

Tamil Arasu

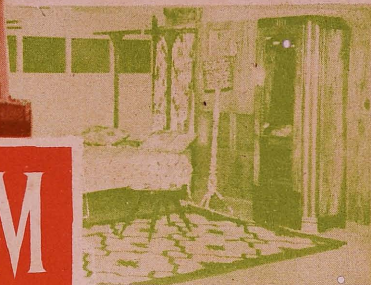


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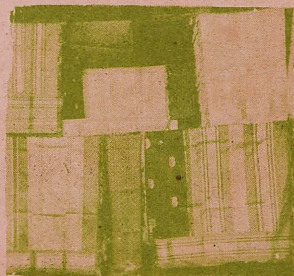
KURALAGAM

Madras-1.

KHADI-KRAFT

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MUTHU

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Tamil Arasu

ASIA-72

special issue.

Tamil Arasu

Vol. III

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CONTENTS

	PAGES
Asia '72 Fair Special Features	4-61
Chamundi of Charapallam	64-65
Agricultural Growth Strategy in Tamil Nadu in next decade.	71-74
Twelve Year Plan for health improvement	75-79
Tamil Nadu's Plan for White Revolution	81-82
Crash Scheme for Rural Employment	88-91

The Buddha's upraised palm in "abhayamudra" gesture of benediction has been chosen to bless the Third Asian International Trade Fair, aimed at promoting worldwide goodwill and co-operation through trade and commerce.

The graphic symbol, inspired by a 9th century A.D. stone carving, was chosen from among several hundred entries in an all-India competition.

Narendra Srivastava, a 41-year-old artist now working with fashion designer Pierre Cardin in Paris, created this functional symbol, imaginatively incorporating typography in it.

His use of the letters TAITF (Third Asian International Trade Fair) to form the integrated symbol of the palm and fingers made it the inevitable choice, acclaimed by one and all.

In True Trade Fair Traditions.

Within one month of opening, the Tamil Nadu Pavilion at the Third Asian International Trade Fair was able to declare that it had attracted more than 5 lakhs visitors. The sales counters have done business to the tune of Rs. 10 crores comprising both export orders and on-the-spot sales. The tribute paid by the staid North Indian daily "Statesman" to the effect that the Tamil Nadu Pavilion is one of only two State Pavilions which had projected their pavilions in True Trade Fair Traditions appears to be quite well borne out by these results.

Who did what?

The Tamil Nadu Pavilion, at Asia 72, was set up with the guidance of Thiru K. Diraviam as Chairman of the committee constituted for the purpose. In addition, the committee had availed the advice of Thiru P. Sabanayagam, Chief Secretary, who is familiar with the problems of our export trade. The execution of the work comprising the co-ordination of labours of all departments and of units of private sector was in the hands of Thiru R. Nagarajan, Director of Information and Public Relations.





Message from U.N. Secretary-General

I wish to express my appreciation to the Government of India for organising the Third Asian International Trade Test Fair at New Delhi, in 1972 as part of the celebrations of the Silver Jubilee of Indian Independence. On this auspicious occasion I am pleased to join the participations in the Fair in wishing the Government and people of India continued progress and development. The arrangements for this Fair, organised under the auspices of ESCAPE, are essentially carried out by the host country and reflect India's consistent support for the activities of the Commission.

The first two Asian International Trade Fairs held in Bangkok in 1966 and in Tehran in 1969 were not only successful in creating greater interest in commerce among countries within the ECAFE region but also with developing and industrialised countries outside of the region.

I am confident that the forth coming New Delhi Fair, the first to be held during the Second United Nations Development Decade, will be an outstanding success, stimulate trade both within and outside the region and assist in achieving the targets set for the Second United Nations Development Decade.

May I express the hope that the Third Asian International Trade Fair at New Delhi, would not only produce direct economic benefits to the participants but also result in closer relations among nations and thus bring about peace and prosperity in Asia and the rest of the world.

KURT WALDHEIM.



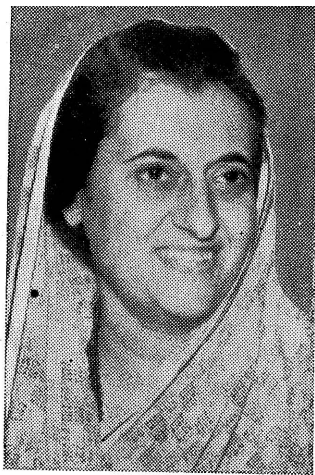
Message from the President

I welcome the Third Asian International Trade Fair as a splendid opportunity for representatives of many governments and businessmen to come together and explore the possibilities of enlarging trade contacts between their countries. There is much scope for expanding exports and imports among the countries belonging to the region covered by the United Nations Economic Commission for Asia and the Far East, between developing countries themselves and as between the developing countries and the developed countries of the world. Asia 72 provides a forum to increase knowledge of one another by mutual contacts.

I do hope that the planning and labour invested in making this Fair a success will lay a firm foundation for expansion of international trade.

V. V. GIRI.

The pictures at the bottom of page 3 depict the traditional welcome accorded to the Prime Minister when she visited Tamil Nadu Pavillion on 30-11-72, and the send off with presents. • The gifts were presented by Thiru R. Nagarajan, Director of Information & Public Relations.



• Message from Prime Minister of India

The countries of Asia are heirs to ancient civilization but most of them have regained independence only in the last three decades. It has been their endeavour to make up for lost time and to bring to their people the benefits of modern technology. We in India are striving to combine the new with the best of the old.

The Third Asian Trade Fair coincides with the 25th anniversary of our Independence. I hope that it will provide glimpses of the progress made by India and will also enable the people of India to now what is happening in the rest of Asia and the world.

My greetings and good wishes to all the international and national participants who have accepted the invitation of the Government of India. May the Fair prove an essay in understanding and co-operation.

INDIRA GANDHI.



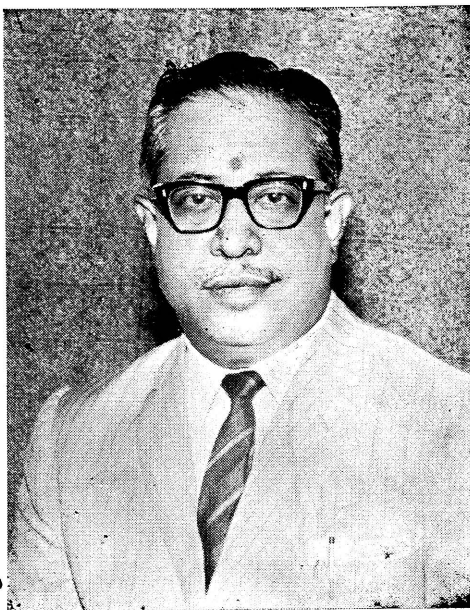
Warm Greetings From Dr. M. Karunanidhi

Tamil Nadu has always been a pace setter in every field of socio-economic activity. Our efforts to identify the areas of economic backwardness and industrial potential for pragmatic plan to maximise the production so as to improve the economy and change the entire economic base have largely succeeded and the State Planning Commission the first of its kind in the States, has taken up this task of furthering the industrial growth on a long-term basis.

Tamil Nadu has emerged a highly industrialised State, in spite of the inadequacy of industrial raw materials and this State occupies third place in the industrial map of India. Tamil Nadu accounts for one-fourth of total spindleage and nearly one-fourth of cement output in the country. We have not failed to diversify industrial production and ensure the proliferation of small as well as cottage industries that bring prosperity to the people in backward and economically vulnerable regions. Tamil Nadu is the cradle of arts and crafts which, handed down from generation, flourish, absorbing the modern techniques and designs. I hope the exhibits in Tamil Nadu Pavilion portray the progress of the industrial and traditional arts on modern lines and the cultural heritage of the Tamils.

Tamil Nadu Pavilion is a window of the industrial growth and development taking place in the State. May I extend warm greetings to all participating in Asian Fair 72 and visiting the Pavilions and the organizers of the Third International Asian Fair 72.

M. KARUNANIDHI.



Message from Chief Secretary, Tamil Nadu

The history of Tamil Nadu, which is inter-twined with mythology is indeed a romance. Sheltered as it is, in the far South, it has steadily progressed in all fields of human activity. In the field of art, science and literature, it has a rich heritage. In the recent decades, the agricultural economy has, as a result of implementation of the scientific methods, progressed by leaps and bounds. The sky line of many of the towns in Tamil Nadu is interspersed with chimneys and tall structures. Industries have developed and the products are known for their quality. Precision and skill is the hall mark of the artisan. Whether it be in the field of social welfare or industrial development, Tamil Nadu has played its part in the national economy. Visit to the Tamil Nadu Pavilion as a prelude to your visit to, and perhaps stay in, Tamil Nadu.

P. SABANAYAGAM.

NEHRU EXHIBITION COMES HOME

The touring exhibition "Nehru and New India", which first opened in New York in 1965 and later travelled to 13 other world capitals, is being brought to India, to be housed from now on in the Permanent Complex of Asia '72. It will be seen in India for the first time at the Third Asian International Trade Fair.

The original exhibit, as shown abroad, was conceived and put up within six months of Jawaharlal Nehru's death. The Fair authorities felt that in the subsequent years much had been added to it to give a proper appreciation of Jawaharlal Nehru statue in India's history and also a statesman of the world.

Since Asia '72 has been designed to complement the Silver Jubilee of India's independence, the Nehru Exhibition was considered a fitting tribute to the memory and legacy of the nation's Man of Destiny.

The Fair authorities decided to enlarge the scope of the original exhibition to include Indian culture, developmental activities and a more coherent presentation of various aspects of India's foreign policy to enable the exhibition to provide a total perspective on Nehru's contribution to national resurgence and also to the cause of world peace.

The content of the exhibition has been further enriched by addition to it tape-recordings of Nehru's voice and a large volume of documentary films footage available in India.

SPECIAL PAVILION.

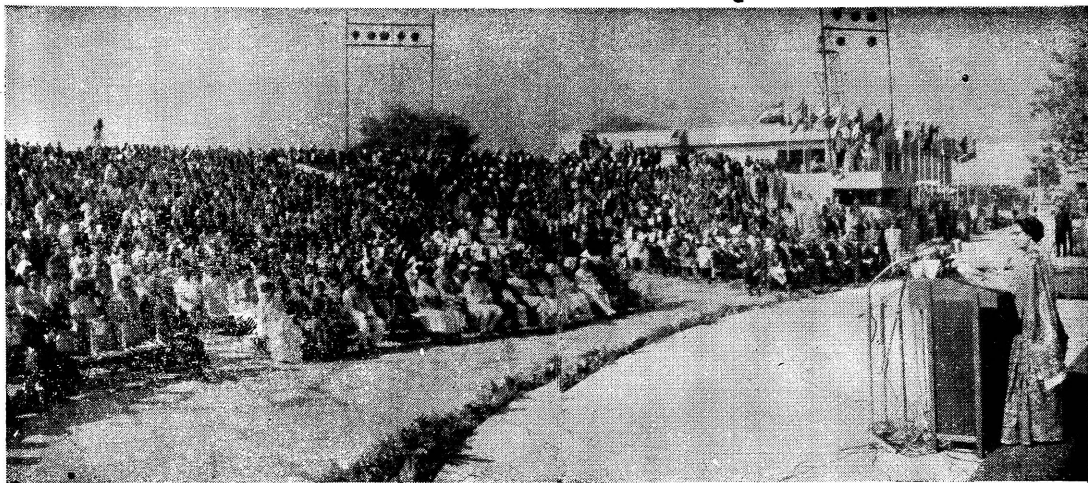
The exhibition is housed in a pavilion constructed specially for the purposes at an estimated expenditure of Rs. 10 lakhs and covering a floor area of 10,000 square feet. It is intended to provide for a large intake of visitors possibly around 40,000 a day.

The Nehru theme has been set in the frame of Indian design, but the idiom is modern. Attempts have been made to salvage as much documentary material as possible, pertaining especially to the freedom movement. The best available architectural and designing talent in the country was entrusted with the task of putting up the pavilion, the display and the reconstruction of the Nehru memorabilia.

When put up in New York, this exhibition attracted a daily crowd of 10,000 to 12,000 which was regarded as good by attendance rating experts there.

The Nehru exhibition will be on view permanently after the fair is over and is expected to be a major attraction of the Permanent Fair Complex.

Open to the public from November 3, it will have special significance since Nehru was born on November 14.



"Many concepts are sought to be tested with Asian blood and so the world largest continent, the home of more than half the mankind, the cradle of the world's most ancient culture, the fount of all the great religions, has not been able to shape itself free from exploitation." Must this continue, she asked.

The Prime Minister asked the Asian countries to cast aside their differences and unite. "Not in the spirit of pan-Asian chauvinism", but solely for the welfare of its people who had too long been harassed and impoverished and who desperately needed peace and a world in which to live in decency and honour.

Turning to trade, and economic growth, Mrs. Gandhi, referred to the prevailing conditions in international life and trade which did not favour the growth of trade for developing countries. While the volume and value of world trade had considerably expanded in the last two decades the share of the developing countries had steadily diminished.

TRADE SHARE

Urgent efforts were necessary to arrest this trend "otherwise the share which is already as low as 17 per cent might further decline".

Mrs. Gandhi said the importance of factors such as the present one, lay in bringing together many countries and enable each one to appreciate the progress that had been made in different fields in the other countries and draw attention towards mutual benefits that could be derived from them.

Mrs. Gandhi said even today the affluence of many nations was built on materials produced in and by the poorer nations, but the commerce was one-sided. It was hoped that aid would help to bridge this yawning gap, but aid which was supposed to be impelled by idealism had come to be too closely identified with the short-term policy objectives of the donor Governments.

It seemed as if trade, which was regarded as more mundane and practical, was more likely to promote. International Co-operation Trade implied mutual need and mutual benefit. This nexus,

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Mrs. Gandhi said, should prompt the two or more sides concerned to take a longer view of the development of natural and human resources the various parts of the world for the good of the human community as a whole.

Mrs. Gandhi said though poverty had shadowed the Indian people for centuries, the burden had somewhat been eased, and "we are now able to give our children a somewhat better chance—longer life and better health, wider opportunities to learn and to do and a larger share of hope". Many new industries and technologies had now been planted on the Indian soil. While until the other day India was not producing any machinery or basic industrial goods. India now had the ability to design and build our own aircraft, our own steel mills and our own atomic power houses".

The Prime Minister, however made it clear that when so many millions were still to be provided work, "we want machinery not to supplant but to supplement the human hand" and to harness all resources natural as well as human. India did not want the type of development which would reproduce the harmful environmental and psychological effects of the classical industrial revolution for the simple reason that "we do not wish to replace one kind of bondage with another".

India Mrs. Gandhi said, did not grudge the affluence of the advanced regions of the world. Unfortunately, progress followed a remorseless logic those who had were in a position to get more pushing aside those who were most in need. Recently, she was told that even in agriculture, 80 per cent of all increase in production had occurred in the advanced countries.

After stating that India did not wish to compete but wanted to work not merely for its own salvation but for a world where all could live in harmony. Mrs. Gandhi concluded her speech in the following words: "Nations must co-operate, the advanced with the backward, the rich with the poor, the big with the small, the Asian with the European, the American, the African, the Australian. If this earth, our only home, is to become not a plundered planet but one of peace and plenty."

Tamil Nadu Progressive Partner of Industrial Activities

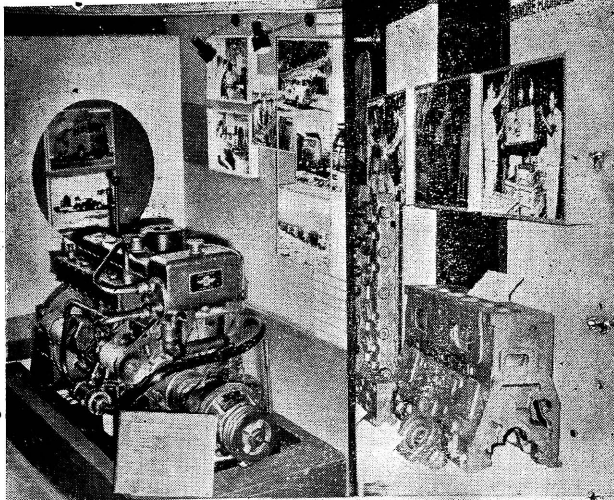
By **Thiru S. Madhavan**,
Minister for Industries, Tamil Nadu.

The classical economic concept that proximity to areas of industrial materials is an important factor influencing the rise of new industries has become obsolete in the context of modern technological progress in transportation and communication system. This is amply exemplified by the growth and diversification of basic as also ancillary industries in Tamil Nadu where, as a result of planned economic endeavour and political stability, a strong industrial base has been raised in the recent past. Giant industrial projects involving huge investments have been established in public and private sectors. The trained technical skill and disciplined labour force have also considerably contributed to accelerating the industrialisation process.

The pavilion of Tamil Nadu at the Third Asian International Trade Fair portrays, in depth and diversity the emergence of Tamil Nadu as a progressive partner of the rapid industrial activity that the country is witnessing today.

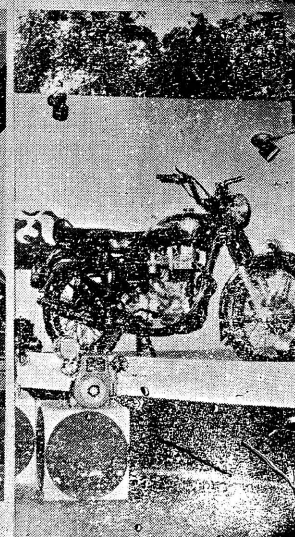
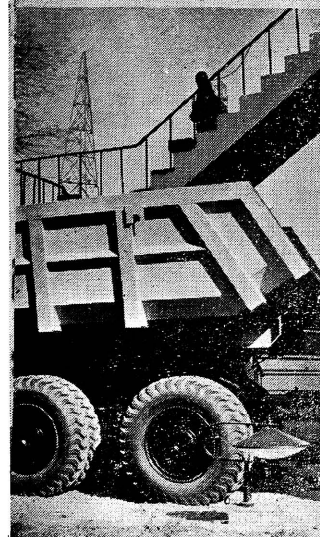
The enterprising industrialists of Tamil Nadu are provided with all facilities by the State financial institutions, apart from the infrastructural facility built up over the years. Twenty-five private industrial concerns are participating in our pavilion. Many of them have the privilege of having a reputable export trade in engineering and sophisticated goods. True to their tradition, Tamil Nadu industries adhere to strict quality control specification of customers. I am glad that transmission towers made in Tamil Nadu carry power in some of the developing nations and silk and handloom fabrics, representing the rich traditions of the people, receive patronage from art-lovers all over the world. We are happy to participate in this Trade Fair which has opened the doors of friendship, co-operation and partnership for all developing nations of Asia.

Tamil Nadu Pavilion in Asia 72' extends welcome to all.



THE SMALL BIG CAR

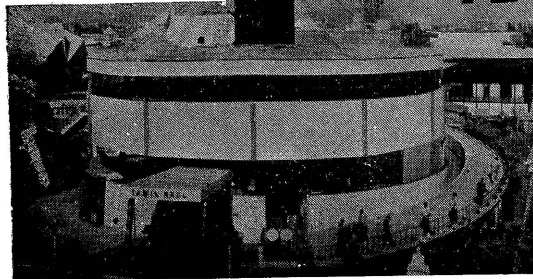
IMPROVED REAR AXLE
WITH COIL SPRINGS



top.—Marine engines and forgings made by Ashok Leyland.
bottom.—Dumper and Motor-Cycles made by Madras industries.

THE TAMIL NADU PAVILION.

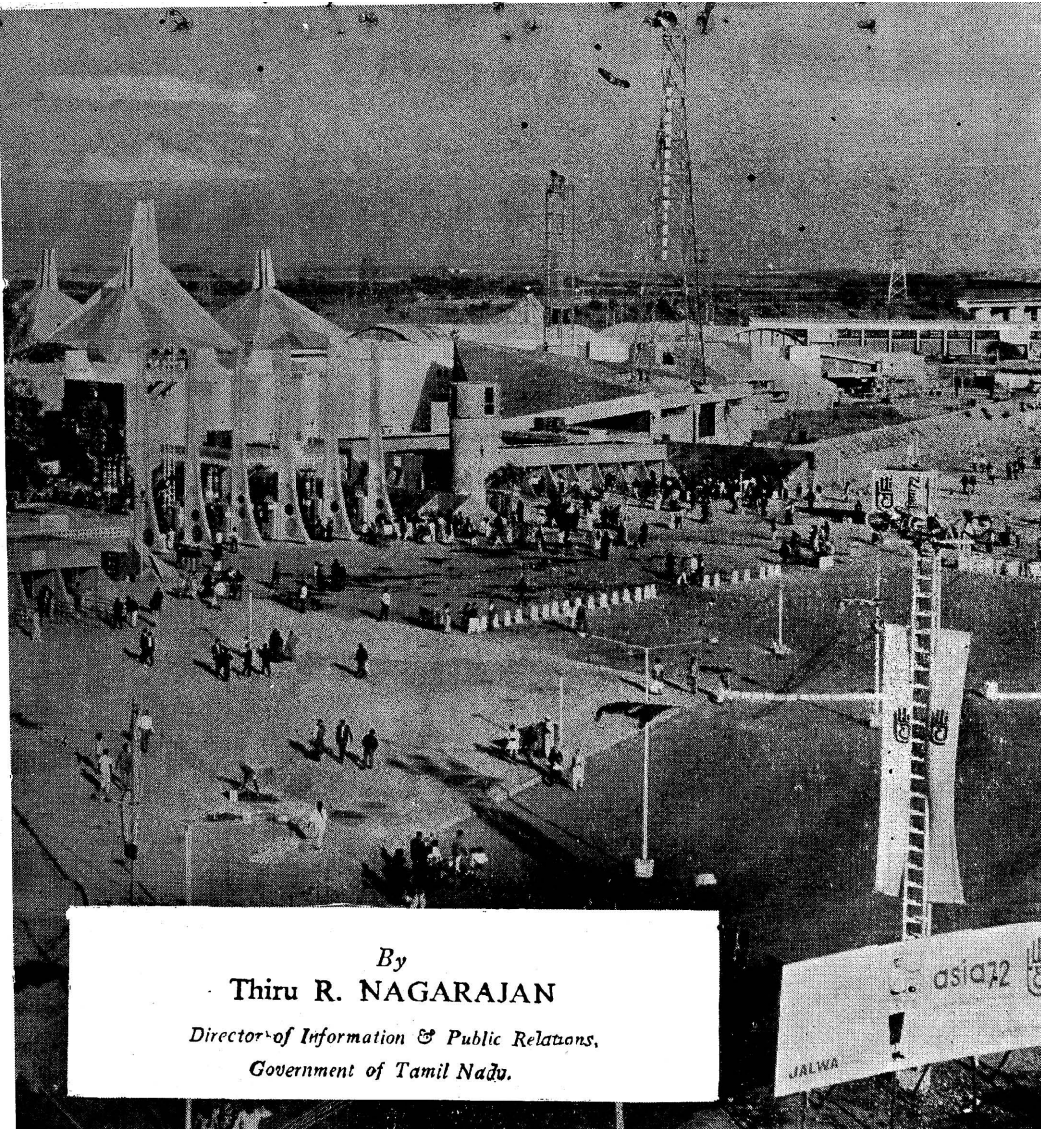
IN asia72



The Third Asian International Trade Fair in New Delhi has given an opportunity to India to place before the international community the progress achieved in the 25 years of freedom and also stress its emergence as an industrialised country with a vast trade potential. Tamil Nadu is an important constituent in this mosaic of exposition and the Government has made every endeavour through the display in the pavilion, to acquaint the visitor with the rapid strides being made in the industry both in the Public and Private sectors. The display has a greater accent on industries and goods with a distinct export potential in keeping with the atmosphere of a trade Fair. Nevertheless, it is relieved by a skillful display of panels of tourist interest set against the background of the great cultural heritage of Tamil Nadu.

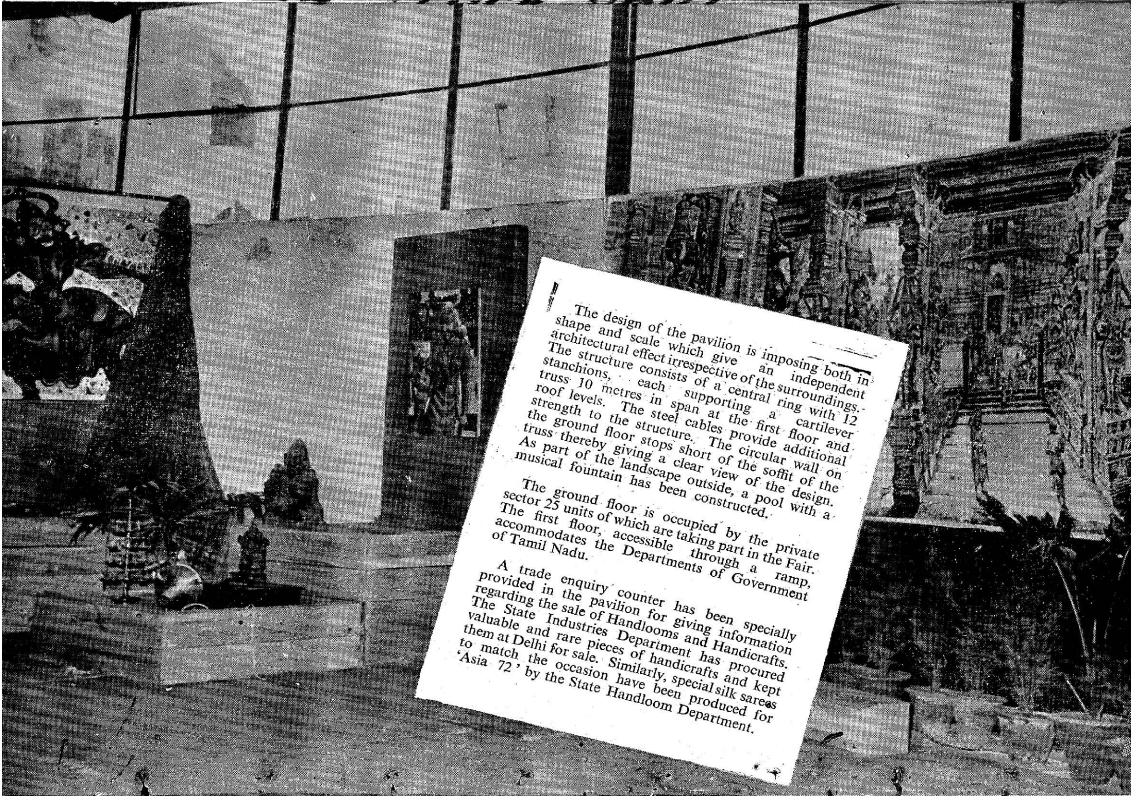
The pavilion has been designed by the Government Architect and executed by the State P.W.D. M/S. Virender Khanna & Associates are the consultants for interior decoration.

Picture on this page is a general view of the Asia Fair Grounds. Picture on page 10 is of the interior of the Tamil Nadu Pavilion. Picture on page 11 is the musical fountain in front of the Tamil Nadu Pavilion erected by the State Electricity Board.



By
Thiru R. NAGARAJAN

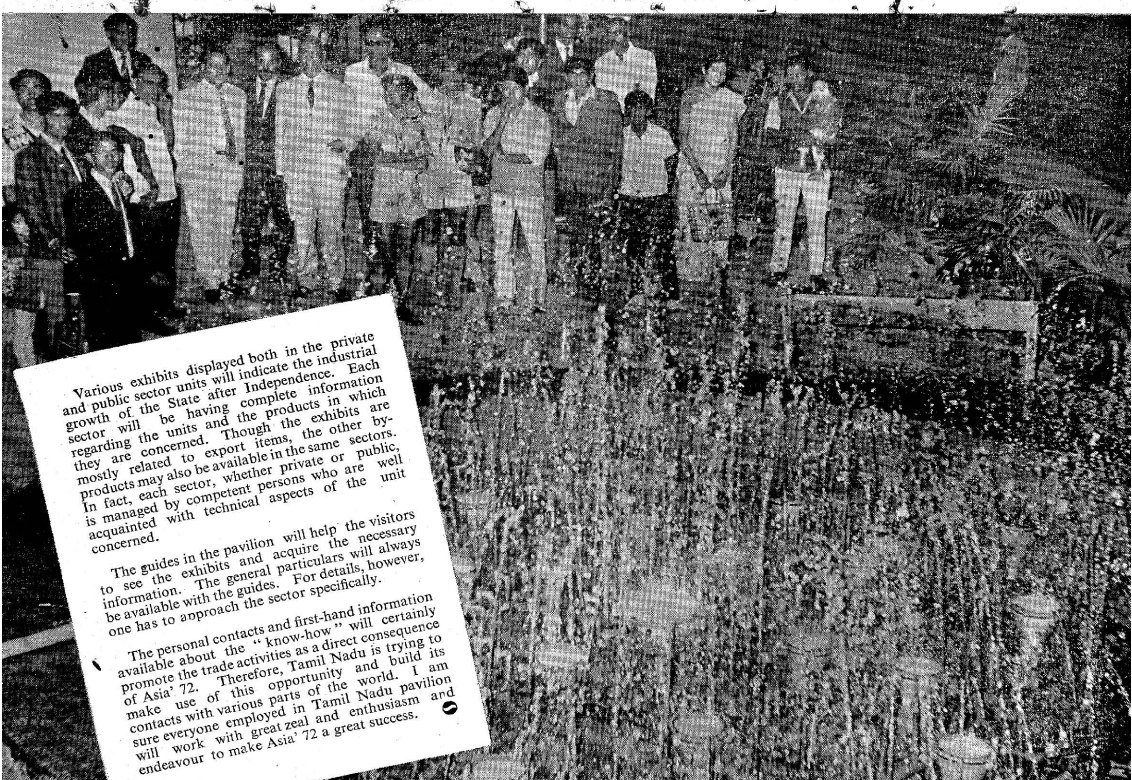
*Director of Information & Public Relations,
Government of Tamil Nadu.*



The design of the pavilion is imposing both in shape and scale which give an independent architectural effect irrespective of the surroundings. The structure consists of a central ring with 12 stanchions, each supporting a cartilever truss 10 metres in span at the first floor and roof levels. The steel cables provide additional strength to the structure. The circular wall on the ground floor stops short of the soffit of the truss thereby giving a clear view of the design. As part of the landscape outside, a pool with a musical fountain has been constructed.

The ground floor is occupied by the private sector 25 units of which are taking part in the Fair. The first floor, accessible through a ramp, accommodates the Departments of Government of Tamil Nadu.

A trade enquiry counter has been specially provided in the pavilion for giving information regarding the sale of Handlooms and Handicrafts. The State Industries Department has procured valuable and rare pieces of handicrafts and kept them at Delhi for sale. Similarly, special silk saris to match the occasion have been produced for 'Asia 72' by the State Handloom Department.



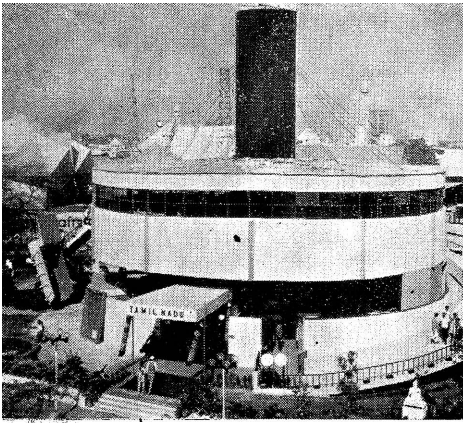
Various exhibits displayed both in the private and public sector units will indicate the industrial growth of the State after Independence. Each sector will be having complete information regarding the units and the products in which they are concerned. Though the exhibits are mostly related to export items, the other products may also be available in the same sectors. In fact, each sector, whether private or public, is managed by competent persons who are well acquainted with technical aspects of the unit concerned.

The guides in the pavilion will help the visitors to see the exhibits and acquire the necessary information. The general particulars will always be available with the guides. For details, however, one has to approach the sector specifically.

The personal contacts and first-hand information available about the "know-how" will certainly promote the trade activities as a direct consequence of Asia '72. Therefore, Tamil Nadu is trying to make use of this opportunity and build its contacts with various parts of the world. I am sure everyone employed in Tamil Nadu pavilion will work with great zeal and enthusiasm and endeavour to make Asia '72 a great success.

WHAT IS WHAT IN TAMIL NADU PAVILION

Built $2\frac{1}{2}$ feet above ground level, the Tamil Nadu Pavilion was high and dry throughout the worst rains, giving well protected floor space of 474 sq. mts. in ground floor and 433 sq. mts. in first floor.



DETROIT AND BIRMINGHAM HAVE COME TO MADRAS ?

The groundfloor of the Pavilion which was made available for the private sector units bore out in ample measure the sobriquet often applied to Madras that it is becoming the "Detroit" of India. A wide range of products from Motor Cycles and passenger cars to trucks and ancillaries, like engines, valves, pistons, carburettors, wheels, rims, fuel pumps, shock absorbers, etc. were displayed by Messrs. Ashok Leyland, Ennore Foundaries, Standard Motors and Enfield (India) Ltd., while different types of bicycles, cycle parts, dynamo and lights produced by Messrs. Tube Investments were on display to lend force to the claim that Birmingham has come to Ambattur, a suburb of Madras.

Automotive equipmetns and cinema carbons manufactured by Messrs. Best and Co., various ranges of P.V.C. Rigid pipes produced by Messrs. Wavin India Company and Madras Chemicals and Plastics Co. Heavy Duty Belts abrasives, refractories, etc., manufactured by Messrs. Carborandum Universal ; various types of Industrial springs produced and displayed by Messrs. Southern Automatic Industries; Electronic components and car radios produced by Messrs. M. R. Electronics. The high voltage isolators manufactured by Messrs. Hi-Velm.

Special Forgings like hammer, pick-axes, etc., produced by Messrs. Madras Industrial Forgings ; the Flour grinding machines manufactured by Sri Lakshmi Industries ; Ceramic wares and sanitary wares manufactured by Messrs. E.I.D. Parry Co., were also displayed. Connoisseurs have not yet been able to see any difference between these wares and those made abroad.



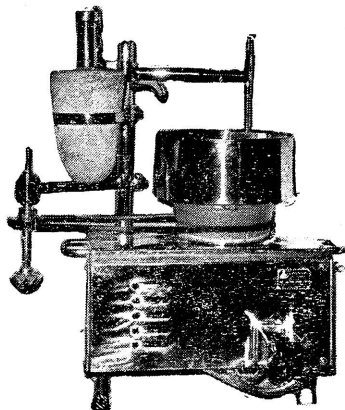
Top : A view of Tamil Nadu Pavilion.

Middle : The Prime Minister in the Pavilion.

Bottom : Thiru P. Sabanayagam, Chief Secretary and Thiru K. Diraviam, Secretary, Education Department, admiring an exhibit in the Tamil Nadu, Pavilion,

The State is rich in mineral resources and the map on mineral resources placed in this section presents a complete picture about the mineral wealth of this part of the country. The products and by-products are also explained in this section. The fertilisers produced by Messrs. Madras Fertilisers, Chemical and Dyes manufactured by Messrs. Dharangadara Co., and Messrs. Mettur Chemicals, products of magnesite produced by Messrs. Salem Magnesite, drugs produced by Messrs. Amruthanjan Ltd., and the raw and cultured synthetic gems manufactured by Messrs. Indo-Swiss Synthetic gem factors are exhibited.

Above all our world-famous leather goods are on display and attracted renowned visitors. All shades of colours are being imparted to leather of excellent finish and these are the cynosure of all attention in the stall.



Special Saree Designs.

With months of preparation behind it, the Co-optex (i.e., The Tamil Nadu Handloom Weaver's Co-operative Society) had released special varieties of silk sarees woven at the famous silk centre, Kancheepuram for sale at the fair. Special gold lace bridal sarees and dance-sarees with vivid contrasting colours were also brought forth in plenty. Incidentally the art of weaving borders in contrasting colours into sarees so essential for Bharatanatyam performers, has not so far been mastered in any place other than Kancheepuram. These sarees are named "Suman-gali" and "Ponni" (Bridal Sarees), while the dance sarees are named "Urvashi" and "Madhavi."

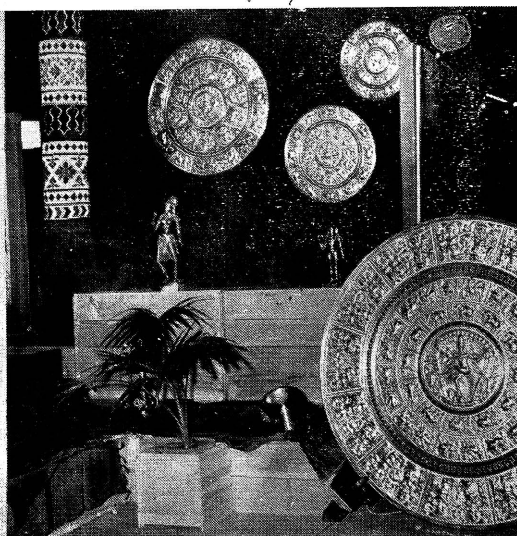
The real Tamil Nadu was projected.

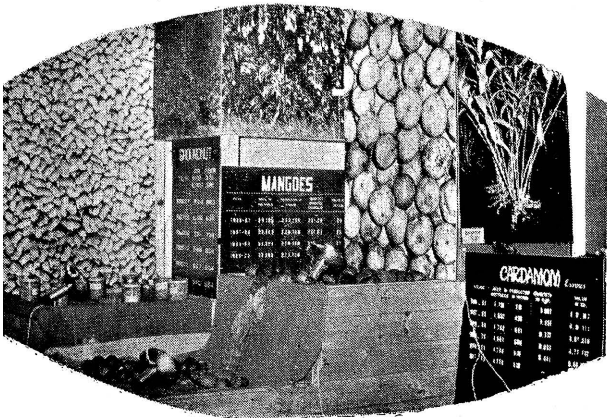
The whole world knows that the vivid contrasting colours of Kancheepuram sarees is an art peculiar to the Kancheepuram weavers. Visitors to the Tamil Nadu Stall in Asia, 72 Fair were delighted to see a Kancheepuram weaver working on his loom right in front of them. Some foreigners went so far as to give their own design and had him weave their cloth in that design. Many had such unique souvenirs. They sold like hot cakes.

In another corner of the Tamil Nadu Pavilion an artist in pith models was turning out exquisite flowers in pith in lovely colours and these also turned out to be hot favourites with visitors.

Similarly the art of wood carving for temple cars is still preserved only in Tamil Nadu. A wood carver from Kanyakumari was also busily working in Tamil Nadu pavilion.

These touches of projecting the real Tamil Nadu won the hearts of many visitors.





TEXTTOOLS BREAKS NEW GROUND

Textool is a self-generating, multipurpose Engineering Complex, with a broad base and an assured market. It is now managed by Government of Tamil Nadu.

It has built sophisticated items like Arc Furnaces and Bar Turning Machine. The volume of the diversification activity both in range and quality is being increased substantially, making the Company less dependent on the fluctuating fortunes of the Textile Industry.

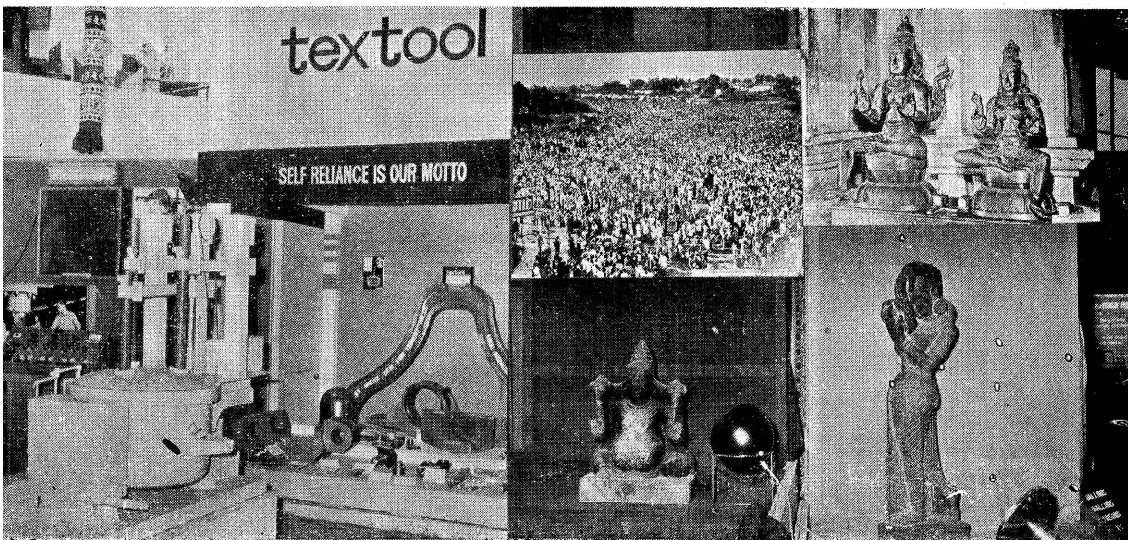
The Flying Fruits.

The accent of the Agriculture Department in Tamil Nadu Pavilion was on cashew and tea as also coffee and table fruits, like banana and mangoes, while the fisheries department concentrated on frozen prawns, canned fish and chank and shell products all of which have huge export potential. The Forest Department made use of two trees in the Pavilion to show off our bird-species, including the pea-cock, (all stuffed and kept in such a way as to look natural). Mounted elephant tusks and forest-produce of export value were also on show. Of particular interest was a huge tusk measuring 5 feet obtained from Mudumalai, said to be one of the largest on record. The table fruits on show were replenished once in three days by air freighted consignments.

TANSI scans all skies and spans many oceans.

The industrial and handicraft products of the State Government took considerable space in the pavilion; some of the pieces like Tanjore Art Plates, Bronze icons, stone sculptures, Art pottery, Temple car, pith models, etc., were exhibited. Among these was the ratha made of paddy and which attracted wide attention for sheer patience in workmanship.

Tamil Nadu Small Industries Corporation, a Government owned Corporation in this State, produces a wide range of electrical goods and agro-based engineering products. Models of some of their products like transmission towers, H.T. & L.T. insulators, Transmission tubes, fuse units and agricultural implements were seen in this section. A model of the micro-wave towers made by TANSI for Railways and to fulfil overseas orders were on display to establish the claim that TANSI scans many skies and spans many oceans.



V.I.P's. COMMENT ON TAMIL NADU PAVILION—IN ASIA '72

- Thiru BAROVAH "Tamil Nadu Pavilion is illustrative of the great traditional culture of the Tamils as well as the impressive industrial growth of the State in recent times."
- Thiru NITI RAJ SINGH "We from the North can see Hindu culture at its best in the South. Tamil Nadu gives us many things. The artisans are superb."
- Thiru R. NATARAJAN, I.A.S., "A delectable dishing up of all that is best in Tamil Nadu from Handlooms and Handicrafts to textools and textiles."
- Thiru K. NAGARAJAN "The display of "Ratham" by using paddy is very impressive. The exhibits of 'Rock Fort' and 'Thanjavur Temple' are very appealing and shows the workmanship of that great Tamil Nadu artist silpy. I should also mention about correct and explanatory guidance by your girl guides at this Tamil Nadu Pavilion."
- Thiru JAMES A TOTH BERKLEAN "Your Pavilion and its helpful staff has inspired me to visit your State. I enjoyed your exhibition of crafts the best in Asia '72. More Thanks."
- Thiru MARIUM IRWINN "An excellent and very interesting Pavilion. it has made me even more anxious to visit to Tamil Nadu."
- Thiru M. V. DESAI "Traditional and innovative artistic and functional to see all this together in one place is a pleasure one will remember,"
- Thiru A. C. BANERJEE "One of the best Pavilion I have seen. It is neat and trim and gives a panoramic view of the exhibits. The first floor displaying handicrafts is fascinating. The Pavilion as a whole is an index of Tamil Nadu's economic growth."

The Governor of Bihar.

Lt. Governor of Pondicherry.



Introducing 'THE SMALL BIG CAR'

STANDARD GAZEL

with more space,
more beauty.

Standard Motor Products of India Limited have been working on the principle of offering small cars that are as roomy and comfortable as big ones. Seems impossible? Let us demonstrate it to you:

HERE!

Standard Motors are proud to present their new model — STANDARD GAZEL — the small big car. It is a new concept. See what the GAZEL has for you:

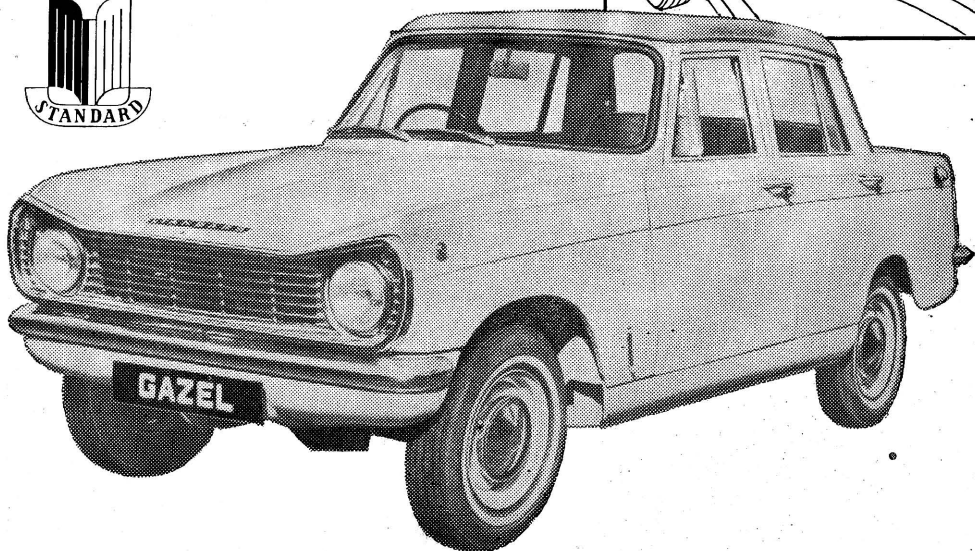
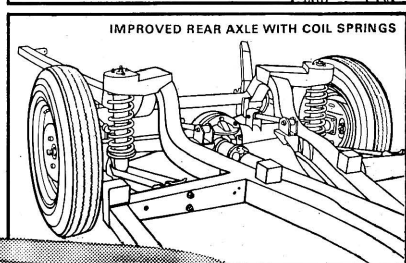
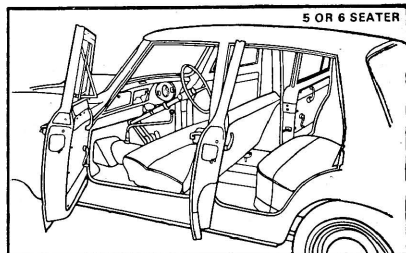
MORE SEATING CAPACITY: With full bench seat in front as well as large space at the back — to seat 5 or 6 persons.

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THE FLYING FIVE STARS

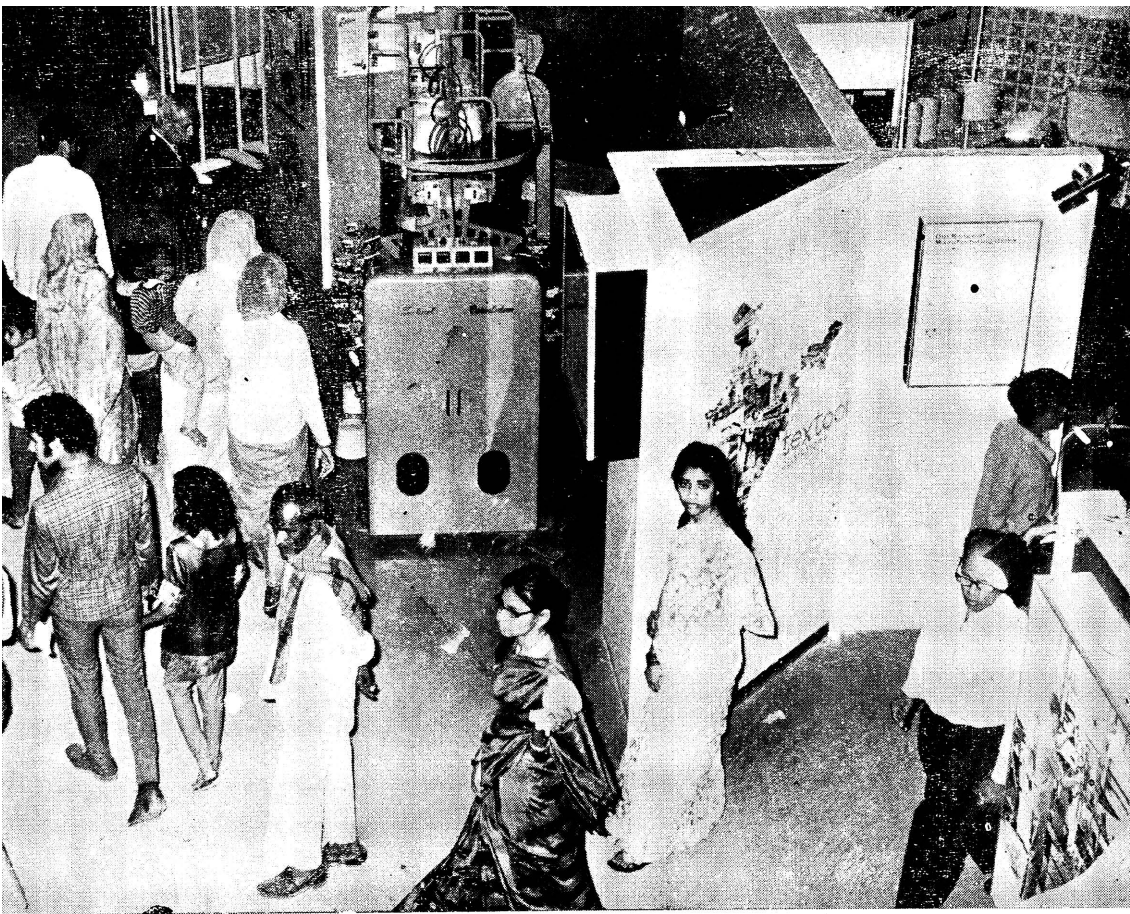
Madras contributed five 'stars' to a documentary entitled "India 72" which is a star attraction at the Theme Pavilion of Asia 72 Trade Fair in New Delhi. These five stars were Chandru (hero) age 5, Saroja age 6, and Chittibabu age 8 from Seva Samajam Orphanage, Adyar and Gopalakrishnan age 5, and Latha age 8, from services Home, Tambaram (a home for deserted wives run by Women's Welfare Department, Government of Tamil Nadu).

Quite in keeping with their "Star" status these five children along with their wardens were flown to Delhi and back with six days' stay in Delhi in between. The entire expenses were borne by the producers of the film. The Art Centrum of Prague, Czechoslovakia. They were also interviewed by the All-India Radio, which is pictured alongside.

Chandru, the boy hero of the film the forlorn and forsaken mood of India at the dawn of Independence, 25 years ago. Prof. Jaroslav Frick, an Internationally known Scenographer leader of the Art Centrum in collaboration with the National Institute of Design, Ahmedabad, produced this audio-visual extravaganza of India's past, present and future. It will be a permanent tourist attraction in Delhi, as it embodies some of the latest techniques of projection, the world has so far seen.

The Tamil Nadu Films Division has filmed Asia, 72 in colour and will be released shortly with commentaries by Thiru R. Nagarajan, Director of Information and Public Relations.





Inside Tamil Nadu Pavilion.

FACTS ABOUT ASIA-72

Asia-72 is the biggest show ever held in India.

About 60 million man-hours of unskilled labour have gone into the making of the Fair.

About 800,000 bags of cement have been used in construction work. This is adequate to build two four-lane bridges across the Yamuna.

About 100,000 tons of sand and 200,000 tons of slag have been used for the various structures and 20,000 tons of steel.

About 600,000 wooden planks have been used for shuttering. The planks are sufficient for laying a three-foot-wide wood-paved path from Delhi to Jaipur, 160 miles away. About 600,000 wooden

slabs have been used. Placed lengthwise, they are sufficient for erecting a railing from Delhi to Madras.

About 50 million bricks have been used for the construction work. As many as 300 trucks were utilised for clearing debris, and each truck made ten trips a day. About 39,000 truck loads of soil had been removed by the time the Fair was inaugurated.

About 10 kilometres of roads have been laid out in the Fair grounds. Some 1.5 million cubic feet of stone metal have been used for road surfaces.

Stormwater drains cover a total length of 12 km.

Underground electric cable structuring of 60 km. has been laid. The Delhi Electric Supply Undertaking will supply 10 mw of power for use at the Fair. There are about 100,000 light points.

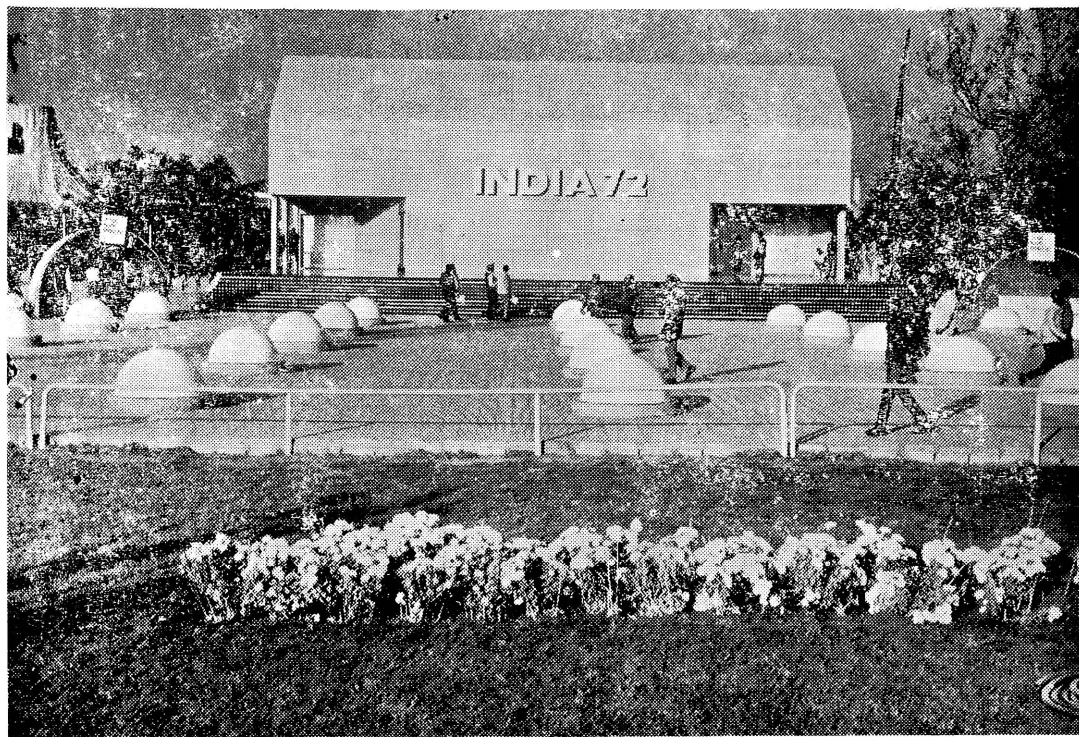
Pipes for filtered water have been laid underground along a stretch of 20 km. The Fair will consume 600,000 gallons of water daily.

About 2,000 trees and 6,000 shrubs have been planted in the Fair grounds. Some 100,000 potted plants have been used for decoration.

The lake covers an area of 130,000 sq. ft. It will store running filtered water.

About 600 telephone lines have been provided at the Fair.

About Rs. 580 million has been spent on the development of the Fair ground and on construction work. This represents only a slice of the total investment made by India and foreign countries. The Fair authorities have to recover Rs. 35 million by way of rent from the participants.



INDIA COMES TO LIFE ON SCREEN

The theme pavilion, conceived as homage to the Silver Jubilee of Indian Independence, will provide a computerised, spectacle through 33,000 feet of film and 30,000 slides. In about 30 minutes it will enable spectators to make a discovery of Independent India.

Its deep semi-circular cinemascope screens are impressive. They are 60 feet wide and 26 feet high. Two cinemascope projectors and 64 slide projectors are operated by just one technician with the help of push-buttons.

Two hidden computers synchronise the audio-visual elements of the grand show. The timing is perfect. Two of the tracks on the four track tape provide sound and music, while the other two tracks act as guidelines for the computers to achieve split-second synchronisation.

The programmed projection technique does not use the conventional cinema reels. Instead, film loops are being used to ensure that

the electronic master brain of the projection system keeps on running the films automatically once it is ordered to go ahead.

The projections have been programmed both in English and Hindi each language programme to run on alternate weeks.

Thus, the very latest achievements in electronics and visual arts have been blended to provide a kaleidoscopic presentation of the Indian saga from the remotest past to the present day.

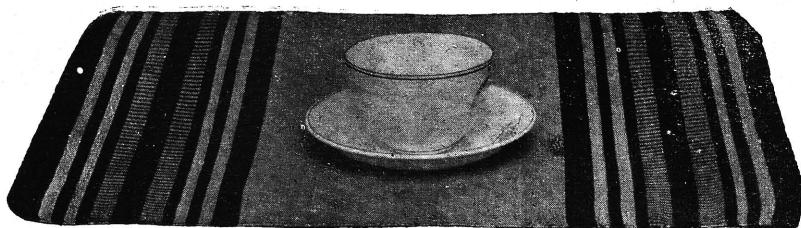
This visual presentation telescopes in a unique manner the glory that is India—the landscape, the people and their culture, their transition through centuries, their achievements and their aspirations. It has been produced by the National Institute of Design, Ahmedabad, and Czech experts from Art Centrum of Prague led by Prof. Jaroslav Fric.

The impact of the Audio-visual presentation, including movie projection, and fast changing audio slide projection, is tremendous. The

spectators are exposed to Indian life in full movement and colour.

The technique of 'multiple projection' is being used for the first time in India. Spectators see a mass of images in rapid succession on the giant screen and the movie simultaneously. The overall effect is that of an objective image of the totality of the Indian experience.

From the cinematic point of view the feature film projection at the pavilion is a triumph of technique and should be of great interest to all connected with the film industry in the country. More than 80,000 feet of film was shot over locations ranging from Kashmir to Kanyakumari by the Indo-Czech team. Film shooting itself was multi-dimensional, with the aim of giving a projection panorama of 180 degrees, much wider than the broad vision of cinemascope projection. Two cinemascope cameras, operating from the same shaft at a distance of 60 feet, were used to pan high-powered camera eyes simultaneously on landscapes and human being to "capture" them alive.



WHY ASIA FAIR

We in Asia share age-old bonds of religion, culture and commerce. Dark days of colonial rule had cast their shadow on these bonds of kinship and obscured them but the dawn of independence, during the last few decades, has cleared the shadows. A new Asia is emerging, a resurgent Asia that is no longer contented with its heritage of mass poverty and ignorance.

In the whole of Asia today there is a restlessness to build a new edifice on the ravages of time, to construct roads and highways, to set up industries, to modernise agriculture and to drive poverty out of the borders of this continent. It is no easy task. We have to strive long and hard to compress into decades the progress made in centuries.

The Asian Trade Fair may provide some stray glimpses of this striving, this ceaseless effort to rebuild Asia which was once the proud centre of many a civilisation. Asia 1972, which is the Third Trade Fair of its kind sponsored by ECAFE, will thus serve as a show-window of the progress made during the past two or three decades in our region, where half of humanity lives.

Only a token.

What is exhibited at the Fair is a token of our earnestness to march forward, undeterred by the fear that the goal is far away and that we have miles to go before we banish poverty. This poverty is our common lot and therefore poses a common challenge to all of us to unite and pull together. Poverty has thus become a new forge to reinforce the old links of religion, culture and commerce.

As our leader Srimathi Indira Gandhi has pointed out, the developing countries, not only of Asia but also of Africa and Latin America, have to put their heads together and work unitedly to carry forward their interests. The world

economy run by the advanced countries does not favour the developing world.

There is already an increased sense of Asian identity. It has grown apace during the last quarter century, which marks a new phase in the history of our region. But we have to come much closer so that we may grow faster.

Peace through trade.

During these 25 years we tried to persuade the developed countries of the world, at important United Nations forums like UNCTAD and also bilaterally, to take greater interest in the developing world and to help it grow faster. We sought their assistance not only on humanitarian grounds but also because we are convinced that there cannot be permanent peace in the world with more than half of humanity living in poverty and ignorance.

We must gratefully acknowledge that we received assistance in the form of large credits and some grants and technological knowhow. After hard bargaining for years, we were also able to persuade the developed countries to charge lower tariffs for some of our exports. We have been trying hard to persuade the richer countries to give as better terms for the commodities that we sell them. Our efforts to forge new international commodity agreements have met with very little success.

In accordance with the international strategy laid down by the UN, the richer countries of the world had voluntarily assumed certain responsibilities to help the developing nations grow faster. It had been hoped that the developed countries would provide at least 0.7 per cent of their gross national product to help finance development of the poorer nations.

Today, if the official aid given by these countries were to be taken together it would, according to

a World Bank assessment, come to barely about half the targeted figure. It is true that some countries have done better and come to very near 1 per cent of their GNP, but the total picture remains dismal.

Implementation of the development strategy during the first two years of the decade has been woefully poor. Several excuses are offered, and the one that seems to be current today is that the developed world is facing a serious international monetary crisis.

Though billions of dollars are at the same time being spent in making destructive weapons or in waging localised wars, the richer countries are not prepared to part with a mere 0.7 per cent of their produce so that the poor may become less poor and peace may become more stable.

Long have we knocked at the doors of the unwilling rich countries to awaken them to the urgent need of doing more so that pace of growth of the underdeveloped world may be quickened, but the responsibilities that these countries assume easily at the UN. are easily forgotten.

Havoc of Quota Curb.

Quota curbs and other non-tariff checks continue to deny to our exports an easy access to the markets of the developed world. The much-publicised generalised scheme of preferences (GSP) has yet to acquire a meaningful content, and our continued attempts to persuade the developed countries to take advance measures to remove non-tariff barriers have met with no success.

The economics of most of the developing countries of our region depend on the export of one or two agricultural-based commodities. Commodities like pepper, coconut, rubber, tea, jute, rice and cocoa play an important part in the export

trade of our region. They are in fact an important source of foreign exchange for the region.

While some of these commodities face the growing threat of synthetic substitutes organised monopoly buying in developed markets keeps down the prices of others. While the prices of the machinery and capital goods exhort by the richer countries have been rising fast, the prices of our primary commodities have grown at a snail's pace because of the cartel system of buying which these commodities have to face in most cases.

The disproportionate growth of value realisation has created a yawning gap between the rich and poor countries. If this imbalance in terms of trade had not been there, the present need for external finance for the development of the poor nations would not have been so great.

At UNCTAD we tried hard, but in vain, to persuade the developed countries to create a special fund to finance the search for newer uses of our traditional commodities so that we may meet the threat from substitutes. As if the growing threat of synthetic substitutes were not enough, some of the developed countries are grouping themselves into economic blocs and raising formidable walls of common external tariffs which the primary commodities of poorer countries would find difficult to cross.

We have been pressing these countries to accept the principle of market sharing, but the response has been disappointingly poor. There is also a continued unwillingness to forge new world agreements for the primary commodities which could have given better terms of trade to the poorer nations. This is the long story of our disillusionment.

The need for integrated development of the Asian region was realised long ago. It was on this assumption that ECAFE was formed 25 years ago. During the last year or two the sands of world politics have shifted so fast that intra-regional co-operation has acquired a new meaning and a new urgency.

Now, as never before, is the need for the developing countries of the ECAFE region to turn round

and take stock of what they have and to see how best they can make the maximum use of their own resources. On its 25th anniversary early this year, ECAFE gave a call to member-countries to make the maximum use of regional resources and skills in all programmes of development and co-operation. The declaration emphasised the need for intensive industrial development based on regional resources.

Earlier, in December 1970, the Asian Council of Ministers laid down at Kabul the guidelines for the implementation of regional schemes. Asian trade expansion programme and an Asian clearing union are some of the other important milestones on the road towards self-reliance.

Not only do we have to increase trade within the region but we have also to step up the commerce of the region with the rest of the world and secure better terms of trade. As ECAFE survey has shown that in 1970 the region's share of world exports increased from 8.7 per cent in 1969 to 9 per cent in 1970. But this was mainly due to the extraordinary growth of Japan at 20.8 per cent.

The share of the developing Asian countries actually dropped from 9.2 per cent in 1969 to 8.8 per cent in 1970. A decade earlier, the share of the developing Asian countries in world exports was 10.5 per cent. This would show that as the years roll on our share in world exports falls.

This trend has to be reversed. The problem of this region will have to be solved primarily by efforts made in the region itself, through regional and sub-regional measures. We have to exchange information on what each one of us has to buy or wants to sell. We have to survey the Industrial potential of the region to lay the foundations for integrated regional development.

We in India have come a long way from where we started in 1947. During the past 25 years of independence the structure of our foreign trade has been revolutionised, mainly as a result of the wise policy measures initiated by that architect of free India, Jawarhalal Nehru.

Gone are the days when this country depended on imports for

even such consumer items as hairpins, needles, razor blades, stoves and crockery. To-day, there is very little that we cannot make in this country. We have to-day the knowhow even to build steel plants. Over the years our engineers and experts have acquired the skill to make a wide range of heavy machinery. Our men are laying railway lines and setting up important engineering and other projects in other countries on a turnkey basis.

Our know-how exported

We have set up more than 100 industrial joint ventures in other countries and our experts to-day include more than 150 items of machinery, components and other manufactures. During the last ten years our exports of engineering goods and chemicals have increased rapidly and the distribution of exports has become more diversified.

In 1960-61, the developed market economies accounted for nearly 66 per cent of our exports, but to-day their share has fallen to only 49 per cent whereas during the same period our exports to the socialist countries have risen from 7.8 per cent to 23.6 per cent.

From the import of hairpins to the export of heavy machinery and sophisticated engineering skills is a long story indeed. It is the fascinating story of free India's development, stray glimpses of which will be available at Asia '72. At the fair thousands of our exporters and state export organisations have put on display some of their best wares for some of which they have won global tenders in foreign markets in the teeth of competition from the leading developed countries.

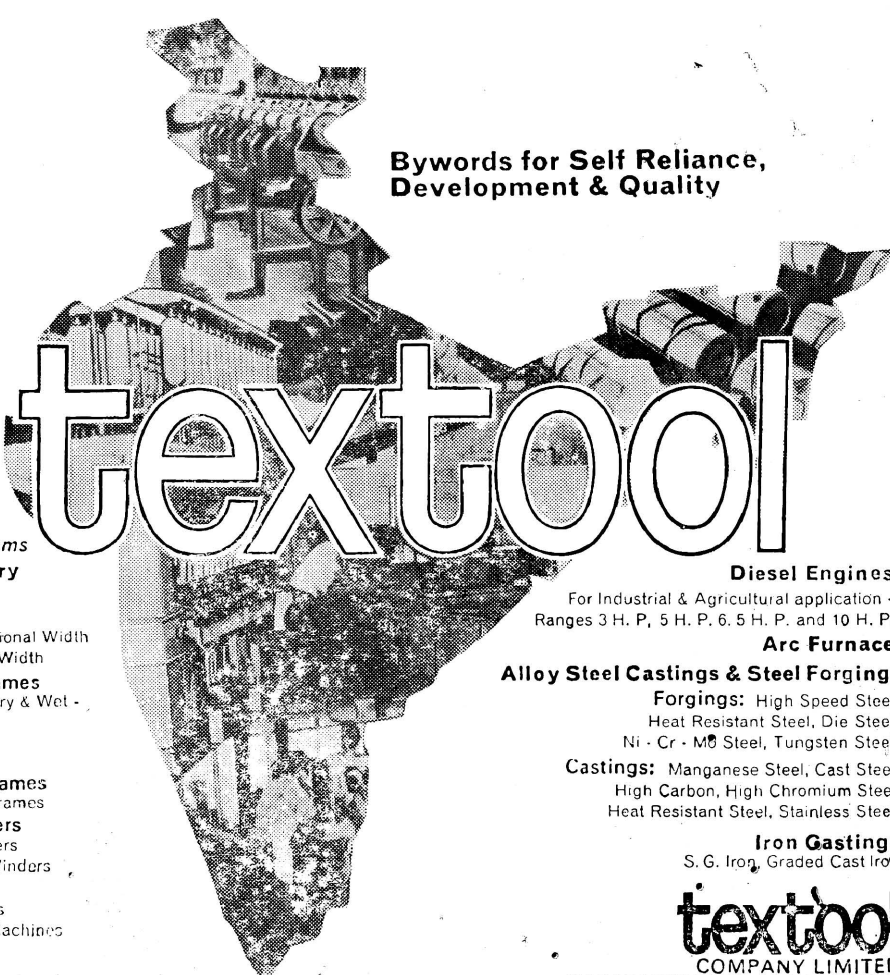
The millions of our countrymen who are expected to visit the Fair may deservedly go back with a sense of pride in India's achievement in the last 25 years. The industrialists, entrepreneurs, students, engineers and technicians, who visit the Fair may benefit from the experience and perfect their own products and skills.

The Fair as expected to attract leaders of business and industry from other countries. For them Asia '72 is a show-window, the show-window of progress and partnership in Asia.

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NEW VISTAS THROUGH ASIA FAIR

Inauguration of the Third Asian Trade Fair by the Prime Minister, Srimathi Indira Gandhi, on November 3, 1972, was an important step in the direction of placing India effectively on the trade map of the world.

The trade fair is a triennial institution created by the Economic Commission for Asia and the Far East as an important instrument in the strategy of regional economic co-operation. Asia '72 is the Third Asian Fair to be held in pursuance of this objective, first two having been held in Bangkok and Teheran.

A large number of Asian and other countries representing six continents are participating in the Fair. These countries account for nearly 65 per cent of world exports. They are also important trading partners of India taking nearly 55 per cent of her exports. It is indeed significant that, for the first time, some of the co-developing countries of Latin America and Africa are also participating.

Progress Through Co-operation.

The theme of the Fair is peace and progress for Asia through economic co-operation. It is a befitting theme and a complement for the 25th anniversary of India's independence.

India has taken textiles as her theme of the Fair. For, textiles industry in India is not only an important one but also a significant foreign exchange earner. It is expected that various magnificent dimensions of this age-old industry of the country will be displayed.

The usefulness of this Fair for India and other developing countries has to be appreciated in the wider context of the aspirations of the developing countries to attain better standards of living through modernisation of their economies and consequently securing for them economic independence to complete their political freedom. In this endeavour, trade is playing crucial role.

Exports Vital to Growth.

It is expected that in the coming years of the second development decade, the expansion of exports by developing countries is vital for sustaining the growth of these economies. While the share of developing countries in ever enlarging world exports is drastically declining from 25 per cent in the early years of the decade of 60's to insignificant level of 17 per cent in recent years, there is an accelerated demand for foreign exchange to pay for increasing imports as well as for debt repayment.

One of the most significant steps in this direction is mutual co-operation among the developing countries. All along, co-operation among these countries has been to a large extent inhibited by the conflict of interests in operation. As a result, the developing countries are made to be more aware of their competitiveness rather than their

BY

Dr. Thirumathi
SUMITRA CHISHTI

complementarity. This has been accompanied by a persistent tendency to look towards the advanced countries of West to meet their needs.

Consequently, the knowledge about the progress made in various fields among developing countries is rather inadequate resulting in limited co-operation in achieving their common goals.

Technological Advances.

By highlighting the potential of participating developing countries to the critical gaze of the world, the Trade Fair will also enable them to identify their weaknesses and strength and help to correct the lacuna in various areas. In this exposure, the most important element will be the technological advances that have been made in the world industries.

The Fair by providing the facilities for a gathering of modern techno-

logies in different fields is expected to open up a new outlet for smoother technological flow between the participating countries.

It is of a particular significance for India. Although India is a poor country, industrially she has advanced considerably. She stands today one among 15 industrial countries of the world. This Fair will establish new channels for working together in advancement of research and development.

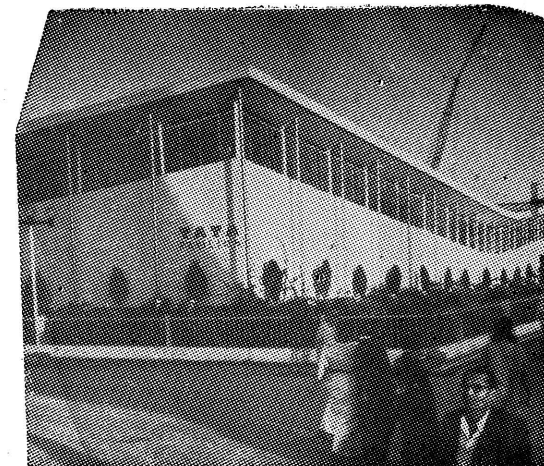
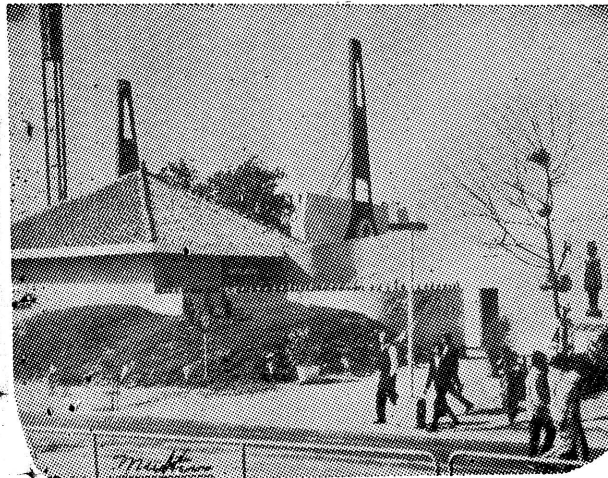
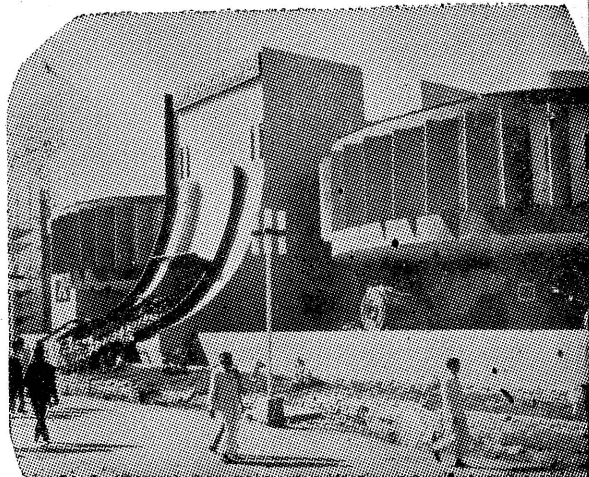
Scope for Joint Ventures.

In the global expansion of export trade, trade fairs are increasingly becoming an important instrument. They will provide at the outset, scope for exchange of goods. Asia '72 is expected to bring traders in closer direct contact and increase their business. It will also provide scope for increasing co-operation in joint ventures. India has already joint ventures in Malaysia, Singapore, Ethiopia, etc. The Trade Fair by exposing the advances made by India and other developing countries in various industries will definitely provide new basis for joint ventures.

Direct Gains.

The direct effects of the Trade Fair for India in particular are mainly three. Through this endeavour, it is expected that India will earn foreign exchange to the tune of Rs. 8 crores. Further, as a result of this Trade Fair India has built a permanent fair site entitling her to the membership of the International Union of Trade Fair which will enable India to hold regularly five commodity fairs and one general fair in a year. This provides an intense exposure to the developments of world industries to Indian manufacturers and traders. No less important impact will be the arrival of tourists. This will undoubtedly help to increase the foreign exchange earning from tourist traffic.

Not the least important effect of this Fair is to educate the Indian himself about the strides made by India in the industrial field and thus raise his confidence in his capacity to achieve the objective of self-reliant economic growth.



INDIA'S PUBLIC SECTOR UNITS OFFER SOPHISTICATED TECHNOLOGY

BHARAT HEAVY ELECTRICALS.

A Government of India undertaking BHEL is the leading manufacturer of heavy electrical equipment in the country. It has three giant plants at Hardwar, Hyderabad and Tiruchirappalli. Actual equipment is displayed from all these plants in such a sequence that the working of power generation transmission and utilisation can be understood quite easily. Displayed at the entrance are a boiler plant and a 400 KV air blast circuit breaker. Another significant exhibit is a complete 200 MW high pressure turbine. Short colour films will bring something more about BHEL to the pavilion.

The slogan of the Heavy Electricals 'power for a Powerful Asia' is a forceful pointer to HEL's role and importance in shaping the future.

The two storey pavilion covering an area of 1,984 square metres projects the activities which are concentrated on the generation of the much needed electric

power and the role HEL plays in making this 'power' available to India and other developing countries is brought home to the visitor.

The exterior of the pavilion is symbolic of the heavy and sophisticated equipment being built in the factory.

Manned by over 16,000 workmen including 1,000 highly qualified and experienced engineers, this multi-plant complex has earned a reputation for the quality and reliability of its products both in India and abroad.

HINDUSTAN MACHINE TOOLS.

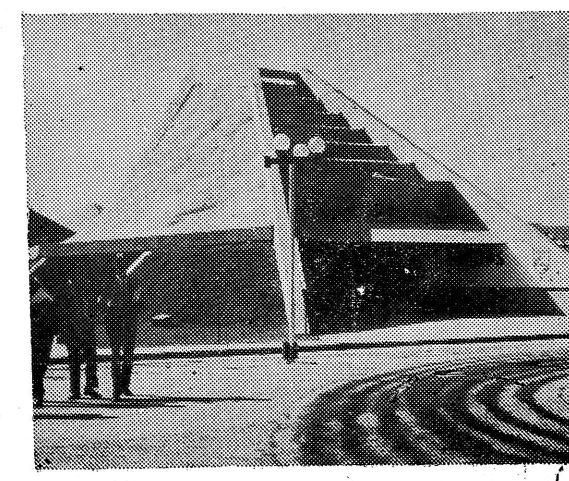
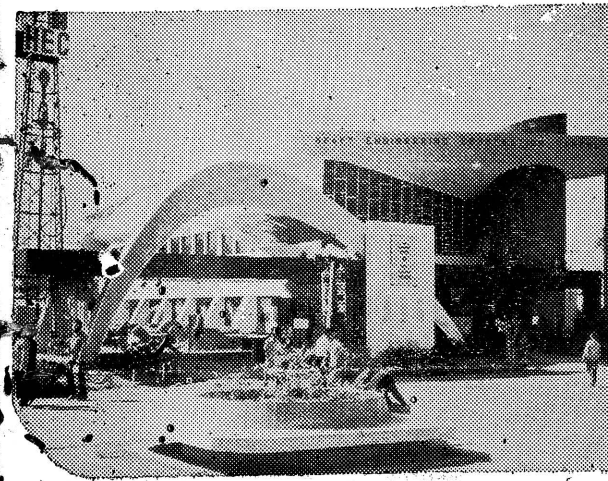
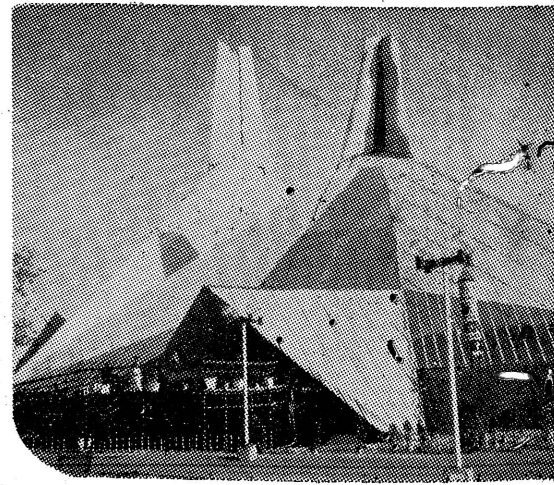
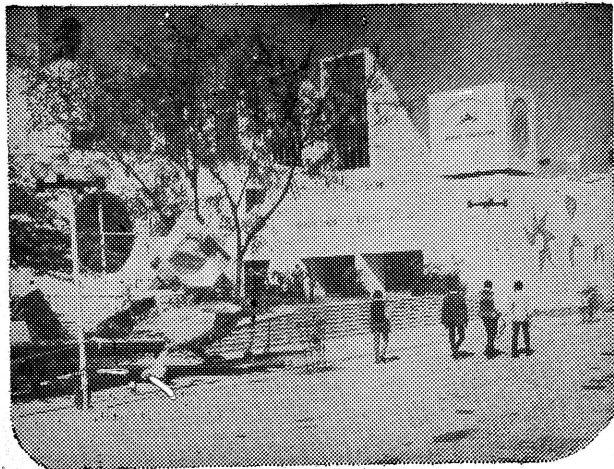
It is one of the world's largest machine tool complexes with five modern machine tool factories at Bangalore, Pinjore, Kalamasari and Hyderabad and two modern watch factories at Bangalore and Srinagar. HMT has the installed capacity of 4,900 machines and 8

million watches per year, specimens of milling drilling, boring and grinding and gear-cutting machines and watches are kept in the stall.

Having acquired the technological capability to make quality machine tools, HMT has stepped into the realm of precision tools. Watch-making was the inevitable next step, keeping in view, of course the absence of a precision watch-making industry in the country. Simultaneously HMT started the search for foreign markets for its machine tools and these were found in sophisticated European and American markets apart from countries in West Asia, Australia and New Zealand.

ENGINEERING EXPORT PROMOTION COUNCIL.

In order to present the image of Indian engineering industry in its right perspective the Council has enlisted the assistance of many specialised associations.



representing different branches of the engineering industries. The visitors to the pavilion will be able to see for themselves that today India has competence, ability and capacity to produce sophisticated engineering goods including turn-key projects for industries like textiles, cement, sugar, edible oils and is capable of selling self-generated and borrowed know-how in many of the fields of industrialization with high technological content such as electro-chemical industries, electro-metallurgical industries, electronics, communications, power transmission and allied products either on turn-key basis or on an individual supply basis.

TECHNOLOGY PLACES INDIA ON WORLD MAP.

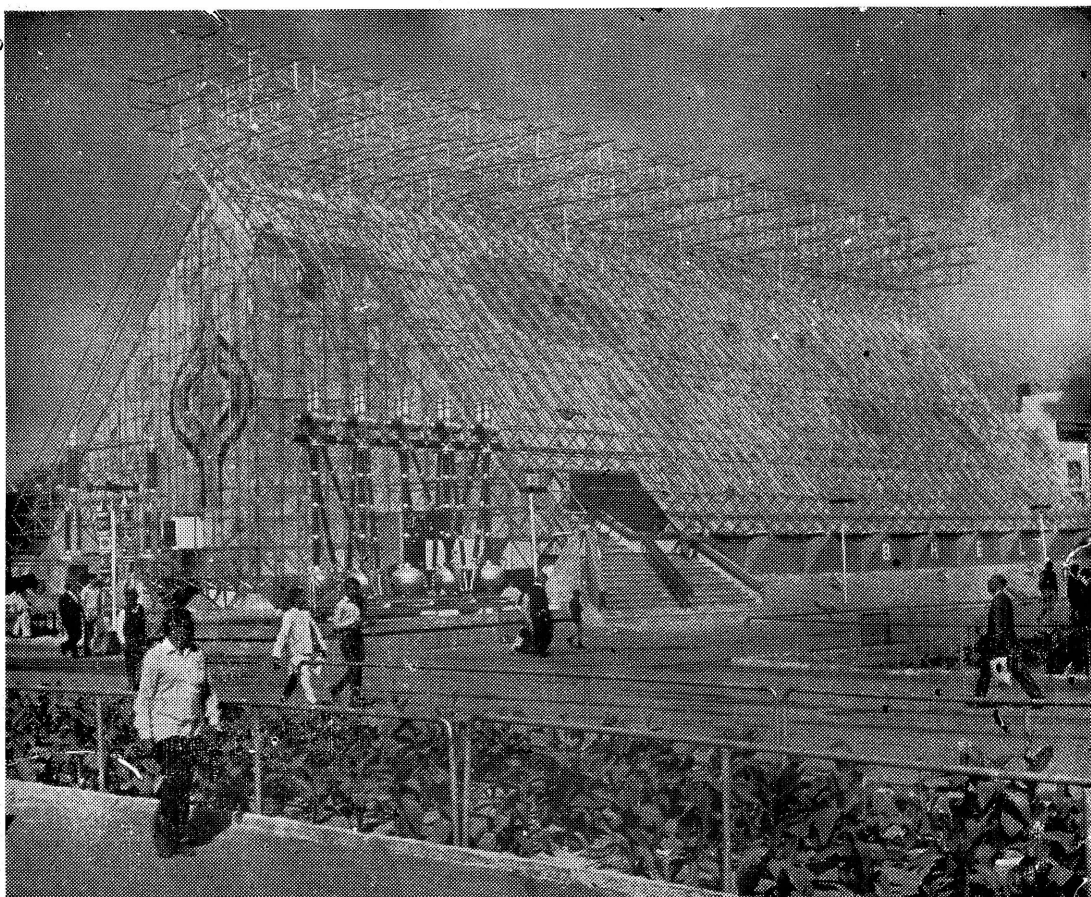
Today Indian technologists are building a uranium milling plant to process a thousand tonnes of uranium a day. Indian technologists are working abroad on turn-key projects and passing on self-generated know-how for electro-chemical, electro-metallurgical, communications, power transmission and other allied industries. It is the same India that is also making rockets and computers supersonic and transonic aircraft, ultrasonic flow detectors and storm warning radars. In fact, from space rockets to computers, from radars to microwave equipment, Indian engineers are manufacturing practically everything in electronics. They have firmly established India as a nation of the

seventies. The pavilion illustrates the endeavours of the Council in the last 15 years to promote the export of Indian engineering goods. Established in 1955, the Council started with exports worth just Rs. 30 million and now exports goods worth 1,250 million rupees. The stall shows the functioning of the Council, how it facilitates the entry of Indian goods into foreign markets and its activities at various centres such as United States, East Africa, Middle East and South East Asia. The Council conducts intensive market studies and keeps the domestic manufacturers apprised of the trends in Foreign markets. The Council has a membership of nearly 3,000 manufacturers, exporters and merchant exporters.

KHADI AND VILLAGE INDUSTRIES.

Here is something which is more than a mere exhibition. It is certainly an exhibition but an exhibition of unique kind. Here is part of the history of India under Gandhi and Nehru. Here is part of the economic revolution which is still going on in this country. Khadi and Village Industries are interwoven into the fabric of the non-violent revolutions under Gandhi which liberated India. In the magnificent technology of his non-violent revolutions, Gandhi used with telling effect the tools of Khadi and Village Industries. British rule in India was based on economic exploitation and Gandhi struck back at that very crucial point through Khadi and Village Industries. His aim

Stall of Bharat Heavy Electricals Ltd.



was to release the masses of the Indian people from exploitative processes of British rule. Through Khadi and Village Industries he built up in the mind of the people a measure of self-reliance and self-dependence and therefore, a sense of freedom.

The staggering reality of India is terrific population, now nearing 600 millions. Nehru realised fully that maximum industrialisation would not solve unemployment among the rural millions. He knew Gandhi's mind and saw in it relentless reality. So in Independent India, with Nehru as the Prime Minister, a statutory commission, called 'The Khadi and Village Industries Commission' was established. This pavilion was organised by this Commission.

ALL INDIA HANDICRAFTS BOARD.

The entrance to the handicrafts pavilion is through a large door with wooden jali and brass inlay which has been specially prepared by the mastercraftsmen of Jaipur. On entering the pavilion, the visitors see some of the most beautiful carpets. On the left is the Hall of Carpets where carpets in a wide variety of designs, colours and qualities from all over the country will be displayed.

On reaching the first floor, the visitors will be afforded the opportunity to see the latest designs in various crafts produced by the Regional Design Development Centres of the Handicrafts Board at Calcutta, Bangalore, Bombay and Delhi.

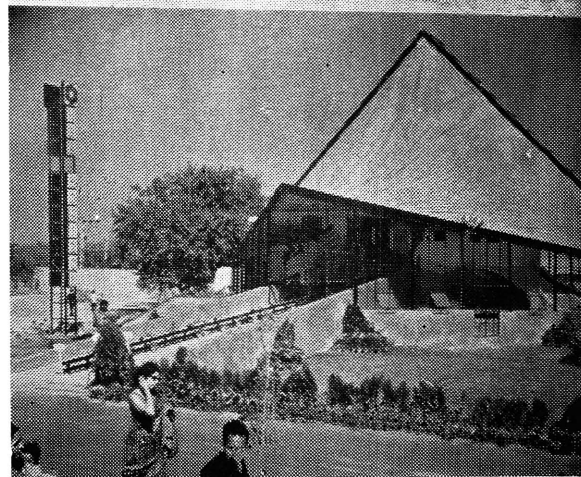
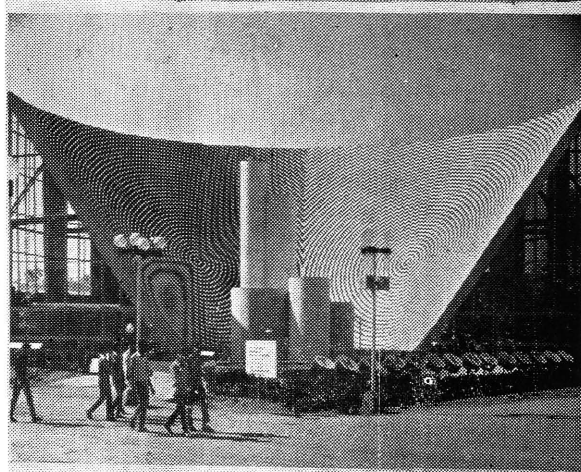
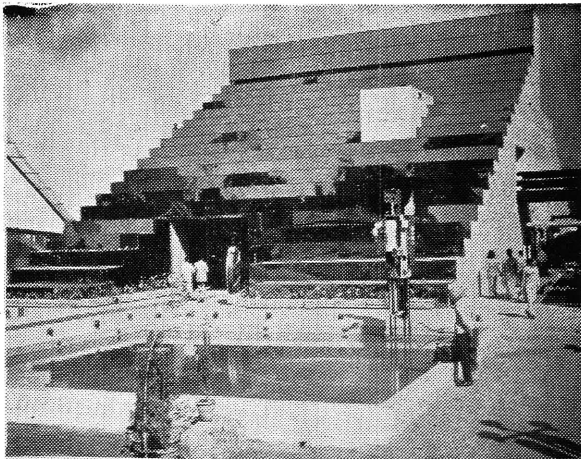
The next section will bring a wide range of exportable handicraft items. The samples will be backed by full commercial information to enable the buyers to place orders.

The visitors will also see in this pavilion demonstration of some of the finest crafts of India.

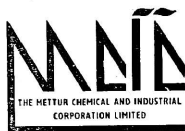
INDIAN RAILWAYS.

The Indian Railways pavilion speaks of the growth of the railways in the first quarter century after freedom. It speaks also of the ceaseless striving that has brought the railways and the nation self-sufficiency in the manufacture of rolling stock, components and other equipments. Predictably there is mention also of the impressive export market developed by the Railways for its wagons and for its know-how.

Indian Railways are Asia's largest and the world's fourth largest railway systems. It is the world's second biggest State-owned system. Its 60,000 kilometres, 4,000 of these electrified, criss-cross the nation from the Himalayan foot-hills in the North to Cape Comorin in the South. The railways run 108,000 trains everyday carrying 6.8 million passengers and 0.6 million tonnes of goods. For moving this traffic, the railways maintain as many as 9,200 steam locomotives, 1,300 diesel locomotives, 625 electric locomotives, 385,200 goods wagons, 25,100 passenger coaches and 1,765 electric multiple unit coaches. Since Independence this gigantic network has been developed out of a system which was battered by World War II and almost crippled by the partition of the country, such a panorama of progress has been exhibited by life-size rolling stock which includes locomotives, coaches and wagons—over a hundred working and non-working models supplemented by attractive panels of photographs and charts.



Trade Development Authority
Automotive Tyre Industries of India
New Horizon Standing conference of Public Enterprises



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and
TOILET and WASHING SOAPS

HIGHEST PRIORITY FOR HARNESSING ALL RESOURCES FOR SELF RELIANCE

BY

C. SUBRAMANIAM

Lined up at Asia 72 are the products of Indian Industry; and the foreign buyer will be able to acquaint himself with what India is making today. These products will be of particular interest to the countries of Africa and Asia, and particularly those of the ECAFE region. On the other hand, India will be able to see what other countries are making and where they have gone ahead of us.

Although in per capita income India is one of the poorest countries in the world, it stands among the first 15 nations of the world in terms of absolute size of gross national products, size and diversification of its industrial structure, and extent and quality of human talent.

We have therefore reached a stage where, given the necessary priority, direction, thrust and institutional support we can make rapid strides towards a self-reliant economy. While the urgency for self-reliance has become sharper today, the potential for it is also high at the present stage of development. The highest priority, therefore, will have to be given to harnessing this potential.

It would perhaps be useful to clarify what we mean by this concept of self-reliance. It is not a negative concept directed towards developing our own potential to the fullest. It is primarily the requirement that a country of a continental size like India can and should maintain herself in a position where her national interest, whether political or economic, are not jeopardised by dependence on others. Such dependence is in itself a reflection of inadequate development and backwardness.

Unless we develop a strong and virile scientific and technological base, we cannot emerge from state of backwardness or eliminate dependence on others.

Increased domestic capability can come about only through better utilisation of existing capacity and the substitution of goods that are imported with those that are available or can be developed locally or through the creation of new capacity.

The most striking example where transfer of technology from abroad led to great a deal of adaptive and applicative research in India, leading in turn to large scale of self-reliance had been the development of the new high-yielding varieties of seed which have laid the foundation for the Green Revolution.

Similarly, Dr. Homi Bhabha, and Dr. Vikram Sarabhai after him, followed a policy of a concerted and conscious import substitution in the matter of atomic energy. They had the best of relation with foreign sources for the import of this sophisticated technology but took the greatest pains at the same time to develop a strong indigenous scientific structure in this difficult field. As a result, in a relatively short time we are now capable of building atomic power plants largely based on our own skills.

Similarly, unless industry, and I am referring to the private sector, spends a much large quantity of resources in upgrading its technology as well as for the commercial exploitation of the processes and products developed in our laboratories, it cannot hope to survive, much less prosper in the modern world. Industrialists must develop close association with scientists and technologists, both in the Government and outside.

To turn to the small scale sector I find it has become an important and integral part not only of the industrial sector but of our national economy as a whole. The number of registered units stands at nearly 300,000 today compared with 36,000 ten years ago, and about 7 million

to 8 million persons are employed in it. Nearly 7 per cent of our GMP is generated by small-scale industries, and they contribute about 50 per cent value added in the manufacturing sector. In other words, they compared very favourably with the larger units.

Unfortunately, the quantitative growth of the small sector has not been matched by adequate attention and concern for quality. Its products should be able to hold their own not only in the domestic market but also to an increasing extent in the export trade.

In the long run, the battle against mechanisation and automation can be fought and won by our traditional and small-scale units by improving their production technology and by increasing the productivity of labour, as an overall principle, this has been recognised in the past, but positive measures by way of research in improving traditional technology in a manner that would improve productivity without displacing labour does not appear to have been undertaken on an adequate scale.

Whatever be the order of our investment effort, large scale factory type industries cannot hope to reach many areas of our country in the foreseeable future. Under these circumstances, the main effort in our income-generation programme for the weaker sections has to be to provide maximum opportunities of self-employment to them so that they may also contribute to and share in the country's economic growth.

The various programmes of the Khadi and Village Industries Commission, for instance, now cover a population of more than 2 million. The value of the goods produced under its aegis is around Rs. 1,100 million a year. Its rate of growth is estimated at 7 to 8 per cent, which is better than the rate recorded by the more organised sector in recent years.

In recent years, the Khadi and Village Industries Commission has extended its activities beyond our national frontiers by finding markets abroad for the products of our rural artisans and by assisting neighbouring countries like Bhutan, Nepal, Mauritius, Sikkim and Sri Lanka to set up similar organisations and generate similar programme in their countries.

I feel some special interest has to be taken in reviewing the adequacy and effectiveness of the training programmes for our rural artisans and craftsman so that the skills bequeathed to us by our ancestors are kept alive and vibrant.

To date, the development of small-scale industries, like development in other spheres, has confined by and large to the big urban areas and metropolitan cities. The time has now come when we have to take these industries to backward and neglected areas. Deliberate and consistent efforts are required to be made in this direction and combined with efforts to take industry from the affluent sections to the loss.

Of late, Delhi has emerged as one of the most important centres of small-scale industry in the country. I believe the number of such industrial units in the territory is nearly 25,000.

Small industries have an important and continuing role to play in the development of industrially less advanced countries like ours. They serve not only a useful purpose as feeder industries for the large-scale sector but also provide employment for a substantial proportion of industrial labour.

It is also true that small industrial establishments need competent management as much as larger enterprises. Our efforts to increase production and productivity will, therefore, have to emphasise the diffusion of managerial talents in the small-scale sector.

While India has made rapid advances in the past 25 years in economic and technological growth, the fact that industries have tended to agglomerate around a few urban centres of growth and that 65 per cent of the small-scale units are located in Delhi, Maharashtra, Punjab, West Bengal and Tamil Nadu, provides no ground for comfort whatever.

It is, therefore, evident that much more needs to be done if industry is to have wider dispersal, and if the policy objective of removing between levels of economic development among different regions is to be achieved.

WORK OF HEAVY ELECTRICALS

PHASES OF POWER EXPLAINED

INDIA's first and the largest Heavy Electricals factory at Bhopal designs, manufactures and undertakes erection and commissioning of the entire range of power plant and equipment for generation, transmission and utilization of electric power. Equipped with most modern machine tools and equipment and manned by over 16,000 persons including over 1,000 highly qualified and experienced engineers, the multi-plant complex has earned a reputation for quality and reliability of its products both in India and abroad.

The factory has already made available sophisticated power plant and equipment worth over Rs. 170 crores to the country and abroad. A large number of power generating stations—hydro and thermal—substations, switchyards, steel, fertilizer, paper and sugar plants, machine tools industries and electric and diesel-electric locomotives, equipped with H.E. built products, are functioning all over the country. Besides, marine turbines have been built for propelling Indian Navy's Leander class warships. Foreign countries to which HE built equipment have been supplied include Ghana, Iraq, Kuwait, Malawi, Malaysia, Singapore and U.A.R. In Malawi and Malasia, HE engineers will erecting and commissioning transformers supplied by this factory.

HE at "Asia 72":

Heavy Electricals (India) Limited, Bhopal, is participating in the Third Asian International Trade Fair at New Delhi. The two-storey pavillion covering an area of 1,984 square metres projects the activities of the factory in the building up of equipment for generation, transmission and utilization of power—the much needed electric power for the advancement of developing nations.

The exterior of the pavilion is symbolic of the heavy and sophisticated equipment being built by the factory. The two circular forms, mounted on pillars, with vertical vanes all around, represent the stay ring of a water turbine symbolizing hydro power equipment. Sandwiched between the two cylindrical forms is a dam representing tapping of power from water with the aid of turbines. The cylindrical rings on the extreme ends represent large motor—another product of HE factory for utilization of power.

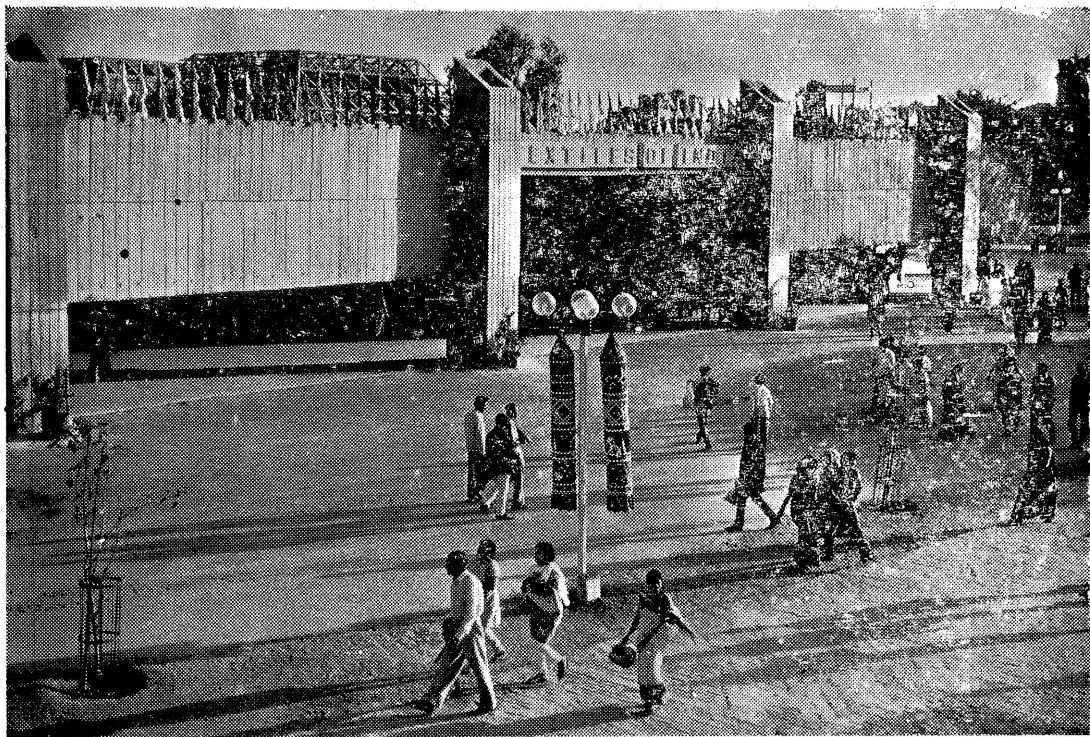
Multifarious activities :

The interior of the pavilion unfolds to the visitor the story of Heavy Electricals woven round the 'How' and 'Why' of the multifarious activities of the factory.

The theme begins with the key word 'Power'. It spotlights two facets of Power—Spiritual Power and Economic Power—which are essential and complementary to each other for the attainment of full-fledged personality of an individual or a nation.

Centuries ago the spiritual power in the shape of Buddha's messages was carried to different countries of Asia from Sanchi—the spot which houses the Buddhist monuments known all the world over.

Hardly 40 kms. from Sanchi, Bhopal stands the symbol of India's pioneering efforts in the post-Independence era for taming electricity for economic advancement. India's first and largest heavy electrical equipment factory at Bhopal is supplying basic power plant and equipment to different nooks and corners of the country, and other developing nations to help build economic power.



Textile Pavilion.

A fabulous fashion extravaganza is put up at the Textile Pavilion in Asia 72 Fair. A glamorous bevy of 16 models are presented in two shows a day in the 300 seat auditorium. Never before have 90 fashion shows been put on in a one-and-a half month stretch in India.

The 40-minute shows project the international appeal of Indian fabrics, handloom cloth, cottons, silk woollens, and manmade fibres for women and men of different climes, age groups and economic strata.

The fashion parade float on water, the stage being set on a pool. It also has a mirror-cube, turntable to show off the models at their best. A five-wing lighting arrangement for the fashion parade provides a Son-et-Lumiers touch to the show.

Six promotion councils.

The textile hit parade is only one of many attractions of the 60,000 square feet pavilion where six important textile export promotion and development agencies of the Govern-

THREE DIMENSIONAL FABRIC DISPLAYS AT TEXTILE PAVILION

A FASHION EXTRAVAGANZA

ment of India have put separate displays.

The Textile Export Promotion Council is the main co-ordinator. The five other participants are the Woollen Textile Promotion Council, Silk and Rayon Textiles Export Promotion Council, Handloom Textiles Export Promotion Council, Central Silk Board and All-India Handloom Board.

The art of textile weaving and designing forms a significant strain in India's heritage. It is an unbroken and rich tradition from the days of the Indus Valley civilisation down to the modern age of polyester fibres.

Impact display.

In this first 'impact display' the accent is on the colours and crafts of India. The first section has a mirror ceiling to give a multi-dimensional effect to the display. A small indoor garden with a pool, alive with bright hued fish, reminds the visitor that the colour consciousness of the Indian craftsman is derived

form the variegated Indian flora and fauna.

As the visitor moves from one section to another in what is one of the biggest pavilions in the fair, he would notice that its designers have tried to create a drama out of colour and space. All the walls and panels of the pavilion are milk-white. Reason there is such a spectacular range of colour and design in Indian fabrics that one just does not need any colour by way of a backdrop to heighten their effect.

To relieve the monotony of walking in big quadrangles crowded with exhibits and displays, sections of various sizes and shapes have been cleverly juxtaposed.

Beautility of fabrics.

Both Nilendhu Shah and Ishu Patel of the National Institute of Design, who have created the pavilion with co-operation of a team of young architects, typographers and civil engineers say: "In our display we have tried to focus attention on the texture, design and colour of our products rather than on the structure of the pavilion itself. We want to tell the world about the "beautility" and variety of Indian textiles."

The visitor has to watch his step—rather her step while seeing a psychedelical display of fabrics. There are mannequins surrounded by revolving mirrors and fabric mounted cubes heaving up and down. Each detail of drape, flare, and huge of beautiful fabrics is on view. There is a complete fusion of the contours of the human body with the drape.

From pop to pure tradition, there is something to fascinate everybody

in the three-dimensional show-window of fabric displays.

Four main fabrics.

The sections displaying four main fabrics, silk, cotton-woollen and manmade fibres offer careful selections from thousands of samples of hand-woven and machine-made textiles. Textile mills from all over India have their most products for display.

The ready-made garments section presents an unusual array of silk, woollen, cotton and manmade fibre dresses and accessories. The message is: "Wear Indian and look beautiful".

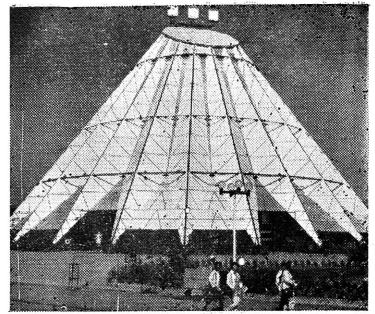
Woollens produced by the craftsmen of Kashmir and Himachal Pradesh, raw-silk garments from Assam, Bihar and Bengal and dresses fashioned from the fabrics woven by the skilled fingers of Uttar Pradesh. Weavers show how traditional skill has passed from father to son.

Fabrics for all seasons.

Classy cottons from Madras and Andhra Pradesh for summer wear in tropical weather or during spring in European countries make up another garments display.

As a member of the designing team says: "We want to confront our foreign visitors with the choice. Let them decide which is more elegant or beautiful. It would be a test for connoisseurship".

Textiles have uses other than draping the human body. This the



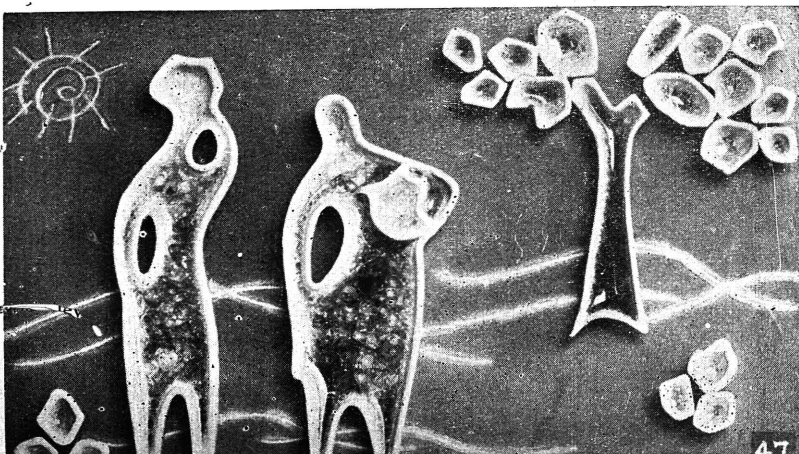
Pavilion of Dehi Cloth Mills.

Textile Pavilion proves through special displays. One display depicts the home beautiful, complete with carpets, wall hangings and other drapery. There are bed rooms and drawing rooms furnished with India material. One can plump for a gay colourful design for modern living or an elegant one to suit the conservative taste.

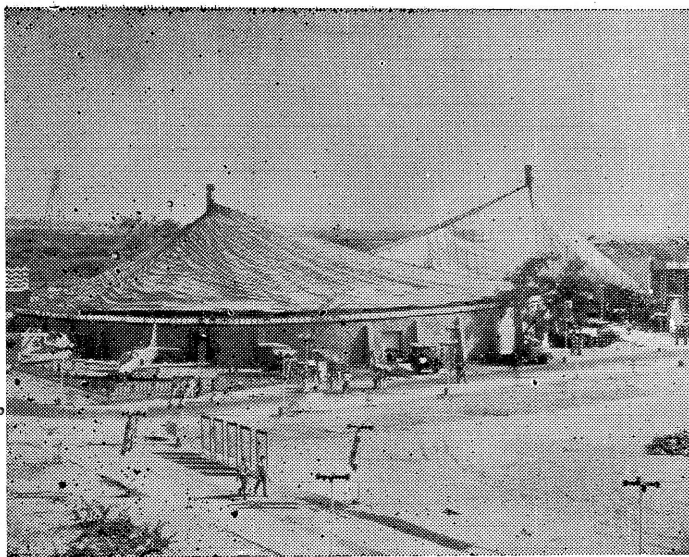
Yet another section depicts the story of Indian fabrics. Here one can browse through pictorial and graphic display of the history of textiles in the country—the coming up of the first textile mills, the saga of the pioneers in the field, the philosophy of khadi and man-made fabrics.

For those who are curious to know about the "Stuff" of Indian textiles there is a display of different kinds of yarns.

The India of fable and legend, which was said to have grown wool on trees, and to which led the fabled silk Road can be seen in its infinite variety at the Textile Pavilion.



The inimitable artistic Products of Ceramic Industry in Tamil Nadu.



THE DEFENCE PAVILION

The stupendous amount of thinking by the back room researchers and scientist and the considerable time taken in designing and developing the thousands of weapons and equipment used by the armed forces are reflected in the exhibition, which opened here today, of the work being done by the laboratories of the Defence Ministry's Research and Development Organisation.

The exhibits range from a mere rifle cartridge whose end-effects are as important as the quality of the rifle used to fire it, to highly sophisticated supersonic aircraft engines and submarine locating sonars.

Dr. B.D. Nag Choudhury, Scientific Adviser, Defence Ministry, told newsmen at a preview that the aim of the exhibition was not merely to educate the people about the basic work being done by thousands of unseen scientists and researchers in preparing to defend the country, but attract the youth towards such research.

The laboratories, whose work are on display, are Electronics and Radar Development Establishment, Bangalore; Defence Electronics Research Laboratory, Hyderabad; Gas Turbine Research Establishment and Aeronautical Development Establishment, Bangalore; Defence

Research and Development Laboratory, Hyderabad, which works on the Development of mis-siles; R. and D. Establishment (Engineers), Poona; Solid State Physical Laboratory, Delhi; Vehicles R.D. Establishment, Ahmednagar; Instruments Laboratory, Dehra Dun; Defence Research Laboratory (Materials), Technical Ballistics Laboratory, Chandigarh; Institute of Armament and Naval Research Establishment.

Emphasis in recent years, as could be seen in the different stalls, seems to have been on aeronautics, missiles and under-water technology.

Mini bus for going round Asia 72 Fair ground.



HIGH-POWER ENGINE FOR SUPERSONIC AIRCRAFT.

The Gas Turbine Research Station has on view a mock-up of the engine it is developing with 8,400 lb. thrust (10,000 lb. with reheat) to power a supersonic 2.2 Mach combat aircraft and the reheat system it has developed to boost the thrust of the engine now powering the just-supersonic HF-24 (Marut). It was claimed that the thrust which has been raised by 30 per cent will give the HF-24 a 50 per cent increase in speed.

The Aeronautical Development Establishment shows the simulator of HF-24 for training purposes.

Perhaps for the first time, the missiles, being developed in the country, will be on public view at the stall of the Defence Research and Development Laboratory, Hyderabad.

"INTRUDER DETECTORS."

The Electronics laboratories of Hyderabad and Bangalore are the most eye-catching. An "intruder detector" based on the infra-red principal is on show at the Bangalore laboratory, the Hyderabad stall has on display a similar equipment based on micro-wave principle. The Defence Electronics Laboratory, Hyderabad, has also on view the IFF (Identification Friend or Foe) radar which, on locating an aircraft, finds through pre-determined codes whether it is a friend or foe.

The LRDE, Bangalore, has also developed equipment needed for treatment of heart ailments, like cardiograms and intensive coronary units.

WELCOME TO TAMIL NADU PAVILION

ASIA '72

TAMIL NADU—The land of temples—is the home of dainty handicrafts. Master-craftsmen turn out art pieces of exquisite beauty and intricate design.

See the masterpieces of Tamil Nadu for yourself and make your choice.

Brighten your home with lovely handicrafts of Tamil Nadu.

Tamil Nadu is the major repository of all that is grand and beautiful in fine arts having with its rich cultural heritage as one of the advanced States in India on industrial and economic front.

The Department of Industries and Commerce, Tamil Nadu offers well-designed factory sheds to small scale entrepreneurs on monthly subsidised rental basis in the functional and conventional Industrial Estates all over the State.

Specially designed factory sheds are available under hire-purchase for starting Electronic and Instrumentation Industries in Functional Industrial Estates.

Developed plots are offered to small scale entrepreneurs to set up Engineering and non-Engineering Industry on attractive terms at Ambattur, Ranipet, Tiruchirappalli and Madurai.

More incentives are also offered to Technician-entrepreneurs for setting up Small Scale Industries in Tamil Nadu.

Financial assistance offered by sanctioning loans for contributing margin money to the extent of 50 per cent of the margin money required subject to a limit of Rs. 25,000.

Workshed-cum-residence in commercial industrial estates are provided.

Assistance is offered for the supply of machinery on hire-purchase through Small Industries Development Corporation.

Some additional attractive incentives to set up industries in Backward Districts are open to you :—

- 10 per cent Capital Subsidy.
- Raw materials given on priority basis.
- Purchase preferences.
- Interest-free sales-tax loans.
- Loan facilities.
- Power tariff concession.
- Visit Tamil Nadu Pavilion.
- Avail the golden opportunity.
- Start your industry in Tamil Nadu.
- You are encouraged and assisted in your venture.
- Profits on a platter.
- Welcome to Tamil Nadu.

*The Director of Industries and Commerce,
Tamil Nadu, 600005.*

INDIAN STATES PAVILIONS

ANDHRA PRADESH.

Andhra Pradesh, the fifth largest State in India, came into existence on Nov. 1, 1956 when Telugu-speaking areas of Hyderabad State were merged with Andhra-known history of Telugu people can be traced back to 3rd century B.C. Excavations at Amaravathi and Nagarjuna Konda, which reflect copiously on the ancientness of Telugu people have been given representations in the Andhra Presentation. Examples of Andhra's artistic tradition can be found in Saint-Singer Thyagaraja and Annamacharya and in Kuchipudi, a dance full of graceful movement, which originated in Krishna District of Andhra Pradesh.

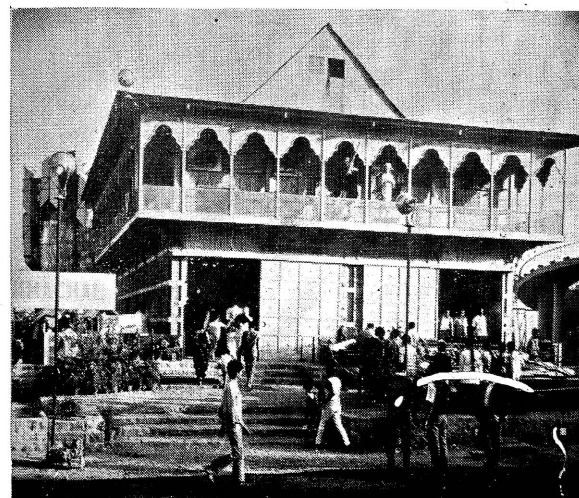
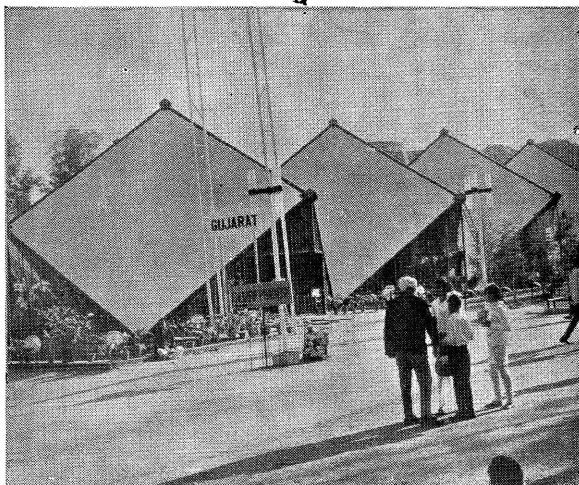
Outside the main structure is a nice little pool and the model of the world's biggest masonry dam—Nagarjuna Sagar.

GUJARAT.

Gujarat occupies an important place on the industrial map of India. Apart from being an important textile centre it will soon become the site of giant petrochemical complex. Exhibits at the Gujarat pavilion are mostly of technical and industrial interest and are intended to tell the visitor how much can be achieved through dedicated hard work. It also speaks of the progress the State has achieved during the last two decades and the efforts of the Government in promoting industrial growth. Attention is also focussed on places of tourist interest including of course the star attraction, the wild life sanctuary at Gir, famous for its lions. The traditional crafts of the State are also represented providing a link between the rich cultural heritage of the State and its inexorable march towards industrialization in a big way.

HARYANA.

The Haryana pavilion stands in the shape of two semi-circular structures, each wing sub-divided into two separate levels. In the first section the story of the achievement of the people of the State during the last four years is recalled with the aid of slides. The second is devoted to the State's impressive rural electrification programme and its industrial resurgence. The third section highlights the progress in the fields of agriculture, animal husbandry, dairy farming, etc. In the fourth section the visitor enters a simulated luxury bus to go on a 'Joy ride' which takes him on a grand tour of Haryana to see on the silver screen in front of him the progress in terms of tourism, transport and roads made by the State. Further up in the section an electronic map explains the expanding Road network in the State. Handlooms and handicrafts from Haryana are also there.



Right—Top :—West Bengal.

Centre :—Gujarat.

Bottom :—Himachal Pradesh.

BIHAR.

Possessing about 40 per cent of India's mineral wealth Bihar has been the natural site for some of the most ambitious industrial projects like TISCO, TELCO, * BOKARO AND BARAUNI. Apart from the giant industrial complexes it has important industrial estates in towns like Patna, Daltonganj and Ramnagar. A collection of rare paintings of the Mithila School of Art brings an air of ancientness to the pavilion.

A less known but important branch of Bihar's industry is the leather tanning and footwear manufacturing. Sizeable foreign exchange is attracted by the footwear industry of Bihar. The natural and fresh designs in the metalware from Chhota Nagpur, Sikkiware from Darbhanga, Zari and Lacquerware from Patna are captivating. The colour boom on the silken threads of Bhagalpur can hardly be matched and not far from the Bo Tree in Bodh Gaya where Siddhartha perceived the ultimate truth is Ohra, where carpet makers weave their dreams on their looms.

MYSORE.

Through pictures, films, models and actual specimens the all-round development of the State in the last 25 years has been projected. Under the inspiring leadership of Dr. Visvesvaraiya, Mysore, hitherto a weak industrial base, initiated a progressive industrial policy and has achieved much. Display models of sandal wood and silk weaving factories are put up at the presentation. Mysore is a pleasant place with a mild and salubrious climate.

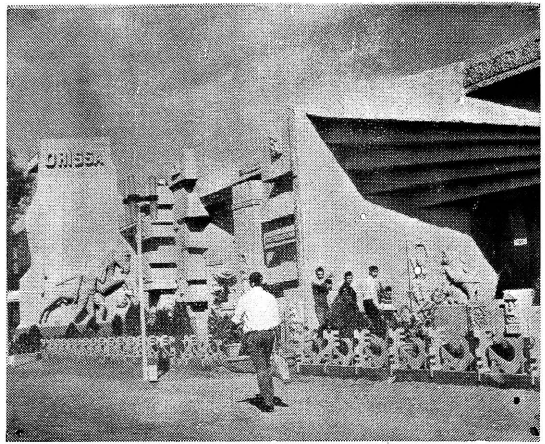
Brindavan Gardens and Shravana Belgola are but two examples of its scenic beauty and the ruins of Vijaya Nagar Empire of its glorious past. Wall hangings invariably draw attention to all these details.

The story of Mysore's industry is somewhat different. In the absence of a rich entrepreneurial class, the State took upon itself the task of starting some important industries. The Bhadravathi Iron and Steel Works was the first steel factory started in the public sector as far back as 1923.

In recent years, the growth of engineering industries has been remarkable, producing a variety of products in both large scale and small scale sectors. Besides, natural resources, cheap labour, availability of raw materials and healthy climate have contributed to the growth of her industry. One might vaguely guess the intensity of industrial activity from the fact that 3,000 factories employ over 3 lakh people. The pavilion modestly unfolds the whole story.

PUNJAB.

Since Independence Punjab has made tremendous progress in the field of agriculture and small scale industries. It pioneered the green revolution. The



Top—Orissa.

Centre—Mysore.

Bottom—Goa.

fact that 25 per cent of the country's 30,000 tractors are owned by Punjabi farmers, shows how great has Punjab's advance in the field of agriculture been. The hosiery units alone earn Rs. 15 crores worth of foreign exchange. The sports goods of Jullundur fetch another Rs. 1 crore worth of foreign exchange.

Punjab pavilion seeks to represent through its architecture of pure geometric forms—cylinders and tubes set in a water-pool—the rugged land and the robust people and their zest for life both in times of tranquility and turbulence.

RAJASTHAN.

○ The Rajasthan pavilion and its exhibits depict the culture heritage of Rajasthan, and in that back ground, the progress made by the State since Independence in various fields.

The pavilion has an entrance with exquisite marble pillars and jali work with domes and chaises depicting a typical palace entrance. On the side is the replica of the famous Hawa Mahal of Jaipur representing—the art and architecture of Rajasthan.

○ The exhibits are shown in various stalls on both side of typically palace like corridor with arches and plaster of paris ceiling.

KERALA.

The Kerala pavilion is a graceful chamber covered with a sloping tiled roof with upturned edges, without compartments inside the structure is quite characteristic of the prevailing mode of architecture in the State. The lucky one's may see the caged baby elephant opposite the pavilion playing music and garlanding V.I.P.'s but children, one and all, will have rollicking fun with its antics. Besides the cage rests a model of Tekkady Wild Life Sanctuary. Exhibits inside brings out the State's supremacy as an exporter of cashew, coir, sea-foods and coffee.

The interior is decorated with indigenous materials like coir mat, brass ornamental fittings, etc. Panels depicting the development of the State during the last 25 years are exhibited with a map of Kerala in the Public Relations Wing of the pavilion. Models of tourist spots are put up to interest prospective tourists. The main entrance to the pavilion is through a padippura (typical traditional Kerala entrance doorway). There is a relief mural 80 m. long depicting the cultural, historical, educational and social life of the Kerala. Various programmes of the industrialisation of the State are also highlighted.



Top :—Delhi.
Centre :—Kerala.
Bottom :—Uttar Pradesh.

THE PATTERN ASSAM MAY WEAVE



"Assam's beauty is praised. The variety of our people is praised, but praise is about all we get. Visitors return to their homes, Politicians and officials return to Delhi and Assam problems stay as they are." This is what the inner feelings of Assamese are. In spite of it, Assam is hoped to weave the fabric of a new India through struggle and faith.—ED.

In Jorhat (Assam), the venerable gentleman with the straight back and the distinguished moustache was provoked. A visitor had commented on Assam's charm and the rich quality of the people of the Province. He had added that his weeks in Assam had resulted in his loving the place.

Everyone says so, the venerable gentleman replied. His tone was courteous, but he was fighting an internal volcano. "Assam's beauty is praised. The variety of our people is praised, but praise is about all we get. Visitors return to their homes, politicians and officials return to Delhi and Assam's problems stay as they are."

The strength of feeling is justified. Twenty five years of Independence have not altered the rest of India's attitude towards Assam. A compound of ignorance, unconcern and inexpensive sentimentality this attitude has left Assam's inhabitants baffled and pained. Many of them have concluded that from the rest of India words of admiration and goodwill is about all they would get.

Producing the bulk of India's tea, Assam gets only a tiny portion of the revenue tea yields. Assam's oil fields supply a great proportion of the country's indigenous petrol, yet it is costlier in the State than in Calcutta, Bombay or Madras. Even today it is only a narrow road and a metre gauge rail line that connect Assam's principal cities with one another and with the rest of the country. Because of the long haul, vitally every commodity is costlier in Assam than elsewhere in India.

POORLY AFFLUENT

Chief Minister Sarat Chandra Sinha says that Assam is not basically poor. "I would describe it as poorly affluent. Our people were used to a self-sufficient way of life. When Gandhiji visited Assam he found existing in many villages the self sufficiency he was hoping for. Our people were proud of their non-reliance on others. When the tea gardens were established our people felt no need to work in the gardens. Labour for tea therefore had to come from outside. This situation has continued. In private industry, in

Government projects and in Central services such as Railways and Posts and Telegraphs you will find most of the jobs held by people from outside.

"We will now spend a large sum of money on the new Capital and on the refinery in New Bongaigaon" added Sri Sinha. "But it will not be an easy job to keep the money in Assam. I will fight that the money stays in Assam but it will be a battle."

Sri Sinha is referred to in Assam as a man who has sprung from the people and is honest and dedicated. He presides over the State during a crucial period. Much will depend on him.

The people of Assam do not need to be informed of the wealth they possess, but it is necessary for other parts of India, to shed their ignorance. In natural beauty the valley of Assam cannot easily be surpassed. The year round greenery, the rivers and the mountains, the tea bush, the bamboo and the Nahar soothe the traveller. The neatness of the villages gives him hope that a clean India is possible, the boys and girls walking along the road to and from school do not look thin. Their faces are cheerful, their hair washed and combed and their clothes clean and bright. There is more behind this than the availability of water. There is a culture of cleanliness in the Assamese countryside.

The tea garden workers, originally from Orissa, Bihar, Madhya Pradesh and Andhra, from a special community. Settled near the estate for decades, they have developed a new language a merger of Hindi, Assamese and other tongues. Some of them have graduated to other jobs. One is a Minister in the new Assam Cabinet. Some compulsive hand brought their ancestors to Assam. The leaf they tend and pluck goes to virtually every home in India and to millions of homes around the world. Often shabbily treated and hitherto kept at a distance from the mainstream of the modern age (except for this stream's alcoholic current), the tea garden workers will soon claim their rightful role in the country's life. In God's plan for India's future theirs may yet be a supreme part.

The Ahom villages, inhabited by the descendants of men who centuries ago came, it is believed, from Thailand, have a distinctive quality. There are no castes and there is no untouchability in this Hindu community whose male members were originally Buddhists. Sibsagar, seat of the Ahom kings contains not only the impressive structures left by the dynasty, but men and women with the fire of patriotism. The spirit of Mairam Dewan, Assamese pioneer in tea and a revolutionary hero in the freedom struggle, who was hanged in the last century seems alive in the Assamese valley. It combines with and draws sustenance from the tradition of service bequeathed by saints Sankardev and Madhavdev.

What is the unique task of the people of an area that has been the victim of neglect? To fight

for long denied rights ? To strive for unity in this fight ? But there is another aspect.

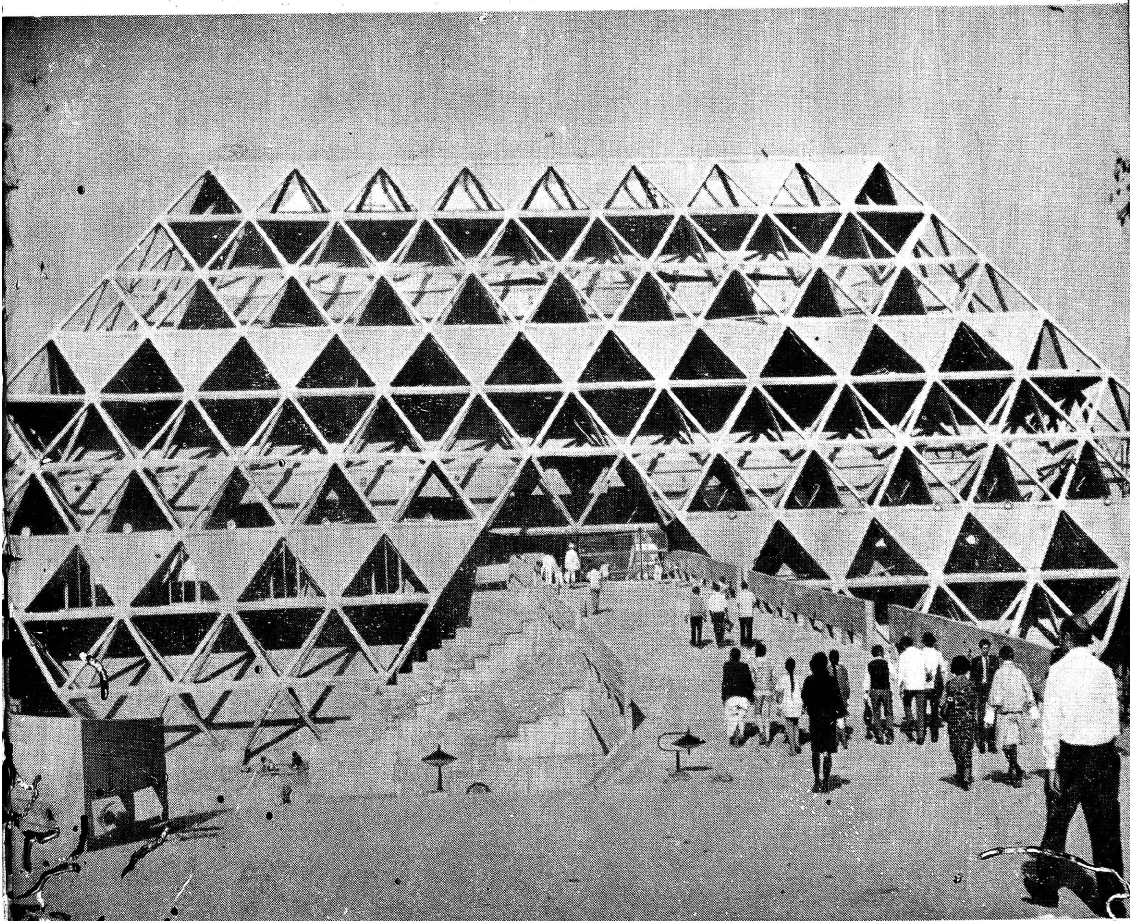
India's attitude to Assam is the product of a serious disease in the country. Who is going to cure this disease? It could be the job of the people of Assam to make the heart of India more caring towards all its members, near and remote. Some region has to supply a fresh group of leaders for the last quarter of this century and the first quarter of the next.

Why does one feel that Assam may supply this line of responsible men and women. Because one has experienced the warmth of heart, the thoughtfulness, the magnanimity and the alertness of mind of the people of Assam. Because one feels in Assam and the whole northeast of India the impact of an intangible but nonetheless real force that suggests destiny at work.

Inside a home much about a people and an area may be perceived. In poor, average and rich Assamese homes one encountered qualities of head and heart urgently needed by the whole country. The rest of India has to repair past mistakes towards Assam. Yet it may be up to Assam to supply to India the elements that are missing.

To learn that Gandhiji was greatly struck with Assam was not a surprise. Among other things he marvelled at the poetry in cloth that the women of Assam could weave. The art thankfully, is not yet dead in the province. Also present today's Assam is a character that makes the visitor feel that Assam may, through struggle and faith, weave the fabric of a new India.

—By Raj Mohan Gandhi
in Orissa Review.



The Hall of Nations Home of 21 Participants.

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UNENDING SEARCH FOR OIL

The Oil and Natural Gas Commission is in the news often. A well is spudded or oil is found and there is exultation. Sometime something fails and there is concern. One can understand this focus on oil, which is among the more important of such primary sources of energy as solid fuels, water power and nuclear power. A close correlation exists between the standard of living and energy consumption, and, in most countries, it is petroleum that holds a dominant position and there is a steady increase in the demand for it.

In the past 100 years the oil industry produced 30,000 million tonnes of crude oil and in the next 10 years alone, as much quantity will be required to meet world demand. There are enormous crude reserves waiting to be exploited and new fields are constantly being discovered.

The world as a whole consumed 2,293 million tonnes in 1970, U.S.A. consuming 679 million tonnes, Japan 200 million tonnes and U.S.S.R. 270 million tonnes. The Middle East countries produced a large quantity of oil. 690 million tonnes but consumed only 51 million tonnes in 1970. The

BY
P. T. VENUGOPAL
*Member, Finance, Oil and Natural
Gas Commission.*

interesting feature to note is that developed countries import a good part of their requirements of crude oil but more often it is companies based in these countries, some of them state-owned, which have been and are exploiting and producing oil in countries which are rich in this natural resources.

LONG WAY TO GO FOR INDIA.

Viewed in the context of world petroleum production or consumption, India has a long way to go. However from a meagre 2 million tonnes of consumption in 1947 the figure rose to 8 million tonnes in 1961, 13 million tonnes in 1966. 20 million tonnes currently and will rise to 46 million tonnes in 1980. Production within the country rose from 0.2 million tonnes in 1947 to 7 million tonnes currently and will rise to not less than 13 million tonnes in 1980.

Oil in the ground has no value. Considerable efforts are needed to find the reserves and develop them. In spite of advancement in technology and methods, oil is still "where you find it". Oil comes from the slow process of decomposition and distillation of organic material in "source rock" that were laid down as sediments on the bottom of ancient seas. It is not found in underground lakes or in streams, flowing in subterranean channels. It is found stored as minute globules in porous reservoir rocks such as sands, sandstones, coarse silt and fractured and porous lime-stone. It is also found in the ancient coral reefs. In nature all the pore space is filled with water, oil or gas. Oil/gas being lighter has a tendency to float over water. Thus it accumulates in traps in the higher part of such sediments.

DIFFICULT OPERATIONS

Geologists and Geophysicists carry out the search for oil using a variety of methods and techniques with an array of instruments, tools and equipment including computerised units. However, their endeavours may not lead to definite results. All that is achieved is pinpointing of structure which would probably contain oil or gas. Then the drillers take over with

Artificial Wool from petrol product at Bulgarian Pavilion.



their rigs and equipment. A well is spudded and one goes deep into the ground 3,000 metres, 4,000 metres or 5,000 metres to find if oil or gas is really there. And if oil or gas is there a second well, a third well and so on has to be drilled to develop a field. Thereafter production installations have to be constructed, pipelines laid and production engineers get busy.

In the 16 years of exploration since 1956 the oil and Natural Gas Commission has covered 213,000 square kilometres all over the country by detailed/semi/detailed-reconnaissance geological mapping and has done 176,000 line kilometres of seismic survey in selected areas. It has drilled in 108 structures distributed in 11 different States, namely, Gujarat, Assam, Uttar Pradesh, Himachal Pradesh, Punjab, Bihar, Rajasthan, West Bengal, Pondicherry, Tamil Nadu and Jammu and Kashmir. Out of these, 31 structures proved to be oil/gas bearing with a concentration of these structures in Gujarat and Assam.

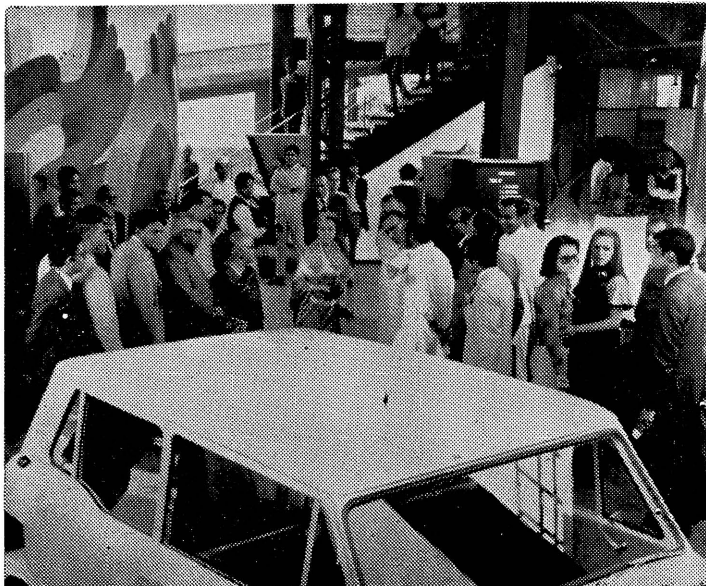
MODEST RESERVES.

Although statistically the success ratio of discovery of oil/gas bearing structures in this country is double the world average, the recoverable reserves of oil/gas established at over 100 million tonnes are only modest. About 24 million tonnes out of this quantity has been produced and consumed so far. The geological or tectonic set up of the country is such that the reservoir and the production per day per well is small. For example, our best known field, Ankleshwar has a large number of wells producing a quantity of oil per annum which in the Middle East just a dozen wells will yield.

Nevertheless the exploration and exploitation efforts have to be kept up in the country until we locate all the oil that is there and produced it, except in areas where physical efforts or financial outlays become too burdensome. Judicious ventures abroad to explore and produce oil in friendly countries should supplement an internal programme so as to attain self-sufficiency in resource availability.

FUTURE PROGRAMME.

The Commission has worked out in collaboration with Russian



The small Car in Haryana Pavilion produced by Sanjay.

experts a definite programme for the next 5 years beginning from 1973. In the 14 basins which contain sedimentary rocks of sizeable thickness and fair hydrocarbon potential, geological and geophysical work will be intensified. The Commission has taken up drilling work in seven basins so far and it has plans to extend the activity and also to move into areas which are considered to be prospective but had been given a lower priority earlier because of inaccessibility, distance from consuming centres and logistic problems. For example, activities have just commenced in Tripura and Surma Valley as also in Kutch in Gujarat.

The Oil and Natural Gas Commission is also at the threshold of a new phase, drilling in deep waters. The first well is to be spudded in January, 1973 in the off shore Bombay High area where the water depth at the first location will be 64 metres. The drilling will be done using the self-propelled self-elevating drillship under construction in Japan, the first of its kind acquired by the Commission. Last winter in the Bombay High and adjoining areas a detailed seismic survey was carried out. The results have indicated presence of good structures which warrant drilling. The Commission has also proposed to acquire its own seismic

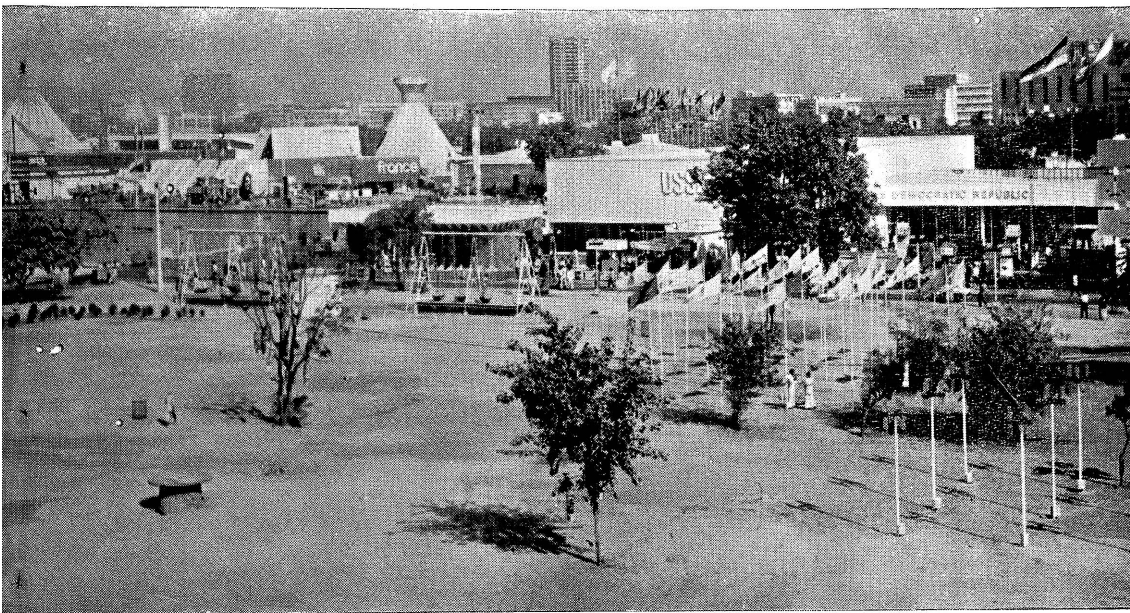
survey vessel and before long carry out its own seismic survey of all the offshore areas of the country minimising dependence on foreign countries.

ADDITIONAL RESERVES.

With its large cadre of scientists, technologists and workers and its plan for modernisation of equipment and acquisition of latest know-how through suitable training programmes of personnel, the Commission will accelerate the search for oil.

In the next five years, additional reserves of oil planned to be established are of the order of 64 million tonnes and the annual production rate of O.N.G.C. is expected to go up from the present 4 million tonnes (Oil India Limited produces a constant 3 million tonnes) to 8 million tonnes. These projections are on a statistical approach based on the experience of the past few years using indices like oil discovered per metre of drilling, average oil content of structure and so on. But one hopes for a bonanza may be in the Bombay High Offshore area, may be in Tripura, may be anywhere else. One hopes for the discovery of an oil field comparable to a Middle East field or more modestly for a few more Ankleshwars. Therein will lie a short cut to rapid economic growth.

INTERNATIONAL PAVILIONS



An aerial view of Foreign Pavilions of Asia 72.

Among the foreign pavilions, the most visually exciting are those of Australia, the Republic of Korea and Canada. The facade of the Australian Pavilion is completely sheathed in aluminium which will sparkle against the clear November sky. The adjacent conical pavilion of the Republic of Korea too is covered with aluminium. The 95-foot elliptical dome of the windowless Canadian pavilion will be another impressive landmark.

The Japanese have adopted a novel covering of canvas for their pavilion. The canvas is anchored to nine trusses along the length of a rectangle. The display area will be dissected by a water course spanned by three Japanese-style bridges.

AUSTRALIA.

Lying southeast of Asia, between the Pacific and Indian Oceans, Australia is almost completely surrounded by wide ocean expanses. It is bounded on the north by the Coral, Arafura, and Timor seas, on the east and south by the Pacific Ocean, and on the west by the Indian Ocean. Neighbouring areas include New Guinea to the north, New Zealand to the southeast, and Indonesia to the northwest.

Australia has the world's largest known bauxite deposits at Weipa in northern Queensland. Search for oil is in progress in various parts of Australia.

Australia produces more opals than any other country ranks third as a producer of lead (310,000 tons in 1958), fourth as a producer of zinc (600,000 refined tons), fifth as a producer of gold and silver. Nickel is its latest discovery and India imports large quantities from Australia.

Coal is Australia's leading mineral product, accounting for about 36 per cent of total mining output (20 million tons of coal and 1 million tons of lignite in 1958), Lead silver and zinc, which are usually found combined in the same ore deposits, account for about 26 per cent.

Victoria has the thickest beds of lignite in the world, while Tasmania has high-grade iron ore deposits estimated at 200 million tons.

Accent on heavy industry, electronic componentry and sophisticated technology are the highlights of the Australian presentation which emphasises the difference between the old Australia and the new. The spirit of new Australia is captured in photographs, models, bass reliefs and wall sculptures that are on display in the section called the National Court. Beyond the Court, in the commerce section, the metal products, rough gem materials and gemstones, wool textiles and wool processing techniques, motor cars and refrigerated vans reflect copiously on the quiet but cultured progress of the people down under.

By participating in the Third Asian Fair Australia is once again reaffirming her faith in the mutual exploration of the frontiers of human potential.

Australian wool Offers India Export Opportunity.

India imports more wool from Australia than from any other country and last year was India's most successful as a major wool trader.

This wool is used for various products which India makes and, in turn, exports mainly to the USSR. This trade realised a gain of \$ 14.5 million in the last financial year.

The Australian Wool Commission is convinced that India's potential as a wool manufacturing and trading nation is still greater. The Commission believes that there is opportunity for India to significantly increase its exports of wool products, particularly to Russia and India's neighbouring countries and also to increase its domestic usage of Australian wool.

The Commission has one of the major displays in the Australian pavilion at the New Delhi Fair which will provide opportunities for closer Australian/Indian co-operation in the processing and marketing of wool.

Staff on the stand outline to visitors the distinct advantages of wool, both as a processing and trading commodity and as a cloth or garment. Technical advice are also available to firms wishing to begin wool processing or to enlarge their existing facilities.

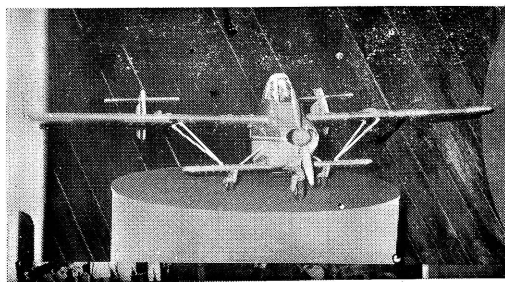
Samples on display include wool in the greasy state as it comes from the sheep's back and, in the various processing stages, from wool-tops, to sliver, yarn, fabric and garments.

Grain Handling Equipment Goes on Trial

An Australian company, Hughes Holdings Group, pioneers in the bulk handling of grain, are supplying equipment to an experimental farm at Hapur, India.

The work, under the auspices of the United National Food and Agricultural Organisation, of which India is a member, is being carried out in a series of feasibility

Australian Pavilion.



Model of Australian Agricultural Plane.

trials at Hapur. The Hughes Holdings Group have supplied grain sugars, bulk truck bins and silos at various trial locations.

The Indian government is watching the Hapur experiment closely and its success will help the Indians determine the value of a national bulk grain handling system. The equipment is particularly useful in controlling vermin and preventing theft.

New Delhi also sees the Australian Company's equipment in the Australian Pavilion at the Third Asian International Trade Fair—Asia '72. The Hughes Holdings Group exhibits their "Jetstream-Hysky-All" bulk machinery for bulk grain handling, manufactured at their factory in Belmont, Western Australia.

Australian Developed Agricultural Aircraft.

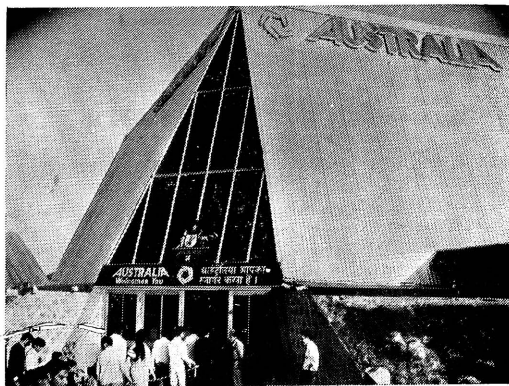
A model of the highly successful Australian agricultural aircraft—the PL 12 Mark 2 Airtruck—will be a focal point of interest for Indian agricultural experts visiting the Australian Pavilion at Asia '72—the Third Asian International Trade Fair—in New Delhi from November 3 to December 17.

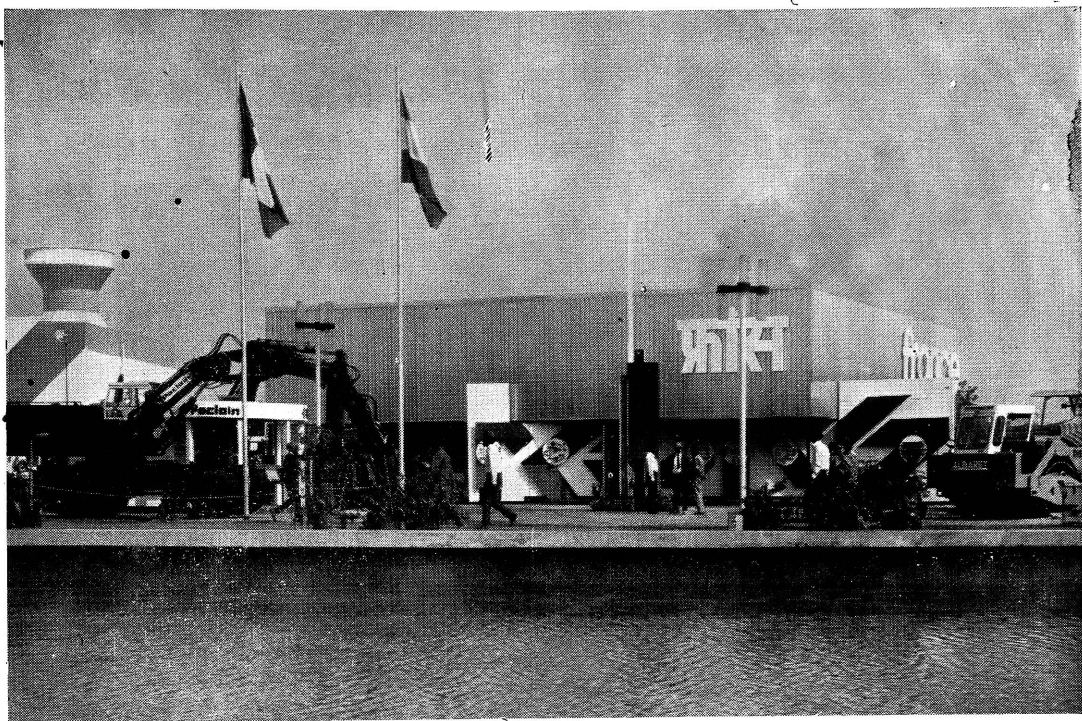
The Airtruck was developed after exhaustive studies of the specific requirements of the Australian agricultural industry. Its unconventional shape is the result of building an agricultural machine, which flies rather than adapting a conventional aircraft to agricultural use.

The Airtruck, built around a one-ton capacity hopper has proved the effectiveness of this concept throughout many thousands of hours in the field. It can distribute more tonnage at lower operating costs than any other aircraft of its size and power.

Twin hopper outlets together with the aerodynamic effects of stub wing and main wing give an extremely even and broad swath of over 90 foot. (27.43 metres), whether the aircraft is spreading or spraying.

Exceptional load carrying capacity for its size under all climatic conditions, combined with very good manoeuvrability, has made the Airtruck profitable in areas previously considered uneconomical for treatment methods.





The French Pavilion.

BELGIUM.

Situated in north-west Europe, Belgium borders the Netherlands and the North Sea on the north, Germany and the Grand Duchy of Luxembourg on the east, and France in the south and south-west.

For centuries it has maintained its status as an industrial country by shaping its production to meet the changing requirements of world commerce.

Belgium engineering and construction firms build steel plants, chemical works, power stations, port facilities, and office buildings throughout the world.

The chemical industry manufactures a wide range of products from heavy chemicals and explosives to pharmaceuticals and photographic supplies. It leads the world in the production of gelatin and radium salts, and is outstanding in the fertilizer, coal tar and plastics fields.

The diamond-cutting industry in Antwerp supplies most of the U.S. industrial diamond requirements. Belgium cuts over 2 million carats annually. Other important industries include glass and glassware.

WEST GERMANY

(FEDERAL REPUBLIC OF GERMANY).

The Federal Republic of Germany, including West Berlin (481 sq. km.) has an area of 249,472 sq. km. (96,313 sq. mi.).

West Germany is bordered by Denmark on the north by East Germany and Czechoslovakia on the east, by Switzerland and Austria on the south and by the Nether-

lands, Belgium, Luxembourg and France on the west. The north-west shores of West Germany border on the North Sea, and there is a short section on the Baltic in the north-east. Its length from north to south is 517 miles and from east to west 281 miles.

The most important West German trade fairs are at Hanover, Frankfurt, Cologne, Nuremberg, and Munich. The Hanover fair represents industries, the Frankfurt fair, consumer goods; the Cologne fair, mostly hardware and household goods; the Nuremberg fair specializes in toys; and the Munich fair in handicrafts.

German exports are predominantly manufactured products; finished goods account for over 80 per cent of total exports. Machines and machine tools, chemicals, motor vehicles, aircraft and ships are the principal exports. Imports consist mainly of agricultural products.

Foreign investments are principally in heavy industry, chemicals, and pharmaceuticals, electrical industry, machinery and vehicles. Smaller amounts are invested in foreign banks, holding companies and trading companies.

The West German pavilion puts the main stress on industrial and agricultural aspect of the country's co-operation and collaboration arrangements with the developing nations. The exhibit goes all out to highlight the fruitful benefits of Indo-German co-operation in the fields of trade, industrial development, research and agriculture, AEG Daimler Benz, Döckel, Demag and Zeiss, some of the biggest industrial houses are

represented to display their more sophisticated equipment relevant to Indian conditions. Taking the cue from the success of the green revolution the West German pavilion emphasises the application of advance agricultural technology as a force to quickly develop Indian economy.

CANADA

Canada consists of all of the North American continent north of the U.S. except Alaska and the small French islands of St. Pierre and Miquelon. Its total area of 38,51,809 sq. miles makes it the second largest country in the world. It is bounded on the north by the Arctic Ocean, on the east by Baffin Bay, Davis Strait, and the Atlantic Ocean, on the south by the U.S. and on the west by the Pacific Ocean and the State of Alaska. From east to west, at its widest, it stretches almost 4,000 miles, and from north to south almost 3,000 miles.

Canada is now the world's largest producer of nickel (80 per cent of world output), asbestos, and natural uranium; the second largest producer of aluminium (from imported bauxite), cobalt, cadmium, magnesium, and zinc; the third of gold; and the fourth of copper, lead, and fluorspar. Yet the country has barely passed the initial stages in the development of many of its most important mineral resources, and resources developed earlier continue to display great potentiality for growth.

Canada ranks fourth in world trade, following the U.S., and the U.K., and West Germany. On a per capita basis it normally holds a leading place, usually alternating with New Zealand or Belgium-Luxembourg for first place. An important feature of both export and import trends in recent years has been the accelerated pace of exploration and development of Canada's natural resources, which increased demand for imported machinery and equipment had caused an upswing in such exports as petroleum, iron ore and uranium.

India's exports to Canada in 1970-71 were valued at Rs. 31 crores against Rs. 117 crore worth of Canadian exports to India. But again, as an instance of fruitful co-operation between nations, approximately 70 per cent of Canadian sales were financed under the Canadian aid programme. Canada is the second largest net

aid donor to India. In the last twenty years under the Canadian Development Assistance Programme, Canada has provided approximately 1 billion dollars in development loans and grants to India, with the main emphasis on food aid and commodity programmes.

CZECHOSLOVAKIA

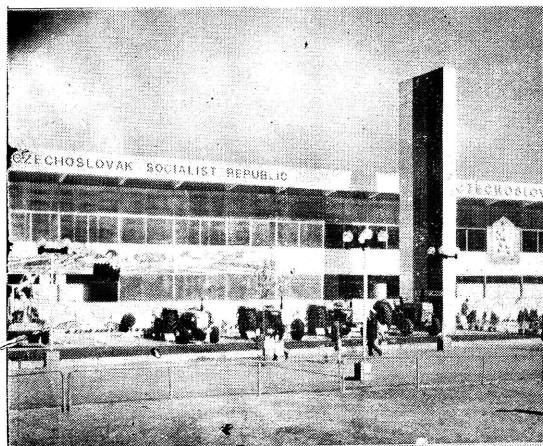
The Republic of Czechoslovakia is situated in central eastern Europe, and consists of the Czech lands (Bohemia and Moravia-Silesia) and Slovakia, with an area of 1,27,850 sq. km., the country has a 2,208 mile border; with Germany on the west and north-west (506 miles), Poland on the north-east (865 miles), the U.S.S.R. on the east (61 miles), Hungary on the south and south-east (422 miles), and Austria on the south-west (354 miles).

Czechoslovakia was one of the more advanced industrial countries of Europe prior to World War II and despite the exploitation and losses suffered during the war, industrial production has expanded greatly since 1945.

The quality of the exportable items—both machine and consumer goods is generally of high calibre, and competes favourably with that of leading industrial country. Madras has been familiar with the Czechoslovakian engineering skill through the Integral Coach Factory and lately by means of the High Pressure Boiler Works, Tiruchirappalli and the Ennore Thermal Plant.

In the history of mutual contacts and co-operation the relationship between India and Czechoslovakia shines as few others. The relations between the two have thrived on a spirit of warm friendliness generated by mutual goodwill and a number of joint ventures.

The most sophisticated machine tools, leather making machines, tractors and agricultural implements are displayed at the pavilion. For manufacturing, Czechoslovakia as a whole imports many raw materials including iron ore, coal oil, many ingredients of chemical industry, raw cotton and wool. The chief exports are machinery and equipment, some fuels and selected foods, and sugar and beer.



FRANCE.

France lies in the western part of Europe. It is bounded on the north by the English Channel, the North Sea, Belgium and Luxembourg ; on the east by Germany, Switzerland, and Italy, on the south by the Mediterranean Sea and Spain ; and on the west by the Atlantic Ocean. Its total area (including the island of Corsica and various small coastal islands) is 550,986 sq. km. (or about 212,681 sq. mi.).

Heavy industry is represented by metallurgy, chemicals and machinery, French ferrous metallurgy has long been one of the leaders of Europe.

France is the sixth largest steel producing country of the world, while in aluminium production, it ranks fourth.

- Chemicals, the fastest-growing industry in France, are among the leading export products, ranging from perfumes to sulfuric acid. The French aircraft industry has never been a mass producer but, like many other French industries, has been a leader in the field of technological advance.

French industries, chief among them being the automotive, have introduced modern production methods with great success.

Trade fairs are held regularly in Paris, Lyon, Bordeaux, Marseille, and Strasbourg.

AUSTRIA.

- Austria, with an area of 83,869 square kilo metres (32,369 square miles), is a landlocked country in central Europe bonded on the north by the Federal Republic of Germany and Czechoslovakia, on the east by Hungary on the south by Yugoslavia and Italy, and on the west by Switzerland.

About half of the people live in and around Vienna (Wien) and in the Danube Valley. Major city is Vienna, the capital and chief city.

Austria holds the fourth place in world wood trade (after Canada, Sweden, and Finland). Timber and other wood products have been traditionally important export commodities and continue to make up the largest single export item. However, exports of raw timber are declining in favour of lumber and such other wood products as veneers, boxes prefabricated houses, toys, matches, turpentine, and volatile oils.

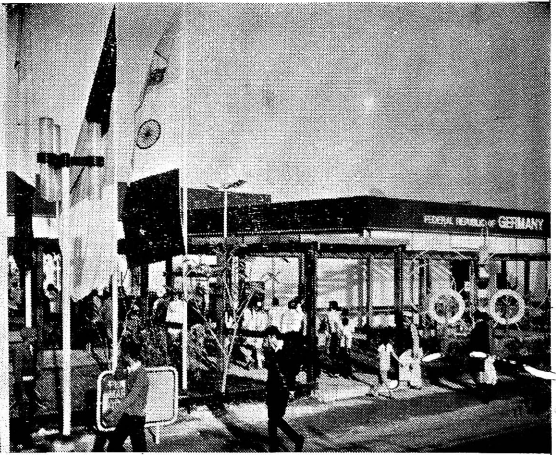
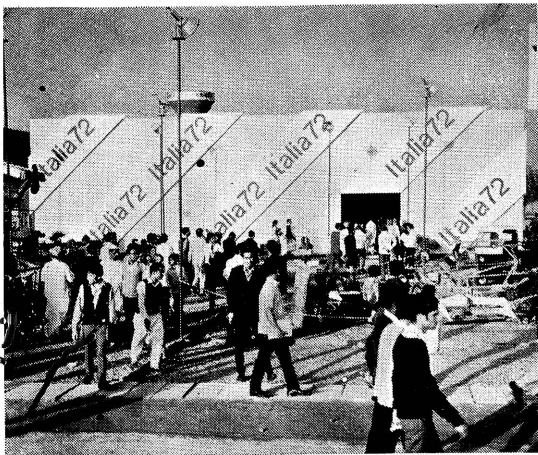
Magnesite reserves of the Austria, largest of their kind in the world, seem almost inexhaustible. Nearly half of world magnesite production is mined in Austria.

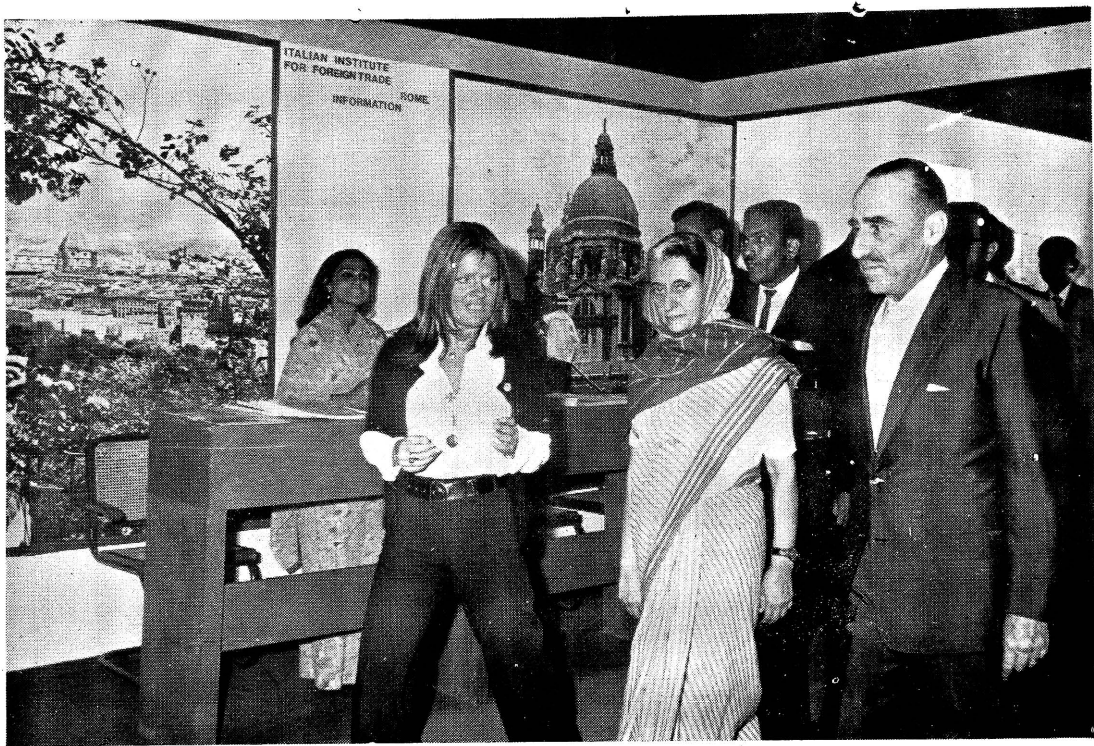
The machinery and steel construction industry exports about 35 per cent of output. Many industries have improved their competitive position by modernizing equipment and substituting new processes. Austria has always been famous for its skilled craftsmen, glass blowers, goldsmiths, jewelers, lace makers, potters, stone cutters, and wood carvers, but small businesses and craft trades now account for only about half their former share in the net total.

SPAIN.

In the late 1960s, Spain was in the process of transformation from an underdeveloped to a developed country. And today, Spain is one of the fastest growing economies in Europe. Spanish economy is supported by Agriculture 70-75 per cent of all agricultural produce being a great variety of fruits, fisheries mining and minerals, power and the manufacturing industries. There are three major industrial regions, viz., the north, catalonia, and the mining districts of the southwest. The north is still the most industrialized region, conveniently facing Western Europe, with coal, iron, zinc, salt, timber and water power.

Her food products comprise half of Spain's exports (notably olive oil, oranges and other fruits and vegetables). An aura of old Spain too, can be felt by the visitor to the Spanish pavilion.





Italian Ambassador Mr. Amedeo Guillat guiding Prime Minister through Italian Pavilion.

ITALY.

The republic of Italy, including the major islands of Sicily and Sardinia, covers a land area of 301,181 sq. km. (116,256 sq. mi.). The boot-shaped Italian main land extends into the Mediterranean Sea a distance of some 725 miles from northwest to southeast; its width varies from 80 to 135 miles except in the north where it is about 375 miles wide. Italy has common land frontiers with France, Switzerland, Austria and Yugoslavia in the north. Its peninsular coastline of about 2,600 miles borders the Tyrrhenian Sea in the west, the Ionian Sea in the south, and the Adriatic Sea in the east. Sicily (9,926 sq. mi.) lies off the toe of the Italian boot, and Sardinia (9,298 sq. mi.) is about 200 miles northwest of Sicily. Within the frontiers of Italy are included the sovereign Republic of San Marino (60.5 sq. km. or 38 sq. mi.) and the sovereign state of Vatican City (0.4 sq. km. or 108.7 acres).

Italian heavy industry, characterized by relatively large enterprises, has staged a spectacular revival during the post-war years, which has exceeded pre-war production levels and established a world-wide reputation in new industrial products (e.g., sewing machines, optics, chemicals, fashion). With the exception of hydro-electric power and natural gas, however, industrial natural resources are inadequate; Italy must normally import about 90 per cent of its coal and

almost all its petroleum, cotton, copper, and phosphate rock, and a major part of its wool, cellulose and iron.

New markets for certain Italian crops (e.g., citrus fruit, other fruits, and early vegetables) are developing. Mining in Italy is limited to the extraction of sulphur, mercury, lead, zinc, bauxite and marble.

The bulk of heavy industry is concentrated in the northwest, in the Milan-Turin-Genoa triangle. Metallurgy, ship-building, precision machinery, and of chemicals are the important heavy industries, while leading light industries include textiles, foods and handicrafts (leather-wear, fashions, etc.).

The best-known and most frequented trade fairs in Italy are those of Milan, Bari, and Palermo.

Twenty leading concerns are exhibiting the most sophisticated and advanced products in a tastefully arranged manner. This has been done with a view to attracting fresh collaboration arrangements with Indian counterparts. The success of such collaboration in the past is strikingly brought out when you look at the contribution the Italian automobile industry has made to the growth of Indian industry. You have only to look at cars like Fiat and scooters like Lambretta and Vespa to understand the full import of such fruitful co-operation, which has also contributed considerably to the growth of the indigenous oil industry.

WIDE RANGE OF SOVIET EXHIBITS FOR ASIAN FAIR.

The Soviet pavilion at the Third Asian International Trade Fair is different from all other Soviet pavilions at other world trade fairs. It is the biggest of all the pavilions in the foreign sector and is spread on an area of 4,700 square metres. It is divided in 20 sections, each for specific display of exhibits. A part of the open space outside the pavilion has been reserved for a display of Soviet tractors and agricultural implements.

A model of Lunokhod-I in its original size, Molniya communication satellite, a cosmonaut's dummy in a space suit with photographic exhibits of Soviet advances in space technology are some other attractions of the Soviet pavilion.

Picture of Soviet Asias.

One of the striking features of the Soviet pavilion is the focus on five Soviet Asian Republics, namely,

Tajikistan, Turkmenia, Usbekistan, Kazakhstan and Kirghizia.

This part of the pavilion unfolds the story of sustained progress of the Soviet Asian Republics from the days of nomadic, livestock breeders to the present stage of modern industry, mechanised agriculture and mighty projects for the generation of power and irrigation of vast areas.

Special Selection of Machines.

This time visitors to the Soviet pavilion will see the widest range of exhibits from the U.S.S.R. than ever before. The number of exhibits roughly runs to 3,000.

The Soviet Economic Commission has made a special selection of exhibits of machines which the U.S.S.R. produced in recent years. The organisers have also included the items of Soviet exports to India in order to highlight the impact of trade relations between the two countries, the economic progress of India and substantial contribution of the Soviet-aided projects which laid the basis for the growth of engineering industry in this country.

"Lake Manasarovar" in front of U.S.S.R. Pavilion.





THE GERMAN DEMOCRATIC REPUBLIC.

East Germany has an area of 107,834 sq. km. (41,635 sq. m.), including the East Berlin area of 403 sq. km. (155.6 sq. m.).

It is separated from West Germany by a 1,381 km. (863 mile) border, and has a 456 km. (285 mile) boundary with Poland along the Oder-Neisse line on the east and a 430 km. (269 mile) border with Czechoslovakia on the south. East Germany's entire northern boundary lies on the Baltic Sea. East Germany is a prominent producer of lignite. Shipbuilding and the chemical industry have received large investments in the last few years.

While East Germany lacks adequate raw materials it is rich in lignite, and there are deposits of rock salt, potash and gypsum, the basis for an important chemical industry, which has high priority in economic planning. The shipbuilding industry also is being expanded. The machine-building industries are important, particularly, light equipment.

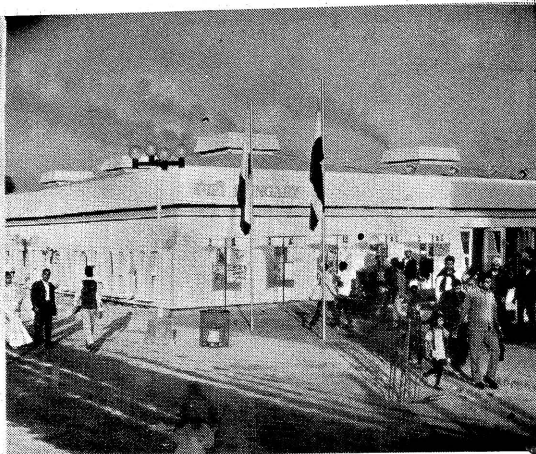
The optical and precision industries also are important producers of export items, especially watches, calculators and cameras.

The most important international trade exhibition in East Germany are the Leipzig Autumn Fair, takes place every year and more specialised fairs are held from time to time. The Government contributes liberally to participation in trade fairs and exhibitions abroad.

The theme of the GDR pavilion is bifocal—"GDR—a reliable economic and Trade Partner" and "GDR—For Worldwide Trade and Progress."

At the GDR pavilion there is exhibited and demonstrated a variety of polygraphical, agricultural and food-processing equipment trusted for their excellent quality. Various types of film materials and cameras, are also displayed. Models of ships represent and the highly sophisticated shipbuilding industry of the GDR.

With the adoption of the Rupee Payment system the foreign trade turnover between India and GDR



has risen from Rs. 2 crores annually in 1951 to Rs. 60 crores in 1971. More than 60 collaboration agreements on technical know-how have been finalised between parties in the GDR and India.

HUNGARY.

Hungary is situated in the Carpathian basin of central Europe. Its total area is 93,030 sq. m. (35,919 sq. m.). The landlocked country has a 1,392 mile boundary; 392 miles with Yugoslavia on the south, 378 miles with Czechoslovakia on the north, 268 miles with Romania on the south-east 221 miles with Austria on the west, and 134 miles with the U.S.S.R. on the north-east.

Hungary has concentrated on developing lathes, buses, tractors, motorcycles, diesel engines, T.V. sets, radios, sewing, machines, and river-going ships, and other engineering products, all export items. Chemical production has been accelerated.

Food processing was the leading industry in the interwar period, but has become less important since the war. Well-known Hungarian food products are Tokay and other wines, poultry, canned fruits and sausages. Also important are tobacco products, cement, prefabricated building parts, and handicraft products. Honey is also exported.

The most important trade exhibition is the Industrial Fair, held since 1906, which takes place every spring in Budapest. Smaller more specialised fairs and exhibitions are held from time to time. The government contributes liberally to Hungarian participation in trade fairs and exhibitions abroad.

In several products India is the first exporter to Hungary, while the latter is contributing to the realisation of Indian Industrialisation programme by supplying machinery, various raw materials and semi-finished products.

Products of 125 factories and several industrial branches are displayed in the Hungarian pavilion covering about 700 sq. metres, with the help of products, photographs, slides and films, not only Hungary's industry is projected but also the country's progress since her freedom is depicted.

POLAND BULGARIA YUGOSLAVIA AND RUMANIA

POLAND

The Polish People's Republic has an area of 311,730 sq.km. The country has a 310 mile seacoast in the Baltic, and is bounded by East Germany (285 miles) on the west, by Czechoslovakia (808 miles) on the south and the USSR (826 miles) on the east, a total of 1,919 miles of land border.

High production has been attained especially in heavy industry with concentration on engineering, metallurgical, and chemical branches. Machinery and equipment now make up about 16 per cent of total exports.

The most important trade exhibition, in Poland is the Poznan International Fair which takes place every June in Poznan. The Polish Government contributes liberally to Polish participation in trade fairs and exhibitions abroad.

The volume of trade between India and Poland has grown by 300 per cent in the decade 1960-70. In 1970 alone the turn-over increased by Rs. 100 million totalling 600 million rupees. Polish exports to India include advanced and sophisticated project equipment and machinery such as coal-mining machines, power station generators and marine diesel engines. India in turn has been exporting to Poland both industrial and non-industrial products which cover almost anything from railway-wagons to locks and padlocks.

- Twenty Polish enterprises are represented at the exhibition.

BULGARIA

Bulgaria has a 248-mile coastline on the Black Sea, and continental borders with Rumania on the north Turkey on the southeast, Greece on the southwest and Yugoslavia on the west.

The traditional industries are devoted to the processing of agricultural products, such as winemaking, flour milling, distilling, sugar refining, edible oils, canning,

tanning and tobacco. Rugs, embroidery, and metalware are traditional craft products. Owing to the government's stress on heavy industrial development, there has been a rapid increase in metal fabricating (machine tools, farm machinery, mining equipment and chemical industries phosphate fertilizers).

Bulgarian canning industry applies such technology which preserves the vitamins and taste of fresh fruits and vegetables. Four enterprises of the food and tobacco industry have been built in India with Bulgarian credit and technical co-operation. The delivering of other six enterprises of the food industry is in preparation. With Bulgaria's assistance, India has completed the gamma globulin and albumin factory, equipped with Bulgarian installations. Indian tip-lorries are working on the construction sites in Bulgaria. In Bulgarian food store one often finds various Indian goods. Bulgaria has also offered India different interesting licences of a number of inventions. India is a regular participant in the Flovdiv Fair and Bulgaria exhibits at the Indian international fairs.

YUGOSLAVIA

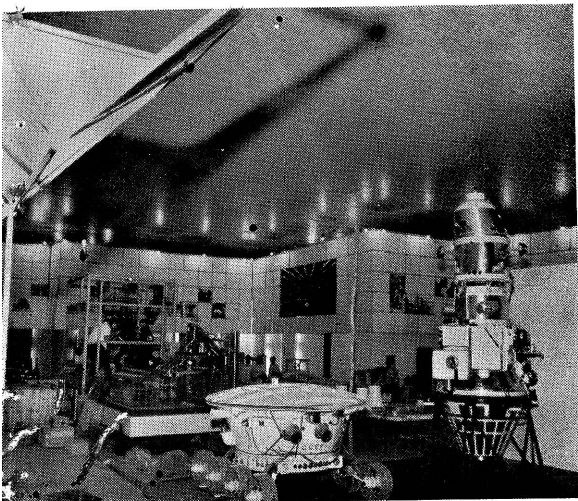
True to its socialist tenets, Yugoslavia has actively and consistently been pursuing the principles of peaceful-co-existence and non-alignment in the field of international relations. Her presentation, housed in the Hall of Nations, mingles well with the spectacle and substance of the fair, and bears eloquent testimony to the energy and spirit of Yugoslavia which are directed towards creating the necessary conditions for an accelerated economic development.

Yugoslavia's march into the industrial age is marked by rapid industrialisation coupled with efficient exploitation of natural resources and sophisticated technology which have enabled her to produce a large number of industrial products and other items such as agricultural and earth moving machinery, equipment for electrical power stations, ships up to 220,000 DWT, machine tools of high quality and industrial gases with equipment for their storage.

RUMANIA

Exposure to invasion and its record of unstable internal politics make Rumania an example in fortitude and perseverance. She did not attract much investment capital and in 1930s came to be attached to the German economy very largely in the role of supplier of unprocessed farm products. But after the Second World War Rumanian economy benefited largely through its membership of COMECON. The resulting trade agreements, as well as the two five-year plans (1951-55 and 1956-60) and the overlapping six-year plan (1960-65), contributed to the more rapid expansion of the economy, which becomes more closely integrated with the economics of the Soviet Union and other socialist countries.

Agriculture, forestry, mining, power and the manufacturing industries, have resulted in a wide range of products of which the chief exports are petroleum, agricultural products, lumber and wood products.



Model of "Lunak hod-1" in the U.S.S.R. Pavilion.

THE PERMANENT HALL OF NATIONS

A Landmark in Architecture

The focal point of Asia 72 is the permanent complex covering 40 acres. The rest of the exhibition has been built around it. Of the four entrapments three are directly related to the four industries comprising the Hall of Nations, the Hall of Industries and the Theme Pavilion. The Hall of new building techniques have been used for the first time in India, and the engineering calculations were computerised.

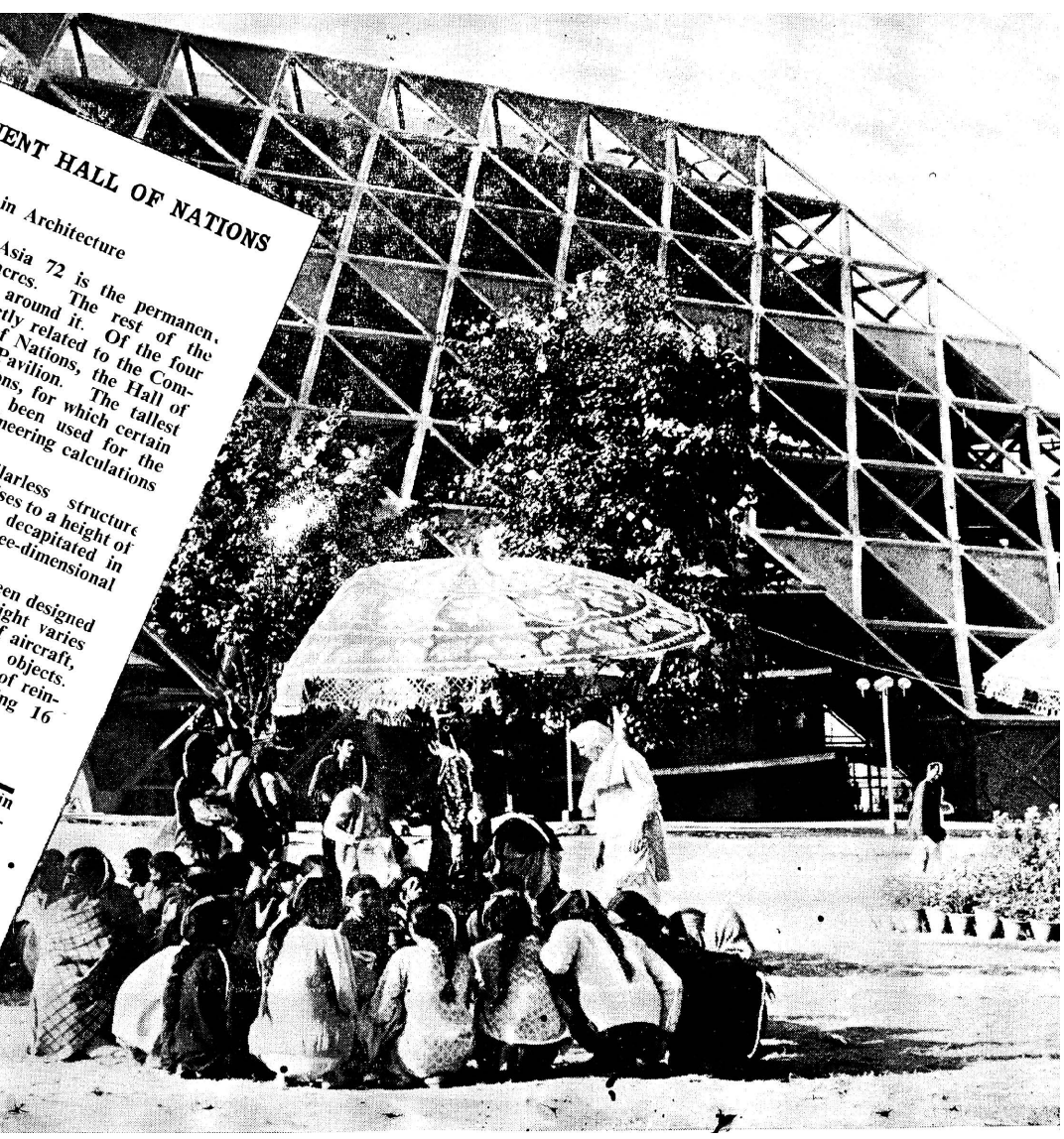
The Hall of Nations, a pillarless structure covering an area 256 ft. by 256 ft. rises to a height of 102 feet. Shaped like a pyramid decapitated in the middle, it is essentially a three-dimensional space frame of reinforced concrete.

The main pavilion in the Hall has been designed with a clear span of 250 feet. Its height varies from 10 to 90 ft. to permit the display of aircraft, earthmoving machinery and other large objects. The whole structure is a web of triangles of reinforced cement concrete, each side measuring 16 feet.

Computer Calculations.

Being the first structure of its type attempted in the country, the architects and engineers cross-checked their calculations with the help of a computer. The electronic machine tackled mind-boggling 350 mathematical equations dealing with wind pressure, seismic waves and points of pressures before giving out the answers. Another unique feature of the Hall is the L shaped mezzanine at a height of about 22 feet. This will provide an additional 40,000 sq. ft. of display space.

The hall of Industries, located close to the Hall of Nations is similar in conception, though built on a smaller scale.



AFRICA PAVILION IN ASIA 72

Guinea :

Guinea, on the north-west coast of Africa, has an area of 245,857 sq. km. (about 95,000 sq. ml.). It stretches from north-west to south-east about 480 miles. The Atlantic coastline from north to south is 170 miles. Guinea is bounded on the north by Portuguese Guinea and the Mali Federation, on the east by the Ivory Coast and on the south by Sierra Leone and Liberia.

The most spectacular mining developments in Guinea have been in the production and export of bauxite and iron ore. Bauxite exports from the Los Islands began in 1952 to push up aluminium production the world over.

The largest industrial unit in Guinea is the large aluminium plant at Fira, the largest in the world with a 1.2 million tons capacity.

Kenya :

Participating for the first time in the series of Asian Fairs is Kenya. The exhibit offers abundant evidence of the economic advance made by the country since achieving its independence in 1963. Kenya has a predominantly agricultural economy with agriculture, horticulture, livestock, forestry and fishing accounting for almost 38 per cent of the gross national product. Coffee, tea, meat preparations, sisal, hides, skins and furs, pyrethrum extract, petroleum products, sodium carbonate and cement are the major exports. Some of the principal products displayed at the fair are cashew, cotton, sisal fibre, wattle bark extract, pyrethrum, soda ash, wood carvings, handicrafts and game skin goods.

Sudan :

Sudan's display in the Hall mirrors all the economic agricultural, industrial and social progress of that country. Great relics of her ancient civilization which flourished 4,000 years ago, a variety of handicrafts and other ingredients of primary industry fill the rest of the space.

A stimulating cup of coffee can be had at the corner. Films and colour slides will be feature of the Sudan presentation. And to give meaning to the spirit of co-operation representatives will be on hand to answer any enquiries about Sudanese commerce and trade.

Tanzania :

An independent sovereign state of East Central Africa, within the Commonwealth of Nations, consisting of the republic of Tanganika and Zanzibar.



The Ambassador of Kuwait Mr. Eisha Al Eissa
with Prime Minister.

Tanzanian economy is dominated by agriculture, accounting for about 80 per cent of exports by value. Livestock industry and mining production are two other major sources of earning. Diamonds account for about two-thirds of Tanzanian mineral output.

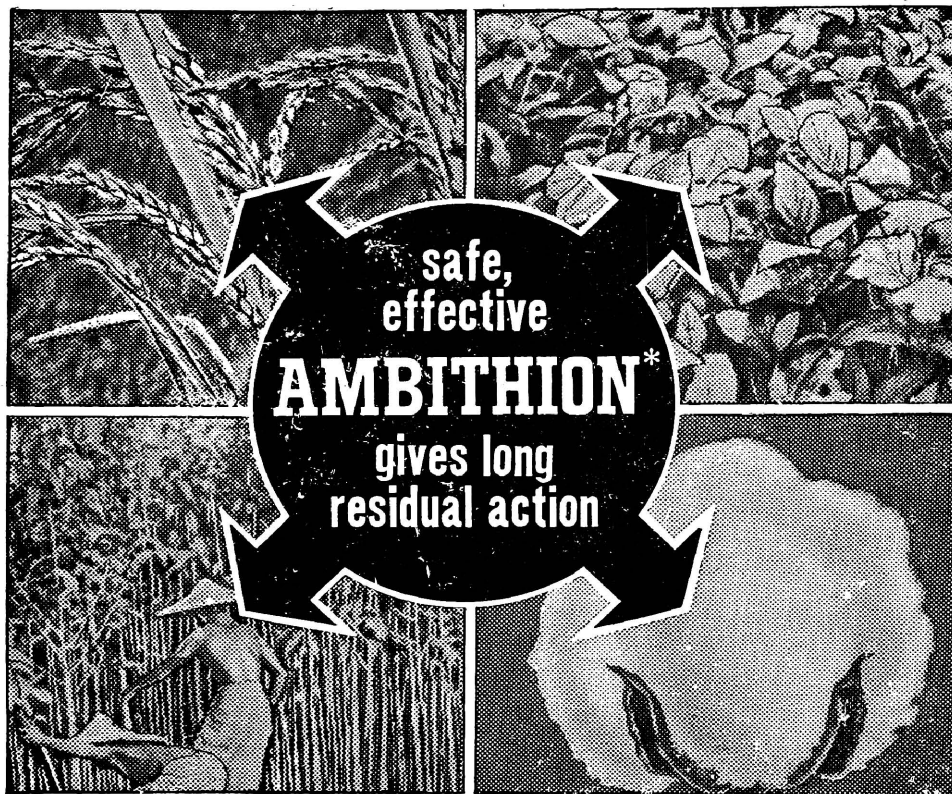
Zambia :

The economy of Zambia is based on prosperous copper mining industry. A four-year development plan launched in 1966, followed by another at the end of the first plan period, has contributed greatly to the process of raising the standard of living of its population. Zambia's copper-based economy received a set-back following the declaration of unilateral independence by Southern Rhodesia but under the dynamic leadership of Mr. Kenneth Kaunda the difficulties have been overcome. The chief export of Zambia continues to be copper followed by maize and tobacco. The main imports include wheat, gasoline, fertilizers, cotton rayon fabrics, motor vehicles and clothing.

Kuwait :

Kuwait is built on oil. And that is a long way from the times when Kut (Meaning the fort) was the abode of some nomadic tribes who could do not a thing with this unrelieved desert. Kuwait means something-different today. It means health, wealth, education collaboration and expansion.

Kuwait is a compact enclosure designed with the view to accommodate the wares which are typical of her oil rich economy. Traditional activities of the people are also represented. Oil and petrol chemical industry including by-products of oil are given major representation.



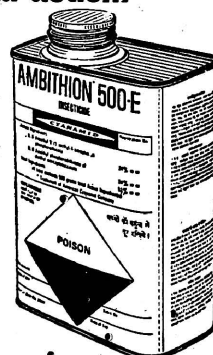
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PERU

Here is another example of 20th Century progress depicting the ups and downs of its own history. Man might be living in Peru since 8000 B.C. but his ancientness has never obstructed his productive genius.

Peru's present economy is made up of agricultural exports, cash-crops, a booming fisheries industry, a growing manufacturing sector, dairy products, sugar and vegetable oils. The presentation is a comprehensive portrayal of contemporary Peru.

ALGERIA.

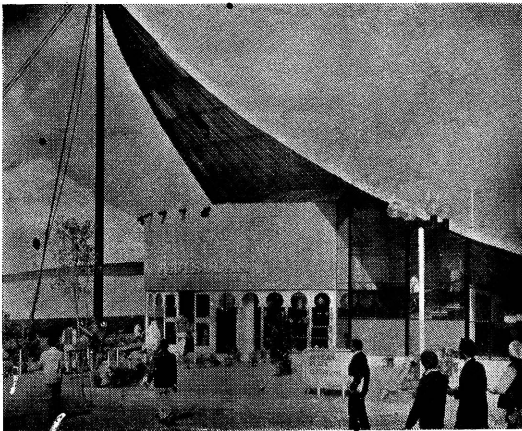
Algeria is situated in northwest Africa. It is bounded on the north by the Mediterranean Sea, on the east by Tunisia, on the south by the departments of Saoura and Oasis, and on the west by Moreocco. It occupies an area of 209,630 sq. km. (81,920 sq. mi.) and includes the uplands, valleys, and coastal plains that lie north of the Atlas Mountains.

Iron ore is Algeria's leading mineral. Phopshates lead, zinc, antimony, copper and tungsten are the other minerals. Export of oil from the field of Hassi Messaoud skarted in January 1958.

There are small coal resources, but oil from the Sahara is expected to be a major asset. Solar energy is the object of extended experimentation. Algeria had to make good the mass exodus of the Europeans who were the skilled farmers. But through sustained effort and sophisticated technology the economy has already begun to improve. The road to progress is paved with difficulties but Algeria's industrial potential, her forestry, fisheries, mining and power promise much. The Algerian exhibit brings into focus the changing face of the country.

FIJI.

Fiji.—Fiji, the exotic archipelago comprising 300 islands, offers a fine example of a multi-racial society living in total peace and harmony. The island nation in the South Pacific is home to a fascinating variety of people. Among them are Fijians, Rotuman, Indian,



Sudan

Chinese, Europeans and Samoans. The Fijian exhibit gives a comprehensive view of life in the islands. It also brings into focus the Fijian archipelago as a potential tourist resort which even now earns as much as 33 million pounds annually from tourism.

LIBYA.

The air of an ancient civilization and the traditional crafts of its people are as much native to the Libyan scene as her oil which flows from port to port and to different parts of the world. In spite of this self-sustaining economic prop Libya has diversified into all-round economic reconstruction. Her economic policy aims at freedom from subordination, transformation, into a productive economy, just distribution through agriculture and the ushering in of an industrial revolution. And to this effect the agricultural sphere has been extended beyond the coastline and into the interior. The Libyan pavilion provides a concentrated look at the country's many faceted march towards development.

MONGOLIA.

The Mongolian Republic consists of 17 Aymags (regions) sub-divided into somons (district.) The highest organ of state authority is the great people's Khural composed of deputies elected for three years on the basis of one for every 2,500 of the population. Pastoral pursuits still was major occupation of more than 80 per cent of the population into the second half of the 20th century while 80 per cent of the total exports were derived from animal products. Cultivation is severely limited by low rainfall and a short-growing season. Oil fields in Sayn Shanda region in the Eastern Gobi district supply a significant part of Mongol oil requirements. Other important minerals are copper, lead, zinc, silver, gold, manganese, antimony, tungsten, tin, mercury, graphite and sulphur.

PHILIPPINES.

This archipelago of approximately 1700 islands first became known to Europeans when Ferdinand Magellan circumnavigated the globe. Although the bulk of the population is Roman Catholic, pockets in the mountain province and Mindaro where aboriginal pagan religion is followed, bring out a contrast between the ancient and the modern Philippines.

The Philippine pavilion at the Fair highlights the achievements and development programmes laid down by the government for an accelerated economic growth. The fertile soil and tropical climate of the Philippines are well adapted to the raising of agricultural products, and farming engages about two-thirds of the employed population. Philippines is one of the world's largest lumber-producing countries, fishing is an important industry. Deposits of gold, silver, copper, chrome, manganese and lead are the other essentials of her economic scene.

CYPRUS.

Cyprus is the largest Mediterranean island after Sicily and Sardinia. Including small island outpost of Cape Andreas known as the Kildhes, its area is 9,25 sq. km.) (3,572 sq. mil.) The island is situated in the extreme northeast corner of the Mediterranean.

Cyprus agriculture is in transition, having changed in recent decades from subsistence farming to production for local and export markets. The rate of farm mechanization is increasing. Its rich copper deposits create an enviable potential.

TURKEY

Turkey is a rough triangle with its apex in the Bosphorus. Locked by a fringe of mountains in its north and south the climate of its undulating plains is mildly warm marked by dry summers and a cool rainy season. The insufficiency of rain and unreliable rainfall in the interior poses difficulties for agriculture which accounts for 40 per cent of Turkey's gross national product.

For centuries Turkey was essentially an agricultural country supplying few manufactured goods to the world markets. However after the revolution, fathered by the great Kamal Pasha, which found a sympathetic echo in India involving leadership of the freedom movement including Gandhiji and Jawaharlal Nehru and the beginnings of an economic revolution were also made. The tempo of industrialization increased perceptibly after World War II.

Planned development in Turkey dates back to 1962 when the State Planning Organization was set up and

given the task of drawing up three five-year development plans. Turkey's most important trading partners are the EEC nations, particularly West Germany, and the USA.

IRAQ

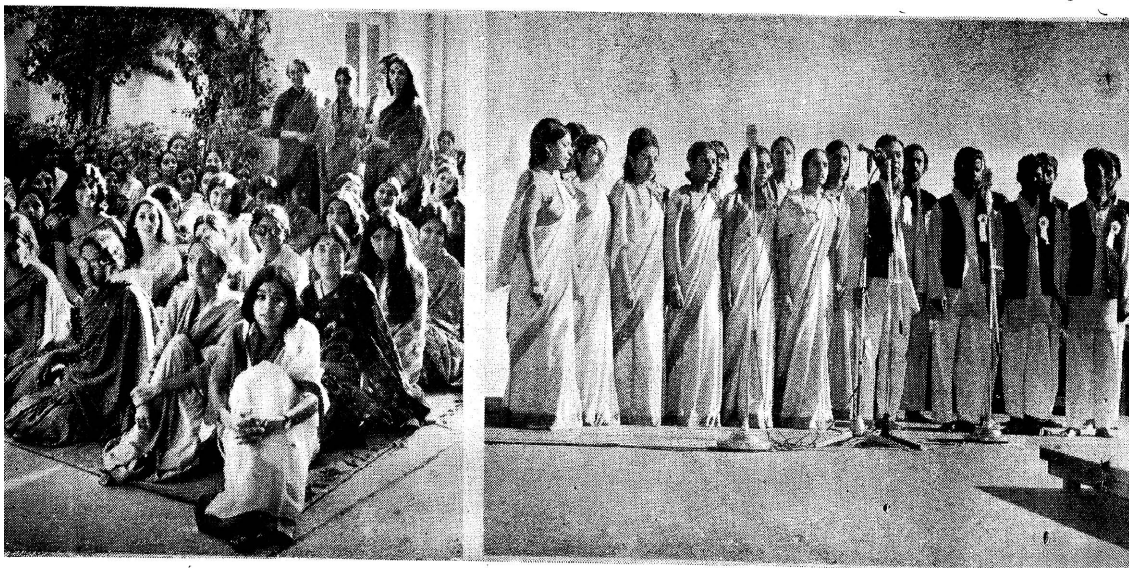
Present-day Iraq (444,442 sq.km. or 17,555 sq. ml.) corresponds roughly to the former Turkish provinces of Baghdad, Mosul (al-Mawsil), and Basrah (al-Basrah). It is bordered on the north by Turkey, on the east by Iran, on the south and the south-west by the Persian Gulf, Kuwayt, and Sa'udi Arabia, on the west by Jordan and on the north-west by the UAR (Syria).

Iraq's oil wealth is now harnessed to Indian industry and is its chief export commodity.

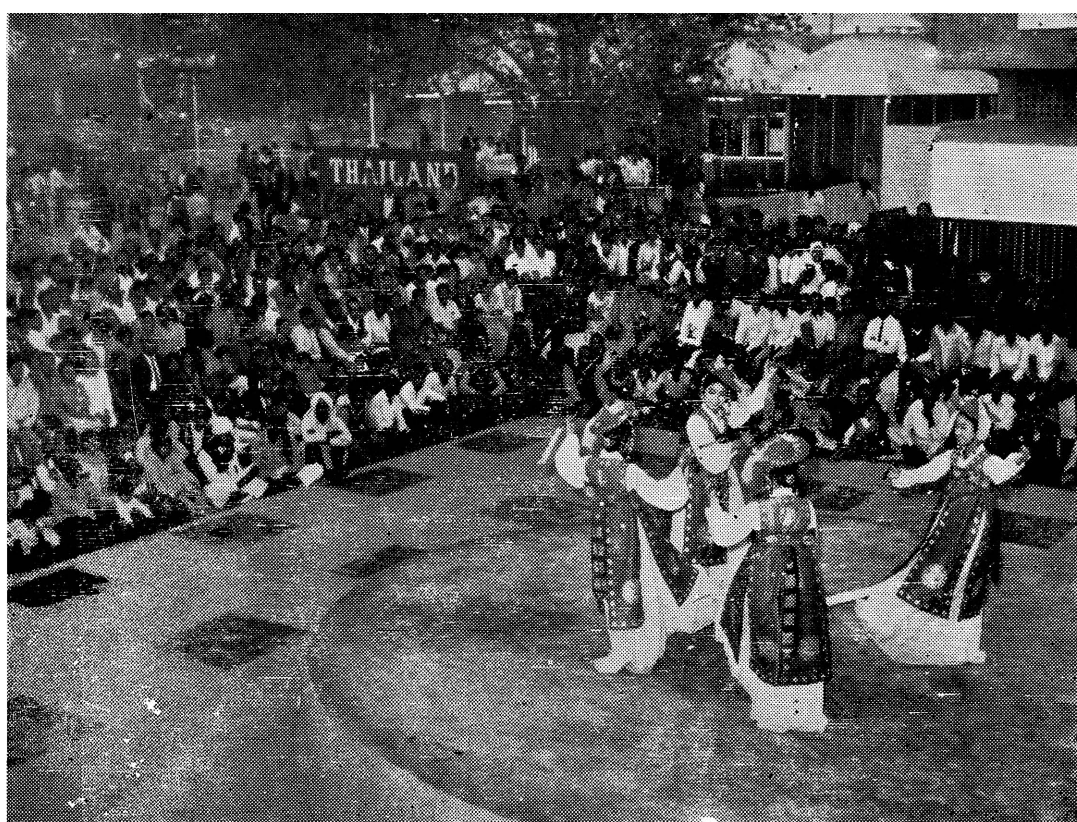
Iraq has an abundant supply of natural gas that provides a cheap source of fuel for petrochemical industries. Natural gas is also used for a power plant.

Iraq is developing other industries, using raw materials in good supply in the country: cotton, wool, hides and skins, tobacco and sesame oil. Her chief attraction to the world lies not so much in oil but in her inestimable dates.

TO PROJECT INDIA'S IMAGE



Asia '72 Girl guides and the Folk song troupe.



The Korean Folk Art Troupe.

REPUBLIC OF KOREA.

(SOUTH KOREA.)

South Korea contains 220,792 sq.km. (85,226 sq. ml.) and has 1,930 islands along its 4,822 miles coastline.

Korea is a peninsula in eastern Asia, lying between the Yellow Sea (with its northern indentation known as Korea Bay) and the Sea of Japan, being separated from south-western Japan by the Strait of Korea 122 miles broad.

With some 85 per cent of their animal protein derived from the sea products, South Koreans are among the world's most active fishermen. Manufacturing is becoming increasingly important.

South Korea's chief exports are foodstuffs (rice, fresh and dried fish, dried laver, agar-agar, and other seaweeds), minerals (tungsten, iron ore, flourspar, graphite, talc, scrap metal, and coal), floss silk and raw silk, waste textiles, bristles, and cork bark. Principal imports are grains, flour, sugar, raw rubber, woods, paper, chemicals, medicines and pharmaceuticals, wool and worsted fabrics, machinery and appliances, and transport equipment.

The Korean exposition dedicated to Korea—Land of Progress, Peace, and Liberty—is a modest and elegant structure which comprises separate sections, devoted to heavy industrial products, consumer goods and other knick-knacks.

Snatches of its history are re-enacted through folk dance performances by a 6-member troupe which performs daily at the fair.

MALAYSIA.

Three-quarters of Malaysia, an independent federation in South-East Asia, is covered with tropical rain-forest. The economy is largely agricultural distinguished by cash crops, mainly rubber, timber, palm oil, copra and coconut oil. West Malaysia grows about 70 per cent of its rice and East Malaysia about 50 per cent. Tin and iron are the only important minerals and their production is confined to West Malaysia. Mainly one-third of Malaysia's trade passes through Singapore. The U. S., Japan, the U. K., and the U.S.S.R., have been Malaysia's principal customers, and the United Kingdom and Japan, the largest suppliers.

MAURITIUS.

The Mauritian display in the Hall of Nations gives glimpses of its history from the days of its earliest inhabitants now extinct and its geography in relief maps showing the physical features of the land. Mauritius with its natural beauty and the inherent hospitality and simplicity of its people is a paradise in the Indian Ocean. The progress made in agriculture and industry cannot escape the eye and for a change the visitor can also have a good look at a variety of sea-shells from the Mauritian lagoons.

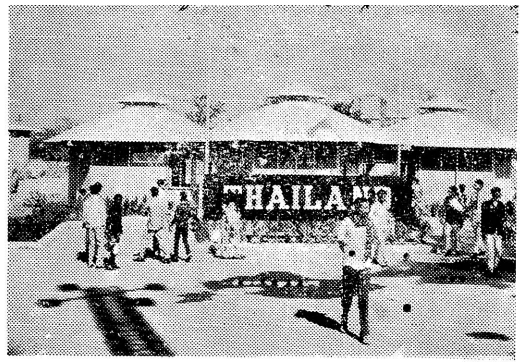
JAPAN.

The Japanese archipelago lies off the eastern edge of the Asian continent and extends in a northeast-southwest arc. The southern end of the archipelago is only 130 miles from the southern tip of Korea; the northern end is less than 100 miles from the Kurile Islands and Sakhalin Island. The area is bounded on the north by the Okhotsk Sea, on the east and south by the Pacific Ocean, on the west by the Japan Sea, and in the southwestern region by the East China Sea. The area of the four main islands is approximately 142,726 sq. miles and thousands of smaller islands are adjacent to them. The entire chain stretches for 1,400 miles and has a total coast-line of some 16,500 miles.

Japan's principal island is Honshu, on which are located the capital city of Tokyo, the principal cities and plains and the major industrial areas.

Manufacturing has been a key element in Japan's economic expansion during three periods of phenomenal growth. First, during the 50-year rise of Japan from a feudal society in 1868 to a major world power in 1918, output in manufacturing rose more rapidly than that of other sectors. Second, during the 1930's when Japan recovered from the world depression earlier and faster than any other country and embarked on an aggressive course in Asia, manufacturing, especially heavy industries, again had the highest rate of growth. Third, in the remarkable recovery since World War II, manufacturing, which had suffered severely during the latter stages of the war, was again a leader, although commerce and finance expanded even more rapidly. Manufacture is the source of the bulk of Japan's exports and the user of most imports.

Japan is the world's leading shipbuilder. More than half of the ships built are exported, including mammoth supertankers. As far back as 1958 the Kure Shipyards launched the Universe Apollo of 104,500 deadweight tons, the largest tanker ever built up to that time. Other transportation equipment includes automobiles, trucks, buses, motorcycles and scooters, and bicycles, as well as locomotives and other railway equipment. Electrical machinery, equipment, and supplies include generators and motors, transformers and other such heavy equipment. What Japan produces is mainly smaller size equipment including radios, television receivers, washing machines, refrigerators, fans, and other appliances. Japan's electronics industry has



Thailand

grown rapidly in recent years, and now leads the world. Among other machinery produced is textile machinery, including large numbers of household sewing machines for export, tractors, metalworking and woodworking machinery, and other agricultural machinery.

Chemicals, the third largest industrial grouping in Japan, is experiencing rapid expansion like machinery and metals. Textiles and apparel form the fourth largest industrial grouping.

There are five sections bringing home to the viewer the significance of the Japanese miracle, a war-torn country racing to the top of the world's major industrial powers within 25 years. Machines of all kinds, telecommunications equipment, industrial machinery and agricultural machinery are all there on view.

THAILAND.

Thailand has the unique distinction of being the only country in South-East Asia which has never been a Western colony. This 'Land of Free' is about the size of France with a population of approximately 35,000,000. Thailand's capital Bangkok is a hot-bed of most international activities. ECAFE has its office there. Almost 80 per cent of Thailand's population finds occupation in agriculture, forestry and fishing. Rice is the staple food as well as the leading export. Rubber, Tin, Maize and Teak come next.

A visitor to the pavilion cannot miss the nearness and similarity in Indo-Thai culture. Buddhism which originated in India long back is the predominant religion in Thailand to-day. The other portions of the pavilion emphasise the strides taken in agriculture and manufactured products.

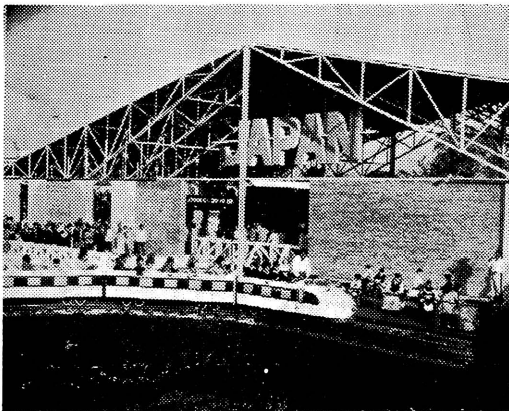
INDONESIA.

The Republic of Indonesia consists of five large islands and more than 3,000 small ones forming an arc between Asia and Australia.

Indonesia is bounded by the South China Sea on the north, the Pacific Ocean on the north and east, and the Indian Ocean on the south and west.

Petroleum and tin account for about one-third of total exports. Indonesia ranked ninth among petroleum-producing countries. After Malaya, Indonesia is the world's largest producer of tin.

In the 17th and 18th centuries spices formed the basis of this economy, in the 19th century it shifted to sugar and coffee, and in the 20th century, oil, tin and rubber have gained ground.



Japan stall

BURMA.

Burma is bounded on the north by India and China, on the east by Thailand, Laos, and China; on the southwest by the Andaman sea, and on the west by India, Bengala Dosh, and the Bay of Bengal. With a land area of 678,034 sq.km. (261,789 sq. mil.) Burma has a lengthy coastline (1,200 ml.) extending along the Bay of Bengal and the Andaman Sea to the west and southwest.

Manufactured goods comprise the largest share of Burma's imports from other countries. Burma's dependence on the import of such goods and the export returns of a single commodity, rice, places its economy in a delicate balance.

Burma has rich and varied minerals deposits and resources; lead, zinc, silver, copper, nickel, and cobalt are produced at the Baldwin mine at Namtu; tin and tungsten at the Mawchi mines in Kayah state and in the Tenasserim area; and petroleum at the Chauk and Lanywa fields. Jade, rubies, sapphires and gold are mined, and resources of iron ore antimony and coal are known.

NEPAL.

The Nepal pavilion emphasises the religio-cultural heritage of the country. The main entrance is modelled after the famed Pashupatinath temple while another entrance takes the shape of the Swayambhu Stupa, a symbol, as it were of the happy blending of Hindu and Buddhist traditions. On display above one of the windows near the main entrance are the national emblem of Nepal, the Lohophoron, Rhododendron Arboreum, cow and the royal sceptre.

Nepal, home of the world's highest mountain, the Sagarmatha or the Everest, stretches for 500 miles in the lap of the high Himalayas. The exhibit draws pointed attention to the country's geography. Economic prosperity through regional co-operation is a major objective and strategy in Nepal's foreign trade policy. Her immediate southern neighbour India occupies a pre-eminent position in the country's foreign trade. Although Nepal's trade with overseas countries is growing, more than 80 per cent of her total trade is still with India. Probably the most promising sector in Nepal's economy today is her tourism industry. The Kingdom of Nepal opened itself to tourists only as late as 1951. But then in the 20 years since Nepal has become must in every tourist's itinerary. Under the present ruler His Majesty King Birendra Bir Bikram Shah, who has dedicated himself to the economic and cultural progress of Nepal, the country is beckoning foreign tourists to see its unique cultural makeup breath-taking scenery and to enjoy the warm hospitality of this friendly land.

BANGLA DOSH.

The Independent, Sovereign State of Bangla Dosh, with an area of 143,000 square kilometres (55,000 square miles) and a population of about 7.5 crores, lies between the Indian State of West Bengal to its north and west, the Indian State of Assam to its north and

north-east, the Union Territory of Tripura in the east and Burma to its south-east.

Bangla Dosh produces about 80 per cent of the world's production of raw jute; the area under jute in 1967-68 was about 2.40 million acres and the production 1,223,000 tonnes.

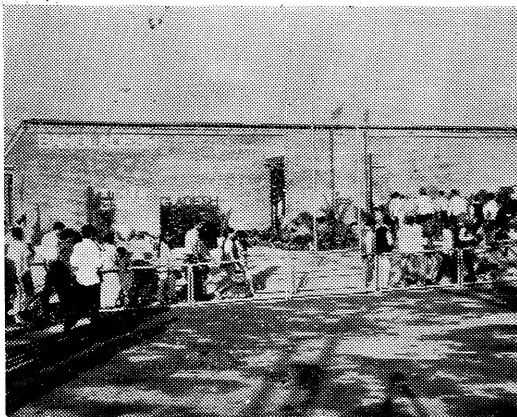
Bangla Dosh is predominantly a fish producing area and possesses great possibilities for the manufacture of various oils and fish products. The estimated annual production of fish is about 65,000 metric tons.

About 11,100 industrial establishments employed a little over 2 lakh workers in 1966-67. Of these, the more important ones were 22 textiles mills, 7 sugar factories, 18 match factories, 7 glass works, 178 hosiery factories, a paper mill, 29 jute mills, 28 aluminium works and a cement factory. There were also a newsprint factory, a fertilizer factory, a shipyard and a dockyard.

Undaunted by the horrifying events of just over a year ago, Bangladesh is taking its rightful place among foreign participants in the Fair, the first time ever the nation is joining such an exposition. Not surprisingly Bangladesh gives the pride of place to jute the golden fibre that earns the new country the bulk of its foreign exchange. With jute production expected to go up to 9 million bales by 1974-75 Bangladesh is evidently looking forward to an economic boom which coupled with the ready markets which its textiles find in the U.K., the U.S.S.R. and the U.S.A. should make for a satisfactory exchange position during the next few years.

Hides and skins from Bangladesh enjoy a worldwide reputation because of their exceptionally good quality.

The paper industry of the country is capable of producing about 48,000 tonnes of newsprint and writing paper and about 1,500 tonnes of fancy transparent paper suitable as wrapping to protect against moisture.



Bengala Dosh

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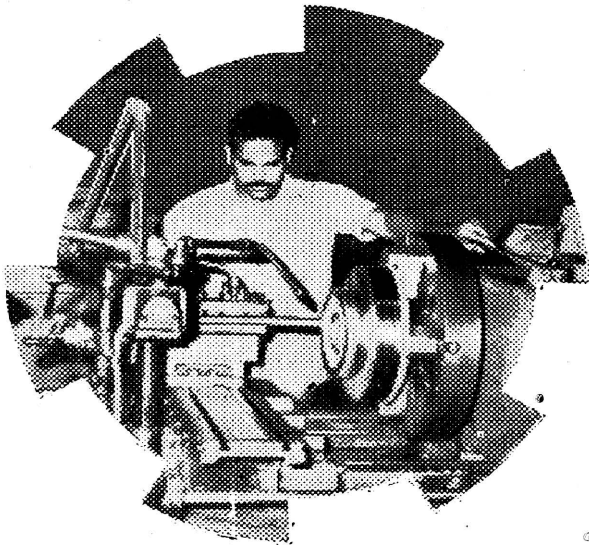


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Prime Minister at Indonesian Pavilion.

BHUTAN.

Bhutan, a landlocked country in the Himalaya Mountains, is bordered by Tibet on the northwest, north, and east, by India on the south, and by Sikkim on the southwest.

The easiest access to the country is by two Tibetan passes, the Natu La (14,000 feet) and the Jelep La (14,390 feet). In order to obviate the ten day trip needed to reach Bhutan from India or Sikkim, India agreed in 1959 to construct several roads to Bhutan; the first, was completed in 1961, running from the Indian railhead of Alipur.

Bhutan imports piece goods, silk, betel nuts, and tobacco. Exports include timber, handicraft items, yak tails for fly whisks, and yak hair, which is used for theatrical wigs and Santa Claus beard. Trade is exclusively with India and other neighbouring countries.

AFGHANISTAN.

Afghanistan is bounded on the north by the U.S.S.R., on the extreme northeast by China, on the east by Jammu-Kashmir and Pakistan, on the south by Pakistan, and on the west by Iran.

Except for sugar, Afghanistan is almost entirely self-sufficient in foodstuffs. The pace of economic development has been accelerating, during the last decade. There has been an increase in industry and an expansion of transportation and communication facilities. About 80 per cent of cotton cloth, 95 per cent of woollen cloth, and virtually all chemicals, steel, tools and machinery must be imported.

The rug industry for which Afghanistan is world famous, is the most important handicraft industry.

Afghanistan is almost completely a supplier of raw materials and foodstuffs and an importer of consumer and capital goods. Chief exports are hides and skins (principally karakul skins), fruits and nuts, raw wool, ginned cotton and woollen carpets. Important trade channels are to the east through Pakistan and through the northwest with and through the U.S.S.R.

The trade relations of Afghanistan with India date back to the days of the undivided Indian subcontinent. The bulk of her export trade was with, or passed through, India. But the Afghanistan of today is a combine of Agriculture, river projects, industry and animal husbandry, benefiting vastly from its relations with the U.S., the U.S.S.R. and other East European countries. The Afghan pavilion not surprisingly focusses attention on the changing face of the country.

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AN 'AIR GARDEN' AT THE FAIR

Ganganodyan, or Air Garden, is the name given to the pavilion of the Civil Aviation Group, which includes Air India, Indian Airlines, the Civil Aviation and the Meteorological Department. Built on a plot of 2,600 square metres, it will have a covered area of 1,700 sq. metres divided into four sections, one for each of the four constituents of the group. The overall theme of the pavilion is "faster air transport for economic development and better understanding".

In its structure the pavilion, conceived by architect Ram Sharma and designed by Abhyajit Varma, reflects speed, motion and reliability, the Prime requisites of any reliable air transport system. In the totality of its display, the pavilion will project the development of mass air transport system in India from the early piston engine era down to the Jumbo age.

Air India portrays its image as the nation's flag carriers around the world. A series of stunning blow ups and transslides explain the training of crew, maintenance of the fleet, operation of routes and cargo handling.

The Indian Airlines section tells the story of its contribution to the national economy and towards the promotion of national integration. Close circuit television and a display of navigational and other operations are part of their section.

The third section deals with the International Airport Authority of India, the Research and Development Institute of Civil Aviation and the Aeronautical Telecommunication Service. In a simulated atmosphere, the visitor can have glimpses of the sophisticated equipment and instrumental landing system capable of operating under all weather conditions.

SIDELIGHTS OF CONSTRUCTION PHASE: LOVE'S LABOUR NOT LOST

A unique feature of the construction phase of Asia 72 Fair was the VIP treatment meted only to construction workers who have helped complete this gigantic project in record time.

Amid a medley of noise associated with construction life went on as elsewhere. Forty-two babies were born at the site in ten months. Considering the army of nearly 40,000 men and women working on various structures, this is not a large number.

The first five babies born were presented with Rs. 200 each while the next seven received Rs. 100 each from the Fair authorities. A special function was held on July 19 at the impressive Ball of Nations to honour the newborn.

Although the majority of the workers came from adjacent Rajasthan, almost every State was represented in the huge labour force. Skilled workers and artisans came from far-off Assam and the deep south to decorate their State pavilions.

To meet the special requirements of foreign pavilions, some workers even came from abroad. A dozen Chinese were brought from Singapore to complete the special wood carving work of the Australian pavilion. A few Russian workers helped raise the Soviet pavilion with a larger display area than other foreign pavilions.

Most of the Indian workers lived in a small township on the site itself. Provision was made for power supply and drinking water. A regular bazaar came up complete with barbers, vegetable sellers, grocers and tea stalls. These were run by the workers themselves.

A voluntary organisation set up two creches for the babies of working mothers. Two schools were opened for children of school going age. Medical aid was also provided.

THE SCIENCE AND TECHNOLOGY PAVILION

In this pavilion you will get a glimpse of the broad spectrum activities of the major scientific organisations in the Country—the Council of Scientific and Industrial Research and the Departments of Atomic Energy, Space and Electronics.

A working model of the CIRUS reactor at Trombay. Photographs of the Tarapur Atomic Power Station, about 100 km. north of Bombay which has been in operation since October 1969, the Rajasthan Atomic Power Station at Kota, one unit of which attained critically recently, the Madras Atomic Power Station at Kalpakkam in Tamil Nadu, and the next one at Narora in Uttar Pradesh where work will start soon, are on display.

In the near future, there will be advanced nuclear power system where plutonium could be used. Research in this area is being carried out at the Bhabha Atomic Research Centre at Trombay, and at the Reactor Research Centre that is being built at Kalpakkam.

Then, an idea of the varied and complex activities involved in harnessing atomic energy. The whole gamut of operations—from that of locating, mining, and processing atomic minerals to generating power is portrayed. An important activity is the production of radioisotopes which have varied and almost unlimited applications in medicine, agriculture, industry and other areas.

Finally we come to Space. Our country's modest space effort is primarily oriented towards realising some of the benefits of space applications such as satellite communications, earth resources study, satellite-TV, etc. In this section, we show you the satellite stations already built and the ones proposed to be built and depict the R. & D. work at the Vikram Sarabhai Space Research and Technology Centre at Thumba.



Temple takes shape.

The senior officer who had been placed in charge of the management of the construction of the Temple was one Kandradhittan, the son of Raja Rajan's uncle, Madurantaka Chola. The Emperor, his son Rajendran and Raja Rajan's sister Kundavaiyar sent for Kandradhittan one day and were engaged in animated discussion about the various aspects of the Temple under construction.

Kundavaiyar gave expression to her view that the Temple should be called "Raja-Rajecharam" only. Rajendran said that the Temple should have seven entrances, with two sentinel-statues installed at each point of entry. The Emperors smiled to hear his son's proposal. "Rajendran is always concerned only about security. Would statues guard the Temple, son?" he queried. "Oh don't I know, father, that it is for us to preserve and project the statues?" replied the Prince, "I only wanted them installed for the sake of adornment". His desire was conceded.

Kandradhittan enquired whether the outer entrance, the main entrance and the inner entrance could be on the traditional pattern. The Emperor nodded assent. Kundavaiyar, however, intervened to suggest some alterations in nomenclature. The first entrance may be called the "Keralandhagan Entrance" to signify that Raja Rajan was as the God of Death to the Cheras; and the second entrance may be known as "Raja Rajan Entrance", suggested the lady, Raja Rajan kept quiet, since he was not in the habit of contradicting his sister.

Kandradhittan's plan that the tower over the sanctum would be of impressive height, with as many as thirteen tiers, received enthusiastic clearance.

"The *Stupa* at the top of the tower should be of copper, 3,000 *Palams* in weight and it should be encased in gold plate weighing about 300 *Kazhanis*" when Raja Rajan expressed this desire, his sister was thrilled and moved. She proposed that tablets carrying special notes regarding the Chola Empire and records of its victories and achievements should find a place in the Temple.



Kandradhittan informed them of his plan to carve a large-proportioned Nandi in Monolith.

Rajendran said, "Tell the sculptors that the tower of the Temple should be so structured that its shadow never falls on the ground".

"That reminds me, Kandradhitt" broke in the Emperor in hardly-suppressed excitement, "A long-term desire of mine has got to be fulfilled in the Temple". Everyone in the chamber turned towards him in the eagerness of expectancy.

"The Dance Supreme which the Lord is said to have indulged in..."

.....", continued Raja Rajan, only to be interrupted by his son who exclaimed, "Why only the Lord, Father? Are not danseuses aptly able to portray the same theme?"

"Won't your banter ever leave you, Rajendra!", chided the fond father, "I am viewing the dance from the point of view of Art, it is indeed a supreme manifestation of Art. If only your wife Panchavan Madevi were here now, she should have joined me in rebuking you?"

(To be continued.)



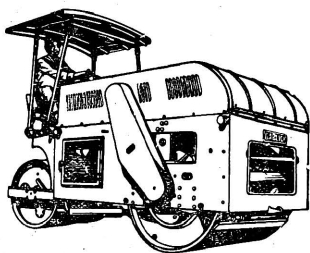
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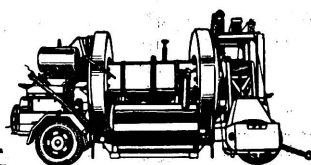
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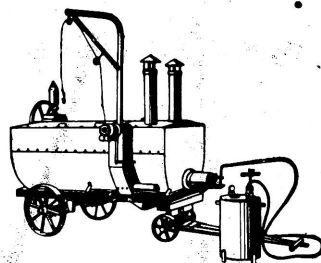
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LET US HAVE HOPE AND CONFIDENCE AND TRUST IN OUR CAPACITY

Speech of the Chief Minister of Tamil Nadu on the occasion of the inauguration of the Seminar on Mariculture and mechanised fishing at Central Polytechnic, Adyar, Madras-20 on the 28th November 1972.

Tamil Nadu has a *long and glorious* tradition of maritime activity. The Cholas, the Pandyas and the Cheras vied with each other, in promoting maritime trade with many countries of the world. Valuable *pearls and chanks* used to be exported from time immemorial to the West, particularly Rome, Greece and Egypt. Marine fishing has also been one of the ancient but important occupations of the Tamilians.

Modern industrial revolution is changing the face of our Society. The old order changes giving place to new. The economic and social fabric of our people is changing too. Each nation is seeking to increase its material wealth. Our country cannot afford to lag behind in this race. We are one of the poorest nations of the world. But we have vast potential. We have immense natural resources. We have a man-power that can be trained and shaped and used in all kinds of productive occupations. We have the energy and will to do so. It is only necessary to tap all these to make India and our State economically viable and prosperous.

I spoke of the existence of a vast potential. This is particularly true of fisheries. The Indian Ocean, the Arabian Sea and the Bay of Bengal have vast marine resources. All of them have been utilised at present. I am told that the marine fishery potential is more than three or four times the present rate of exploitation. The world fish production is said to be about 70 millions tons per year. India produces just 1.75 million tons. She still ranks the 7th.

Our own State of Tamil Nadu contributes about 16 per cent to the National Fish Production. But we are not exploiting all the marine fishery resources along the coastline of 1,000 k.ms. Thus a good marine fish potential exists which can be readily tapped. If we do not tap these resources, some other country will do so sooner or later.

Just as the potential exists, the need also exists to utilise this potential. Our population is growing fast. We are pledged to give our people rising standards of living which includes good *nutritive* food. Fish is one of the most nutritive foods which nature offers us. Our people take the smallest quantity of protein, which is so vital for health and growth. There is thus a crying need for providing our people with a nutritive food, which the fish can supply in abundance.

If the potential and the need exists, how do we go about the business? Herein lies the importance of mechanised fishing and mariculture.

Our marine fishing operations are carried on mostly by traditional fishermen in small ill-equipped craft with inefficient gear. You have seen the catamarans and the canoes. There are about 94,000 of them in our country. In Tamil Nadu alone, there are about 30,000 traditional vessels. They have served a limited purpose of giving the fishermen some means of livelihood. For them fishing is a way of life, not an industry. Therefore, their productivity is very low. They face

“We are one of the poorest nations of the world. But we have vast potential. We have immense natural resources. We have the energy and will to do. It is only necessary to tap all these to make India and our State economically viable and prosperous”.

hazards of rough sea with no worthwhile reward.

In order to supply the fisherman with better vessels; and better gear, we need to mechanise fishing activity. We have not only to give them improved vessels, but also to give improved engines and mechanised power for the existing crafts. We have to increase the size of mechanised vessels so that they can go into deep sea and exploit the rich potential there. We have to give facilities for such vessels to berth on the shore. We have to arrange to provide other necessary materials for processing, freezing and marketing. The State naturally will have to play a very important role in setting up all these facilities.

We in Tamil Nadu have done considerable work in mechanised fishing operations. We have now about 1,300 mechanised vessels on the Tamil Nadu coast. In the Fifth Plan we propose to introduce another 1,250 vessels, smaller or larger size as the case may be. We also have massive plans to organise all the facilities required in this connection. It is our hope that as a result of these activities, our marine fish production will increase from the present level of 1.7 lakh tons per year to 5 lakh tons before the end of Fifth Five-Year Plan.

Sooner than later, we must have vessels which will go out into international waters for fishery exploitation. I have no doubt that the Government of India will provide all the facilities and financial assistance to the State Governments. I am told that hardly any Indian fishing vessel hardly exploits fishery in international waters around our country; whereas fishery vessels of many other countries are fishing in such waters. It is my earnest desire that we immediately launch on schemes which will help us to acquire large vessels which can exploit the resources in the international waters close to our shores. This desire of mine is prompted not only by consideration of pride and prestige; but by the situation of need and compulsion. Besides, we will be earning valuable foreign exchange which now goes to other nations.

At Mandapam, we have a very big dry dockyard and a big slipway which we took over

from the Southern Railway. We have an ambitious programme to build medium sized trawlers in this dockyard. The trawlers that we propose to build here will be of the range of 76 footers to 110 footers. We have the necessary know-how and technical skill in this State to build fully-equipped and sophisticated medium sized fishing trawlers. Shortly we propose to form a public limited company for this purpose. I would request the Government of India to help these efforts of ours and extend necessary help so that the trawlers which we now have to import from abroad can be built in our own country.

I am greatly impressed by the possibilities of mariculture. I am told that all over the world mariculture is practised in the coastal areas and that many refined techniques have been evolved for increasing fish production by such methods. We are yet to make a worthwhile beginning in our country. In many ways, mariculture poses exciting challenges. Because, it involves breeding, rearing and developing selected species under controlled conditions. It is like producing high yielding varieties of crops in Agriculture. In mariculture we seek to create suitable conditions for the fish to develop rapidly and to give us maximum yield for comparatively minimum investment. As in Agriculture and Poultry, maricultural techniques will set modern trends in fisheries also. Maricultural operations are possible all along the coastline of our country with its backwaters, lagoons and estuaries. But I am told there are plenty of problems still to be tackled in this sphere. We need more know-how for successfully breeding and rearing selected species in the coastal regions. We may need engineering and technical skill of different order to build ponds and to connect the backwaters with the seas in a controlled manner. However, I have no doubt that Indian fishery scientists, biologists and experts will successfully tackle all these problems. Before long, it should be possible for every square foot of our estuaries to produce high quality and valuable fish by adopting maricultural techniques.

We have plenty of talent and technical skill in our country.

What we need is hope and confidence and trust in our capacity to build our future. While so building, we must take into account the fact that we are changing old habits and old thinking. Change sometimes produces unpleasant effects in the short run. Therefore, the speed of change has to be controlled so that unpleasant consequences are kept to the minimum.

When we seek to modernise our fisheries, we need to keep in account the fact that we are in some manner affecting the livelihood of the vast majority of the traditional fishing class. To what extent they can be brought into the main stream of change and progress is a matter of social debate.

HOW MUCH FISH?

It is proposed that, the present consumption level of fish will be stepped up from 5.87 kgs. to 9.70 kgs. by 1974, to 12.56 kgs. by 1979, and to 17.58 kgs. by 1984. Then fish will contribute 9.63 gms. per capita per day of proteins as against the present level of 3.22 gms.



Minister for Health unveiling the name board of the Intensive Coronary Unit blank at Stanley Hospital.

SOPHISTICATED CARE IN STANLEY HOSPITAL

Two special units for sophisticated diagnosis one for Urology and the other for Coronary diseases were inaugurated on the 3rd October 1972 by the Tamil Nadu Health Minister, Prof. K. Anbazhagan, at the Stanley Hospital.

The Urology Unit is a special clinic in the Government Stanley Hospital for diseases of Genito-Urinary system. This functions on Tuesdays and Thursdays between 11 A.M. and 1 P.M. Here patients are treated regularly and their progress is followed up for more than a year.

Various problems like tuberculosis of Genito-Urinary system, infertility and various other problems like obstruction uropathy in Children and adults are detected in time and treated with limited surgical treatment.

Dr. D. Jagadisan, M.B., B.S., M.S. is the head of this Urology Unit. He had been to Australia under

Colombo plan and had his training in Urology, particularly endoscopic resection, etc.

He has been awarded the Colombo plan fellowship under the guidance of Prof. Murughan, Internationally reputed Urologist in Prince Henry Hospital, Sydney. Dr. Jagadisan has been elected a member of the British Urological Association.

Dr. Jagadisan's Unit consists of Dr. A.M. Sathyanarayana, M.S., Dr. N. Ramamoorthy, M.S., Dr. R.N. Sujee, M.S., Dr. A. Jayamani, Dr. Sambandam and Dr. Gajendran.

During the period 1971-72 about 1,100 cases of Urological diseases have been treated with about 80 operations successfully performed.

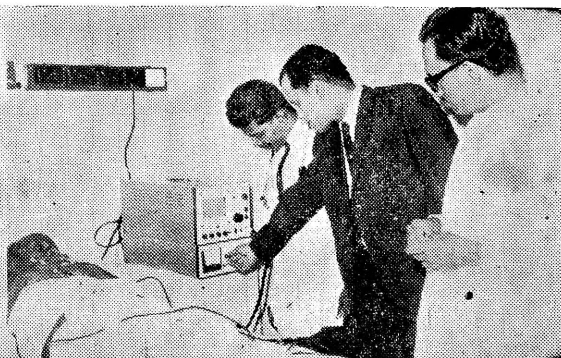
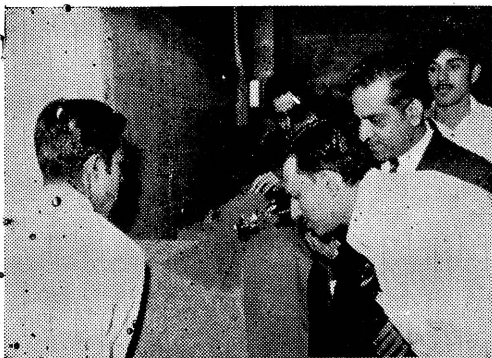
Dr. Jagadisan opines that certain diseases like Prostates enlargement occur in people in the prime of

life. Diseases like stones occur in poor people with vitamin deficiencies.

Dr. Jagadisan points out that Urology is a new and developing Speciality. This is the second Urology Unit in Tamil Nadu State Hospital, first being run in Government General Hospital under Prof. A. Venugopal. The Government of Tamil Nadu have been generous in sanctioning most of the needs of the Infant Department.

Now the work in this Unit is increasing day by day and is sufficient for a full-fledged whole-time Unit with a Professor, and Assistant Professors for adequate teaching of both Under-graduates and Post-graduates and also with more equipments to render excellent service to the ailing public. I must thank my colleagues in the Surgical, Medical and Bio-Chemistry and Bacteriological Departments for their whole-hearted support and co-operation.

Minister for Health having a round of the special sophisticated instruments put up inside the Intensive Coronary Unit.





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NEW AGRICULTURAL GROWTH STRATEGY

Tamil Nadu has indeed taken big strides in agriculture and Green Revolution has been spreading at a faster pace during the last five years. Now Tamil Nadu is a surplus State in food production. Nevertheless the State Planning Commission has chalked out a 12-Year Plan (1972-84) embodying new growth strategy for a sustained and balanced growth of Agriculture in the State. The present status quo and the future aim of the State is explained in this article.—E.D.

Agriculture occupies the pride of place in the economy of Tamil Nadu. It provides a strong, efficient and prosperous base to the State's economic growth. Its importance can be seen from the fact that it contributes even to-day 33.79 per cent of the total net domestic product and supports 73.3 per cent of the rural population. Agriculture in Tamil Nadu took big strides, during the last two decades towards definite transformation from a stage of chronic stagnancy to that of sustained growth, resulting in Green Revolution, which has been spreading in the State during the past five years. Significant success has been achieved during this period in the production of cereals. The benefits of the Green Revolution have yet to be spread to the production of other crops, viz., pulses, cotton, oil seeds, vegetables and fruits.

prosperity to the State. Now that we have attained self-sufficiency in cereal foodgrain production, we have to plan and augment the production of other commodities, not only to meet the growing needs of the State, but also to increase the income from unit area of land and that of the farmer.

The area irrigated in Tamil Nadu is 32.79 lakh hectares. The total irrigated area under cereal is 27.2 lakh hectares of which paddy alone covers 23.47 lakh hectares. Of the other crops under irrigation, sugarcane covers 1.35 lakh hectares, oil seeds 1.67 lakh hectares, non-food crops 2.82 lakh hectares, fruits and vegetables 90,000 hectares, condiments and spices 62,000 hectares and pulses 7,000 hectares.

Rainfall :

Tamil Nadu receives a normal rainfall of 945.7 mm. of which 307.3 mm. are recorded during

IN TAMIL NADU

Land Utilisation :

The total geographical area of Tamil Nadu is 130 lakh hectares of which the net sown area is 62.81 lakh hectares (48.3 per cent).

The per capita arable land in Tamil Nadu works out to only 0.153 hectares which are far lower than that of several other States. The scope for bringing additional area under the plough is limited. Instead, the State has to depend for meeting the increased future demands of agricultural products largely on increasing output per unit area of land.

The area sown more than once is 12.50 lakh hectares, representing 20 per cent of the net sown area. Of the gross cropped area, 76.2 per cent is under food crops and 23.8 per cent is under non-food crops. Sowing 76.2 per cent of the area under food crops is too imbalanced to bring in economic

South-West Monsoon (June to September) 449.7 mm. during the North-East Monsoon, 50.9 mm. during the winter period and 139.8 mm. during hot weather period.

Nilgiris hills, Palani hills and Shevroy hills get the maximum rainfall and a major part of Coimbatore district, western part of Tiruchirappalli district, northern part of Madurai, Tirunelveli and Ramanathapuram districts being in the low rainfall area, are arid.

Agricultural production over large tracts of Tamil Nadu is susceptible to wide fluctuations on account of poor and variable rainfall. Only 24.84 lakh hectares (40 per cent) of the net sown area is irrigated, while 60 per cent still depends on rainfall for successful

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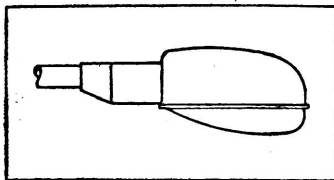
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agriculture. Agricultural technology has not made a dent in solving the problems of this area.

Agricultural production during the first decade of planned development, registered a steady growth in the production of food and non-food crops. The foodgrain production which stood at 31.63 lakh tonnes in 1950-51 reached the annual average production of 40.88 lakh tonnes during the First Plan, 50.05 lakh tonnes during the Second Plan and 55.52 lakh tonnes per annum during the Third Plan. During the year 1970-71, the foodgrain production was of the order of 70.30 lakh tonnes.

20-year growth.

During twenty-year period from 1950-51 to 1970-71, the rice production increased from the base level of 19.5 lakh tonnes to 53.03 lakh tonnes in 1970-71. The oilseeds registered a considerable increase during the Second and Third Plan but showed a decline trend thereafter. With regard to sugarcane, after initial set back in production during the First Plan period, the production registered a steady increase reaching 11.48 lakh tonnes in terms of gur in 1970-71. Cotton production too, registered a steady increase but there had been marked fluctuations from year to year.

The second half of the past decade initiated the transformation of agriculture, the crucial sector of the economy, from a state of chronic stagnancy to one of substantial growth. In the context of high rate of growth of population on one hand and limited resources on the other, the State is compelled to re-orient its entire farm strategy. The age old farming practices should be transformed to suit the need of the rapidly growing demands of the people. The need for greater production, therefore, is immediate. With the spread of the high yielding varieties, the myth that the Indian farmer is hard crusted, tradition bound and not amenable to new ideas and practice has exploded. The farming community of Tamil Nadu has transformed the erstwhile deficit state into a surplus-one with regard to foodgrains in a matter of a few years. But there is still a wide gap between the supply and demand with regard to

pulses and raw materials like cotton. Even with regard to fats and oils, and vegetables and fruits the requirement based on the nutritional standards outstrip supply.

Inputs like seed, fertiliser, plant protection, chemicals and farm equipments are either not available in adequate quantities and at the proper time or the farmer does not have the resources to purchase them. Availability of credit, maintenance of the supply line of inputs and emphasis on extension, research and training, therefore, assume added importance.

Future aim.

The strategy for future development of agriculture should aim at removing these constraints and maximise agricultural production from unit area.

Objectives.

The objectives of the perspective Plan are :—

- (1) Providing balanced diet to the growing population.
- (2) Ensuring an adequate supply of raw materials to agro-based industries.
- (3) Raising the standard of living of the rural population depending mainly on agriculture.
- (4) Earning and saving foreign exchange.
- (5) Providing large part of the additional employment.

The implication of each of these objectives are briefly noted below :—

Provision of balanced diet.

Tamil Nadu produces enough cereal to meet the requirement of population. But with regard to pulses, oils and fats, fruits and vegetables, the production falls far short of the requirement. Provision of these protective foods on the scale prescribed by nutritional experts is an urgent need.

Supply of raw materials to agro-based industries:

The supply of adequate raw material for the agro-based industries should be ensured for economic

progress. Though Tamil Nadu has a well developed textile industry consuming 11.4 lakh bales of cotton per annum; only 3.6 lakh bales of cotton are produced in the State. The sugar factories in the State are working only for short periods in the year. To meet the demands of the agro-based industries, it is essential to step up the production of raw materials like cotton, sugarcane, oilseeds, fruits and vegetables and foodgrains.

Raising the standard of living of the people.

Agriculture supports 73.37 per cent of the rural population. The standard of living of the rural population is low as compared to that of other countries or to urban population in the State. The standard of living of these people could be raised only through stepping up of agricultural productivity and production. Increased profits from agriculture and consequent development of processing industry are essential to bring about this objective.

Earning and saving of foreign exchange.

The Tamil Nadu has great potentialities for the production of export oriented crops like tea, coffee, oilseeds, maize, spices, fruits and fruit products resulting in valuable foreign exchange earnings. Further, by stepping up agricultural production of commodities like rubber and cotton, reasonable savings could be effected in foreign exchange.

Additional employment.

Agriculture still continues to be a seasonal operation in large parts of our State. The introduction of High Yielding Variety Programme, Multiple Cropping Programme and installation of tube-wells and filter-points, has resulted in additional employment. Further, extension of these programmes and adoption of improved techniques in dry farming areas would keep the agriculturists engaged for longer periods than at present.

Keeping these objectives in view, an attempt has been made in the ensuing page to take note of the present situation in each area of agricultural production and project future demand and supply, based on available technical know-how and feasibility.

FOODGRAINS.

The foodgrains production of 70.30 lakh tonnes in 1970-71 would be increased to 111.50 lakh tonnes by 1983-84. Rice production would be increased from 53.03 lakh tonnes in 1970-71 to 76.5 lakh tonnes at the end of the Plan by extension of area under high yielding varieties. Under Millets, emphasis is laid on increased production of maize for development of maize-based industries. Production of pulses would be increased seven times by introduction of new short-term varieties, replacement of horsegram and adoption of rhizobial cultures. Production of vegetables and fruits would be stepped up by extension of acreage in green belt areas and by adoption of improved cultivation techniques.

COMMERCIAL CROPS.

Production of oilseeds will go up from 10 lakh tonnes to 16.85 lakh tonnes in 1978-79 and 23.03 lakh tonnes in 1983-84. Sunflower would be introduced over 1.5 lakh hectares during the Fifth Plan and 3 lakh hectares during the Sixth Plan period. By the end of the Perspective Plan period, 25 per cent of cotton seed produced in the State would be utilised for the production of oil.

COTTON.

Cotton production would be stepped up to 9.22 lakh bales in 1978-79 and 11.88 lakh bales in 1983-84.

SUGARCANE.

Twelve more sugar factories in Tamil Nadu are recommended for establishment in the course of the twelve-year period for stepping up sugar production from 2.99 lakh tonnes to 9.25 lakh tonnes in 1983-84. The crushing capacity of the existing sugar factories are also to be expanded. Sugar beet cultivation will also be tried in selected areas.

OTHER CROPS.

Coconut production would be stepped up and production of hybrid coconut seedlings would be augmented to meet the growing demand. The production of exportable products like cashew, turmeric and chillies would be increased to meet the internal and external demand.

Regarding the major Plantation Crops, the Perspective Plan aims at extending the area under Tea by 6,000 hectares, Coffee by 1,400 hectares and Rubber by 2,000 hectares.

INPUTS.

The Seeds Act is sought to be amended to ensure quality of seed. There is a proposal to set up a Seed Corporation to produce and market certified seed and enforcement of quality control on supplies of fertilizers and pesticides is emphasised.

IRRIGATION.

Medium and minor irrigation projects will consist of remodelling and lining of channels, a tank efficiency programme and ground-water exploitation programme. The Plan envisages extension of irrigation to 12.70 lakh hectares, including ground water exploitation covering 3.50 lakh hectares at an aggregate cost of about Rs. 360 crores.

AGRICULTURAL FINANCE.

The report estimates the short-term requirements of agricultural finance at Rs. 216 crores by Co-operatives and Rs. 144 crores by the commercial banks. The long-term requirement during the Perspective Plan is estimated at Rs. 580 crores, of which Rs. 400 crores would be provided by the Land Development Banking structure and Rs. 180 crores by Commercial Banks.

AGRICULTURAL MARKETING.

Strengthening the Regulated Market Agency and provision of adequate storage facilities are recommended. Establishing a State Price Stabilisation Board, systematic studies of cultivation costs, announcement of floor and ceiling prices before the sowing season and provision of crop insurance are some of the important recommendations in this field.

INCOME AND EMPLOYMENT GENERATION.

When the Plan is implemented in full, the contribution of Agricultural Sector to State income will be doubled, and employment opportunities vastly enlarged. In the Fifth

Plan alone, 14 lakhs of people will find additional employment directly in agriculture. An aggregate investment of Rs. 540 crores is envisaged over the twelve-year period.

CHANGING FOOD HABITS WILL INFLUENCE CROP PATTERN.

The pattern of land allocation is the result of a large number of decisions taken by the individual farmers, physical features such as soil and climate, technical limitations such as irrigation and drainage, economic influences by way of market economisations, land tenure, local habits of diet, etc.

It is envisaged that the gross cropped area would increase only due to multiple cropping and crop intensity would increase from 120 per cent to 160 per cent in the next twelve year period.

It is expected that maize based agro-industries would develop in the immediate future. It is expected the area would increase to 2 lakh hectares.

Food habits of people would change and they may not go for small millets, once per capita income increases substantially.

TWELVE-YEAR PLAN FOR HEALTH IMPROVEMENT IN TAMIL NADU

[The achievement of any State in the promotion and protection of health is of value to all. Tamil Nadu's Health Policy for the period 1972-84 is to conform to the health objectives embodied in the Indian constitution. The salient points in the health policy of the State Government for the period 1972-84 has been clearly elucidated in this article—Ed.]

The World Health Organisation constitution declares that "Health is a state of complete physical, mental and social well-being and not merely absence of disease or infirmity..... The achievement, of any State in the promotion and protection of health is of value to all and unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger."

The Directive Principles of the Indian Constitution state inter alia :

"The State shall, in particular, direct its policy towards securing that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength. The State shall, within the limits of its economic capacity and development, make effective provision for old-age, sickness and disablement. The State shall make provision for securing just and humane conditions of work and for maternity relief. The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as amongst its primary duties."

Tamil Nadu's Health Policy for the period 1972-84 will conform to the health objectives embodied in the constitution of the World Health Organization and the Constitution of the Republic of India.

Health facilities are a basic right of every citizen and expenditure on public and individual health represents an investment in the nation's economic infra-

structure. The problem of population adds a restricting dimension to public health planning. It brings into our tasks the problem of using resources otherwise available for health to control population and the danger of dissipating scarce resources over too wide an extent through the repetition of existing amenities rather than through promotional health, basic research and the technological abridgment of the health problem.

There are 7.9 million children below six years in Tamil Nadu. Of these, approximately 55 per cent subsist below the poverty line. This means the feeding programmes will have to cover nearly four million children among whom 1.72 million are likely to be below three years.

The first programme proposed is to feed pre-school children in the Kuzhandaigal Kappagams (Balwadis) integrating the efforts made under the Applied and other schemes of the Women's Welfare Department of the State Government. This Nutrition Programme, CARE and Demonstration Feeding, Family and Child Welfare should cover all the 1,707 Kuzhandaigal Kappagams (Balwadis) functioning in the State with a uniform programme of feeding, care and education, which will be based on the quantities of protein and calories to be administered daily; the weekly menus based on local foods; the cost of food; other overheads to support the cooking and feeding operations without reliance on voluntary contributions; and the simultaneous provisions for health care.

The next step will be the progressive expansion of the Kuzhandaigal Kappagams from 1,707 to 12,500

by 1984 with consequential or appropriate changes in menu and costs. These Kuzhandaigal Kappagams with 600 children each will cover 7.5 lakhs of children. The rate at which they can expand by 1984 is limited due to financial and human constraints. It is, therefore, proposed to reach the pre-school children through the existing primary school system which is well extended. This can be done by attaching pre-primary sections to selected primary schools along with a meaningful 2-3 hour educational programme using the school facilities without disturbing the school programme itself. This strategy will cover 9.18 lakhs children in the 15,300 primary schools with 60 children each.

COST.

(In lakhs of Rupees.)

		Capital	Recurrent.
1972-73	..	6.52	2,68.35
1973-74	..	6.52	2,68.35
V Plan	..	32.63	33,97.15
VI-th Plan		32.63	63,33.02

Children and expectant mothers are a priority for medical and nutritional care. The youth of today are tomorrow's work force. It is priority then that is at once prudent, constitutional and economic. Well-being is a more wholesome objective than a clinically negative condition, and remedy is better than palliative. So are the foundations of social health laid in the well-being of the child to be preferred in the short run to the curative manipulations designed to deal with the working adult or the aged.

In the light of the above value and given scarce resources, the first requirement is of uniformity in the rendering of certain basic health services, nutrition and sanitation to all families irrespective of their domicile, rural or urban occupation ; or economic circumstance, rich or poor.

A second objective is to raise the quantum of medical care and the quality of services bought and sold at a given level of prices and preferences as to meet the sizable extra demand imposed on the system by canons of equity and the requirement of policy (while controlling and conserving this viable and historical segment of health care in society, its quality and its arrangements). The necessary means and institutions—the flesh for the ideal—may come from within society, from its capacity for self-reliance in the form of donations and voluntary services. Or else, the necessary machinery may be called into existence by charter or decree, qualitatively transforming, if necessary, the existing health service into an equally accessible and total civic amenity for all.

The end-value of Tamil Nadu Health Policy, then, is the improvement of the health of the population, particularly the 60 per cent who are not served today through an

integrated administration of public health, nutrition and family planning at the village level. This in turn will involve—

(a) the improvement of health and medical services ;

(b) the promotion of the nutritional status of vulnerable segments of the population according to a system of priorities ;

(c) a campaign for family planning ; and

(d) the provision of a safe and adequate water-supply and satisfactory sanitary facilities in cities and towns, and appropriate, immediate and practicable facilities in the rural areas.

Health Services.

A small economic and self-contained multi-purpose dispensary called a mini-health centre will provide maternity and child welfare, family planning, preventive and curative health care, applied nutrition and medical relief services. Each mini-health centre will serve 10,000 persons living within the Panchayat thus involving the establishment of 1,000 new mini-centres and there-organisation of the existing 2,700. Three thousand and seven

hundred pharmacists will be recruited and trained exclusively from among high school graduates in the villages and will be placed in-charge of dispensaries in the mini-health centres located in their villages. They will serve as extensions of the mini-health centres under the supervision of medical officers. Siddha Wings will be added to these mini-health centres in the form of small rural dispensaries. Three hundred and seventy-four poly-clinic centres comparable in scale and hierarchical status to the block primary health centres, will be formed by converting and upgrading the existing facilities at the Block level. These will subserve the mini-health centres and a population of 80,000 to one lakh with added bed strength. Eighty-six taluk headquarters' hospitals will be upgraded to poly-clinic hospitals with a minimum of associated specialities. They will also have a siddha wing of ten beds each.

Above these two will be the district General Hospital, each with a bed-strength of 400 to 650 and the entire range of specialities, together with a



Minister for Health holding the insignia awarded for Thanjavur district for the best in the execution of Family Planning Scheme.



The All-India Award presented to Thanjavur district at 8th meeting of the Central Family Planning Council held at Hyderabad on 1-11-1972 and 2-11-1972.

Siddha wing of 20 beds and a Homeopathic wing of 10 beds. Two of these hospitals will also become teaching hospitals contributing to an aggregate State output of 1,000 graduate-doctors per annum. This will be matched by an out-turn of 100 doctors per annum in indigenous and homeopathic medicine. The doctor-population ratio will be raised to 1:3,000, the number of hospital beds will likewise be raised to one bed per thousand of population and the quantum of nurses raised to one nurse per five beds. The auxiliary nurse-midwife ratio to the population will be stepped up to one in five thousand and the pharmacist ratio to 1 in 10,000. Full-fledged health laboratory services will be set up at the State, Regional, District General Hospital, Poly-clinic Hospital and poly-clinic centre levels.

Medical Education :

A programme of restructuring and upgrading of medical education at all levels—pre-clinical, para-clinical, clinical, dental and nursing—involves the creation of two new district colleges, a post-graduates centre in Madras, a Homeopathic college and a second Indigenous college of medicine.

Medical research will be developed in increasing measure for which more facilities and equipment will be provided. The proposal for a three-year diploma course to meet the shortage of doctors in the rural areas, which was actively contemplated in the Approach to the Fifth Plan, is really not germane to the problems of Tamil Nadu. For the State's present 10,000 medical graduates will have by 1981-82 increased to 16,000 fulfilling the target-ratio of one doctor to 3,000 of the population. Rather it is a problem of more even distribution of a given supply of doctors as between the rural and urban areas by an arrangement which will remain viable at the same time in the services of the State Government's avowed policy of devising an extensive and suitably equipped health service that is easily accessible to the bulk of the rural population.

Nutrition :

Tamil Nadu is way ahead of other States in school nutrition with the mid-day meals scheme which is in operation in 30,603 elementary schools

catering for 18.2 lakh pupils for 200 days in a year. It must be continued with improvements in the nutritive quality of the food and better nutrition education.

The Nutrition Programme will be directed at the vulnerable sections of the population—in particular, pre-school children, pregnant and nursing women through "Kulanthaigal Kappagams" which are to be increased to 12,500 and through 15,300 pre-primary section in appropriate primary schools. These feeding programmes will meet at least a third of the daily requirements for calories and nutrients of 26,00,000 children below six years of age, who constitute 50 per cent of the target population of the Perspective Plan for nutrition. The school-feeding programme will be continued and strengthened. Nutrition education will be imparted from the nursery through secondary schools to the University level with separate curricula for professional, personnel and extension services.

Family Planning :

The Family Planning Programme will be such as to reduce the present birth-rate of 32 births per thousand to 25 in 1979 at a "Project population" of 465.79 lakhs and to 22 in 1984 at an estimated population of 3,498.47 lakhs through intensification of effort, motivation and extension education. To attain these birth-rates by 1979 and by 1984 respectively, 58 couples for thousand population out of a total of 175 couples per thousand will be sterilized by 1979, an additional 50 by 1984. I.U.C.D. Users will increase from 1.4 per thousand of population in 1972 to 3.0 in 1979 and to 5.0 in 1984. Conventional contraceptive-users will increase from 1.7 in 1972 to 15.0 in 1979 and to 23.0 in 1984. This is based on a combination, for every thousand of population, of 12 sterilizations, four I.U.C.D.s and four conventional contraceptives and it has been computed that this "mix" among others considered can limit population growth in Tamil Nadu to the desired target by 1979. An integral part of education for family planning through school and out-of-school programmes, through the radio, films, posters, boardings and other audio-visual mass media will aim at purveying information

about specific contraceptive methods, at removing misconceptions and fears regarding the consequences of sterilization and at explaining the health, economic and ethical values of the small-family norm as a means of building a happy family. Population education will be incorporated in the school curriculum, and a University, centres of population studies has accordingly been suggested by the Task Force. A distinct course for undergraduates studying for the M.B.B.S. degree has also been drawn up.

Drugs :

The production of drugs will be expanded from the present Rs. 12 crores to Rs. 24 crores. Improvements will be effected at the King Institute of Preventive Medicine in Guindy, which at present meets the entire demand for "biologicals" in the State so as to modernize its techniques of production and step up its standards and bring them in conformity with those laid down by the World Health Organisation.

Integrated Administration :

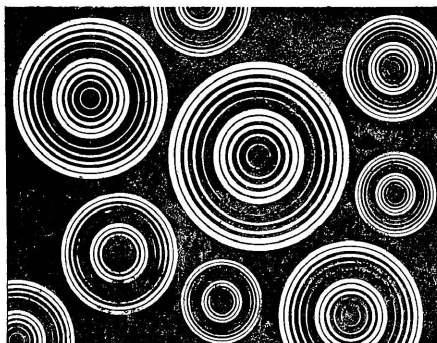
It is proposed that the administration of public health, family planning and nutrition be integrated in the Department of Health through a single Secretary and a Director aided by the three Joint Directors for the three services on to the district, taluk, block and mini-health centre levels.

SANITATION AND WATER-SUPPLY.

Urban water-supply :

Protected and piped water-supply in urban areas has come to be regarded as essential for the control of water-borne epidemic and endemic diseases. Public Health must be seen as an entailment of the development of local panchayat areas. The urban areas in Tamil Nadu have been delimited by a working administrative definition: (a) They should have a unit population of 5,000 or more and population densities not less than 1,000 per square mile; (b) 75 per cent of its inhabitants should derive their livelihood, in order to qualify for urban status from non-agri-

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cultural occupations. Given the growing scarcity of water for all uses in relation to population and to economic growth, this is not as disabling a criterion as it might seem. Rather does it make for rational priorities in determining the units of municipal action in which high densities also render populations living in proximate groups susceptible to waterborne epidemic and a host of vectors and contagions. Added to the 340 population concentrations, which are urban by the above definition, are 400 new townships and town panchayats which have been named, through the initiative of the District Collector and his sanitation staff, for conferment of civic benefits under the States urban water-supply and drainage plans.

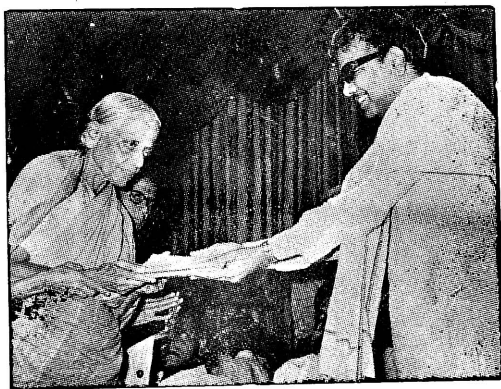
Over 70 per cent of all urban areas have already been provided with piped, protected water-supply. The remaining 562 towns are accounted for by ongoing schemes which should be completed by 1977. The provision in the rural areas

of assured sources of drinking water as distinct from that used for irrigation and certified as potable by the State Laboratory will be provided to all citizens of Tamil Nadu by 1975. The provision of water-supply for 4,916 villages which do not now have any water-supply source, for the 2,330 villages in the grip of endemic diseases and for a total of 11,814 villages which have inadequate water-supply will be completed by the end of the Fifth Plan.

Further purification of rural water-supply with a view to making it safer for drinking will be undertaken during the remaining period of the Perspective Plan. Underground drainage facilities for part of the unserved urban towns numbering 722 will be provided during the Fifth Plan and for the remaining towns in the Sixth. The construction of a sanitary latrine, together with leach or a soakage pit for the local community as a whole and other environmental sanitation works will also be completed in the

rural areas during the twelve-year period.

Industries will be provided with arrangements for the treatment and disposal of effluents and river waters and a minimal pollution control system. This will progressively evolve into a perfect system with the requisite authority and technical equipment to identify its tasks and delimit the pollutions. A Water Management Cell under the Water Supply and Drainage Board will also be established to ensure the conservations, disposal and re-use of water for drinking, irrigation and industrial uses. The Board and the Cell will be empowered to deal with water as a single State-wide resources and prepare legislation for the conservation and equitable distribution of water obtained from all sources. Another body will be formed for the prevention of pollution and contamination of the environment (the atmosphere and water courses in particular) by domestic and industrial effluents, fumes, and gaseous emanations.



TAMARA PATRA RECEPIENT

The picture published on the left side was originally published at page 13 of the issue of 1st November 1972 of "Tamil Arasu" under the wrong caption "Tmt. Mrs. Krishna Bharathi". It is to be read as Padmashree S. Ambujammal, who is the proud recipient of Tamara Patra. The mistake is profoundly regretted.

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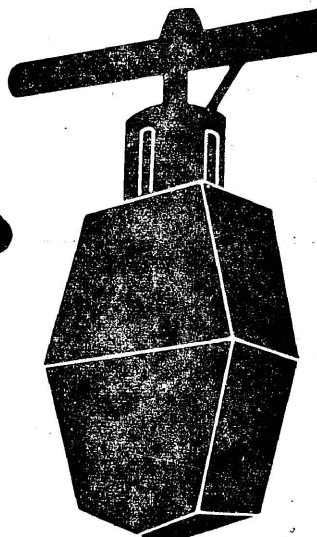
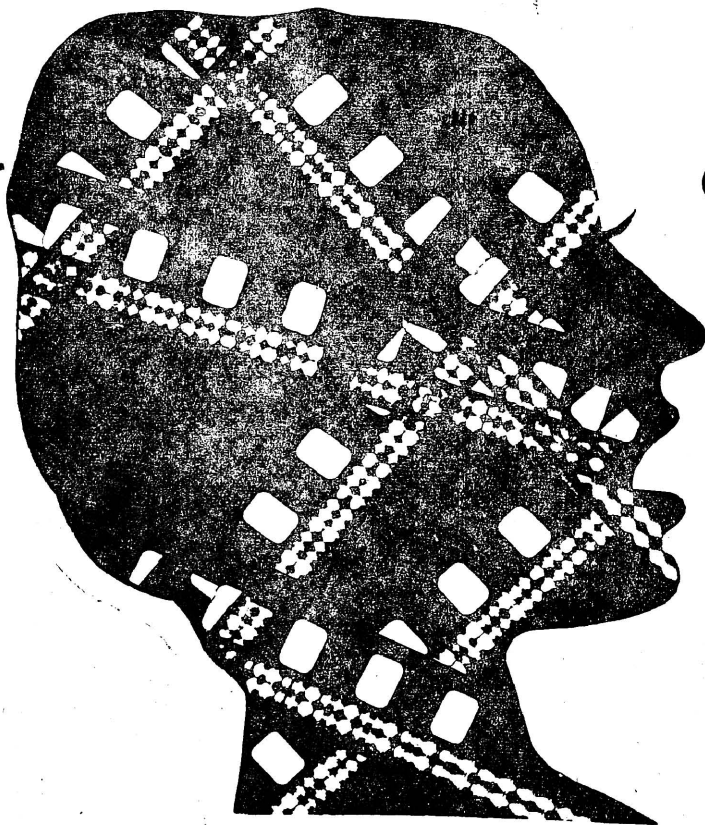
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TAMIL NADU'S PLAN FOR WHITE REVOLUTION IN NEXT DECADE

To usher in white revolution in this State, a Twelve-Year Plan for the Period 1972-84 has been chalked out by the Task Force of the State Planning Commission for Animal Husbandry. In this article the major strategies outlined in the report of the Task Force for Animal Husbandry has been enumerated and explained. —E.D.

Animal Husbandry plays a vital role in the prosperity of a nation. In planning the development of the Animal Husbandry Sector, both in its quantitative and qualitative aspects, factors such as achievements so far made, constraints encountered, objectives and strategies to be adopted in future, input requirements and likely output employment potential and organisational set up for Animal Husbandry Development, are of prime importance.

Present condition

In 1970-71 the capital value of livestock and poultry in Tamil Nadu was estimated at Rs. 327 crores and the net value of livestock products, estimated at Rs. 170 crores, accounted for 6 per cent of the State's total income. Cattle and buffaloes being the major contributors to income from livestock sector, the districts of Chingleput, Coimbatore and Madurai, where better breed of cattle such as Jersey, Sindhi and Murrah buffaloes are found relatively more, yielded larger income than the remaining districts. Livestock Development was concentrated in a few districts, and the relative prosperity of agriculture in these districts is no accident.

According to the 1966 Livestock Census (the latest for which figures are available), Tamil Nadu had a total livestock population of 24.57 million. Of these, cattle and buffaloes accounted for 13.58 million (55.2 per cent), sheep and goats 10.39 million (42.3 per cent) and other animals such as pigs, horses, mules, etc., accounted for 0.60 million (2.5 per cent). The State had 6.1 per cent of the total cattle population of all India. The percentages for other groups were 5.1 for buffaloes 15.8 for sheep, 5.8 for goats, 7.8 for others (Appendix 1).

The number of breedable cows and buffaloes in 1951 was 25.92 lakhs and 10.17 lakhs respec-

tively and this rose to 28.51 lakhs and 12.31 lakhs in 1966 showing an annual average growth rate of about 0.66 per cent for breedable cows and about 1.40 per cent for breedable buffaloes.

The buffalo population in India accounts for 50 per cent of world population and 51.7 per cent of Asia. There is ample scope for the development of buffaloes for milk production, since buffaloes are suited for Indian conditions.

This growth in numbers had hardly improved the quality of the livestock. The production of milk had increased from 6.58 lakhs metric tonnes in 1951 to 9.49 lakhs metric tonnes in 1971. Assuming that 50 per cent of the breedable cows and buffaloes are in milk, the average yield per animal works out to 285 kgs. in 1951 and 291 kgs. in 1971 hardly showing any perceptible improvement in productivity in the last two decades. Though the average yield is deplorably low, the better breeds yield much more.

Still the yield of our non-descript cattle compares very unfavourably with yields of cows from various countries. The European and the Scandinavian cows yield 17 to 25 times higher.

Low per capita availability of milk

The per capita availability of milk in the State is very low. The average availability is only 63 gms. per head per day for the State as against 300 gms. considered necessary for a balanced diet. The reasons for such a low per capita milk consumption are (i) low production and productivity of the animals and (ii) the absence of reliable processing and marketing system in urban areas. The supply is inadequate in urban areas particularly in big cities. But considerable unexploited potential is existing in rural areas. Villagers continue to churn the

milk into butter at loss. Further, more, in conversion, only the fat content is retained and the valuable constituents like protein, milk, sugar and vitamins are not fully utilised. The urgency of developing a suitable system of distribution for fluid milk is being increasingly realised.

So is the case with poultry and other animals. While the per capita requirement of egg per day is 8.4 gms., the availability is only one gm. Against the per capita requirement of fish and meat 1.4 ozs. (40 gms), the availability is only 26 gms. leaving a gap of 14 gms.

Thus out of a total of about 72 gms. of protein requirement including vegetable protein, per head per day 20.3 gms. are to be of animal origin, 11.3 gms. of milk protein, 7.9 gms. of fish and meat protein and 1.1 gms. of egg protein. But the available animal protein per head per day is only 7.9 gms. 12.4 gms. of milk protein, 5.4 gms. of fish and meat proteins and 0.1 gms. of egg protein.

Stupendous task ahead

The magnitude of the problem is stupendous. Consumption of milk will have to be increased five fold, eggs nine fold and meat at least double the current consumption. The lag in productivity has checked the rhythm of expansion and widened the gap between requirement and availability. It is against this back drop that the framework of the Perspective Plan for Animal Husbandry Sector has to be designed. The development aspect of this sector can be conveniently divided into (a) Dairy Development ; (b) Sheep and Goat Development ; (c) Veterinary and Public Health ; (d) Poultry Development ; (e) Piggery Development ; and (f) Veterinary Education and Research.

The objectives of the Perspective Plan frame for Animal Husbandry Sector are :

(1) to increase the Animal Production through—

(a) milk, (b) meat and (c) egg as stated above ;

(2) to increase the contribution of Animal Husbandry Sector to State income from 6 per cent to 16 per cent;

(3) to produce adequate raw materials for Animal Husbandry based industries; and

(4) to create more employment opportunities.

These objectives should be possible of realisation by adoption of a set of strategies. These may be outlined as follows :—

1. Upgrading the indigenous cattle with quality exotic germ-plasm for high milk production.

2. Upgrading of local buffaloes with quality Murrah buffaloes.

3. Breeding through artificial insemination.

4. Providing adequate health cover through establishments of a net work of Veterinary institutions.

5. Establishing large size layer farms and hatcheries for poultry development.

6. Multiplying Yorkshire pigs in a massive way for meat production.

7. Improving the quality of sheep for mutton, skin and wool.

8. Increasing feeds and fodder production adequately to support the production programmes.

9. Improving marketing facilities for milk and eggs.

10. Strengthening and streamlining the Animal Husbandry Department to cope up with the plan work.

New strategies

The Plan aims at increasing milk production nearly six times in a period of 12 years from 972 millions kgs. in 1972 to 6,016 million kgs. in 1984. This will increase the present per capita availability from 63 gm. per day to the minimum nutritional level of 300 gm. per capita per day. The Plan would improve the economy of the small and marginal farmers and provide opportunities for self-employment to the un-employed and full employment to the underemployed.

The major strategy consists of an aggressive programme of improving the existing cattle with the use of

high quality exotic germ-plasm for production of cross-bred cows of high productivity and improving the genetic make up of local buffaloes through high quality bulls available in the country. The programme in its essence is based on extensive application of artificial insemination techniques covering 3 million breedable cows and buffaloes, in Package Schemes comprised in Intensive Cattle Development Projects and Key Village Blocks.

In the sphere of poultry the Plan aims at increase of egg production 8 fold. This will mean 9 million eggs a day for table at the terminal year. The population of Tamil Nadu will have 8.5 gm. per capita per day as against 1 gm. at present. This would be achieved through, over a lakh and half small scale producers.

Augmentation of meat availability under the conditions prevalent in Tamil Nadu is sought through pigs and poultry. Pigs are prolific breeders, multiply quickly and put on weight faster than other farm animals. The turnover of meat production is high. Together with Poultry and Pig the Plan envisages to double the availability of meat, from the present 4 grams per capita per day to 8 grams in 1984.

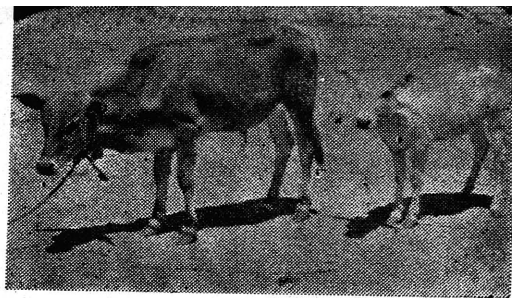
The availability of animal proteins through milk, meat and eggs is 3.4 grams per capita per day at present. The Perspective Plan aims to raise this to 14.2 grams in 1984.

Programmes have been formulated for the in-put requirements by way of improved germ-plasm, feeds and fodders, animal health services, marketing of animal products, etc.

The financial out-lay for the Perspective Plan period ending 1984 for Animal Husbandry Development, Dairying and Milk Supply, would be Rs. 216.39 crores comprising Rs. 79.89 crores of seed capital and Rs. 136.50 crores of loan capital.

The Plan will benefit directly over a million small and marginal farmers, and agricultural and non-agricultural workers. The contribution of the Animal Husbandry sector to the State income will increase five fold from Rs. 170 crores in 1970-71 to Rs. 848 crores in 1984.

NEW HIGH YIELDING MILCH CATTLE FROM EXOTIC STRAINS



Born to a non-descript
cow mated with a Jersey
bull.

Born to a non-
descript cow mated
with a local bull

The Madras Veterinary College Research Centre has over several years evolved a hybrid strain called Jersind which is a cross between the famous Jersey bull and Sindhi cow. These Jersind calves have shown very good tolerance to the local climate conditions and are proven to be not so easily susceptible to diseases. Pure exotic breeds were difficult to maintain because of their tendency to fall easy victims to diseases. The Jersind cows show better yields than Sindhi cows. A Sindhi Cow gives in a period of 300 days 1,062 kilograms milk, whereas the Jersind cow gives 1,712 kilograms milk over the same 300 days. The lactation period in Jersind cow is 335 days against 303 days in a Sindhi cow. The gap between two calvings is also markedly less in Jersind cows; it is only 398 days in the Jersind against 559 days in the Sindhi cow. Above everything else, the Jersind comes to its first calving at 21 months' age whereas in the Sindhi cow the first calving takes place only at the age of 51 months.

Similar experiments were also conducted on cow-calves born to local breeds of cows through Jersey seed insemination. The local Jersey hybrid cows came to their first calving in 22 months' age against the normal cow's calving at the age of 56 months. The period between two calvings is also much less in such hybrids is much less at 329 days against the normal 425 days. In the yield also hybrids born from Jersey seed insemination far better, giving double the average yield i.e., 900 kilograms milk in 300 days against the normal 465 kilograms milk.

MANAGING CROSS-BRED ANIMALS.

Cross-breeding has come to stay. It is perhaps the best means to

upgrade the non-descript cattle of our country. But the full benefit of cross-breeding programme is coupled with the supplies of feeds and fodder at reasonable prices. We can increase milk production by feeding nutritious fodder to our stock. But the problem is not merely one of increasing the milk yield per animal by higher levels of feeding. It is one of economic milk production. With the smallest number of animals, capable of higher production sound management will pave the way towards more milk for the millions.

Weaning at Birth is Best.

The breeding needs of all the useful and economic dairy animals have to be met within an interval of six to eight weeks after calving. Here we should look into the physiological need for period of genetic rest after each calving.

The practice of weaning the calves at the time of birth to reduce maintenance cost and to cull out unwanted progeny should be regularly followed.

Every selected female calf from birth to the age of three months has to be fed at least ten per cent of its body weight with milk. Add a small portion of readily assimilable concentrate feed to the milk ration of young calves from birth to maturity. Allow them to nibble grass from a very early age of even three to four weeks. From the third month upwards, the rate of feeding of concentrates can be increased and the milk ration similarly reduced till it is finally withdrawn by about six months of age. Small doses of fish liver oil and mineral mixture as a supplement to the milk ration from the beginning keeps them healthy.

Allow the calves to move freely in the calf-run attached to the milking shed. From three months to the age of near maturity a separate standing has to be provided to the calves.

Heifers near maturity and other which have become mature should be housed separately in clean and hygienic sheds classified into different age groups.

Good feeds are essential for healthy and proper growth of animals. A good cross-bred calf at birth should weigh not less than 20 kilograms unless the body size of the mother has been very small and the standard of nutrition of pregnant mother has been very poor.

Calves fed and managed in this manner would reach the age of maturity from nine months upwards to 15 months even though they may not ordinarily be mated earlier than 18 months of age. The first calf ordinarily should be born after 30 months of age. The breeding potential of cross-bred progeny is better than their local parent. Usually they are regular breeders, unless they have been brought up under very poor conditions of feeding and management.

Feeding standards.

Properly fed and housed, the rate of weight gain per day of calves on an average would be about 0.3 kilogram in the first three months and about 0.4 kilogram till the sixth month. The average cross-bred cow from the first generation consumes about 2.5 per cent of its body weight of feed reckoned on a dry matter basis. A cow of the first generation produce about 6 to 7 kilograms of milk per day on an average, while its body weight would be from 300 to 350 kilograms.

The feed intake thereafter, if anything, is lower than that of its female parent, while the fat test milk produced is definitely higher than the milk from pure bred exotic mothers under proper housing and management, the average length of lactation of cross-bred females is about 300 days.

Some of the superior progeny have very specialised dairy qualities. They also demand greater care in feeding and management. Failing this, they become readily susceptible to bacterial, viral or parasitic infections and to common metabolic disorders and digestive upsets.

The cross bred progeny have a high level of hybrid vigour. They are fairly resistant to ordinary diseases. They also respond well to protective measures against common infectious and contagious diseases.

Some feel that the native female parent would suffer from difficulties in delivery with progeny of exotic male parents. This is not so common. Normal veterinary aid may be required to ensure easy delivery. Care is also required for preventing naval infection at birth. The belief that cross-bred progeny from exotic males do not tolerate heat like the local stock is not quite true. Only give them greater protection from direct sun light.

Cross-bred progeny are however more prone to blood parasitic infections—The application of external skin dressings against common ectoparasites at intervals of 3 to 4 weeks in the form of sprays, baths or dips would safeguard them against most of the common blood infections transmitted by fly and tick bites.

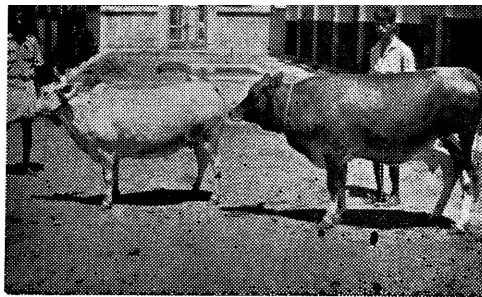
Is dairy farming profitable? How does it compare with crop farming? Some interesting studies were made on these aspects, by the National Dairy Institute, Karnal and the answer was that by employing high-yielding cows and equally high-yielding and nutritious fodder crops, better net incomes could be obtained from dairy farming than from arable farming or mixed cropping.

A Study on Dairy Farming.

Four types of ventures involving the same size of farms of 7.5 acres were taken up for study and according to Dairy extension, the specialised dairy farming unit with eight Tharparkar Cows gave a net income of Rs. 1,807.99. The same type with eight murrah buffaloes returned Rs. 1,301.02. The income in the case of mixed farming and arable farming with the same size of holding was Rs. 1,250.37 and Rs. 1,107.02 respectively.

Some important conditions which were found necessary to ensure such a good return were (1) Making the farm self-sufficient in feeds and fodder by growing both in the farm itself. (2) Rearing only quality milk animals yielding more than 2,000 litres of milk in 305 days (3) Replacing the animals as soon as the level of productivity decline and (4) Employing improved methods for raising fodder and thus increasing the carrying capacity of the land.

Proper choice of fodder crops which can come up in the area well and adequate feeding of the same with judicious manuring was found to be quite rewarding. It was also found that it was most profitable to maintain cross-bred cows which yielded not less than



Dam Cow

| Daughter Calf N.D.X. Jersey

Note the effect of crossing with pure exotic sire on the baby size.

10 litres a day and matured earlier producing milk by the age of 2½ years.

The indigenous (Zebu or humped) cattle came to production only after 3½ to 4 years. The cross-breed in addition remain in milk for a longer period (for ten months in a year yielding a profit of Rs.100 over the zebu cattle).

JERSEY CHOSEN FOR CROSS-BREEDING

The Cow population in Tamil Nadu in breedable age is estimated at 30 lakhs. It is proposed to upgrade the calves of at least 15 lakhs of these cows through the insemination of Jersey semen. The project will be taken up in a phased manner to reach this target at least by 1976. Eighty Jersey bulls will be imported for this purpose to meet the semen requirements. Three frozen semen laboratories will also be started for this project, for deep freezing of semen with a semen bank attached to each.

Dam Cow

| Daughter Calf born through Jersey sire Jersey.



The patient should be cautioned that one of the hazards of insulin administration is the production of hypoglycaemic shock. It can occur due to the following reasons:—

(a) Too much insulin intake, (b) Inadequate amount of carbohydrate, (c) failure to take diet in proper time, and (d) unusual amount of exercise.

An overdose of insulin results in an undue lowering of the blood sugar causing the symptoms of hypoglycaemia.

Hypoglycaemia due to soluble insulin usually begins with a feeling of weakness and emptiness about the pit of the stomach. Tremor and tachycardia are common and diplopia occasionally occurs. The individual feels faint and dizzy and often experiences a strong desire for food. Clammy sweating is almost invariable, and, as the condition becomes pronounced, mental symptoms are common, the patient sometimes becomes very hysterical laughing, crying, shouting and struggling. Some most respectable diabetics, while in hypoglycaemic attack have run amuck in the streets and had been apprehended by the police as drunk and disorderly. At other times lassitude and somnolence are more marked feature, especially in the case of children. It is at this stage, the diabetics should be taught that they should swallow a lump of sugar, alarm somebody who knows about his ailment and wait for improvement. The advanced stages of hypoglycaemia are characterised by muscular twitchings, depending, coma and eventually convulsions.

All patients taking insulin should be carefully explained about hypoglycaemia, and should be made thoroughly conversant with the necessary treatment. It is desirable for the physician to induce a milk insulin reaction if possible, so that the patient may become acquainted with its manifestations and its relief with sugar. Patients should always carry some sugar with an identity card for emergency. The identity card should contain the following statement:—

I have Diabetes.

If unconscious or be having abnormally. I may be having an

THE COMMON HAZARDS OF DIABETIC PATIENTS

SOME SAFE ADVICE

BY

DR. DURGA RANJAN

MUKHERJEE, M.B.

INSULIN REACTION. If I can swallow, give me two lumps of sugar (which may be obtained from my own pocket) or sweet or fruit juice or a sweetened drink.

If I am unable to swallow or if recovery does not occur promptly (say within 10 minutes after administrations of the sugar lumps), please call a physician or send me to a nearby hospital with this written history AT ONCE.

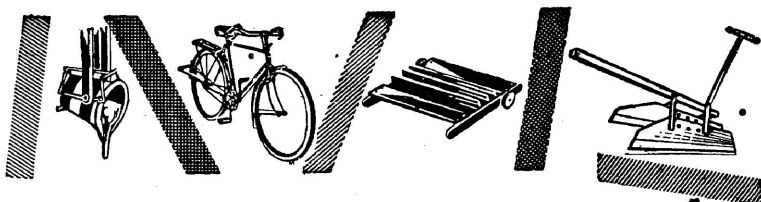
- (1) My name.
- (2) Address.
- (3) Telephone No.
- (4) Physician's name.
- (5) Address.
- (6) Telephone No.

Also please notify :

Name, Address, Telephone No.
(Also indicate the variety and dosage of insulin or name and dosage of oral anti-diabetic drug).

Some physicians overstress the dangers of hypoglycaemia, causing their patient to become unduly alarmed about it. This exaggerated terror of hypoglycaemia is responsible for much insufficient dosage, or even for insulin administration being withheld or stopped, with disastrous consequences. Again, if some gastric upset renders a patient temporarily unfit for his ordinary diet, insulin is often discontinued altogether from fear of hypoglycaemia. This is one of the most common causes of diabetic coma. When, for some reason or other, the patient cannot be given an ordinary diet, a light diet may be substituted, and if necessary the ordinary dose of insulin may be appropriately reduced, but should never be discontinued as long as sugar is present in the urine. Where the digestion is upset as the result of an infection, the insulin requirements should be increased rather than diminished. It should always be remembered that while the number of deaths from diabetic coma are not negligible, those from hypoglycaemia are so rare as to become clinical curiosities.

Many patients are averse to start insulin and physicians hesitate to prescribe it in the belief that once started it will have to be continued for life. In a large percentage of cases this permanent administration is, of course, necessary. Where there is no delay in starting insulin is merely a matter of putting off the evil day and in the meantime the patient will probably lost in condition, and his sugar tolerance will become progressively more and more impaired. Such a patient may, indeed, require eventually



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much larger doses than he would have done had insulin been given earlier. It is a fallacy however, to suppose that insulin once stated need in every case to be permanently administered. After an initially severe hypoglycaemia has been well controlled by the use of insulin, the patient is often able to reduce the dose and even do well without it altogether, the patient regaining much of his lost sugar tolerance. Again, insulin may be required as a temporary measure because of some superadded infection, but when this subsides, the sugar tolerance may once more improve, so that the patient may be able to tolerate a normal diet without insulin.

One of the most dreadful complications of the disease is diabetic coma in the pre insulin era, most of the juvenile diabetics died of coma. Fortunately this too is preventable again, only when the patient co-operates with himself and with the physician. Diabetic coma should never occur when an intelligent patient is under efficient treatment. Occasionally it may be encountered in an undiagnosed and therefore treated case. Sometimes it is simply due to disregard of treatment by the patient or to grossly ineffective treatment on the part of the physician, and more often it is the result of gastro intestinal upsets, infections or surgical operations in diabetics who are being adequately treated for all ordinary occasions, but whose treatment is insufficiently elastic to cope to with such emergence.

The physician should differentiate to the patient between diabetic coma and insulin reaction stressing that development of diabetic coma is shameful on the part of the patient.

An auxiliary and yet useful tool in diabetes controls is exercise. Controlled exercise can help the patient enjoy a life which diet or drug will never be able to render. The diabetic should plan to keep his body strong and mind alert. He has disease which makes him susceptible to complications, particularly to infectious, acute or chronic, general or localised, in one part or another of the body but specially in the lower extremities. He should take advantage of sun-

light and fresh air because of the resistance to disease in his muscles sugar is burned and thus more carbohydrate may be allowed and less insulin required. Juvenile diabetic should be encouraged to play outdoor games like football, cricket, tennis, etc. But for the danger of hypoglycaemia, as a result of the strenuous exercise, every diabetic under such circumstances should have someone to keep an alert eye upon him. A diabetic when about to take extra and strenuous exercise, should take additional carbohydrates as well as protein and fat. However, exercise for an uncontrolled diabetic is far from beneficial and every diabetic, therefore, should obtain an opinion from the physician before a routine exercise.

It is pathetic that some people, claiming themselves to be yogis advises diabetics to perform yoga for better treatment and discard drug therapy altogether. The author, who has wide experience in this field and who published many articles in different medical and non-medical journals on this subject considers the yogic system of treatment rather harmful.

The diabetic should be asked to be always cheerful and also thankful that his disease, instead of being of a hopeless character, is one which his brains will help him to control. He should keep his temper under restraint and not be a spoiled child or pretend to be nervous, but gain the respect of his associates. He should secure a daily action of bowels; sleep eight to nine hours at night; take time to complete relaxation; and insert exercise into the routine of the forenoon, afternoon and evening with medical advice.

During consultation with the physician, while dealing with the immediate problems of the patient, should gradually expose to the patient the various associated aspects of the diseases too. They should be told that heredity is the basis of diabetes. As Warren and Le Compe told, "When both parents have diabetes, all the children may be expected to develop the disease if they live long enough; when one parent has diabetes and the other is a diabetic carrier, 40 per cent of their children may develop the disease; whereas if a diabetic

or a carrier marries an individual who neither has diabetes nor is a diabetic carrier none of the children will have diabetes". So if a diabetic wishes he or she may marry but not in another diabetic family and in no case with a diabetic.

Diabetic often question their physicians how the disease can be prevented in their families. The answer will be: Teach other members of your family to avoid obesity. By this means much of the element of the heredity factor probably can be overcome or postponed. Encourage the children to eat vegetables freely and fruits instead of sweets. At any rate, seek to discover the disease early and make it a family custom to have the urine and blood of each member examined once a year. The diabetics should check their urine for sugar always on rising from bed often upon retiring; occasionally before noon and night meals and at any time if in doubt about condition; or during any illness. They may use the following method for sugar testing; Put 4 drops of urine in a test tube and add a half teaspoonful Benedict's solution. Shake well and place in boiling water for five minutes. Colours after boiling; Blue means no sugar; green coloration means a small amount; yellow a moderate amount; and orange or red a large amount of sugar. Several other simple and more convenient tests are available such as Clinitest, Tes Tape, etc. They can use these also.

Diabetes mellitus is a chronic disease and may lead to serious complications such as tuberculosis, nephropathy, blindness, etc., if the disease is not diagnosed timely. As such, vigorous campaign should be made throughout the country to find out undiagnosed diabetics. The campaign stating the carious aspects of diabetics should be popularised by the Government inserting the facts in the newspaper, screening in the cinema halls, TV, etc. It is expected that when people will come to know the nature of the disease and the grave complications that may arise without adequate treatment, they will voluntarily come forward to get themselves checked up in order to prolong their life. The suspected people should be energetically and quickly checked at Government hospitals.

CRASH SCHEME FOR RURAL EMPLOYMENT

The "Crash Scheme for Rural Employment", is being implemented in Tamil Nadu from 1971-72 onwards. This is a 100 per cent Centrally assisted scheme. The aim of the scheme is to provide employment opportunities for atleast 1,000 unemployed persons in each district for about 250 days in a year. The scheme has been designed to generate additional employment through a net work of Rural Projects of various kinds which are labour intensive and productive.

During May 1971, the scheme was introduced in 123 blocks and subsequently the scheme was extended to 106 blocks from October 1971. Thus the scheme was in operation in 229 blocks during 1971-72. Now the scheme is being implemented in 230 blocks. The entire districts of Dharmapuri, Kanyakumari and The Nilgiris have been covered in full by the scheme. In the other 10 districts, the scheme has covered 20 blocks each except Tirunelveli district, where the scheme is now in operation in 21 blocks. The scheme is expected to cover the remaining years of the Fourth Plan period.

The following works are being taken up under the Programme :

(1) Rural infra structure including Road Works on a Master Plan basis.

2. Land Reclamation and development of Panchayat Lands, etc.

3. Drainage and embankments, etc.

4. Water conservation-cum-ground water recharging works.

5. Minor irrigation works like construction and restoration of storage tanks, etc.

6. Soil conservation of afforestation scheme requiring manual labour.

7. Construction of additional class Rooms for Primary School buildings.

8. Special repairs as distinguished from ordinary day to day

maintenance repairs of existing assets with a view to making them durable and useful.

9. Completion of incomplete relief works taken up earlier under other schemes.

Projects costing less than Rs. 5,000 should not be taken up under the scheme. Comprehensive schemes for the year 1972-73 and 1973-74 are prepared for each block and got approved by Government through the Collectors.

The scheme is being implemented by associating Non-Officials and Panchayat Raj institutions. A Block level committee selects the labourers to be employed. The works are executed by the Panchayat Union Commissioners departmentally. Each district is taken as a unit for the operation of the scheme. The financial allocation per block is Rs. 1.25 lakhs except the blocks in Kanyakumari and The Nilgiris District. In respect of these two districts the financial allocation is Rs. 12.50 lakhs per district. During the year 1971-72, a sum of Rs. 292.31 lakhs was spent and Rs. 83.73 lakhs of Mandays were generated under the scheme. A sum of Rs. 293 lakhs has been provided in the Budget Estimate for 1972-73.

Under this scheme, wages to workers, are being paid at the prevailing scheduled rates, in the area up to maximum of Rs. 100 for 25 working days in a month, per worker.

Materials and equipments required for implementing the scheme can be purchased from out of the C. S. R. E. However the cost of such equipments and materials including the cost for supervisory staff should not exceed 5 per cent of the total allocation.

Government have permitted the appointment of the following minimum staff in all the C. S. R. E. blocks, for implementing the scheme during 1972-73.

1. One Union Overseer.
2. Two Road Inspectors.
3. One Junior Assistant.

The expenditure on the employment of the Junior Assistant is to be met from the Panchayat Union General Funds.

According to the stipulations of the Government, for every Rs. 12.50 lakhs spent, 250,000 mandays should be generated.

The physical achievements under the scheme during 1971-72 is enclosed.

RURAL MANPOWER PROGRAMME.

The Rural Manpower Programme is being implemented in this State from 1961-62. The main objective of the R.M.P. is to provide for the utilisation of the Man Power in backward rural areas during slack seasons for the benefit of the Community at large and for the creation of tangible community assets which will increase Agricultural Production.

During 1961-62 and 1962-63 the scheme was implemented in select blocks as a Pilot Programme mainly for carrying out soil conservation works under the control of Agricultural Department. From 1963-64 onwards, the R.M.P. has become a regular feature. For the implementation of the scheme 35 blocks were selected in 1963-64, 20 more blocks were included in 1964-65 and a further addition of 17 more blocks were made in 1965-66, bringing the total to 72 blocks. The programme continuous to be operated in 72 blocks.

The following works can be taken up under the programme.

(i) Digging and deepening of Community Irrigation wells.

(ii) Improvement to Minor irrigation sources such as desilting strengthening and raising of bunds, etc.

- (iii) Formation of roads.
- (iv) Improvements to existing roads.
- (v) Reclamation of lands vested with Panchayats.
- (vi) Construction of Community Thrashing Floors, etc.

The Panchayat Union Councils have been made responsible for the implementation of the programme.

The works are to be executed by the Local Labour contract Co-operative Society if one is available. Otherwise, they have to be executed by the Panchayats departmentally.

Ninety per cent of the expenditure on these works are met as Government grant under this scheme and the remaining 10 per cent is to be met as Public contribution either from the Villagers, or from the Panchayat or from the Panchayat Union.

The expenditure on Road works under the scheme should not exceed 50 per cent of the allotment for the year for the block.

During 1967-68, five ineffective blocks were weeded out and five new blocks were selected in their places. During 1969-70, 42 blocks were weeded out and 42 new blocks were selected.

During 1970-71, 24 blocks were weeded out and 24 new blocks were selected. One block was weeded out during 1971-72 and in its place one new block was selected.

Thus the scheme has covered 144 blocks up to 1971-72.

The expenditure incurred and the Mandays generated under R.M.P. from the year 1963-64 onwards is as follows:—

Year,	Expenditure.	Mandays generated.
	(RUPEES IN LAKHS.)	
(1)	(2)	(3)
1963-64 ..	28.68	16.09
1964-65 ..	27.54	13.51
1965-66 ..	48.72	19.90
1966-67 ..	52.43	17.26
1967-68 ..	40.70	15.72
1968-69 ..	50.89	18.49
1969-70 ..	40.65	14.94
1970-71 ..	50.00	17.66
1971-72 ..	49.80	15.70

RURAL ROAD SCHEMES

A special scheme to connect habitation with a population of 1,500 and above with maintained roads was sanctioned by Government at an estimated cost of Rs. 19.00 crores for the formation of 281 kms. of all weather link roads connecting 200 habitations and also for improving 4,280 kms. of existing katcha roads. In the first place Government have sanctioned the formation of 281 kms. of link roads and the improvement of 1,427 kms. of existing katcha road at an estimated cost of Rs. 6.00 crores. However the expenditure should be restricted to Rs. 3.00 crores during 1972-73. The cost of the scheme is proposed to be shared as 50 : 50 basis by the Government of India. The Chief Engineer (Highways and Rural Works), Madras, is implementing the scheme.

PILOT INTENSIVE RURAL EMPLOYMENT PROJECT

The Government of India have drawn up a scheme entitled "Pilot Intensive Rural Employment Project". This scheme is being implemented in one block in each State. In Tamil Nadu, the scheme is being implemented in Mangalur block of South Arcot District.

(i) To provide gainfull employment on work projects not requiring skills of a high order in selected compact areas progressively to all those that offer their services for a wage;

(ii) To utilise the funds appropriated for the project for creating durable assets preferably such as will have the multiplier effect of creating new job opportunities of a continuing nature and will form part of an Area Development Plan;

(iii) To explore the possibility of imparting new skills to some atleast of the workers employed on Project works during the period of the employment and of assisting them in finding continuous employment in the secondary and territory sectors in rural or urban areas; and

(iv) to study through the implementation of the project in selected areas, the nature and dimensions of the problem of

unemployment among the rural wage seeking labourer and the effect, if any, of the project on the wage level in the area with a view to evolve a comprehensive programme to the rest of the country.

The project is envisaged for the present as a three-year project and its scope will be expanded year after year in accordance with the pace at which necessary administrative and other arrangements are developed.

Employment will be provided under this scheme to all able bodied men and women within the age-group of 15 to 59 ordinarily residing in the selected blocks and who have offered themselves to do manual work.

The following works may be taken up under the scheme:—

1. Minor irrigation.
2. Soil conservation.
3. Afforestation Farm Forestry.
4. Reclamation and Development of Land.
5. Drainage, embankments, etc.
6. Water conservation and ground water recharging.
7. Pisciculture tanks.
8. Pasture development.
9. Free plantation.
10. Rural godowns.
11. Road building.
12. Rural Water supply.
13. Housing for weaker sections of the Community.
14. School building.

The Collector of South Arcot has been made responsible for the planning and implementation of the scheme. A Committee has been constituted with the Collector of South Arcot as Chairman for the selection of personnel and execution of the works under the programme.

The wage rate under the scheme should not be higher than the prevailing local wage for similar work. The wage rate per worker will be Rs. 4 per day. One day in a week will be a holiday. Payment of wages should be made once a week and there will be no ceiling on the actual amount to be earned by a worker in a week or a month.

A sum of Rs. 10.00 lakhs has been provided for the scheme during 1972-73. The wages of labour should be Rs. 7.00 lakhs and material component Rs. 3.00 lakhs. This is a 100 per cent centrally assisted scheme.

OBJECTIVES.

The objectives of the Applied Nutrition Programme are as follows :—

1. To demonstrate the production of more nutritionally valuable foods like vegetables, fruits, eggs, fish and milk.

2. To educate the people to become more nutrition continuous.

3. To organize demonstration feeding programme for expectant and nursing mothers and pre-school children.

4. To improve the family diet with available foods to raise the standard of health.

5. To train all the participants in the programme (officials and non-officials) in Nutrition education to produce more nutritive foods.

6. Developing the leadership and resources to make the programme self-generating in each village.

IMPLEMENTATION OF THE PROGRAMME.

(a) To improve the production of the nutritionally valuable foods the following have been set up in villages or selected blocks.

Community, School and Home gardens to grow nutritionally rich vegetables and fruits. Backyard and Block units to produce more

poultry and eggs. To educate the people demonstration feeding programmes have been arranged to distribute cheap balanced foods to expectant and nursing mothers and pre-school children.

Periodic evaluations are also done to measure the impact of the programme on the people and find out to what extent production and consumption of protective foods are taken up by the local people.

The period of operation of this programme is only 5 years with the aid of State, RAO, WHO, UNICEF, and Government of India.

During the quarter in question the programme was in operation in 16 blocks. The production and distribution under various aspects are enclosed in the proforma.

PROGRESS REPORT ON APPLIED NUTRITION PROGRAMME.

Quarter ending 31st March 1972.

Serial number and name of the schemes.	Physical achievement under the scheme.	
	Numbers.	Quantity.
<i>Horticulture—</i>		
<i>(i) Community Garden—</i>		
(a) Number started	31	..
(b) Area in acres	117.74	..
(c) Production (in Kgs.)	..	9,803
(d) Distribution (in Kgs.)	..	7,225
<i>(ii) School Garden—</i>		
(a) Number started	277	..
(b) Area in acres	94.34	..
(c) Production (in Kgs.)	..	..
(d) Distribution (in Kgs.)	..	..
<i>(iii) Kitchen Garden—</i>		
(a) Number started	26,557	..
(b) Vegetables produced (Kg.)	..	..
<i>(iv) Headquarters Nursery—</i>		
(a) Number started	10	..
<i>(b) Seedling distributed—</i>		
Papaya	2,96,706	..
Moringa	2,33,775	..

PROGRESS REPORT ON APPLIED NUTRITION PROGRAMME.

Quarter ending 31st March 1972.

Serial number and name of the schemes.

Physical achievement under the scheme.

Numbers. Quantity.

Aviculture—

I. Grower Farm—

(a) Number started	..	..	..	..	..	..	..	..	74	..
(b) Chicks supplied	..	..	..	..	..	..	..	..	13,314	..
(c) Number supplied for ANP	..	..	..	..	..	..	..	..	5,639	..
(d) To other Farmers	..	..	..	..	..	..	..	..	500	..

II. Backyard Units—

(a) Number started	..	..	..	..	..	..	..	..	2,533	..
(b) Production	..	..	..	..	..	..	..	..	2,403,677	..
(c) Distribution	..	..	..	..	..	..	..	..	57,021	..

III. Deepitter Units—

(a) Number started	..	..	..	..	..	..	..	..	599	..
(b) Production	..	..	..	..	..	..	..	..	243,265	..
(c) Distribution	..	..	..	..	..	..	..	..	38,321	..

Nutrition Education—

(a) Number of M.M.S. organised	..	..	..	..	..	..	..	..	214	..
(b) Number of members enrolled	..	..	..	..	..	..	..	..	3,490	..
(c) Number of demonstration conducted	..	..	..	..	..	..	..	..	3,025	..
(d) Number of competition conducted	..	..	..	..	..	..	..	..	129	..
(e) Number of exhibition	..	..	..	..	..	..	..	..	67	..
(f) Number of K.K.S. started	..	..	..	..	..	..	..	..	156	..

Training—

(a) Officials	..	..	..	..	..	..	..	..	1,365	..
(b) Non-Officials	..	..	..	..	..	..	..	..	1,091	..

Special Projects—

(a) Distribution of Mitch Animals—

(1) Animals supplied Number	..	..	..	..	..	..	..	..	22	..
(2) Milk obtained (in litres)	..	..	..	..	..	..	..	..	..	1,062

(Sd.)

For Director of Rural Development.

The Tamil Nadu Industrial Investment Corpn., Ltd.

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

The terms and conditions of assistance

Minimum: Rs. 1,00,000 (for small-scale industries : Rs. 25,000).

For Technocrats and Rural Medical Practitioners : Rs. 10,000.

Maximum: Rs. 25,00,000 (Rs. 2 lakhs and Rs. 1 lakh in the case of Technocrats and Rural Medical Practitioners respectively).

Rate of Interest

9.75 per cent in the case of major and medium-scale industries.

7 per cent in the case of units in backward areas and for Technocrats and Rural Medical and Veterinary Practitioners.

8½ per cent in the case of other small-scale industries.

Initial repayment holiday

2 years in the case of ordinary industries.

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

Amortisation period

Ranging from 8 to 10 years.

Special concessional terms are available to small-scale industries, technocrats, rural medical and veterinary practitioners.

FOR FURTHER DETAILS, PLEASE APPLY TO

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CHINTHAMANI

SHOWS THE WAY

The six-year-old 'Chinthamani' in Coimbatore, the co-operative department store set up by the Coimbatore District Central Co-operative Supply and Marketing Society has made history in retail business. Its impact is so significant that the private grocery shops in the town are forced to form an association in competition, and the cloth merchants, an organisation for common purchase and advertising campaigns against the Chinthamani. The business discipline that has come about as a result of Chinthamani is remarkable. The private merchants quote Chinthamani prices publicly. The manufacturers of consumer articles take pride in making supplies to the Store. Chinthamani has, therefore, earned an all-India reputation for efficient management and business success.

Within a few years of its operation, the Chinthamani has refunded the entire share capital and loan of Rs. 6 lakhs given to it initially by the Government.

The sales of Chinthamani have reached phenomenal heights during the last five years. Starting from a sale of Rs. 77 lakhs in 1967-68, it has achieved a sale of Rs. 560 lakhs in 1971-72. During 1972-73, it expects to establish a new record with a sale figure of about Rs. 700 lakhs. Such a large turnover in a small town speaks of the department store's efficiency. The secret behind this is that the Store provides the 'better buy in Chinthamani' incentive. Almost the whole town turns up for shopping in it. The Store has consequently provided a special omnibus service for its members living in distant areas. One can purchase tokens worth Rs. 5 for a journey to and from various sections of the Store.

The Chinthamani Co-operative Department Store was set up on November 12, 1966 in the wake of devaluation of the rupee in June, under the Centrally Sponsored Scheme of Consumer Co-operatives. Within 6 years, it has been able to

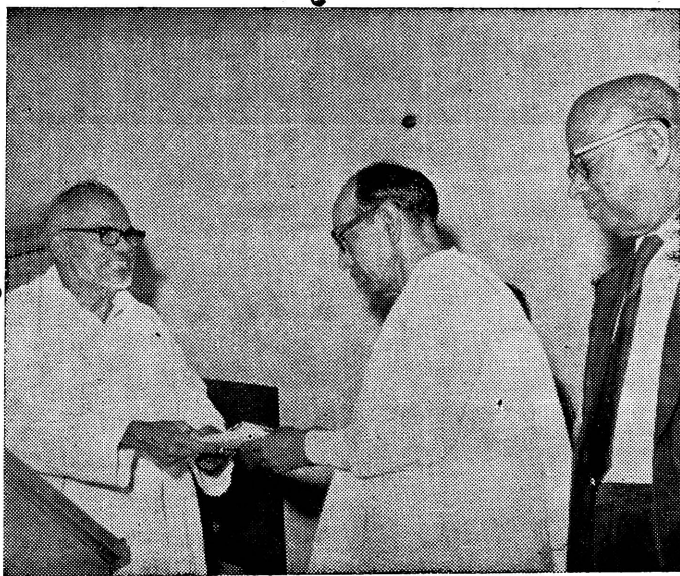
take up retail sale of a wide range of essential consumer goods and other articles such as groceries, rice, fruits and vegetables, fish and eggs, textiles, readymade garments, drugs and medicines, household articles, cosmetics, electrical goods, cycle parts, cooking gas and hot plates, furniture, shoes, books, stationery, toys, liquor and automobile spare parts. Besides, it has set up an agro-service centre to cover agriculturists' requirements of improved seeds, fertilisers, plant protection chemicals, tractors, implements, services, etc. A notable feature of the service is that it offers free technical advice and a home-delivery.

Among other services provided to the consumers are watch, pressure cooker, electric fan and sprayer repairs; car battery service; tailoring and round the clock sale of medicines. The amenities provided include those of banking, postal

services, telephone calls at concessional rates and free parking of cycles, etc. The Chinthamani has set up three more branches in different areas of Coimbatore and one in a taluk town at 60 kilometres.

Foodgrains and grocery articles are procured during the harvesting season from various production centres and stocked to enable the store to sell them at low prices throughout the year. The consumer goods including textiles are procured in bulk from the manufacturers. The Purchase Officers of the Organisation make purchases of fruits and vegetables directly from villages.

All healthy practices that go with sound business are strictly followed in the Chinthamani. Besides, the Society has undertaken manufacture of oils, icecream, popcorn, spice powdering, dal milling, coffee



Thiru N. V. Nataraajan, Minister for Labour Welfare, receiving the special number of Journal at the inaugural function of All-India Co-operative week on 14th November 1972 from Thiru Si. Pa. Adithnar, Minister for Co-operatives.

grinding, etc., to assure unadulterated quality goods. The inventory control and management policies of the Chinthamani are advanced. Good use is made of press and other media for sales promotion. Like a modern business organisation, Chinthamani follows scientific personnel management policies. It offers on-the-job training, incentives, etc., to its employees. A Board of Directors, representing a cross-section of the consumers, provides a dynamic leadership in this regard.

The Chinthamani and the Society are not content over its own prosperity and success. They have as well gone to the rescue of neighbouring super markets, which are not doing well. The Chinthamani took over management of the Trichy Co-operative Super Market recently, on August 20, 1972. The services of Chinthamani's well proved staff were placed at the disposal of the Trichy Unit. Its stocks were replenished and price-structure revised. Good publicity

was also given to the change over. Ever since the takeover by Chinthamani, the sales of this organisation too have gone up. This has been followed by the Tamilnadu Government entrusting the working of two more co-operative super markets in the neighbourhood, to Chinthamani.

Chinthamani has set up a new department store in the Big Bazar area with financial assistance from the Government of India under the Central Sector Scheme for development of consumer co-operatives having growth and employment potential. The new store has provided additional employment to 65 educated persons. The number is likely to go up. A scheme for setting up yet another departmental store at Old Sungam in Coimbatore has been approved by the Government of India. This project is expected to generate additional employment for another 50. Thus, Chinthamani has been able to generate employment opportunities for the educated unemployed.

Encouraged by the success of Chinthamani, similar projects are being undertaken on a selective basis in other States as well, under the Central Sector Scheme for development of consumer co-operatives having growth and employment potential. Sixteen other projects have been initiated in different States including Mysore, Andhra Pradesh, Tamil Nadu, Maharashtra, Gujarat, Haryana, West Bengal, Assam, Bihar, Orissa and Goa.

In the present situation when rise in prices of essential consumer goods is of serious concern, both to the Government and the people, voluntary association of consumers through consumer co-operatives can render immense service to the society. Ultimately the consumer co-operatives like the Chinthamani have to play an increasingly larger role in the evolution of a consumer oriented distribution system of food-grains, sugar, controlled cloth, essential commodities and other consumer goods.

“PRICE PREFERENCE TO THE PRODUCTS OF SMALL SCALE, COTTAGE AND LOCAL INDUSTRIES.”

In order to promote and develop local, small-scale and cottage industries, a policy of price preference to the above industries in the matter of supply of stores and other articles required by the Government departments is being followed by the State Government. If purchasing officers of the Government departments are not able to purchase goods from the Government institutions like Jails, Tamil Nadu Small Industries Corporation, Limited, Industries department, etc., they are requested to call for open tenders and make purchases, giving price preference to the products of small, cottage and local industries on the lines indicated below:—

(b) Up to 10 per cent to the products of cottage, small-scale industries within this State, against those manufactured outside this State, but within India provided the qualify is comparable.

The effect of the existing price preference is as follows:—

	Large Scale Industries.	Small-scale Industries.	Cottage Industries.
Other States in India.	100	115	115
Tamil Nadu ..	110	125	125

Government have also constituted a Committee headed by the Industries Secretary and other senior officers to look into any complaints of alleged non-compliance with the above instructions.

Age-limit for public services in Tamil Nadu increased.

The Tamil Nadu Non-Gazetted Government Officers Union which held their 45th State Conference at Salem on 20th February 1972 passed

a resolution requesting the Government to enhance the age-limit for recruitment to public service from 25 years to 30 years.

The State Government find that the Government of India have raised the age-limit for recruitment to the All-India Services from 24 years to 26 years. The Tamil Nadu Public Service Commission has also recommended the enhancement of the maximum age-limit to 26 years in respect of posts included in certain services from the present age-limit to 26 years. After carefully examining the suggestions the Government have decided that the maximum age-limit for direct recruitment to all posts under the Government of Tamil Nadu be increased to 26 (twenty-six) years.

The Government also direct that where the age-limit is higher than 26 years, the higher limit shall continue and it shall not be reduced to 26 (twenty-six) years. The Government also direct that this order shall not in any way affect candidates belonging to Scheduled Castes, Scheduled Tribes and Backward Classes where in respect of any of the posts members of these have either no age-limit or where they enjoy the concession of a higher age-limit.

The Madurai Central Bank 'Robbery' case will go down in the annals of crime as a 'cause celebre' if only for its audaciousness and sheer dexterity.

The Madurai Branch of the Central Bank of India, situated in the heart of the city and close to the famed Meenakshiamman temple, opened up as usual on 12th April 1971 and was soon bubbling with activity as a large number of clientele queued up at the counters. The assistants were on their toes attending on the customers and to various other chores connected with banking. As the day wore on, the staff found themselves still busy with seemingly endless and myriad transactions. At the table inside the cash cage lay nine bundles of 100—rupee notes totalling Rs. 90,000 waiting recount and remittance into the State Bank of India. With the lunch hour in sight and prospect of a hearty meal in its wake, the staff were busy giving finishing touches to the ledgers when, much to their chagrin, they heard an irate customer vehemently complain that a cheque for Keelamasi street Muthusamy Nadar was being delayed unnecessarily. Well, once in a way they used to have a visitor of this kind who professedly has no sympathy for the banking staff and who, if not given a red carpet treatment, pours out his bile. But, what was unusual was the irritably pitched voice of the stranger and solicitous offer of 'bakshis' to the peon to help him encash the cheque. Antony, the peon, brusquely spurned the offer and directed the stranger to go to the appropriate counter. When he returned he was agast to find the nine bundles missing. It was indeed a mystery to find the bundles missing in the twinkling of an eye. Rupees ninety thousand in hard cash and indeed no mean sum! The alarm was sounded and the entire business came to a grinding halt, much to the bewilderment of the staff. An immediate check was made but the cash was nowhere to be found. The Bank authorities, after drawing blank in their efforts to retrieve the money, informed the police over the phone.

A team of police officers headed by the Superintendent of Police himself arrived at the scene and immediately embarked upon a methodical and systematic check

METICULOUS INVESTIGATION SOLVES A BAFFLING CRIME

DETAILS OF MADURAI CENTRAL BANK ROBBERY CASE

by

THIRU K.V. GNANASAMBANDAN

of the persons and the premises. That such a large amount of cash kept inside the cash cage should be missed in broad daylight under the very nose of the bank servants was inconceivable and could not be believed. The investigating officers, all the same, wanted to be sure if the amount was really lost or whether it was just an error in accounting as, in the latter case, it would reduce itself to much ado about nothing. And, if the amount was really lost, the suspicion to begin with would naturally fall on the banking staff. The chance for an outsider to enter the cash cage and decamp with the money would appear to be far remote. The presumption that the banking staff might be responsible could not altogether be ruled out in the circumstances. This delicate task of verification was undertaken and, after a discreet enquiry, the staff was cleared of any suspicion.

It was then the investigating officers turned their attention to 'Professionals'. The First Information Report lodged by the Bank authorities was necessarily vague and least helpful. The valuable assistance of the Finger Print Expert could not obviously be had for there was no possibility of any finger prints being left at the scene. The 'modus operandi' adopted by criminals in similar bank 'robberies' (thefts) reported in previous years in and around Madurai City was carefully gone into but it was found that those offences were committed by the well known method of dropping a coin or smearing a dirt or irritant and, thus, diverting the attention of the victim before bolting away with the cash. Unfortunately that was not the trick played by the culprits in the present case. In fact the offence was unprecedented, literally and historically as well. However, there was a silver lining in an otherwise dark cloud that shrouded the crime.

A thoughtful police officer, who interviewed the bank staff closely and meticulously, found that the alleged delay in the encashment of cheque for Keelamasi Street Muthusamy Nadar was a hoax meant to distract the attention of the Bank staff and that probably should have been the time for the culprits to have clandestinely removed the cash bundles. The

close resemblance of the method adopted in this case was a pointer worth probing into and set the officers on the track of the wily criminals of Ramjinagar. It is a naive to suppose that the culprits, if they were really responsible, would be found in their haunt, especially after a successful haul of huge cash. It is equally known that the Kepmari community men spread their dragnet far and beyond and operate throughout the country. Hence, officers were sent to various places such as Kolar, Mysore, Bangalore, Trivellore and Pondicherry where batches of Kepmaris are known to seek favourite rendezvous.

As days began to roll by and with no tangible clue forthcoming, the Police had perforce to survive many anxious moments which included the familiar accusation of inaction and even possible connivance! However, after a relentless pursuit of clues covering a period of 25 days, information started at last trickling down about the possible complicity of Pandurangan and his associates of Ramjinagar. Immediately the investigating machinery was geared to action and an alert police officer was able to lay his hands on one Prakash, alleged to be an associate of Pandurangan, who returned to Ramjinagar after a brief period of absence. Prakash was questioned at length by senior officers and the movements of Pandurangan and his cohorts were ascertained. It appeared that this gang of desperadoes were about that time hovering around Bangalore. A party headed by an Inspector was despatched forthwith to Bangalore. The Inspector made searching enquiries at Bangalore and the suburbs keeping a particular watch at the cinema houses but eventually drew blank. It looked as though the birds had flown. But, quite undaunted, the investigating officers worked up the various shreds of clues once again and correctly guessed that the gang would be moving up north possibly to Bombay where their spending 'spree' is likely to raise the least suspicion. Another party left for Guntakkal and kept a close watch at the Guntakkal Railway junction. And it was not before 7—5—1971 Pandurangan and his two associates, Andavan and Durai, walked into the bear trap carefully laid for them and were picked up before they had a chance to board the Bombay bound train together with their womenfolk. A

UNDAUNTED BY CRITICISM, POLICE PURSUE ALL CLUES SWIFT ARREST SAVED MUCH OF LOOTED MONEY

prompt search of their personal and belongings was carried out and cash of Rs. 30,105 besides new clothings and other articles valued at Rs. 5,000 were taken due possession of. The Inspector and the party, who were at Bangalore in the meanwhile, moved to Melur and succeeded in laying their hands on Seeni alias Srinivasan and Devangan, two other associates, at the Railway station, probably also on their way to Bombay. The Inspector recovered a sum of Rs. 10,022 from them and also gold ornaments to the tune of Rs. 5,000, evidently bought out of the stolen cash. The remaining two associates, Krishnan and Muthu, however, had an initial luck of run and could be secured only 40 days later, on 20th June 1971, at Tiruchirappalli railway junction. They had a sum of Rs. 13,938 on them which was seized. The police were, thus, able to recover on the whole cash of Rs. 54,065 and jewellery, clothing and other articles worth Rs. 10,000, the proceeds of their last piece of dishonesty, out of a sum of Rs. 90,000 that was lost.

It turned out during the investigation that Pandurangan and his associates stayed for a while at Madurai under the garb of pilgrims and 'conned' the bank for some time carefully noting the movements of the staff and the system of pay out obtaining in the Bank. As a result of this observation, they fixed the time and entry into the Bank. Krishnan amongst them was clad in khaki and passed off as the Bank peon. As illuck would have it, the cashier who was seated close to the cash bundles, went out at the opportune time to ease himself and the peon left in the cash section was needlessly haranguing to the assistants not minding the bundles on the table when Krishnan quietly removed them and walked out with none of the staff becoming the wiser for it.

The investigation was pushed through vigorously and all the six accused were soon arraigned before the Sub-Magistrate, Madurai, on 21st June 1971 to answer a charge of theft.

The swift action of the police in rounding up this gang before they could spend away much of the cash and the efficient manner with which evidence in this case was

garnered by the investigating staff left Pandurangan and his associates with only a Hobson's choice in defence of their crime and they elected to plead guilty. The learned Magistrate accordingly convicted and sentenced each of the six accused to suffer rigorous imprisonment for a period of six months, the maximum that could be imposed, in his C.C. No. 2886/71, dated 23rd June 1971. Although Pandurangan, Seeni and Andavan had previous convictions in North Indian Courts, the Magistrate held that they could not be considered for enhanced punishment due to efflux of time.

As for Pandurangan and his cohorts, it is hoped that the prison term, albeit a short one, would bring home the wisdom of the old adage that crime never paid. Also, it would serve a lessor for other neophytes not to embark upon such a perilous voyage but give up their criminal propensities for which their tribe had come to be notorious and turn out to be good and law abiding citizens.

A FEATHER TO THE CAP OF MADURAI URBAN POLICE

A mention must be made about Thiru N. V. Arunagiri, Deputy Superintendent of Police (since retired), and his team of enthusiastic officers who left no stone unturned in their efforts to get at the clues and swung to action when once the breakthrough was achieved. As the Superintendent of Police, Madurai Urban District, it fell to the task of this author to direct and supervise the entire investigation.

The Central Bank Officers invited the Inspector-General of Police, Tamil Nadu for a small function at Lakshmisundaram Hall, Madurai in which they presented a Memento to Madurai Urban Police officials in appreciation of their brilliant work. The Inspector-General in turn presented the Memento to the Writer and observed "it is customary to say that one is happy in such functions: But, on this occasion I am pleased to say I am really happy about the excellent work turned out by Madurai Urban Police who brought credit not only to themselves but also to Tamil Nadu Police".

the living past

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

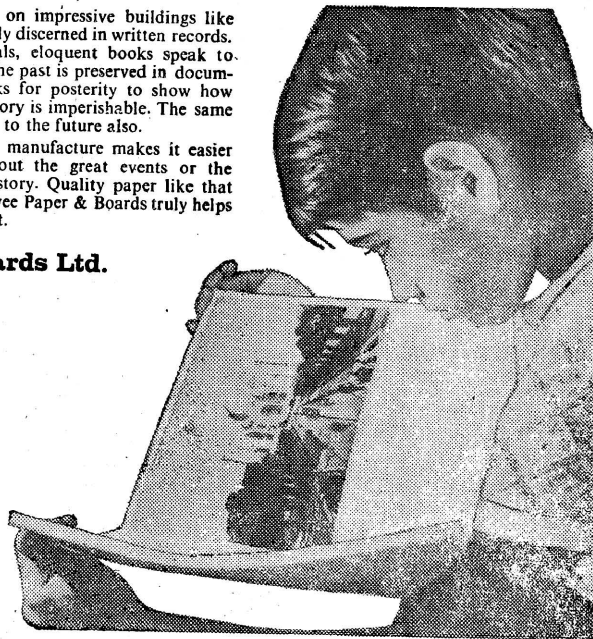
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NEW TECHNIQUES IN CHRYSANTHEMUM CULTIVATION.

In Tamil Nadu, planting of chrysanthemum has to be done between May and July to get good yields and flower size. This is a season-bound crop and can form good flower buds only when nights are longer than days. The planting is therefore, adjusted to coincide with the time of the year, when the light conditions are favourable for flower bud formation. Since plantings are thus concentrated in a short period of the year, the flowering occurs almost at the same time in most places leading to over-production, gluts and reduced returns to growers.

Experiments were undertaken at Tamil Nadu Agricultural University, Coimbatore, to regulate flowering and stagger the flower production by manipulation of day length and application of growth substances. These studies have indicated that artificially extended long days immediately after planting and gibberellic acid treatments resulted in more rapid and enhanced vegetative growth, increased the yield of flowers, induced early flowering and extended the duration of flowering. An earliness of 24 days in the modified photoperiod and 33 days in the gibberellic acid treatments were recorded over the untreated plants, in both white and yellow varieties of chrysanthemum as shown below :

Plants applied with night lighting for 30 days from planting.

Plants sprayed with gibberellic acid (400 ppm.) 3 times at fortnight intervals starting from 30th day after planting.

Control (untreated plants) ..

Number of days from planting to first flowering.	Duration of flowering (days).	Yield in number per plant.
104	116	33
95	128	45
128	93	21

RESULTS OF USEFUL EXPERIMENTS AT TAMIL NADU AGRICULTURAL UNIVERSITY

These experiments have shown the possibilities for regulating the flower production and increasing the yield of chrysanthemum by lighting the plants at night and by spraying with gibberellic acid. The practical advantage of the technique is in the more equitable arrivals of flowers in the market. At present, all the flowers arrive at the same time leading to gluts

and lowered prices which affect the producers who do not get a fair return for the crop.

Source.—Communication Centre, Tamil Nadu Agricultural University, Coimbatore-3.

A NEW HYBRID MANGO 2/9.

Periyakulam Fruit Research Station of Tamil Nadu Agricultural University has evolved a new hybrid mango 2/9 from the parental combination of Chinnaswarnarekka and Neelum. Deep red, drable and loamy soil with adequate drainage facilities are best suited for this. One year old grafts may be planted in pits of 3 cft. size in July—September. The pits may be filled up with farmyard manure and top soil in alternate layers. A space of 40' on all sides of the pit may be given. The graft must be planted in the centre of the pit with the ball of earth and the soil pressed around it. The rootstock sprouts should be removed. Weeds should be removed periodically and two main ploughing—given in October. During the pre-bearing periods, short-term crops like vegetables may be successfully grown.

One year old plant requires 20 kg. of farmyard manure and 2 year old, 3 year old and 4-5 year old trees require $\frac{1}{2}$ lb. Nitrogen, 1 lb. of Nitrogen and $1\frac{1}{2}$ lbs. of Nitrogen as Ammonium Sulphate respectively. The fertilizer may be applied in shallow trenches in the drip circle of the tree and incorporated thoroughly during October.

The hybrid begins to bear from 5th year of the planting. The flowers produced before 5th year should be removed. The general flowering season is December—January and the harvest is done in June. At times, this hybrid produces an off-season crop during February.

The yield from a 12 year old tree is on an average 600 fruits per season and the fruits are attractively coloured. A note-worthy feature of the variety is that it gives an increased yield of about 30 per cent over the local commercial crop Neelum.

Source.—Communication Centre, Tamil Nadu Agricultural University, Coimbatore-3.

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