories of the

country, during the past few years, has indicated that the flyash can be used advantageously in the following civil engineering works:—

1. Manufacture of concrete blocks, bricks, tiles and pipes.
2. Manufacture of clay bricks.
3. Manufacture of light weight aggregates.
4. Manufacture of Portland flyash cement.
5. Replacing cement in mass concrete and reinforced concrete.
6. Production of cindered flyash aggregates.

7. Production of cellular concrete.

8. As a fill material in embankments.

9. As a filler material in the asphaltic concrete pavement.

In the Highways Research Station, Madras, tests were carried out on the use of flyash as Admixture to cement mortar, part-substitute for cement in mortar and concrete, and part-substitute for sand in mortar. The cement content of plain concrete could be cut by 20 per cent by weight by adding 30 per cent flyash. The strength of



brick work in lime water with the flyash used as partial replacement of sand or lime gave encouraging results.

In Madras, using flyash from Basin Bridge it would be possible to effect a financial saving of 8 per cent in concrete and 6 per cent in cement mortar.

Flyash, added to local soils, clay or sand, with 2 or 3 per cent lime may give a stabilised road-base material of very good strength. For example, a well laid road base having 80 per cent sand, 18 per cent flyash and 2 per cent lime may have a strength equal, if not superior, to the conventional water bound macadam road-base.

Experimental road constructions using flyash from Neyveli and Basin Bridge have been tried in the Rameswaram--Dhanushkodi road in the Rameswaram Island and in the Adayar (Central Polytechnic)—Mahabalipuram Road and their performance behaviour is being observed.

The Seminar on Flyash

The seriousness of the problem of disposing the large quantity of flyash is understood and at the same time the potential use of flyash in the various construction activities is being recognised. However, there is no marked progress in the use of flyash on a large scale. This is due to the lack of knowledge of the uses of flyash on the part of engineers and industrialists. In order to arrive at a proper solution to the problem of useful disposal of flyash, the Seminar was organised in which research workers, flyash

CELLULAR CONCRETE

A Cellular Concrete Plant is under erection at Ennore, Madras, with collaboration from Poland by the Tamil Nadu Housing Board, at a cost of about Rs. 3 crores. The programme is to manufacture cellular concrete wall blocks of 59cm×24cm.×19cm. and reinforced roof slabs of size 299cm×59cm×12cm. The proposal is to adopt the sand technology having sand, lime and gypsum as the main constituents for blocks and gypsum substituted by cement in the case of roof slab. The capacity of the plant is 1,38,000 cum. per annum and will require about three acres of coastal land for sand quarrying per annum. The plant is located just opposite to Ennore Thermal station to find use for the huge quantities of flyash that will be produced by the Ennore Thermal Station. It is proposed to substitute flyash for sand in the manufacture of Cellular concrete.

Technology

Flyash, Lime and gypsum are ground to size and mixed with water of required quantity. To this, Aluminium Powder and

producers, industrialists in the fields of cement and concrete, and building materials and top-level engineers participated. The Seminar was held for three days from 3rd to 5th August, 1970. Dr. K. L. Rao, Minister for Irrigation and Power, Government of India inaugurated the get-together and Thiru S. Madhavan, Minister for Industries, Tamil

'Sulphapol' solution are added and mixed thoroughly and the slurry is poured into the moulds. Time is allowed for chemical reaction liberating hydrogen gas and for the initial setting of the mass. The over growth of mass above the moulds is cut off. The sides of the mould frames are removed and the mass is cut into required sizes. It is then subjected to steam curing in autoclaves for 17—18 hours at 12 atm. pressure and 190°C. After autoclavisation, the product is ready for use.

The total quantity of flyash produced in the Ennore Thermal Station will be about 1,700 tons per day when all the four boilers, work on three shifts. Out of this, about 1,300 tons is to be collected in the mechanical separators and the balance about 400 tons in electrostatic precipitators. The Cellular concrete Plant may be in a position to use about 350 tons per day of flyash out of about 1,300 tons collected in the mechanical separators only, as the ash from the electrostatic precipitators will be too fine to be suitable for Cellular concrete manufacture.

Nadu Government presided. Thiru Madhavansaid that licences need not be insisted on for starting of industries using flyash.

The participants in the Seminar called for the setting up of a high-power body to tackle the problem of disposal and utilisation of the flyash-waste, treating it as a national problem.



Demonstration on nutrition.

Speaking at the Fourteenth Convocation of the Madras School of Social Work, Arignar Anna observed that :

"Social Work is istinctd from Social Reform. While Social Reform tends to create animosity, social work would create friendship as it brings solace to the afflicted, education to the illiterate, and light in the midst of darkness. Social Work distinguished from Social Reform is very much needed, as our society is just emerging out of the clutches of habits and traditions. We are not a backward community as we have solved problems with which backward nations are still grappling.

"If we analyse the psychology of our people, we will find two different characteristics—one, a sense of frustration and the other one of exasperation ; both are explosive and it is a wonder that there has not been a social and political convulsion. This is

because we are a balanced people to whom patience comes naturally but this patience should not be mistaken for docility or surrender. Unless people trained in Institutions such as the Madras School of Social Work could carry the message of humanity and service and put them into action quickly, we may be left panting and gasping in the midst of a people justly roused."

In a nutshell

In a nutshell, this is the problem facing us. Because social work happens to be a solution to the problem, organised and trained social work as rendered by institutions like the Guild

of Service, the State Social Welfare Board, the Social Service League Units in the colleges, etc., are becoming all the more necessary.

To give such a practical bias and trained orientation to the work of these instutitons a team of highly experienced young women with a tried *modus operandi* visited Madras last month. They brought with them a new dimension in social service. They are sponsored by the Grail Movement.

The Grail Movement

The Grail is an international movement of women, which expresses through its programmes, a sense of responsibility of its members, to collaborate with others on many different levels, working towards the process of full human development. The unit is staffed by specialists and represents the "outside help" that is available to back up and stimulate existing efforts in the field of rural development. There is a "felt need" for this kind of technical assistance in this field.

The group comprises three Indians, an Australian and an American who are available for advice and help to small agricultural projects.

**A FORMIDABLE
FORCE FOR GOOD**

The team holds courses for a duration of 10 days to three weeks. The courses are intended for the training of village level community education workers, National service volunteers, teachers and voluntary agency personnel.

The State Social Welfare Board, Tamil Nadu, invited the team of the Mobile Unit to conduct a course of Social Service Training at Madras. Almost all the colleges in the city responded and sent their representatives.

The lectures were on how to work with a community, community service, food and nutrition, child development and kitchen, gardens, etc.

Demonstration classes

Demonstration classes on preparation of cheap nutritious food for children, making a smokeless chula, a village refrigerator and improved cooking practices (cooking in a hay-box) were held for the students.

The students also discussed the working of extension methods and working with the community.

Full of enthusiasm and joviality, Miss Margot Harrison from Australia is in charge of Health Education. Miss Harrison had come to India with some of her young friends who worked in the Cheshire Home. Asked about her

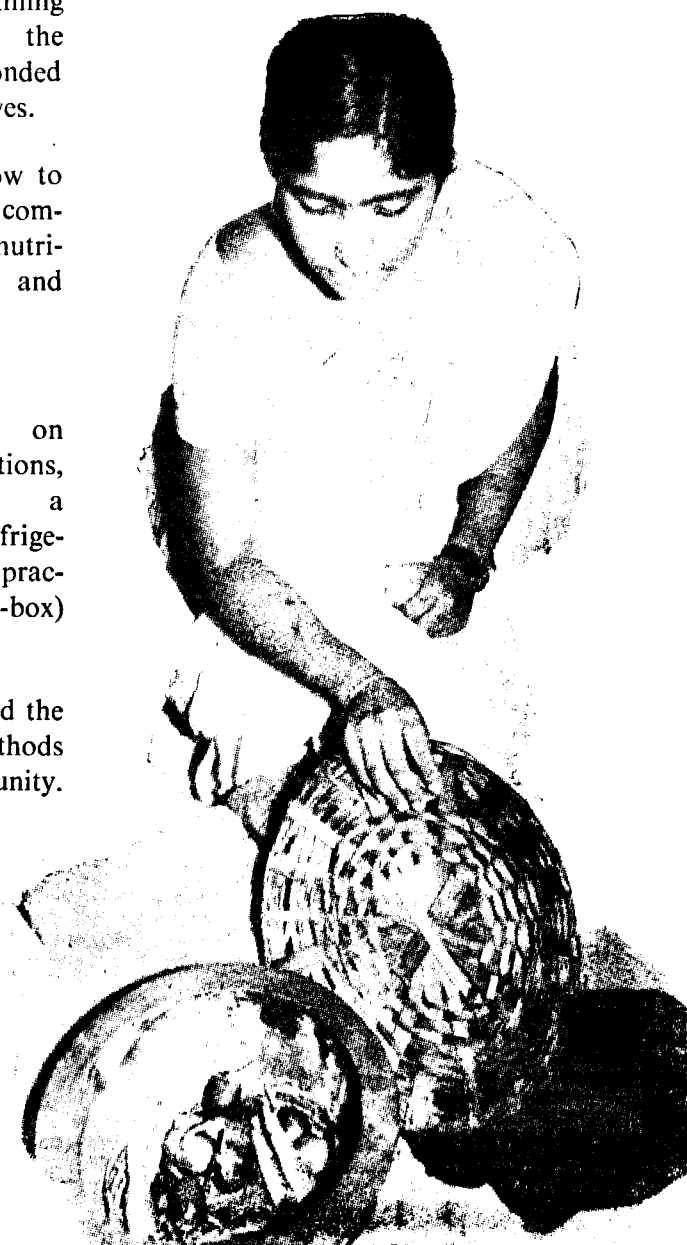
experience here she said, "This has brought India and its fascination very close to me and I am thrilled to have had this opportunity of seeing India and even more at the prospect of meeting so many of its people all over."

Living experience

An important function of this team is to provide a living

experience for well qualified and educated young women to learn from being together, working, teaching and travelling for 6—12 months at a time, providing useful service to their country. In short, to give a lead to the young women of our country an idea of 'professional' social service, as distinct from dedicated social service, which of course becomes secondary in their approach.

Miss Romilla Kapoor has specialised in poultry and small agriculture. Graduating from Delhi University, Miss Kapoor spent four years working with resettlement of Tibetan refugees, in the Hills of Himachal Pradesh. In the course of her work she came into contact with the Grail Team and joined it after finishing her work at Himachal Pradesh. Miss Kapoor had travelled with the team in various States. She says that the response to their courses has been very encouraging indicating the enthusiasm for social work which is building up amongst the people.



Village refrigerator for keeping vegetables fresh

The students who participated feel that they derive mental satisfaction in rendering social service. Thiru Venkataraman from Vivekananda College says that he feels that, doing social work is a challenge since there is vast scope in doing service to the humanity.

Coming from rural areas, he says he has an idea about the needs of the people and the improvements to be made in the sanitary and hygienic surroundings. As a member of the

college Social Service League he has rendered help to the rural people to conduct adult education classes and in keeping their surroundings clean. He had also attended the International Seminar at Delhi on Community Development.

Views of the trainees

Miss Bhuvanewari a member of the Social Service League of Stella Mary's College is very enthusiastic and keen about the classes. She says that she finds the programme very interesting.



Hay-box for rice cooking

"The lectures make you think for yourself and how to approach the people."

When asked how she became interested in social service, Bhuvanewari says that the conditions in the slum in her neighbourhood prompted her to take to social service. Asked whether she has had previous experience, she says that she has worked in two slums: "I was put in charge of supplying milk to the undernourished children. And also have the experience of working in a nutrition programme. I have also worked in a hospital at Athkudi."

She feels that there should be more response and co-operation from the people. Unless they are convinced that what we do is good for them, they will be difficult to approach.

A formidable force

Thiru Nityanadam of Loyola college is a member of the Prosperity Brigade and has worked with the members of the Brigade in repairing the banks of the Canal in Perambur. He has also helped in laying kitchen gardens. About the Grail Movement's course in Madras he says "Well, it is not just the usual course. It is rather a foundation. This gives you the correct picture of how to approach the people. It helps you to educate the people to do things rightly."

While the student who comes from the rural area is eager to help the rural society to lead a



A training class in session

better life through the adaptation of modern techniques to suit their environment the students from the city are eager to eradicate the evils of slums, one of the major problems of modern civilisation.

In our country this problem has not yet attained serious proportions. If we take adequate measures in time we will be able to tackle it without much difficulty, thereby we may avoid the serious consequences of this phenomenon which is the case even in some of the advanced nations. This programme has demonstrated the eagerness of our younger generation in taking up this noble work. The need is, proper guidance. Social work just because it is voluntary, need not be haphazard and amateurish. Backed by guidance, such as that provided by the Grail Movement voluntary social work becomes a formidable force to usher in the new society. ☉

VILLAGE REFRIGERATOR

Place green vegetables in a bamboo basket and cover it with a lid. Cover the lid with a piece of damp gunny. Heap some sand in a corner and keep it wet. Place the basket on the wet sand. The moisture will keep the vegetables fresh for a few days. Since the vegetables are placed in a bamboo basket, there is room for air circulation, which prevents the vegetables from rotting.

HAY-BOX

A housewife who has to attend to all house hold chores will find the hay-box a boon. This is an improved method of cooking. Take an old wooden-box. Place hay in it. While cooking rice take it half-cooked from the oven and place it in the hay-box. The hay acts as the insulator and cooks the rice evenly. There is no need for constant attention and the housewife can go about with other jobs.

PICTURE PAGES

Facing page: Chief Minister distributing land-patta to the landless poor at Tiruchi on 8th August 1970.

Sardarni Ujjal Singh distributing Certificates to Social Work Trainees of Grail Mobile Unit, at Children's Theatre on 1st August 1970.

Fair-rent quarters for Government servants at Sivaganga was declared open by Chief Minister on 10th August 1970. Ministers for Housing, Industries and Backward classes also participated in the function.

The personnel of the Grail Movement who conducted courses for Social service workers in Madras were honoured with prizes by Dr. Sathyavani Muthu, Minister for Agriculture and Harijan Welfare.

Thiru V. R. Nedunchezian, Minister for Education, released the 2nd volume of Children's Encyclopaedia on 24th July 1970 at Rajaji Hall.

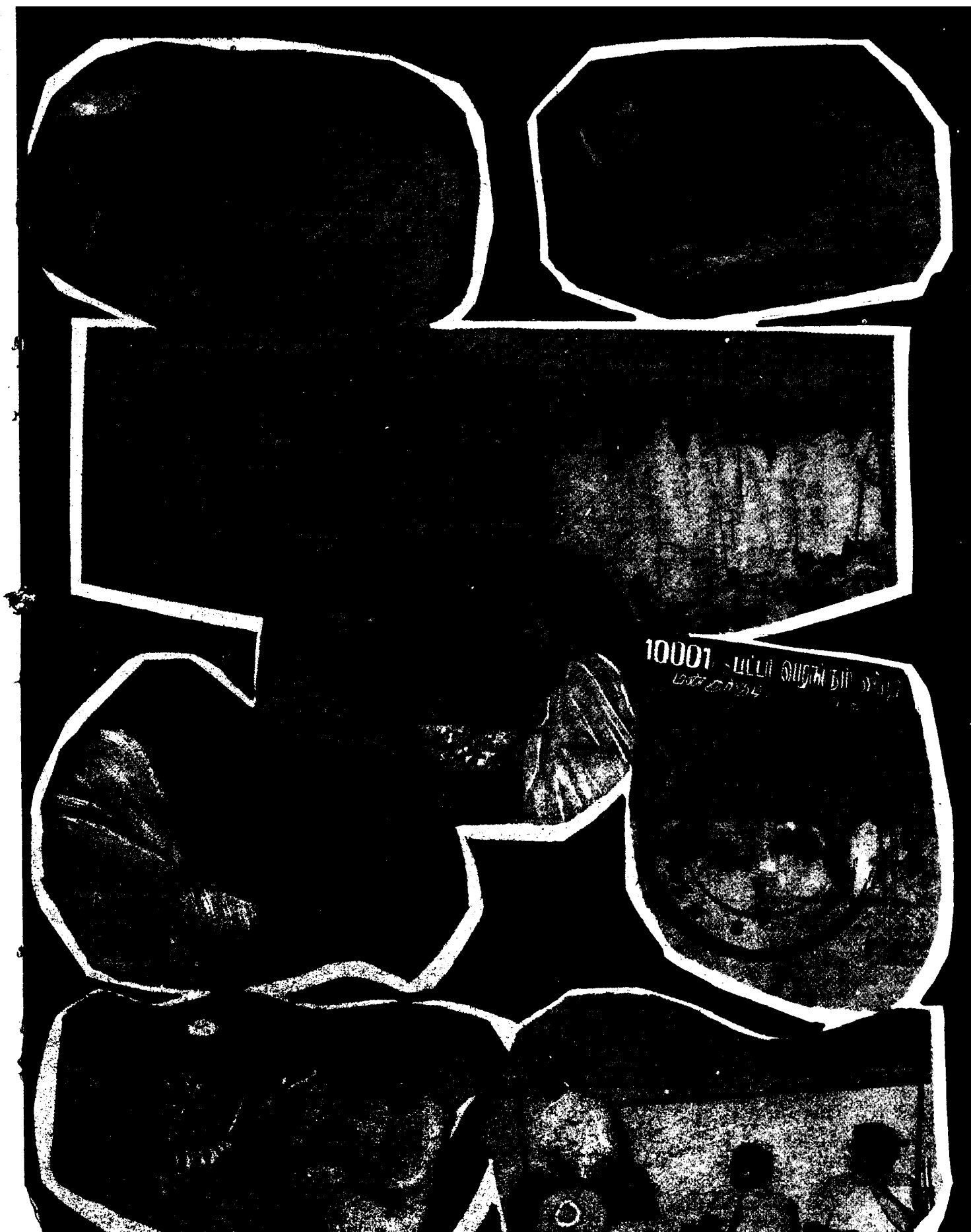
Distribution of land to landless poor at Mannargudi on 7th August 1970 by Chief Minister.

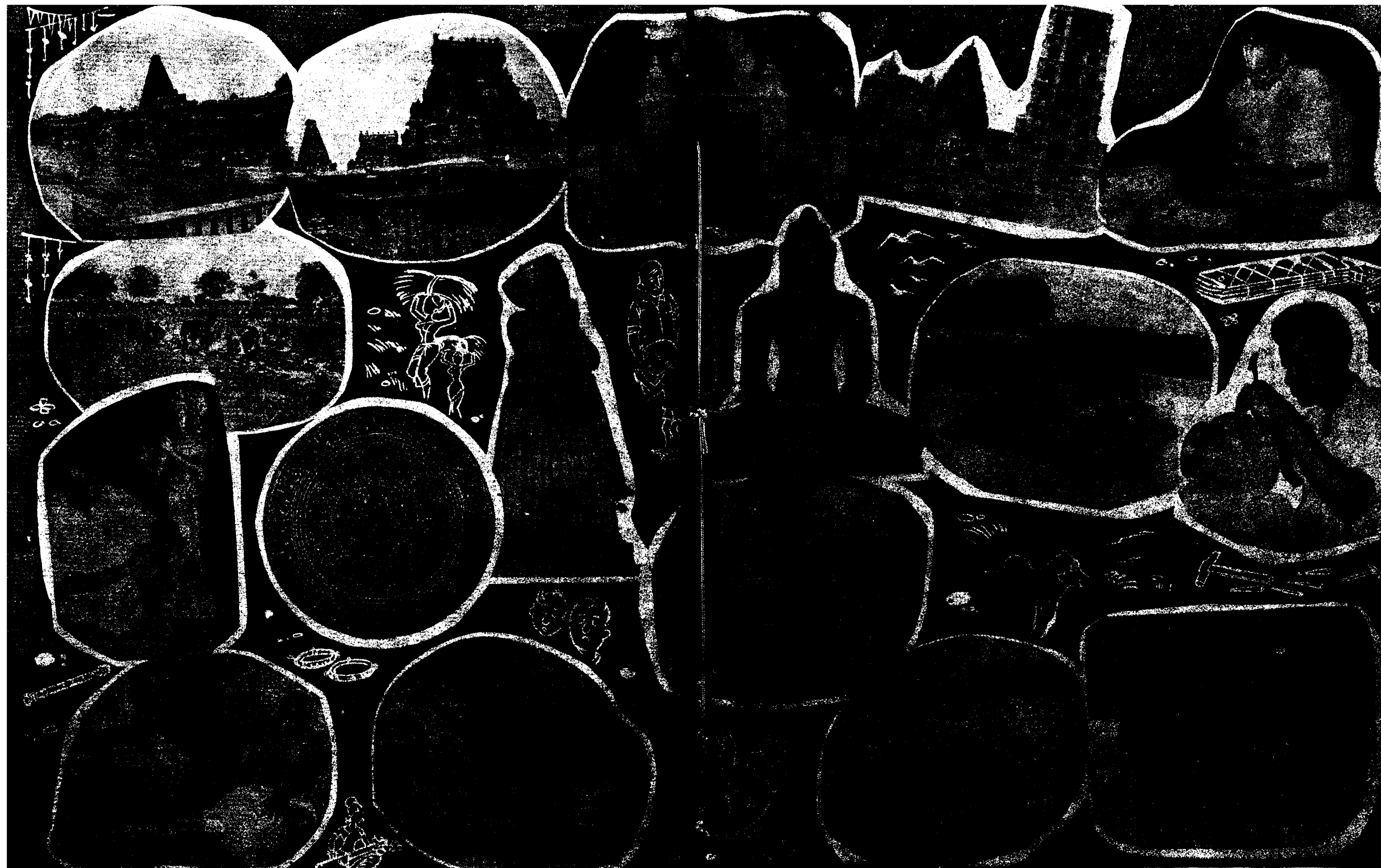
The Central Road Safety Committee met Works Minister Thiru S. J. Sadiq Pasha on 7th August 1970.

The distribution of enriched food to workers, organised by CARE programme was extended to T. I. Cycle Factory at Ambattur. Thiru K. Vezhavendhan, Minister for Labour inaugurating the Scheme.

Centre spread: Scenes of Thanjavur—the old and the new—it which are of absorbing interest to all.

Last page: Independence Day Celebrations 1970 on the ramparts of Fort St. George. Leaders of all political parties participated.







ALL THE SNAKES AND VENOM TOO

The Madras Snake Park and
Reptile Research Centre.

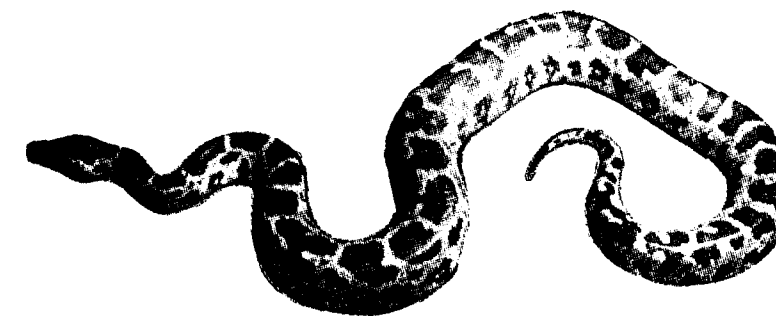
Snake parks have been established in many parts of the world as centres for studying reptile habits, extracting venoms for medical and biochemical research and as places for people to visit to learn about these creatures. India has been without a snake park. That is unfortunate in a country where snakes and other interesting reptiles are common but rarely seen. The Madras Snake Park is being set up on the Velachery Road near Tambaram (in the Madras City suburbs) as India's first reptile research centre. Besides undertaking studies on reptiles, which include subjects from snake-bite to reptile conservation, this centre will be open to the public at a nominal admission fee.

Large collection

The Madras Snake Park maintains a large collection of snakes from all over India as well as some snakes from foreign countries like the American rattle

snake and European vipers. Mr. Romulus Whitaker, the project originator is an American herpetologist who has lived in India for 13 years. He plans to include the larger reptiles like crocodiles, giant tortoises and king cobras in the proposed Snake Park. He feels that thousands of deaths by snake-bite in India every year can be avoided if only the real facts about snakes and snake-bite are made available to the public. There are only four poisonous

The Madras Snake Park and Reptile Research Centre is likely to be maintained from the World Wildlife Fund. The conservation of all wild life including the reptiles is of major importance; the snake park will help publicise these facts. To be opened very soon, the snake park will display snakes in natural surroundings in deep, safe pits. Every week end the extraction of venom from hundreds of snakes will be shown to the visitors to the park.



snakes which cause most snake-bite deaths in India: Cobra (Nulla pambu), Krait (Kutta virian), Russells Viper (Kannadi virian) and the Saw-scaled Viper (Suruttai pambu). The antivenin serum prepared at Haffkine Institute in Bombay for treatment of snake-bite is effective against any of these snake-bites. This and many other facts to be learned at the new snake park can help to save lives.

Pythons as pets

While on the subject of snakes, our thoughts naturally turn to Rev. Fr. C. Leigh, S.J. of Loyola College whose absorbing pastime and study was rearing pythons! No snake-charmer could have handled the serpent tribe or Ophidia—as they are scientifically referred to—with the perfect nonchalance he displayed in proving that the snake is a harmless creature “more sinned

against than sinning". And what he did not know about them wasn't worth knowing. The secret of his success in being able to tame and handle pythons with such calm impunity, was to treat them gently; If you are rough, careless and brusque in your movements, you are sure to be bitten. Boas (pythons) are literally coldblooded creatures, gene-



rating nobody heat of their own. A human being substitutes for a sun-dappled trunk of a tree; hence they like to be handled and revel in the warmth of a human body!

Pythons do not have any positive virtues as pets except perhaps, eating only once a week or every two weeks. They are easier to maintain than either cats or dogs. Because of their relatively antiseptic living habits too, the snakes transmit fewer diseases than the ordinary pets. They are slow-moving, gentle and hardly ever bite, and once you have handled and tamed them, they seem to know you.

"According to Fr. Leigh, baby pythons grow rapidly, about one

foot the first year, four to six inches annually for the next few years. They eat mice during the childhood, but prefer rats when adult. He usually fed his pets mostly on bandicoots, crows, kites and dead hens that the obliging neighbourhood supplied him with. Since they were not fastidious about their rations, there was always plenty to eat and the cost of their maintenance very low. Occasionally a rabbit or a dead dog was thrown into the cage, but their juiciest bite was a monkey, which they preferred to anything else on the menu. There are no housing problems regarding the pythons, as they are content to live in tank or any old cabinets converted into cage.

TAMILS BAG TOP INVENTION AWARD

Thiru A. C. K. Krishnaswamy and Thiru C. Hariprasad of Madras have jointly claimed the Invention Promotion Board's highest award of Rs. 10,000 for developing an improved process and plant for carrying out fermentation of tea leaves. The award is being given for the first time since its inception ten years ago.

Thiru R. Dasgupta, Thiru M. S. Jayasimha, Thiru K. S. Sitarama Rao and Thiru R. Y. Narayan of the Indian Telephone Industries, Bangalore, claimed the second highest award of Rs. 3,000

for developing a split armature telephone receiver. It is simple, easily serviceable and cheap.

Thiru D. S. Likhari of Hindustan Zinc, Udaipur, gets Rs. 2,000 for developing a centrifugal blower lined with indigenously available fibre-glass reinforced polyster resins. It requires one third of the power needed by the imported blowers.

Prof. V. A. Altekar, Director, National Metallurgical Laboratory, Jamshedpur, gets Rs. 2,000 for developing a process of electro-thermal zinc dust smelter to

convert waste zinc hydroxide sludge, a by-product of sodium hydrosulphite plant, into superfine zinc dust.

Thiru M. R. Krishnamurthy, Dr. V.S.V. Sastry and Thiru K.C. Rajaraman of Regional Engineering College, Tiruchirappalli, have been awarded Rs. 2,000 for developing a single phase induction motor with single winding and reduced size, which can run at 2-3 speeds without the conventional resistance starter and can be used in production of scientific instruments, reduction gear units, small machine tools, etc.

Some drugs have been used to extract the truth from the suspected criminals and such drugs may be classified as "truth drugs". These drugs have been found useful in psychiatry and to some extent have been used for fact-finding purposes in criminology. These drugs are supposed to stimulate talk. For example the drug sodium pentothal makes a suspect, usually non-communicative, and glum talk uninhibitedly. Thus a good deal of material that might not have been otherwise forthcoming in hours of interrogation, could be extracted by such uninhibited talks. The evidence of the information thus secured may be inadmissible in courts but such techniques, if employed in trial investigation of crimes, give very valuable information. Under the effect of such drugs, the suspect will lose the conscious control of behaviour and will lay bare the "truth".

Antecedents

The modern truth drug has antecedents going back to earlier times. Many of the plant products belonging to the family of solanaceae contain narcotic alkaloids, scopolamine, hyoscyamine, atrophine and polandrene. These plants or their extracts have been used in some form or the other in all parts of the world. Under the influence of such plant preparations our normal waking consciousness will be suppressed while the matters dormant in the sub-conscious will come to the forefront. This class of chemicals brings about a marked increase

in the talkativeness and communicability and thus help in getting at the truth. These drugs bring about a decrease in blood-pressure decrease in heart rate, dilation of pupils, etc. These drugs remove the psychic inhibitions and bring about verbal release.

Initially scopolamine along with morphine and chloroform were being used on women during child birth to alleviate pain. But as a side-effect, it was found that women under the influence of these drugs often volunteered to talk freely. In 1922 it occurred to physician Robert House that scopolamine might be employed in the interrogation of suspected criminals. This was how the "truth drug" was discovered. But further studies proved that this drug had several toxic effects and it was soon given up. The drugs now most frequently used in interrogations are sodium amytal and sodium pentothal. They have the least toxicity and unfavourable side effects and give reliable results.

The interrogations conducted under the influence of these drugs will enable us to get a lot of information quickly and will be very helpful for taking timely action. But the information thus obtained should never be mistaken for

evidence or presented as such in court. However, the information collected by interrogating a spy will be immensely useful for gaining knowledge about the enemy activities. It may also be, however, mentioned that all the subjects are not likely to respond uniformly to this type of investigation; some are able to withhold information even under the influence of these drugs while some habitual liars are least affected by them. In a sense, therefore, we may say that this technique is yet in an embryonic stage and much data has got to be collected before such drugs are widely recommended for extraction of confessions for investigation of crime, but nevertheless this technique may be much

TRUTH DRUGS

more reliable for fact-finding purposes compared to the polygraphic technique, commonly known as "lie detector".

The lie Detector

The polygraph is only an instrument for recording rate of breathing, change in skin conductivity and pulse and blood-pressure. It is generally used in a pharmacological

laboratory for the study of the variation of these factors under the influence of chemicals on certain body mechanisms. But of late the polygraph is being used under the name of 'lie detector' for elucidating truth during police investigations.

As long ago as 1895 an Italian criminologist claimed, that by taking a suspect's blood-pressure during police interrogation he could establish whether or not he was telling the truth. Later a Swiss psychiatrist stated that by measuring the 'skin's resistance to a low electric current, guilt could be similarly established. Early in this century a Harvard Psychology Professor reported that a study of the body-physiology would trap a person in his deceit. Investigations also showed that there existed a relationship between a man's emotions and his rate of breathing and blood pressure.

Polygraph

One of the most noted polygraph examiners was Leonarde Keeler. He was the first person to bring about some improvements in the older models of polygraph and carry out the recording of suspect's changes in blood-pressure, the respiration, etc., during interrogations. Keeler got remarkable results from such studies and was able to obtain astonishing confessions from even hardened criminals. Since then, this new kind of interrogative approach has found importance all over the world.

Keeler called this apparatus a polygraph—It records rate of

breathing, blood pressure and skin electrical resistance. All these three readings are recorded on a roll of paper during an actual test when the interrogator puts the subject a number of questions formulated to fit the case. Some questions are neutral and innocuous that can be answered without showing evidence of any emotional disturbances on the graph.

But in order to get a real result out of a lie detector the questions selected must be carefully framed, only then the emotional disturbances will be created in the subject's mind which in turn bring about rapid variations in the breath-rate, blood-pressure and skin resistance which will be recorded by the polygraph.

Type of questions

It is, therefore obvious if any useful result is to be obtained from any lie detector, much depends upon the type of questions put during the interrogation. On the reaction to these crucial questions, a determination of a lie or a truth is made out; much depends on the technique of questioning, the questions asked and the manner in which they are asked. Thus a polygraph can be of some use only if we have trained and experienced examiners and on their skill depends the detection of a lie; but the instrument itself will not in any way help in extracting the truth. Thus the technique of using 'truth drugs' stands better compared to this machine which only helps in detecting a lie, under able

questioning by an expert interrogator.

This instrument has been widely used in America in detecting the lie in quite a good number of cases and their achievement has given the lie detector a reputation for its infallibility. One of the largest users is the U.S. Army and the federal agencies to check those suspected of being security risks. Many banks, commercial houses and departmental stores—places where both temptation and opportunity for theft are present—use the lie detector.

Quite good but...

But it is not popular because in the hands of an incompetent examiner this instrument can lead to entirely wrong conclusions. We have to take into consideration a number of issues involved in this technique, some are scientific, some are moral and ethical, as much of the recordings obtained in a polygraph depends upon the examiner and is likely to lead to erroneous interpretation. It is not an easy and routine job to recognise a 'false positive' reaction from the innocent or a 'false negative' one from the guilty.

The experts in the field advise that one need not worry about what the machine has recorded as long as one has been interrogated by a trained examiner. A polygraph can only record the relative physiological changes during questioning but cannot detect a lie. Hence science still hesitates to give lie detector its blessing.☉

The strategy is to integrate more than one method of pest control. At the same time pest resistant varieties of crops are also being developed.

In the strategy of pest control the modern concept is to integrate more than one method which are compatible with each other with a view to tackle the different stages of the same pest species for its eradication. In this line of work the old method of biological control through parasites and predators are advantageously being used in conjunction with the systematic and granular insecticides. Physical, mechanical and cultural methods of control are also integrated with the latest methods of chemical control to get good results. In an endeavour to make pest control cheaper, research on the utilisation of native products of plant origin are being done.

Pest resistant strains

Several strains of crops have been developed which are resistant to the attack of specific insect pests. Use of resistant varieties eliminates the possibility of pesticides hazards and the cost of treatments. For instance, MCU 3 cotton has been found to be highly tolerant to stem weevil; some varieties are resistant to jassids aphids and thrips.

The application of a chemical against a pest even before its occurrence on a crop as a preventive measure has several advantages over the conventional method of applying an insecticide on an insect affected crop.



The prophylactic treatments effectively reduces the multiplication of the pest population. This method would be very effective for the control of tissue borers of stem, fruits and bolls.

The brood emergence is determined by light trap catches of adults like paddy stem borer, etc. A sudden increase in the population of moths caught is taken as an indication for taking up prophylactic brood emergence sprays.

Development in pesticides

Increased use of pesticides of high toxicity and prolonged residual action has resulted in harmful effects on food fodder and human health; in addition to the development of resistance in insects to the insecticides. New pesticides have been developed which have very low toxicity and shorter residual toxicity. Systemic insecticides which are absorbed into the plant system and translocated to the growing parts have been very effective in controlling the sucking pests like the aphids

jassids alleuroids and thrips without killing their natural parasites and predators. Hence severe secondary outbreak of pests like aphids due to the destruction of their natural enemies with the use of the ordinary insecticidal sprays have been eliminated in using the systemic insecticides. The development of the wide spectrum insecticides which are effective against a wide range of crop pests is another advance.

New types of insecticidal formulations have been made to meet the individual requirements against specific pests. Systemic granules encapsulated insecticides ultra low volume concentrates have been developed making pest control more effective and economical.

They can be easily applied or broadcast by hand without the use of cumbersome equipments. They have the added advantage of long residual action slow release of the chemical lesser phytotoxicity and with practically no contamination of



atmosphere as there is no drift. The granulated insecticides are also useful as soil insecticides and as systemic insecticides which can be applied to the soil before planting; thus giving protection to the crop from the beginning. They were also found to be effective in checking wire worms, white grubs and root aphids in the cereal crops. Application of granular insecticides for paddy stem borer in standing water was also found to be effective.

Ultra low volume techniques

This involves the application of concentrated solutions or suspensions instead of the conventional method of diluting the spray materials in the large volume of water. The insecticides are mixed in 50—70 litres of water and sprayed over an acre. There is no wastage through run off by this method.

Here the concentrated insecticide is sprayed with special nozzles. It reduces application costs and achieves a heavier deposit

of the toxic material on the crops giving greater efficiency. New nozzles and accessory equipments have been designed for this new method. An aircraft can cover four times more area with ULVC than with L.V.C. By fitting suitable retractor nozzles to the mist blower ultra low volume sprays could be effected. There is less loss through evaporation by this method greater chemical stability



and greater resistance to the physical elements.

By combining two or more insecticides, pests which cannot be controlled if applied individually [Toxaphene+DDT (Heliothox) EC] can control effectively the American boll worm on cotton, paddy leaf roller, etc. Certain non-toxic synergising agents are added to the insecticides to increase their efficacy. By using mixed formulations the cost of control measures is reduced and also the danger of the development of resistance in insects to insecticides is also reduced.

Several disease causing organisms like bacteria, virus, fungi and nematodes have been used for the control of insect pests. Application of Thuricide dust (Bacterial culture of *Bacillus thuringiensis*) at 10—15 kg./acre has been found to cause heavy mortality of the diamond back moth caterpillar on cabbage, castor semilooper, tobacco caterpillars and others.

Use of sex attractants

In this method certain secretions from the female body or similar synthetic materials are used to trap and kill the males in large quantities which are attracted to these substances. By this method, the chances of the females getting fertilised by potent males are reduced and thus they lay unfertilised eggs which do not hatch, resulting in reduction of population.

In this method the males are reared in large numbers and treated with irradiating materials and due to the radiation effect they become sterile but otherwise potent for copulation. These males

are released in the field in large numbers so that they compete with the normal males in the field for copulating with the females; resulting to unfertilised eggs and reduction in population.

Use of antifeedants, etc.

Certain compounds designated as antifeedants are being now tried against crop pests. These materials when sprayed over the crop make the insects consume lesser and lesser quantities of food thus effectively reducing their number and reproduction.

Certain substances called as juvenile hormones or phenomones

when used on pupae or late instar insects affect their normal physiology and development and make them sterile. Thus with the use of such substances the reproductive phase of the insects life is interfered with, resulting in the reduction of population.

Another useful programme to be launched this year is the training of selected cycle and motor mechanics in servicing and maintaining plant protection equipment. These trainees will be selected from each block of the Madurai Agricultural Region for attending to the needs of Madurai and Ramanathapuram districts. ☉

COCOA IN TAMIL NADU

Trials have shown that cocoa of very high quality can be grown in Tamil Nadu. Cocoa which is useful not only for beverages but also for its food value, offers very good scope for development in Tamil Nadu particularly in hill ranges like Kalrayan hills and Nilgiris. Cocoa is a new crop to this State, but it is a very important crop as, besides, being a highly valued beverage yielder, it has got a high nutrient value in a concentrated form.

Being a perennial crop it will take time to convince the grower to take to it for large scale cultivation. Our initial experience of Cocoa Cultivation in Nilgiris has shown that Cocoa of very superior quality even according to international standards can be produced in Tamil Nadu. There are three pilot centres for Cocoa as visual demonstration centres at Mangalam-combu, Pechiparai and Papanasam to educate the growers as to how

Cocoa can be developed successfully.

Having achieved success on a small scale, it is now proposed to launch a fairly big programme of Cocoa cultivation on a plantation scale. An area of 2,000 acres in Genguvarodai of Madurai district and another area of 1,000 acres in Kanyakumari district have been chosen for development of Cocoa. ☉

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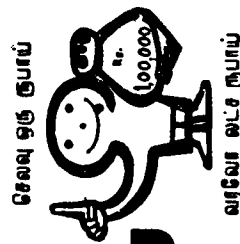
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COME TO THE SUCCOUR OF THE POOR

[Madurai University Convocation Address delivered by Thiru M. Karunanidhi, Chief Minister of Tamil Nadu, on 23rd August 1970.]

My heart swells with joy for having this unique opportunity of delivering the convocation address at this Madurai City of the Pandya Kings, who, having inscribed their insignia, the Fish on the brow of the Himalayas, alongside their insignias, the Tiger and the Bow of the Cholas and the Cheras, held sway over the country known as the Navalam peninsula with great pomp and pride. Though not nurtured in the temple of learning—the University, in the conviction that, I had this opportunity as one who had delved deep into the hoary literature of our Tamil language, I am standing before you.

Sanctified soil

This is the soil which was sanctified by the foot prints of great scholars and poets who had established here the “Tamil Academy”. We have

assembled in this great city which was the venue of the legendary events of Kannagi, the heroine of Silappadikaram having learnt the gross injustice meted out to her sought justice before the Pandya King, who wilted before her fury, like a hare transfixed by a tiger. My loving hearts, assembled in this soil of the Pandyas, the recipients of the titles of renown like Thalaiyalanganathan, Aariyappadai Kadanthan, etc., to receive the degrees awarded by the University, kindly accept my greetings. And then bridle yourself to hoist our flag of victory in all the directions.

You may shoulder any number of responsibilities. But I do not have the capacity to know the kind of responsibility you are cherishing. Your teachers may know it. Intuitively, you may be aware of it.

Greatness of Tamil

Recently I have toured a small part of the world. I saw the fame of our Tamil spread over those places much earlier. A few scholars felt glad in speaking about it. Those who have understood the greatness of the Tamils welcomed me with respect. They said that it is a lyrical language, and a sweet language not by hearing my speech, but by feeling the gentle breeze of that Tamil wafted by many others. The world knows about the greatness of our language. I have heard the scholars of different nations speak about the distinct qualities of the Tamil as a fully matured language with pride at Paris. My heart swelled with pride because of the fact that the Tamil has once again attained its pre-eminent position as a distinct language full of life, light and lustre. Even so, my heart felt an inexplicable pang of pain. Why? Thousands of the sons of Mother Tamil are steeped in poverty. I have seen sky scapers there. My eyes are filled with tears, at the galling thought as to when the Tamils will also achieve a full, happy life, which dimmed that sight.

In foreign countries people are enjoying life to the full. Only when our country also becomes prosperous our people will be happy like them. Is it possible to achieve this by the efforts, sacrifices, energy and intellect of one individual? Individuals may preach philosophical concepts and tender advice. These are the only things freely available in the world. If it is ordained that many

must toil to gladden the life of a single individual, then there is bound to be bitterness in the minds of the many. Individuals must think that they are also part of the society. The society is nothing but the association of individuals. With such clear thinking, if we had the courage to train ourselves to serve, then we can win many a degree in the university of the Public Life. We can march with pride and say that ours is a prosperous country and our people are having a better life.

Work, work, work

You may demur, 'work, work and still more work', seems to be the refrain of my speech. You may be tempted to point at the straining guts of the hand-cart puller; you may point at the dripping sweat of the tiller of the soil and ask of me: "Is it not work? Is it not enough work? Do we need to put in more work?" Yes, it is not enough. We must work to reduce the work load of those toilers.

That does not mean that we must also join forces with the worker in the factory or in the field; but we have to lessen the burden of his labours.

Lessening the burden

What else shall we do? An individual's effort is not enough for that. The country as a whole must prosper. All of us should work in different fronts to achieve this. You may be inclined to ask whether I am again advising only to work. If you think a little, everything will be clear to you. If, many of us work in different fronts and in different capacities the



age-old blind fatalistic notion that a few are born only to work will disappear. For the worker toiling in the field and for the wood-cutter the leisure time will become the time of recreation. For all those working in the factory, in the offices, etc., their enthusiasm will grow in proportion to the work they put in. This is the mirror which will reflect the prosperity of the nation. It is not enough if we see our face alone in this mirror. It must also reflect the philosophy of socialism.

Employment problem

I am aware you may be prompted to say, "we have studied for years and are getting the degree to-day. There are those who have studied with devotion and there are others who might have also studied but at great cost to their parents. You are saying, 'more work is needed' and you are also likely to call us to 'sacrifice'. Is it only for hearing this we have assembled here? Anyhow we are prepared to follow your advice. After all we have aspired for the degree only to serve. But, where is the opportunity for us to work? Where is the employment opportunity? Will you provide it?"

Before answering such questions I would like to place before you some of the problems for your consideration.

It is now twenty-three years since we got our Independence. We have implemented three Five-Year Plans. After that though one or two years have passed the Fourth Plan has not moved. Only a few months back it has been resuscitated. The unemployment problem assumed huge proportions during this non-plan period which has brought in its wake poverty. There is only a feeling of frustration. To solve this unemployment problem which has assumed such huge dimensions, the Government of India should take bold steps immediately. But, do not think that by saying all these things, I am merely counselling patience till such measures are taken. At state level, we have formulated certain practical schemes for solving the unemployment problem. Therefore, graduates of the year, you need not be disheartened.



The Chief Minister with the Governor and the Education Minister at the Convocation of the Madurai University.

What is the purpose of higher education? A pat answer like, it is for getting a post, is not the proper thing. It is for acquisition of knowledge and capacity. At the same time, I do not deny the fact that we have to look after ourselves and our family. It is for those who are thinking on these lines I am telling, that by the State Government's efforts there will be employment opportunities and they can be rest assured.

Purpose of education

The number of those who study with the intention of getting a job to eke out their living is larger. Though few in number, students from the rich families do not study solely for eking out a living. Then, why is it that they are also hunting for jobs? They must not think that even if there is enough wealth, to be in a job is more respectable.

Wealthy people are certainly not in the compelling position of seeking employment to eke out their living. It would be better if their knowledge can be utilised for the development of various industries in the country. Wealthy students should think about

social service and public works. There can be no end to the sufferings of the poor graduates if these well-to-do students also apply for jobs. In implementing this policy the well-to-do graduates should co-operate with the Government. They must think of it as their sacred duty towards the poor graduates who are suffering a lot every day. This may not solve the problem. It is only just like the mother unable to feed her weeping baby trying to make it sleep by resting on her shoulder. Yet, if the State Government do not take even this minimal effort the tragical allegory of the child's unending cries leading to swollen belly, fever and disease ending in tears may well apply in the case of indigent graduates as well.

State Government's efforts

Many a poor parents have spent for the education of their sons by tightening their belts in the hope that their sons will protect them in the evening of their life through their earnings. We do not want to see that these aspirations of those parents go unfulfilled. Within the limited power available to the State Government we are trying to meet at least the minimum of the aspirations, and the longings of the parents of such graduates.

Do you think that there is no other avenues of work in the country for the graduates from the well-to-do section of the society ?

There are people in Tamil Nadu who are not aware that :

'The Tamils are a distinct race, and It has exceptional qualities of its own'.

Will it not be a far more satisfying thing for them to kindle this flame of Tamil in the hearts of those unfortunate brethren ?

There is the scientific field, the research field, inviting you to open new vistas of knowledge and to proclaim the intellectual superiority of the Tamil Nadu to the world. Why is then this hesitation ? The war ravaged West Germany which was in utter ruins is to-day smiling with its opulence. This was possible only because of her rapid industrial development.

Duty of the wealthy

If those who had acquired the knowledge come forward to co-operate with the Government to transform their perishable wealth into imperishable wealth will it not be an act of righteousness ? Would not the country transform itself into a wealthy nation ?



Poet Bharathi who sang loud, 'There shall be no caste, child', did not live to realise his cherished goal. We may continue that unfinished task.

"Tamil is the beautiful language of ours ;

It is the nectar which gives us joy",

sang Bharathi Dasan. That dream of the poet can be translated into reality. Tamil need not only be a poetical language. It can also be the medium of instruction. In this effort you must stand by the Government. Still there are some who oppose Tamil as medium of instruction. Only, if we overcome these obstacles we can say that we have understood the meaning of, "Tamils are a distinct race", as said by Namakkal Ramalingam Pillai.

Gandhi said

It would be appropriate if we remember what Mahatma Gandhi said in this regard:

"I must have the same attachment to my mother-tongue, in spite of its short-comings, as a child to its mother's milk. Only this can give me the life-giving milk. I firmly believe that the children of a nation who are taught in a language other than their own mother-tongue are committing intellectual suicide. It takes away all the creative powers of the children. It not only arrests their growth but also isolates them from the family atmosphere. Therefore, I consider that this kind of situation is the greatest tragedy to the nation. The medium of instruction should be changed at once and efforts should be taken to accord the rightful place to the Provincial languages at any cost. I shall accept the temporary chaos as far better than the total waste at the Higher Education level."

Anna's counsel

This is the advice of Mahatma Gandhi. There are people in Tamil Nadu who hold views different even from this. You may be aware of this even without my referring to it. Our beloved leader Anna who delivered the first convocation address of this University, alas, stands to-day as a statue in this ancient city of Madurai. He had stated clearly the need for making Tamil as the medium of instruction. "A language need not have any merit other than being

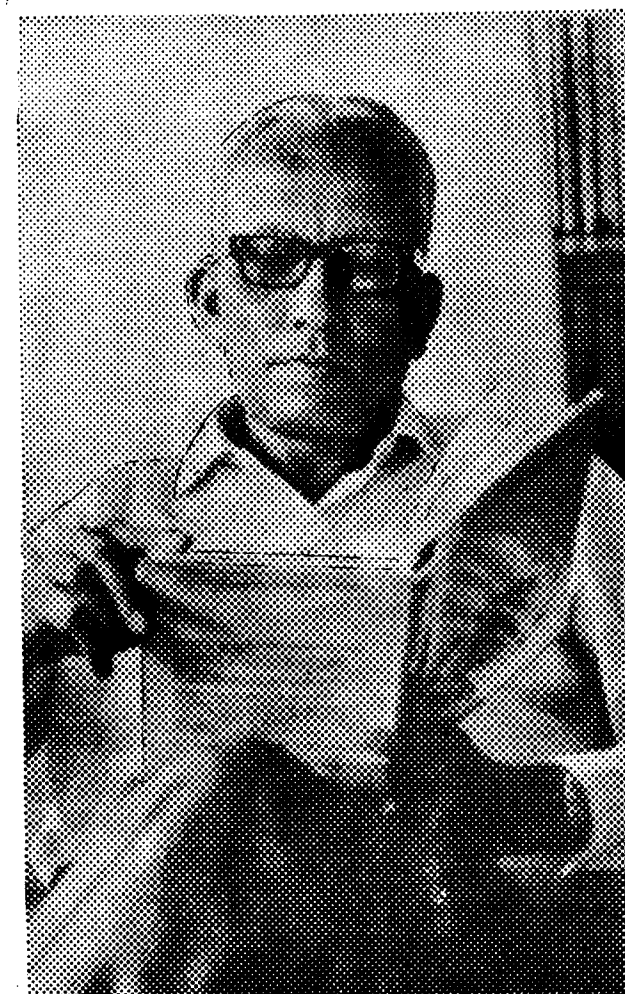
the mother-tongue," to become the medium of instruction. Having said this he explained the place of English in the following words : "Knowledge of English is essential for moving in unison with the world as also to take full advantage of the fund of knowledge available in that language and for communication between the various regions of India and between India and the world." As we cherish his loving memory, so also we shall not forget his noble counsel. I have seen how some of the countries I have visited are marching towards prosperity and fame by teaching the scientific, medical and other technical subjects in their own mother tongue. We must take the responsibility to develop Tamil, which is a treasure house of literature on both the esoteric and exoteric values of life, not merely as the medium of instruction but also as the vehicle of expression to unravel the secrets of the atom and of the lunar travels.

Graduates of the year, are all of you entering the employment arena ? There may be an Ingersoll, a Rousseau, a Voltaire, a Valluvar, a Ilango, a Kambar, a Gandhi, a Nehru and Anna among you. I see in you a galaxy of young men who will follow their path in discharging your duties. That is why, I am requesting you to dedicate your energies for the welfare of the nation. Of you, the rising sun, I am seeking light. Of you, the Moon, I am seeking coolness. Of you, the Jasmine, I am seeking fragrance. Of you, the southerly Breeze, I am seeking the lullaby. Of you, I am seeking the incense of Pothigai hills. My dear friends, I am seeking your efficient and whole-hearted co-operation.

Saplings of the soil

You are the saplings of the soil which was the domain of the Pandya King Nedunchezhian who proclaimed that ; "One should learn by meeting the needs of the teacher and rendering him all help when needed, without the least exasperation." The Tamil mother is seeking your succour and an arbour of coolness in the summer. Thou shalt not fail her. With that resolve, come quick as the sword out of the scabbard in the face of injustice. May you grow mighty as the sheltering tree.

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ICE APPLE Goes TO

A visitor from Nepal said, "I have been going round all the States in India. But only Tamil Nadu has given the proper place and practical direction to village industries".

He made this statement only after visiting the village industrial complex functioning at Kumarapapuram in Madhavaram, a suburb of Madras, under the aegis of the Palm Gur Federation.

Two Professors of U.S.S.R. had recently visited this industrial complex. Both of them were doing research in Gandhian economics. They were amazed to find that this village industries complex of the Palm Gur Federation provided all the material needed by them for their research.

Comprising a mere 4½ acre plot, this industrial complex produces many consumer articles, for both home and foreign consumption. The Palm Gur Mill is at one end of the complex.

The ancillary industries are housed around the mill. Let us take a look at the products manufactured in this complex.

We first start with the products made out of palm fibre and palm leaves. A variety of colourful articles catch your eye. Baskets, boxes, cots, chairs, bags, etc., all made of palm leaves and fibre, but in design and finish competing with the most stylish products of the plastics industry.

Looking at these articles, we bemoan the lack of publicity, as otherwise these articles would have been more popular in the market.

Toughest carpentry job

Next we visit the section where utility articles and vanity pieces from seasoned palm timber are manufactured. Generally such seasoned wood is formed inside a mature tree, and could be got at only after hacking away the thick outer layers encrusting it.

Thus the timber available is only of 6 to 9 inches thickness, and from this timber beautiful articles like walking sticks, table lamps, curios, etc., and cute vanity bags of milady are manufactured here. Tough palm timber is made up of fibrous veins and demands exacting labour for paring and polishing. To make these fancy articles from this wood hefty carpentry skill is required.

We next move on to the section where brushes and brooms are manufactured. Brushes required for cleansing houses, Railways, hospitals, workshops, etc., are

made here. The fibre to make brushes are exported to the United States. Tamil Nadu exports fibre worth Rs. 25 to 30 lakhs annually.

Nutritious palm candy

Tamil Nadu is traditionally famous for the manufacture of nutritious palm candy directly from palm neera. The technique of making candy has been improved today, resulting in the production of quality candy, wrapped in dandy foils. Ginger, cashewnut, milk and orange are used in the preparation of candy. Sweetmeats like laddu too will be prepared shortly. The quality of the sweets manufactured from palm candy is far superior to that of any other products in the market. The manufacture of sweets provides part-time employment for women



and children from the adjoining rural areas, which supplements the family income. Mostly the children are employed to wrap the candies in colour paper.

While large firms utilise huge machines for manufacturing sweets, this unit manufactures toffees with the help of small machines and a large number of part-time workers.

The section for preparing delicious drinks is close-by. Squashes, Sherbets, Jams, etc., are prepared from palm sugar. Tinned fruits are preserved in palm syrup.

Ingenius experiment

Experiments have been conducted to can ice-apple (Nungu). The preservative is palm syrup. The experiment has been success-

ful and the possibilities of exporting Nungu are under study. Two Americans who tasted the canned Nungu have assured that there will be a great demand for Nungu as a dessert dish in their country. With due publicity on a large scale the canned ice-apple (Nungu) will be an important foreign exchange earner in the future. Samples of this ice-apple have been sent to Germany in the interest of this trade. The canned ice-apple retains its freshness for a year. It is estimated that the Unit at Madhavaram alone will fetch Rs. 10,000 annually through the export of the ice-apple. The potentialities of tapping the State's nungu resources for this trade seem to be really enormous. The delicious taste of this ice-apple can be depended on for obtaining a global market.

The products of the Palm-Gur Federation are indicative of ingenuity and bold initiative, without undermining the philosophy of labour-intensive industries for village regeneration.



Palm toffees being rolled in wrapper.

Thanjavur ART PLATE

Thanjavur has the distinction of being the fountain head of Art and cultural tradition of the Tamils throughout the ages. It has been the capital of Cholas, the Nayaks and the Marathas. Each one of them have contributed for the enrichment of the culture of the Tamil people.

The tradition continues even today. Among the many art works of Thanjavur, the "Art Plate" has earned a name for itself because of its intricate workmanship. So much so the Art Plate itself is known as "The Thanjavur Art Plate". This is a peculiar art consisting of inlaying Silver on brass and opper—the type of which cannot be found any where else in India.

Images of various shapes and designs depicting scenes of Hindu mythology or the various avatars (incarnations) of Vishnu and other Hindu deities are engraved and inlaid with silver. They adorn the best houses in all cities like Madras, Bombay, Delhi and Calcutta and even in foreign countries. They are an eloquent testimony to the skill and artistry of our craftsmen. The Thanjavur Art Plate is the first choice among articles of presentation to visiting dignitaries.

In fashioning these plates, four craftsmen work as a team. One is an expert hard-metal-worker, the other is a skilled jewel maker;

the third an expert diamond setter and the fourth a good hand at delicate metal work. But whether the metal art work of Thanjavur is a refinement of or improvement upon the equally famous Bidri Plate is still uncertain. In Bindri plate the brass plate which forms the base, is cut with grooves and inlaid with decorated reliefs. The reliefs are on the same level as the surface of the plate. But in Thanjavur Plate, the reliefs are encrusted on the base plates which facilitate the use of three dimensional figures thereby enlarging the scope of intricate work. This is a distinct contribution made by the artisans of Thanjavur. Again in Bidri plates, the designs are only floral decorations in the pure Moslem tradition. In the Thanjavur Plate mythological figures are embossed amidst floral decorations. Thus the creative imagination of the local artisans appears to have been superimposed on the imported art and a product of great artistic value has been produced.

Though this ornamental work of engraving and embossing images and floral decorations was orginally confined to making of plates, other articles like cups, tumblers, bowls, caskets and jewel boxes came to be made subsequently. In the case of

these articles also, the base material is brass on which embossed reliefs made of copper and silver are encrusted. Of late, a few of the enterprising craftsmen who have sufficient capital have attempted new articles and have made ornamental ash-trays, mirror-stands, photo-stands and flask covers.

According to a Tamil saying, "the first, the best and the most perfect of instruments is the human hand". In the art plate of Thanjavur it is the hand of the artisan that fashions all the sophistry, that we see in it. No machine or power is employed in its making. To see a workman draw the details of the design, chisel out and refine the beautiful images and floral decorations thereby showing a high degree of skill, certainly enriches the aesthetic experience of an onlooker. The decorative art plate of Thanjavur which is a fine example of the artistic crafts of India, is worth preserving. ☉



With the increasing tempo of urbanisation the old world charm of natural atmosphere are slowly giving place to the monotonous town atmosphere. Hectic Town life which has become the daily routine for the urban people slowly eats away their health and energy. They can recoup their health and energy only in calm natural atmosphere away from the urban and industrial areas. There has been growing awareness in western countries about this need and they are developing even small places into major centres of holiday camps for rest and recreation.

Tamil Nadu abounds in such places. Courtallam is one such place which has the major attraction of cataracts. Since these falls are also reputed to possess medicinal properties capable of curing many an ailment the attraction becomes much more. In fact there are very few places

in the world which can be compared to the Courtallam. In the words of Caldwell it is the "finest fresh-water bathing place in the world".

The season

The season at Courtallam begins with the setting in of the South-west monsoon in June and extends right up to the end of September. Small hills of 2,000 to 3,000 feet in height surround Courtallam, which is situated on a low plain 550 feet above sea level. The annual rainfall is 58 inches and is ideal for those who would like a quiet holiday or a rest-cure. Courtallam lies between Tenkasi and Shenkotta on the Madras-Trivandrum route of the Southern Railway at about three miles from Shencottah, covered by a good motorable road. The place is less expensive than the larger and more sophisticated stations which the middle class of today find beyond their means. On this account alone it is well worth a visit.

Its pleasant climate, wealth of brilliant flowers, delicious fruits and tasty vegetables are an inducement which is beginning to draw visitors from abroad. Hills, dales, cataracts and rivulets everywhere make for enchanting scenic beauty and offer lovely picnic spots.

The greatest attraction of Courtallam is the water-falls Vada Aruvi. During the June to September season as also from November to January the period of North-East monsoon the water-falls Vada Aruvi—one of the most striking natural beauties, is in full flood. It is by this cascade, the Chitrar makes its final descent into the level country. To an observer from the foot, the river comes first into sight rushing headlong from the forest above over a precipice nearly half-way down, a deep trough in the face of the rock known as the (boiling sea) Pongumakadal breaks the fall. It is beneath the mass of water issuing from this basin and in the pool lying at the foot of the fall that all classes of people delight to bathe.

Greatest attraction

"What conduces much, to the restoration of the invalids at this signal abode is the little water-fall under which most of the Europeans daily bathe. This cataract is, by a division of a rock above, separate from the greater one and is not more than 13 or 14 feet high. The falling of the water, after the first shock is over, gives an indescribable feeling of pleasure. By its constant beating it quickens the circulation and produces a fine glow all over the body; and has, besides the further good effects of dispelling langour raising the spirits, exciting appetite, and promoting digestion in a superior degree to any other kind of bathing that we are acquainted with."

A big arch with iron railings has been provided to protect the bathers and nearly 200 people can take their shower at a time. Separate arrangements for bathing have been made for men and women. It is said that the water has curative and health giving properties as it takes its long course in the hills rich with herbs of medicinal value and minerals.

Other features

In addition to this main cataract, there are other falls such as Five Falls and Chitharuvi, resorted to by the selected and the glorious Honey

falls or Thenuruvi and Shenbagadevi Falls in the interior of the forest. Just a mile in the South from the main falls is the Tiger falls and still farther about three miles away is the old Courtallam falls which is an imposing cascade (front cover) to which too bathers resort.

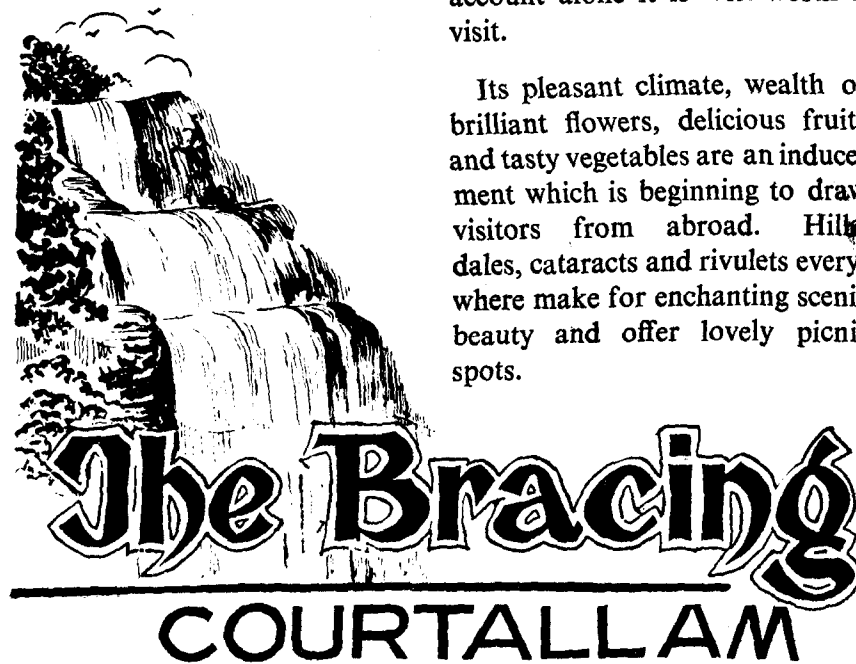
The Courtallam hills abounds in spices, honey, jack fruits, etc. There is a Model Orchard Centre at Courtallam. To the botanist and the sportsman the jungle around Courtallam is equally

delightful. As early as 1835 Courtallam neighbourhood was explored and actually 1,200 species of flowering plants were collected in an area of twenty square miles. It was calculated that at least 2,000 species were to be found and that the ferns were almost equal in number. Sambur and Ibex are fairly numerous. Little spotted deer are less common. Tiger make occasional descents. Wild pig, wild goat, wild buffaloes, jungle-fowl, and spur-fowl are plentiful.

A Holy place

A fine temple dedicated to Lord Courtallanathar and another temple known as "Chitra Sabha" are other attractions. In fact these Shrines were the Central feature of Courtallam till its value as a sanatorium was discovered. Saint Thirugnana Sambandar who lived in the 8th Century A.D. sang in praise of the Lord Courtallanathar, His Consort Kuzhalvai Ammai and the falls. Another of the four Saivite Saints has also sung in praise of the Lord here.

According to legend Lord Nataraja is said to have danced in five places in Tamil Nadu which are named "Sabhas". Courtallam is one among these holy places and is called "Chitra Sabha". The Lord Nataraja and his Consort Sivakami Ammai are painted here in their usual posture. The famous lyric "Kutrala Kuravanji" of Thirukuda Rasappa Kavirayar deals with the love of the Eternal Pair.





Such is the grandeur of Courtallam hills also known as Pothigai Malai and Agasthyar hills in ancient literature. It is one of the loveliest tourist centres of the South, sacred place for Hindus, a paradise for hunters and holiday makers and it also abounds in hill produce. No wonder then Bishop Caldwell should have described it as one of the World's best falls.

As it is becoming increasingly popular the Government of Tamil Nadu has taken steps for providing the necessary amenities for tourists. A Tourist Bungalow has been constructed at Courtallam. It is also under consideration to improve the centre further under an integrated plan. Other important boarding and lodging houses are Dalavai House and Travellers Bungalow. The Forest Rest House provides lodging facilities only.

O. P. R. PASSES AWAY

Thiru O. P. Ramaswamy he had eschewed politics since Reddiar, former Premier of the 1952. After retiring from public composite Madras State passed life he settled in Vadalur. away at Madras on Tuesday, the 25th July 1970.

Born in 1895 Thiru O.P. Ramaswamy Reddiar hailed from Vadalur in South Arcot District. He was a prominent Congress worker since 1926. He courted imprisonment four times during the freedom struggle. President of Tamil Nadu Congress Committee in 1938, Premier from 1947 to 1949, and Member of the Legislative Council from 1946 to 1969.

The news of his death was received by the Speaker of the Assembly Thiru K. Govindan by 1.15 p.m. and he announced the sad news and adjourned the House. The Legislative Council passed a condolence resolution moved by its Chairman Thiru C. P. Chitrarasu and adjourned for the day. The Chief Minister, and other Ministers placed wreaths on the body before it was taken to Vadalur.

