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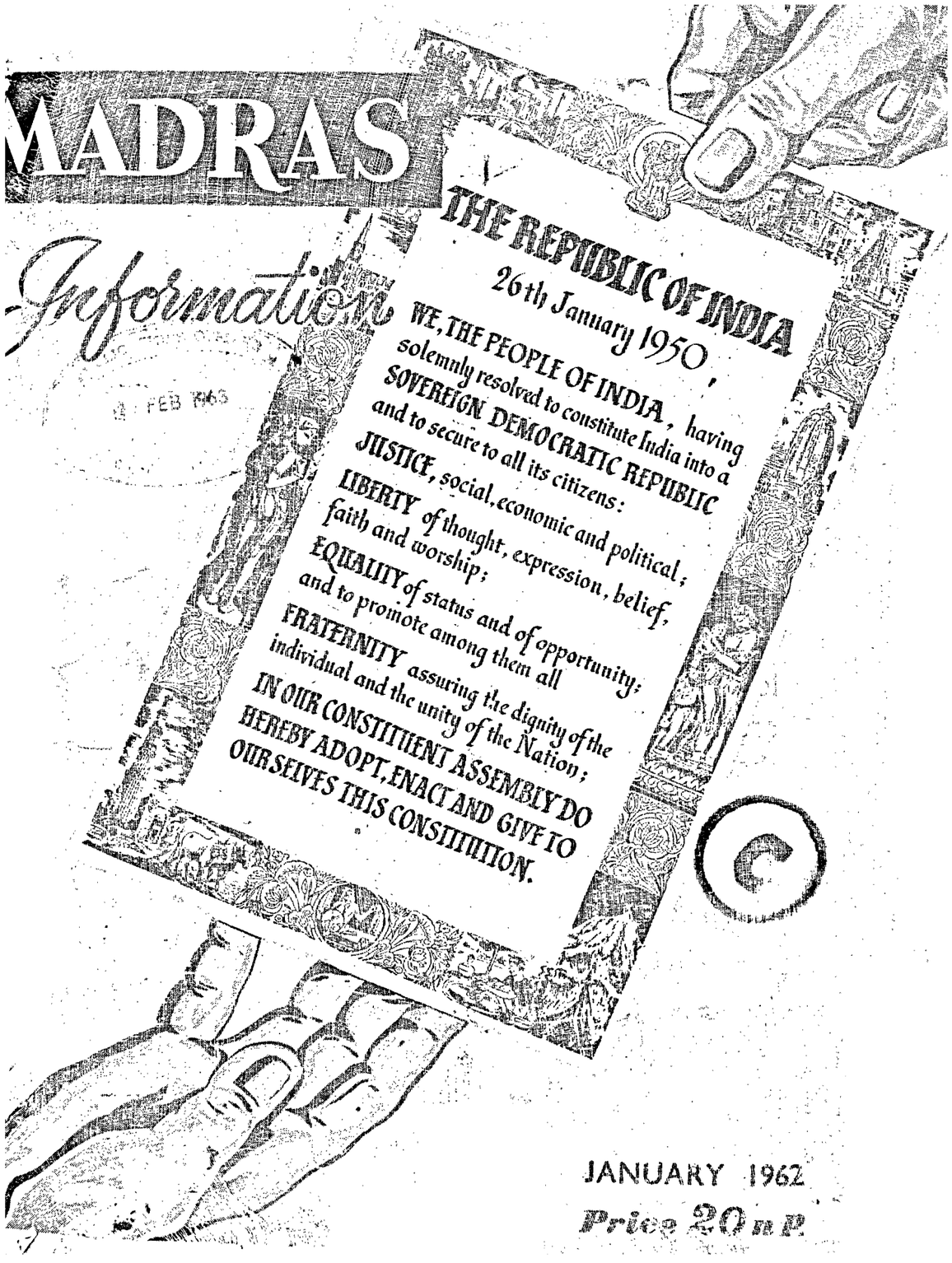
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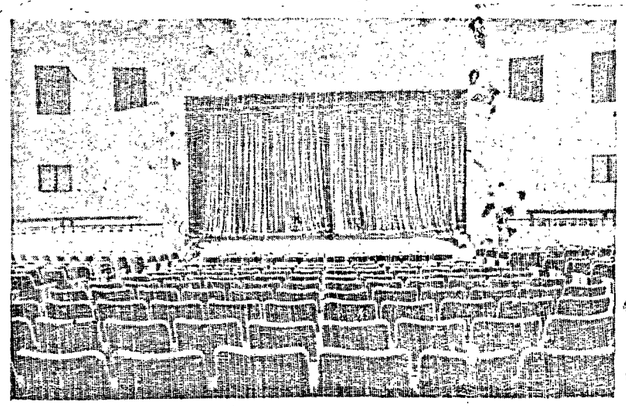
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THE REPUBLIC OF INDIA
26th January 1950
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JUSTICE, social, economic and political;
LIBERTY of thought, expression, belief, faith and worship;
EQUALITY of status and of opportunity; and to promote among them all
FRATERNITY assuring the dignity of the individual and the unity of the Nation;
IN OUR CONSTITUENT ASSEMBLY DO HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.
JANUARY 1962
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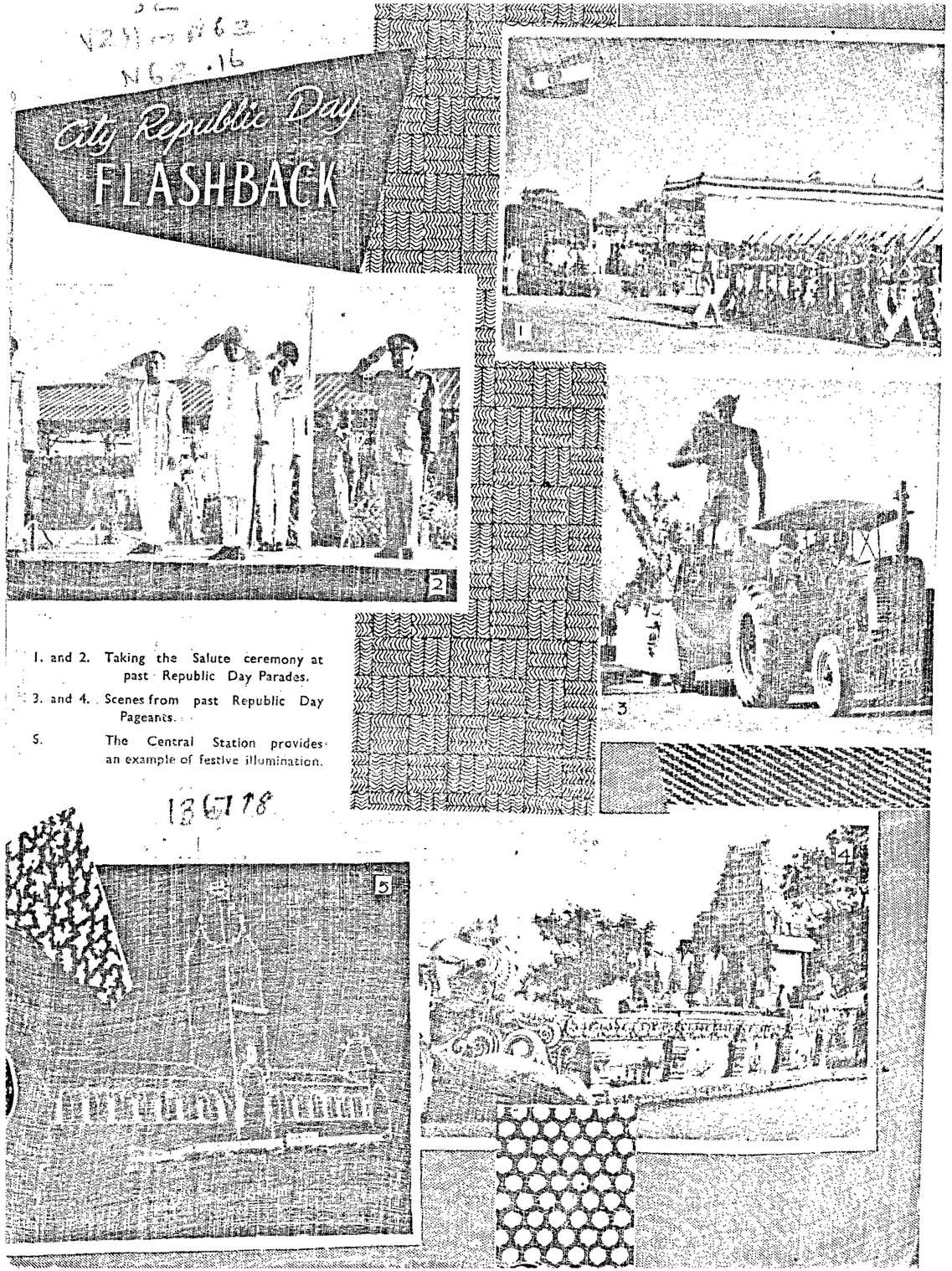
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This month's cover

This month's cover symbolises the story of a pledge of the Indian people that found fulfilment with the birth of the Indian Republic on January 26, 1950. This story is the theme of the first article in this issue.

N21-N62
N62.16



1. and 2. Taking the Salute ceremony at past Republic Day Parades.
3. and 4. Scenes from past Republic Day Pageants.
5. The Central Station provides an example of festive illumination.

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"Lest We Forget"

THE BIRTH OF A REPUBLIC

It was with faith and courage that a band of patriots took a pledge on January 26, thirty-two years ago, to fight relentlessly for complete freedom from British rule. For years until freedom was achieved, January 26, has been observed as "Independence Day" and the pledge taken anew. January 26, 1950 witnessed the actual fulfilment of the pledge. For, on that day the Republic was born. India gave herself her own Constitution and duly declared herself a Sovereign Democratic Republic. The dream of the patriots was realized. This article, presented in connection with Republic Day this year, gives the story of the pledge to attain "Purna Swaraj" and its glorious fulfilment.

The Republic Day celebrations invariably bring back memories of India's epic struggle for liberty and its fulfilment. And it was exactly 32 years ago in January 26, 1929 that the people of India took a pledge to wage a ceaseless struggle to attain "Purna Swaraj". At meetings and gatherings throughout the country on January 26, 1930, millions of people solemnly affirmed "We believe that it is the inalienable right of the Indian people, as of any other people, to have freedom and to enjoy the fruits of their toil and have necessities of life so that they may have full opportunities of growth".

People's Determination

This declaration of the peoples right and determination to be free was issued by the Working Committee of the Indian National Congress a few days after the Congress meetings in Plenary session at Lahore had adopted the goal of complete independence and issued the call to the people of the country to be prepared to make all sacrifices in the pursuit of that goal.

Thereafter through all the years of struggle, the pledge was renewed at mass meetings on January 26, every year until the country finally achieved independence.

This historic day in the struggle for freedom was invested with added significance when India became the Sovereign Democratic Republic of India on January 26, 1950. As was to be expected, when the Constituent Assembly reached the end of its labours, this day was chosen for the promulgation of the Constitution which launched into the world a Republic the youngest of the day but with its roots in a civilization going back to the remotest period of the existence of man.

Now that two General Elections embracing hundreds of millions of voters have been successfully held under the Constitution and the country is preparing to face a third General Election it is worthwhile to recall some of the developments associated with the framing of the Constitution.

Constitution born

The Constituent Assembly began its deliberations on December 9, 1946 in Parliament House, New Delhi, and completed its task at the end of two years, eleven months and seventeen days, when the Article 395 of the Constitution was adopted on November 26, 1949.

Within four days of commencement of work the Assembly after electing Dr. Rajendra Prasad as President, got down to business and the Objective Resolution was moved by Sri Jawaharlal Nehru. The Resolution declared that India would be an "Independent Sovereign Republic" and a Constitution would be drawn up "wherein all power and authority are derived from the people" and "wherein shall

be guaranteed and secured to all the people of India, justice, equality and freedom" and safeguards would be provided for the minorities backward classes and tribal people. The Resolution which was substantially reproduced in the preamble of the Constitution was adopted in January 1947 at the second session of the Assembly. Of the total 165 days on which the Assembly sat, 114 days were spent considering the draft Constitution.

The Preamble

The preamble to the Constitution phrased in elevating language reflects its spirit. It gives expression to the determination of the people to secure to all the citizens, social economic and political justice, liberty of thought expression, belief, faith and worship and equality status and opportunity.

It is not without significance that in forging the instrument of Government, the founders had the unity country, uppermost in their minds and which found succinct expression in the preamble. On Republic Day this year it is important to recall this because it the duty of every citizen to maintain and strengthe national unity and help to achieve emotional integratio

Beit Memorial fellowships for Medical Research

The Beit Memorial Fellowships to promote the advancement by research of medicine and allied sciences in their relation to medicine are available to Indian nationals. The next election of junior fellows for the award of such fellowships will take place in May 1962.

Junior fellowships have successive values of £ 900, £ 950 and £ 1,000 for three years. As a rule, superannuation benefits are provided, to which the successful candidates will be required to contribute 5 per cent of the annual stipend and to which the Trust will make a contribution of 10 per cent.

Candidates must have taken a degree in a faculty of a University approved by the Trustees in Her Majesty's Dominions, Protectorates and Mandated Territories, India, Pakistan and the Republic of Ireland, or a medical diploma registerable in the United Kingdom.

Elections to Junior fellowships are rarely made above the age of 35 years. Applications from candidates must be received not later than February 1, 1962.

Candidates must submit evidence that they can be given accommodation in the Departments where they propose to work, which must be either in Great Britain or Ireland. Forms of applications and other detailed information may be obtained from the Secretary to the Government of India, Ministry of Health, New Delhi.

"Defending the Nation"

a growing citizen army



SRI C. SUBRAMANIAM, *Minister for Finance.*

In connection with the 12th Territorial Army and Auxiliary Air Force Day celebrated recently, the Finance Minister Sri C. Subramaniam, in a talk broadcast from All-India Radio, Madras, appealed to the youth of the country to come forward and join the "Citizen Army" and make the Territorial Army and the Auxiliary Air Force a vital factor in the defence of the country. This feature gives the text of the Minister's broadcast talk.

We are today celebrating the 12th anniversary of the inauguration of the Territorial Army. When we look back and review its achievements and the strength which it has grown, we can justifiably feel proud of India's "Citizen Army". The response for the recruitment to the Territorial Army has been quite satisfactory and 90 per cent of the target of recruitment has been achieved.

During the past 12 years, the force has gained in strength and experience. Its units have received training which will enable them to fulfil their role whenever required to do so. Men from cities, towns and villages all over India have been working together in harmony and shaping well. The experiment of having a second line of defence, consisting of part-time soldiers, has proved a great success. It is, therefore, my privilege now to congratulate all the young men who have come forward to swell the ranks of the Citizen Army and to contribute to the defence of the Nation.

Citizen Army

A question may be asked why India a peace-loving nation which has no aggressive designs towards any country, should maintain a "Citizen Army" also, apart from maintaining the regular armed forces. The answer to the question is fairly simple. It is no doubt true that we are wedded to a policy of friendship and peaceful coexistence. But at the same time, we should be prepared to defend our frontiers and repel any aggression on our soil. This can be done only by maintaining a sufficiently big army and other armed forces, as India has got a long frontier to defend. For a country which has emerged quite recently from foreign domination and is launching a big programme of development and industrialization, maintaining a big army and keeping it idle will only mean considerable drain on the country's resources both material and man-power and is sure to impede the nation's progress in many a vital sphere.

It is only to solve this problem that the Territorial Army and the Auxiliary Air Force have been constituted as a second line defence. These forces mostly consist of men who are not professional soldiers, but citizens pursuing various vocations in life who are at the same time eager to contribute to the country's defence and devote their spare time for equipping themselves for this purpose. An efficient and well trained Territorial Army will help to keep the strength of the regular armed forces to the barest minimum thus keeping down defence expenditure considerably, enabling us to make use of our resources for productive purposes.

TERRITORIAL ARMY DAY


1



3



As the Territorial Army has been organized only with the view to giving the youth of the country who are employed in various capacities, an opportunity to get themselves trained for the defence of the country, the training has been so arranged as not to interfere with the day-to-day work. All able-bodied men no matter whether they are unskilled labourers or highly qualified technicians, between the ages of 18 and 35 can get recruited to the Territorial Army. For each of them, depending on qualifications and abilities, there is an appropriate place in the Territorial Army which will enable than to put forward their best for the nation's cause.

Apart from the satisfaction that one gets in serving the nation's cause, there are also other incidental advantages gained by joining the Territorial Army. Military training disciplines the body and the mind and helps men to be better citizens. The technical skill acquired by learning various trades through service in the Territorial Army will improve the prospects of the men in their civil careers. Training in the Territorial Army also helps them to augment their income as they are paid for the period of training undergone.

Mistaken Notion

To enable men employed in Government service and in private concerns to join these forces, facilities are being provided by allowing them to have a lien on the appointment held by them even after enrolment. Those serving under Government will get either civil or military rates of pay for the period of training whichever is more advantageous. Unemployed men who join the Territorial Army are shown some preference in the matter of employment in Government service with a view to getting them settled in life.

There is a mistaken notion prevalent among many that those who join the Citizens Army will be automatically made to join the regular forces. All prospective candidates can rest assured that enrolment in this force will not interfere with their normal civil vocations except at times of emergency, when they will be called upon to perform their duty for the defence of the country.

I mentioned in the beginning that the response has been satisfactory, but it is necessary that this enthusiasm should be sustained. I should also mention here that the response to recruitment to the Officers' cadre and Junior Commissioned Officers' rank is not as good as for other ranks and some posts have been left unfilled. It is unfortunate that educated citizens, who can understand the country's needs better have not come forward in sufficient numbers to join the ranks of the Territorial Army. It is my sincere and fervent hope that our young educated citizens would not lag behind their less educated brethren in contributing their time and energy for the country's defence.

The Auxiliary Air Force which is the air wing of the 'Citizens Army' is comparatively a recent one. Though at present the Auxiliary Air Force squadrons are not entirely manned by Auxiliary personnel, the intention of the Government is that ultimately it should be so. No one who is aware of the role the Royal Auxiliary Air Force squadrons played in the "Battle of Britain" in World War II can ever under-estimate the value of the Auxiliary Air Force squadrons. If only proper training is given, there is no reason why the Auxiliary Air Force should in any way be of inferior quality as compared to the regular Air Force.

It is the aim of the Government to give the best possible training to men and officers of the Auxiliary Air Force, so that they can take up the air defence of the country at times of emergency. The officers who join the Auxiliary Air Force are given basic training for a year and advanced training in the second year. After successful completion of this training, the pilots of the Auxiliary Air Force learn to fly Vampire jet aircrafts and carry out the Basic and Advance Squadron training on jets to become full fledged fighter pilots.

Lok Sahayak Sena

A word about Lok Sahayak Sena. This is different from the Territorial Army and the Auxiliary Air Force, in that the training in Lok Sahayak Sena does not carry with it any liability to serve in the armed forces even at times of emergency. The training is primarily meant to inculcate mental alertness, physical fitness, discipline and self-reliance, which are qualities that will go to produce good citizens who can work for the welfare of India with greater confidence and efficiency.

Men who have had their training in the Lok Sahayak Sena will be of great help at times of emergency like earthquakes, floods, etc. Training is imparted in camps for a period of 30 days, when the trainees will be given free board and lodge. On successful completion of the training a certificate is also awarded to them. Though there is no liability for military service, the trainees will be most welcome to offer their services at times of emergency.

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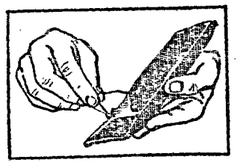
Governor Bisnuram Medhi, who presided over a Special function celebrating the Territorial Army and Auxiliary Air Force Day is seen :— (1) Presenting the trophy to Major Kassan Singh, Banner, 104, Heavy Anti-Aircraft Regiment Artillery, adjudged best unit. (2) Inspecting signal equipment. (3) Opening exhibition of equipment. (4) Getting Familiar with Anti-Aircraft fighting. (5) Happy in the company of the participants after the exercises.

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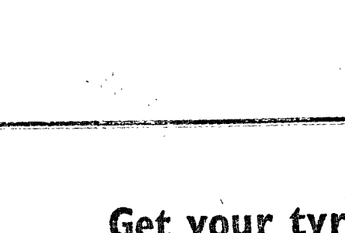


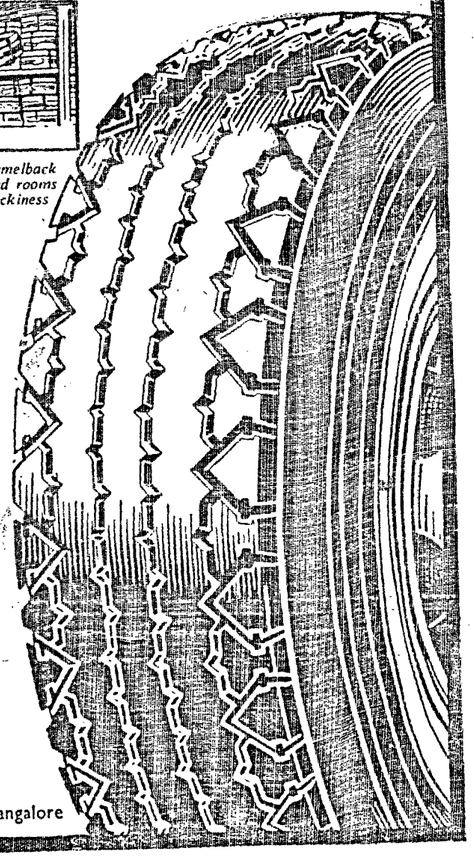
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IRRIGATION SERVES THE PEOPLE

K. V. EKAMBARAM, *Chief Engineer (Irrigation).*

The benefits from irrigation schemes are not represented merely in added incomes to the farmer or the extent of more land brought under the plough. The fact that matters is that the general standard of living of the many increases. This increase in prosperity is important not only for its own sake but more because it silently aids to catalyse social change for the better. This aspect was stressed by the Chief Engineer (Irrigation), in the course of a talk outlining the history and achievements of irrigation projects in the State broadcast from All-India Radio, Madras, recently. This article is from the talk.

The heart of India lies in its villages. Many of our ancien Rulers took stupendous pains to provide irrigation facilities to extensive rural areas. They all tried their best to control and divert more and more waters in each locality for the larger benefit of the people. A special tribute is due to the great Karikal Cholan whose contribution in this respect is outstanding. He built the Grand Anicut across Ullar in the second century A.D. It is also said that he is responsible for the miles and miles of flood banks for the Cauvery and Coleroon from the Upper Anicut to the sea. Existing irrigation in the Cauvery Delta owes a lot to this great Ruler.

Others have given us a number of tanks, large and small, which are quite useful helps for irrigation. Viranam, Mamandur, Kauveripauk, Chembarampakkam, Dusi and Vijayanarayanan tanks are typical of this type. They have dug also a number of river channels, some leading to large tanks and some leading to a group of tanks. With their help, the waters, as they came, were partly stored and partly used then and there. Most of these works were well thought out and a greater part of these works have come down to us in good condition.

Very little by way of construction aids were available those days. On small rivers like Thambraparani small anicuts could be built as permanent structures. On big rivers like Cauvery and Coleroon only korambus were feasible. Such korambus across the Coleroon diverted all possible waters into the Cauvery when the river ran low. Though immensely useful, these korambus were tedious and they were an annual feature too. For instance, the Collector of Thanjavur had to march to the head of the Coleroon with an army of labourers each year just to see that the korambu on Coleroon was well done. Similar korambus were necessary also at the Lower Anicut, from where Vadavar takes off, to fill up the Great Veeranam tank. Vaigai, Vellar, Ponniar, Palar, etc., though relatively small needed also equally constant attention.

Korambus—a weakness

Apart from the needless call on labour annually, the korambus had a weakness. They were washed away if there were very early rains. If this happened, a good deal of water was wasted before another korambu was built. So, determined efforts were taken early in the last century to put up permanent anicuts to replace these korambus. Sir Arthur Cotton built the Upper Anicut and the Lower



Chief Minister Kamaraj, recently inaugurated a new bridge across the Cheyyar.

Anicut on Coleroon in 1836. The Cauvery-Vennar regulators at Grand Anicut followed later. The Pelandorai and Shatiatope Anicuts across Vellar, the Tirukoilur Anicut across Ponniar, the Palar Anicut across Palar, all came in due course. Most of these works have since been modernised in stages and presently, they are all the best of their kind.

Priceless Tradition

Thanks to this priceless tradition dating from centuries, irrigation in our parts was fairly intense everywhere by the end of the last century. Almost all the river flows were being put to use by them except perhaps a bit of the flood flows. In spite of all this, large populous areas with poor rainfall, were generally hard hit. It was to help such a tract in Nilakottai and Melur taluks that the West Flowing Periyar was diverted into Vaigai, towards the close of the last century. They did this by building a high dam in masonry in a thick jungle and boring a tunnel in the divide. The workspot was neither healthy nor inviting. It was also wild and hazardous. But they braved it all and built it. The results have been really solid. For some 140,000 acres in Periyar area, which otherwise has no dependable local sources, are now happy benefiting from that supply of water.

In a sense, the Periyar Dam was the precursor of more to come. The Mettur Dam was the next to appear. It is by far the largest in the South and is on the Cauvery whose basin is already well developed. Its construction therefore posed not only technical problems but inter-State political problems as well. All these were solved happily, and the dam, with a new canal from Grand Anicut, came into service from 1934. The reservoir in this case covers 60 sq. miles and it is now a pleasing sight as well as an abundant source of fresh water fish for miles around. The dam itself is over a mile long and it is entirely of masonry. It is over 176 feet high and gives a good head for power. The Mettur Power House now generates some 40,000 K.Wo Watts, and with its water and power, the Mettur Reservoir is now giving plenty of new life to Thanjavur, Salem and to several other adjacent districts in the State.

Added Impetus

With Periyar and Mettur Dams as welcome precedents, planning for similar dams on other streams later received added impetus. The Lower Bhavani Dam to irrigate a new area of over two lakhs acres was started in 1949 and completed in 1955. Unlike previous dams, this dam was built as an earth dam for the greater part, the river reach alone being in masonry. This saved quite a substantial part of construction costs. In a way the Lower Bhavani Dam helped to evolve a technique not hitherto tried in our State. Being of medium height, the Bhavani Reservoir has only poor scope for power. However, the dam site has since been found to be an ideal spot for a community research centre, fisheries, and agricultural research and for a training institute for Gram Sevaks and Block Development Officers. It is now a symbol of progress in the several directions which all modern irrigation schemes aim at.

Since Independence

After independence, especially under the two Five-Year Plans, even more intense plans for greater prosperity were launched and completed. We now have Amaravathi, Vaigai, Manimuthar, Sathanur, Krishnagiri and Vidur Dams. The recent addition of Kanyakumari district to the State has brought us two more reservoirs, Kodayar and Perunchani, whose services to that area in the State are invaluable. The Parambikulam Aliyar Project started recently is now in active progress. We have invested over Rs. 32 crores on these dams in the two periods which exceeds all that was invested in irrigation prior to Independence by a good margin.

The additional irrigation they may add will be of the order of 6·5 lakhs acres. All these dams incorporate up-to-date features and are well built for assured service. They are mostly of part earth, part masonry construction with a view to keep down costs. To the extent feasible, we have created also excellent parks close to all these dams and these are now attractive week-end resorts for thousands of people from far and near.

A Difficulty

One practical difficulty experienced, was as unexpected as it was vexing. It was the attention needed to get the necessary field bothies excavated by the people concerned. Costs in these cases are not much but there is a visible reluctance to cede the required lands, making compulsory acquisition a necessary step. Government had therefore to relax the rules and provide these lands also in many cases.

Excavation too is often in default and rules have been framed to get this also done by Government. The cost will be first met by Government and later recovered from the beneficiaries in instalments. All this is being done to see that irrigation facilities brought almost close to the village borders are used by them.

The Broader Spirit

Though the new reservoirs are primarily meant to benefit new areas, they have however been worked in a broader spirit and have often released substantial water to pre-existing irrigation to save standing crops in critical periods. Even second crops are allowed if storage is plenty. What makes this easy is the fact that the new reservoirs give quite close control over the respective river flows and so ensure up to 90 per cent of the waters being put to beneficial use in their ayacuts as a whole.

There is no need to panic now in any basin, for, the reservoirs assure that we will never be surprised by a drought or by ordinary unforeseen flood. Thanks to all these, out of the present area of 15 million acres under cultivation, irrigation of well over two million acres is now on a secure footing, in a way never known before.

Tanks too help

It happens that a substantial part of our irrigation is still through the help of tanks. In fact over 2·2 million acres are of this class and these are served by some 37,000 tanks. Tanks are therefore still as important as our river systems and we are therefore trying to modernize them as part of our Five-Year Plans. This work is considered under two broad categories, Special Minor Irrigation Programme and Desilting-*cum*-Reclamation. The former deals with construction or renovation of anicuts, channels, improving old tanks to new standards and generally restoration of their ayacuts to full size.

The Desilting-*cum*-Reclamation schemes aim to restore the lost capacity partly by desilting and partly by raising F.T.L. We have spent about Rs. 5 crores on these sources in the Second Plan period and the area benefited is of the order of two lakh acres under the tanks so far attended to. An even greater outlay (about Rs. 8.8 crores) is expected to be made available for these very important renovations in the Third Plan and it is hoped that the people who depend on these tanks completely, will derive still larger benefits from them in future.

Private efforts

Apart from all that the State does, private efforts also are playing an exceedingly good role in the matter of irrigation. These are all mostly through wells and spring channels. The area under these sources is actually of the order of 1·5 lakh acres. These lands are generally poorly served by tanks and river channels or not at all. Hence these wells and spring channels are quite vital for help. The Government in the Revenue Department is therefore trying all that is possible to encourage these small sources in more extensive numbers. This is now done under well subsidy schemes, river pumping schemes, tubewells, filter-point wells, hiring pumps for lift irrigation, etc. Recovery of costs wherever necessary is also spread over several years to make the repayment easy.

Plenty of electricity is now available in all our rural parts and its great merit is that the motors work round the clock to irrigate the maximum number of acres per well. Small sources in the rural parts stand a good chance for an independent renewed life on modern lines. Reclamation of saline lands and drainage relief for water-logged pockets are also receiving due attention. Every possible obstacle which stands in the way of good land use is being removed to the extent the State can

A New Problem

Incidentally all these past achievements pose a new problem. As we have fairly controlled all waters including small sources, very little scope remains for new major projects in the Third Plan period in the area covered by the earlier Plan schemes. Expansion of irrigation hereafter can be only through medium schemes of local importance. These medium schemes have their own good points. They could be completed within a short period; they do not need any large complement of plant and machinery; they provide also good scope for utilization of local labour. Possibly we can count on public co-operation too for building them. Some schemes of this category are therefore being intensively investigated by special staff and one of these works "Improvements to Palar Anicut and its channels" has already been sanctioned and is being started. Yet another, Sathanur Dam II Stage is also likely to be taken up soon.

Side by side we are exploring also means for saving some of the waters in our deltas by modernizing the channels and improving their duties. Channels in Cauvery Delta and

A view of the new bridge across the Cheyyar.



Vaigai area are therefore be[illegible]w investigated to see how far we can improve [illegible]annels proper, reduce seepage and other losses throughout their length and generally tighten up their working and efficiency. Water so saved will certainly help us to stabilise existing irrigation much better. A small number of other local works, mostly through better control and storage of upland flows is also possible in some of the existing river basins. These schemes are also now under active consideration by Government and when these too are completed benefits from irrigation will have touched their ceiling.

The task ahead

Great as these achievements have been, it is wrong to imagine that our labours have ended. Our population is growing constantly. Unless irrigation also keeps on expanding, the gap in food producton will also grow. So, irrigation expansion is a continuing task for which, unfortunately, we seem to have very little further scope. We have very nearly exhausted all local waters. We have therefore necessarily to look to the adjacent water-surplus States to help us to the extent they can. Some help has already been received for Parambikulam area and we are grateful for it. If there is good will on both sides, a good deal of the same sort of help is yet possible.

But before we can press others for such help, we should first of all see that the existing waters are put to maximum use without waste. This is certainly a matter for all our people at large. They should use the available waters as economically as possible. They should also try to increase the yield by use of good fertilizers, good seeds and improved technique. Only by these means could the benefit of irrigation be realized to the maximum.

The benefits from irrigation schemes do not stop with some added income from just so many acres of new irrigation or assured supply to existing irrigation. What is of greater moment is that the general standard of living improves. This improvement is unmistakably there in all our irrigated areas. It is also astonishing how increased prosperity catalyses social changes for the better. We see many modern amenities in each village; many small and subsidiary industries; increased production and income from cash crops like cotton and sugarcane; and also gradual education of labour in machines and new appliances.

Many educational and technical institutions have also come into existence in rural areas, mostly because the one great problem of water for the villages is now being tackled with great determination. And, the people are now so assured of its results that they feel free to pay greater attention to the cultural side of life.

Electricity from fuel heat

Successful operation of a high temperature generator which converts heat from conventional fuels directly into electricity has been announced by Atomics International in the United States. Called a flame heated thermionic generator, the device burns a mixture of propane and air. It is the first device in which conventional fuels have been used sucessfully to obtain the high temperatures required to operate an efficient thermionic converter.

The generator may eventually be used to improve the efficiency of central station power plants by about 20 per cent, Atomics International believes. In this application, very high temperature heat from burning gas or oil could first pass through the generator and be converted directly to electricity. The remaining heat, at lower temperatures, would then be used to produce power in the conventional turbine generator system.

The main parts of the generator are a furnace and a thermionic converter. The converter consists of two electrodes, or metal plates. The flame heats one of the electrodes to 2,800 degrees Fahrenheit (1,540 degrees centigrade), and this causes electrons to "boil off" and jump a small gap to the cooler electrode, thus producing an electric current.

The Fight Against Cancer

A class of chemicals that may halt cancer in human beings has been reported to the American Chemical Society's 140th national meeting held recently. Several dozens of the compounds, which have been tested so far only on animals and laboratory cultures of human cancer, appear to furnish a double blow to cancer growths. They are themselves effective against cancer, and they also increase the cancer-killing ability of radiation.

Known as sulfhydrill-inhibitors, they were reported by Dr. Francis E. Knock of Presbyterian-St. Luke's Hospital. Though the compounds have long been known, discovery of their anti-cancer character is new.

Working under a U.S. Public Health Service grant, Dr. Knock and her associates found that the sullfhydrils break down the cells' natural protection against radiation thus enhancing the work of X-rays in destroying cancer tissue. Used alone, the compounds also exhibited a strong anti-cancer effect. It is claimed that the sullfhydrils are much less toxic than many standard anti-cancer compounds, including the widely used nitrogen mustards.

Radiation Therapy

The first radiation therapy using small, precise doses to destroy advanced and deep-seated cancers was recently reported by Drs. James J. Nickson of New York and Titus C. Evans of Iowa State University. They first pumped air into the tumour to enhance the "cancer-killing" ability of radiation. The new treatment is based on the discovery of British scientist L. H. Gray that tumours are far more sensitive to ionising radiation when aerated.

The technique is said to be a tremendous advance in radiation therapy because, it sets up a tumour as a willing host for the "killer" rays; causes only minimal damage to surrounding healthy tissue; can be used on cancers which formerly had to be cut out by surgery; promises to be effective where conventional radiation, even in massive doses failed.

The technique was tried on a very limited number of patients at the New York hospital and found to work, it is reported.

New Vaccine

A Cleveland researcher says he has isolated the virus that causes leukemia and certain cancers in rats and developed a vaccine effective against these disorders in rats. He believes the vaccine may be effective in treating people with similar cancers. Dr. Sergio de Carvalho, Director of Cancer Research for Rand Development Corporation, says he can have the vaccine ready for testing on people with cancer in about a year. To date, hundreds of anti-cancer vaccines have been developed that are effective in preventing cancers in laboratory animals but have not proved effective in treating human beings with already existing cancers.

Tooth Decay: Pregnant women can cut tooth decay by 36 per cent by taking vitamin B-6 during pregnancy. This is reported by Dr. Robert W. Hillman of State University of New York. He said a study of 468 women, some taking vitamin B-6, others not showed that the expectant mothers taking vitamin B-6 got more than a third fewer cavities than the others. The vitamin (pyridoxine) was administered in lozenges.

Preventing Measles

Among recent achievements by U.S. medical researchers a new vaccine that gives complete protection against measles and which gave 100 per cent protection to 318 children exposed to epidemics in the Philedelphia area is reported. The vaccine developed by a group under Dr. John F. Enders of the Harvard Medical School and 1954 winner of the Nobel Prize medicine offers promise for areas where measles is a danger.

The living virus vaccination was followed by an arm injection of gamma globulin to eliminate serious side effects noted in earlier trials. The gamma globulin antidote also confined the infection to the injected area and yet the mild local infection alerted the body's defences to produce enough anti-bodies to provide protection against measles.

Heart Function Analyser: A compact mobile electronic unit simultaneously records 12 different types of information about the heart and may spot trouble before actual heart damage occurs. Known as the heart function analyser and built by the Telecomputing Corporation, Los Angels, the unit can be wheeled to a patient's bed side to record information such as heart sounds, pulse pressure, and analysis of the heart's mechanical activity. It has demonstrated 22 per cent more accuracy than the electrocardiogram in detecting coronary disease, according to reports.

Detecting Malaria

A simple, quick and reliable method for spotting malaria and other parasite disease organisms has been developed

by the Walter Reed Institute of Research at Washington. The process involves colouring blood samples of suspected victims with a special dye that makes the malaria parasites easily observable under a low-power microscope. Because it can be used by an ordinary laboratory technician and requires no expensive equipment, the technique has special significance for the world's malaria regions. In a striking demonstration, the staining technique for the first time showed microfiliariæ (microscopic worms) in the circulating blood of dogs.

Ear Surgery

Doctors are using bits of plastic to repair defective middle ear bones and tiny sections of a patient's own blood vessels to fix perforated ear drums. These are two examples of delicate ear surgery now being performed by physcians, says Dr. Francis A. Sooy of the University of California Medical Centre. In this new micro-surgery, the doctor looks through a binocular microscope that magnifies the cramped interior of the ear 32 times. At this magnification a pencil lead looks as big as a piece of water pipe.

Oral Polio Vaccine

A report recently issued in London, describes the success of an important trial designed to test the effectiveness of an oral poliomyelitis vaccine of living organism type and to find the best way to give the vaccine to achieve maximum protection against the three main types of active virus responsible for the disease. The trial was initiated by Britain's Medical Research Council and carried out by the Public Health Laboratory Service.

Over 300 infants between six and 12 months old were divided up into three groups. The first group was given one dose of vaccine containing all three types of protective virus ; the second group, three doses of the same vaccine at four-week intervals ; and the third group, three separate doses of vaccine, each containing only one type of protective virus, at four-week intervals. The infants were visited twice weekly until one month after the last dose was given and no ill-effects due to the vaccine were seen.

The results showed that the best protection was achieved in the second group, closely followed by the third ; that immunity at least as good as with the injected vaccine was maintained for over one year ; and that immunity only developed after the protective virus had established itself in the bowel. The results mean that whole populations can now be protected by three doses of only one vaccine containing all three types of protective virus, and the possibility exists of wiping out the disease as it is known now.

Oral polio vaccines of the type tested contain mild living viruses which cannot produce poliomyelitis, but which make the body protect itself against attack by active virus. Further, the protective viruses grow all over the gut wall and so prevent dangerous viruses from gaining a foothold.

Two firms in Britain are making oral vaccines. Of these, the Wellcome Foundation is concentrating on the manufacture of the three-virus type, and has already supplied considerable quantities for use overseas. It has supplied vaccine to immunize the entire population of the Bern Canton in Switzerland, some 300,000 doses for use in Japan, more than 3,000,000 doses for Rio de Janerio, Brazil and other supplies for Korea and for the use of the United Nations in the Congo.

Curing Ringworms

Ringworm : One of the commonest, most painful and unsightly group of skin diseases of men and animals in the tropics—can now be cured by Griseofulvin, an anti-biotic drug which can be taken by mouth and which was recently introduced for the treatment of these diseases.

Tests carried out over the past few months show that the drug, whose trade name is Grisoven, has been able to cure in a few weeks severe fungus attacks that have resisted other forms of treatment. Ringworm diseases include athlete's foot and dhobi's itch.

The action of the new drug is fundamentally different from those used previously, in that it attacks the disease from within and so makes treatment simpler and more effective. It makes its way into the blood stream and thence into the outer layers of the skin on which the fungi live and grow. Fungi are killed and the infected skin replaced by new healthy skin.

Glaxo Laboratories were responsible with Imperial Chemical Industries for the discovery of the drug. Griseofulvin had been known since 1939 as a scientific curiosity, a product of a common green mould found, for example, on skin of rotten oranges. No use had been found for the substance until its activity against fungi-causing disease in plants was discovered.

The French Parliamentary delegation which visited the City recently photographed on arrival at the airport.





Among one's primary needs, housing is next only to food and clothing. Co-operative housing societies are making a significant contribution towards solving the housing problem, especially in the urban areas. It is in these areas that the problem is most acute. Individual owners of plots have been helped to build houses, extensions have opened out resulting in many well-laid colonies with modern amenities, thanks to Co-operative Housing. This article traces the history of Co-operative Housing in the State from the year 1924 and records the phenomenal advance that the housing societies have made during the period.

From the year 1924, the Government of Madras have been encouraging the formation of co-operative housing societies and financing them for the grant of long-term loans to their members for the construction of new dwelling houses in urban areas. When the problem became acute after the war, Housing Committees were constituted by Government in 1947 in municipal and major panchayat areas with officials and non-officials as members for the selection of suitable areas for opening out extensions and putting up new colonies. After the Committees had selected suitable sites for house construction, co-operative housing societies were organized in these centres.

To suit the varying needs and conditions of different localities, a variety of co-operative organizations have been developed. There are now 587 housing societies of different types in the State providing financial assistance to their members for the construction of new houses. While the building societies function on the individual ownership system and provide long-term loans to their members for the construction of houses, the co-operative house construction societies function on the co-partnership-tenancy system under which the houses are constructed and owned by societies and are provided to the members under the hire-purchase system. The members become the owners only after the entire hire-purchase amount is paid to the society.

The building societies and the house construction societies in the urban areas in the State implement the various housing schemes sponsored by the Central and State Governments, viz., the Low Income Group Housing Scheme, the Middle Income Group Housing Scheme and the State Urban Housing Scheme. Under the Low Income Group Housing Scheme which is financed by the Central Government, loans not exceeding 80 per cent of the cost of construction including the value of the site subject to a maximum of Rs. 8,000 are provided to persons whose income does not exceed Rs. 6,000 per annum.

Urban Housing

Under the Middle Income Group Housing Scheme for which the finance is provided by the Life Insurance Corporation of India, loans up to a maximum of Rs. 20,000 are provided for the purchase of developed plots and for the construction of houses thereon to persons whose income exceeds Rs. 6,000 but does not exceed Rs. 12,000 per annum, provided the estimated cost of the home does not exceed Rs. 25,000. The loan is limited to Rs. 16,000 only if the persons already possess developed land. In either case, the loan is limited to 80 per cent of the total cost.

Under the State Urban Housing Scheme which is entirely financed by the State Government there is no restriction as regards the income limit and loans are provided to

deserving persons up to 80 per cent of the estimated cost of construction of the house subject to a maximum of Rs. 12,000. The loans under all these schemes are ordinarily provided only to persons who do not already own houses in their own names or in the names of their wives or minor children so that the benefit of State aid provided through the co-operatives may become available to those who are really in need of houses. Exemptions in this regard are, however, made in respect of persons who own rural houses of value not exceeding Rs. 5,000 or who have fractional interest in houses without themselves residing in such houses.

Co-operative housing activity is not confined to urban areas alone. In 1950, Government formulated a rural housing scheme which provides for the grant of long-term loans for construction of houses in rural areas. Until recently, the maximum loan admissible under the Rural Housing Scheme was only Rs. 5,000. This has since been raised to Rs. 7,500. By way of special facilities, Government loans are given in respect of these societies to the extent of eight times instead of four times the paid-up share capital if agricultural land is offered as additional security. The societies are also subsidized to meet the legal fees payable to Government Pleaders for getting their opinion regarding the title of the beneficiaries to the land on which they propose to put up houses, if the estimated cost of the house does not exceed Rs. 5,000.

Progress

The Government of India have formulated a Subsidized Industrial Housing Scheme for the benefit of Industrial workers. Under this scheme, co-operative housing societies of industrial workers are provided financial assistance for construction of one-roomed or two-roomed tenements at a ceiling cost of Rs. 3,300 for a one-roomed tenement and Rs. 3,850 for a two-roomed tenement. The scheme provides for the grant of 65 per cent of the ceiling cost as loan and 25 per cent subsidy, the balance of 10 per cent only being contributed by the members.

Finance Minister Subramaniam inaugurated a programme of Children's films from different countries at the Children's Theatre, recently.



On 30th June 1961, there were 310 urban housing societies including 200 ordinary building societies, 53 house building societies, 18 house construction societies, one Township, four tenancy housing societies and 34 industrial housing societies. They had 35,802 members on the rolls with a paid-up share capital of Rs. 173·01 lakhs. Till 30th June 1961, 9,714 houses were constructed with the help of these societies and 1,427 houses were under various stages of construction. The loans outstanding against these societies to Government amounted to Rs. 419·36 lakhs.

There were 253 rural societies with 1,898 members and a paid-up share capital of Rs. 6·07 lakhs. Up to 30th June 1961, they constructed 374 houses and 228 houses were under construction. The Government loan outstanding against these societies amounted to Rs. 18·64 lakhs.

During Second Plan

The following figures will indicate the progress made by the housing co-operatives under the different housing schemes during the Second Plan period.

	Loans disbursed.	Number of houses constructed.	Number of houses under construction at the end of plan period.
	RS IN LAKHS.		
State Urban Housing Scheme.	136·76	1,691	734
Low Income Group Housing Scheme.	105·21	1,421	752
Middle Income Group Housing Scheme. (Introduced in July 1959).	30·40	37	252
Rural Housing Scheme.	17·36	326	220

So far as the Industrial Housing Societies are concerned, 15 societies have obtained the sanction of Government for 17 schemes involving the construction of 1,589 tenements. The total loan and subsidy sanctioned are Rs. 36·47 lakhs and Rs. 14·34 lakhs respectively. During the Second Plan period, a sum of Rs. 27·16 lakhs was disbursed to these societies and 712 houses were constructed. There were also 200 houses under construction at the end of the Plan period.

Third Plan Programme

A little over one crore of rupees are distributed through the co-operative societies for the construction of houses every year under the various schemes. The demand for loans for the construction of houses is on the increase.

The programme for the third plan envisages the construction of 1,500 houses under the Low Income Group Housing Scheme with a total loan assistance of Rs. 125 lakhs, and the construction of 1,200 houses under Industrial Housing Scheme with financial assistance amounting to Rs. 50 lakhs. In addition to the amounts provided under the above two Plan schemes, it is expected that about Rs. 40 lakhs under the State Urban Housing Scheme, Rs. 25 lakhs under the Middle Income Group Housing Scheme and Rs. 6 to 7 lakhs under the Rural Housing Scheme will be utilized every year during the Third Plan period.

Concessions to Government Servants

With a view to encouraging Government servants to build houses of their own with State loans, Government have extended certain special concessions to those who are members of housing societies composed exclusively of Government servants. According to the Government Order issued in the year 1956 and orders issued subsequently, Government loans up to 10 times their paid-up share capital are granted to Government servants provided they are permanent Government servants having not less than five years of service before superannuation or approved probationers with not less than five years of service to their credit and their income does not exceed Rs. 6,000 per annum. Such loans to Government servants are given under the State Urban Housing Scheme. By way of a further concession, the loans given are permitted to be utilized for the purchase of site or the payment of any subsisting debt already raised for the purchase of site provided the loan does not exceed 10/11th of the cost of construction inclusive of the value of the site.

These concessions have encouraged the formation of new societies for Government servants in various towns in the State. There are now 34 societies of Government servants in various places, viz., Madras, Salem, Erode, Tiruchirappalli, Tiruppur, Palayamcottai, etc., These societies are taking steps to acquire land, prepare layouts and allot sites to their members for putting up new colonies. At Madurai and Coimbatore, co-operative housing societies have been formed under the Rural Housing Scheme also for the establishment of colonies for Government servants in the neighbourhood of the towns. This concession has since been extended to Government servants who satisfy the above conditions even if they are members of societies composed of other persons besides Government servants provided the societies agree to extend this concession to them.

House-site Societies

Government have also permitted the Government servants to withdraw from their Provident Fund accumulations for payment of amounts due to co-operative housing societies.

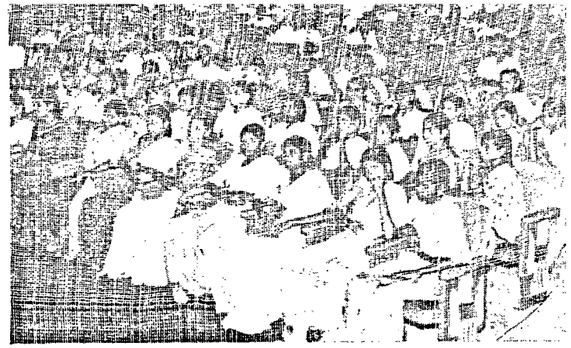
Co-operative house-site societies are generally formed with the object of enabling persons with low income to buy house-sites on which they could later on build their own houses according to their means. In places, where people have already been occupying the land for a long time either paying or not paying rent to the owners, house-site societies are formed when the occupants are threatened with eviction proceedings by the owners. Where vacant lands are available and people living elsewhere come forward to buy such lands for providing themselves with house-sites, in such cases also, house-site societies have been formed for their benefit.

The beneficiaries are required to contribute 1/5th of the cost of the land by way of share capital and the balance of 4/5th of the cost is obtained as loan from Government by organizing them into house-site societies. The land is purchased either by private negotiations where the land owners agree to sell the land at a reasonable price or it is acquired under the Land Acquisition Act. Government loans advanced to these societies are repayable in a period of 10 to 15 years.

There were on 30th June 1961, 27 house-site societies in the City of Madras. Government have sanctioned loans to the extent of Rs. 6·35 lakhs to 12 house-site societies for purchase of house-sites for allotment to their members. Government have also sanctioned a subsidy of Rs. 12,742 and a loan of Rs. 15,742 towards share capital of the member of one of the house-site societies.

Helping Maintenance

The construction of new houses by itself cannot be expected, to solve the housing problem. The maintenance of the existing houses in a state of good repair is equally important in any housing programme. Until recently, there were no co-operative organizations except in four towns for financing on house mortgage for repairs or renewals or improvements to existing houses. The co-operative urban banks functioning in towns were to some extent providing loans on house mortgage for such purposes, but they could not, for obvious reasons, provide credit repayable in more than three to five years. The Madras Central Co-operative House Mortgage Bank with a network of primary house mortgage banks in municipal



A view of the audience at the function inaugurating Children's films from different countries inaugurated by the Finance Minister.

towns was therefore established in 1959. Government have participated in the share capital of this central organization to the extent of Rs. 5 lakhs and have also provided advances to it to the extent of Rs. 6 lakhs.

The Life Insurance Corporation of India has agreed to provide a loan of Rs. 20 lakhs to this bank on the guarantee of the State Government. The State Government have also guranteed the repayment of deposits raised by the bank up to an extent of Rs. 25 lakhs. The Central House Mortgage Bank has 31 primary house mortgage banks affiliated to it with a paid-up share capital of Rs. 10.71 lakhs. It has so far issued loans to the extent of Rs. 24.49 lakhs to the primary house mortgage banks. The establishment of primary house mortgage banks has filled a void in co-operative housing, and the co-operatives are now in a position to tackle the housing problem on both fronts, namely, the construction of new houses and the upkeep of existing houses.

Significant Contribution

Housing is among the primary needs of man next in importance only to food and clothing. With the liberal assistance provided by the State Government and Government of India, the co-operative housing societies are making a significant contribution to the solution of the housing problem, which has become extremely acute, especially in urban areas during the past few decades. Not only have the housing co-operatives helped individual owners of plots to build houses on such plots but they have also succeeded in opening out extensions and bringing into existence in most towns neatly laid out colonies with modern amenities.

Though there can be no doubt that the contribution made by housing co-operatives is substantial, it cannot be denied that their achievement is comparatively small having regard to the stupendous nature of the problem. The major handicap that stands in the way of intending house builders is the high cost of land and the soaring price of building materials. Developed sites should therefore be made available to them at reasonable cost To check the rising price of land, Government may compulsorily acquire lands fit for housing and allot such sites to housing co-operatives at reasonable price after necessary development. Such a long range measure in this regard can effectively help the middle class and the lower middle class people to put up suitable houses at a moderate cost

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The "Hovercar"

Design work on a 300 m.p.h. "hovercar"—a development on the principle of the Hovercraft—which could carry 150 passengers is to be undertaken in Britain by Hovercraft Developemnt, a subsidiary company of the National Research Development Corporation.

The machine is being designed to skim half-an-inch above a specially prepared track. Weighing 43 tons, it will cost £ 150,000—one-seventh the cost of a giant jet airliner.

The National Research Development Corporation foresees the hovercar as a high-speed, inter-City transport, or—at slower speeds with an increased passenger load—an underground commuter transport. Individual hovercars would be linked to form a "hover-train". According to a spokesman of the Corporation, the first 150-seat hovercar would be built and operating within four years.

"Jobs for the Many"

Employment Service in the State

D. D. ANUGRAHAM, *Deputy Director of Employment*

The recent opening of a special Employment Office at Neyveli marks the latest venture of the Employment service, which ever since it was taken over by the State Government, has not only been extending the benefits of its activities to cover wider areas, but has also been enlarging the scope of its activities in the light of latest developments in the field. In this article, the Deputy Director of Employment gives an account of the many sided activities of the service from the time the State Government took over in November 1956.

Small beginnings do not continue to remain so for ever. They enlarge and extend in an ever widening circle of activities. It was in November 1956 that the Government of Madras took over the Employment Service with 12 Employment Offices. Later, it extended its coverage to two more Employment Offices, one at North Madras and the other at Nagercoil. Besides these offices, there are two Employment Information and Assistance Bureaux, functioning in the remote areas of Ramanathapuram and Tirunelveli districts.

The recent opening of a Special Employment Office in the campus of the Neyveli Lignite Corporation, Limited, marks the latest venture of the Employment Service and is designed to meet the requirements of the Corporation. The Employment Office at Neyveli registers all employment-seekers of Neyveli Township. A Secondary Register of Technical Personnel of other areas who are willing to serve at Neyveli has also been built up so that as and when demands are received from the Corporation for Technical Personnel, the Secondary Register may be consulted and arrangements made to recommend suitable applicants. There is tremendous scope for this Employment Office to meet the man-power requirements of the Project.

New fields

Apart from the extensive coverage of the Employment Service, the Service has embarked on explorative fields of Man-power Survey and Research. These have considerably strengthened the wings of the Service. The first of its kind is the collection of Employment Market Information in the Public and Private Sectors of the entire State on a continuing basis through what is called an "Establishment Reporting System" whereby, data is collected, collated and interpreted on the volume of employment, the pattern of employment and shortages and surpluses of man-power. Arising from this survey, Employment Market Reports are issued once a quarter for each district. The information thus disseminated is invaluable to employers, employment-seekers and particularly the Employment Officers in their day-to-day work.

The second programme of study is Occupational Research and Analysis. Under this programme, job performances are observed and jobs defined with a view to compiling an occupational dictionary. It is also hoped that in course of time, this research will contribute to the furtherance of Job Evaluation, which is of great significance in personnel management.

Vocational Guidance

Besides the two developmental schemes, the Employment Service has undertaken to impart Vocational Guidance and Adult Counselling at Madras, Madurai and Tiruchirappalli.

During his stay in the United States as Indian delegate to the United Nations, Industries Minister Venkataraman visited Findlay City in Ohio State when he was presented with the Key of the City. In the picture he is seen receiving the key from Mayor William J. Carlin. Mr. Wayne Brewer, President of the Cooper Tyre and Rubber Factory, which the Minister visited, is also seen in the picture.



Group guidance is given to young people in hundreds and individual guidance to a smaller number to enable them to choose careers and courses of training suitable to their aptitudes and abilities. The beneficial impact of this programme is already being felt.

In recent years, the Employment Service in Madras State has broken away from conventional method of matching men with vacancies and has reorganized its work on new techniques of placement based on scientific and codified classification of occupations and industries. As a result of the adoption of new techniques, the assessment of job seekers and job opportunities has become much more precise than in the past. The Employment Service has been availed of by employers in the Private Sector in no small measure. Forty-seven per cent of the vacancies notified by them during the last six months have been effectively filled by the Employment Offices purely on a voluntary basis. With the remarkable strides that the Service has made, its relevance in the economy of the State is steadily growing.

Priority Principle

During the year ended September 1961, assistance has been extended to about 156,000 employment-seekers. Of these, nearly, 37,000 have been effectively placed in spite of the limited number of opportunities in the State. The placement of 37,000 job-seekers may not be impressive in terms of numbers. But the fact remains that in placing these job-seekers the Employment Service has been "Crusading" for them in that the Service always stands for the principles of priority and seniority in the process of selecting and referring applicants to employers. Added to this is the advantage that applicants who generally have no access to employers are being sponsored or introduced to them by the Employment Offices.

Further, there has been considerable systematization of the placement activities with the result that when an employment-seeker registers at an Employment Office, he has a reasonable chance of being placed within a time-limit depending on the volume of employment generated in that area and his ability to impress on the employer at an interview.

Useful Service

The Employment Service is useful to the people at large to the extent that it furnishes all information on employment avenues and opportunities to job-seekers, affords free facilities for securing employment, guides and counsels them on increasing their chances of employment or employability, introduces them to the employers who are otherwise inaccessible and initiates them into employment suitable to their aptitude and ability.

A review of the work of the Employment Exchanges in all the States shows that for over two years, the Employment Service in the Madras State has been leading in placings. That it has stolen a march over its counterparts in spite of limitations, shows that the Employment Service in this State has functioned well in the service of the unemployed. The Service has set up a remarkable record in effecting the maximum placings in the whole of India. The performances of the Employment Exchanges in Madras State have been very effective and the usefulness of the Service is being increasingly felt and recognized.

Flying Bicycle

Britain's first flying bicycle is now undergoing trials at Lasham airfield, in Hampshire. It has no engine of any kind, and its propeller is operated by two pedals. So far it has made only ground runs, but an attempt to get it airborne is expected to be made shortly, when the test pilot will be Martin Hyman, 28 year old Olympic athlete.

The machine has been designed by a team of aeronautical enthusiasts at Southampton University led by Miss Anne Marsden, a young areodynamicist. It weighs only 130 lb. and has an 80 foot wing span. Another flying bicycle is being built at Hatfield by de Havillands. Both groups have been helped by a £1,500 grant from the Royal Aeronautical Society.

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Centenary of Scientific Forestry

The function of our forestry has to be judged not merely from the standpoint of the few people, who, at will, obtain fuel, timber and grass from the forests or from whether the country's Exchequer secures large financial gains out of them. A different, long-range view of our forest wealth as the nation's most valuable asset, yielding vast benefits in perpetuity has to be taken. This point was stressed by the Union Minister for Agriculture, Dr. Panjabrao Deshmukh, in a talk recently broadcast from All-India Radio in connection with the Centenary of Scientific Forestry in India.

The whole of our scriptures, ancient history and tradition are replete with references to forests. Whether it is the Ramayana or the Mahabarata or even in later periods, forests and woodlands are closely interwoven with the lives and philosophy of our people. Our ancestors, therefore, prized the forests as well as trees and sang their praise so much so that quite a few of them were made objects of worship which practices continue right down to the present day. And yet for various understandable reasons, forest plantations, conservation and regeneration were neither systematically undertaken nor dealt with in a scientific manner until a century ago.

Young Science

It is also a fact that forestry is one of the youngest of sciences because, even in Europe, scientific management of forests is only a couple of centuries old. This of course does not mean that our ancestors could not distinguish between the various kinds of trees and know of their rate of growth and utility. The main reason was that in those times compared to the needs of the population, the forests were, much vaster with a variety and numerousness of wild life which were an object of dread and dislike. The question of replanting or regeneration therefore did not arise and was left wholly to nature, human beings not having to bother much about it. In fact, in most places, forests had to be cut down and cleared so that the lands could be utilised for habitation and agricultural purposes.

The British Government, however, realized the importance of forest development in India fairly early. It is said that a Department of Forestry was created in India before they had one in England itself.

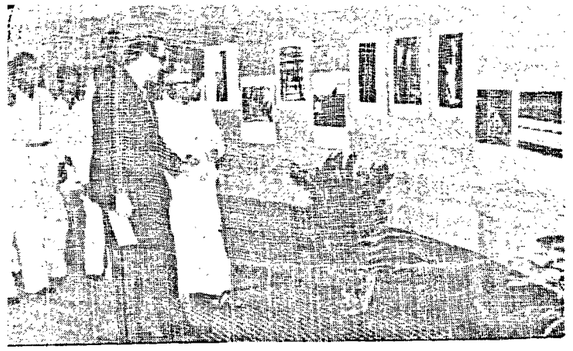
Good Foundation

However that may be, we can look back with some satisfaction that scientific forestry was introduced in India over a hundred years ago and thanks to the various generations of forest officers and scientists, we have a good foundation laid and commendable positive work done in this field on the basis of which we are in a fairly good position to develop our woodlands further.

The occasion is being celebrated today on an All-India basis and specially at the Forest Research Institute, Dehra Dun. I feel rather proud to say that this Institute is recognized on all hands as one of the foremost

Photo taken during the study course training to staff of Panchayat Union Officers held at the office of the Assistant Development Commissioner in Government Estate, Mount Road.





Home Minister Bhakthavatsalam being shown round the exhibition of Yugoslav Photographic Art recently inaugurated by him at the Centenary Exhibition Hall, Government Museum.

Forest Research Institutes of the World, and certainly the biggest of its kind in the East. The Institute caters [illegible] various branches of forest research both in the field and in the laboratory but is also our premier and the only institution for imparting higher forestry education.

Significant Achievement

Till about a dozen years ago, most of our higher posts, whether in forest conservation, education or research, were held by foreign trained personnel. The candidates carefully selected by the State Governments and rigourously and properly trained at Dehra Dun have now filled their places with ability and efficiency. This by itself is a significant achievement worthy of higher appreciation. This Institution has in fact earned considerable international recognition and fame so much so that it attracts foreign students and scientists for training and research.

It is not surprising that an average person in our country does not realise the great role which trees and forests play in the country's economy and what enormous contribution they make to the general well-being and prosperity of the people. Had this realization come to them fully, there would not have been repeated and persistent popular demand of forest lands for agricultural purposes, the wanton molestation and cutting down of trees and the habit of poaching and encroachment in forest areas.

Magnificent Ranges

One of the most outstanding physical features of our country is the magnificent ranges of mountains that not only constitute a formidable barrier in the north but provide the most enviable source and fountain of economic prosperity to the country. The famous and the sacred Himalayas not only give us the sacred waters of the Ganges and the Jumna but also numerous other rivers which help us in our agriculture, power production and industrial development and give us vast quantities of wood and timber but for which we would have been poorer still.

The case is similar so far as our other great mountain ranges such as the Vindhyas, the Satpuras and the Western and Eastern Ghats are concerned. While the Himalayan ranges provide various benefits to the Northern parts of our country, the other ranges are the sources of such great rivers as the Tapti, Narmada, Godavari, Krishna and Cauvery, etc., and their waters benefit the Central and the Southern Regions.

The Real Problem

Now if all these most valuable functions which the Himalayas and the other mountains perform are to benefit us perpetually, we have to see to it that they carry an adequate forest cover. If we fail in our duty to attend to this task properly, the disasters to which the country can be subjected are literally unthinkable. Indeed some of them are becoming a matter of repeated and very painfull experience in recent years. The function of our forestry has, therefore, to be judged not merely from whether a few people can obtain fuel, timber and grass at their own sweet will and free of cost or whether the country's Exchequer secures large financial contributions but from a very different and a very long range view as the nation's most invaluable assets yielding vast benefits in perpetuity.

It is nearly 10 years ago that we took the wise step of framing a national forest policy for the country but unfortunately we have been finding it extremely difficult to act up to it. The above observation is made only with a view to emphasize the importance of sticking to the essentials of that policy which has been applauded by forestry experts and scientists everywhere. Today, when we are celebrating the Centenary of scientific forestry in our country, a tribute is due to the achievements of the forest officers of India during the last hundred years and for the traditions of food service that they have handed down to us.

Edifice of Research

In the course of the last century, a magnificent edifice of forest research has been built up to look after the forests which cover nearly a quarter of the country's land surface. It has been their task to keep these areas under proper management and plan in such a way that larger quantities of timber and fuel and other forest products may be available on a sustained yield basis. They have constructed large mileage of roads in trackless interior regions, built houses for the staff, raised plantations of useful species and thereby enormously increased the value of the forests. They have also protected the varied and wonderful wild life of the forests which with the modern engines of destruction in the hands of unscrupulous people would have been by now almost completely wiped out but for the protection offered by the forest officers, often at considerable risk to themselves.

New Era

The year of the centenary opens out a new era of hope and greater endeavour to the foresters of India. I refer to the proposal for the revival and reconstitution of the Indian Forest Service, recruitment to which was stopped since 1932. There is also a proposal to confer the status of a University on the Forest Research Institute and College at Dehra Dun. A Court of the Forest Research Institute has in fact been already formed. All this naturally means a significant recognition of the importance of the science and practice of forestry in our country. These proposals when they fully materialise, are sure to raise the status of forestry in our country and, I am sure, will hearten all foresters of India so as to give them the necessary urge and enthusiasm to go about their work with increased vigour and devotion. Thus we may congratulate ourselves that we are now entering on a new and more purposeful era of forest development in our country.

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handicrafts for every home

The tradition of handicrafts in India has always combined the aesthetic sense with a clear understanding of the value of utility. The variety, range and production of handicrafts in India has increased phenomenally with the advent of freedom. Handicrafts worth crores find a ready and willing market abroad, thus earning valuable foreign exchange. Also, a wide range of handicrafts are consumed in the home market too thus rendering baseless the popular notion that handicrafts are only for the foreigner looking for curiosities. This article is presented in connection with the All-India Handicrafts Week celebrated recently.

Indian handicrafts have a proud tradition and provide a link between our past and present. Finds at the sites of excavations have enabled historians to fix the dates of civilisations by comparing the skill displayed by the artisans of various periods. In India, of course, are found evidences of a very high level of craftsmanship comparable to the best produced in any part of the world, from the very earliest times.

Indian handicrafts have always been valued for both their aesthetic and utilitarian values. They have formed the most valued export commodities at almost all periods of history and traders carried these products to all parts of the world.

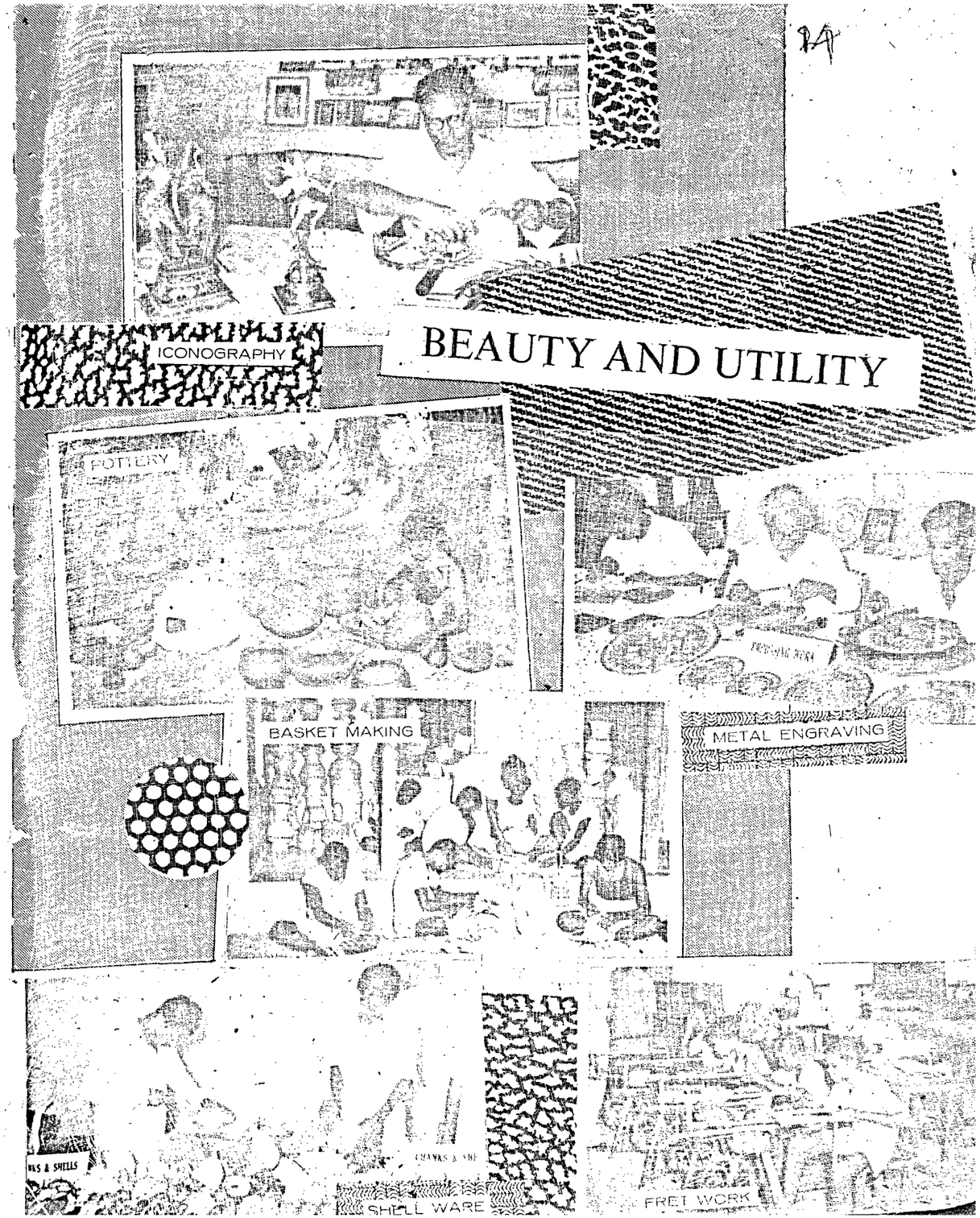
Exquisite Beauty

Resilient and deeply rooted in the hearts of the people, the handicrafts industry, in spite of all handicaps, is still the largest single employer of labour in the country. One million workers are to-day producing articles of exquisite beauty and every day use for both the indigenous and foreign markets. From the humble pith to the sweet smelling sandalwood, from reeds to ivory and from gold and silver to the basest metal, nothing is too great a challenge for the marvellous skill of our craftsmen, who with infinite patience and artistry bring grace to the life of the humblest and the richest in the land by producing articles of considerable beauty for their use.

Handicrafts have always been an integral part of our daily life and craftsmen have occupied an honoured place in the village hierarchy. "Art for Art's sake" is a concept alien to the Indian mind. Nothing is made purely for aesthetic satisfaction and beauty finds no worshippers for its own sake. It is subtly combined with utility to



An example of exquisite, decorative wood carving.



produce works of art even in the smallest water pot and the coarsest mat. The catholicity of taste and outlook of the Indian craftsmen has enabled him to adapt himself to changing circumstances and has helped in the production of articles to suit conditions of any given period of history.

Amazing Evolution

Modern living conditions require suitable new shapes. The craftsman today is rising to the challenge by producing delicate blends of colour, pleasing changes in fabric textures, lightening of perfumes and impressionistic designs on ceramics and pottery. Today we find an amazing evolution taking place. Indian handicrafts, which have for centuries satisfied the aesthetic and utilitarian needs of the people, are today undergoing subtle changes while clinging tenaciously to their basic shapes. A little streamlining here and there, a simplification of line and colour have all brought our handicrafts in one leap from the age of the bullock cart to that of the jet plane.

Not everything today is what it was meant to be. Brass water pots have become much admired table lamps, the tray has become a table top, fabrics traditionally used for garments, are being used for curtains and table mats. Water buckets adorn many a living room as a container either for flowers or magazines.

For every home

Over one hundred crores of rupees worth of handicrafts are produced today in an ever increasing range. Out of these goods worth about ten crores are exported, while the rest are absorbed in the home market thus proving effectively and finally that handicrafts are not, as some critics imply, only for the foreigner looking for curiosities or the rich Indian. They are reaching every home providing an ever increasing link between various parts of the country and promoting its unity.

Rural Electrification

All towns and villages, with a population of more than 5,000 will be electrified by the end of the Third Five-Year Plan. In addition, half of the villages, having a population ranging between 2,000 and 5,000 will be provided with electric power.

In 1951, only 3,687 villages were electrified. In the First and Second Plan periods, the number increased to 23,000 which will further rise to 43,000 by 1965-66. This means a phenomenal rate of increase in the number of villages electrified since the beginning of the planning period. A more impressive achievement, however, is that about 40 per cent of the larger villages, having a population of over 5,000 will have electricity for agricultural, domestic and industrial use.

In a land of little over half a million villages, much, however, still remains to be done, and it is expected that the tempo of electrification will be substantially accelerated in the Fourth and Fifth Plans, when tiny hamlets will have the benefits of electricity.

A Centenary Feature

Recent Archaeological Excavations

Sir Mortimer Wheeler, the well-known archaeologist, observed a couple of years ago "Today no part of the world is better served in archaeological matters than is the Republic of India". The tribute is well-merited for, indeed, India has made considerable progress in archaeology, as in other fields of work, since Independence. The spade has brought to light several new aspects of ancient Indian civilization, besides adding more details to known ones. This article on recent archaeological excavations in India by Sri B. B. Lal, Director, School of Archaeology, New Delhi, is presented in connection with the Archaeological Centenary recently observed in India.

Just a couple of years ago, an archaeologist of international fame, Sir Mortimer Wheeler, observed: 'Today no part of the world is better served in archaeological matters than is the Republic of India.' And indeed this handsome tribute was no exaggeration, for, as in other walks of life, so also in archaeology, India has made considerable progress since Independence. The spade has brought to light several new aspects of ancient Indian civilisation, besides adding more details to the already known ones.

The dim past presents man as in a purely savage state, hunting animals with the help of stone tools and living either in caves or on open terraces of rivers and recent explorations have brought to light several new sites of this period, the more prominent being those in the Sub-Himalayan region of Punjab and in various river valleys of Rajasthan, Bihar, West Bengal, Madhya Pradesh and northern Maharashtra. While the Sub-Himalayan sites, with their typical pebble-tools, show a relationship with those in south eastern Asia, the others recall similar sites in southern and eastern Africa.

A Recent Excavation

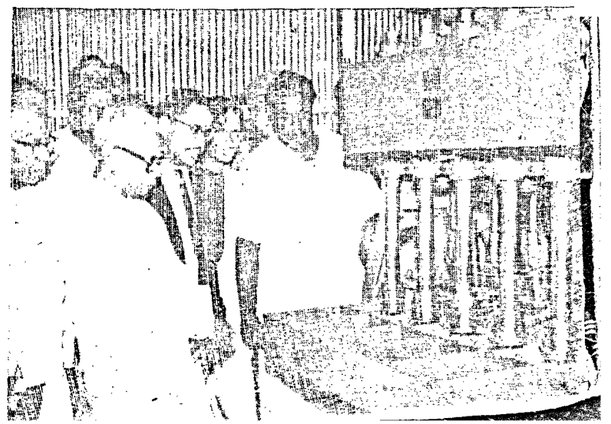
A most recent excavation, by Dr. R. V. Joshi and Shri M. D. Khare, of a cave near Hoshangabad in Madhya Pradesh has shown that it was occupied as late as the microlithic period, when tiny stone-tools of fine workmanship had replaced the bigger and cruder ones. At the close of the Stone Age stands the cultural equipment unearthed by Shri T. N. Khazanchi at Burzahom near Srinagar in Kashmir. The people now used, besides polished stone axes, bone harpoons, awls and needles. They prepared their own dwellings, domesticated animals and possibly carried on agriculture.

Getting out of the Stone Age, one's attention is at once drawn to the excavations at Alamgirpur in Meerut district of Uttar Pradesh and at Lothal in Ahmedabad district in Gujarat, conducted respectively by Dr. Y. D. Sharma and Shri S. R. Rao. While the excavation at Alamgirpur has shown that the Indus Valley Civilization did in fact extend much beyond the confines of that valley, the excavation at Lothal has added quite a few new items to our knowledge.

Lothal dockyard

Thus, apart from bringing to light several structures and antiquities, the excavation has laid bare a dockyard, 218 metres long and 37 metres wide, connected by means of a 7-metre wide channel with a now-dried-up river, which itself is hardly a few kilometres off the sea. While seals of Indus civilization found, years ago, at several sites in Iraq had hinted at the possible trade connections between India and western Asia during the Third millennium B.C., the discovery of the dockyard at Lothal now indicates the *modus operandi* of this trade. One can now visualize, small boats, such as are in fact depicted on the Indus seals themselves, sailing along the coast of

Home Minister Bhakthavatsalam, being shown round the Sriperumbudur Bolt and Nut Manufecturers' Co-operative Cottage Industrial Society factory recently inaugurated by him.





Sri Shriman Narayan, Member, Planning Commission, with Ministers of the State Cabinet and others in the Cabinet Room of the Secretariat.

the Arabian Sea and Persian Gulf, carrying cotton goods, spices, etc., from India and bringing in return cosmetics and the like from western Asia.

Indeed, the Sumerian records of a comparable date refer to such a trade between that country and the east. Another new feature revealed at Lothal relates to burial practice. In some of the excavated graves two bodies lay together. Thus, if anthropological examination shows that in these cases the persons buried were each a male and female, we might be having here something of great socio-religious import.

At Kalibanga

Another Indus site where excavation is presently being conducted for the training of students of the School of Archaeology is at Kalibanga in District Sri Ganganagar, Rajasthan. The site consists of two mounds, a smaller one on the west and a bigger one on the east, which pattern is characteristic of both Harappa and Mohenjo-Daro where the smaller mounds have turned out to be citadels and the larger mounds the towns in general. Further, the layout of the streets at Kalibanga north-south and east-west is also reminiscent of the layout of Harappa and Mohenjo-Daro. Kalibanga is immensely rich in antiquities, but a find of outstanding importance is a pot-shered, the inscription of which clearly indicates that it was written from the right to the left.

It has been believed by some that the Indus civilization came to a sudden end. The excavation at Lothal, however has demonstrated the slow, yet, certain devolution of that civilization, and, combined with the evidence from Rangpur, another neighbouring site, has shown that many an item of the succeeding chalcolithic cultures of central India and the northern Deccan may not entirely be unrelated to that civilization.

Chalcolithic cultures have been laid bare at several sites, the more noteworthy among them being Navda Toli, Prakash, Bhal, Nagda, Tripuri, Nasik, Jorwe and Nevasa excavated variously by Drs. H. D. Sankalia, B. Subbarao, M. G. Dikshit, S. B. Deo and Sarvashri B. K. Thapar, M. N. Deshpande and N. R. Banerjee. The excavator of Navda Toli has compared some of the pottery-types and painted designs from that site to those from Iran and is inclined to believe that a large influx of people took place from that country into India about the middle of the 2nd millennium B.C., which is the date obtained for the lower levels of the site by carbon-14 tests.

In South India

In southern India, Sir Mortimer's excavations at Brahmagiri, in 1947, had given a clear definition to the polished Stone Axe Culture of that area. The recent work at Piklihal and Utnoor by Dr. F. R. Allchin of the Cambridge University, in collaboration with the Government of Andhra Pradesh, and at T. Narsipur in Mysore by Dr. M. Seshadri, has added much valuable data to our knowledge, demonstrating a two-way cultural traffic between South India and the northern Deccan. The remains at Utnoor have been dated to *circa* 2000 B.C. by a radio-carbon test.

Proceeding from the somewhat impersonal story of prehistory and protohistory to that of early history itself, we find two great cities, Kausambi in Uttar Pradesh and Ujjain in Madhya Pradesh known to have been the capitals respectively of Udayana and Pradyota in the 6th-5th centuries B.C. The Lord Buddha is known to have visited the former site and stayed at a place called Ghoshitarama; and indeed an inscription discovered from the excavation helps us clearly to identify the place. At both Kausambi and Ujjain the excavators, respectively Shri G. R. Sharma and Shri N. R. Banerjee, have unveiled mighty defences. Made of mud, the defences were further strengthened with burnt-brick revetments, which at the former site can be seen even today soaring to a height of over 13 metres.

An amphitheatre too

The well-known site of Nagarjunakonda in Andhra Pradesh is awaiting submergence under a dam. The salvage operations over here, under Dr. R. Subramanyam, with general guidance from Shri T. N. Ramachandran, have brought to light a large number of *stupas*, monasteries a citadel, a bathing-*ghat* and last but not least an amphitheatre—all assignable to the early centuries A.D.

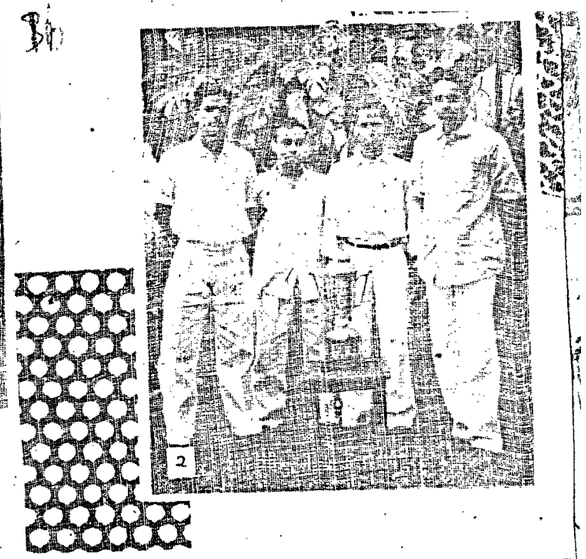
At Ratnagiri in Cuttack district of Orissa, where excavation has been carried out by Mrs. D. Mitra, a large monastic establishment of the Mahayana cult ascribable to the early medieval times has been unearthed.

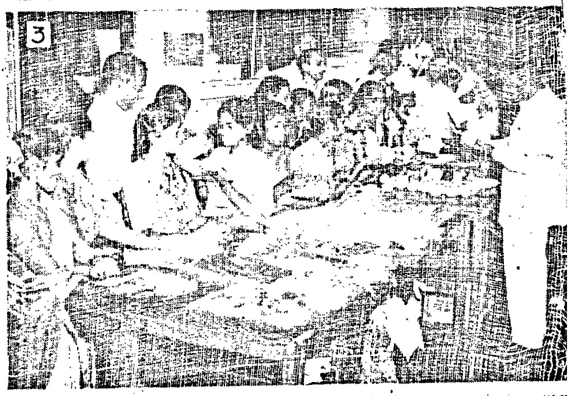
This brief survey shows that quite substantial ground has been covered during the past few years. However, much more remains to be done before we can hope to have areally comprehensive picture of Indian archaeology.



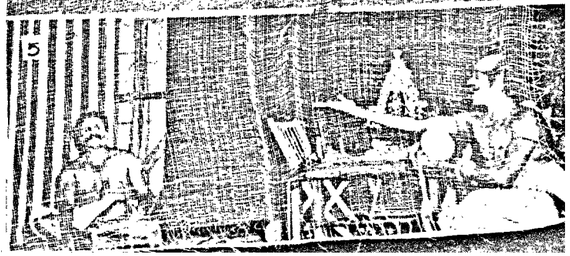
State Police Sports Meet

(1) Mrs Maragatham Bhaktavatsalam presenting the trophy for individual performance (2) The Secretariat Unit won the inter-office relay and claimed the Vijayaraghavan Memorial Rolling cup. (3) Scene from exhibition organized on the occasion. (4) Fancy dress. (5) Cultural item pepresenting folk tradition. (6) Drama.











Science in the news

Everyday that passes in this Age of Science registers some important advance or other as a result of which new and improved techniques and devices emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments. Apart from developments in the Indian scientific field, interesting 'bits' from the United Kingdom and the United States are also included.

Idli is a common food preparation widely consumed in many South Indian homes. It is usually prepared by steaming a fermented dough of rice and black gram (Phaseolus mungo) dhal. Idli is generally considered as a nourishing and easily digestible food. As commonly prepared, it has a protein content varying from 11 to 13 per cent on moisture-free basis. Since protein malnutrition is widely prevalent among children belonging to the low income sections of the population, it was felt that idli enriched with protein rich foods would form a suitable supplement for the treatment and prevention of protein malnutrition in children.

The nutritive value of idli fortified with Indian multipurpose food or Bengal gram flour has been studied at the Central Food Technological Research Institute, Mysore, by growth experiments on albino rats.

During his recent visit to the City Sir Saville Garner, Permanent Under-Secretary Designate of State for Commonwealth Relations, called on Revenue Minister Manickavelu. He was accompanied by Mr. W.J.M. Paterson, Deputy High Commissioner for the United Kingdom in Madras.



The results show that (1) unfortified idli diet promotes significantly higher growth than rice diet and (2) diet containing idli fortified with multipurpose food promotes significantly higher growth than those containing unfortified idli or idli fortified with Bengal gram flour. The livers of animals receiving the rice diet show parenchymal damage of a mild protein deficiency type, while the livers of animals receiving idli or idli fortified with Bengal gram and Indian multipurpose food are quite normal. The mean fat content of livers of rats receiving diets based on unfortified idli and idli fortified with Indian multipurpose food or Bengal gram was significantly less than that of livers of animals fed on the rice diet.

In view of the scarcity and high cost of milk and other protein-rich foods of animal origin in different parts of India, idli enriched with Indian multipurpose food can be used as a cheap and effective source of protein and others dietary essentials for the treatment and prevention of protein malnutrition in children belonging to the low income groups of the population.

Treatment of Timber

More than four million tons of industrial timber are extracted from Indian forests annually. Proper treatment of timber for preservation against decay and deterioration is necessary to ensure efficient utilisation of this important resource.

At present there are two firms in India manufacturing seasoning and preservation equipments. Automatic temperature and pressure recording equipments are imported. Most of the preservative chemicals are produced in the country; the only imported items are arsenic pentoxide, pentachlorophenol, dieldrin, borax and boric acid.

Both material and design know-how for manufacturing not only the plant but also ancilliary equipment for treatment of timber are available in the country. With the growing demand for treated timber, proper plants of suitable design will be needed so as to reduce treatment costs to the minimum.

Reducing Costs

During the next five years three basic types of plants are likely to be in demand: (1) mobile units which can be towed to various points so as to save transportation costs, as in the mining and tea garden industries and Forest and Soil Conservation Departments where a large amount of fencing timber protect new plantation; (2) small size units (capacity one lakh cubic feet per year) using water-soluble preservatives, creosote or pentachlorophenol; these plants are economical to operate, involve a low initial cost, require minimum power and can be operated off diesel engines and low pressure boilers, and (3) larger units with pressure cylinders of a diameter extending up to 4-feet for both water-soluble and creosote treatment. Such units are chiefly required for treatment of sleepers and general timber. Installation of a few centres of this type is under consideration under the Third Five-Year Plan.

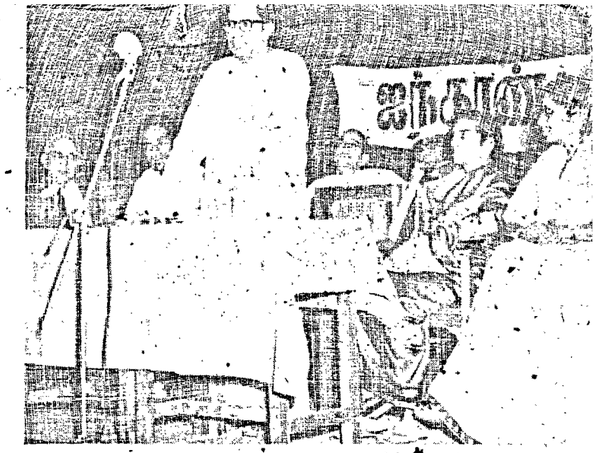
Solar Battery

An operational solar battery capable of supplying power for many hours for lighting and other purposes at an on-load voltage of 24 V. has been developed as a result of extensive research work at the Centre de Recherches Physico Chimiques of the Compagnie Generale de 'Telegraphie' Sans Fil (CSF.) near Toulon in France. The development is a milestone in the field of direct transformation of solar energy into electric energy. This is the largest static generator hitherto developed which can recover energy from solar heat.

Unlike in the selenium and silicon batteries which use the solar energy in its light form, the CSF battery uses solar energy in the heat form only. Its operation is based on collecting and holding the maximum possible heat energy in the sun's radiation (c. 800 W./sq.m. at Toulon, and can be more in a tropical country) and manifesting it as a temperature difference between the hot and cold junctions of a calcined bismuth telluride thermo-couple.

Perfectly adapted

The solar generator provides electric energy which is perfectly adapted to supply electronic circuits fully or partially transistorised. It is completely static, quite stablerequires no maintenance and lasts almost indefinitely.



The Finance Minister who presided is seen addressing the Symposium held recently at the Vivekananda College under the joint auspices of the Five-Year Plan Publicity Organization and National Savings Organization.

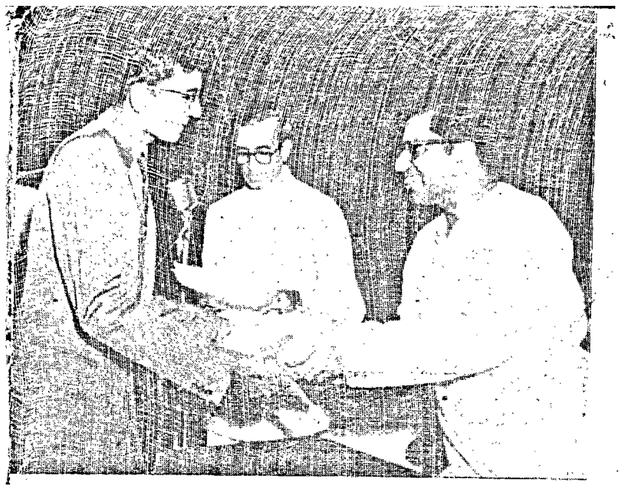
The French scientists and engineers have also developed a smaller version of the generator which can be charged during the day by more sunlight and supplies power during night-time to a self-contained, portable lamp which can be worked continuously for hours.

The solar generator holds far-reaching economic prospects for under-developed countries. For example, it will be now possible, using the CSF generator units and transistorised electronic equipment, to overcome the problems chitherto unsolved) encountered in planning vast structures designed for effective telecommunications, meteorological observations and navigational safety in the deserts and the under-developed areas in the equatorial and tropical belts.

Determining Chemical Reactions

A simple, rapid, mathematical method for determining the order of a chemical reaction has been developed by research workers at the National Bureau of Standards, Washington, D.C. When the order of a chemical reaction is known, the factors influencing the speed of the reaction can usually be determined. Thus, the method promises to be particularly useful to chemcial engineers, industrial chemists, and other scientists concerned with controlling rates of reaction. The procedure may also be utilised to detect errors in initial conditions and stoichiometry; in some cases it provides clues to the forms of complicated kinetic expressions.

Although distinct first—, second—, third—, and zero-order reactions can be defined in simple terms, very few reactions actually follow a constant order through



Finance Minister Subramaniam, who recently inaugurated the Plan Publicity Week in the City is seen presenting a set of books to Sri P. Chidambaram of Presidency College who won the first prize in the inter-collegiate debate on the Third Plan.

an entire series of steps. In fact, most chemical processes are complex, involving two or more simultaneous reactions. Because of the complex nature of such reactions, the mathematical description of the overall process is the result of several rate expressions and consequently is difficult to obtain accurately. Although the Bureau method does not solve all the problems involved, it does simplify the fitting of data to mathematical expressions and provides information on the actual equation. In some cases, it permits interpreting deviations from constant order which are caused by errors in initial times and concentration, and by the reaction following a more complicated-rate expression.

Time-Ratio Tables

The Bureau method of finding order is based on time-ratio tables which were calculated by the Bureau. To find the order of a chemical reaction by the Bureau method, the degree of advancement of the reaction, that is the extent of the reaction completed, is obtained experimentally at specific intervals. This is done by measuring some physical or chemical property which is a known function of the concentration of a reactant or product. By plotting the different percentage of completion as a function of time, and drawing a smooth curve through these points, values of the times for various degrees of advancement can be obtained. Then, by comparing different ratios of these times to the time-ratio values on the Bureau table, the related order can be rapidly determined.

Not only because of its simplicity, but also because it involves only one subjective step—fitting the smooth curve to time versus concentration data—the method should prove to be particularly valuable to chemists without highly developed mathematical backgrounds.

High stretch paper with satisfactory strength properties has been prepared from sisal fibre by the sulphate digestion process as a result of investigations undertaken at the Forest Research Institute, Dehra Dun. Compared with paper produced from coconut coir, paper from sisal has a slightly lower stretch but a much higher yield and better strength properties. The colour of the paper from sisal is light brown while that from coir is dark brown.

Wood Preservatives

Wood preservatives, containing zinc and boron, have been developed from raw cashewnut shell oil as a result of experiments conducted at the Forest Research Institute at Dehra Dun in 1960–61, according to the Annual Report of the Institute. During the year, work was also taken up under the Marine Organisms Scheme to test the durability of treated and untreated timbers in water and a biological study of the various organisms attacking timber was made at the harbour research centres in Bombay, Cochin, Madras, Trivandrum and Waltair. It was found that some untreated varieties of timber gave satisfactory results. Studies on treated thatch grass, used in experimental building indicated that it could last for about 15 to 20 years. For making thatch roof fire resistant, compressed thatch boards have also been made and these can be used as shingles on galvanised roofs or for roofing low cost buildings in place of normal thatch grass.

Releasing sand Trapped Oil

An underground oilfield in England is to be set on fire to free the solidified oil it contains—amounting perhaps to 100,000 tons. The oil is trapped in sand 200 ft. below Peat moss near Formyby, Lancashire.

Athough a frickle has been won from this small field since the beginning of the last war most of it is waxy and cannot be pumped out of the bore hole. The British Petroleum Company plans to burn part of the oil underground. The heat should melt the rest and allow it to flow to the surface.

Five holes, four in a square and one in the centre, have already been drilled and giant compressors are pumping air at 150 lb. per sq. inch into the outer holes. Measurements will be made of the passage of air from the outer holes. When these tests have been completed probably next spring, a fire will be lighted at the bottom of the central bore. As air is pumped through the outer holes, the exhaust gases, sand, water and oil will come out of the centre.

Gradually the fire will extend outwards until it reaches the four outer holes. By that time, all the oil covered by the five-hole pattern will have been removed. The process will be repeated over the whole 25 acres of the oilfield.

Shade Card for Cotton Handlooms

One of the first problems which the Weavers' Service Centres sponsored by the All-India Handloom Board, took up for investigation soon after their inception was the complaint, both at home and abroad, that the exquisite and artistic fabrics produced by this ancient craft, although attractive in design and structure, were nevertheless not dependable as the colours used were non-fast to light and washing and the shades were fugitive. A number of scheme have been sanctioned by the Government of India during the last few years for the establishment of dye-houses of varying descriptions in several States. As a preliminary to finding a solution to the complaint, an examination of the working of these dye-houses was undertaken by the technical staff attached to the Weavers' Service Centres.

This study revealed that, in quite a number of cases, in order to ensure cheapness, direct and non-fast colours were being used. In some cases, even though the colours actually used were fast and costly, the process followed in the dye-houses were defective and unscientific and in consequence, the results obtained were quite unsatisfactory. It was, therefore, decided that a comprehensive shade card for cotton fabrics should be evolved by the Weavers' Service Centre, illustrating a wide range of shades which could advisably be used throughout the country and would at the same time pave the way for standardisation of shades for handloom fabrics. In order to ensure that the correct shades were obtained, it was further resolved that the shade card should be fully illustrated, and should explain to the dyer the exact processes to be followed in order to obtain the intended shade.

Preliminary Trials

Trials were accordingly carried out with the assistance of dye manufacturers, and over 500 shades on cotton were dyed in the Central dye laboratory of the Weavers' Service Centre, Bombay. Of these, 221 were selected for purposes of standardization. These cover a full range (from yellow to black) and represent shades suited to tastes in different parts of the country, emphasis being laid on the all round fastness of the colour. The selected shades include different groups of fast dyes such as vat, naphthol, re-active dyes, etc. A booklet giving a detailed description of the actual processes of bleaching and dyeing of the shades, as also the precautions to be observed in order to ensure good results was also prepared.

To cover current shortages of individual types of dyes, a table was prepared in collaboration with dye manufacturers detailing the equivalents of colours produced by different manufacturers, so that the shortage of one group of dyes may be made up by the substitution of the equivalent of an alternative colour to obtain the desired shade. Useful hints regarding the vessels considered suitable for wet processing of yarn were also prepared. To make the shade card more useful, a table giving the approximate cost of producing each of the selected shades illustrated in the shade card for given quantities of yarn was compiled.

Standardization

As already stated most of the fast groups of dyes comprising vats, naphthols, etc., have been covered in the shade card, and a very full range of shades has been illustrated. A number of these shades are moreover, actually being used in the production of hand woven fabrics in many parts of the country. It is felt that if manufacturers were to observe the suggestions contained in the shade card it should be possible not only to eliminate prevalent complaints regarding the quality of dyes used in handloom fabrics but also to standardize shades for cotton fabrics throughout the country.

A large number of designs evolved by the units of the Weavers' Service Centres are now being regularly produced in bulk in co-operative institutions, production centres, etc. All the shades used in these fabrics will henceforth be covered by one or the other shades represented in the very wide range of shades illustrated in the shade card. It should, therefore, be possible for production units, to duplicate the requisite shades without much difficulty. In case of difficulties, however, the services of the technical staff attached to the Weavers Service Centres would be freely made available to producing units.

The shade card with the descriptive brochure and suggestions for processing is priced at Rs. 21 per set. It has been decided that the set should be made available to co-opertative institutions at 50 per cent of the cost, hamely, Rs. 10·50 (and postage charge Rs. 2·06 extra).

Fish Rearing in Amaravathi

V. D. SPURGEON, *Deputy Director of Fisheries.*

What the State Fisheries Department has done for fishery development in the Amaravathi Dam and how the fish farm at the foot of the Dam adds to the tourist attraction of the place are detailed in this article by the Deputy Director of Fisheries. On account of its parks and avenues and its scenic charms, the Amaravathi Dam is already a pleasant holiday spot.

The Amaravathi river rises in the Western Ghats near Munar in Travancore State at 5,000 feet and flows through inaccessible thick jungles of the Anamalai Range and enters the plains near Kallapuram in Udumalai taluk in Coimbatore district at the present dam site.

This river remained untamed and her water was wasted till 1953. In resurgent India, a Dam across her was an urgent necessity.

The construction of this major reservoir was inaugurated in December 1953 by the Chief Minister. Soon heavy machinery rolled and earth moved up and down and the Dam was in the making. A 3,594 feet long and 120 feet high Dam wall steadily rose impounding 4,000 million cubic feet of water and was completed in 1957.

The catchment area is 324 square miles and 4,000 million cubic feet of water will irrigate 32,000 acres of wet and 21,000 acres of semi-wet areas yielding additional food grains to the extent of 10,000 tons to feed the State population.

Sri V. K. Palaniswamy Gounder, Deputy Chairman of the Legislative Council, inaugurated the Sixth Prize Bond draw at Coimbatore at a formal function presided over by Sri N. Mahalingam, M L.A.



While 4,000 million cubic feet of water stagnates above the Dam awaiting to be daily released a bit for growing of agricultural produce; it need not be kept idle. Simultaneously 4,000 million cubic feet of water can hold acquicultural fish produce in it at no extra expenditure to the State.

The Government through their Fisheries Department had started a programme of fish growing in this water storage. With necessary technical staff stationed at the Dam, a fish farm was formed to grow and breed selected varieties of food fish and to transplant them into the Dam above.

Protein Supplement

The Fisheries Department has been carrying to Amaravathy Dam seeds of important fish such as *Catia, Rohu* and *Mirgal* from other fish seeds centres in the State, and stocking the lake every year. Figures for such scientific stocking are as follows :—

1957–58	.. ..	4,18,380
1958–59	.. ..	4,25,595
1959–60	.. ..	2,31,265
1960–61	.. ..	1,45,294

After 5 years of intensive stocking like this, the 4,000 million cubic feet of water will yield a sizable fishery to add to the total output of inland fish in the State.

Thanks to the Amaravathy Project, the parched tract of Udamalpet taluk in Coimbatore district is now converted into bounteous fields supplying the people with cereals. Also thanks are due to the same project for the "by-product" of fish that is a vital protein supplement to the otherwise ill-balanced carbohydrate rice diet of the area.

In addition to the fishery development in this virgin water expanse across Amaravathy the Fisheries Department has yet another programme to supply interested ryots fish seeds at subsidised cost with a view to encourage private fish culture in tanks, ponds and wells.

Wonder Fish

Tilapia is a wonder fish. The male *Tilapia* carries the baby ones in his mouth for protection. *Tilapia* is such a prolific breeder and adjusts to any kind of difficult condition that, this fish fills up any piece of water in one to twelve month's time. Just introduce half a dozen of this fish in any place and see the remarkable change It spreads like wild fire. The water gets literally choked with fish—(*Tilapia*).

Figures for supplying fish seeds for farmers from Amaravathy Fish Farm are as follows :—

1959–60	.. ..	4,126
1960–61	.. ..	9,254

To demonstrate to the public at large how even a well can be put to use for growing fish the Department runs a demonstration well at Pollachi—not far from Amaravathi Dam.

In 1957–58—400 fish seeds were stocked in the well at nominal cost but fetching an additional income of Rs. 50·25 to the ryot.



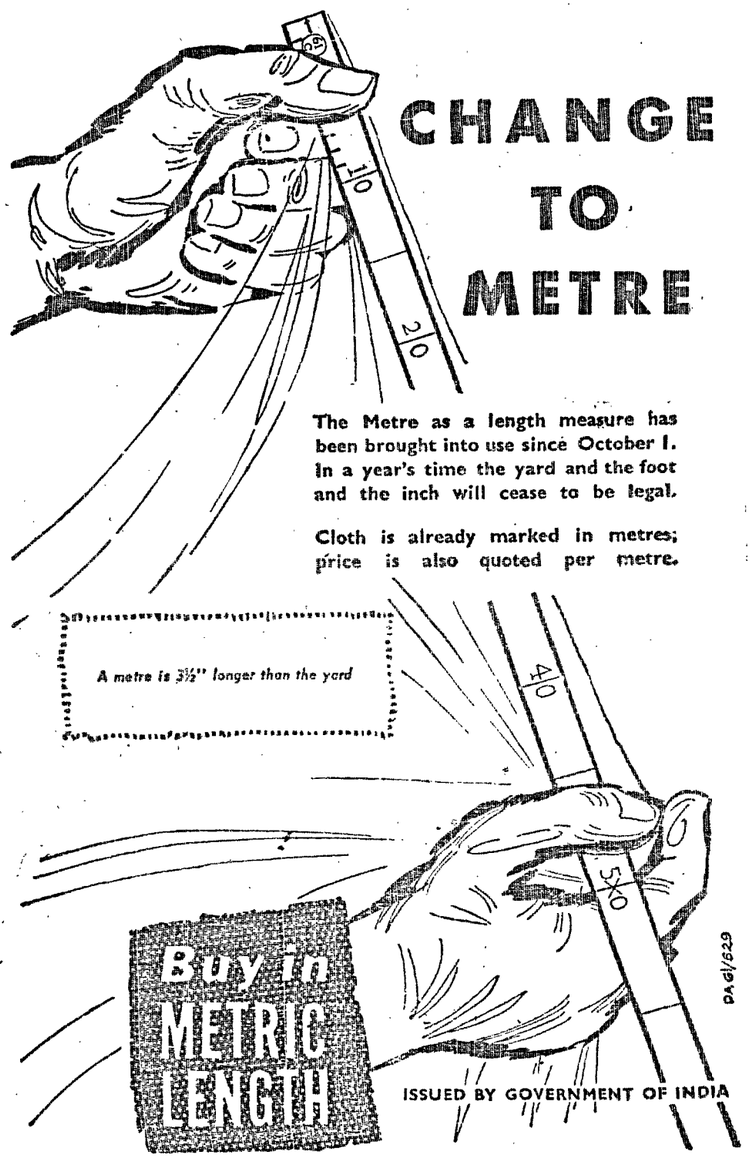
Srimathi Lourdhammal Simon, Minister for Local Administration, who recently opened the newly constructed 100-bed Post-Natal and Medical ward for women and children at the Kasturbha Gandhi Hospital, Triplicane, is seen in the picture distributing sweets to child patients. Health Minister Manickavelu is also present.

Also the Department has provincialized short-seasonal irrigational tanks in Pollachi and Udumalpet area; and stocks them with fish and increases the fish production annually.

Already Amaravathi Dam is proving a tourist attraction. The well laid out park, picturesque avenues, life-size statues and mountainous scenic splendours are irresistible temptations. A neatly laid out fish farm at the foot of the Dam, angling and boating facilities up in the reservoir, a good fisheries museum and a "live fish Grotto" are the other attractions that are bound to make a visit to the Amaravathi Dam worth while.

Teachers' Welfare

A new scheme for teachers' welfare was inaugurated in New Delhi by the Vice-President, Dr. Radhakrishnan. The scheme provides for the setting up of a Trust known as "The National Foundation for Teachers' Welfare". The object of the trust is to channelise private philanthropy to help teachers in indigent circumstances. The Union Government have agreed to make a donation of Rs. 5 lakhs for the scheme and an appeal is being issued for generous donations from the public. Dr. Radhakrishnan also gave away national awards to teachers of outstanding merit from all over the country. The awards this year have gone to 85 teachers—44 belonging to primary schools and the rest to secondary schools. The award consists of a certificate of merit and Rs. 500 in cash.



Paradise for Tourists....

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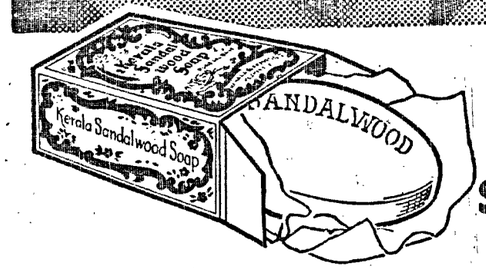
The Mudumalai Game Sanctuary in Nilgiris district and the Vedanthangal Birds Sanctuary near Madras promise other surprises. So, do not tarry....

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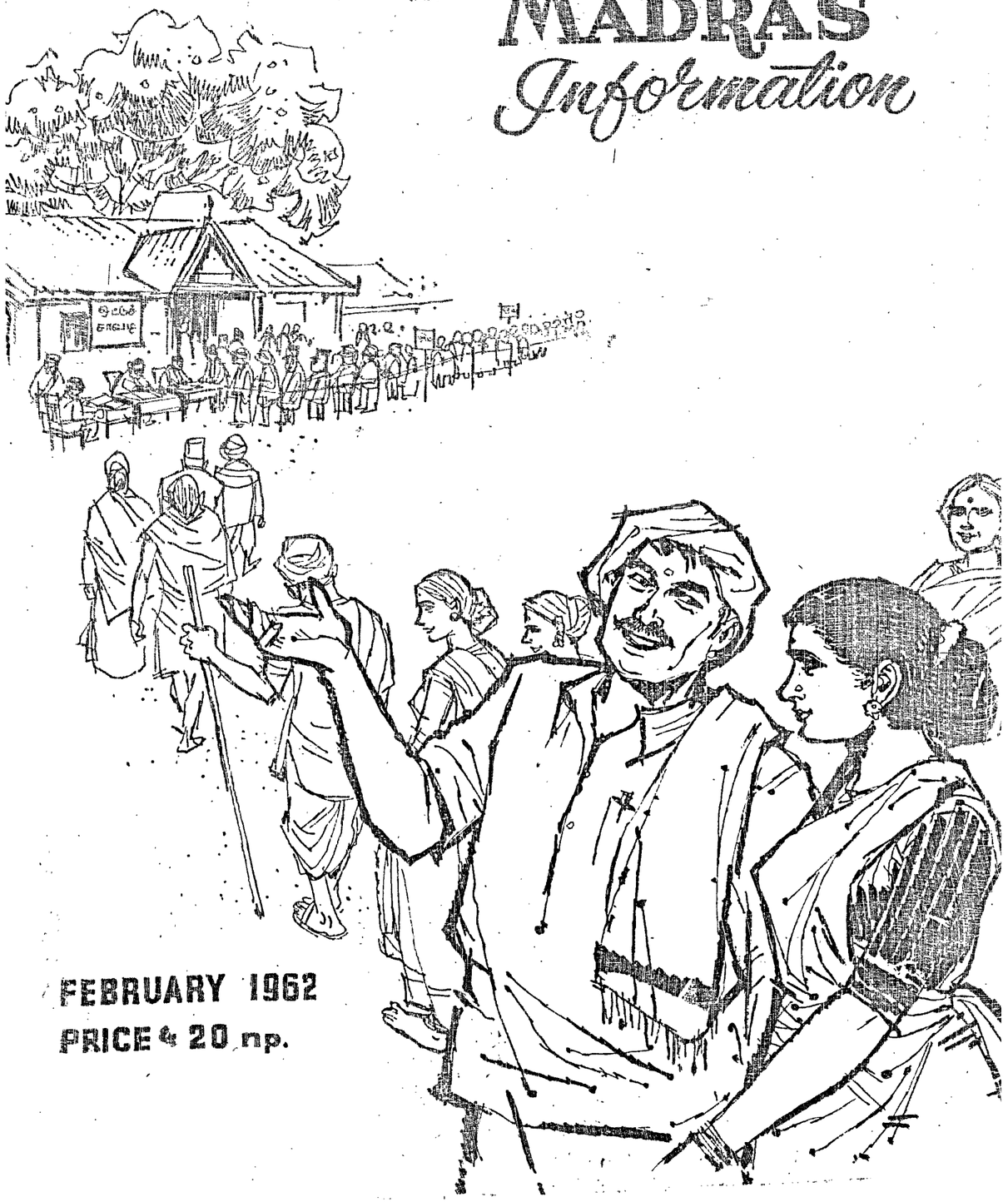


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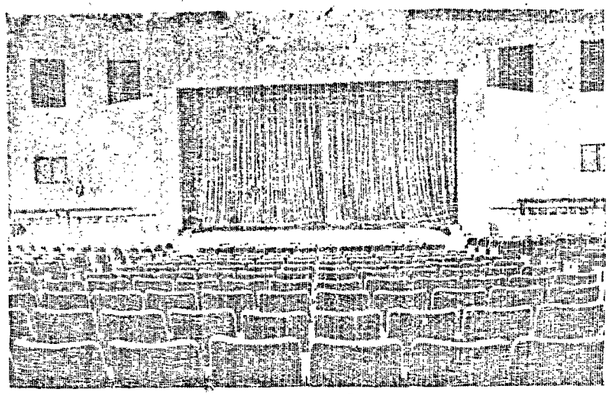
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This month's cover

The peasant in the remotest village is happy that he can create the Government of his choice. This mood of political awareness and consciousness and the exercise of the franchise in the village are caught in this month's cover.



World's Biggest Poll

EXERCISE IN Democracy

By the expiry of this month, the people of India would have elected their representatives through the ballot box. Under adult franchise every man and woman who has attained the age of 21 is entitled to vote. Twice after independence, the nation has gone through this great exercise in democracy, first in 1952 and again in 1957. The 1962 elections start on February 19 and by February 25, the polling will be completed in all the centres. In connection with the ensuing General Election, this feature is presented.' Guide material to the voter relating to the marking system, ballot papers, system of symbols, the polling programme in the State is also included.

It may have become a cliche, but the phrase still aptly defines democracy : Government of the people, for the people and by the people. India will reaffirm its faith in the sovereignty of the people-and their right to rule themselves through whom they prefer—when it holds the general elections from February 17 to 24 this year. Twice before the country has gone over this exercise in democracy, first in 1952 and then in 1957. And every time the results have proved that climate, distance or literacy does not handicap free choice.

In the First Poll as many as 88·6 million persons voted from a total of 173 million (51·15 per cent) ; in the Second, the percentage fell to 47·57 : 92 million voters out of 193 million. But even this average compares favourably with that of most countries in the world.

This time the voters are nearly 210 million, nearly four times the population of Great Britain. The constituencies have also increased because of the separation of the two-member seats—91 Lok Sabha and 584 Assembly—into the General and Reserved for the Scheduled Castes and Tribes. And the period of polling has been reduced from 19 days in the last elections to less than a week now.

Free Choice

But in no way will a voter experience any difficulty in exercising his free choice, the sheet-anchor of democracy. The number of polling booths has been increased to about a quarter million, one for 900 voters, and so spread that ordinarily a person will not have to cover more than a mile to vote. The contingent of Returning Officers has been strengthened so that there is one for every Lok Sabha seat or for 2-3 Assembly seats. And to ensure more secrecy—a right guaranteed by the Constitution—the new system of voting has been introduced, where the choice is indicated on the ballot paper itself.

The names of candidates contesting a particular seat as well as the symbols of the parties they seek to represent will be printed on a single ballot paper, and not displayed on the face of separate ballot boxes as each individual candidate had in the past two General Elections. A voter is to indicate his preference on the ballot paper itself, against the candidate's name or symbol, with a cross-mark stamped by a rubber seal which a polling station will supply.

The new system will save more than two million ballot boxes. Instead of 2·6 million boxes used in the last elections, nearly a quarter million will be required this time.

To help the voters to distinguish the ballot paper of the Assembly from that of the Lok Sabha, colours have been made different : *pink* for the Assembly and *white* for the Lok Sabha. At a polling booth, the Assembly ballot paper will be given first. After a voter has indicated his preference on it, he will collect the Lok Sabha ballot paper and go through the same process—getting the inked rubber

←These pictures include an old woman being carried and a blind woman being led to the polling booth.

stamp for making impression, going to the voting compartment and dropping the folded ballot paper into the ballot box.

The Yardstick

The same ballot box will be used for the Lok Sabha and the Assembly ballot papers. It will facilitate counting and make the poll brisk. But no result will be announced before the polling is complete throughout the country to avoid the repercussions of victory or defeat in one constituency on the other. However, once the returns are made public, the entire gamut will finish in three to four days, between February 25 and 28.

The system of symbols has also been liberalized. The yardstick adopted in the earlier elections to determine the recognition remains more or less the same; at least three per cent of the total valid votes polled. But the word "National" or "State" tagged with a party has gone so that none has any edge over the other. The recognition was meant only for symbol purposes, nothing more. Now the symbols have been allotted statewise, on the past performance, and there is no scope of any euphemistic advantage.

All these innovations have been introduced to ensure fair elections—for an individual to exercise his choice without any difficulty or confusion. From him stems all powers of the Government and his must be the final and free decision.

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A Farewell Tribute

The State Administration—An Appreciation

SRI C. SUBRAMANIAM, *Minister for Finance.*

In his valedictory speech in the Madras Legislative Council on December 16, 1961, Finance Minister Subramaniam made an appreciative reference to the efficiency of the State Administration and the good work done by the officers of Government. The extract from the Minister's speech forms the subject-matter of this feature.

I would like to take this opportunity to express my appreciation of the good work done by the officers of our State. Some members were good enough to praise my work as Finance Minister. They have expressed their appreciation of the way in which the finances of the State have been built up. If appreciation is due, that appreciation should go to the various officials who have been helping me in discharging my function as Finance Minister.

That is really one thing in which we have been most fortunate. Our State has been most fortunate in having efficient and devoted Civil Servants. It is because of them that we have earned a name of having the best administration in India today. When I am stating this, I am not confining my appreciation to the older Civil Service men who after Independence have done the greatest service in giving us a stable and efficient administration by providing the steel framework for it. I am not confining my appreciation to those who had already had the training in the methods of administration. My appreciation is also due to the younger generation of officers. The younger generations have been doing their duties in such a devoted manner that I have no doubt in my mind that any future Government will be well served by the officers we have.

It is not only the Finance Department that I am referring to. As Minister for Finance, as Minister dealing with Planning and Education, I had to deal with almost all the departments in our Secretariat, and not only all the departments of the Secretariat but also all the Heads of Departments in the State, the various Collectors and the various other officers functioning in our State. My appreciation is due to all of them. Only because we have been able to maintain the standard of efficiency in our officers, we have stable strength today and the future of our State is quite bright. The administration of Madras has always earned the greatest praise, even during the British regime. It has been possible for us to maintain that name and I hope it will continue to be maintained.

Supporting small-scale Industries

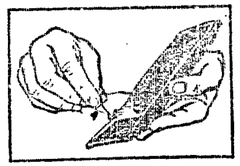
The Government of India have decided that the small-scale industries should exclusively supply 46 items of stores required by Central Government Departments. Till recently, there were only 27 such items, which were supplied to the Government by the small-scale industries. This step has been taken in accordance with the Government's policy to encourage the small-scale industrial sector, and strengthen it in the country. The 19 items now included in the category of stores, to be procured exclusively from the small-scale industries, include cotton and woollen goods, leather products, iron and steel products, tarpaulin and brushes.

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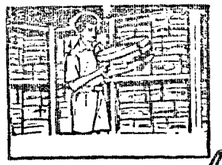
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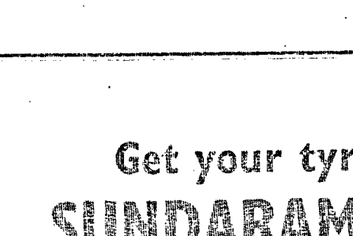


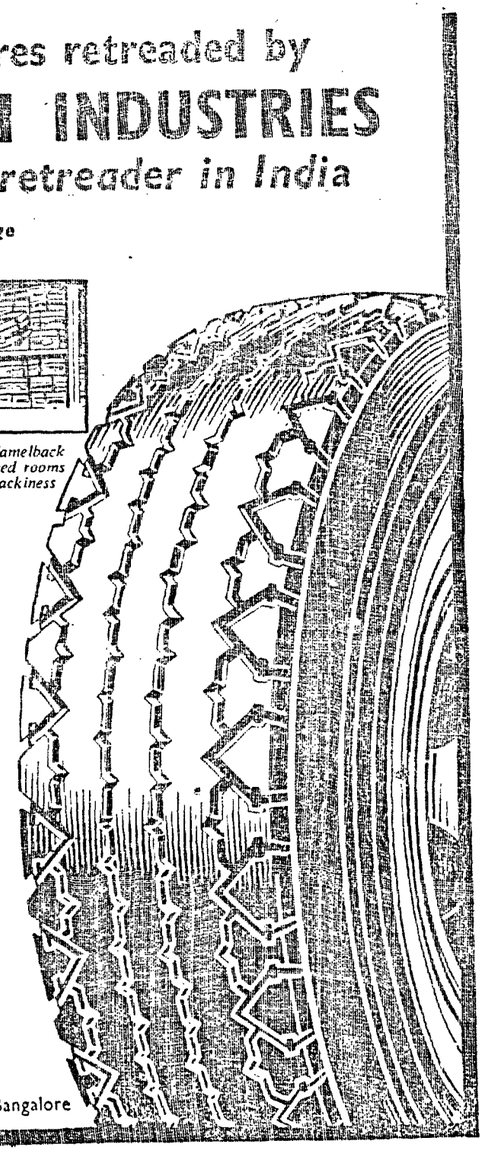
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A Tribute to the State Farmer

SRI M. BHAKTAVATSALAM, *Minister for Home and Agriculture.*

In his recent speech delivered in connection with the State Farmers' Day in the Agricultural College, Coimbatore, the Home Minister who is also the Minister for Agriculture paid high tribute to the farmers of the State as being "second to none" and stressed the important role played by them in agricultural development during the First and Second Plans. This feature gives the text of the Minister's speech.

I am very happy to participate in this annual celebration of the "State Farmers' Day" and the "Coconut Week". The idea of organising "Farmers' Day" at this Central Research Institute and the Agricultural Research Stations located in the districts of this State was first given effect to a decade ago. Since then, it is being observed as an annual feature of these Research Centres. The main purpose of this celebration is to provide opportunities for the farming public to come into close contact with Agricultural Research Workers in different fields and exchange views and ideas with them on the numerous problems confronting them.

I learn with satisfaction that these annual gatherings of farmers at the various Research Stations have proved exceedingly beneficial to both the Research Wing of the Department as well as to the farmers. To my mind, this is largely due to the increasing awareness on the part of our farmers to put into field practice the latest techniques of soil management and crop husbandry.

Second to none

It would be no exaggeration to say that the farmers of this State are second to none in quickly taking to improvements on all aspects of crop production. The great strides which this State has made in the matter of spread of improved strains, use of chemical fertilisers, growing of green manures, timely control of pests and diseases, provision of better irrigation facilities, reclamation of lands, adoption of soil conservation measures, etc., during the First and Second Plan periods, have been largely due to the keen interest and the hard labour put in by our farmers. I should say that it is their sustained effort that has helped this State to secure appreciable increase in Agricultural production and more particularly of food grains, cotton, oilseeds and sugarcane during the Second Plan period. On this occasion, I wish to compliment them on this unique service.

The more ambitious programme of increasing agricultural production launched in this State from 1961-62 under the Third Plan, demands still greater effort on the part of the Agricultural Department Officers and the thousands of farmers in the villages. The fact that the targets of increased agricultural production fixed for the Third Plan period are much more than the achievements of the two earlier plans put together, would show that their achievement will be no easy task. Only concentrated effort on the part of one and all would help us to reach the high targets. Hence I take this opportunity to appeal to farmers of this State to continue to strive for better production than in the past. With determined effort on their part, I have no doubt whatever that the increased production set for this State for the Third Plan period will be easily reached.

Crop Yield contests

To provide inducement to the farmers to step up production in their holdings, the scheme of "Crop Yield Competitions" has been in operation in this State for some

The Institute of Mathematical Sciences set up by the Government of Madras, was inaugurated recently at the Presidency College by Prof. S. Chandrasekhar, eminent Indian Mathematician, serving as Distinguished Service Professor in the Chicago University. Finance Minister Subramaniam presided.



years now in respect of paddy, millets, groundnut and sugarcane. The phenomenal yields recorded by the winners of these competitions is a matter over which any one can be proud. It clearly reveals the vast potentialities that exist in this State for increased crop production. The conduct of these competitions in a routine manner from year to year will not fulfil their objectives, viz., to increase the average acre yields of the crop over large areas. The experience of the winners of these competitions in maximising production should be widely published so that all other farmers begin to follow them. The winners of these competitions could also help the Agricultural Department in popularising their methods among the farmers in the neighbouring villages. I congratulate the winners of the competitions on their outstanding performance.

Coconut Production

Celebration of the "Coconut Week" every year has also been undertaken by the Department with a view to making known to the growers the improved techniques of planting and nurturing the coconut palm. It is gratifying to find that even in the matter of extending cultivation of coconuts and maintaining them on scientific lines our State Farmers have evinced special interest. This is quite evident from the fact that the demand for planting material from the Departmental nursery centres has considerably increased in recent years.

Similarly, raising of green manure crops and application of chemical fertilisers to the palm are also becoming increasingly popular in certain coconut growing areas. If only our farmers continue to maintain their interest in extended cultivation of the palm and the proper upkeep of the gardens, we can confidently look forward to achieving self-sufficiency in coconut production within the next few years. I, therefore, appeal to our farmers to pursue this work diligently as per the recommendations of the Department.

Adma Constructor

A barge equipped with "legs" 200 feet in length has been built at a shipyard in north-eastern England for use at the Umm Shaif underwater oilfield in the Arabian Gulf. The barge, also described as a mobile platform, has been launched at the Swan, Hunter and Wigham Richardson yard at Wallsen-on-Tyne.

It is 195 feet long and 90 feet wide, and has a 100-ton capacity crane which will be used to erect production towers and to service wells at the Umm Shaif Oilfield, about 60 miles from the Abu Dhabi coast. Named the *Adma Constructor*, the barge has eight hydraulic jacks, each of 600 tons capacity, capable of elevating it on its 84-feet-diameter, legs 35 feet above sea level.

Aboard the *Adma Constructor*, which has cost £1,250,000 is a three-storey deckhouse to accommodate the staff, and it has a helicopter platform. On the lower deck are the workshops. The barge has its own generators, distillation units for producing fresh water, air compressor units, and submersible pumps to lift sea-water supplies to the barge when it is raised above the sea.



FAMILY PLANNING IN MADRAS STATE

SRI R. A. GOPALASWAMI, I.C.S., *Chief Secretary to Government.*

The impression that the propaganda relating to family planning has made in the State and details of the actual work of propagation that has supported the family planning programme are described in this article by the Chief Secretary. Discussing the superior merits of the 'Sterilisation' method which is the main plank of the family planning programme in the State the author makes the point, with the aid of supporting figures, that its advantages are getting known in every district of the State. This article is presented in connection with Family Planning Day observed recently all over the country.

Five years ago, the Government of Madras appointed a Family Planning Board as the official agency for advising Government on how to organise and direct a programme of propagation of the practice of Family Planning by the people of this State. The Board undertook as its first task the formulation in precise terms of the advice which the Government should arrange to convey to every married couple. The advice runs as follows:—

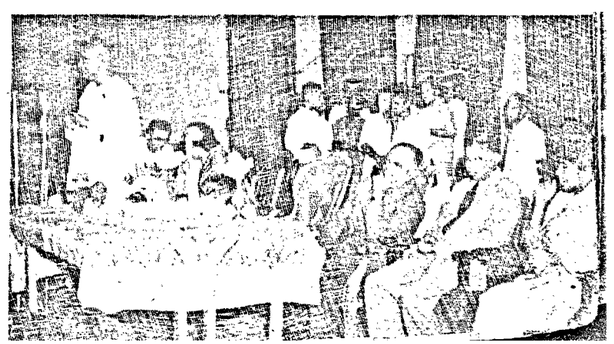
"After every confinement, try and make sure as well as you can, that there is an interval of at least three years before another pregnancy occurs. If the wife is weak or ailing, the interval should be longer-just as long as necessary for safeguarding her health.

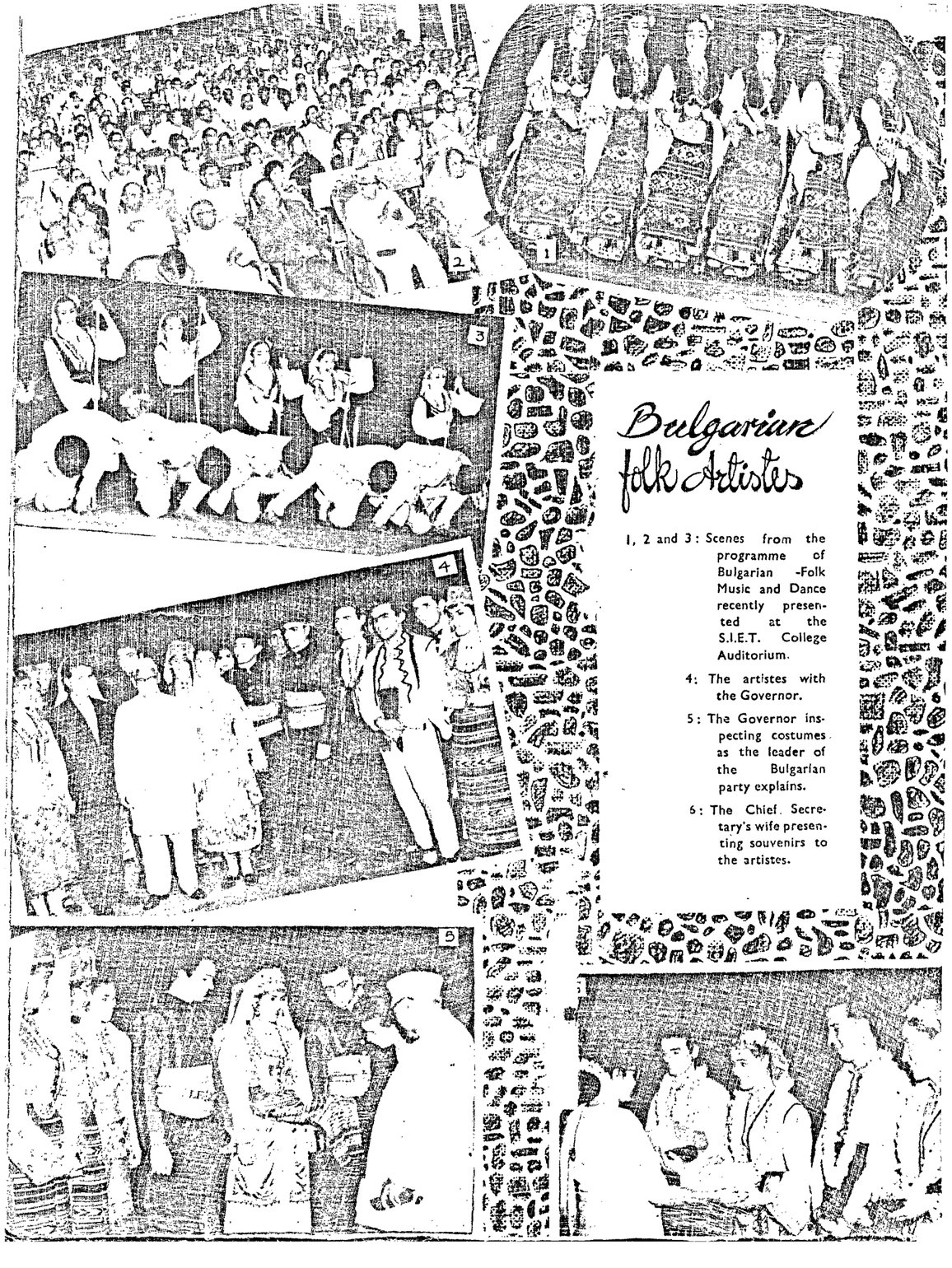
When three or more children have been born to you, make up your mind that it is time to stop. Make quite sure that no further pregnancy occurs, unless, there are altogether exceptional reasons to the contrary.

Do not imagine that it is necessary to give up conjugal union in order to avoid undesired pregnancy. It is not. If you practise family planning, you can have conjugal union and yet avoid undesired pregnancy. There are some ten crores of married couples in the world to-day who do this. You can be one of them, if only you make up your mind".

If this advice is to be acted upon, it is necessary to provide information about the various methods of Family Planning known to be available. This information had to be furnished in sufficient detail to enable each individual married couple to choose the method which was most acceptable to it. To this end the Family Planning Board arranged to prepare a Family Planning Manual which was brought out as a Madras Government Publication in September 1956. This manual has since served as the standard text-book on the basis of which workers are being

Works Minister, Kakkan addressing the meeting organised in connection with Family Planning Day at Teynampet Congress Grounds recently.





Bulgarian folk Artistes

1, 2 and 3: Scenes from the programme of Bulgarian -Folk Music and Dance recently presented at the S.I.E.T. College Auditorium.

4: The artistes with the Governor.

5: The Governor inspecting costumes as the leader of the Bulgarian party explains.

6: The Chief Secretary's wife presenting souvenirs to the artistes.

trained and instruction is being imparted to all who seek advice in Government Hospitals, Maternity and Child Welfare Centres, and other Family Planning Information centres in this State.

For those who are capable of reading and understanding a printed pamphlet, there is really no need for further instruction. The Family Planning Manual is adequate for purposes of self-instruction. That is why, in the initial stages, Government arranged for free supply of the Manual to all their employees and all the teachers in this State. The usefulness of the Manual came to be appreciated and sales to the public have increased steadily. During the last five years, 445,638 copies in Tamil and 97,347 copies in English have been distributed. The demand is still continuing and the fourth edition is being brought out to meet it.

These figures of sales constitute an encouraging indication that the Government's advice to every married couple is receiving acceptance at least in principle and there is a widespread desire for securing information on the subject.

Superior Method

The Family Planning Manual is an unusual document in that it is the first book on the subject ever published by any Government. It is an unusual document in another respect also, for probably it is the first to recommend "Natural" methods as well as "Surgical methods" in addition to the "appliance" methods, which alone are advised in Family Planning Clinics of the West.

The Manual recommends Vasectomy or "Husband-sterilisation" as well as "Salpingectomy" or "Wife-sterilisation". The superior advantage of these methods over all other methods is that they solve the problem once for all. The inconvenience of an operation is quite small and is undergone only once. Thereafter, the married couple have conjugal union without any precaution, expense, or irksome restraint. There is the greatest possible assurance that pregnancy will not occur again. The permanent character of the result also constitutes the limitation on the use of the methods. The Manual affirms that "they can be resorted to only at that stage of married life when both the husband and the wife (having had enough children) feel that there is no risk of their ever desiring another child".

Most advantageous

During the first decade of married life when the objective of Family Planning is only to "space" the child births and not to stop them, sterilization is out of the question and there is, therefore, no question of comparative merits. But, for those who have made up their mind to stop their career of child bearing, sterilisation is incomparably more advantageous than all other methods, even when other methods are open to them. For the vast majority of the people of this State who cannot afford to buy contraceptive appliances and who do not possess the privacy or other household conveniences necessary for their use, sterilisation is not merely the more advantageous method but is the only feasible method of family limitation.

Five years ago, these views about the relative advantages of different methods were only a working hypothesis based on a prior consideration. It was necessary to gain practical experience of the response of the people to the advice given to them. This had to be done in selected areas, under conditions of effective supervision and control, in order that lessons could be drawn on the basis of which a State-wide Campaign could be successfully organized. The programme operated by the Government of Madras during the last five years has been a large-scale pilot experiment carried out with this end in view.

Notable acceleration

Experience has decisively confirmed the working hypothesis with which we started five years ago. It may now be taken as established, that if reliance were placed exclusively on "Appliance methods" it is unlikely that the practice of family planning would spread beyond, at best a third of the population; and that too gradually over a decade or longer. It has also proved that "natural" methods have a definite but limited acceptability; and the large majority of people who will not take to appliance methods will not also take to "natural" methods either. Finally, and most gratifyingly, it has been proved that "surgical" methods can be made acceptable precisely to that large majority of people among whom it is a vain attempt to propagate other methods.

Our experience with sterilisation is best described in the number of sterilisations performed in the Family Planning Surgeries maintained or approved by Government. This was 695 in 1956, 1,804 in 1957, 2,850 in 1958, 3,343 in 1959 and 7,856 in 1960. Since then there has been a notable acceleration; the number of sterilisations performed during the first ten months of 1961 substantially exceeded the combined total of the five preceding years; the figure is 19,388.

Pilot Experiment

The pilot experiment was carried out mainly in Madras City for which separate figures are as follows:—

Four hundred and thirty-five in 1956, 660 in 1957, 1,204 in 1958, 1,291 in 1959 and 3,339 in 1960. During the first ten months of 1961, the number has risen to 19,481, which exceeds the combined total of five preceding years quite substantially.



Scene from the drama enacted in connection with Family Planning Day.

There are certain calculations which show that if the number of sterilisations which will be reached during this year in Madras City is maintained permanently year after year, the birth-rate of the City is sure to register a continuing fall from year to year, as it did in Japan. Japan succeeded in reducing its birth-rate by one-half over a ten-year period, mainly as a result of large-scale resort to induced abortion. Madras City can be regarded (in the present year 1961) as having entered the initial phase of a similar period of ten years or (perhaps even shorter) during which City's birth-rate will get halved. It will get halved mainly as a result of sterilisation.

Demand for Vasectomy

One other feature of these figures of sterilisation to which attention should be prominently drawn is the decisive superiority of Vasectomy (or the Husband-sterilisation method) over Salpingectomy (or the Wife-sterilisation method). In the year 1956 the number of vasectomies was insignificant. During 1957, the number of vasectomies was less than one-sixth of the number of Salpingectomies. During 1961, however, the position has been reversed and the number of vasectomies is not far short of six times the number of Salpingectomies. The relevant figures are furnished below :—

	Vasectomy (Husband-sterilisation).	*Salpingectomy (Wife-sterilisation).*
1956	25	670
1957	231	1,573
1958	986	1,864
1959	1,330	2,013
1960	5,184	2,672
1961 (first ten months) ..	17,048	2,340

The why of it

Both forms of sterilisation are equally harmless and equally effective as "once-for-all" methods of completing the child-bearing career of married couples. But there are many reasons why Vasectomy is preferable to Salpingectomy; vasectomy may be performed at any time, while Salpingectomy is usually performed immediately after confinement. Vasectomy does not need hospitalisation, while Salpingectomy does. Vasectomy is done under local anæsthesia; the patient remaining fully conscious during the short time it takes to complete the operation; and he walks off at the end of the operation.

It is, indeed, highly encouraging that these advantages are now getting known in every district of the State. Unlike Madras City where the work is fully developed, work has only just begun in the rural areas of other districts. Even so the message has spread everywhere as may be seen from the break-up figures for the first ten months of 1961 given below :—

Break-up figures

Name of district.	*Vasectomy (Husband-sterilisation).*	*Salpingectomy (Wife-sterilisation).*
North Arcot	1,072	81
South Arcot	248	63
Chingleput	76	45
Nilgiris	253	57
Coimbatore	739	343
Madurai	503	116
Ramanathapuram ..	540	71
Salem	776	107
Tiruchirappalli	1,369	93
Thanjavur	1,635	147
Tirunelveli	1,062	128
Kanyakumari	137	74
Reports from (private organisations in) mufassal districts.	7	165
Total mufassal districts ..	8,417	1,490
Madras City ..	8,631	850
Madras State ..	17,048	2,340

Responsibility of Panchayats

Three years ago, the Legislature of Madras State enacted a new law on the constitution and functions of Panchayats and Panchayat Unions. On the basis of this law, the entire rural population of this State have since been incorporated in over 12,000 Panchayats, which are united in 373 Panchayat Unions. As provided in the Act, the execution of the National Extension Service Scheme of Community Development and other related Development Schemes of the Third Five-Year Plan of the State has devolved on these new local authorities.

The preamble of the law declares that these changes are being brought out in order expressly to secure the realisation of two major national purposes. The first of these purposes is to see that the production of food increases from year to year so as to keep pace with the growth of population. The other purpose is to see that the growth of population is brought under control. The Act proceeds in pursuance of this aim, to declare the provision of advice to married couples about the practice of Family Planning to be one of the obligatory functions of the Panchayat Unions.

One other special provision of the new law is the requirement that there should be at least one woman member in every Panchayat and at least three women members in every Panchayat Union. This is a safeguard designed to bring about an awakening among the women folk of the rural areas in respect of the whole field of planned development generally, and the propagation of Family Planning in particular.

Educative programme

During the last eighteen months, an educative programme has been systematically carried out in order to bring home to the new local authorities, the full significance of the responsibilities placed upon them by the Legislature; the part they have to play in the implementation of the Third Five-Year Plan generally; and in that setting, in the propagation of Family Planning.

The educative programme is a continuous process and will extend over the next few years. In order to mark the culmination of the first phase of this educative programme all the Presidents of all the Panchayats of this State and all other Panchayat Unions Councillors, including women members were brought together two months ago in a State Panchayat Conference which was held in the City for two days. At this Conference, three resolutions were discussed and adopted at first in a large subjects-committee and later in full plenary session. One of these three resolutions which relates to the propagation of Family Planning formulated in precise terms, the duties to be performed by Panchayats and Panchayat Unions.

Duties Defined

The duties of the Panchayat as defined by the State Panchayat Conference are as follows: (i) To carry out a monthly review of births and deaths in the village and thereby ensure the availability of correct and complete information about the growth of population in the villages; (ii) to persuade all the families in the village in its charge to receive instruction in methods of family limitation provided by Panchayat Unions and in particular to ensure that every mother to whom a child-birth occurs receives instruction in family limitation within a period of three months before or after child-birth; (iii) to persuade every family to make its contribution to the Five-Year Plan by the adoption of the Small Family Habit and the abolition of *High order births* in the family; and (iv) to convince parents, about the efficacy and harmlessness of sterilisation as a method of family limitation; and, to that end ensure and pioneer sterilisation in adequate numbers.

The duties of the Panchayat Unions have been formulated in the following terms :—

(i) to organize the provision of systematic instruction in methods of Family limitation in the Block; and (ii) to maintain a regular review of the progress of the Family Limitation Programme of all the Panchayats in the Block and to assist, guide and co-ordinate the efforts of all the Panchayats.

Encouraging Facts

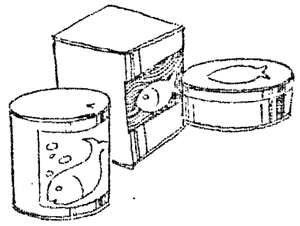
Five years ago, when the Government took their first step it was unthinkable that elected leaders, drawn from every village of the State could come together in a conference and therein full and serious deliberation define their own duties in this manner. That this has now happened is the most encouraging among the three encouraging facts described in this article.

These facts give us the assurance firstly, that the initial phase of pilot experimentation has been successfully completed; secondly, that the State-wide attack on the basic problem of controlling the growth of population has now begun in earnest; and thirdly, that Madras State can expect to solve this problem during the next decade as unmistakably as Japan achieved during the decade which ended only four years ago.

A view of the gathering at the Family Planning Day Celebrations.



CANNING



P. JAYACHANDRAN. *Research Assistant, Tuticorin.*

Canned foods are popular and sell well. More and more fruits and vegetables in India are preserved by canning. Why not fish too be canned for preservation? The author of this article makes a plea for the popularization of the fish canning industry in the country and explains why it is a sound proposition. He says that fish canning is good as a means of preservation, costs less and describes canning operations and the factors required for starting a canning factory.

The most ingenious method, so far discovered of preserving food materials is canning. In canned products the flavour, texture and taste of the original product are preserved faithfully. Canning as a method of food preservation was invented by a Frenchman. Nicholas Appert. For this discovery, he was richly rewarded by Napolean.

In India the method of canning is not quite popular. People do not take to canned food, because sometimes it is costly. Fish, during seasons of glut is preserved mostly by salt curing. Salt cured fish can be preserved for three to four months but the smell is disagreeable to many. However canned foods are becoming popular in the market and more and more fruits and vegetables are now preserved by canning.

Costs less

Canning as a method of preservation in retaining the texture and flavour of the products in their keeping quality is excelled only by quick freezing and deep frozen products. The frozen fish can be stored for six to twelve months but heavy expenditure is incurred initially and for maintaining them in that condition especially in a tropical country like ours. The capital cost on a cannery will be comparatively less and further no expenditure is involved during storage period and canned fish are mostly ready to be served at the table.

The fundamental principle of canning is the application of heat to foods in hermetically sealed containers at a temperature and for a period sufficient to destroy yeasts, molds and enzymes and to destroy or render inactive any bacteria likely to cause spoilage. Sterilisation means the absolute destruction of all organisms present and the maintenance of that condition. We cannot expect sterilisation to produce a sound article from inferior or partly decomposed raw material and thus sterilisation is more difficult in stale fish due to larger number of bacteria.

The canning operation consists of the following steps: washing, cleaning, cooking, filling, exhausting, closing, retorting and cooling. The fish is washed well free from slime and then cleaned. The type of dressing depends on the type of fish. Generally they are sealed or deshelled, the head, the tail, the fins and the entrails removed and sliced. After this preliminary dressing, they are cooked in boiling brine of 50° salinometer (1 lb. salt per gallon of water) or cooked in oil and drained. They are then packed in cans with the chosen sauce in oil and exhausted by placing the filled cans in boiling water for ten minutes.

Various other ingredients or spices are added to give flavour. Mustard sauce is prepared from the following ingredients: mustard, salt, pepper, cayenne, turmeric and other spices with vinegar. Tomatoe sauce may also be used. The cans are sealed, while still hot, to obtain a vacuum, with a can seamer. The sealed cans are sterilised at 120° C, 15 lb. pressure for 90 minutes. Immediately after sterilisation they are water cooled to prevent destruction of colour and flavour and adverse effect on texture, etc.

Factory Factors

The following factors should be considered in starting a canning factory :—

1. The raw materials must be cheap and available without wide fluctuation in prices and for the major part of a year. The species must be suitable for canning.

2. The site chosen must be as near the fishing area as possible. If a water front location is available it should be preferred. The depth of water should be sufficient for boat traffic. By prompt landing, a first class product is assured. A good sweep of tide will favour the removal of waste material.

3. The overall cost will be higher if the season is of short duration.

4. The finished product should reach the consuming centres by cheap transport.

5. Experienced labour must be available and it is desirable to employ many in view of the perishable materials but the overhead cost must be kept at the lowest level.

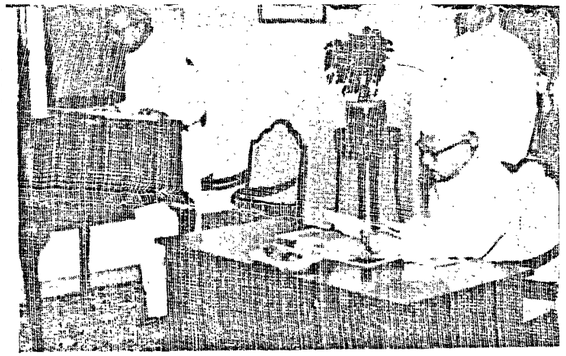
6. Plenty of water-supply should be available and the water used should be potable.

7. The capital required varies with locality, type of product, market conditions, etc.

The Right Centre

Tuticorin offers itself as the best place for starting a cannery in Tamizhnadu. Fish is available almost throughout the year. The Government of India are already having an Off-shore Fishing Unit. A deep sea fishing unit will be started soon in this place by our own Government. The supply of the desired species may also be augmented from neighbouring fishing villages. The existence of a cold storage enables one to preserve the fish until such time as is required. Tuticorin is connected with all important places by rail and road.

The Government of India have started an Export Promotion Council for marine products at Ernakulam "to do everything possible to diversify our exports both commoditywise and countrywise". Canned marine products form an important item to earn foreign exchange during the Third Plan period.



Swearing in ceremony of Sheriff Suryanarayana at Raj Bhavan.

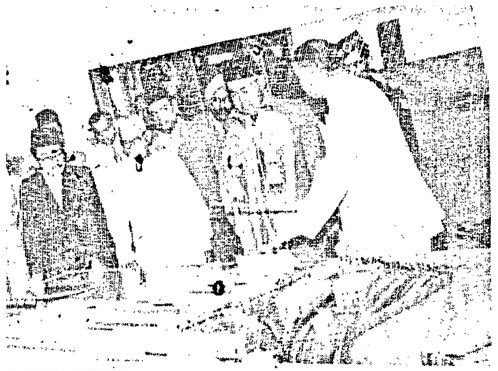
Union Defence Minister Krishna Menon, laid the foundation stone for the Heavy Vehicle Factory at Avadi recently. Chief Minister Kamaraj presided



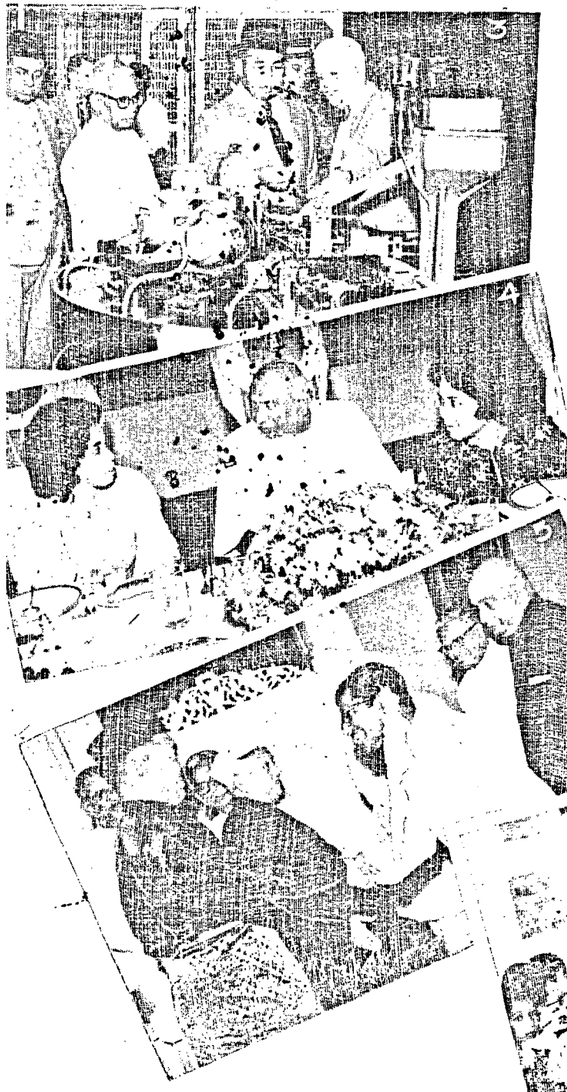
Jobs for the Blind

More than 500 blind people a year are now being put through courses in Britain by the Royal National Institute for the Blind and the Ministry of Labour, and they are proving that they are fully competent to take their place at the workbench alongside sighted operatives.

In conjunction with an engineering firm, the Institute has developed an extremely sensitive device designed to enable both blind and semi-skilled operators to carry out fine inspection of engineering parts, accurate to within 0.000025 inch. Known as the "Audible Comparator", it gives three clearly distinguishable tones which indicate whether the workpiece is of the correct thickness, too thick, or too thin.







1 : With the Governor and Chief Minister on arrival at the airport.

2 : At the Integral Coach Factory.

3 : Visited T. I. Cycle Factory in Ambattur.

4 : The Queen with the Chief Minister at Raj Bhavan Dinner.

5 : King meets Ministers at Raj Bhavan.

6 : The Queen visited the Tambaram Service Home

7 : At Mahabalipuram.



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HANDLOOM INDUSTRY LOOKS UP

The Handloom industry faced a critical time during the early fifties. But with the setting up of the All-India Handloom Board, measures were initiated to rehabilitate the industry and it has since been placed on a firm footing, all development measures having been canalised through the medium of co-operative societies, considering the dispersed nature of the industry. Thanks to these measures and the good work done, the Handloom industry is looking up and its future is bright. This article is presented in connection with All-India Handloom Week, celebrated recently.

Under the Third Five-Year Plan, the production of cloth in the handloom sector is envisaged by 1965-66, at 2,800 million yards, out of the total target (for all the sectors of the cotton textile industry) of 9,300 million yards. The Handloom industry occupies a very important place in the country today, mainly for two reasons; firstly, it accounts for about 30 per cent of the actual requirements of cloth, and secondly, its employment potential is immense.

Before the Government took steps for rehabilitating the industry, when it faced serious difficulties following the cessation of the Second World War, the estimated production of handloom fabrics was 1,100 million yards; and today it is nearly 1,900 million yards. To tide over the crisis that enveloped the industry arising out of large accumulations of cloth in the early fifties, the Government of India set up the All-India Handloom Board in 1952, not only to take measures on short-term, but also long range basis, to rehabilitate and expand the industry.

A Living Tradition

In fineness of texture and dexterity of weaving, in beauty of designs and harmony of colour, hand woven fabrics are the best in the World. Each piece is an individual creation imparting an exclusive touch to the garment. Being India's most important traditional cottage industry, Government could not afford to let such a living tradition disappear from the economy of the country.

In order, therefore, to put the industry on a firm footing, the All India Handloom Board set about its task, starting first with the canalising of all the development measures through the medium of co-operative institutions considered to be the best course, taking into account the dispersed nature of the industry. The measures for rehabilitating the industry were to be in the direction of encouraging an adequate supply of suitable yarn, establishing marketing organisations, both inside and outside the country, promoting research, improvement in designs, etc., and better techniques of production, training of personnel, arranging for supply of improved appliances, etc. It will be of particular interest to know the salient features of the progress of the various schemes during the last nine years.

Uniform Pattern

The assistance that was given to the State Governments for the implementation of the various schemes came through the Cess Fund by the levy of additional excise duty on mill cloth, and with the abolition of this Cess Fund from April 1960, funds are being sanctioned from the general revenues. The State Governments are responsible for implementing the various schemes for which loans and grants under the ceiling share for each State are made available in accordance with the pattern of assistance laid down in the general principles for the purpose of adoption of a uniform pattern in all the States.

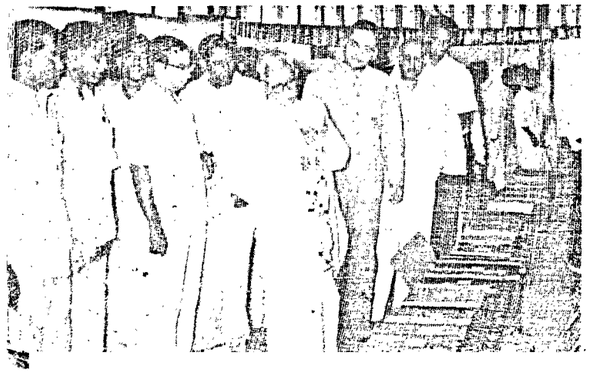
The first step taken, was in the direction of bringing the weavers into the co-operative fold by making them members of the Societies. As a result, the number of weavers in the co-operative fold has increased from 7 lakhs in 1952 to 12 lakhs now. Having given assistance for the formation of co-operatives the next step was to provide them with adequate facilities to carry on their production and marketing programme for which loans are being advanced. From 1st April 1957, the societies obtain their financial credit requirements from the Reserve Bank of India, through the States and Co-operative Banks.

Marketing

To overcome the difficulties faced by the weavers in marketing, steps were taken to provide financial assistance for opening of sales depots and primary works Co-operative Society setting up inter-State depots, running of mobile vans, push carts, etc. The measures have now brought into being more than 1,600 sales depots and 33 inter-State depots, 49 central depots and 38 mobile vans in the country. Amongst other measures taken for the sales promotion activities, the scheme of giving rebate on the sale of handloom fabrics deserves special mention.

Another aspect by way of supplying the weavers with improved appliances for stabilising the industry and competing with the organised mills, was not lost sight of. These implements will not only increase the production, but also improve the quality of cloth. Loans and grants are, therefore, being sanctioned for the setting up of dye-houses, pattern making factories, finishing and calendering plants, supply of improved appliances like jacquards, dobbies and drop boxes, etc. The weavers are slowly developing a progressive outlook and as a result of this scheme, there are now working 10 calendering and finishing plants, 482 dye-houses and 49 pattern making factories in different parts of the country.

Home Minister Bhakthavatsalam who recently declared open the Uthukottai Panchayat Union Office is seen going through the Panchayat records exhibited on the occasion.



The decentralised nature of the industry is such that the handloom weaver has to function in isolation from the advantages of research work in textile laboratories; but still he has to meet the rapidly changing tastes of the consuming public and adjust his pattern of production to these changing needs. The importance of setting up suitable machinery to cope with the changing fashions and evolving new patterns and designs, was more increasingly felt.

The Handloom Board has, therefore, set up a network of Weavers' Service Centres at Bombay, Madras, Calcutta, Varanasi and a Sub-Unit at Kancheepuram, which are now functioning as units interpreting the new demands of production units, giving advice on weaving techniques, on yarn dyeing, fastness of dyes, etc. These centres carry out research and enable the production units to function efficiently. A centre has recently been set up at New Delhi and it is proposed to establish more such centres in other important places of the country during the Third Five-Year Plan.

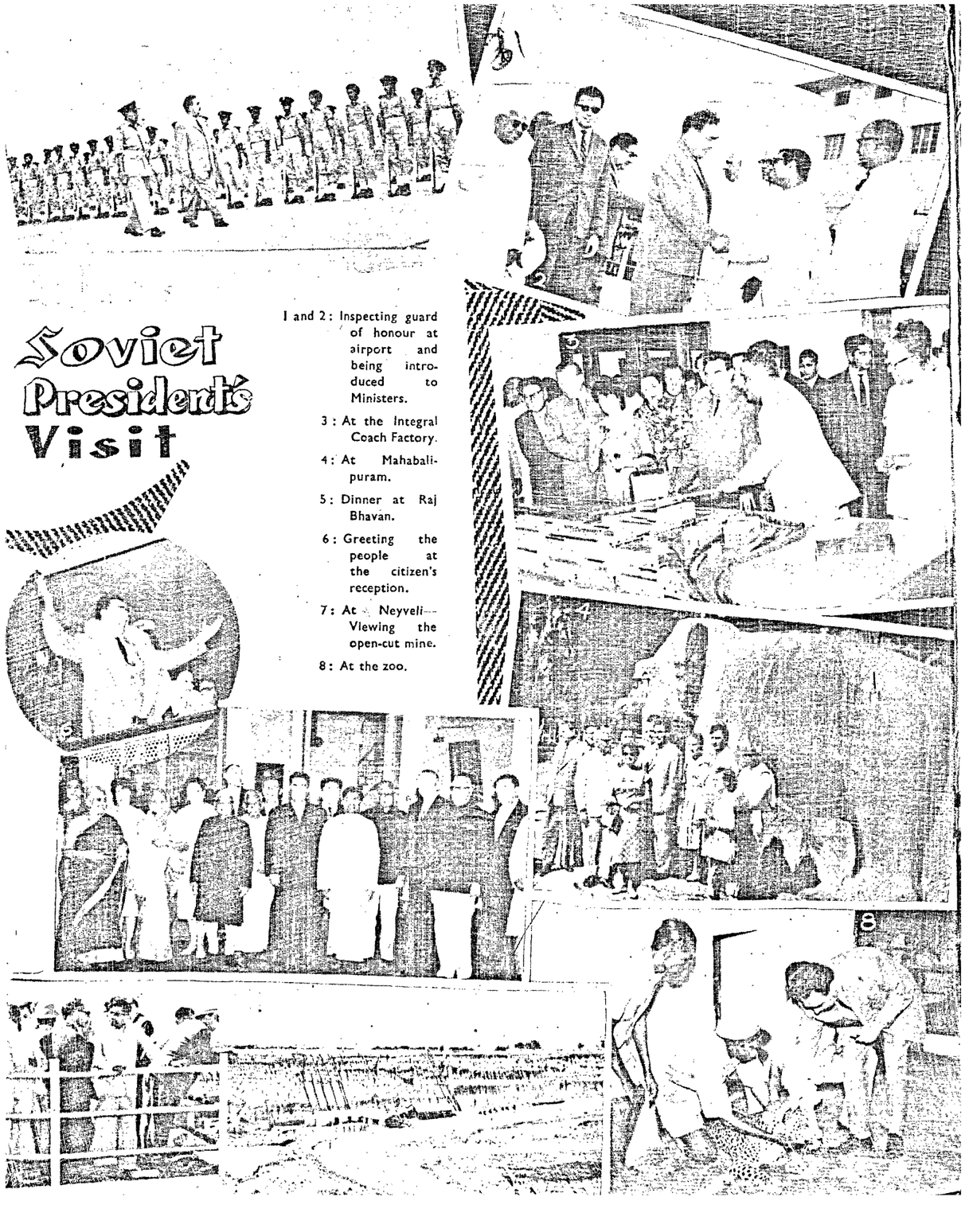
Weavers Training

In pursuance of the suggestion of the Working Group the Weaver's Service Centres have a training scheme for weavers, dyers, pattern makers, etc., who are already employed in the Co-operative Societies or in a Government establishment and the training lasts for 4 months at present in weaving and dyeing. A programme of training by observation has also been formulated in the Weavers' Service Centres to enable experienced supervisors of handloom production centres and weavers, to learn the techniques of work carried on each loom and discuss with the technical staff of the centres. Besides, the above centres, the Handloom Board is running two Central Institutes for Handloom Technology, Central Weaving Institute, at Varanasi and the Textile Institute at Salem. The institutes of Handloom Technology are designed to train technical personnel required for the development of the handloom industry in its various aspects.

Co-operative Spinning Mills

The spinning mills supply yarn to the handloom industry through normal channels. To overcome the difficulties experienced by the industry in getting this important raw material at reasonable prices, it was decided to establish Co-operative Spinning Mills by the Co-operative Societies to enable them to obtain yarn required not only at reasonable prices, but also reduce their dependency on the mills. Eleven co-operative spinning mills have been sanctioned so far, out of which three have already gone into production.

With a view to help the weavers, who have no looms of their own or were thrown out of employment from factories, the Handloom Board decided to extend financial



1 and 2: Inspecting guard of honour at airport and being introduced to Ministers.

3: At the Integral Coach Factory.

4: At Mahabalipuram.

5: Dinner at Raj Bhavan.

6: Greeting the people at the citizen's reception.

7: At Neyveli—Viewing the open-cut mine.

8: At the zoo.

assistance for the formation of industrial co-operatives. In pursuance of this, some industrial co-operatives were set up in Kerala and Madras States. In the light of the recommendations by the Working Group, the pilot schemes for provision of employment to loomless weavers is being implemented in Madras State and it is expected that with the introduction of this scheme, more and more weavers will be benefited.

Housing

The problem of housing the weavers has been acute, and in order to give them proper housing-*cum*-work facilities, Government has formulated a scheme for the purpose, by giving financial aid to such of those weavers who needed it. This assistance is given for the construction of new houses or repairing or renovating their existing houses. Under this, fifty-eight housing colonies for the construction of 6,872 houses have been sanctioned so far, out of which 2,401 houses have been constructed, while 1,560 houses are now in various stages of construction.

Publicity, which is so essential for the promotion of the industry is also receiving its due attention. Publicity and propaganda, being undertaken by the Handloom Board, include press advertisements, neon-signs and hoardings, printing of folders, participation in exhibitions, etc. Due to competition from China, Japan and Hongkong and more particularly to the restriction imposed by the importing countries, there has been a decline in the export of handloom fabrics to the traditional markets. One of the active steps taken by the Government is the establishment of All India Handloom Fabrics Marketing Co-operative Society with a view to expand the export activities for the Indian handloom fabrics in the foreign markets. This society is now running sales emporia at Singapore, Bangkok, Colombo, Aden and Kuala Lumpur. Another organisation called the Handloom Export Organisation (H.E.O.) has been set up under the State Trading Corporation to explore the possibilities of export to the non-traditional markets, like U.S.A. and the Continent.

A scheme of inspection and quality marking of handloom fabrics to face the competition in the overseas markets, is in operation. The main objective of this scheme is to set up the necessary machinery which would ensure the standards of quality and also create mutual confidence between the exporters and importers.

Since the Handloom Board was set up, a sum of Rs. 37·75 crores (as loans and grants) for various schemes had been sanctioned during the year 1953-61, and a sum of Rs. 35 crores had been spent. For the development of the handloom industry during the Third Five-Year Plan period, an outlay of Rs. 34 crores has been provided.

The rising trends of improvement in the handloom industry are indeed visible today in no small measure and the implementation of various schemes have, no doubt, paved the way for the consolidation of this large and most important cottage industry. Combined with proper guidance and assistance from the Government and the continued patronage of the consumer, it is hoped that the record of progress of the industry will be more impressive and it will rise to the occasion and justify its role in the national economy of the country during the years to come.

Training for Three Lakhs Industrial Workers

About three lakhs industrial workers would be given training during the next 5 years under the Workers' Education Programme. For this purpose, sum of Rs. 2 crores has been provided in the Third Plan. Already 17,136 workers have been trained and about 8,000 are under training. Additionally, the 12 regional centres set up by the Central Board of Workers' Education have trained 1,405 worker-teachers besides 220 who are under training. It has been decided to open four more regional centres and over 200 additional primary centres during the next year. Against Rs. 18·74 lakhs provided for 1961-62, it is hoped about Rs. 32 lakhs will be spent on Workers' Education in 1962-63.

A News Report

The Midday Meal for better Learning

The Midday Meals Scheme is based on the philosophy that education is better received when nourishment is satisfactory and ill-received on a hungry stomach. The scheme is being gradually extended to cover areas in the State which do not enjoy the advantage of its benefit. Recently, the scheme was inaugurated in the elementary schools of the T'Nagar Range, Madras, by the Director of Public Instruction, Mr. Robert L. Soltz presiding. This feature gives a report of the function.

The Midday Meals Scheme in the Elementary Schools of the T'Nagar Range was recently inaugurated in a special pandal put up in the T'Nagar High School, by Sri N. D. Sundaravadivelu, the Director of Public Instruction. Mr. Robert L. Soltz, Administrator, Co-operative for American Relief Everywhere, was in the chair. Sri T. S. Palniappa Pillai, President of the T'Nagar Area Committee of the Midday Meals Scheme, welcomed the guests. A welcome address in Tamil was presented to the Director by the children and an address of thanks-giving in English to the people of the United States of America for the CARE gifts was presented to Mr. Soltz.

The report read on the occasion by the Deputy Inspector of Schools, T'Nagar Range, stated that fourteen aided elementary schools in the range were being fed. A cultural programme of kummi, kolattam and dance was presented by the children of the T'Nagar Elementary School.

Better learning

The Director in his speech gave an account of the working of the Midday Meals Scheme in the State and felt happy that all teachers as well as the general public had taken up the scheme with enthusiasm and were working it to satisfaction. He said the scheme considerably helped children to learn better and pointed out the need for uniform dress for all children and teachers and appealed to every earning member of the public to contribute at least a naya Paisa for every rupee that he earned. The resources so pooled could be utilized for feeding and clothing the children, he said.

Mr. Soltz said he was happy to observe the Midday Scheme being implemented very well and the additional work on account of CARE gifts being borne without complaint. Mr. C. Bakthavatsalam, Secretary of the Midday Meals Committee, proposed the vote of thanks.

Science Block inaugurated

At another function the Science Block of the T'Nagar High School was declared open by Robert L. Soltz. He observed that science was being given great importance in Indian Schools and that teachers and educationists could well be proud of the good work being done.

Sri N. D. Sundaravadivelu, who presided said that the teaching of science should not degenerate into mere dictation of notes but should be largely experimental and that laboratory facilities should be put to maximum use and children should be provided opportunities to experiment on their own.

Sri T. N. Sundaram, the Headmaster, pointed out that a grant of Rs. 37,500 was received from Government against a total expenditure of Rs. 50,485 towards the building of two laboratories, laboratory furniture, apparatus and appliances. He thanked the Director for sanctioning the scheme and the State Government for the grant.

The guests were later taken round the Science Block where a Science Exhibition had been arranged by the teachers and students.

Sri N. D. Sundaravadivelu, Director of Public Instruction, inaugurating the Midday Meals Scheme at T.Nagar.



Experiments in the State

RAIN AT MAN'S COMMAND



Experiments on artificial rain making are being carried on the world over and the trials conducted have been significant. To augment natural rainfall to the extent possible, experiments on cloud stimulation have been carried on in Madras State from 1953. Experiments are in progress even now and results have been obtained. The agriculturist is vitally interested in these experiments. An account of the work done in the field in Madras State is given in this article.

Frequently one sees clouds that appear to carry precipitable water pass over tracts of land without shedding any rain. One wonders, especially the one in need of rain, whether there is any method of drawing rain from these clouds.

As all rain is a result of clouds dropping its water content, conditions in nature in which rain does not occur can usefully be stimulated, if an effective method of such stimulation can be devised. Clouds are composed of water droplets, generally very minute, and unless these join together to form a suitable sized rain drop, there is no rain. Under conditions of natural rain, there apparently exist sufficient number of large-sized nuclei of foreign hygroscopic matter, round which water collects under favourable weather conditions. At times when this does not occur, rain-bearing clouds may pass over a country without dropping any rain. This is generally due, among other things, to the absence of sufficient number of nuclei of the right size in the cloud regions.

Various Devices

It is to remedy this defect that attempts have been made for some years past, to artificially supply the nuclei of right size in adequate quantities, adopting various devices. The most common method, which has been used in U.S.A., Australia, etc., is to send up fumes of Silver-iodide from electrically fired ground generators. Enormous number of experiments have been made in this manner and success has been claimed for the process, both in U.S.A. and Australia. In countries like Australia, Russia, etc., aeroplanes have been used to drop dry ice, or fine crystals of Silver-iodide directly into the rain-bearing clouds over a wide front. Significant success has been claimed for these methods. The conditions of clouds in these countries correspond to what are known as supercooled clouds, with temperatures in a major portion of the cloud below 0° C.

But in many parts of India clouds are of warm types, to seed which a slightly different process is called for. The principle is not very different. In the place of Silver-iodide, suitable salts like a mixture of Calcium Chloride and common salt is fired from ground generators. It is observed that the smoke rising from these generators is carried by the upward draught of the wind into the clouds when conditions are favourable. This provides the necessary additional hygroscopic nuclei to cause a kind of trigger effect on the rain-bearing clouds. The result is some rain, the magnitude of which again depends on a number of other favourable weather conditions. This in short is the process which has been in vogue in the matter of cloud seeding experiments in the Madras State.

Chief Minister, Kamaraj recently declared open the new buildings of the Government Hospital for College Boys, Harijan Welfare Department at Saidapet. Works Minister Kakkan presided.



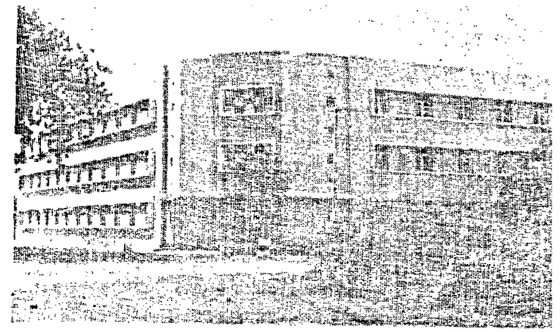
First Experiments

In actual practice a handful of salt mixture is placed in an iron pan 12" to 15" in diameter. This salt mixture is disintegrated into minute particles at the high temperature of the electric arc. The whole thing is carried out in a drum-shaped vessel 2½' to 3' in diameter and 5' high, lined with fire clay, the smoke from which issues through a ventury-shaped chimney about 1' diameter and 40' high, held to the ground by stay wires.

Sri V. K. Sethuraman for the first time initiated the seeding experiments on the above lines in Madras State in 1953 and 1954 and reported some results. On this, in November 1954, the Honourable Minister for Agriculture Sri M. Bhakthavathsalam convened a meeting with Chief Engineer (Irrigation), Chief Engineer (Electricity), Director of Agriculture, Sri A. R. Venkatachari and Director, Regional Meteorological Centre, Madras, at which the question of conducting more extensive experiments on cloud seeding was discussed using known and comparatively cheap techniques, the object being to augment natural rainfall to the extent possible.

Some Results

In accordance with this, a series of experiments were carried out in 1955 and 1956 in the Nilgiris, Madras, (Mylapore) and one or two other areas. In 1958 experiments were started at Coimbatore from a generator located on the terrace of the Agricultural College and Research Institute, Coimbatore. These experiments are in progress even now and some results have been obtained. It has been found very difficult to evaluate these results in a manner satisfying the rigorous specifications of scientific research and statistical requirements. The general feeling among the officers who conducted these experiments and the members of the several committees who have examined these results, is that on some days, at least, the seeding has produced results, which may in common parlance, be called significant.



A view of the new hostel building.

Main Difficulty

The main difficulty is to distinguish the results of seeding from those due to the natural pattern of rainfall, which would have been obtained on the same day, if no seeding had been done. More recently, the new method of random number seeding, in which on some seedable days, no seeding is done, while on others, seeding is done in accordance with a table of random numbers, is in operation. This has been in use only for about a year now. Though the method is an improvement it is too early to say whether it will lead to more definite conclusions.

The above represents in short the present position in regard to the seeding experiments in the Madras State. In these experiments we have had the useful collaboration of the Director, Regional Meteorological Centre, Madras. The Advisory Committee for Rain and Cloud Physics attached to Council of Scientific and Industrial Research, New Delhi, has also been helping us. This committee has planned and is executing a much more comprehensive scheme of experiments in and around New Delhi. Their assistance is promised for the seeding experiments at the Tiruchirappalli Centre in Madras State.

Promoting Education Overseas Through Television

The setting up of a centre to promote education through the medium of television in oversea countries has been announced in London. Grants totalling £ 100,000 over five years have been promised by the British Government to support its activities, which will concentrate on the needs of oversea television services, particularly those in developing countries.

To be known as the Centre for Educational Television Overseas, the organization will be a private, non-profit-making company whose sponsors will include the British Broadcasting Corporation, the independent television companies, the Nuffield Foundation, the Gulbenkian Foundation, Rediffusion, Ltd., and Unilever, Ltd.

A Report

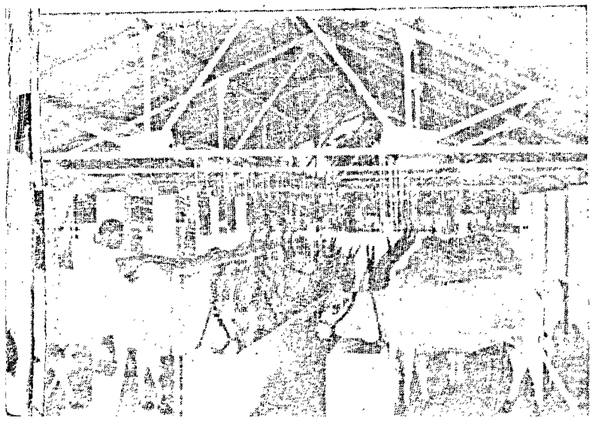
Pudukkottai Livestock Farm

DR. D. PATTABHIRAMAN, *Director of Animal Husbandry.*

Aided by a sum of Rs. 50,000 sanctioned for the purpose by Government, additional buildings have recently been constructed at the District Livestock Farm, Pudukkottai. The Hygienic Milking Byre was recently opened at the Farm by Sri V. Ramiah, Minister for Electricity, the Works Minister Sri Kakkan presiding. A building for the Poultry Extension Centre at Tiruvarankulam was also declared open by Sri Ramiah. In the report issued in connection with the functions, Dr. Pattabhiraman, Director of Animal Husbandry, has given a short account of the Pudukkottai farm including a short note on the Tiruvarankulam Poultry Extension Centre. This feature gives the substance of the report.

The District Livestock Farm, Pudukkottai, was taken over by the Animal Husbandry Department on 5th June 1961 consequent on the merger of Pudukkottai State. This farm is situated in Pudukkottai Town itself. The area of the farm when taken over was 7·05 acres, of which 5·95 acres of land was utilised for raising fodder grass. At the time of taking over there were only 103 heads of cattle consisting mostly of cross-breeds and Sindhi and a few of Kangayam and non-descript. Since most of the above stock did not conform to the breed characteristics they had to be culled out and disposed of and a few animals of descript breeds of Sindhi and Kangayam of known pedigree had to be transferred from the Livestock Research Station, Hosur, to this farm to serve as a foundation stock for building up a good herd of Sindhi and Kangayam at this farm.

The Hygienic Milking Byre recently opened at the Pudukkottai Livestock Farm.

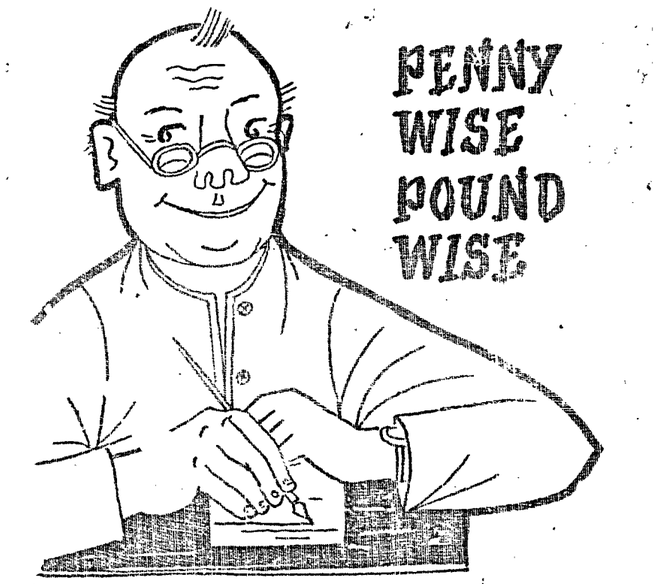


The main object of taking over of this farm was (i) to meet the local demand for pedigree stock of descript breeds of bulls, (ii) to serve as a demonstration centre for the district on modern Animal Husbandry practices and (iii) to raise a dairy for the supply of milk to the public of Pudukkottai Town.

Contest Winners

At present there are 473 heads of cattle consisting of Sindhi, Kangayam and graded Sindhi. Since the area of the farm was considered small and could not afford enough facilities for the maintenance of increasing cattle, it was found necessary to acquire some more area so as to improve the farm on modern lines. Accordingly 990 acres of reserve forest lands were taken over from the Forest Department on 28th May 1957 at Machuvadi area which is about four miles from Pudukkottai Town of which at present 890 acres have been cleared and about 430 acres have been brought under cultivation. Roads were also formed and 6,900 avenue trees planted. During the short period of three years most of the area has been developed into high fertile lands. Hundreds of people who have practically no other means of earning their livelihood are employed in attending to the farm operations and their economic condition has improved to a considerable extent. The original available graded Sindhi stock of the farm were bred to pure Sindhi Bulls during the last ten years and the present Sindhi stock phenotypically and genotypically conform to the breed characters of Sindhi.

During the All-India Regional Cattle Show at Bangalore in 1958, Sindhi cow No. 83 of this farm won the first prize for the highest milk yielding Red Sindhi cow competition at the show. In addition three cups were also won by this Sindhi cow under the All-India competitions.



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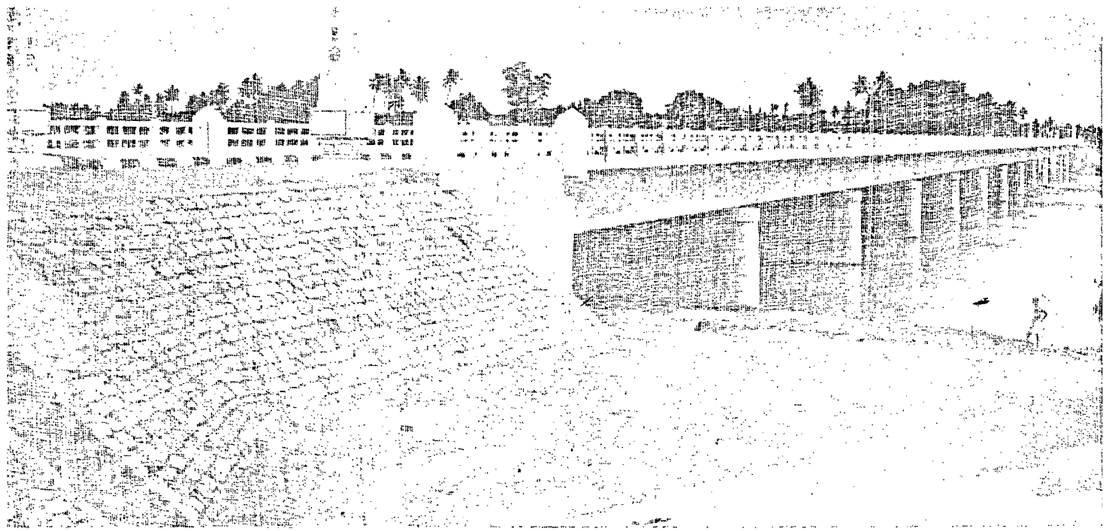
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New bridge across Vaigai near Madurai recently declared open by the Chief Minister.

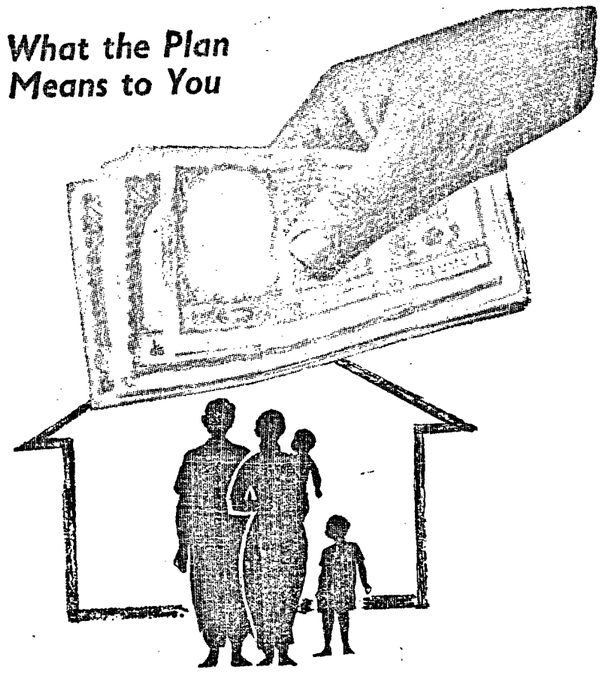
In the year 1960-61, Sindhi cow No. 86 from this farm won first prize in milk yield competition at the 4th Madras State Cattle Show at Madras. Another Kangayam cow No. 191 of this farm also won the breed championship for animals of the best draught type cow of the show in the All-India Cattle Show held at New Delhi in 1959-60. Vast improvement has been registered at this farm for improving the quality of milch stock. The reasonable improvement in stock observed in and around the area is mainly due to the supply of descript bulls from this farm. The value of the stock in villages has also gone up considerably.

Poultry Extension Centre

The Poultry Extension Centre at Tiruvankulam was started during the Second Five-Year Plan under All-India Poultry Development Scheme in 1956-57 with a foundation stock of 100 birds. During the past five years, a large number of birds have been hatched out, resulting in the distribution of a number of cockerels to the block areas.

Textile Industry Expansion Programme: 10,000 Automatic looms to be licenced

The Government of India have decided to license 10,000 automatic looms in units of 500 each as part of the programme of expansion of the textile industry during the Third Plan period. Licences will be issued subject to the condition that 75 per cent of the cloth produced on these looms should be compulsorily exported. Failure to carry out this obligation will entail a penalty which will be related to the shortfall in the export performance. For a unit with 500 looms, the matching spindlage will be of the order of 25,000 spindles. The allotment of the new looms will not be on regional considerations, but will be solely on the basis of the ability of the applicants to discharge their export obligation.



Rs. 275 MORE PER FAMILY

Average annual income per family, by the end of the Third Plan will go up to Rs. 1,925 as against Rs. 1,650 in 1960-61.

Help make the Plan a success to increase your income and ensure

THIRD FIVE YEAR PLAN — **A Good Life for Everyone**

Seafaring Traditions



This article on Navigation in ancient India by B. Ch. Chhabra has significance not only as an Archaeological Centenary feature but also has special interest in consideration of Navy Day celebrated recently all over the country. The seafaring traditions and maritime exploits of the sons of the soil date back to the dim past and if within twelve years the Indian Navy has grown very rapidly, the pace of progress is easily understood in the light of the excellent background the country has had the benefit of in the field of navigation.

India was in the forefront in the field of shipping and ship-building. Her ships, flying Indian flags, sailed up and down the Arabian Sea, the Indian Ocean and far beyond. Her master-mariners led the way in navigation. Riverine traffic within the country, shipping along the entire length of India's coastline, and on high seas was brisk until as recently as the days of the East India Company.

It would have been odd indeed, if, bounded on three sides by the great ocean, and gifted with a remarkable spirit of enterprise and invention, India had registered no advancement in the sphere of navigation, while she had gone far in other arts and sciences. Recent research has firmly established the obvious; in olden days India's navigation system was second to none in the world.

A Sanskrit couplet says: "For a man of daring and determination, the wide world is but a courtyard; the ocean a mere channel; the nether world only a playground; and Mt. Sumeru a mere ant-hill."

Industries Minister Venkataraman photographed on arrival at the airport from the United Nations where he had served as a member of the Indian delegation.



Wonderful achievements

This ancient couplet expresses the spirit with which the ancient Indians were imbued and which accounts for their wonderful achievements on land, beyond seas and across mountain barriers. There is indeed evidence to show that even before the advent of the Indo-Aryans in India, the sons of the soil were adept in navigation both riverine and oceanic. Right from the dawn of history, therefore, Indians have been engaged in plying boats and ships, carrying cargo and passengers, manufacturing vessels of all types and dimensions, studying the stars and winds, erecting light-houses and building ports, wharfs, dockyards and warehouses. From rustic beginnings they developed a precise science of navigation and composed regular manuals as well as elaborate treatises on the subject, some of which survive to this day. Thanks to the research conducted during the past century mainly in the fields of literature and archaeology, we have gathered a mass of information on the subject, which is, moreover, constantly being augmented.

It is noteworthy that the very term *navigation* is derived from *nau*, which is the Sanskrit word for 'ship' or 'boat'. The same *nau* or *nav* as well as its synonym or diminutive *nauka* is even now commonly used in Hindi and other cognate languages. Thus *nava gatih* 'going in a boat' amounts to 'navigation'.

Sanskrit literature is full of references to river transport and sea voyages. Sometimes we have graphic descriptions of fleets, even of shipwrecks. The *Rigveda* is taken as the earliest extant work of the Aryans, though there is no general agreement as to its exact age. Tradition ascribes it to a hoary past, while the archæologists place it between 2500 B.C. and 1500 B.C. Anyway, it mirrors the life of early Indo-Aryans faithfully, wherein rivers and seas, boats and ships play an important part. At one place, Rishi Kutsa Angirasa prays to Agni: "Remove our foes as if by a ship to the yonder shore. Carry us as if in a ship across the sea for our welfare". Here the reference to a ship and the sea is only by way of similitude.

At another place, we have what appears to be an historical fact, recorded by Rishi Kakshiyat. It is an episode of Bhujyu, son of Tugra undertaking a voyage in the Indian Ocean, experiencing a shipwreck and rescued by the Asvins. The terms denoting the manned ships and the vast expanse of the bathomless ocean in this context are significant.

In Valmiki's *Ramayana*, we come across beautiful descriptions of large boats plying on the Ganga near Sringiberapura. King Guha of that place arranges a magnificent boat for Rama accompanied by Lakshmana and Sita, in exile, to enable the party to cross the river.

When Bharata comes later to the same place, with the whole royal household, citizens of Ayodhya and a large army, with the intention of bringing Rama back to Ayodhya from exile, the same King Guha, suspecting Bharata's intentions, takes precautionary measures by ordering five hundred ships, each manned by one hundred youthful mariners to keep in readiness, should resistance be necessary.

When Guha is convinced of Bharata's good intention, however, the same fleet of five hundred ships transports Bharata and his army to the other shore. The description of the ships is noteworthy:

"Some (of the ships) reared aloft the *svastika* sign, had tremendous gongs hung, flew gay flags, displayed full sails and were exceedingly well built."



Industries Minister Venkataraman with Chief Inspectors of Factories from various States on the occasion of the 13th Conference recently inaugurated in the City by the Minister.

The ship chosen for Bharata, Satrughna, Kausalya, Sumitra and other ladies of the royal household had special fittings and furniture such as yellow rugs. It also displayed the insignia of *svastika*.

In the *Mahabharata* there are many references. The ship contrived by Vidura for the escape of Pandavas had some kind of mechanism fitted in it: "the ship strong enough to withstand hurricanes, fitted with machinery and displaying flags."

Panini, who flourished about the 7th Century B.C., in his *Ashtadhyayi*, has incidentally recorded certain usages which reflect in a way the maritime activity before and during his days in India. According to one *sutra* various types of small river craft were in use, and their names were *utsanga, udupa, udyata, utputa, patika*, etc. A large boat was called *udavahana* or *udakavahana*. Of special interest is the distinction made between cargo coming from an island near the coast and those coming from mid-ocean islands: the former were called *dvaipya*, and the latter *dvaipa* or *dvaipaka*. Certain other *sutras* speak of ferry charges, cargoes, marine trade and the like of those days.

Chandragupta Maurya's minister, Vishnugupta Chanakya *alias* Kautilyaa, the celebrated author of the treatise on statecraft, *Kautiliya Arthasastra* of about 320 B.C., devotes a full chapter on the state department of waterways under a Navadhyaksha 'Superintendent of Ships'. His duties included the examination of accounts relating to navigation, not only on oceans and mouths of rivers but also on lakes, natural or artificial and rivers. Fisheries, pearl-fisheries, customs on ports, passenger and mercantile shipping, control and safety of ships and similar other affairs all came under his charge.

Jaina scriptures, Buddhist *Jatakas* and *Avadanas* as well as classical Sanskrit literature, abound in references to sea voyages. They acquaint us with many interesting

details as to the sizes and shapes of ships, their furniture and decorations, articles of import and export, names of sea-ports and islands, in short, everything connected with navigation.

There is an encyclopædic work in Sanskrit, called *Yuktikalpataru*, ascribed to King Bhoja. It treats of jewels, swords, horses, elephants, ornaments, flags, ships and the like. The chapter on ships constitutes a manual on ship building. It gives directions as to the kinds of wood to be used for ships and boats, classifies the different types of vessels, and shows how to fit them with necessary furniture for the comfort of passengers. Three classes of ships are distinguished according to the length and position of their cabins : *Sarvamandira*, *Madhyamandira* and *Agramandira*.

Archæology amply supports literary record. We start with the Harappa Culture which, according to archæologists, pre-dates Vedic Culture in India. Excavations at Mohenjo-daro on the Indus have yielded, among other things, a potsherd and a couple of statite seals, each bearing a representation of a boat or a ship incised on it.

By far the most substantial proof is afforded by the recent discovery of a dockyard at Lothal in the Ahmedabad district of Gujarat, where extensive ruins of the Harappa Culture have lately been laid bare. The remains of the dockyard testify to the water-borne trade, particularly of the Harappan people in that region. It was roughly trapezoid in plan ; its eastern and western embankments were each 216 m (710 ft.) long ; the northern embankment measured 38 m (124 feet) and the southern embankment 35·4 m (116 feet).

There is a long gap after the Harappan period, archæologically speaking. And there are few remains that throw light on navigation in India in subsequent times until we come to the Andhra period of Indian history. The sculptures at Sânchi and similar other sites show vivid scenes of river and sea journeys. They attest the continuity of old traditions of navigation in India. In this connection the ship-type coins of the Satavahana rulers in South India deserve special mention. One coin belonging to King Yajna Satakarni clearly shows a 'two-masted ship on the obverse, and the so-called Ujjaini symbol : a fish, a conch and a snake or eel below the reverse. The four circles of the Ujjaini symbol on the reverse are supposed to represent the *Chatur-udadhi*, 'four seas', that encircle the earth. The legend, running along the edge on the obverse, is in *Brahmi* characters and Prakrit language. It contains the king's name : *Sami Siri Yana Satakani*.

Then, there is a stone inscription, likewise in *Brahmi* and Prakrit, of about the second or third century A.D., which mentions a 'sea-captain' or 'master-mariner' (*Mahanavika*) named Sivaka. This inscription was found at Ghantasala (ancient Kantakasola) in the Krishna district of Andhra Pradesh. This place was a sea-port in olden days. Ptolemy mentions it as "the emporium Kantakossyla immediately after the mouths of Maisolos, that is the river Krishna.

Similarly, a *Mahanavika*, called Budhhagupta, a resident of Raktamrittika, identified with Rangamati in Bengal, is mentioned in a Sanskrit stone inscription, discovered in Province Wellesly of Malay Peninsula, now kept in the Indian Museum at Calcutta. This inscription belongs to about the fifth Century A.D. and affords an evidence of sea voyages between India and the Far East in those days. This is now exhibited in the Centenary Exhibition of the Archæological Survey of India at New Delhi.

A fresco painting in Cave II at Ajanta of about the same time (500 A.D.), depicts the sea-voyage of Bhavila, described in the Purna *avadana* of the *Divyavadana*, an old Buddhist Sanskrit text.

The scene depicted at Ajanta is a forerunner of elaborate sculptured representations on a number of fine reliefs on the world-famous Buddhist *stupa* at Barabudur in Central Java. This stupendous monument was built by the Sailendra monarchs of Srivijaya, a Sumatran empire, about the 9th Century A.D. The sculptured relief reproduced here is a telling example of the plastic art of those days, showing strong Indian influence, and at the same time, providing an evidence of how merchants and monks travelled between India and Indonesia, and how a brisk cultural intercourse existed between them.

Natural Resources Committee.

The Planning Commission has set up a Natural Resources Committee. It will assess the information regarding the natural resources of the country and identify gaps in it in relation to the programme of planned development. Besides, arranging for coordinated programmes for surveys of natural resources in different parts of the country, it will initiate studies in problems relating to them and recommend measures for their conservation, utilisation and development. The Committee is headed by the Deputy Chairman of the Planning Commission and is assisted by a Standing Committee and expert technical committees in various fields of study.



1 and 2: The Union Minister for Industries and Commerce, Sri K. C. Reddi recently inaugurated the Clay Washing Plant at Neyveli

3 and 4: Witnessing the working of the plant and being shown a sample of the 'Clay'.

5 and 6: With workers and examining sample lignite.

Beams from Bamboo

Science in the news

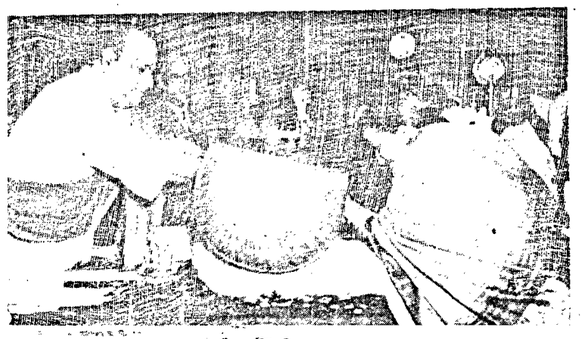
Every day that passes in this Age of Science registers some new advance or other as a result of which new and improved techniques and devices emerge to lighten the burden of the housewife the common artisan, the small businessman and the big industrialist. This feature takes note of such developments. Apart from developments in the field of Indian Science, interesting 'bits' from the United Kingdom are also included.

Details of a method of fabricating springs and beams from bamboo developed at the Central Road Research Institute, New Delhi, have recently been published. These bamboo springs and beams can be put to a number of uses such as low cost housing, construction of bullock carts or in fabricating cantilever bridges.

According to this method, the nodes are removed from split bamboo and the pieces piled on one another after suitable adjustments. They are then joined together with the help of suitable adhesives, bolts or clamps. The weather resistance of the material can be increased by treating the bamboo with a fungicide.

A new well-tested method for the elimination of salinity from land is described in another article. Compared to the older method by which the saline matter mostly soaked down into the earth the new treatment brings the saline matter to the surface after which it is flushed.

Vazhuvur Ramiah Pillai who presided over the recent Tamil Isai Festival in the City is seen giving away the first prize to Soundaravalli Srinivasan for winning the competition in Gopalakrishna Bharathi's songs.



Earthquake Resistant Structures

The earthquake Engineering research and Training School at the Roorkee University has been conducting for some time past research in the designing of earthquake resistant structures. A special table for making precise vibration measurements on models has been designed and constructed. The table can be used for investigating the earthquake resistance properties of house models weighing up to 200 lb. It is also intended to determine the following information useful for earthquake studies. Variation of motion (acceleration, displacement or velocity) along the height of the model; relation between ground motion and the motion of any particular point of the structure; period of vibration of the structure; and behaviour of different parts of a structure when subjected to variable ground motion.

A sensitive pressure gauge capable of measuring static and dynamic pressures up to 0·5 lb. per square inch has been developed at the Research centre.

A method has also been evolved for working out seismic co-efficients. This will be helpful in designing structures in a particular location in the absence of specific records during earthquakes.

Work is also in progress at the Training School to develop strong motion recorders utilising indigenous materials. The instrument is useful in recording the strong motions at sites near seismic zones. The Training School has conducted a survey of seismic areas in Northern Uttar Pradesh, Himachal Pradesh, Punjab and Kashmir.

Epsom Salt from Sea Waste

A process for extraction of epsom salt and potassium chloride from sea bittern has been developed on a semi-pilot plant scale at the Central Salt and Marine Chemicals Research Institute, Bhavnagar. The know-how for extraction of these chemicals and cost data for operating a semi-commercial unit producing three tons of potassium chloride and 10 tons of epsom salt per day were given in a recent issue of the *Research and Industry*.

India's present annual requirements of about 50,000 tons fertilizer grade potassium chloride are almost entirely met by imports. The only indigenous source that could be tapped for its production is sea bittern. It is expected that if the bittern from all the salt works is fully exploited for producing potassium chloride, the present demand for this chemical could be easily met. The quantity of bittern available in the country is expected to be higher as salt production for industrial and other uses is increased during the Third Five-Year Plan.

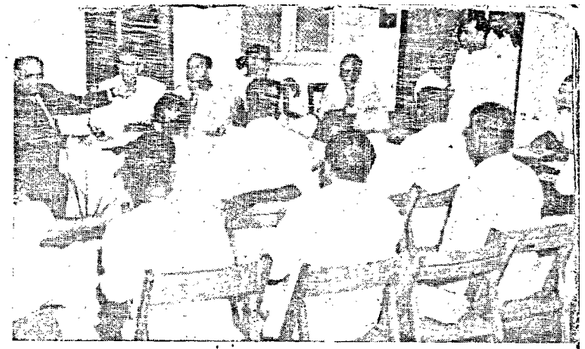
Improved Dyes for Rayons

The fastness properties of dyes used in the rayon industry have been improved as a result of research carried on at the Departmental Chemical Technology, University of Bombay. Derivatives of aminoazobenzenes are largely used as dyes for cellulose acetate, especially for yellow, orange and red shades, because of their good dyeing and overall fastness properties. These dyes, however, have certain drawbacks like low fastness to light and gas fading.

Research has shown that the basic character of the free amino groups in the dye molecule is responsible for these defects.

These defects can be removed by reducing the basic character of the free amino groups by modifying the structure of the parent compounds. About 20 dyes with modified structures have been prepared which show considerably improved fastness properties.

The results of these investigations are of significance in view of the increasingly stringent demands of colour fastness of dyes used in the rayon industry. Search for dyes with better fastness and other desirable properties has been carried out at the Department of Chemical Technology, University of Bombay, for the past two decades. From the range of dyes already available, it is clear that the discovery of new classes of synthetic dyes is not an easy matter, but the work so far carried out shows that it is possible to effect improvements in the properties of the dyes in use.



Chief Secretary Gopalaswami addressing Presidents of Taluk Associations at the Government Estate, Mount Road.

Studies on the synthesis of a new class of dyes capable of giving deep shades on Orlon 42, a synthetic fibre of the acrylonitrile group, also conducted at the Department of Chemical Technology, are presented in another paper appearing in the same issue of the Journal. Six dyes in polymethine series synthesized by a method whose details are presented in a paper, have shown very good substantivity and fastness properties on Orlon 42.

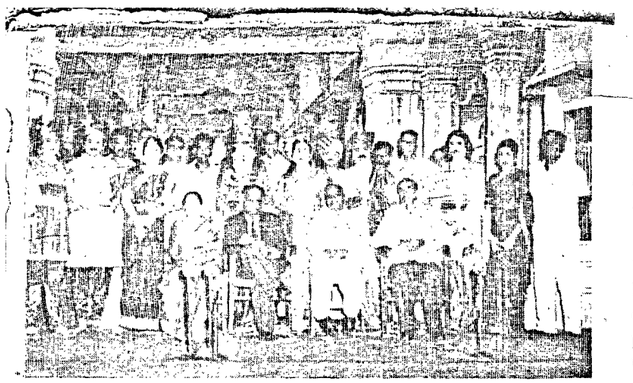
Therapeutic Agents in Garlic

The stability of the antibacterial and antifungal agent, allicin, present, in garlic has been studied. The widespread use of allicin as a therapeutic agent is limited because of its strong odour and pungency. This handicap is overcome in two ways: administering (i) allicin in a capsule or (ii) the precursor of allicin, namely, alliin, which has no pungency or smell, along with the enzyme allinase which reacts with alliin to liberate allicin in the intestines. The suitability of either of these two methods depends on the relative stabilities of allicin and alliin to heat and during storage over long periods. Studies were therefore undertaken at the Central Food Technological Research Institute, Mysore, to examine the stability of allicin and alliin during storage at different temperatures.

The results have shown that while allicin in aqueous extract as well as in dehydrated garlic powder remains stable during storage over long periods, allicin in aqueous extract of garlic loses its antibacterial activity. Alliin, being more stable and non-irritant, in addition to being devoid of strong smell, has therefore been recommended. A suitable method of administering allicin and allinase separately has been worked out which ensures the formation of allicin only in the intestines.

Classification of Mica

Rapid and accurate classification of mica, micanite and other laminated sheets can now be made with an apparatus



The Secretariat Dramatic Party recently enacted the drama, 'Kalai Chelvan' at the Annamalai Manram in aid of the Flag Day Fund. The Chief Secretary who presided on the occasion is seen with members of the troupe. The drama written by M. Thangaswamy was directed by D. F Kantharaj. V. Subramaniam provided the lyrics.

developed at the Central Glass and Ceramic Research Institute (CGCRI), Calcutta.

The development of the apparatus is of significance in view of the fact that India meets nearly 80 per cent of the world's total requirements of good quality sheet mica.

The quality of mica is generally evaluated visually on the basis of properties such as colour waviness and presence of stains and spots. Tests with the new apparatus developed at the CGCRI reveal that visual evaluation is not a satisfactory method for determining the quality of mica and a correct assessment can be made only by determining its power factor. The conventional methods of power factor determination are too slow and elaborate for commercial routine testing of mica sheets. These limitations have been overcome in the new apparatus, the details of which are given in a recent issue of *Research and Industry*, a monthly periodical of the Council of Scientific and Industrial Research.

The new apparatus is portable, self-contained, battery-run and is easy to operate. This renders it eminently suitable for use in industry. Test-pieces of any size and thickness can be evaluated with the apparatus.

Bonding Agents for Abrasives

Another article in the journal describes a process for making modified phenolic and urea resin adhesives, developed at the Shri Ram Institute for Industrial Research, Delhi.

Phenol-formaldehyde and urea-formaldehyde resins are the most common types of synthetic resins used as bonding agents for the manufacture of grinding wheels. However straight unmodified phenol-formaldehyde and urea-formaldehyde resins do not provide satisfactory bonding strength and the articles made with these resins crack at the curing stage. These drawbacks are eliminated in the new process in which the resins are modified with a mixture of furfural and furfuryl alcohol.

At present both formaldehyde and phenol are imported but they will soon be manufactured in India. Furfural is being produced in the country while furfuryl alcohol is obtained by hydrogenation of furfural. A process for producing furfuryl alcohol has already been developed at the Shri Ram Institute for Industrial Research.

With the steady growth of industries the consumption of abrasive materials for grinding wheels is rapidly rising. Synthetic resins find considerable use in the production of sand paper also. About 150 tons of synethetic bonding agents are estimated to be consumed for making abrasive articles; by 1965 the figure is expected to rise by 20 per cent.

Marine Borer Problem

Even though concrete and metal have replaced timber in many marine constructions, timber is now recognised as being more suitable for certain purposes by reason of its high resistance to corrosion, its elasticity, light weight and comparatively low cost coupled with high salvage value, but timber is exposed to the attack of a large number of boring animals.

The damages caused by the marine wood-boring organisms have repeatedly engaged the attention of zoologists and harbour engineers, and the problem of their control is as old as the history of navigation of the sea. An impressive body of information has been compiled during recent years on taxonomy, ecology, anatomy, and economic aspects of the marine borers as a group at Bombay, Madras, Andhra Coast, Cochin harbour and the Sunderbans in West Bengal.

The reason for this increased output of literature on the subject has been institution of the scheme on "Protection of timber against marine organisms' attack" sponsored by the Forest Research Institute, Dehra Dun, at five centres along the East and West coasts of India in December 1953. About thirty papers are now available on the above mentioned aspects.

Automatic Water Pumping Station

Brighton, the famous British holiday resort, believes it is the world's first town to build a water pumping station which operates remotely according to a programme based on expected daily needs for a week ahead. The station is fully automatic and not manned.

The development was made possible by research into water consumption of the 316,000 people living in the 64 square mile area served by the town's pumps. Average consumption over a year was 14,000,000 to 18,000,000 gallons a day.

The pumping station operates according to seven-day programmes which can be amended or replaced at any time. It receives its pumping instructions by telephone line from a control room six miles away. The control room has an electronic plug or peg board with holes relating to each half-hour of each day of the week. These set the week's programme.

Purification plant is automatically corrected for a wide range of water quality. Brighton authorities consider it a possiblity that eventually a computer might be used for the integration and automatic control of all water sources in the district, including 30 reservoirs.

Isotope Production

A portable generator that can produce radioactive isotopes on the spot is now being marketed by a British firm. It is claimed to be the first really safe, compact, and inexpensive fast neutron unit to become generally available.

Originally the generator was developed by Britain's atomic weapons research establishment. It is said to sweep away many of the risks associated with the use of radioactive materials in medicine and industry, and to open up a new range of applications of the techniques of nucleonics.

Including all the electric power supplies and controls, the equipment occupies a total space of less than four cubic feet. In spite of its small size, the generator produces a stream of neutrons with an energy of 13 to 14 million electron-volts and pulses of 20 micro-seconds duration. In its commercial form it works from the standard public electricity supply. It is completely inert and therefore safe when switched off.

It is thought that the equipment will be suitable for Educational purposes and research work, and for training scientists in the use of nuclear instruments. In the medical field, it enables hospitals to be equipped with their own neutron source for the production of radioactive isotopes.

Air Traffic Control

Practical experiments into the use of automation as an aid to air traffic control are now being undertaken by Britain's Ministry of Aviation at the Oceanic Control Centre which covers the North Atlantic. To help these experiments, the Ministry has installed a Ferranti Apollo computer at the centre at a cost of about £ 70,000.

It is hoped that eventually such computers will be able to take over much of the clerical work at present done by the traffic controllers. They could for example, accept flight plans and departure plans filed by aircraft crews and print flight progress strips. They could also automatically collect information on traffic, broken down into categories, routes and time intervals, so that more may be known about the nature of the traffic, its behaviour, and the way in which it is being controlled.

Undersea cables

British equipment operating on radar principles, will, it is claimed, locate faults in undersea cables quicker, more easily and more accurately than ever before. Called a Pulse Echo Fault Locator, the equipment is being installed to maintain the Commonwealth round-the-world cable now being laid.

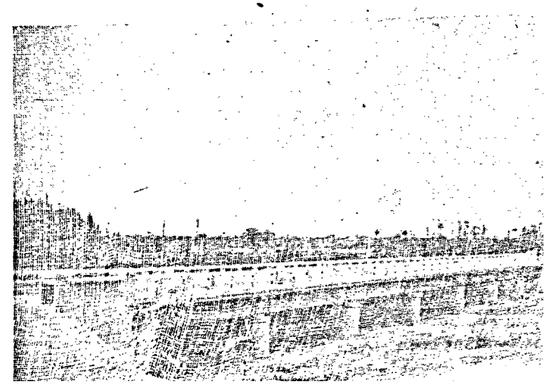
Fault conditions characterized in co-axial cables by abnormal impedence variations, result in increased reflection of a transmitted signal. The equipment makes use of this condition to determine the cable distance to the fault by relating the time interval between the transmission and the received reflection of a pulse signal to the known propagation velocity of the cable. In normal conditions it is possible to pinpoint the area of a fault to within as little as 80 yards, thus saving valuable time and costs. The locator can also be used for land cables and for tests in cable manufacture.

Preventing Fish Poisoning

Protection for the World's inland fisheries could result from British experiments at the Water Pollution Research Laboratory on ways of preventing the poisoning of fish by substances commonly found in water effluents from industrial processes.

Farmed fish is an important source of food in many parts of the world. In the Philippines, Indonesia,

The New Vellar bridge recently opened near Pudukkottai



Thailand and Formosa, they farm milkfish ; in Hong Kong, mullet ; in the Indo-Pakistani sub-continent, China, and Malaya, the poison-resistant carp ; and in Madagascar, Tanganyika, Uganda and Kenya, the perch-like tilapia. Such fisheries could be affected by rivers polluted with industrial wastes, particularly from metal industries, but it is much more likely that the growth of industry will affect river fisheries such as those supplying substantial amounts of food in Kenya, the Congo and the Far East.

Research at the Water Pollution Research Laboratory of Britain's Department of Scientific and Industrial Research has included studies of the effects caused by the discharging into rivers of industrial effluents containing diluted poisons such as Cyanide, ammonia and copper and zinc salts. It has been found that the poisonous effects of these substances are additive and that they are much more poisonous when dissolved oxygen is absent from river water. This condition is already common in many Eastern rivers, which are so contaminated with sewage that the oxygen content is dangerously low.

The Water Pollution Research Laboratory is well equipped to study problems of fish poisoning sent in from anywhere in the world. Scientists at the laboratory have fish tanks and apparatus for making controlled experiments under natural conditions—and in order to be able to advise on methods of protection, all they need are supplies of the fish to be studied and information on water composition and the nature of the effluent.

Autonomics

Work started recently on three new research buildings at the National Physical Laboratory (NPL), Teddington, near London, including a £ 475,000 autonomics laboratory which will be the world's first single research centre entirely devoted to this work.

The autonomics building will provide the unusual laboratory conditions necessary for experiments in the automatic control of industrial processes and the investigation of learning processes in men and animals with a view to their simulation by machines.

Animals which, it is hoped, will throw new light on the design of mechanical systems will be kept in fully air-conditioned rooms. The research programme of the autonomics division also includes very high-speed computing techniques, mechanical translation of scientific Russian into English and automatic recognition in print.

Jersey Animals in India

The first batch of Jersey animals presented to India by an American Organization, Heifer Project Inc., arrived recently at New Delhi. In all, 54 animals arrived. The animals will form part of the foundation stock of the Jersey Farm being set up in India under the Third Plan for the development of hill cattle by cross-breeding. One Unit of this Farm will be at Kalaula, near Mandi in Himachal Pradesh while the location of the other is yet to be decided. The Farm will enable the rearing of the Jersey bull in large numbers in India itself. To start the Farm, about 125 Jersey animals including bull, cows, heifers and young male calves are required and these are being provided as a gift by Heifer Project Inc. The animals are being flown to India by batches, the cost of transportation being met by the Government of India.

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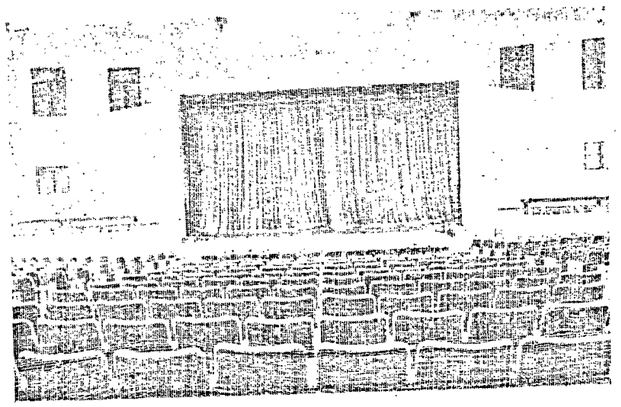
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MARCH 1962

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This month's cover

The third general elections are over and the representatives of the people have been chosen. Satisfaction now takes the place of suspense and the common citizen is serenely excited as he takes stock and is happy that the people's self-elected representatives will take their places in Government. This is the theme represented in this month's cover.

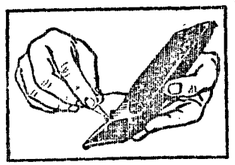
'The People's Verdict' recording the results of the 1957 and 1962 elections is issued along with this number as a special supplement.

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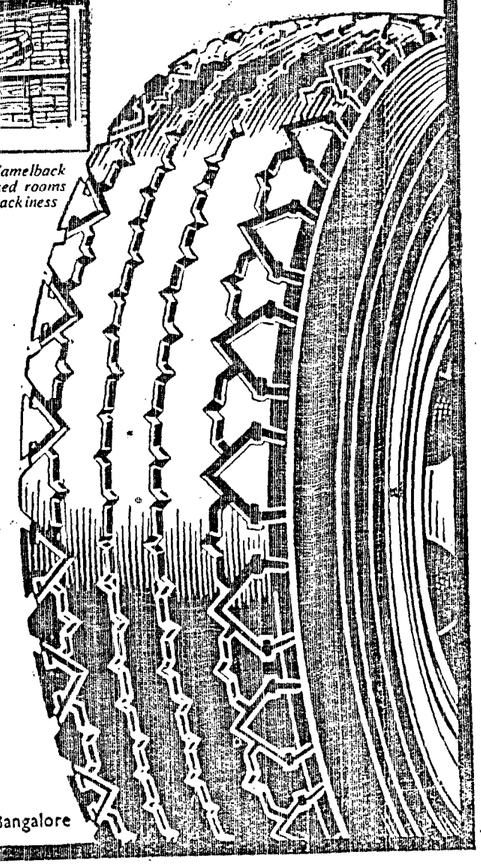
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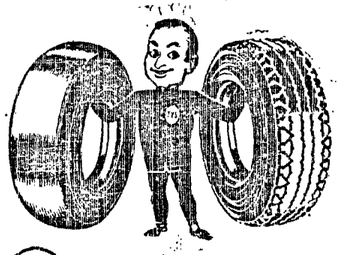
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Towards a Modernized Society

SRI JAWAHARLAL NEHRU.

With the achievement of political independence, the Indian Nation has risen from its slumber and has been engaged in the struggle for achieving economic prosperity. This is an undertaking of gigantic magnitude. Prime Minister Nehru has described the India that is changing fast as a result of efforts aimed at modernising the nation in a message highlighted by the Times, *London, in its Special Supplement issued in connection with the Indian Republic Day this year. This feature is an extract from the message.*

What does India stand for ? After the achievement of political independence, she is passionately anxious to better her economic condition and to raise the standard of living. This is a vast undertaking for 440 million of people, most of whom still follow the ancient methods and practices which are quite out of date to-day. Therefore, it is essential to modernise these methods and to bring her in line with modern techniques and ways of thought. At the same time, she firmly adheres to her spiritual heritage which brings her peace and tolerance for different opinions.

The political revolution which took place in 1947 was not complete. There were the French and the Portuguese enclaves in India and it was inconceivable to her that parts of India should continue under different domination. The nationalism which moved the people of India to achieve their freedom was directed towards the completion of that task. The French Government appreciated the changed situation and came to terms with India about their enclaves, but the Portuguese took up a contrary attitude and functioned within Goa and outside in a way which was exceedingly irritating to Indian nationalism.

As years passed, this desire to liberate the people of Goa who were in every way like the other people of India, became intense. The distressing events in Angola showed how far Portugal could go in retaining her colonial possessions. Indian nationalism had always a broader basis than the achievement of freedom for India. It desired freedom for all colonial territories and it had an economic aspect seeking a measure of equality for its people.

A 40-member Bharat Dharshan Party from Nagaland which visited the City recently photographed with Governor Bisnuram Medhi at Raj Bhavan.



This economic base led to an agrarian policy which was opposed to landlordism and an industrial policy which led to State-owned or co-operative industries, in addition to the private sector in industry. It aimed at a Welfare State and social security for all its people.

Main concern

India was too much entangled in her own problems to seek to play an important part in world affairs. But inevitably she got tied up with international affairs. Her whole future depended on peace for the world. War put an end to all her efforts at self-improvement and therefore world peace was desired. But her main concern has always been to get rid of her poverty and unemployment.

All her Five-Year Plans have been directed to this end. Industrialisation has become essential and the base of this is the development of heavy industries and the training of her people. Education has been considered to be basic for the nation's growth and therefore great stress has been laid on both mass and specialised education.

A revolutionary feature has been the establishment of Panchayats Raj which means decentralisation of authority to a great extent among village organisations; also the spread of the co-operative movement. This is meant to promote not only better agriculture and development schemes affecting the rural areas, but also the improvement of the individual. Democracy has spread down to the village and men and women there have greater self-respect and rely upon themselves. The dependence upon officials or on Government is much less.

Altogether the scene in India is a promising one and the face of India is changing rapidly. Education and Panchayati Raj are changing rural India. Not only big industry but also innumerable small industries are growing up. It is this that occupies the mind of India and excites her imagination. In another ten years' time India will have advanced sufficiently along this road and will become an industrial nation of some magnitude.

World's Biggest Aerial Ropeway

BRITISH FIRM AWARDED CONTRACT.

The world's biggest aerial ropeway is to be built in India by a British firm at an estimated cost of over £2,000,000. It will carry up to 450 tons of sand an hour from the bed of the River Damodar to collieries at Jharia in Bihar.

The Indian Coal Board has placed the order with Breco-Ropeways of London. Breco is to construct a composite plant which will include a sand winning apparatus, feeder ropeways, and heavy capacity trunk ropeways delivering sand to a number of stockpiles for distribution to the various collieries. The whole plant is expected to be completed by the spring of 1964.

Governor's Republic Day Message

In his message to the people of Madras broadcast from All-India Radio, Madras, on Republic Day this year, Governor Bishnuram Medhi explained that the Five-Year Plans were formulated to banish ill-health, illiteracy and poverty from the nation and reviewed achievements in the State during the period. This feature is an extract from the broadcast talk.

It was on January 26, 1929, that the people of India took the solemn pledge to wage a ceaseless struggle to attain 'Purna Swaraj', and thereafter, every year, through all the years of struggle, the pledge was renewed at mass meetings held all over the country until we attained Independence. It was therefore appropriate that when the Constituent Assembly reached the end of its labours in 1950, January 26th—the historic day in the struggle for Independence—was chosen as the date on which the new Constitution was promulgated. Thus was born on 26th January, 1950, the Sovereign Democratic Republic of India, the twelfth anniversary of which we are celebrating to-day as the most auspicious day and a day of national rejoicing.

Our Constitution is sacred and it embodies the united resolve of the people of India to secure for all citizens social, economic and political justice, liberty of thought, expression, belief, faith and worship, equality of status and of opportunity, and to promote among them all fraternity assuring the dignity of the individual and the unity of the nation. We have already gone through two general elections covering the entire country embracing millions of our population. We are now on the eve of the next gigantic general election when the whole nation will go to the polls for the third time to elect people's representatives.

Historic Day

On this historic Republic Day, let us recall to our memory those known and unknown martyrs who sacrificed their lives and property during the non-violent struggle for the attainment of complete independence under the leadership of Mahatmaji, the Father of the Nation. If to-day we enjoy the fruits of freedom, this is only due to the sacrifice undergone and selfless service rendered by those who took part in our prolonged struggle for Independence, and let us therefore on this memorable day pay our homage and humble tribute to those patriots who with blood and sweat paved the way for freedom from foreign yoke. Let their lives and sacifices serve as a beacon to us and inspire us to work with determination for the achievement of our goal of Welfare State as quickly as possible.

The Bigger Problem

The achievement of Independence brought us to the end of only one chapter of our country's history. The bigger problem of national reconstruction still remained. Considering the backwardness of the country which had long been under foreign domination, the task facing the nation was truly stupendous. We have to banish from our land the curse of poverty, ill-health and illiteracy and secure for the individual a higher standard of living and reduce the gap between the rich and the poor as quickly as possible.

With these ends in view, our successive Five-Year Plans were formulated for the balanced and integrated development of our country. We have already gone through the first two Five-Year Plans and we are now in the first year of the Third Plan. During all these momentous years,

Martyrs' Day: The Secretariat staff observed silence for two minutes on January 30, in memory of those who gave up their lives in the freedom struggle. The Governor was also present.



vast changes have taken place in the country in every field of activity—industry, agriculture, health, and so on. The life expectancy of the people has gone up from 32 to 42 which, more than anything else, gives a true indication that there has been an appreciable increase in the standard of living of the people.

Madras State

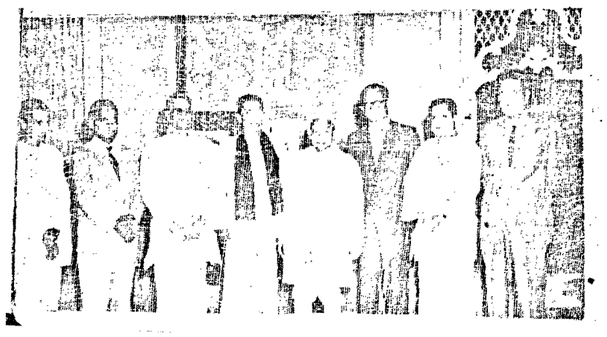
Coming to the State of Madras, the achievements under the successive Five-Year Plans have been really encouraging. During the First Plan, nearly 93 per cent of the total estimated outlay was spent during the Plan period. In the Second Plan, we have really exceeded the financial outlay of Rs. 152 crores by nearly Rs. 34 crores. During the current year also, the progress in the implementation of the schemes has exceeded estimates and if we keep up the present tempo, it is likely that we will be exceeding the provision for the Third Plan materially. Both in the First and in the Second Plans, we have seen increase in agricultural production giving a surplus of 3 lakh tons of foodgrains in normal years, and further development of industries and power resources laying the foundation for all-round industrial development. For example, during the Second Plan, the number of villages electrified increased from 3,500 to about 10,700.

Free Education

Among our achievements in social services, I may mention that free education has been provided to all children up to the Fifth Standard and to poor children up to the Eleventh Standard. The fresh enrolment in elementary schools was at the rate of one lakh children each year and nearly 2,000 additional schools were opened. Further, the mid-day meals scheme was introduced under which meals were provided to poor children numbering more than 10 lakhs. Another encouraging development in the field of education is the people's voluntary efforts in contributing cash and kind to the tune of Rs. 6½ crores towards the improvement of school buildings and provision of equipments and for providing school uniforms worth more than Rs. 19 lakhs to about 3¼ lakhs of pupils.

I convey my greetings and felicitations to the people in general for such noble efforts which have gained momentum as a people's movement in encouraging students of poorer classes to join the schools in increasing numbers. While on the subject of education, I may also make special mention of the programme of pre-school training for children of the age group 2 to 5 which will be introduced on a pilot scale beginning from April next. Another new scheme which will be widely welcomed is the one for the grant of old age pension of Rs. 20 per month to all destitutes over the age of 65.

Members of the Ceylon Press delegation met the Governor at Raj Bhavan during their recent visit to the City.



Decentralisation

In order to make the implementation of the Five-Year Plans more effective particularly in the agricultural sector and to mobilise public participation in our development programmes, the year that has just passed witnessed the introduction of the scheme of democratic decentralisation under which the Panchayats became very effective units of local administration and development. On Gandhi Jayanthi Day on 2nd October 1961, the task of bringing into existence Panchayat Unions in an orderly manner was completed.

With the inauguration of the scheme, certain functions such as improvement of agricultural production, implementation of programmes relating to village industries as well as expansion of normal civic services, the universalisation of primary education, the development of comprehensive services of maternity assistance and child care, family welfare, assurance of protected water-supply and development of village roads and other similar duties in the field of culture and welfare have been entrusted to the Panchayat Unions. With the completion of this new reform of local administration for local development, the entire State is covered by 12,570 Panchayats and 373 Panchayat Unions formed out of Community Development Blocks thus ushering in Panchayat Raj, which was the dream of the Father of the Nation.

Goan Liberation

In the international field, India has been following a policy of non-alignment with power blocs and has been rendering all possible help in efforts calculated to end tension and prepare the way for international peace by gradual disarmament and agreement on nuclear weapons. Our armed forces are serving under the United Nations in far-off Congo and their exemplary conduct in very trying circumstances has won praise and admiration from all quarters.

Nearer home, the most important event after the advent of freedom took place in December last when Goa, Daman and Diu were liberated from the clutches of the Portuguese. The people of these erstwhile Portuguese possessions were under foreign rule for the last 450 years and they had to wait for fifteen years to become free after India herself had got her independence from British rule. The Portuguese showed no inclination whatever to transfer the territories to India in spite of repeated efforts at negotiations. True to our policy of liquidating colonialism, it is a matter of joy and pride that these enclaves were liberated and brought back to the fold of the motherland and thus enabled to share the sovereignty which their brethren in the other parts of the country had already been enjoying. We heartily welcome the people of the enclaves to our fold and send our greetings and good wishes on this happy, auspicious occasion.



Finance Minister Subramaniam presided over a recent meeting of the Zonal Traffic Advisory Committee which met at the State Information Centre recently.

National Integration

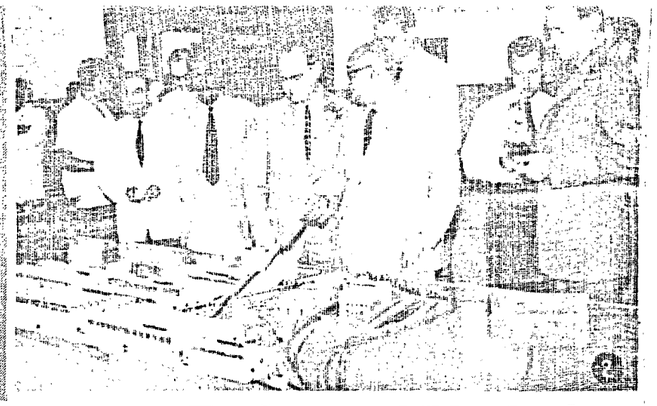
It is needless for me to emphasise that we should guard ourselves against all fissiparous and disruptive tendencies like communalism, casteism, linguism and regionalism that tend to undermine our solidarity and strive our best to promote national unity and cohesion. The history of India shows that whenever there had been dissensions among us, we lost our liberty and became a subject people. Our hard-won freedom which came to us because of the sustained and enduring sacrifices of our freedom fighters has to be further consolidated and strengthened by forging unity and integration among ourselves.

The Government of India have been giving some thought to these aspects and have constituted a high level committee which will periodically review matters pertaining to national integration. We have to take note of the changing times and meet the challenge at every stage, overcome our difficulties and demonstrate ultimately that we stand united as a nation. I am never tired of repeating this aspect of our problem because I know that all of you will appreciate its importance especially at a time when a mighty nation is knocking at our doors and has committed aggression claiming a large chunk of our territories as its own.

Welfare of Backward Classes

In a circular to the State Governments, the Union Home Ministry has indicated the schemes which the Centre will sponser in the next five years for the welfare of backward classes. The total expenditure will be approximately Rs. 35 crores. The main emphasis is on post-matric scholarships for which the Union Education Ministry allocates about Rs. 225 lakhs every year and for which the Union Home Ministry proposes to set apart about Rs. 570 lakhs till 1966. The major scheme for the scheduled castes is for the improvement of working conditions of persons engaged in unclean occupations, including the eradication of the practice of carrying night-soil as head loads. For the scheduled tribes the Centrally sponsored schemes include Tribal Development Blocks, Co-operation including forest co-operatives and marketing consumer co-operative societies and tribal research institutes and training including applied research and special surveys. All-India Voluntary Organizations will also be given assistance, which the Minsitry of Home Affairs will administer directly. Similarly, grants will be given to institutes for training, applied reserach and special surveys particularly for areas inhabited by scheduled tribes.





Danish Prime Minister visit



1. Mr. Viggo Kampmann, Prime Minister of Denmark and Mrs. Kampmann with Revenue Minister Manickavelu who received them at the airport on arrival.
2. Mr. Kampmann at I.C.F.
3. At Mahabalipuram.
4. Witnessing the City Republic Day Celebrations.
5. Mr. Kampmann inspecting Guard of Honour at airport ere departure.
6. Being garlanded by Home Minister Bhaktavatsalam who saw the distinguished visitors off.







Danish Premier's Tribute

Fascinating India:

A source of inspiration

The name of India held a fascination all its own and the Indian people had not allowed their ancient spiritual springs to dry up but had preserved them as a source of inspiration to contemporary man : Mr. Viggo Kampmann, Prime Minister of Denmark, who visited Madras State recently as part of his Indian tour paid this rich tribute to the Indian Nation and its people while replying to the speech of Prime Minister Nehru at the banquet given in his honour by the Union Government at Rashtrapati Bhavan, New Delhi.

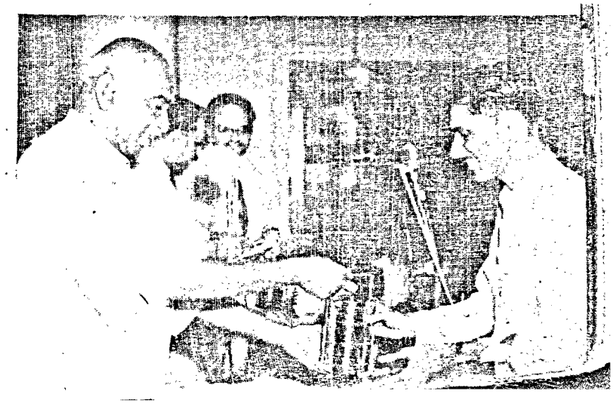
To people from every part of the globe, but perhaps especially to us from Northern regions, the name of India holds a fascination of its own. From childhood we are familiar with pictures of the snowclad mountains of the Himalayas, the luxuriant green of impenetrable jungles and of the bustling cities. We have heard about the charm of Indian village life as described in Rabindranath Tagore's tales, about picturesque processions and about temples and monuments, awe-inspiring and beautiful. Many people from our part of the world have been spell-bound by the depth and the greatness of Indian philosophy and poetry which have exerted immeasurable influence on peoples and cultures all over the world.

Rich Heritage

But the most fascinating experience, in my opinion, is that this rich cultural heritage is not considered as relics to be placed in museums; that the Indian people never allowed their ancient spiritual springs to dry up but preserved them as a constant source of inspiration for contemporary man. In a modern world mainly given to matters of fact, India has—by making the past an integral part of the present—lived up to her cultural heritage and thus found her own answers to her own problems, in keeping with the great traditions of the past.

Ever since India won her independence we have, in my country, followed with keen interest this great venture of modern India as we know it to-day. We have learned with admiration of the ceaseless efforts to build up a democratic state in this continent, of the untiring work to exploit the natural resources of the country and to

Chief Minister Kamaraj distributed certificates and awards to worker teachers and trainees at a recent function under the auspices of the Workers' Education Centre at Rajaji Hall.



change the economic and social pattern of a traditional community into a modern industrialized society devoted to the welfare of the people. We admire the achievements already made and we appreciate the enormous task you have undertaken to solve the many problems still ahead. And another fascinating experience is your approach to witness how the innate sense of beauty and of graceful human intercourse enrich everyday life in India.

Common ground

We know of Mahatma Gandhi's great efforts on behalf of present-day India and we realize, Mr. Prime Minister, your own unique contribution to the building up of this great nation and to securing for India the very significant position which your country holds to-day among the nations of the world.

This is true not least in the United Nations where our two countries meet on common ground. We share with you our belief in this World Organization. As one of the practical manifestations of this belief I may mention that to-day Indian and Danish soldiers serve together under the United Nations flag in the Middle East and the Congo, safeguarding international peace and security.

Trade Contact

The relations between our two countries are not however, limited to international organizations. An important aspect of our direct contracts over the years is trade. I am happy to know, therefore, that our commercial relations have developed during the last couple of years in a way which is satisfactory to both countries. In recent years Danish imports of Indian goods, especially textiles and feeding stuffs, has doubled. After a decrease in Danish exports to India in the last few years these exports—especially consisting of machinery and equipment of importance to the industrial development of modern India—again showed a satisfactory though small increase in 1960.

It is a pleasure for us to know that Denmark through the Technical Assistance Programme is making her own modest contribution towards the building up of modern India, an aim likewise pursued by Danish civil engineering firms working here.

Personal Contacts

The cordial relations between our two countries have also been strengthened by the personal contacts between the Heads of our Governments. I recall the enthusiasm with which my predecessor, the late Prime Minister, H. C. Hansen, spoke of his short visit here in the early spring of 1957. And I wish to assure you, Mr. Prime Minister, that I carry with me the greetings and good wishes from everybody who met you during your stay in Denmark in the summer of 1957. The wisdom, the friendliness and the sense of humour of this great representative of a great nation will long be cherished by the Danish people.

Research in Social Sciences

The Government of India have initiated a scheme for sanctioning grants-in-aid to individual research workers for fundamental research in social sciences and cultural subjects. Under the scheme, financial assistance will be given to scholars also to purchase equipment, apparatus, stores or other material needed for their research projects. The scheme does not include the story of subjects falling under science, technology, education and commerce.

Individuals desirous of obtaining assistance under the scheme should apply to the Union Ministry of Scientific Research and Cultural Affairs on prescribed forms. Applications may be submitted through the State Government or the institution, if any, in which the scholar is working.

A Productive Investment

Economic Aspect of Education

PROFESSOR JOHN KENNETH GALBRAITH.

The great debate whether education should have the topmost priority as a prerequisite to all other progress or should a sound economic base ensuring increased production income be given the first place is discussed in this feature by the American Ambassador in India who is an eminent economist and intellectual. This is from a talk featured by All-India Radio in its programme for the Universities.

In these last years, as many new countries of Asia an Africa have escaped colonial bondage and turned as first-class citizens to the tasks of their national development, they have had to decide what priority to accord to investment in education. Should it have the very highest priority ? Is education a prerequisite to all other progress ? Or should a certain economic base be provided first ? Only as increased production income is available does good education become possible. Only from this will there be wherewithal to support schools and colleges and universities.

Priorities

This has been the debate. It has been decided in various ways. Sometime, too, it has been decided without any one seeing that there is an argument. Education has been given priority. Or other forms of expenditure—roads, airports, dams—have been put first because they seemed the first essential. The problem of priority here is comparatively new. Uncertainty in fact entered with economics. Economic development in our day has come to be regarded over-whelmingly as a problem in economic analysis. In economic analysis the role of education is ambiguous. This ambiguity has led to doubt and uncertainty as to what comes first.

More specifically we think of economic development as the investment of present resources for increased future production—the investment of savings for growth. We regularly measure the developement effort of a country by the volume of its investment—what it saves from its own consumption, and what it is borrowing from consumers abroad, to invest in future increase in output. And here the problem for education is both a form of consumption and a kind of investment. Like bread it is something we use or consume. But, like a dam or canal, it is something in which we invest to produce more in the future,

When we think of education as a consumer's good or service it becomes something on which we should save. Savings are necessary for investment, and savings are obtained by economising on consumption. But when we think of education as an investment, it becomes something we should emphasise. We seek to expand investment. The resulting conflict in policy could scarcely be greater.

Contrasting attitudes

The contrasting attitudes which underlie this conflict are evident in almost every discussion of education. Often it is said that intellectual activity is pursued for its own sake ; the poet, artist or writer rightfully scorns economic gain as a test of performance. And who would say that people should be rescued from the serfdom of ignorance only in order to make them more productive. In these attitudes education is, by my more vulgar definition,

Governor Bisnuram Medhi who inaugurated the Ninth All-India Handloom Week in the City recently witnessing the Handloom exhibition arranged as part of the Celebrations.



a consumer good. Though it may be a rather superior consumer good, those who take a less poetic view of matters righteously insist on the priority of ditches, dams and fertilizer plants. These are the things that feed those poets.

But there is another view. Studies by Theodore Schultz among others in the United States have recently shown that outlays for education may bring large increases in production. A dollor or a rupee invested in the intellectual improvement of human beings will regularly bring a greater increase in national income than a dollaar or rupee devoted to railways, dams, machine tools or other tangible capital goods. To rescue farmers and workers from illiteracy may certainly be a goal in itself. Nowhere is there a literate peasantry that isn't. Education, so viewed becomes a highly productive form of investment.

Surprising Returns

And this is true of many kinds of education. Most of us agree on the importance of scientists and engineers for economic development. But the productivity of doctors and public health specialists is also very high. The suppression of malaria brings great increases in energy and output as experience of the last fifteen years has shown. (It also brings an astonishing output of babies and, while we have talked of birth control in these last years, science has so far accomplished much more in promoting births than preventing them).

And not only scientists, engineers and doctors are a good educational investment. There are surprising returns to esoteric and even exotic forms of knowledge. The linguist opens avenues to the technology of other cultures. Literacy leads on to a demand for writers who can supply its market. And the accomplished writer adds to gross national production in precisely the same way as a successful farmer. Not even the artist, as an object of investment, may be ignored. One of the most successful industries of modern India is motion picture production. This industry flourishes only in the presence of a secure artistic tradition in the theatre, music, ballet and the visual arts. It requires reasonably good artists to produce bad pictures; it takes very good ones to produce good pictures. No one ever invested in an artist with a view toward helping the balance of payments. Yet India's artistic tradition is serving admirably to earn foreign exchange.

Handloom exhibition: Home Min. ...er Bhaktavatsalam inspecting handloom fabrics at the exhibition.



High Importance

In fact education is of high importanace both as an object of immediate consumption and as a form of investment but for future production. It is neither consumption nor investment but both. To look at education as a form of consumption, given the importance that the developing country attaches to investment, is to risk assigning it an unduly low priority. Some new countries have certainly regarded their steel mills, dams and fertilizer factories as the tangible manifestation of such development. Aswan, Volta or Bhakra-Nangal are development.

Well-trained teachers may provide a greater promise of increased production But they are not such tangible monuments to progress. However, I have a feeling that this mistake is by way of being corrected and I hasten to say that it has never been nearly so serious an error in India as in the less developed lands.

If education, and henceforth I speak more specifically of university education, is regarded as a consumer service, we will naturally bring to it the attitudes that seemed appropriate to other forms of consumption These include a high decree of permissiveness. The phrase consumer sovereignty is one of the oldest in economics; it implies the right of the consumer to choose between various forms of consumption. It implies, above all, to consume or not to consume, as he wishes.

Consumer Sovereignty

This notion of consumer sovereignty, when brought to education, suggests that the student has the right to study or not to study as the consumer has the rirght to consume or not to consume. It implies that his field of study is purely a matter of his own preference. But if, in fact, the student is the privileged object of the investment of scarce resources, the matter is not so clear. Society has given him some of its savings. This being so, he has a clear obligation to return to society the increased production that society expects and for which it has spent its scarce substance. The more scarce the resources, the greater this obligation.

If education is a form of investment, planning of educational output then becomes desirable and even imperative. Attention must be accroded to the distribution of talent between engineering, science, medicine, agriculture and other needed specialities. I am not going so far as to sugges

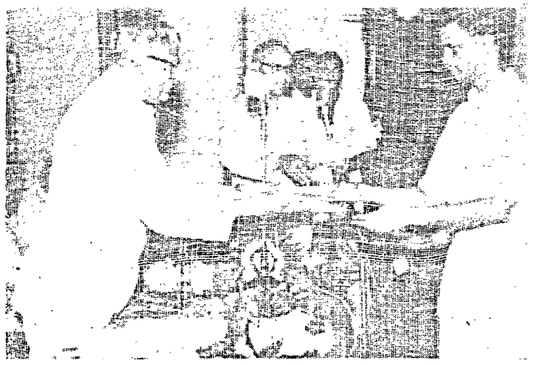
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that students should be forced into a profession which they do not prefer. But I am certainly suggesting that when education is viewed as an investment, serious thought must be given to the accommodation of students to need and the incentives and other arrangements by which this is broght about.

Responsive University

To view education as an investment will have some bearing on university administration. The university must be responsive to development requirements and it must be so organised as to make this possible. The needs of the larger community must be effectually translated into curricula, courses and good academic discipline. It is hard ever to take a stand against democracy. But the school master, at his best and in the most democratic countries, has always been a rather authoritarian figure. I doubt that a university can be wholly successful unless it reposes strong and responsible power in those who teach and unless those who teach delegate as needed to their own representatives. I believe the university by nature is an oligarchy of its faculty and that the faculty must be effectually organised for action. This is especially so if education is regarded purposefully as an investment from which the most of what is needed must be obtained.

But I have no intention of allowing the faculty to escape without comment. By no means all of the traditional university practices and habits fit the requirements of the developing country. In most older university communities—mine is one—many faculty members have come to take a rather lofty view of teaching. We say that our primary taks is research, or writing, or intellectual leadershoip. Students, we agree, are sufficiently privileged if they can see us passing in the street or listen to some uninspired lectures. These attitudes cannot be afforded if education has being tested by its productivity. Then the task of the teacher must be to mould and shape and guide and inspire his students to insure that they are indeed a more productive properly.



Handloom exhibition: Industries Minister Venkataraman giving away prize of Rs. 300 for 'best handloom silk saree'.

Nor can subject matter or degrees be copied as a matter of course by the university in the developing countries I looft with considerable discontent on much of the economic that as taught in the new countries. It is not clinically concerned with the problems of these countries and pragmatically with their solutions. Rather it is often a fashionable elucidation of the sophisticated models and systems which are currently in fashion at Cambridge, the London School or even at Harward. I have sometimes wondered if medical education has been really adapted to the situation of the poor country. In the United States and Europe -and indeed, also in New Delhi, we yearn for doctors who are trained and totally trustworthy. The provision of such total training is the *sine quanon* of modern medical education. But in the developing country, with scarce resources, if we insist on these high standards for the few, may we not deny medical assistance to the many? Do we not get good doctors in the capitals at the price of having no one to set a broken leg or prescribe some morphine in the villages?

In short, the developing country must consider its own educational system in light of the peculiar requirements of development. It cannot simply adapt from the older models. Having come late to development, it is the good fortune of the new countries that they can learn from others. But it is their misfortune that somuch of what exists in other countries cannot be copied without serious cost. Adaptation, I suggest is as demanding inits own way as innovation.

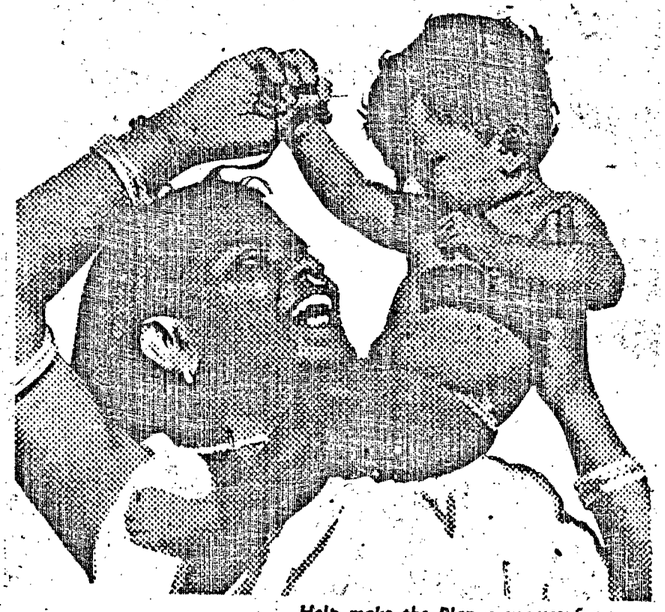
Workers Suggest Improvements on Railways

Over 630 suggestions for economy in the production cost of railway equipment and improving efficiency on the Railways were received from the railwaymen all over the country during 1960-61. Of these, 85 had been accepted by the Screening Committees functioning on the various Railway Administrations. The accepted suggestions would result in net annual savings of over Rs. 63,000 in addition to economy in working hours. The suggestions emanate from all classes of railwaymen, including welders, fitters and mechanics. The successful suggestions earned the workers cash prizes besides advance increments and letters of appreciation and commendation.

What the Plan Means to You

BETTER HEALTH SERVICES

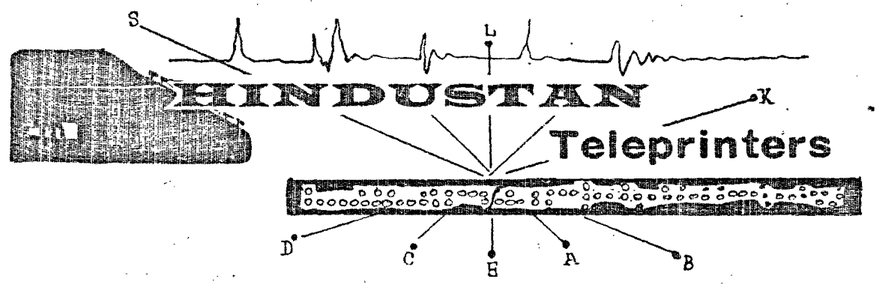
Pure drinking water for villages and towns,
14,600 hospitals and dispensaries, 2,40,100 beds,
81,000 doctors, 10,000 maternity and child health centres
and measures to control diseases
like malaria, tuberculosis, small pox
by the end of the Third Plan will ensure
progressive improvement in your health



Help make the Plan a success for

THIRD FIVE-YEAR PLAN | ***A Good Life for Everyone***

DA 61/119



The expansion of industrial and commercial activity since Independence has led to a rapidly increasing demand for tele-communication facilities. In this context, the manufacture of the teleprinter, that versatile handmaid of tele-communications, in India itself, is a development of the greatest significance. This feature gives a short account of the Hindustan Teleprinters, Limited.

Coming under the label "Made in India", there is another item of manufacture today—the teleprinter, that versatile handmaid of tele-communications in this age of technology. The Hindustan Teleprinters, Limited, a fully State-owned company set up at Madras with an authorised capital of Rs. 3 crores, had assembled by June last 70 teleprinters, and would have assembled another 100 now—all in just about a year, since it came into existence. The main factory, yet to come, will be sited near the Industrial Estate at Guindy, Madras, on a 35 acre plot made available by the Government of Madras.

Purposeful programme

Meanwhile assembly operations have commenced in rented premises in the Industrial Estate and the initial batches of teleprinters have gone out. The Hindustan Teleprinters have a purposeful programme ahead, aiming at full production in the least possible time. Commencing with assembly operations in temporary premises, as at present, the full output of 1,200 teleprinters a year is to be achieved by the end of 1963. By that year, 78 per cent of the components would be indigenous. All items—a teleprinter has some 2,500 components—are to be manufactured or to be procured indigenously by 1965.

The setting up of the factory was considered necessary for the development of telegraph communications in the country and for those many users requiring fast tele-communication services.

An agreement for technical collaboration for establishing the factory was signed by the Government of India with Messrs. Olivetti of Italy in August 1960. The agreement provides for assistance of Olivetti in the production of teleprinters and ancillary equipment, including supply of manufacturing data, drawings and specifications, machines and materials. Besides, Olivetti are to provide training for Indian personnel in Italy and depute Italian experts to work in the Indian factory in the initial stages. In addition, the agreement allows export under specified conditions for 10 years, and thereafter without restriction.

In return, Olivetti is to be paid a sum of Rs. 15·7 lakhs in instalments, and royalties at the rate of 4 per cent on the value of indigenous output during the first five years, and thereafter at gradually diminishing rates up to 1970, after which no royalty is payable.

Next year (April 1962—March 1963), the factory expects to complete 850 machines. Nor is that all. The factory proposes to introduce the "moving basket" type of teleprinters replacing the present "moving" models. In the present model, the carriage with the paper moves from one end to the other; in the "moving basket" model, the paper carriage will be stationary, and the letter keys will move as a single unit.

Humble beginnings, yes; But as Hindustan Teleprinters, the new venture in the public sector, get into their stride and full production, it will mean another step towards self-sufficiency in the field of tele-communications.

The Package Programme

Significant rise in crop yield per acre is the vital factor in stepping up agricultural production. The Intensive Agricultural District Programme aims at achieving this. Better known as the Package Programme, the scheme is in operation in Thanjavur district of Madras State and in selected districts in six other States. This article by Sri Y. N. Varma, Extension Commissioner, Ministry of Food and Agriculture, gives an account of the programme and its working.

A rise in yield per acre is, in the ultimate analysis, the deciding factor in increasing foodgrains production in India. The Intensive Agricultural District Programme, popularly known as "Package Programme", is a significant step in this direction. The Programme, which is already in operation in seven States and is being gradually extended to the remaining eight, is a closely-knit, compact project rapidly to maximise production in selected districts by combining *all* the factors that contribute to increased output.

But that is not all. In the words of Shri S. K. Patil, this "apparently fractional effort in fifteen districts out of more than 300 is a great demonstrational enterprise to convince our farmers that the Programme points a way which leads them surely and steadily to the goal of food self-sufficiency. Under a democratic set-up, this is the only type of programme that can achieve that goal and from that point of view, the whole Programme constitutes a great democratic effort to bring about rapid progress in the field of agriculture".

Home Minister Bhaktavatsalam evinced interest in the 'Beaver' tractor at the American Pavilion in the National Agriculture Fair. The Minister, presided over the formal dedication ceremony of the pavilion by Mr. C. Tyler Wood, U.S. Minister for Economic Affairs.



Criteria for Selection

Under the Programme, evolved on the basis of a report prepared by a Ford Foundation Team, a "favourable district" is selected in each State, having maximum potentialities for increasing agricultural production within a comparatively short time. There are three principal criteria for selection. First, the district should have maximum irrigation facilities. Secondly, it should have the minimum of natural hazards, that is, there should not be any problems requiring long-term attention such as susceptibility to floods or acute drainage or soil conservation problems. Thirdly, it should have well-developed village institutions like co-operatives and panchayats.

The districts are selected by the State Governments themselves keeping in view these criteria. The responsibility for implementation of the Programme also rests with them. They draw up the programme of work with reference to the selected district keeping in view the local conditions.

People's Programme

Being a People's Programme, the farmers themselves play a vital part in it. The farmers are reached through co-operatives and panchayats and step by step, all agricultural families in the district are enabled by trained staff to prepare their individual production plans. The total effort of the community is thus organised and developed as fully as possible and greater output is ensured with greater concentration of resources and simultaneous provision of all the elements required for increased production. The entire cultivated area in the district is saturated with improved varieties of seeds; full supplies of organic manures and fertilisers are arranged; attention is paid to efficient utilisation of irrigation facilities adequate plant protection measures are undertaken with the use of pesticides, etc.; improved farm implements are put to use. And, there are regular scientific demonstrations to popularise improved agricultural practices. Agricultural credit required by farmers is provided through strengthened co-operative societies. Marketing arrangements and other services are also guaranteed to enable the cultivator to obtain the full market price for his produce.

The emphasis

The Programme normally covers all the food crops grown in the districts both in Kharif and Rabi seasons although emphasis will naturally be laid on major crops such as paddy in Madras, Andhra Pradesh, Bihar, Madya Pradesh, Assam, West Bengal, Maharashtra, Kerala, Mysore and Orissa, wheat in Uttar Pradesh and Punjab and millets and wheat in Rajasthan and Gujarat. In addition, the Programme envisages inclusion of livestock improvement projects and other related activities which could be taken up in any of the seasons.

The Programme was launched in the districts of Tanjore (Madras), West Godavari (Andhra Pradesh) and Shahabad (Bihar) during 1960–61. In the districts of Ludhiana (Punjab), Aligarh (Uttar Pradesh), Pali (Rajasthan) and Raipur (Madhya Pradesh) the programme was introduced in the Kharif of 1961–62. The response from the cultivators has been encouraging everywhere.

Quality seed programme

Out of the 139 blocks into which these seven districts are to be divided for the purpose of this intensive drive, the Programme was in operation in 102 blocks in the Kharif of 1961–62. In terms of cultivated area, the Programme covered about 14 lakh acres, which is about 16 per cent of the total cultivated area in the districts.

In all, about 130,000 farm production plans were prepared for farmers in these districts during the Kharif of 1961–62. A quality seed programme has already been worked out and seed cleaning, processing and treating equipment is being provided to each district. There has been a great spurt in the use of fertilisers, both nitrogenous and phosphatic. In West Godavari, for example, the total quantity of nitrogenous fertilisers being used during 1961–62 in the Programme area (which constitutes only 25 per cent of the total area of the district) is about 20,000 tons as compared to about 14,000 tons for the entire district before the introduction of the Programme. Agricultural Engineering Workshops costing about Rs. 5 lakhs each, are being set up in all districts not only to produce better implements but also to train village artisans. More rural godowns are being built to maintain supplies within easy reach of cultivators.

Increased Yields

Marked increases in yields have already been achieved on demonstration plots in some districts. In Shahabad, for instance, the percentage increases ranged from 49 to 244, while in West Godavari, the highest increase in yields obtained was 83 per cent. About 5,000 crop-cutting experiments are being conducted in all the seven districts to collect full data about yield, etc.

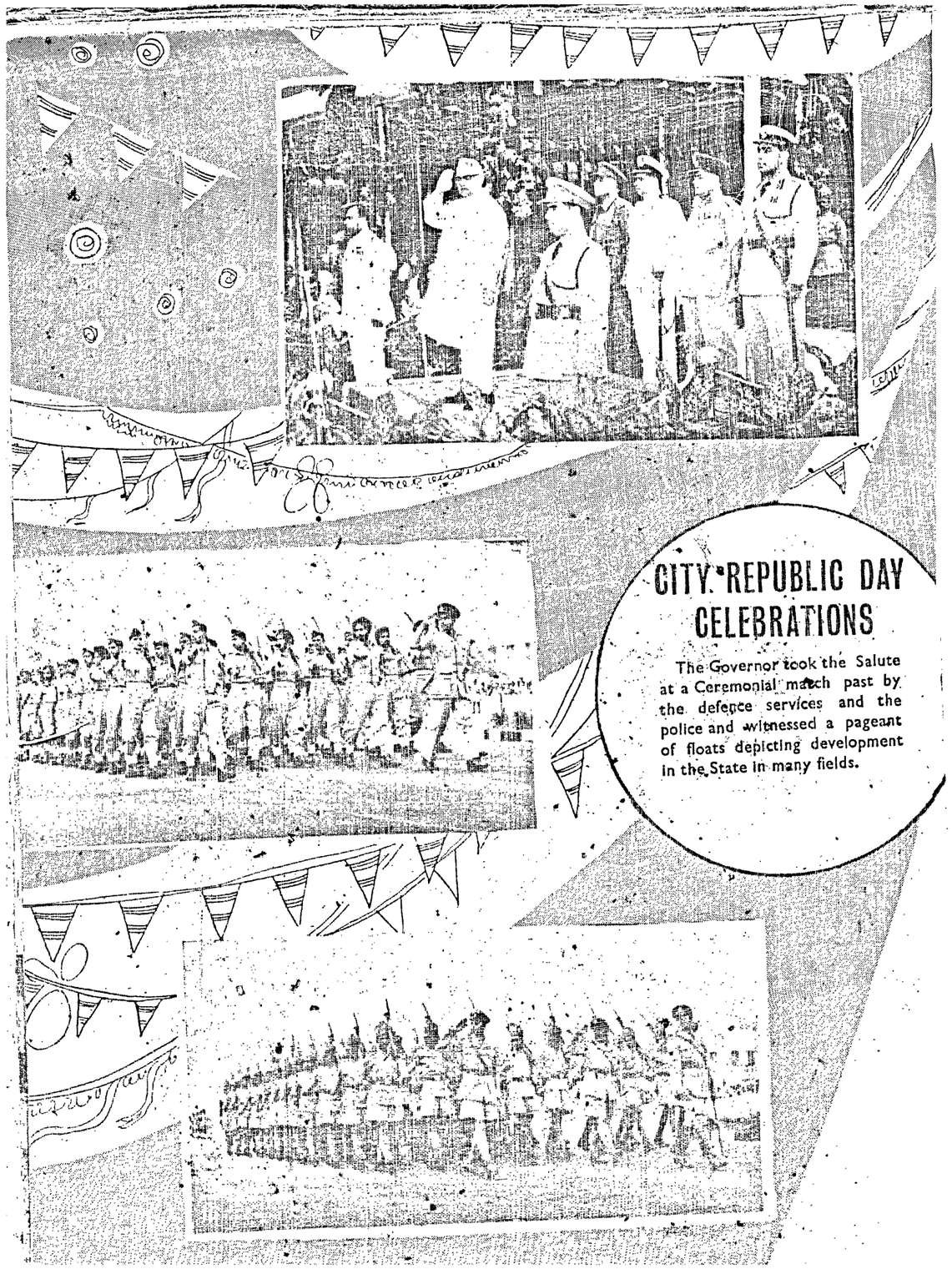
The total expenditure in the first seven districts is estimated at nearly Rs. 9 crores over a five-year period. This includes a contribution of about Rs. 3·7 crores from the Ford Foundation. In addition, about Rs. 8 crores is to be advanced as medium-term loans and nearly Rs. 22 crores more as short-term credit in the fifth year of the Programme.

The Programme is now being extended to the districts of Palghat and Alleppey (Kerala), Mandya (Mysore), Surat (Gujarat), Sambalpur (Orissa) and Burdwan (West Bengal) and will be in operation there in the Kharif of 1962–63. Later, it is to be introduced in Cachar (Assam) and Kolaba or Bhandra (Maharashtra).

More initiative

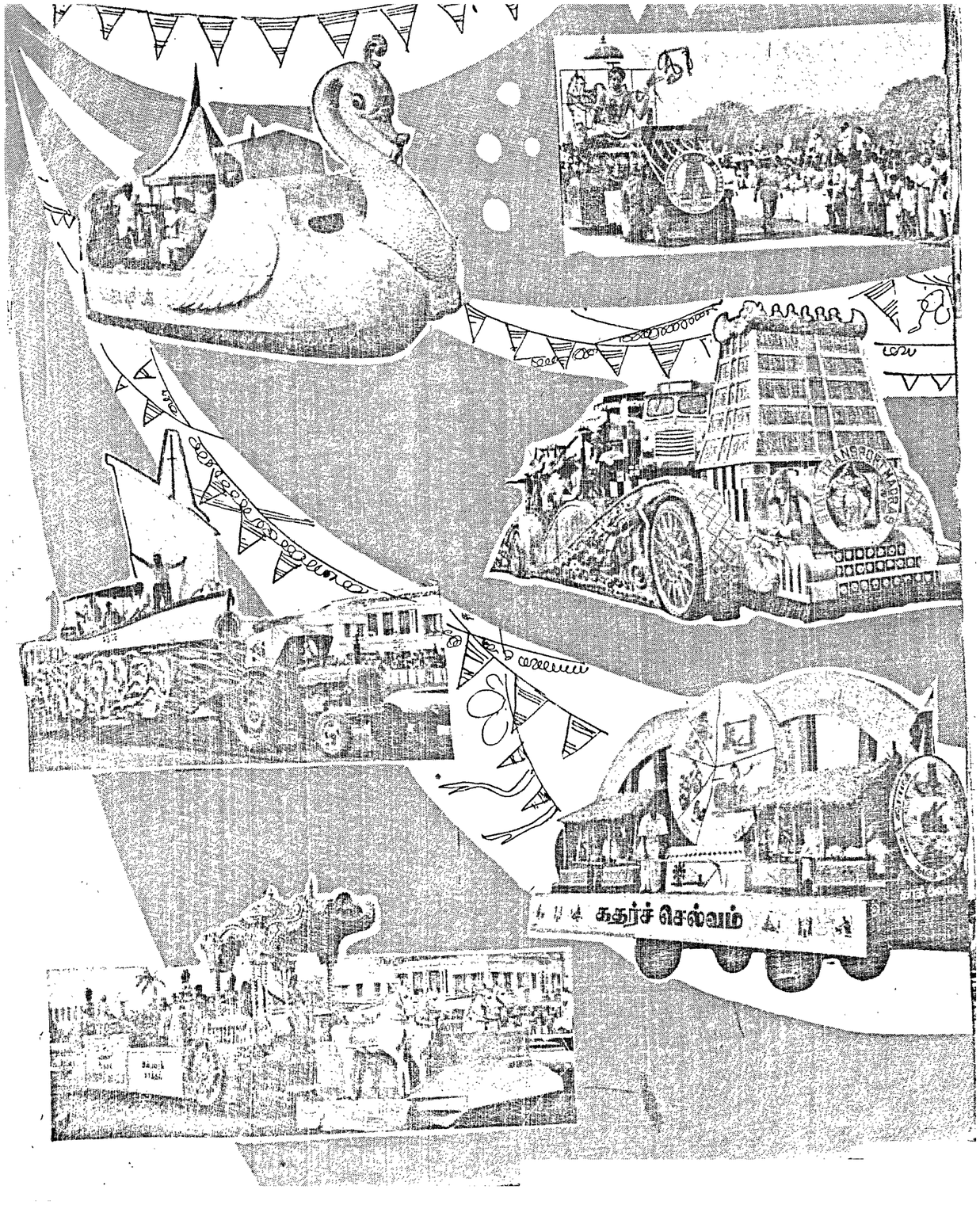
Under the Third Plan, a target of 31·5 per cent increase in foodgrains production has been fixed for the country as a whole, bringing it up to 100 million tons. The achievement of this average for the entire country pre-supposes a much higher percentage increase, 60 per cent or so, in the predominantly food producing districts such as those selected for the "Package Programme".

The "Package Programme", intended to put the nation's agriculture on a modern footing, is being watched with considerable interest not only in India but also by other countries. Involving joint participation of the administrative machinery geared to co-ordinated action, and non-official agencies like Panchayats and co-operatives, the experiment is benefiting the agriculturist as well as the administrator. The Agriculturist is enabled to plan and work for his prosperity and the administrator is becoming more realistic in his approach to problems. Red-tape is receiving a setback. In removing procedural bottlenecks, many traditional and outworn habits of administrative thinking have been abandoned and more and more initiative is coming into play.



CITY REPUBLIC DAY CELEBRATIONS

The Governor took the Salute at a Ceremonial march past by the defence services and the police and witnessed a pageant of floats depicting development in the State in many fields.





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DA61/570

National Leprosy Control Scheme

Dr. A. C. BHATTACHARYA.

Prevalent in India for a long time, the scourge of Leprosy was a totally neglected subject and though it remained a problem of magnitude, received scant attention. Happily after independence, the problem has been engaging increasing attention from the Government and the people. This article presented in connection with Anti Leprosy-Day observed in the country on January 30 this year gives an account of the National Leprosy Control Scheme.

Leprosy has been prevalent in India for a pretty long time but its incidence is not uniform in all the States. It is more prevalent in some States whereas its existence in others is very negligible.

India can be divided into three regions as per prevalence of the disease—areas of high incidence, moderate incidence and low incidence. The areas of high incidence (five or more per thousand) include Assam, West Bengal, Bihar Orissa, Madras, Andhra, Kerala and Madhya Pradesh. The areas of moderate incidence (1 to 5 per thousand) are the eastern part of Uttar Pradesh, Madhya Pradesh, Maharashtra and Himachal Pradesh. Low incidence (below one per thousand) is reported in plains of Punjab, Western part of Uttar Pradesh, Rajasthan and Gujarat.

Before Independence

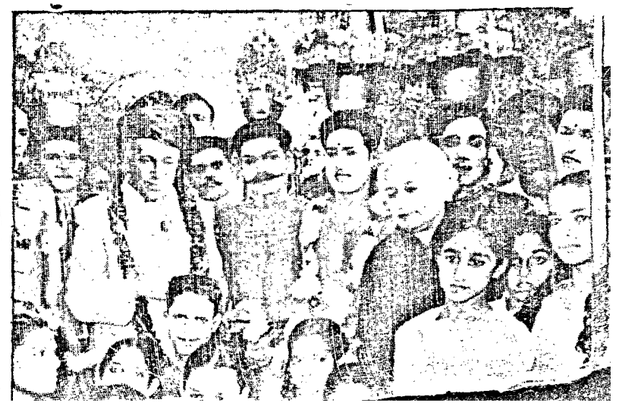
It has been estimated that about two millon people are suffering from the disease of which about 0·5 million are in the ineffective state. Prior to Independence, it was a neglected subject and did not receive interest proportionate to the magnitude of the problem. Various State Governments had no specific plan for anti-leprosy work. Apart from running a colony or a few clinics here and there their plan consisted mainly of giving grants-in-aid to others. The result was that in the past most of the colonies clinics or other anti-leprosy activities were started by non-official agencies according to their convenience and policy.

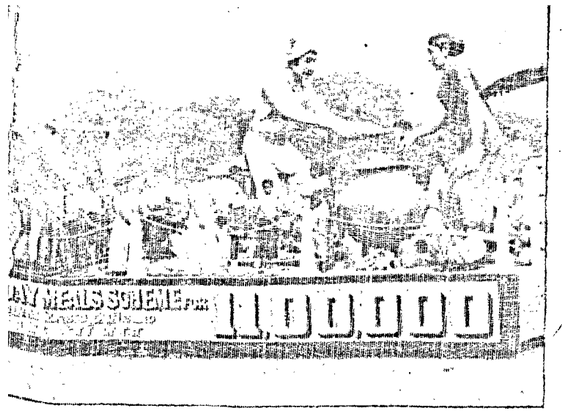
Only after Independence has this problem been engaging greater attention of the Government. Leprosy is a chronic communicable disease and takes a good deal of time for recovery. With limited number of available beds and limited resources of the country, it is not possible to hospitalize all the infective cases for treatment but the problem has to be solved.

Thanks to the discovery of Sulphone, we have now a drug, although it has its limitations, to start a mass anti-leprosy work at much less cost. To put in practice the idea of making infective cases non-infectious and to treat all cases, the Government initiated a scheme known as National Leprosy Control Scheme under the charge of a Director, Leprosy Control Work who co-ordinates various centres established in India through the State Health Directorates. The State Health Directorates are directly responsible for proper functioning of the Centres.

The Government of India gives cent per cent grant to the State for the establishment of Leprosy Subsidiary Centres and the recurring expenditure is borne on 50 : 50 basis. Two types of centres were envisaged under the programme, subsidiary Centre and Treatment and Study Centre.

Prime Minister Nehru with members of the Madras Contingent who participated in the Republic Day Celebrations at New Delhi.





The Midday Meals Scheme was the theme of the Madras tableaux at the Republic Day Celebrations in the Capital.

Subsidiary Centres provide survey of the population of about 50-60 thousand, follow-up of healthy contacts to detect cases and to carry out mass treatment with Sulphone. The Treatment and Study Centres in addition carry out epidemiological survey and scientific assessment of the result of sulphone therapy.

The Last Decade

During the First Plan it was decided to start 40 centres—four Treatment and Study Centres and 36 Subsidiary Centres—of which four Treatment and Study Centres and 29 Subsidiary Centres were established. In the Second Plan period the Scheme was continued and it was proposed to establish an additional 100 Subsidiary Centres but 104 such centres were established exceeding the target. A total of 137 Centres has been located in various States with Maharashtra having the largest number of 22, Bihar 18, Andhra Pradesh and Orissa 15 each, Madras 14 and West Bengal 13. There are four Treatment and Study Centres and 133 Subsidiary Centres.

The progress of the National Leprosy Control Scheme is satisfactory. Regular survey of population, examination of persons, case detection, treatment, publicity and welfare activities and follow-up of healthy contacts are being carried out in a systematic way.

Work done

The population covered by the leprosy centres is 14,296,374 of which 10,202,686 have been surveyed. Resurvey of the population has been carried out in 36 centres of 12 States. Population resurveyed is 20,11,055. On examining 7,424,021 persons, 20,11,055 leprosy cases have been detected: Lepromatous—21,461, Non-lepromatous—72,706 and Intermediate—4,621. The incidence of leprosy on persons examined comes to 1·33 per cent.

The number of registered known cases of leprosy in the project area is 130,289. The type and percentage of registered known cases is: Lepromatous—29,821—(22·89 per cent) Non-lepromatous 93,913—(72·08 per cent) and Intermediate 6,555—(5·03 per cent). The lepromatous rate is 22·89 per cent. The cases under treatment in the project area is 115,829. Thus 88.9 per cent of the registered cases have been put under treatment.

Besides this there is a good number of cases coming from outside the project area for treatment in the different treatment Centres. Number of cases registered is 74,473 and cases under treatment is 36,585. Taking both cases from inside and outside the project area the total number of registered cases comes to 204,762.

The number of healthy contacts under observation is 382,569. The table shows the number of persons who developed signs of leprosy among the contacts for three years—

	1959	1960	Up to September 1961.
Number of healthy contacts examined.	223,840	265,991	291,452
Number of whom signs. of leprosy developed.	618	572	641
Rate of transmission of leprosy.	0·276 per cent.	0·215 per cent.	0·219 per cent.

The estimated expenditure during the Second Plan period for the control of leprosy is to the tune of Rs. 2·5 crores. In addition, grants were sanctioned to the different voluntary organisations from Health Minister's Discretionary Fund and the amount spent during the Second Five-Year Plan is Rs. 26,36,350.

During Third Plan

During the Third Plan period a provision of Rs. 431·40 lakhs has been made for Leprosy Control Programme. The scheme will be implemented by the State Governments and the Union Territories. The Government of India will give grants to the State Governments and Union Territories in a proportionate manner. The following programme will be implemented on priority basis: (1) Establishment of Leprosy Control Units according to modified pattern; (2) Establishment of Leprosy Training Centres; (3) Establishment of Study, Education and Treatment Centres to be attached to the existing Health Services, i.e., Primary Health Centres, Dispensaries, etc.; (4) Appointment of Assistant Leprosy Officers in State where Leprosy is endemic.

A Bright Future

55

Cooperative SUGAR MILLS



Sri V. BALASUNDARAM, *Registrar of Co-operative Societies.*

A comparatively new venture, the establishment of sugar factories in the State on a Co-operative basis has paid cane growers well and the future of sugarcane growers and sugar production in the State is bright. In this article, the Registrar of Co-operative Societies traces the development of co-operative sugar factories in the State and details the vital requisites for opening of such factories and their successful functioning.

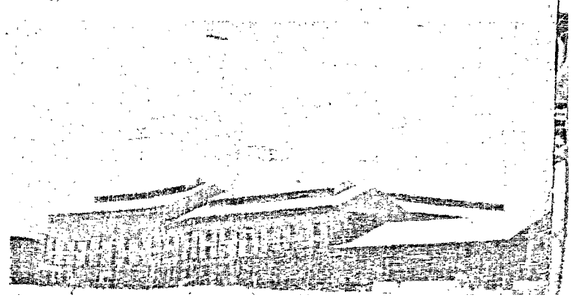
The establishment of Sugar Factories on a co-operative basis is a comparatively new venture in Madras State. A part of the sugarcane grown is consumed by Sugar Factories in the private sector, but a considerable portion has to be converted into jaggery and brown sugar. The price of jaggery is subject to wide fluctuations; not infrequently, the cane growers are confronted with low and uneconomic prices for the jaggery produced by them. Further, the small cane grower is not also able to find the resources for owning the machinery and equipment required for the manufacture of jaggery.

With a view to helping the cane growing agriculturists to secure a good return for their cane, the question of organizing the co-operative sugar factories was taken up in 1955.

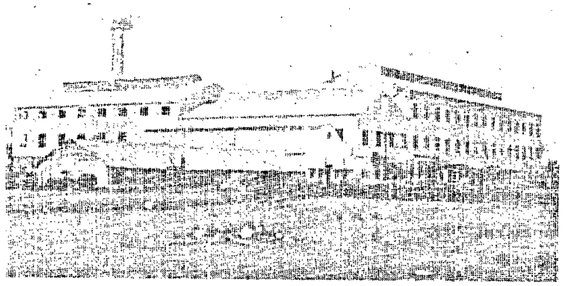
Right Preference

About this time, the Government of India also started encouraging the formation of more sugar factories for meeting the shortage of sugar in the country. In licensing new factories, the policy of the Government of India was to give preference to those organized on a co-operative basis. Thanks to this policy, three Co-operative sugar factories were started in this State during the period of the Second Five-Year Plan—one at Udamalpet (Coimbatore district), with a cane crushing capacity of 900 tons per day the second at Ambur (North Arcot district) with a cane, crushing capacity of 800 tons per day, and the third at Madurantakam (Chingleput district) with a cane crushing capacity of 800 tons per day. Each of these factories has a capacity of crushing over 800 tons of sugarcane on an average per day. The capital cost of each is about Rs. 110 lakhs, of which 60 per cent is met by way of a long-term loan from the Industrial Finance Corporation of India and the remaining 40 per cent by way of share capital from the members and the State Government.

The Amaravathi Co-operative Sugar Factory went into production in 1960. The quantity of sugar produced was 11,897 tons. The North Arcot District Co-operative Sugar Factory commenced production on 25th November 1960



The Amaravathi Sugar Mills.



Madurantakam Co-operative Sugar Factory.

and produced 13,293 tons of sugar. The Madurantakam Co-operative Sugar Factory commenced crushing on 18th March 1961 and produced 6,424, tons of sugar. The Amaravathi Co-operative Sugar Factory has again commenced production for the current season on 15th July 1961.

And more factories

Besides the three factories mentioned above, three more are being organized, one at Namakkal in Salem district, the second at Kallakurichi in South Arcot district and the third at Sanayanallur in Madurai district. The one at Namakkal has collected a share capital of Rs. 35·25 lakhs, including Government share capital of Rs. 15 lakhs. It has placed orders for plant and machinery. The collection of share capital is in progress in the other two areas. The factories to be started under the Third Five-Year Plan will have 1,000 tons daily cane crushing capacity each. The capital cost of a new factory will be about Rs. 140 lakhs. Towards this capital cost, the Industrial Finance Corporation will advance a long-term loan of Rs. 90 lakhs and the mills will raise a share capital of Rs. 50 lakhs, of which Rs. 25 lakhs will be from the State Government.

Vital factors

The successful functioning of a sugar factory depends on several factors. The site of the factory should be in the heart of the cane growing area. Adequate water-supply should be available both for the factory and for residential quarters. The factory should be close to a railway station for easy transport of sugar. There should be a network of roads to facilitate quick transport of sugarcane to the factory. There should be about 4,000 to 5,000 acres under sugar cultivation, around the factory to facilitate steady supply of sugarcane. This is very important, as unless the sugarcane is crushed within a few hours of cutting there will be loss of 0·1 to 0·2 per cent in the extraction of sugar. This will reduce the profit of the factory considerably. Cane supply should be adequate to feed the factory for at least 150 days in a year. The growers should also adopt measures for improving the yeild of sugarcane per acre.

Liberal Assistance

The Government are extending liberal financial and other assistance to sugar factories. They contribute 50 per cent of the share capital of each factory. They give guarantees to the suppliers of machinery for payment of deferred instalments by the factory, to the Industrial Finance Corporation for repayment of loans taken by the factory for meeting capital cost and to the State Bank of India for repayment of loans taken for working capital. Further Government also give the free services of officers to each of the factories for the first year of its working.

Thanks to the formation of the Co-operative Sugar Factories, the future of the sugarcane growers in their areas is bright. The three factories which have already gone into production, have paid to the cane growers up to Rs. 53 per ton of sugarcane, inclusive of transport charges, though the Government of India have fixed only Rs. 44·10 per ton, as the minimum price. The members are given an advance of about Rs. 500 per acre towards purchase of manure, cane sets, implements, etc.

Members as Owners

By adopting the system of deducting Rs. 3·50 per ton from the price of sugarcane supplied by the members to be taken to the credit of their share capital, the factory enables the members to increase their share capital investment, and encourages the habit of saving. As members of the factory, the sugarcane growers are practically its owners and therefore a large portion of the profit earned by the factory goes to them. Each factory provides employment to more than 500 people in its area. The co-operative sugar factory thus helps to improve the economic condition of the sugarcane grower and also relieves, to a considerable extent, the unemployment problem.

Multi-vitamin Fruit

A fruit rich in many vitamins has been introduced in India. Known as Barbados or West Indian Cherry, it is being grown in the Lal Bagh garden at Bangalore. It has taken well to the soil and climate of Mysore. The fruit is especially rich in vitamins C and A and also contains Vitamin B, iron, calcium and phosphorus.

Widening Mental Frontiers

The Commonwealth Scholarship Scheme

SIR DOUGLAS LOGAN

The success of the Commonwealth Scholarship Scheme is not confined purely to the academic side of the scholar's life, but has extended to the social, cultural, literary and artistic fields also, says the Principal of the University of London, who is the author of this article presented in connection with the recent Commonwealth Education Conference held in New Delhi.

The first suggestion of a comprehensive scheme to enable Commonwealth citizens to enjoy the facilities for higher education at post-graduate level in universities in other Commonwealth countries was made, not at a Commonwealth Education Conference, as might have been expected, but at the Commonwealth Trade and Economic Conference which was held at Montreal in August 1958. At the end of the discussion of the proposal, the Rt. Hon. Derick Heathcoat Amory (now Lord Amory and High Commissioner for the U.K. in Canada) announced that, in any such scheme for a thousand scholarships and fellowships, Britain would be responsible for instituting half the number and Canada quickly followed suit by offering to underwrite a further 250 awards.

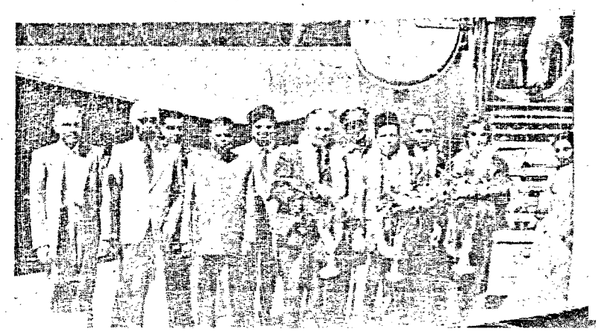
Practical Steps

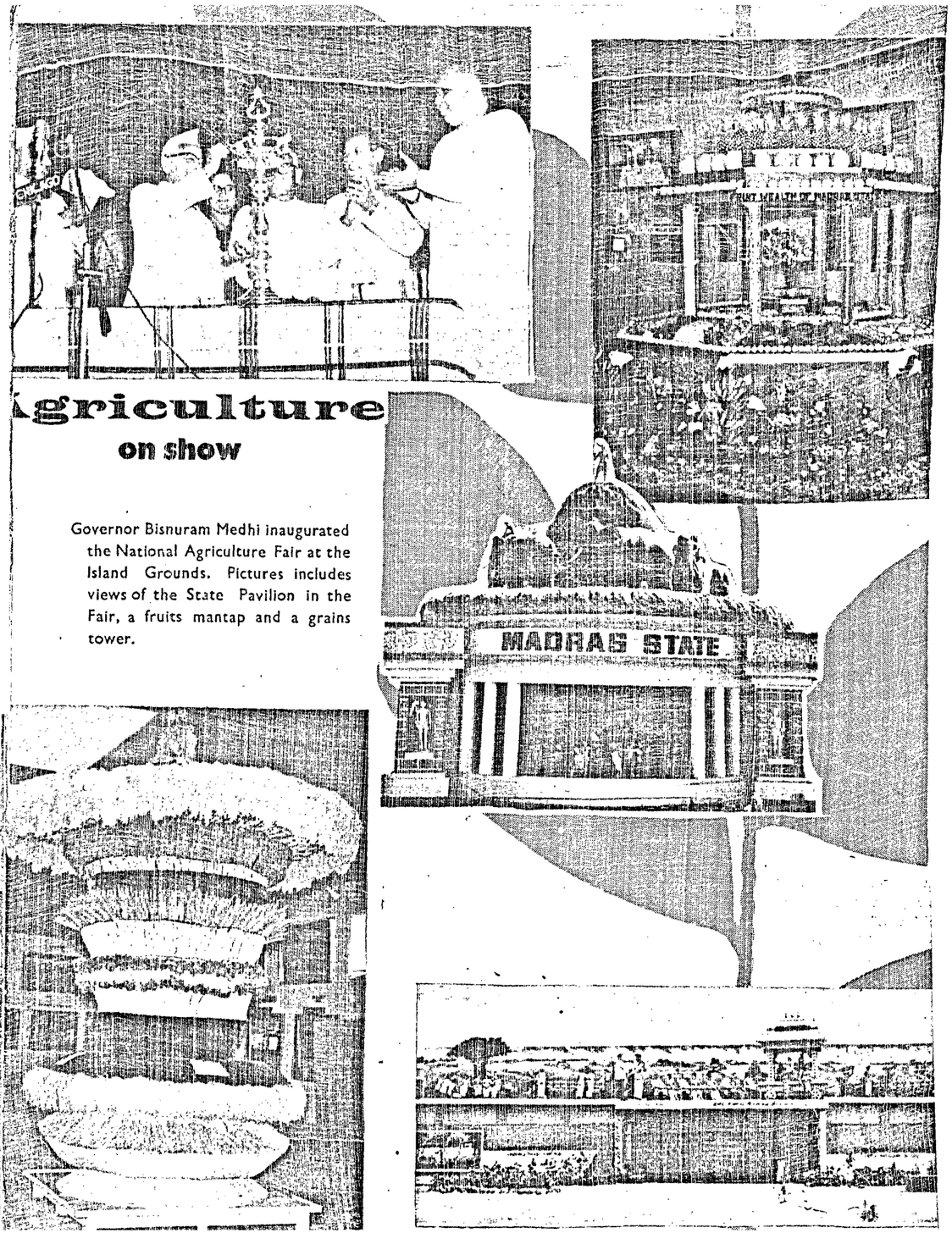
Eleven months later, the First Commonwealth Educational Conference was convened in Oxford to implement this scheme and other proposals for Commonwealth co-operation in the field of education. By the time the Conference met in July 1959, it was clear that the target of a thousand awards would be exceeded. It was felt that the main object of the scheme should be to widen the educational opportunities for men and women of high intellectual promise who could be expected to make a significant contribution to the life of their own countries on their return home from study overseas. In the light of this and other considerations, a number of general principles were formulated at the Conference on the basis of which each participating country could with profit base its own particular scheme.

Immediately after the conclusion of the Conference, Britain set about taking practical steps to ensure that the scheme could come into operation in October 1960. To this end Britain made available for competition during the forthcoming year 250 of the 500 awards to which she was committed. Application forms were distributed to the government or administrative agencies of the various Commonwealth countries, colonies or dependent territories and nominations were requested by a date early in January 1960. In the event the difficulties and delays which had to be surmounted in Britain before the machinery for making these awards could be set up were later experienced throughout the Commonwealth.

In Britain the Commonwealth Scholarship Commission was created by Act of Parliament under the chairmanship of the Earl of Scarbrough; the Association of Universities of the British Commonwealth provided the secretariat and the British Council were asked to deal with the welfare side of the scheme. Very few nominations were received on time and some arrived a considerable time after Universities had filled all their vacancies for the following October. In these circumstances it was remarkable that as many as 178 scholarships were awarded and accepted and that

Arrival at airport of Sir Allen Brown (and Lady Brown) and Inche Abdul Rahman C. Haji Talib, delegates to the Second Commonwealth Education Conference at New Delhi as Leaders of the Australian and Malayan delegations, who visited Madras recently.





Agriculture on show

Governor Bisnuram Medhi inaugurated the National Agriculture Fair at the Island Grounds. Pictures includes views of the State Pavilion in the Fair, a fruits mantap and a grains tower.

168 scholars actually arrived in Britain in late September 1960. Welcomed personally by the Earl of Scarbrough, they spent a week in London, adjusting themselves to a new country, attending receptions given in their honour and meeting and talking to one another, before dispersing to their places of study.

Largest Number

Since then a second generation of scholars have taken up their awards in October 1961 and a third competition is already in progress. Of all the Commonwealth countries, India is the one to which the largest number of Commonwealth Scholarships tenable in Britain is offered each year, and 69 of the 381 scholars studying in Britain at present are Indians. A general account of the progress of the whole scheme, with full statistical details, is contained in the first Annual Report on the Plan published by the Commonwealth Education Liaison Committee, while a more specific statement on the United Kingdom part of the operation is given in the Annual Report of the United Kingdom Commonwealth Scholarship Commission (both these documents can be obtained in India through H.M. Stationery Office agents).

The competition for Commonwealth Scholarships has been exceptionally fierce—in India, for example, over 3,500 applications were received in 1961—and the candidates finally selected are accordingly of an outstandingly high intellectual calibre. It is too early yet to make any comprehensive assessment of the academic attainments of the first generation of scholars since the majority will not be taking their examinations or submitting their theses until July 1962 at the earliest but all the indications so far are most encouraging.

Best Students

A number of scholars reading medicine here have successfully taken examinations for the higher diplomas of the Royal College of Surgeons and the Royal College of Physicians. Several university departments have reported that a Commonwealth Scholar studying with them is the best student they have ever had and a number of scholars have already had articles published in learned journals. The quality of their work has enabled the majority of scholars doing research to be registered for submission of their research work for a doctorate.

It is a pleasure to record that success has not been confined to the purely academic side of the scholars' lives.



Finance Minister Subramaniam with the delegates and others at the Reception given to them at the Rajaji Hall.

Many have distinguished themselves in cultural and social societies, literary and artistic fields and in sporting activities. The scholars as a whole are an outstanding group of people of whom the Commonwealth has just cause to be proud.

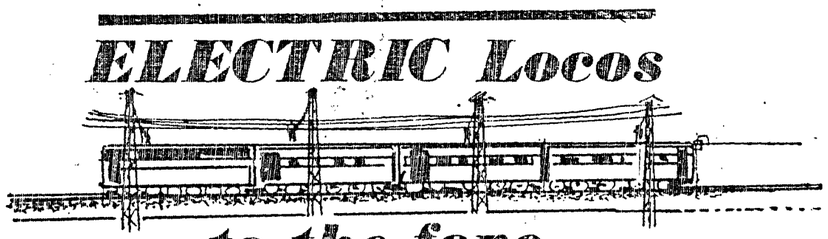
Some Problems

The Commonwealth Scholarship Commission has inevitably had to face a number of unforeseen difficulties in the first two years of its existence. The most serious problem has been caused by the high academic quality of the scholars which enables so many of them to embark on courses for a Ph.D. degree of a duration of up to three years. The scheme was conceived on the basis that the ordinary length of tenure of an award would be two years, with the possibility of a third year extension in a few cases.

If, as is the case, the number of such intensions is very large, then the number of new awards which Britain can offer with a maximum of 500 tenable at any one time is inevitably reduced below the contemplated figure of 250. It must be realised, however, that such a reduction is in fact an implied tribute to the scholars now studying under the scheme. We confidently expect that, whether they have stayed for one, two or three years, the scholars will, on their return home, justify the high hopes of their governments and provide convincing proof of the vitally important contribution which the scheme can make to development, both in the educational sphere and elsewhere, throughout the Commonwealth.

Growing Suburban Traffic

ELECTRIC Locos to the fore



The steam locomotive, throwing skywards columns of dark grey smoke is gradually disappearing from some of the congested routes on the Indian Railways. This article describes how its place is being taken, slowly but surely, by the sleek, fast moving electric loco, adding considerably to the frequency and speed of train operation. In this connection, the extension of the electric train service in the Tambaram-Vandalur section in Madras State early this year may be recalled.

The story of electric traction in India dates back to 1925 when a distance of about 16 kilometres between Victoria Terminus and Kurla, and Victoria Terminus and Bandra in Bombay was energized. The only metre gauge line, running electric trains, lies between Madras and Tambaram which was commissioned in 1931. By the end of 1936, electrification was carried out on a total route length of 388 kilometres in Bombay and Madras areas. Electric traction came to the Eastern region in November 1957, when the first electric train ran from Howrah to Sheoraphuli.

Chief Minister Kamaraj recently inaugurated the electric train service on the Tambaram-Vandalur section. Sri V. Ramaswamy, Union Deputy Minister for Railways looks on as the Chief Minister inaugurates the service by pulling a lever.



Electrification is primarily intended to cope with the fast-growing suburban traffic in and around the metropolitan cities. In Bombay area alone, the Western and Central Railways together at present operate 1,035 suburban trains a day.

Between Madras Beach and Tambaram, over 200 trains run daily at a frequency of six minutes during rush hours. In Calcutta, electric trains on the Eastern Railway have reduced the travelling time between Howrah and Burdwan by 1 hour and 23 minutes. Nearly 15 lakhs of people—factory workers, office-goers, traders, students etc.—are now carried daily by the electric trains thus bringing the principal industrial cities within easy reach of the suburban population. Use of electric traction for carrying the freight traffic commenced virtually during the Second Plan period.

During II Plan

Railways' Second Plan provided for electrification of 1981 kilometres on some of the important lines of Eastern and South-Eastern Railways. These lines were destined to bear the main brunt of the phenomenal rise in goods traffic during the Second Plan. Electric traction, which combined speed with greater hauling power, was rightly considered as the most economical and expeditious method of handling heavy mineral and other traffic.

A Central Project Organization known as "Railway Electrification" has been set up in Calcutta for execution of the electrification scheme.

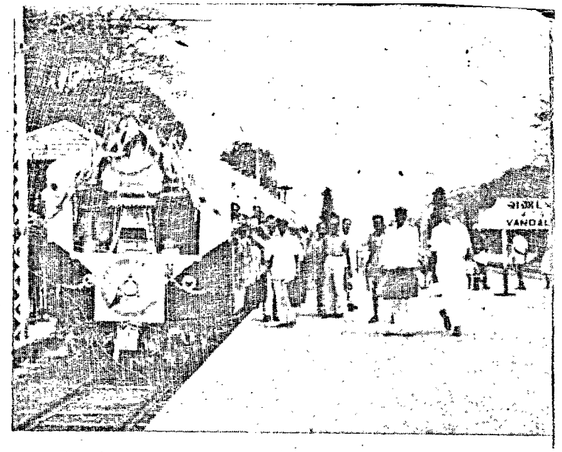
A significant feature of this programme is the adoption of the most modern and economical 25 KV., a.c. 50 cycles system for the first time on Indian Railways.

The sections from Waria to Gaya including the branch line to Pathardih, Asansol to Chakradharpur, Rajkharsawan to Dangoaposi, Sini to Tatanagar, covering about 633 kilometres have already been energised. The Gaya-Mughalsarai and Tatanagar-Kharagpur sections are likely to be commissioned this year.

Another 1,426 route kilometres are proposed to be electrified during the Third Plan. The sections to be electrified include Sealdah Division, Waria-Howrah and Docks (via) Howrah Burdwan chord-line on Eastern Railway, Moghulsarai-Kanpur on Northern Railway, Howrah-Kharagpur on South-Eastern Railway, Igatpuri-Bhusawal on Central Railway and Tambaram-Villupuram on Southern Railway. The preliminary work of survey, designing of overhead equipment and ancilliary works, etc., in these sections has already commenced.

Rolling Stock

Simultaneously, with the introduction of electric traction, Railways have taken up the manufacture of necessary equipment and rolling stock. The first India-made electric locomotive—the Lokmanya—rolled out of the Chittaranjan Workshop in last October. Steps have also been taken for the manufacture of a.c. freight locomotives there. The Integral Coach Factory at Perambur and an engineering firm in the private sector in Calcutta have already started the manufacture of electric multiple units stock.



The electric train arriving at Vandalur on its maiden trip to the place.

There is no doubt that electric traction is the most effective way to modernise rail operation. Indian Railways are electrifying at a rate much faster than many countries more highly industrialized than India.

Tilak Memorial in London

Tilak House, the London memorial to Lokamanya Bal Gangadhar Tilak, was officially opened recently by Earl Mountbatten of Burma. It represented one more link in cultural understanding between the East and the West, he said. The memorial is the house in Talbot Road, Paddington, where Tilak lived in 1918–19. At present it contains five flats for the use of Indian students, but this accommodation will be extended to eight flats when possible.

Providing the flats is the first phase of a £300,000 scheme to establish a cultural centre, library and, later, scholarships in Indian culture and philosophy bearing the name of Tilak.

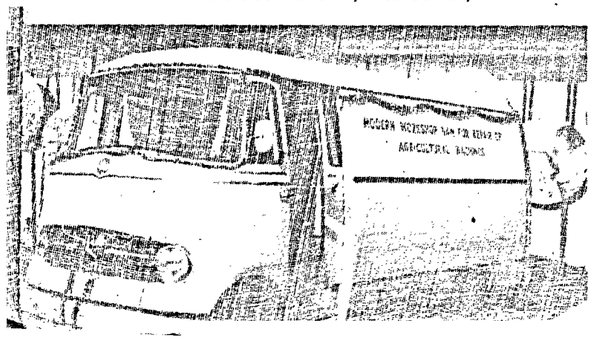
AIR serves the Nation

Human taste is diverse ranging from the most exclusive and fastidious to the most generous. Whereas a stage performance or a presentation on the screen may demand months of rehearsing and preparation, broadcasting has to arrange programmes for its listeners, practically round the clock, throughout the year. A stupendous task this and how All-India Radio fulfils this task, managing to cater for the requirements of all sections of people, is described in this feature article.

It has been said by a well-known dramatist that you cannot mix art and politics; yet that is precisely what broadcasting has to do. Mr. Lionel Fielden, the first Controller of Broadcasting, observed in his book on "Broadcasting in India", "king emperors and cockney comedians, statesmen and jazz-crooners, duns and daubers, rub shoulders at the microphone; at one end of the scale broadcasting wears the top-hat of holy significance, at the other the cap and bells of carnival."

In India broadcasting does all this and much more. With its vast spaces and teeming millions, India offers at once an opportunity and a challenge to the art of broadcasting, an opportunity for entertaining, informing and educating over 430 million people; a challenge to catering for the cultural needs of a vast and varied country. The task becomes more difficult when broadcasting, as in India, happens to be a Government department and answerable to the taxpayer of the biggest democracy in the world.

The mobile workshop Van presented to the State Government by West Germany.



The business of broadcasting is to please. Even if it is to inform and, in a way, educate, it has to be done in a pleasing manner and that too only through the ear. If it can hold the attention, the programme can be said to be successful; if not, howsoever useful the information being passed on, it has failed. And what a variety of audience broadcasting has to cater for, all at the same time. All-India Radio seeks to do so by broadcasting special audience programmes and by associating public men in all fields at various levels in planning its programmes.

There are special programmes particularly directed to women, children, farmers, the forces, industrial workers, highbrows, lowbrows and numerous tribes in various stages of civilisation. All-India Radio, therefore, broadcasts not only in all the major Indian languages along with English, but also in about 50 dialects and 80 tribal semi-languages.

Music Predominant

About 50 per cent of the entire All-India Radio programmes running into 122,000 hours a year consists of music; the rest comes under the category of spoken-word. Of music, roughly half is devoted to classical style and the remaining comprises devotional, folk and light music. There are over 7,000 approved classical music artistes on the list. All-India Radio arranges a Radio Sangeet Sammelan every year preceded by a countrywide music competition. During the Sammelan, a symposium is also organised on some aspect of India classical music in which well-known musicologists of the North and the South participate.

In 1957, All-India Radio offered an alternate listening programme of variety entertainment in Vividh Bharati which includes skits, playlets, one-act plays, popular film songs, short interesting anecdotes and a daily 105-minute programme of Karnatic music. An indication of its popularity can be had from its fan-mail running into nearly 400,000 letters a year or on an average over a thousand letters per day. The wealth of the country's folk music is also adequately reflected in the programmes. Efforts are being made to collect, compile and present all types of folk and tribal music.

Advisory Bodies

There are several Advisory Committees consisting of eminent non-officials who take active interest in broadcasting and other specialised fields like music, literature, rural reconstruction and education. At the apex, there are the Central Advisory Board for Music, the Central Programme Advisory Committee and the Music Audition Board with a Northern and Southern Panel for the Hindustani and Karnatic styles. These committees comprising persons well-known in their special field normally meet once a year and advise the Ministry of Information and Broadcasting generally in formulating All-India Radio programmes. The first meeting of the Central Programme Advisory Committee which met in November 1952, desired in its Declaration of Objectives that All-India Radio should "express, satisfy and guide public taste and impart information as well as instruction in the widest sense". It also wanted the organisation "not to have recourse to commercial broadcasting or advertising in any form."

Each station in its turn has a Programme Advisory Committee of its own. Some serve two stations together in the same area. Their membership ranges from 10 to 16. In all there are 23 such committees with some 250 members.

Farm Forums

Co-operation of people with sound and practical knowledge of agricultural problems is sought through the Rural Programme Advisory Committees at each station in planning programmes for the people of rural region. Their down-to-earth advice is generally useful and seldom overlooked.

In 1956, All-India Radio started an experiment in Radio Rural Forums on the Canadian pattern. These forums are listening-*cum*-discussion-*cum*-action groups of about 20 persons formed in selected villages. There is a convener selected from amongst themselves by the villagers, who arranges pre and post-broadcast discussion and forwards the points raised to the Radio Station which tries to meet them with the help of various authorities, in subsequent broadcasts.

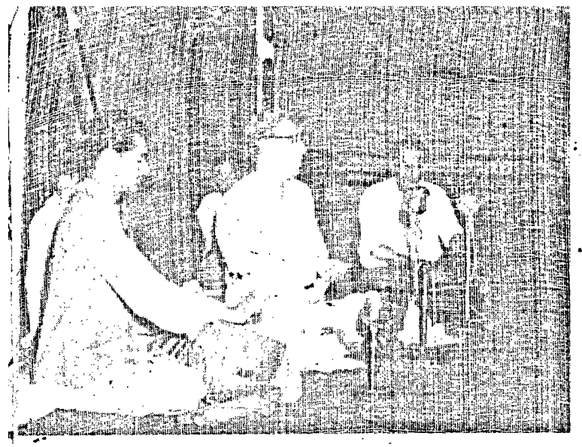


A mobile workshop Van was presented to the Madras Government on behalf of West Germany at a function at the West German Pavilion inside the National Agriculture Fair by the West German Ambassador Mr. G. F. Duckwitz. Home Minister Bhaktavatsalam accepted the gift on behalf of the Madras Government.

Instances are not wanting where these broadcasts have contributed in a concrete manner to the economic and social welfare of the village population. A farmer of Nutakki village in Guntur district, by using the chemicals for eradication of pests suggested in a Forum programme, earned Rs. 1,800 per acre from his crop of chillies. In another case, listening into the complaint of prevalence of malaria in a particular village, a District Medical Officer was prompted to rush medical aid to the village and save many lives. At present there are about 2,000 Radio Rural Forums all over the country; by the end of the Third Plan their number is likely to increase to 25,000.

For workers Too

To seek and secure active and intelligent participation of industrial workers on similar lines, All-India Radio has



Ustad Amir Khan gave an exposition of classical Hindustani vocal music at the R. R. Sabha, Mylapore, recently. The concert was arranged by the State Government under the Union Government Scheme of Inter-Zonal exchange of outstanding artistes.

started Radio Labour Forums at places with adequate labour population. These forums are also listening-*cum*-discussion groups.

In order to elicit the opinion of eminent persons in different fields in respect of important programmes, each station of All-India Radio sends reply-paid cards to about 100 people and analyses the replies received.

Audience Programmes

There are a number of audience programmes that different AIR stations hold each year either during the Radio week celebrations or on the occasion of specific festivals in each region. At Delhi, among important audience programmes of all-India nature, are the National Symposium of Poets, the Radio Literary Forum and the Patel Memorial Lectures. Once a year poets from various parts of the country gather in the Capital to read their poem in original verse, translations of which in all other Indian languages are broadcast later. During the Radio Literary Forum (Sahitya Samaroh), eminent scholars of the country discuss some important aspect of Indian literature.

Thus each Radio Station serves as a cultural nucleus of its region where throng not only men of letters but also exponents of folk, light and classical music and also a multitude of the merely curious who just go round the Radio Station in the hope of unravelling the mystery of the 'magic box'.

Instant Tea

An Aberdeen (Scotland) factory is now exporting an "instant tea" powder which is claimed to make tea comparable with the best natural brews. The powder is already in use in Britain, and exports now go to Canada, Denmark, Finland, the Lebanon, the Netherlands, Norway, Switzerland, Syria, and the United States.

Before processing, a perfect brew is made from a blend of Assam and Ceylon teas. The brew is then frozen by accelerated freeze-drying equipment. Careful control of temperatures prevents the loss of any of the aromatic oils or constituent parts of the tea.

Activated Earth Industry



Everyday that passes in this age of Science registers some important advance or other as a result of which new and improved devices emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature which takes note of developments in the Indian scene, includes interesting bits from the United Kingdom also.

The Regional Research Laboratory at Hyderabad has worked out a process for the activation of earths using sulphuric acid. The cost of production for a plant having a capacity of five tons per day works out to about Rs. 410 per ton with this method. An investment of Rs. 6 lakhs is estimated to give an annual return of 35 per cent. Extensive deposits of fuller's earths and bentonites occur in Rajasthan, Gujarat, Mysore and Andhra Pradesh which can be used for bleaching vegetable and mineral oils.

The use of activated earths in India, however, is of recent origin. Establishment of the first vanaspati factory in 1930 gave a fillip to the setting up of activated earth industry, the first being the Bombay Sewree Chemicals set up in 1936.

As the demand for activated earths increased, more factories were set up at Bombay, Calcutta, Delhi, Madras and Bhavnagar. The total installed capacity of these factories now is about 6,000 tons per annum as compared to the production of 3,500 tons of activated earths in 1958.

The number of vanaspati factories all over India has gone up. Thus, for the growing requirements of the vanaspati industry and for the dark vegetable oils now used for hydrogenation, the present production is inadequate and there is considerable scope for the establishment of more activated earth factories in the country.

Compressed Wood

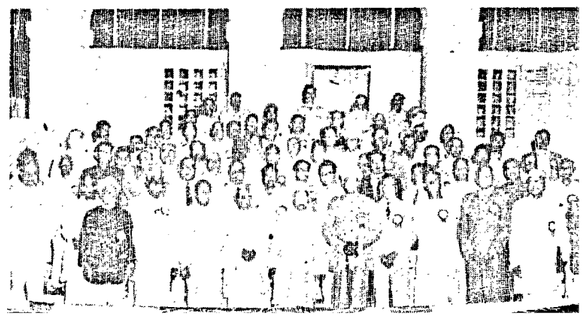
Compressed wood has improved strength and elastic properties and high resistance to wear. These properties make it eminently suitable for use in textile auxiliaries, door handles, bearings and rollers. Indian requirements of compressed wood have, until recently been imported.

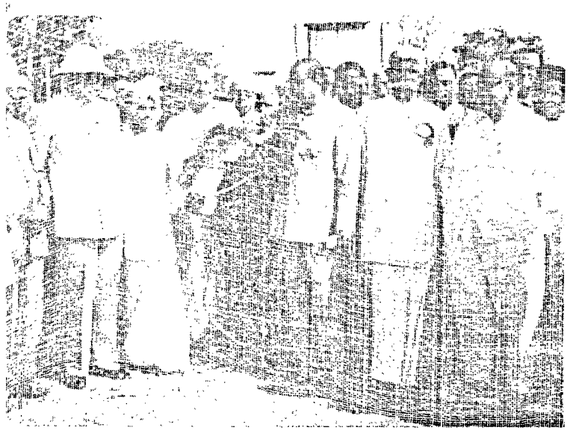
Studies on several species of timber have been carried out at the Forest Research Institute, Dehra Dun to determine their suitability for use in textile auxiliaries. The results of investigation on 12 species of Indian timber show that the strength and wearing qualities of the species improve after compression and these species could, therefore, be utilised for textile auxiliaries and other purposes.

New Low-Cost Telephone

By improving the transmission performance of a telephone instrument, it is possible to allow for larger losses in the subscribers line and, therefore, reduce the size of copper conductors used. This permits substantial economy to be effected in the cost of line plant network and savings in foreign exchange. Subscribers line resistance limits can be raised from 650 to 1,000 ohms, i.e., in the ratio of 1 : 1·55. This ratio is a rough measure of the maximum realisable economy.

All-India S.P.C.A. Conference: The Governor gave a tea party to the delegates at Raj Bhavan.





All-India S.P.C.A. Conference : Delegates inspecting one of the exhibit animals

With this aspect in view, a new telephone has been designed by the Indian Telephone Industries at Bangalore. The transmission performance improvements spring basically from a complete redesign of the receiver which is a sealed unit in the form of a capsule. The elements serving the magnetic and the acoustical functions have separated so that each can be designed to function more efficiently.

Brine Storage Tanks

An investigation into the causes of corrosion in brine storage tanks (used for feeding saturated sodium chloride to caustic soda cell) conducted at the National Metallurgical Laboratory, Jamshedpur, suggests some practical remedies to counter the adverse effects of corrosion.

The main factors governing the rate of corrosion of steel in brine solution are : oxygen concentration, pH, exposure conditions and presence of inhibiters. Corrosion rate of mild steel in brine has been found to first increase and then decrease with increase in chloride concentration. The initial increase has been attributed to increase in conductivity of the solution combined with the high penetration power of chloride ions. However, further increase in salt concentration decreases the solubility of oxygen in salt solution, thus tending to decrease the rate of corrosion. Increase in alkalinity results in marked decrease in corrosion. Aluminium coating has been found to provide good protection under certain conditions.

The results have indicated that replacement of the existing steel tanks with alloys such as Worthite, Monel inconel, and nickel, claimed to resist the attack of sodium chloride, may not be economical. The life of the tanks can be increased by using suitable protective coatings. As aluminium and zinc are also susceptible to halide corrosion, the following organic coatings, already used in practice, may serve the purpose ; polystyrene copolymer (ACE-ITE), polyvinyl chloride (ACE-Revielor), and vinylidene chloride (ACE-Saran).

Drying of Indian Timber

Hardwoods form the major portion of forest produce in India. Most of these are refractory to seasoning. Development of suitable seasoning processes will go a long way in helping the timber industry. Kiln drying of timber at temperatures above and in the neighbourhood of the boiling point of water has recently gained importance in foreign countries as a quick-drying method, though it is still in the experimental stage.

Preliminary investigations have been conducted at the Forest Research Institute, Dehra Dun, on the high temperature drying of three Indian timbers, viz., *kuthan* (Hymenodictyon excelsum) *kanju* (Holoptelea integrifolia) and *bakli* (Anogeissus latifolia). The first two timbers take 8 to 10 days to dry (1 in. thick material) under the conventional schedule. It is very difficult to kiln - season *bakli* and even under the mildest temperature schedule the timber shows a great tendency to surface cracking.

Case-hardening stresses and moisture gradients in high-temperature dried timber were found to be of the same order as in kiln drying at medium temperatures. In regard to surface cracking more encouraging results were obtained compared to normal drying. The main high temperature drying defects were crookedness, deformation around knots, and a shrunken and darker appearance of the timber. But these were very much less in the case of *kanju*. Intermittent steamings, specially during the later part of the run, quite effectively bring down the divergence of moisture contents in high-temperature dried charges.

The results show that of the three hardwoods, *kanju* could be successfully seasoned by the high-temperature drying. The method could be applied to other light hardwoods also.

Super Camera

A camera able to film at the rate of 8,000,000 pictures a second was among inventions shown by the United Kingdom Atomic Energy Authority at the Physical Society Exhibition in London recently.

This super-high-speed camera was developed by the Authority's Scientists at Aldermaston, Berkshire, to photograph the instabilities that upset plasmas in thermo-nuclear experiments. With a discharge lasting only a few thousands of a second and instabilities developing in a hundredth of that time, very fast cameras are needed to record what goes on.

The new camera is novel in that it produces individual sharp pictures. It does this by using a rapidly rotating mirror to scan the image of the event over a stationary film round the inside of a light-tight drum. One hundred and seventeen lens systems are used to make, in effect, 117 separate cameras to produce sharp images.

Automatic Coal Mining

Automatic coal mining, with coal being cut and loaded at the face by remote control, may be introduced in the East Midlands, Britain's top coal division in terms of productivity and output. At the most productive colliery, Linby, near Nottingham, a remote-controlled "walking" roof support machine—an automatic pit-propping device—will be tried out at the coal face.

Already, a remote-controlled coal cutter, operated by a radioactive gamma-ray probe, is being tested at New Lount Colliery, Leicestershire, and later this year the two methods will be combined at Britain's first unmanned coal face in a colliery yet to be selected.

"Fully automatic remote-controlled mining within five years is not unreasonable," says Mr. Wilfred Miron, Chairman of the East Midlands Division of the National Coal Board. "It will mean that narrow seams, at present unworkable, can be exploited, and it will mean also a big recruiting drive for skilled technicians."

Crop Pests' Insecticide

Details of a new insecticide which is claimed to be "the most efficient and versatile yet discovered" have been announced in London. The insecticide, called "Telodrin", has been developed by the Shell group of companies.

Its main applications will be in the control of pests in food crops, particularly rice, sugar-cane and maize, but it is anticipated that there will be a large demand for Telodrin to deal with the wide variety of pests which attack cotton and tobacco crops.

Telodrin is the latest addition to the insecticide family comprising Aldrin, Dieldrin and Endrin—three compounds which together have done much to increase world food production and reduce disease.

An announcement by Shell says that more than 400 field trials have been carried out in 65 countries over the past four years, and in these it has been proved that there are few insect pests against which Telodrin is not highly effective, either in the soil where the pests attack plant roots, or on the plant while they feed on the fruit or foliage.

The announcement adds : "Telodrin, like other chlorinated hydrocarbon insecticides such as DDT, acts on the nervous system and is effective merely on contact. As in the case of certain other insecticides, Telodrin can be incorperated with fertilizers during manufacture, for use in the soil. Used in this way, only a quarter of the dosage rate normal for other soil insecticides is required."

Package Irradiation plant

Two years' successful operation of its package irradiation plant at Wantage, Berkshire, has led the United Kingdom Atomic Energy Authority to licence several British companies to manufacture irradiation equipment. The prototype package irradiation plant at Wantage, which has a design capacity of 500,000 curies of cobalt-60, has at present a source strength of 270,000 curies. It is mainly used for the sterilization of medical equipment and hospital items such as blankets.

The first commercial application of an irradiation plant is that by carpet manufacturers in Australia, who have installed a package irradiation plant primarily for the sterilization of goat hair against the anthrax bacillus. The first plants in the world used solely for large-scale and continuous sterilization of medical and hospital supplies, together costing about £80,000, excluding the cost of radiation sources, will be built at Slough, Buckinghamshire and Edinburgh, Scotland. They will use intense gamma radiation from sources of cobalt-60 made in the Calder Hall (Cumberland) reactors and fabricated at the Radio-Chemical Centre near London.

Artificial Hip Joint

Research at the biochemical laboratory of a British hospital has produced a plastic and stainless steel hip joint

All-India S.P.C.A. Conference : Srimathi Tara Cherian presenting a prize to G Bharathi, a student of the Lady Willingdon High School for her speech on prevention of cruelty to animals.



which makes it possible to treat sufferers previously considered unsuitable for surgery. The joint has been developed by Wrightington Hospital, near Wigan, in co-operation with Manchester University's Department of Engineering and local firms.

The surgeon in charge of the work, Mr. John Charnley, said that during the past decade there had been many attempts to device artificial hip joints, but few of these had stood the test of time. Current tendency, therefore, was for orthopaedic surgeons to turn down patients, or to use methods which stiffened or partially stiffened the hip.

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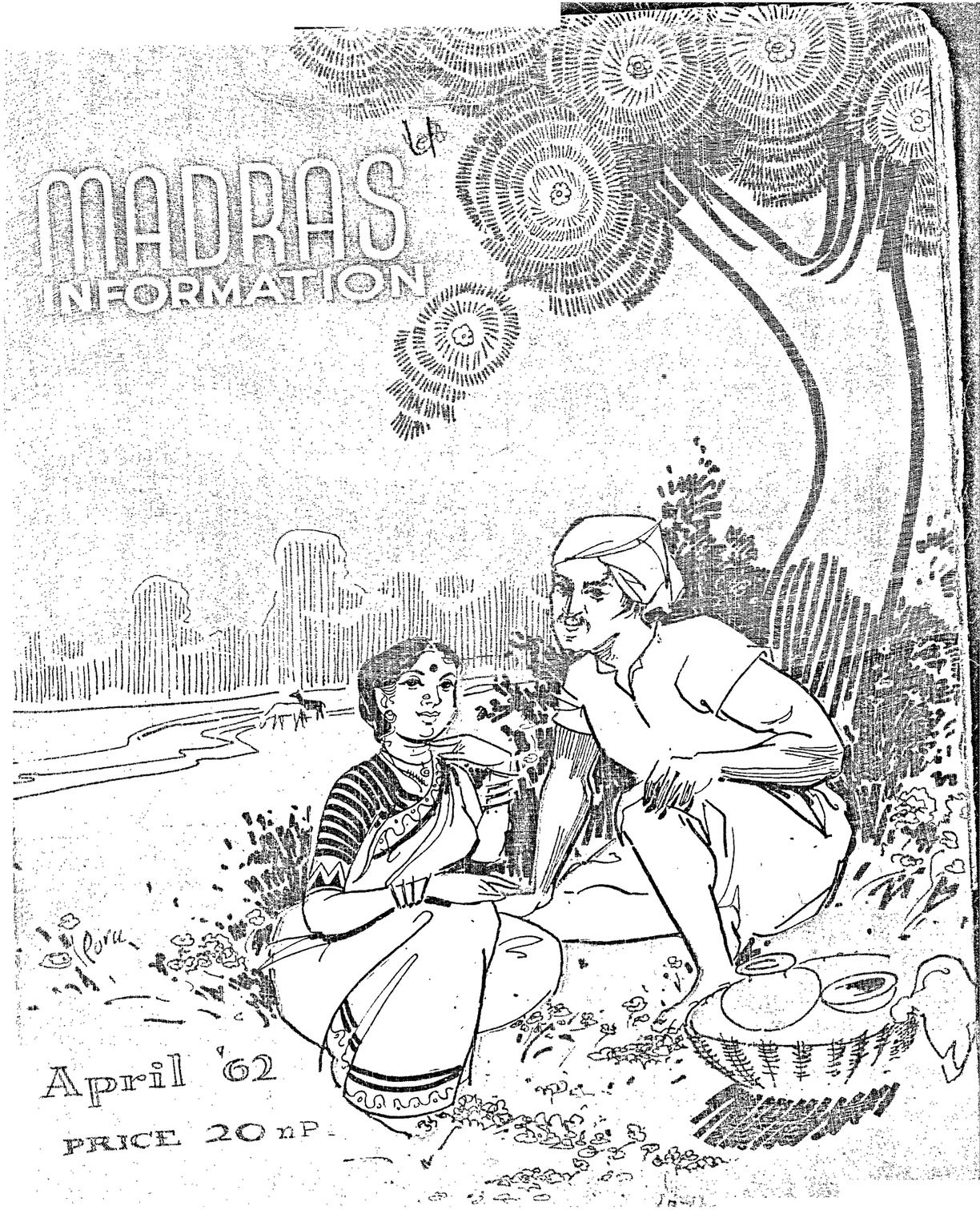
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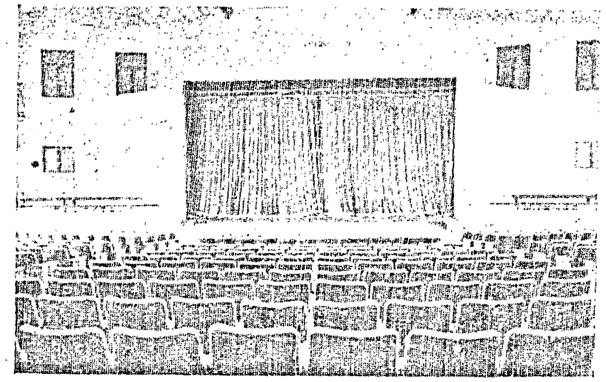
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This month's cover

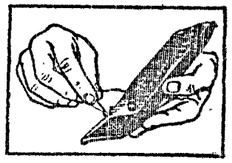
Springtime synchronises with the season of rest and relaxation for the farmer in the villages. The trees are in full bloom and flowers and fruits are aplenty. The music of the birds is everywhere and the air is heavy with the natural fragrance of the countryside. This month's cover attempts to capture this springtime mood in the village.

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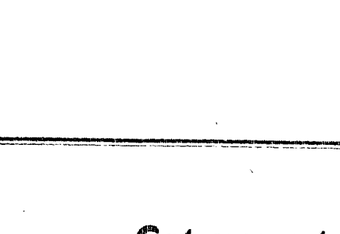


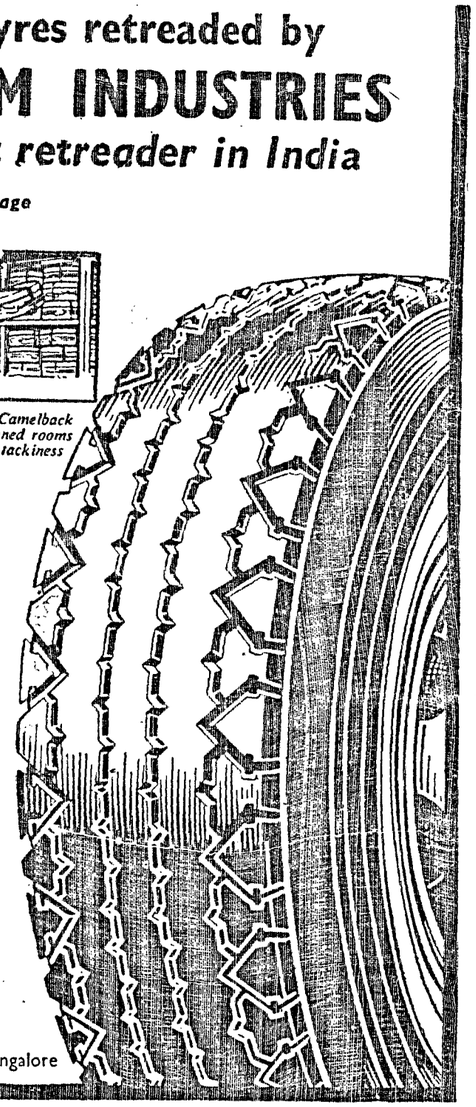
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FREEDOM OF INFORMATION

SRI JAWAHARLAL NEHRU

A basic degree of educational development is important for the expression of the individual. The dignity of the individual, of the group, of the nation, of the world, can ultimately come about by the development of individuals and not in a world where people are some kind of inchoate mass. This fundamental aspect of freedom was stressed by Prime Minister Nehru in his address at the concluding function of the U. N. Seminar on Freedom of Information held recently at New Delhi.

We live in an age of great change, revolutionary change, technological change and the rest. The media of information also go on increasing and becoming all-pervasive. Any rule that you might make is likely to be out of date, because of technological developments. Anyhow, if the United Nations Organization and the nations that are members of the Organization agree on the general principle and look at it from time to time as to what is being done and what is not being done, it is a good thing.

What is the free world? I do not know, because the so-called free world is full of countries which are not absolutely free, where not only accidentally, but deliberately, information is suppressed and not allowed to go. Yet it is called so. By what definition it is called a free world, I do not know.

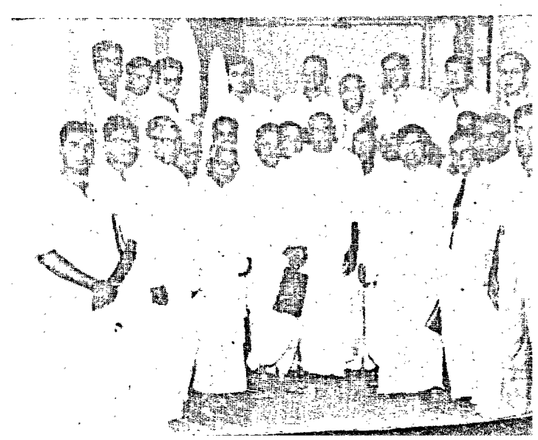
Freedom of Life

We know that there are certain countries which deliberately, as a matter of policy, suppress information of a particular kind. But of the other countries, how many are there which accept this principle and act up to it? There may be difficulties, of course, as there are so many difficulties as between the countries, advanced countries, advanced in well-being, development, etc., and countries that are not advanced.

Indeed, I would say that although freedom of information, etc., are of vital consequence, even that becomes unimportant where there is absolute poverty prevailing anywhere. Freedom of life itself is more important than any other freedom to sustain life. That is obvious. Our thinking is based on the belief that freedom of life is guaranteed or assured. If it is not assured, if through poverty and other means you do not get even the capacity to live worthily, then all other freedoms do not count.

The starving man has no freedom. It is only a great philosopher who even when he starves can take advantage of the freedom and right of expression, etc. Normally, persons

City Pressmen gave a party to members of the outgoing Cabinet in the Cabinet Room of the Secretariat recently.



who are starving will not be thinking of freedom of expression; he will be thinking of food. Therefore, the problem takes a somewhat different shape and different form in countries that are developed and under-developed and although there is much in common between the two in regard to this matter and we should aim at the same thing.

Equally Essential

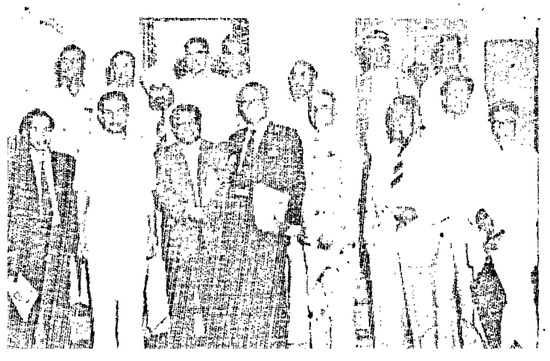
But because we gave as a sign of equality the vote to everybody, every person on his attaining the age of 21 has a vote here. Whether he is educated or uneducated, or a tribal or a forest dweller, whether he lives in the high mountains or the plains, he has a vote. But it is obvious that all of them although they can exercise the vote, they cannot, they have not the means to exercise it after gaining as much information as possible, simply because they may not be —apart from the media of instruction—educated enough or have access to various kinds of information, etc. All kinds of difficulties come in.

In fact, I imagine that apart from the freedom from hunger which is essential, freedom from ignorance is equally essential, in order to open your mind to advance or to consider questions with some balance and come to a decision. I am merely saying something which is very obvious to you all. This Seminar cannot sit down and talk about freedom from hunger; somebody else's job to deal with it.

Conditioning Factor

Whatever rules you may frame depend very greatly on the conditions of the people you are addressing, the conditions of economic development and of education, etc. The same media, which is very good as a mass media, may be utilized for very wrong purposes; may be utilised for a wrong purpose by Governments, may be utilised even more than by Government, by private agencies for their private profit.

A visiting Press Delegation from Ceylon consisting of editors and correspondents was entertained by the Press Reporters' Guild, inside Government Estate, Mount Road.



A question has been raised recently how far even the media of advertisement may not be misused so as to distort a person's mind. Some books have come out, too, on that subject. This mass media is very useful and at the same time there is an element of danger in it, if it is distorted for private gain.

I do not know if this Seminar ever considered these aspects of these questions—and I do not suppose they can be easily considered—but all these dangers lurk in the future, and the only way to save the future is for wide spread education and a measure of well-being.

The Elections

Recently, we have been having, in a big way, the General Elections in this country and some of you may have observed them; anyhow, you must have read about them. These elections created a good deal of excitement in the country as elections normally do. Indeed, I might say the elections, as a rule, make a normal person behave abnormally. He gets out of his normal rut of thinking and he is excited to behave abnormally. He does things which he, probably, would not do if there were no election.

Still, on the whole, our elections which were very big in numbers, in the arrangements made for them, passed off well, but there is one aspect of elections which I would like to mention. We have rules and regulations as to what should be done and what should not be done. But I was shocked very often at the kind of posters that were issued by candidates for elections. Sometimes they were [illegible] mous, indecent, highly objectionable—all kinds of things—and if you consider them from the point of view of the electorate, I have no doubt that the poor electorate, through no fault of theirs, must have been influenced by them in a wrong direction. That kind of thing seems to me cannot be justified by any kind of freedom.

Basic Development

But ultimately it means this: that in order that your freedom should flourish, there must be a basic degree of educational development. Education is the most important thing, I think, to open out the individual. After all, your idea is to develop the individual. The United Nations talks about it, our own Constitution in India discusses the dignity of the individual. That is right, and I believe that the dignity of the group, of the nation, of the world can ultimately only come about by the development of individuals, and not in a world where people are some kind of inchoate mass.

The development of the individual can only take place by education in the wider sense. By education, I do not necessarily mean, although it is essential, just reading or writing. There is the test of literacy. I have often found totally illiterate people more educated than the so-called literate people. It is common experience in India. I have the greatest respect for the Indian peasant, even though he may not be able to read or write. I have respect for his cultural equipment, even for his balance. I cannot explain that. But it is so. That does not mean that I am advocating the lack of literacy in them; of course, not. But I mean literacy by itself does not take one very far. It has to have some cultural background.

Extraordinary Paradox

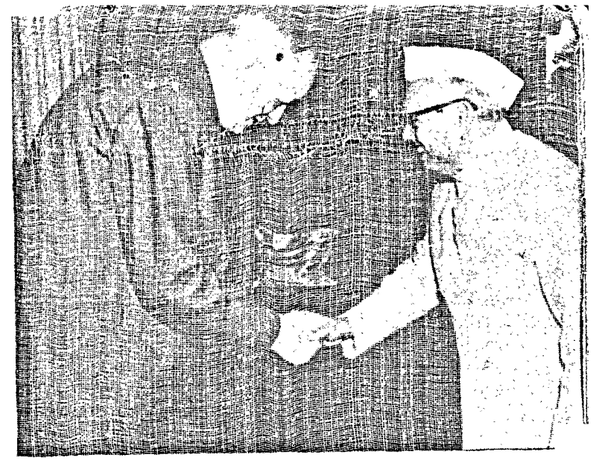
The cultural background that the illiterates in India have is surprisingly good. You will see an illiterate person roll out to you chapters from our epics, because he has from his childhood up derived knowledge from the famous books which he has heard, the epics which he has got by rote, although he may not be able to read word. It is a rather extraordinary paradox and that gives him the cultural background, and he is full of metaphors and similes in talks, from the old stories, from the mythological tales. His mind is not an empty mind. While a person who knows reading and writing only, nothing more, his mind is pretty empty mind. But, of course, the way to know more is through reading and writing. That is essential.

But it is the development of some measure of culture, and of tolerance—tolerance of the other's point of view, not conceding that what one thinks must necessarily be right and it is the only right. "My doxy is only orthodoxy and others are heterodoxy." That kind of thing is too prevalent today; even among the highly educated. Everybody thinks of his own doxy, not of others' doxies.

Need for Tolerance

We go back, in a sense, to what in Europe, in the Middle Ages—those fierce wars of religion, where a difference of religion was considered almost a sin or may be worse than sin. There were fierce religious wars. There was no tolerance for each other. The Western world has got over that, and there is no such lack of tolerance of people differing in religion.

In India, there has been, compared to the West, remarkable tolerance in regard to thinking, religious thinking, views, etc. There has been equally remarkable lack of tolerance in regard to one's social life. The individual was bidebound by caste and other restrictions, and, therefore, he could not develop properly. Anyhow, what one should aim at is obviously tolerance. Tolerance means tolerating the other's opinions; not one's own opinions, not the



An eminent West German journalist, Mr. Immanuel Birnbaum who was in India recently met Governor Bisnuram Medhi during his visit to the City.

opinion of those who agree with one—that everybody does —but tolerating the opinion that is opposed to yours. It is a state of mind more than an act.

Exciting Place

That seems essential, because the world is a varied place; it is a very exciting place. The variety of views in it makes it still more exciting. Why anybody should want to have a uniform view and uniform way of thinking, I do not understand. First of all, it is sheer conceit to think that way, because truth is much too big to be comprehended by any individual or for anybody to say that he knows it. Anyhow, it adds to the richness of life to have this variety of thought and action.

The whole concept of information coming from every quarter, sometimes contradictory information, sometimes conflicting views, out of that welter, we are more likely to arrive at the truth than if only one aspect of it was presented. That is the idea, I take it, in favour of full information reaching one from every quarter. That is so, and I entirely agree with the idea that sources of information should be as free and as varied as possible.

Old Story

Although, they are free, it becomes the old story of the freedom of the law, which is the same for a millionaire and the starving pauper. We punish the millionaire if he steals bread; we punish the pauper, too, if he steals bread. But it happens the millionaire does not steal bread, there is no occasion for him to do so; the starving pauper may have to steal bread for himself or his child. It is all very well to lay down principles but in applying them, the conditions governing an individual make a great deal of difference.

Where economic conditions vary between the rich person and the poor person, the rich person can put his idea across in a hundred ways by adopting the modern mass media. But the poor person cannot do that; he can shout out in the market place; that is all he can do. So, to say that you give an even chance to everybody is not correct. It would be even chance when everybody was on the same level. But they are not on the same level. The rich individual, the rich group, the rich nation can flood the country and the world through mass media with its own view of things, which may be the correct view or may not be. But the point is, it can do so while the other party cannot.

Changing World

I do not know whether these questions came up before you to consider; probably, not. It is difficult to deal with them. But when considering this matter in theory, these ideas strike one. But surely, whatever you may do, you will always have problems to face, because this is a changing world and a changing world brings changing problems. For the present, anyway, we have to confine ourselves to the problems that we have to face today, and to try to endeavour to bring about freedom in this business of giving information, expression of views, etc.

I am convinced that more freedom that is there the better, and the more the suppression there is, even of what I may consider, wrong, is bad. What I consider wrong may not after all be wrong. How do I know? In what I consider wrong, there may turn out to be some element of truth. So, I am prepared to take the risk of allowing truth and the so-called right and the so-called wrong to appear on the scene; and, one of them will survive, or a part of one of them will survive, provided there is no suppression.

A Caution

In considering the problems before us, we seem to take some things for granted. We seem to take for granted that people generally are equally cultured or equally educated, or equally well-off in the physical sense. They are not. Therefore, if freedom of information be given to everybody many people misuse it. In the name of free information, they dole out something that is wrong and mislead the people. That is all right if the other side of the picture is also placed before the people. But it is not quite all right if one side is wealth which can take advantage of the media of communication and on the other side there is no such facility; then difficulties arise.

I suppose gradually we shall deal with these problems which arise and as we develop into some kind of a Welfare State, as every country develops into some kind of Welfare State, and the acute pressure of poverty is no more there and also when we are more or less educated, so that we can follow arguments for and against everything and when also—this is most important—we grow more and more tolerant of each other.

Sign of Culture

Of course, toleration depends on the knowledge of the other party. In the previous centuries very little was known of other countries and the result was we thought of others as barbarians, like the old Greeks, Romans, Indians, Chinese, etc., every country had the idea that everybody beyond their borders were barbarians because they did not know much about them. They thought knowledge, culture and civilization were confined to their own borders.

We are beginning to get to know something about others. It is surprising how little we know about others, each country, even the highly developed countries, they are full of their own problems. They may go abroad and see famous monuments, but they do not know much about the problems or the dreams which the people of other countries have. It is because of that, perhaps, that they are surprised at the way another country might act although that action may be governed by history, geography, by what has happened through the ages and conditioned the people. I do think that this business of tolerating another opinion, even though you disagree with it, is a sign of culture and civilization. Without it, there is an element of culture, which is missing. Before you tolerate some thing, you must know what it is. Therefore, this business of freedom of information, etc., through the Press, radio and other mass media is so important.

Research in Universities

The University Grants Commission has recently instituted a scheme to enable universities and colleges to have the benefit of the services of teachers for research and teaching after their retirement under the normal superannuation rules. Grants under the scheme are tenable for two years in the first instance. Twenty-two teachers have been selected under the scheme.

Literature and MODERN LIFE

ALDOUS HUXLEY

How does literature affect life and how does life affect literature? What, in this context, is literature and whose, precisely, is the life that affects and is affected by literature? Mr. Aldous Huxley, eminent writer of our time, posed these questions and answered them in a recent talk broadcast by All-India Radio in the National Programme. This feature gives the text of the talk.

How does literature affect life? And how does life affect literature? Let us begin by trying to define our terms. What, in this context, is literature? And whose, precisely, is the life that affects and is affected by this literature? The course of history is determined by many factors, of which the most important are technology, economic arrangements, the actions of outstanding individuals in key positions, and ideas. In so far as they are given organized expression in writing or in memorable speech, all ideas may be classified as literature. But for our purposes this definition of literature as 'ideas in verbal form' is too comprehensive to be useful. The writings of Locke, Hegel, Marx and Lenin have influenced the course of history and so, at one remove, have affected the lives of millions of human beings. It would, however, be absurd to give to these verbalizations of metaphysical and political ideas the same name as we give to the expression, say, of Shakespeare's feelings and thoughts about personal relationships, or Wordsworth's feelings and thoughts about Nature. In what follows I shall use the word 'Literature' in what I may call the Shakespearean-Wordsworthian sense of the term.

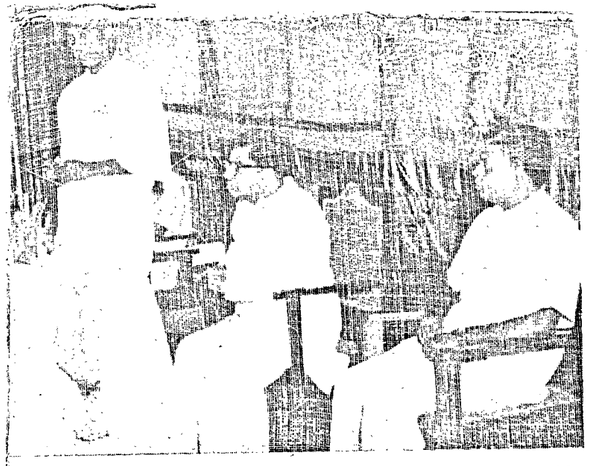
Eloquent Expressions

Works of literature (in this restricted sense) may contain, among other matters, eloquent expressions of the kind of philosophical and political ideas that help to shape the course of history and so, at one remove, affect the lives of individuals, by changing the social environment in which they live. Over the years many poets, dramatists, novelists and essayists have used their talents to 'put across' such ideas. In some cases their efforts have proved successful; in others they have been completely fruitless. Thus Rousseau's political ideas left their mark on history; Dante's, on the contrary, did not.

Or consider a more recent example. H. G. Wells was probably the most widely translated and generally admired author of his time. Millions of people all over the world read his books; and yet the humane, libertarian, rationalistic internationalism which he so consistently and persuasively preached has had no perceptible effect upon the history of our century, which is the history, among other things, of proliferating nationalistic idolatry and multiplying dictatorships. As a teller of fantastic tales,

Sir Archibald Nye, former Governor of Madras, was entertained at Raj Bhavan by Governor Bishnuram Medhi during his visit to the City recently. Ministers Kamaraj and Bhakthavatsalam and Sri O. P. Ramaswami Reddiar, former Chief Minister of Madras, were also present.





The Bureau of Tamil Publications was recently inaugurated by Minister Subramaniam at a function at the Children's Theatre. Chief Minister Kamaraj presided.

Wells was eminently successful; as the prophet of internationalism, as a crusader for rationality and tolerance, he was a complete failure.

A Conclusion

From all this we may conclude that there is no one-to-one relationship between literary talent and the effectiveness of propaganda. No amount of genius can guarantee the general acceptance of a history-changing idea. Indeed genius may actually militate against its acceptance. In the sphere of propaganda, whether religious, political or commercial, what is needed is neither beauty of language, nor delicacy of feeling, nor subtlety and depth of thought. What is needed is the constant repetition of a few stereotyped phrases embodying the bare rudiments of the idea which is to be inculcated.

And even oversimplification and repetition are not always sufficient; there must also be favourable circumstances and, for the hard-to-persuade the covert or open threat of brute coercion. Reduced by their interpreters to mere caricatures of themselves, it is generally at second or third hand that the ideas of men of genius achieve the kind of general acceptance that gives them power to change the course of history.

Poetic Function

In Latin the word *vates* means both 'poet' and 'prophet'. But though as a matter of historical fact there have been great poets who were also great enunciators of ideals, great defenders of faiths, great denouncers of evil and exhorters to goodness, the poetic function is, at bottom, quite different from the prophetic. Prophecy is concerned with what ought to be, with righteousness, with intelligibility, with the assertion that, in spite of all appearances to the contrary, there is a divine plan and cosmic purpose.

Poetry and, in general, all good literature, is concerned not with what ought to be, but with what is, with inexplicable mysteries of mere existence, the bottomless strangeness of beings capable, as men and women are capable, of all wickedness and all virtue, of luminous intelligence and the darkest, most suicidal stupidity, of mystical insights and all the loathsome monstrosities of superstition.

The Self-explorer

'Know thyself' is the advice given by every master of the spiritual life. To help us towards this indispensable self-knowledge is the purpose and prime function of literature. The *vates* may do some incidental prophesying in the name of God, of Society, or Science, or History but unless he is primarily a self-explorer with a gift for imparting to others his insights into the paradoxes of human experience, he remains a rhetorician, a mere propagandist, and no true poet.

A good poem, or indeed any piece of good literature, is always a statement in Dr. Johnson's words, of "that which, though not obvious, is acknowledged upon its first production to be just, that which he who never found it wonders how he missed." Alas, the reasons why he missed it are very simple.

Most people know singularly little about themselves. Good literature expresses in penetrating and evocative words the findings of those exceptional men and women who have explored themselves and discovered what in fact it is that they perceive and think and feel, why they behave as they do, how far the multifarious reality of their psycho-physical existence differs from the clear-cut role which they have chosen or been compelled by circumstances to play.

Self Understanding

Those who expose themselves to such literature are stimulated to embark upon the same kind of self-exploration as was undertaken by the writer; and some at least of the writer's discoveries about himself in relation to his body, himself in relation to his unconscious mind, himself in relation to other selves, to nature, to social institutions and the surrounding culture, are found to be valid, *mutatis mutandis*, for the reader.

Good literature is an education in self-understanding. (Bad literature, as I shall have occasion to point out in a later paragraph, is an education in self-misunderstanding). The prophets denounce wrong doing and exhort to goodness. The poets, to the extent that they are truly poets, make us aware of the hidden sources of good and evil. Awareness is one of those unconditionally good things, whose excellence does not require to be proved by reference to anything beyond itself.

But though self-knowledge is an absolute good, to be pursued for its own sake, it can in fact be justified on ethical grounds. The heightened awareness of what is, to which good literature leads us, is not only good in itself; it is also good inasmuch as it may result in profound and transfiguring changes of personality. And this transfiguration may be almost miraculously for the better, even though the self-knowledge which brings it about may be an insight into unsuspected weaknesses, unregarded vices and unexamined imbecilities.

Good Literature

Good literature is like the sun that shines impartially upon the bad man and the good, the idiot and the geniust Thus, in *Troilus and Cressida* Shakespeare never tells us which of the astonishingly varied cast of charactersis correct in his or her estimate of human nature, society and the cosmos. Is it the romantic and essentially innocent Troilus who is in the right? Or chivalrous Hector? Or level-headed, wordly-wise Ulysses? Or Cassandra proclaiming that this is a pitiless universe governed, not by the gods, but by an inscrutably malignant Fate? Or Helen and Cressida for whom, in the delicious flower of their age, there is nothing in that universe except sexual love? Or finally is it Thersites who really knows what's what—Thersites with his ferocious debunking of all high motives and noble pretensions, his frightful insistance that the loftiest spirit is associated with a body that is foredoomed to the humiliations of sickness, decrepitude, physical pain and ultimate dissolution?

No Sides, No Judgments

Shakespeare takes no sides and passes no judgments. Eschewing the easier and more gratifying role of *vates*-the-prophet, he remains throughout *vates*-the-poet, the explorer and impartial recorder of what is rather than the moralistic and philosophical proclaimer of what ought to be, what perhaps might be if only things were quite different from what in fact they are. He makes no attempt to dragoon the reader into a particualar set of belief or course of action; he merely tells his not very edifying and far from cheerful story, throws in the results of his observation and self-analysis, and leaves us free to accept a poetical education in the knowledge of what is, or, if we prefer, to reject it.

Self-knowledge is always an awareness of first-order experiences—of events below the level of words, of the mysteries of existence before we have conceptualised them into a specious intelligibility. But if this is the case, why bother with literature, why go to the endless trouble of hunting out the right, the uniquely perfect form of verbal expression?

The paradoxical answer to this question is that it is through words that we are made aware of the subtler forms of non-verbal experience. We do not need a novelist or a lyric poet to tell us what it feels like to have a tooth-ache or to be afraid of an oncoming tiger. But wherever more complex, less obvious experiences are concerned, good poets and novelists can be enormously helpful. When we fall in love, they can tell us what being in love really feels like. If we suffer from shyness or a sense of guilt, they can make us fully aware of the nature of our emotions.

Literature Helps

They can throw light upon such obscure experiences as being moved simultaneously by compassion and disgust, admiration and envy, love and resentment. The Verbalisation of such feelings in a piece of literature helps the reader to become aware, in all their ramifying subtlety, of analogous feelings within himslef—feelings which exist below the level of language and apart from all concepts but of which, if he had not read about them in a poem or a novel, the experiencer would never have become clearly and completely aware. Verbalised thought points the way to the wordless not-thought which is the ground of our being. Self-knowledge is the awareness of this wordless ground but the road to wordlessness runs through the realm of words.

We see, then, that literature can help us to know and understand our own experiences. What any given person experiences depends in part on his inherited physique and temperament, in part on the nature of his surroundings. A man with the physique of Falstaff will not experience the world as a man with the physique of Hotspur experiences

The Seventh quarterly Prize Bond draw was inaugurated by Minister Venkatraman at the Rajaji Hall recently.



it. It is in the highest degree unlikely that the character of Cassius will find a lodging in the frame of Mr. Pickwick.

Life affects literature by first affecting the men and women who produce that literature; and these men and women will react to the pressures and stimuli of the environment in different ways, according to their various temperaments and constitutions. This is why all sweeping generalisations about modern literature and modern life must be taken with a grain of salt. No society above the numerical and cultural level of a primitive tribe is homogeneous; and the individual writers who react to this heterogeneous social environment are unique individuals, who may be poles apart from one another in temperament and physique.

Chronic Anxiety

Bearing these obvious facts in mind, let us proceed very cautiously to consider some of the ways in which our rapidly and radically changing environment affects modern life and contemporary literature. What are the new experiences forced upon us by the new environment in which we now find ourselves? Let me list a few of the psychological consequences of being alive in the twentieth century rather than, let us say, the eigteenth.

There is first of all the psychological consequence of being contemporary with the H-Bomb and the Cold War. This, for many people, is an experience of vague, chronic anxiety, associated very often with a sense of the futility of existence, the pointlessness in a world that may at any moment be destroyed, of forethought, effort and aspiration.

We pass now to the psychological consequences of being contemporary with modern methods of production and distribution. Every advance in technology needs to be matched by a corresponding advance in social organisation. More and more people are now finding themselves more and more completely subordinated to organisations that exist, not for their sake, but for the sake of industrial or bureaucratic efficiency, and over whose workings they have absolutely no control. Hence a widespread and ever deepening sense of helplessness, of not being the master of one's fate.

Advancing Technology

Advancing technology tends to concentrate power in the hands of fewer and fewer people. Three thousand millions of us are now at the mercy of a few scores of politicians, generals and administrators, none of them conspicuously wise or good, and all of them the prisoners of a political system which, being based upon nationalistic idolatry, is positively guaranteed to lead to catastrophe. Not surprisingly, the sense of total helplessness is often accompanied by an attitude of complete and utter cynicism.

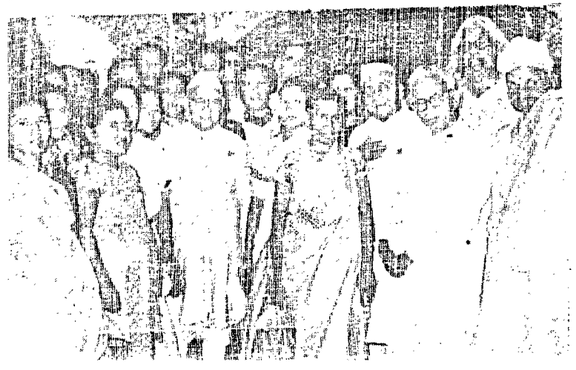
Another by-product of advancing technology is the recent sudden, enormous and accelerating increase in human numbers. At the time of the birth of Christ it is estimated that the total population of our planet was about two hundred and fifty millions. It took sixteen centuries for that number to double itself. It will take only 40 years for our present population of nearly three thousand millions to become a population of six thousand millions.

Growth of Cities

One of the results of this population explosion has been the inordinate growth of the world's great cities. Ever greater masses of human beings now live in a completely man-made environment. Millions of our children have never seen a fruit tree or a field of grain. What are the psychological consequences of this state of affairs? There is, first of all, a deprivation, a narrowing of experience. The inhabitants of a modern metropolis pass their lives in the midst of almost unmitigated hideousness; have no direct acquaintance with the refreshing otherness and mystery of the natural world and are in consequence completely devoid of what Wordsworth called 'natural poetry'. It is worth remarking, in this context, that although modern poets write very little of nature, non-literary or semi-literary books about the life of birds, mammals and insects are extremely popular. Literature seems to reflect only the city-dweller's deprivation, leaving to naturalists and ethnologists the task of satisfying the spiritual hunger created by these deprivations.

And there are yet other psychological consequences of an exclusively urban life in one of the world's vast metropolitan areas. Sociologists have noted, and men of letters

Governor Bisnuram Medhi who inaugurated recently the Eighth National Convention of Farmers at Teynampet Exhibition Grounds is seen in the picture with a group of farmers from Assam. Minister Bhakthavatsalam and Union Minister Punjab Rao Deshmukh are also present.



have penetratingly expressed, the city-dweller's sense of unrelatedness, of not being an organic party of his society, of living all the time in a crowd and yet being chronically lonely.

Another Product

Let us now consider the psychological consequences of another product of modern technology, namely, contraception. At present contraceptive methods are regularly employed only in the industrially speaking, more advanced countries of the world. For men and women living in these countries it is now possible to divorce sexuality from reproduction. The demographic consequences of this divorce are almost wholly desirable.

What of the psychological consequences? In the main, I should say, these too are good. In the context of mutual tenderness, the separation of love from mere biology makes for a more genuinely human relationship between men and women. Outside the context of tenderness this setting free of sexuality from its biological concomitants may result in the trivialisation and cheapening of an enriching experience. Sex made easy, sex without tears, sex within the reach of everybody—this when unjustified by tenderness, may become an expense of spirit in a waste, not of shame (for in divorcing sexuality from procreation, effective contraception has also divorced it from sin and the sense of guilt), but of pointlessness and promiscuous banality.

Fuller Realization

All these new experiences made possibly by recent changes in our environment have had to be explored analysed, named and turned into literature. Modern life affects the makers of modern literature and modern literature helps those who expose themselves to it to realise more fully the anxiety, the sense of futility and helplessness, the cynicism, unrelatedness and isolation, which their over-menacing, over-organised, over-populated and over-urbanised environment now compels them to feel.

Middle Income Group Housing

The Government of India, have sanctioned loan assistance amounting to Rs. 4 crores for the year 1961-62, to 14 State Governments, which asked for it, under the Middle Income Group Housing Scheme. This loan assistance is intended to assist persons in the income range of Rs. 6,001 to Rs. 15,000 per annum to build houses for themselves. The State-wise allocation of funds is as follows: Andhra Pradesh—Rs. 55·75 lakhs; Assam—Rs. 1·75 lakhs; Bihar—Rs. 15 lakhs; Gujerat—Rs. 15·10 lakhs; Jammu and Kashmir—Rs. 3·50 lakhs; Madhya Pradesh—Rs. 16·85 lakhs; Madras—Rs. 30·30 lakhs; Maharashtra—Rs. 75 lakhs; Mysore—Rs. 26·10 lakhs; Orissa—Rs. 10 lakhs; Punjab—Rs. 80 lakhs; Rajasthan—Rs. 18·40 lakhs; Uttar Pradesh—Rs. 32·25 lakhs; and West Bengal—Rs. 20 lakhs. The amount will be advanced by the Life Insurance Corporation of India direct to the State Governments.

VISIT

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To see a paradise for bird watchers sheltering Grackle, Golden Oriole, Paradise Fly-catcher, Orange Minivets, Jerdon's chloropsis and a host of brilliantly plumaged perching and ground birds.

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For further particulars write to:

STATE WILD LIFE OFFICER
Office of the Chief Conservator of Forests
136, Peters Road, Royapettah
MADRAS-14

or

WILD LIFE RANGER No. 1
Mudumalai Wild Life Sanctuary
Kargudi P.O. (*via*) Gudalur
THE NILGIRIS

The Art of ERICULTURE

Ericulture is the art of rearing silk worms and raising cocoons out of that variety of silk worm which feeds on castor leaves. This article outlines the scheme on the Eri Silk Worm, An attempt is being made to popularise this scheme in the State under the rural industrialisation Programme. It is noted that Eri silk is strong, durable, absorbant and does not stick.

Sericulture is the art of raising mulberry and non-mulberry silk cocoons. Non mulberry silk culture includes Tassar, Muga and Eri worm rearing. Ericulture or Eri Silk culture is the art of rearing silk worms and raising cocoons out of that variety of silk worm which feeds on castor leaves. Eri or Eridi means castor in Assam language. Sometime purely as an emergency measure they are fed on Kesaru and in later stages of their growth with cassava papaya, sweet potato, sissu, cabbages, etc.

Eri Silk is very strong and durable compared to other variety of silk. It is absorbant and does not stick to a perspiring body. It is valued on account of its softness and cream colour and above all it is ahimsa silk since no life killing is involved in any of the processes. It clothes a religious person. The cocoons are spun into thread on charkas or Takkle like cotton and not reeled since fibres are of such a nature that long continuous thread cannot be taken out of them. The total production of Eri silk in India exceeds 5 lakh pounds a year.

Climatic conditions

Mr. D. B. Green, has clearly brought out the importance of this industry in page 29 of his note on "The economic resources of the province of Madras and possibilities of their development." He mentions that if the castor leaves now wasted are utilised to rear the eri worms, an important industry can be developed without any detriment to the seed. Ericulture is prominently suitable for development as a cottage Industry as the apparatus is expensive and the work involved is simple and can be carried on by women and children in their spare times in their homes.

This industry can be carried on in many parts of India and the worms are bred indoors. The worms are hardy and thrive best in warm and moist climate from July to March. The ideal temperature and humidity vary from 75 to 85 F. and 85 to 95 per cent, respectively. It also thrives well in places where the temperature varies from 50 to 98 and from 80 to 100 F. To facilitate ideal temperature and humidity manipulation could be done by having thatties and sprinkling water on them in rearing houses. Thatched houses are best suited for rearing.

Rearing House

A rearing room or a rearing house, generally a thatched one is ideal and where facilities are not available a part of the dwelling room may be used for the purpose, but be kept neat and very clean and fumigated before use. The rearing place should be devoid of smoke, smell of tobacco or any pungent smell. There should be good ventilation. It should have windows or doors on every side. The surroundings should not be water logged or marshy or shaded by nedge on any side. The rearing house may face north but never west, should be well protected from ants, rats, lizards, squirrels, silkworm, flies, spiders and birds, etc. Space required for the first day is about 6 square feet for 16,000 worms and for this same number of matured worms 240 sq. feet of space is required at the rate of 6 sq. ft. for 400 worms. At the rate of 4 sq. ft. in a bamboo tray of 2′ × 2′ we may require 60 Trays which may be kept in 5 bamboo or wooden racks of $6\frac{1}{2} \times 2\frac{1}{2} \times 4\frac{1}{2}$ ht. to hold 12 trays each.

The eri silk worms are multivoltive, i.e. more than one crop of five to six crops in a year. The eggs are yellow in colour when it is fresh and after an half an hour it change into white and later it is black.

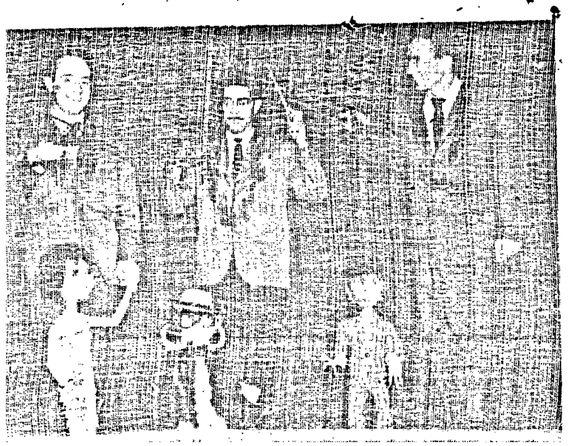
Their Feeding

The eggs purchased or sent by post from distant places from a grainage or rearing station seed is spread in a piece of paper or cloth. In summer the eggs hatch on the 7th or 8th day after oviposition but in winter it takes long time i.e. on the 13th to 21st day after oviposition. Eggs hatch regularly and uniformly without application of artificial heat. After rearing 5 to 6 broods from the same stock eggs from distant places should be obtained. In an ounce of egg about 16,000 to 20,000 worms could be reared. Worms generally come out 4 to 11 in the morning in a temperature of 75 to 85° F. At first feeding very small pieces of tender castor leaves are fed to the newly come out worms after about 12 hours when more than about 50 per cent of eggs have been hatched out. The young works when they are harm are black with hairy body. Then they appear yellowish, whitish and green. The mature worm is of golden yellow colour. The rearing place may have 98° F. room temperature. Nets are used for removing the litter consisting of the remains of leaves and the excreta of worms,regularly from the bed of the silk worms. Worms are better not handled with bare hands, but with the help of nets of feathers. A rearer should have nets of different meshes. Nets of smaller meshes ($\frac{1}{2}$ inch) are used for the younger worms and those of higher meshes (1 inch) for the older ones.

The very tender castor leaves should be cut into small bits and should be spread over the net which is placed over the young worms. The worms slowly get into the net and begin to eat the leaves. As the worms grow up they may be fed with mature leaves. Since feeding the works forms an important part of the silk worm rearing the details for day-to-day feeding is given below for a rearing of 16,000 to 20,000 worms.

First day.—The worms should be fed with $1\frac{1}{2}$ tolas of tender castor leaves at 6 a.m. and 5 p.m. *Second day.*—$7\frac{1}{2}$ tolas are fed at 6 a.m. and 5 p.m. *Third day.*—$12\frac{1}{2}$ and 15 tolas are fed at 5 a.m. and 10 a.m. The worms now go into the first moult and $12\frac{1}{2}$ tolas of tender castor leaves at 12, 4 and 9 p.m. *Fourth day.*—$2\frac{1}{2}$ tolas are fed at 5 a.m. and 9 a.m. and after this many come out of the moult and leaves should be served to them. Again $12\frac{1}{2}$ and $7\frac{1}{2}$ tolas are fed at 2 and 9 .pm. *Fifth day.*—$7\frac{1}{2}$ and $17\frac{1}{2}$ tolas are fed at 5 a.m. and 10 a.m.and many go to the second moult. Again $7\frac{1}{2}$, 20, 30 and $17\frac{1}{2}$ tolas is fed at 12, 2, 4 and 6 p.m. *Sixth day.*—$17\frac{1}{2}$tolas is fed at 5 a.m. and many come out of the moult and again at 12 and 4 p.m. 20 and $12\frac{1}{2}$ tolas are fed. *Seventh day.*—The worms are fed with 60, 60, 25, 60 and 80 tolas of castor leaves at 5 and 10 a.m. and 2, 4 and 9 p.m. respectively. *Eighth day.*—The worms are fed with 80, 200 and 70 tolas at 8, 10 and 2 P.M. and many to the third moult and again 30 and 60 to las are fed at 4 and 9 p.m. *Ninth day.*—30 tolas are fed at 5 a.m. and many come out of the moult and again 110, 160 and 240 tolas are fed at 10 a.m. and 4 and 9 p.m. *Tenth day.*—280, 360, 320, 320 and 560 tolas are fed at 5, 10 a.m. and 2, 4, 9 p.m. *Eleventh day.*—600, 760 tolas are fed at 5 and 10 a.m. and many worms go to the fourth moult and again at 4 p.m. 160 tolas are fed. *Twelfth day.*—160, 180 and 60 tolas are fed at 5 a.m. 2 and 4 p.m. and now many worms come out of the moult and again 440 tolas are fed at 9 p.m. *Thirteenth day.*—740, 640, 400, 880 tolas are fed at 5 a.m. 2, 4 and 9 p.m. *Fourteenth day.*—720, 880, 800, 720 tolas are fed at 5 a.m. and 2, 4 and 9 p.m. *Fifteenth day.*—780, 720, 800, 880, 1320 tolas are fed at 5, 10 and 9 p.m. *Sixteenth day.*—1200, 1040, 380, 1,100 tolas are fed at 5, 10 and 9 p.m. *Seventeenth* day.—1,320, 400, 960, 1,040, 1,520 at 5, 10 a.m. and 2, 4 and 9 p.m. *Eighteenth day.*—1,200, 320, 320, 320, and 460 tolas are fed at 5 a.m. and 2, 4 and 9 p.m. *Nineteenth day.*—360, 160, 160, 160 and 240 tolas are fed at 5, 10 a.m. and 2, 4 and 9 p.m. *Twenteenth day.*—240, 40, 60, 30, 45 tolas at 5, 10 a.m. and 2, 4 and 9 p.m. *Twenty first day.*—25 tolas are fed 5 a.m. and now all the worms mature.

French puppeteers gave an exhibition of their art at a recent show in the City arranged at the Museum Theatre.



Important Stages

In the development of the Eri worms, the moulting stage and cocoon building stage before pupa stage and the moth stage are important. During the period of moulting the worms do not eat, they are decreased in size, remain motionless. They look sick at the time and should not be thrown away. Serve leaves when all the worms go to the moult and when all the worms come out of the moult serve entire leaves and when they crawl upon the leaves transfer the worms with the leaves to a next tray. Avoid overcrowdding always. For moulting worms take 24 to 48 hours and during this period they should not be disturbed. When about 85 per cent worms have come out of the moult food may be given. In Madras Gokulam Harijan Welfare Industrial School, Eri worms were successfully reared and feeding time was based on 4 moulting stages as shown below :—

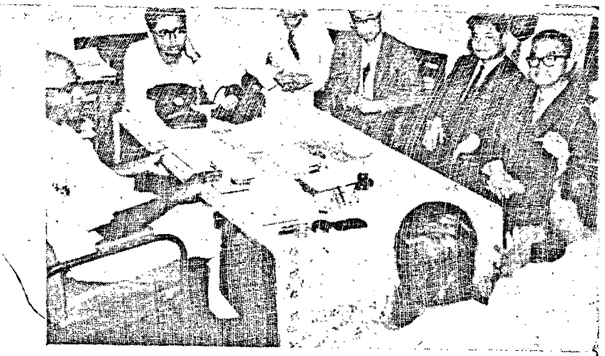
(1) Before first moulting at 6 a.m. to 10 a.m., at 3, 6 and 10 a.m., (2) Before 2nd moulting 6 and 10 a.m. and 2, 5, 8 and 10 p.m., (3) Before 3rd moulting 6, 9 a.m. and 12 noon and 3, 5, 8 and 10 p.m., (4) Before 4th moulting 6, 8, 11 a.m. and 2, 5, 8 and 10 p.m.

Protection

The worms take 21 to 28 days to mature and now they appear sluggish, decreased in size and they do not eat during this time. They pass a semi-liquid excrement and wander about the tray from 9 to 12 in the morning as also the worms without food for a long time. The mature worms should then be piled and placed in the spinning basket or tray, one layer of dry leaves, straw or grass, wood shavings or crumbled paper, etc. put in, the basket and over it about 100 worms are placed and again another layer of spinning medium is put over the worms. About 500 worms (5 layers) can be kept in this way in one big lichi basket of diameter and depth of about $1\frac{1}{2}$ feet and 1 foot respectively. To prevent the worms from crawling up the basket is covered with a lid or it is turned upside down. They are then kept in a airy room. The worms begin to spin at night. After 5 days in summer and about 8 days in winter, the cocoons are picked out from spinning basket and they are spread in one layer for the emergence of the moths.

More active

The worms can spin in deal wood boxes and even on trays. An average cocoon is about $1\frac{1}{2}$ inch in length by $\frac{3}{4}$th inch in diameter. The moths begin to come out on the eighteenth day in summer and on or about the 10th day in winter. They do not eat or drink. Female has bigger and thicker body and male has smaller and shorter body. The males are more active than the females. In the afternoon collect the moths and keep about 250 of them in one basket with a lid over it. At night they will pair. Next morning keep the paired ones in a separate basket. In the afternoon of the same day separate forcibly and throw them away and keep the fertilised female in a basket for laying eggs. Two hundred moths can be kept in a basket. Next morning throw away the females and scrap off the eggs with a stick or with the fingers or with any fine scraper. In winter keep the worm in a warm room. Cocoons and young worms are specially attacked by enemies and should be kept in a closed basket hung from a string. The eggs of the second night came can also be kept for rearing but not the eggs of the 3rd day. A moth lays about 200 eggs. For taking eggs select only white and big cocoons and preferably those formed by the early worms in a brood; spread them evenly on trays. Exchange eggs in July from distant places. If the first rearing is started on the 1st of November it will end on 20th December and so on.



A 5-man team of Japanese fisheries experts recently in Madras to examine the possibility of establishing a deep-sea fishing project met the Secretary to Government, Food and Agriculture Department and other Officials at the Secretariat and had discussions with them.

Treatment of Cocoon

The pierced cocoon, as well as those from which moths could not come out, should be soaked in clean water for about 12 hours and then washed well in fresh water. They are placed in a solution of about 10 seers (800 tolas) of boiling water to which has previously been added washing soda of about one fifth of the weight of the cocoon (one seer). Tie up the cocoons in a bag of cloth and drop it in the above solution, the bundle being kept under solution by placing a stone or heavy wood on the top of tieing below it. Boil for about three hours. Then lift out the bag of cocons, untie it and wash them well, squeeze out the water and dry them in the sun. Then they are readily carded by hand and spun or spun as it is into thread on the charka or Taklie like cotton. Improved charkas, on which continuous and better thread both in quantity and quality can be obtained are available at the Silk Institute, Bhagalpur, Begusara or Ranchi.

A Song in your Heart . . . .

A summer spent in Kodaikanal, lovely Hill Station in South India, puts a Song in Your Heart. The season is invariably wonderful. The Sunshine is pleasant and the Climate is just right. The beautiful lake, the waterfalls, the wooded slopes, the rocks, the giant trees and flowers of myriad hues provide endless visual delights. Prospects for Hiking and Climbing are excellent.

Further South, historic Madurai, City of Festivals and Fairs and Seat of Tamilian Learning and Culture, beckons the Tourist. The Meenakshi temple here, Temple of Temples. represents all the superlative values that contributed to the greatness of South Indian Architecture and Sculpture.

The invigorating Courtallam Falls further down offer incomparable pleasures for holiday-making in Summer Months.

And watching the glorious Sunrise and Sunset from Kanyakumari, the Land's End, provides experience of a Joy without Parallel.

So, Do not Tarry . . . .

VISIT MADRAS STATE

Projects for Utilising MAN-POWER

In pursuance of the objectives to provide increased employment opportunities in rural areas in addition to creating employment through general development programmes, the Third Plan has a Special Programme of Works for utilising man-power resources. The first series of 32 pilot projects was launched in the 1960–61 slack season. Nearly, 200 projects will start working from the current (1961–62) slack season representing the second series of projects.

Using to the fullest possible extent the man-power resources of the country and ensuring a substantial expansion in employment opportunities is one of the principal aims of the Third Five-Year Plan. Both the First and the Second Five-Year Plans assigned to employment a very high priority. However, as foreseen in the Plans, there was a degree of conflict between the competing claims of capital formation and larger employment.

As early as April 1959 the National Development Council expressed the view that during the Third Plan, in addition to creating employment through the general development programmes, programmes designed to provide increased employment opportunities in the rural areas, particularly during the slack agricultural seasons should also be prepared. In pursuance of this, the Third Five-Year Plan has a special programme of works for utilising man-power.

The First Series

The first series of 32 Pilot Projects was launched in the 1960–61 slack season, primarily to gain experience in the organisation and direction of the programme at the State, District and Block levels. The projects gathered momentum in the 1961-62 slack season and are now in their concluding phase. The working of the Pilot Projects was closely studied by the Programme Evaluation Organisation, which also prepared a number of case studies.

Before launching on the programme on the second series of projects the Planning Commission organised three Regional Conferences with the State Governments, at which, on the basis of the experience gained in the working of the first series of Pilot Projects, the programme for the second series was evolved.

High Importance

Inaugurating the first Regional Conference in Delhi on January 29, 1962, Mr. Shriman Narayan, Member, Planning Commission, underlined the high importance the Planning Commission attached to the programme. He said, " We found during the first two Plans that we were unable to make a dent on this problem of unemployment and under-employment. If we were not able to provide work for those who seek work, much of our planning effort becomes meaningless. This is a legitimate criticism of our Plan. We must try through this programme to find a way to provide employment for those able-bodied persons in our villages, who remain idle during the slack seasons."

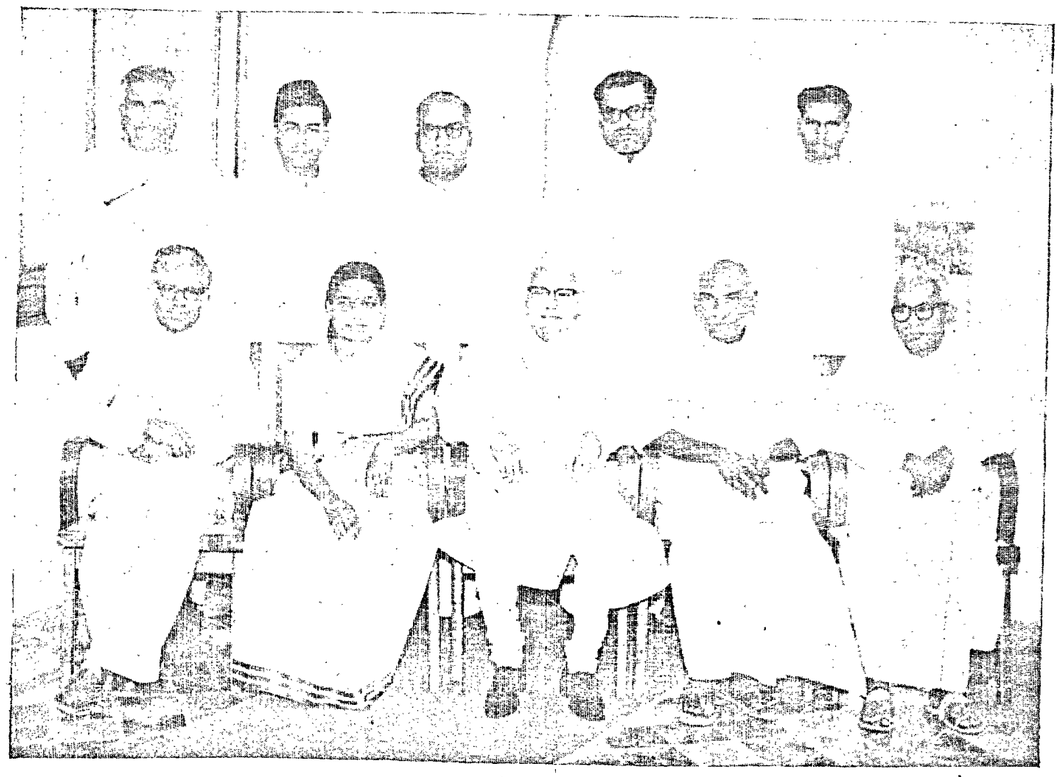
The two Regional Conferences which followed this at Calcutta and Hyderabad took up the thread and the conclusions reached at these conferences added clarity to the primary objective of this programme and the mechanics of working it.

There was agreement on the point that the rural works programme should be approached as a supplementary

Ministers' Portfolios

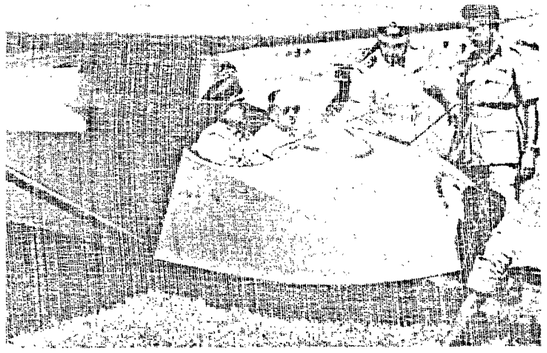
NEW MADRAS CABINET

Sri K. KAMARAJ *(Chief Minister)*	Public, Planning, General Administration including Board of Revenue and District Revenue Establishment, Community Development, Panchayats, Home, Transport.
Sri M. BHAKTAVATSALAM *(Minister for Finance and Education)*	Finance, Education, Labour, Courts and Prisons, Legislature, Elections, Khadi and Village Industries, Religious Endowments, Official Language.
Sri R. VENKATARAMAN *(Minister for Industries)*	Industries, Commercial Taxes, Nationalised Transport, Technical Education, Electricity, Housing, Handlooms, Yarn, Textile, Mines and Minerals, Iron and Steel Control, Prices and Supply of Goods Act, Companies, Newsprint Control, Ex-servicemen, Legislation on Chits, Law.
Sri P. KAKKAN *(Minister for Agriculture)*	Food and Agriculture, Minor Irrigation, Animal Husbandry, Harijan Welfare, Prohibition.
Sri V. RAMAIAH *(Minister for Public Works)*	Public Works, Revenue.
Srimathi JOTHI VENKATACHALAM *(Minister for Health)*	Public Health and Medicines, Women's and Children's Welfare, Orphanages, Accommodation Control.
Sri NALLASENAPATHI SARKARAI MANRADIAR *(Minister for Co-operation)*	Co-operation, Fisheries, Forests and Cinchona
Sri G. BHUVARAHAN *(Minister for Information)*	Information and Publicity, Registration Stationery and Printing, Government Press.
Sri S. M. ABDUL MAJID *(Minister for Municipal Administration)*	Municipal Administration.



Sitting : *(Left to right)* Sri R. Venkataraman, Srimathi Jothi Venkatachalam, The Governor, Sri K. Kamaraj, Sri M. Bhaktavatsalam.

Standing : *(Left to right)* Sri P. Kakkan, Sri S. M. Abdul Majid, Sri V. Ramaiah, Sri N. Nallasenapathi Sarkarai Manradiar, Sri G. Bhuvarahan.



The Governor of Madras recently visited No. 3 Madras Air Squadron N.C.C. Meenambakkam and enjoyed a flight in a Glider, piloted by Squadron leader Dandapani. This picture was taken just before the flight.

programme aimed at strengthening the economy of each area exposed to a high degree of unemployment and under-employment. It was a transitional measure forming part of a comprehensive attempt over a period to create a viable economy for these areas.

Selection of Areas

There was recognition of the fact that the programme embodied a new approach to the working of the entire development programme, in districts and blocks. Through the intensive use of the available man-power and determination to find work for every willing hand, the programme is designed to increase the potential for development specially in agriculture on the basis of widespread and well-organised community effort in slack seasons and carefully worked out plans on the part of the various Government agencies. The rural works programme was to serve as a catalyst to harness unutilised man-power to the fullest possible extent.

There was general agreement in the conferences that the areas for starting the project should be selected after suitable surveys were completed at an early date. However, for the present projects could be started on the basis of such data as were available with the State Governments.

Some of the criteria suggested for selecting the areas were interesting. It was suggested, for example, that the net inflow of labour into a particular area, the presence or absence of major employment-generating projects, migratory movements of labour, the existence of a high proportion of agricultural labour and the level of wages may serve as suitable indices.

Choice of Schemes

A project area may have a number of individual schemes to be worked. There was unanimity on the point that in taking up such individual schemes for execution in project areas, the primary object of stepping up agricultural productivity should be kept in veiw. The individual schemes, while affording maximum direct employment should enhance the possibilities of generating indirect employment.

There was similar unanimity over the view that schemes involving considerable expenditure and time should not be taken up under this programme. The schemes should be small ones capable of completion within a single working season. It was also felt that schemes which had only a small employment component, such as poultry, dairying and cottage industries should be altogether excluded.

Road Works

There was considerable discussion as to whether road could be taken up. The experience in the working o the first series of Pilot Projects was that roads forme perhaps the easiest works programme which could b started in any rural area. However, there was agreemen on the point that the relationship between increasin agricultural productivity and providing continuous employ ment and the road works programme was rather slende There were many who wanted the roads programme t be kept out. But champions of roads were not wantin Ultimately, it was agreed that road programmes con be included only if (*i*) there was no other major worl to be taken up in an area, (*ii*) roads were indispensable t the area and formed part of overall road plan for t village and (*iii*) their construction was of such a natu that it could not be taken up by the people witho assistance.

The Core

The core of the works programme to be taken up the project areas was settled without much discussio These were : soil conservation, contour bunding, an water logging, minor irrigation, afforestation, draina and land reclamation.

State Governments already experiencing acute shorta of the technical personnel required to push through th Plan programmes were anxious to make sure that execution of the rural works programme would not pu a heavy demand on their limited staff. It was agre therefore, that the works should be of a simple nature calling for a high degree of technical supervis

To ensure that the works programme did not come halt for want of schemes it was agreed that, for each a over and above the programme to be immediately ta up, there should be a few more schemes which sho be available for being taken up in case the ot schemes were completed before the end of the s season.

There was considerable emphasis on ensuring that community contribution, which was an essential element of this programme, did not in any way cut into the primary object of the programme, namely, to provide gainful employment to idle agricultural labour. At the same time, there was recognition of the need to ensure that the rural works programme did not in any way disturb the existing equilibrium of community obligations in the area under other development programmes. Another point on which all the participants were agreed was that the works executed under this programme should have the guarantee of maintenance by appropriate local institution.

There was clear recognition on the part of the State Governments that the rural works programme could not be executed in isolation; in fact, there was need for integrating it as a supplementary programme with all other development programme undertaken in the area, so that together they could make a noticeable dent in the unemployment and under-employment problem in the area.

Interesting Variations

There were interesting sidelights about the local variations that the programme had undergone in its execution in the 15 different States. For example, it was found that West Bengal had a more or less similar programme for the relief of unemployed persons. Maharashtra also had a programme under which 50 persons or more could jointly approach the District Collector for works whenever they found themselves idle.

The experiment carried out in Madras under which labourers employed under the programme were given their wages half in cash and the other half in the form of sumptuous meal also came in for some study. Another interesting proposal was that of the Madras Government where, at the Panchayat level facilities are proposed to be provided for registering persons in advance for work during slack seasons.

A Special Problem

The Kerala representative pointed out a special problem in the region, namely that the slack season coincided with the period of heavy rainfall. This would require further thinking on the nature of the works to be taken up.

The interchange of experience between the States and the agreed basis on which the programme is proposed to be worked in the coming season augurs well for its massive expansion in 1963–64 and 1964–65.

The Third Plan envisages a steady expansion of the programme. Beginning with a target of employment for one lakh persons through this programme in 1961–62 there will be a step up to 4 to 5 lakh persons in 1962–63, 10 lakhs in 1963–64 and 25 lakhs in 1965–66.

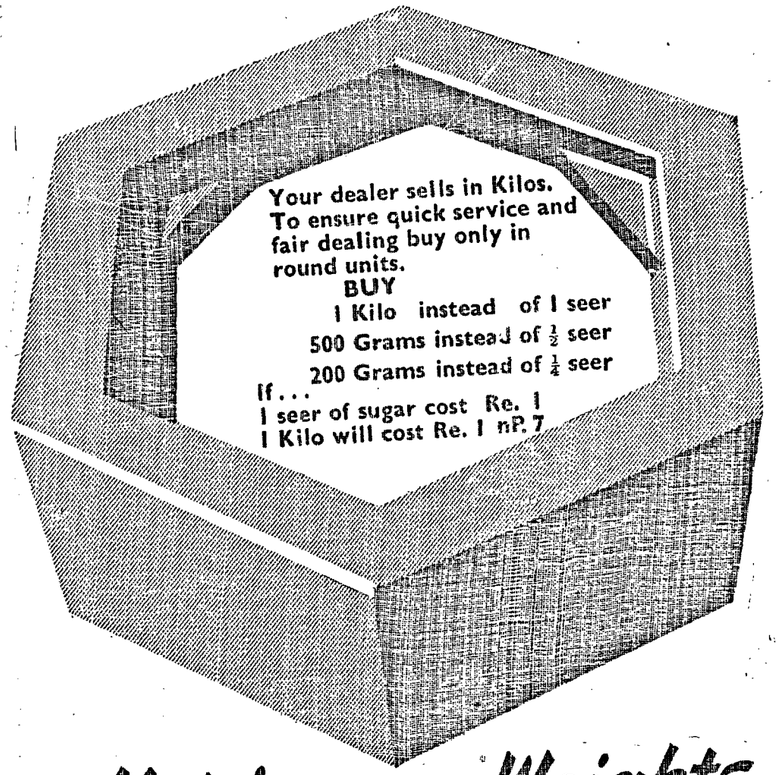
Nearly 200 projects will start working from the current (1961–62) slack season. Their distribution in the various States will be as follws : Andhra Pradesh-15, Assam-10, Bihar–13, Gujarat–11, Jammu and Kashmir–6, Kerala–13, Maharashtra–15, Madhya Pradesh–10, Madras-13, Mysore 13, Orissa–12, Punjab–10, Rajasthan–13, Uttar Pradesh–20, West Bengal–14, Himachal Pradesh–5, Tripura–2.

Courtesy : *Yojana.*

Increase in National Income

The total National income in 1960–61 was seven point one per cent more than the income in the previous year. The per capita income in the same period went up by 4·8 per cent. In 1960–61, the National income at 1948–49 prices, was Rs. 12,690 crores and per capita income Rs. 292·5. Of the increase in the National income, the agricultural sector accounted for nearly 43 per cent. This is revealed in a report prepared by the Central Statistical Organisation. The report shows that in real terms the National income went up by 20·2 per cent during the Second Plan period, while the per capita income increased by 8·4 per cent.

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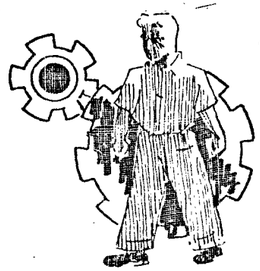
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Training Apprentices in INDUSTRY

A country's industrial efforts depend mainly on human resources; the technicians in every section of industry. To train them and utilise their talents fully is of paramount importance for the industrial growth of the nation. This precisely is the basis of the legislation for training apprentices which the Apprentices Act embodies. The Act which became law in December 1961, is being enforced from March 1, 1962.

The Apprentices Act marks not only the culmination of a long march towards a fair deal to apprentices; it also places India in line with the industrially advanced countries in the supply of skilled workers and artisans.

Ostensibly, "apprenticeship" implies a system by which in-plant training or "accelerated training" in institutions is imparted to young persons systematically for a period fixed in advance. But in actual practice, this rarely happend before.

A major portion of skilled workers and artisans came as raw youth—mostly relations and friends of work people—who joined as unskilled labour and gradually acquired skill in the course of their work. Not infrequently, they received a nominal wage and the period of apprenticeship extended from 6 to 10 years, or even longer, suiting the convenience of employers.

No Programme

Another shortcoming in the system was that, barring some public sector and private industries, no industry provided for a regular and well-organised training programme for apprentices. Even in larger and better organised workshops the new recruit was left to learn what he could by working alongside the more experienced worker.

The exploitation of apprentices and the unsatisfactory system of their training engaged public attention at various times. As far back as 1943, the Labour Investigation Committee voiced its opinion against the prevalent practice and recommended regular and well-organised training programme for apprentices. The system also came in for severe criticism by the Advisory Committee on Technical Training in 1944–45 and later by the Central Wage Board for Sugar Industry.

Shortcomings

Critical shortcomings of industrial training were also examined by the Indian Labour Conference in 1951. It went a step forward and recommended legislation to enforce apprenticeship training. The Shiva Rao Committee, in

Sri G. L. Mehta, Chairman, Indian Investment Centre, New Delhi, addressed City industrialists recently at the Rajaji Hall. Minister Venkatraman is seen speaking on the occasion.



1952, also recommended legislation as a last resort to overcome apathy of employers to the training of apprentices. Support for legislation on apprenticeship training also came from the Technical Training Committee of Small Scale Industries Board in 1956 and a number of public and private organisations.

What was clearly needed was to systematise training of apprentices and to improve the quality of training methods. Equally important was the need to have a survey, within each industry, to work out the right kind of training course and get the right balance between formal instruction and workshop experience appropriate to each class.

Voluntary Scheme First

Accepting the need for an organised programme, the Government prepared a national apprenticeship training scheme for implementation on a voluntary basis and launched it during the Second Plan period.

But this did not lead to fruitful results. Though the average recurring cost reimbursed by the Government to the employer for running the scheme came to Rs. 47 per month per trainee, the target of 7,100 seats fixed for the Second Plan had to be brought down to 3,000. Of the 2,700 seats sanctioned, only 1,250 apprentices were undergoing training at the end of the Second Plan period.

As against this background, the requirement of engineers and technicians at three principal levels—graduates, diploma holders and skilled craftsmen—is increasing continuously. For the Third Plan alone, it is estimated that about 51,000 graduates, one lakh diploma holders and 13 lakhs craftsmen (about 8 lakhs in engineering trades and 5 lakhs in non-engineering trades) will be required. The requirement of graduates and diploma holders for the Fourth Plan is estimated at 80,000 and 1,25,000 respectively. Correspondingly, craftsmen will also be required in still larger numbers.

Legislation

Obviously, industry, left to itself, was not going to solve the problems. The widening gap between demand and supply of apprentices could not be bridged by exhortations alone and some decisive action was called for. The obvious course was to enforce observance of the scheme through legislation; hence the Apprenticeship Bill.

The main difference between the legislation in other countries and the law in India, however, is that while in the former it is to regulate programmes of apprenticeship training in India it is to regulate as well as compel employers to take up a certain number of apprentices.

Enforcing Bodies

For enforcing provisions of the scheme there will be a Central Apprenticeship Council, bipartite in composition, and at State level, there will be separate State apprenticeship councils. Besides providing for compulsory, and for a fixed period training of apprentices in various stages, the Act also apportions financial responsibility for the training of apprentices between the Government and the employers. In the case of medium and small firms, a system of joint training schemes has been proposed.

The Act also provides for age limit for taking up apprenticeship, trade tests of apprentices by the National Council for Training in vocational Trades, reasonable opportunity for employment after the period of apprenticeship and compensation for injury during the period of apprenticeship.

Inventions promotion—More cash prizes

The Inventions Promotion Board in the Union Ministry of Commerce and Industry has awarded ten more cash prizes ranging from Rs. 250 to Rs. 2,000. The Board had earlier announced cash awards to 21 inventors. The inventions, which have qualified for these awards, are varied in nature, the highest award of Rs. 2,000 going to two inventors of scripts for Oriya and Kannada Typewriters. A prize of Rs. 1,000 has been awarded for the invention of an electronic device for automatic tuning of music scales, while two prizes of Rs. 500 each have been awarded for a water cooler and a new design of nozzles suitable for spraying insecticides. The other awards are for inventing hollow keys, electric automatic lamp, instruments for sugarcane research and apparatus for raising water.

'Creative Therapy'

HOW MUSIC Reclaims HANDICAPPED

JAMES DODD

An account of a new therapy where music is exploited to heal and teach the handicapped, to help the lame to walk, the paralysed to move and the dumb to speak is outlined in this article. The success of the new experiment in therapy in Britain, appears to open up prospects of a 'breakthrough' with far-reaching and beneficial consequences for the world of the handicapped.

To help the lame to walk, the paralysed to move and the dumb to speak — these have always been among the high aims of physicians and surgeons, and during the last 20 years their work has been increasingly supplemented by that of the skilled therapist. Together, they have achieved astonishing results in cases that would once have seemed hopeless.

Occupational therapy has been used for years. By involving the patient's own interests and imagination in various tasks, it seeks to enable him to correct his own handicaps. Unfortunately these tasks are often repetitive and uncreative, so that the patient's interest and incentive tend to slacken.

A Violinist's Idea

Recently, the success of a new experiment in therapy in Britain seems to have opened up prospects of a "breakthrough" with immense potentialities. It is based on the theory of "creative therapy", drawing its motive power from the battery of creative energy which exists—perhaps latent and unrealised—in so many young people. This theory has been applied before, though more as a palliative than a cure.

The British Spastics Society can quote many examples of patients, almost completely paralysed, who have learned to paint by holding brushes between their teeth, or attached to their feet, and to write creatively by similar means. But the benefits here are largely mental.

It has taken an amateur violinist, Mr. Herbert Lyon, who lives at Leyton, near London, to establish a new school of therapy through music, which he calls reclamation. Yet he says music is of secondary importance; it is the self-discipline and concentration taught which can help a handicapped child to overcome many of its major problems. This type of therapy has gained the support of medical and educational authorities as well as musicians and, recently, active encouragement by grants from the Gulbenkian and Carnegie Trusts.

From Walthamstow, London, at the Wingfield Music Club of Great Britain and Northern Ireland, Mr. Lyon and enthusiastic voluntary helpers are applying this latest form of creative therapy to a membership of about 60 handicapped learners. These include spastics, cripples and severe asthmatics, many of them children who have not responded to other methods of treatment.

The Challenge Principle

Here, to quote the London "Times", is the "imaginative pioneering work on new methods, so often best undertaken by the inspired volunteer". And amazing results have been achieved. Apparently impossible performances have resulted from a deliberate demand on the patient for an apparently impossible effort. For a basic principle of Mr. Lyon's treatment centres round a challenge.

A handicapped child, new to the club, is set to learn to play a musical instrument. It is preferably one to his or her taste, although the child may have no knowledge or appreciation of music. Certainly, the instrument is nearly always one well outside his compass— one that he cannot, in theory, possibly play. And so, Mr. Lyon reasons, the whole creative energy of the child is canalized into persuading his atrophide, dormant or malfunctioning physical or artificial "mechanism" into obedient activity.

True in Practice

As a theory, it sounds too good to be true, but it has been proved true in many cases. Not only have many learner-patients gradually, and after arduous, unremitting practice, lost most of their disabilities and eventually been able to lead a normal life, but some have achieved such musical proficiency that, after professional coaching, they have reached concert standards.

Spastics, unable properly to co-ordinate their limbs, frequently begin with percussion instruments. The idea started some years ago when Mr. Lyon himself had to fight to regain the use of three fingers injured in an accident. In hospital, he watched the struggles of others. He knew the power of music, and he put together what he knew to form his theory.

His first "patient" was the six-year-old daughter of a neighbour. She had an artificial left-hand. As an experiment he taught her to play a specially adapted 'cello', with the bow attached to her "hand" by elastic bands. After nine months' work, she could manage only a few bars. Then, fairly suddenly, the "creative miracle" worked. A year later she was playing expertly at a local music festival.

For some time Mr. Lyon, his wife and interested friends carried on these lessons in his house. But soon the news of their achievements spread, and voluntary help came in. Today the club is in a position to pay professional teachers' fees for promising children. It takes possible patient students from all parts of Britain to London for consultation. It pays for fares and instruments, and is organizing local people to help handicapped pupils in many districts.

This new therapy has done even more than heal and teach handicapped people. It has given them something more concrete and equally important—a sense of comradeship and of achievement, and of belonging in the normal world.

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BOOKS and Ideas about Books

One of the major problems connected with higher education in India to-day is the non-availability of reasonably-priced books in various disciplines, both for use as text-books and as reference material in Universities and Colleges. Students and teachers at Indian Universities have largely to rely on foreign books to impart instruction at post-graduate, and sometimes even at under-graduate level. Besides being expensive, foreign books are beyond the reach of the average student and teacher. The absence of inexpensive text-books and standard works hinders the progress of education, and particularly the development of scientific and technological education, that is so essential for the development of the country and the satisfactory execution of our national plans.

In order to meet this situation, the Ministry of Education has, in collaboration with the American Embassy, formulated a scheme for the low-priced republication of American educational standard works in India. The Government of the United States of America affords assistance to this scheme by utilising Rupee Funds under the Surplus Commodity Agreement, P.L. 480.

Suitable titles

The Ministry of Education, in consultation with the University Grants Commission, the Ministry of Scientific Research and Cultural Affairs and other Ministries of Government, decides on the titles that are suitable for republication. Contracts are then entered into by the American Embassy with Indian publishers of standing who have secured the necessary copyright in regard to publication of a mutually-agreed-upon list of American titles. Under Indian regulations, royalty payments need the prior approval of the Government and this prior approval is obtained from the Ministry of Education.

Books re-printed under the scheme are priced at about one-third of the original American price, and efforts will be made to keep the price in India as low as possible. Assistance will be extended by the American Embassy to Indian publishers who have obtained copyright so as to enable them, while covering production cost, royalty and overheads, to maintain the price of reprints sufficiently low to bring them within the reach of most Indian University students.

Distribution

Distribution is in general through normal trade channels. In addition, the University Grants Commission may, where

Dr. S. Nasu, an agricultural expert from Japan is seen receiving a set of books of the Agricultural Department from Minister Bhaktavatsalam whom he visited in the Secretariat.



necessary, underwrite certain titles and arrange for distribution through University Co-operative Stores where they exist.

So far, the following books have been published under the scheme :—

		RS.	NP.
(1) College Chemistry by Linus Pauling.	Original price ..	30	00
	Republished price.	12	00
(2) Statistical Methods applied to Experiments in Agriculture and Biology. by Snedecor, G.W.	Original price ..	37	50
	Republished price.	15	00

Other titles are under consideration. To evaluate these books, the Ministry of Education has constituted panels of experts in various fields and sub-fields and, on the basis of the evaluation of these experts, includes titles in the list or rejects them.

Fair administration

So that the scheme may be fairly administered and cause no hardship to Indian authors and publishers, the Ministry of Education has set up an Indo-American Board that is composed of representatives of the Government of India and the Government of U.S.A. The Board consists of 14 members, seven representing the Government of India and seven the U.S.A. The Chairman of the Board is the Secretary, Ministry of Education and the Secretary to the Board is a nominee of the American Embassy. The Board meets once a quarter.

The Government of India has under consideration another scheme to promote the inexpensive re-publication in Science Technology and the Humanities, of works by Indian authors that may be suitable for students at University level.

The Madras State Lalit Kala Akademi was recently inaugurated by Minister Subramaniam at the Children's Theatre, Sri P. V. Rajamannar, former Chief Justice, presiding.



Bibliography of locusts

The Zoological Survey of India has recently brought out a six-hundred page volume of a world bibliography of the published scientific works on locusts and grasshoppers. The work was begun by its author some 25 years ago and was finally completed with the aid of a special scheme of the Government of India.

A total of over 7,000 references are listed alphabetically according to authors, followed by an authors' index and subject index, the latter being divided into ten sections, viz., general reports, etc., morphology, development, physiology, ecology, phases, e.g., solitary and gregarious forms within the same species, evolution and genetics, control and taxonomy.

A short introduction brings out interesting details. While Europe published about 3,300 works and North America 1,400, Asia produced only 700. In Asia, India leads with about 500 references as against 40 from China and 70 from Japan. The works have been published in nearly all the major well-developed languages of the world, but the overwhelming majority (nearly nine-tenths) are in the European language, the remaining few being in the Asian and none in the African. Among the European languages English predominates with nearly half the total number.

First work

Leaving aside the ancient Sanskrit and Chinese texts and the references in the Bible, the first work on locusts is by the Arab writer, Ad-Damiri, in a work written in the fifteenth century. Then for a century there is nothing and only about thirteen in the seventeenth century, but increasing to nearly 700 in the second half of the nineteenth. Thereafter, an increasing flow occurs and the highest figure is about 270 works in the year 1952.

The introduction also brings out the economic and bibliogical importance of locusts. Swarms of locusts periodically cause devastation to agriculture. The swarming locusts are truly hungry. Instances are cited of a swarm in Russia having stripped a herd of sheep of its wool, and in India, of having completely eaten up a ten-month old baby while the mother was away in another part of the field.

Handbook on Britain

The 1962 edition of *Britain : An Official Handbook*, the 13th in the series, covers events up to September 1961. It contains 588 closely-packed but interestingly presented pages of information about Britain—the land and the people who live in it, the Government, the law, the armed forces, the social services, the problems and administration of housing and town and country planning, the churches, the arts and sciences, the press and broadcasting, the national economy, industry, transport and communications, public and private finance, trade and the balance of payments, labour conditions and training and sport.

There is a new section at the end for visitors to Britain—notes on travel facilities, passports and visas, Customs duty, purchases tax, import of birds and animals, visitors' cars and driving licences, social security benefits, and the health services.



A visiting team of American farmers, both men and women, met Minister Bhakthavatsalam at the Secretariat.

Comprehensive Index

There is a coloured frontispiece of the Queen and the Duke of Edinburg, as well as photographs ranging from the port of Liverpool to British breeds of dogs, from the nuclear reactor at Windscale, Cumberland, to reading aids for the blind, from guided missiles to Young Farmers' Clubs. There are 12 diagrams and five maps, one of which is a coloured fold-in map, with England and Wales on one side and Scotland and Northern Ireland on the other. There is also a 30-page bibliography and comprehensive index.

Britain : An Official Handbook is prepared by the Central Office of Information, with the co-operation of other Government departments and many national organizations, and published by H.M. Stationery Office. The price of the cloth-bound edition is Rs. 20 and that of the paper-bound edition Rs. 10.80 nP. (excluding postage in both cases). The handbook is available from British Information Services, Shanti Path, Chanakyapuri, New Delhi-21, or through any leading bookseller.

Free treatment for Sick Animals

Government have recently, in acceptance of certain representations, directed that treatment to all sick animals should be provided free of cost in all Government Veterinary Institutions irrespective of the fact whether the animals belong to the rich or the poor.

The levy of fees for treatment of sick animals was first introduced in the Veterinary Institutions situated in Municipal towns and was subsequently extended to other areas. Charges were levied at the Veterinary Institutions only to those owners of cattle whose income was more than Rs. 200 per mensem.

It is now felt that the abolition of the system of collection of fees in Government Veterinary Institutions will increase their popularity and usefulness and the number of cases that will be attending the Veterinary Institutions will increase correspondingly and this will ultimately help to control the disease position and improve the health of Livestock.

A Popular Pavilion



The recently concluded National Agricultural Fair held at the Island Grounds was a very great show and host State Madras participated in it in a very big way. It put up the biggest and grandest pavilion on view and attracted vast admiring crowds. A descriptive review of the Madras Pavilion and an account of the rich agricultural traditions of Tamilnad that it was designed to reflect are set forth in this feature article.

In the series of National Agricultural Fairs, contemplated by the Bharat Krishik Samaj to depict agricultural development trends in the world to-day, the 2nd National Agricultural Fair was recently held in Madras at the Island Grounds. Mammoth Pavilions, rich in variety and theme were put up. Pleasing to the eye and catering for popular tastes, the spectacular display attracted huge crowds.

In this impressive and unique fair, the Madras State pavilion easily stole the show by virtue of its massive proportions, its prominent location and the fascinating theme adopted for the frontage decorations.

In 1960 at the World Agricultural Fair at Delhi the Madras Public Works Department to whom the erection of the Madras State Pavilion was entrusted, spared no pains to present the rich traditional architecture of the South b the reproduction of a 57-foot high five-tiered replica of th Rameswaram Gopuram with its majestic praharams, etc This rightly earned the first prize for best traditiona architecture displayed at the Fair. Now in 1962, the hos State of Madras could not have chosen a better them than the one selected which portrayed the rich and gloriou Tamilian past symbolising prosperity and plenty through agricultural production.

Minister Bhaktavatsalam inside the State Pavilion in the Agriculture Fair.



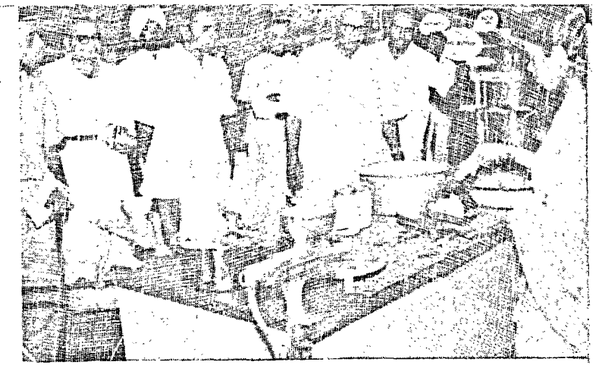
Popular Theme

Three illustrative set-ups one from Puranic lore, the other to accentuate the farm theme and the third from legendary heroics, adorned the frontage of the Madras State Pavilion The central set-up consisting of life size mouldings of ele phants revolving over a bed of hay was dexterously mount ted up by suitable mechanical contrivances. The elephant were made to revolve round a haystack fixed centrally to convey the idea that thrashing operations in olden days had been resorted to with the aid of elephants signifying thereby the plentiful yield from agricultural operations. A peasent with a plough (moulding) placed on the top of the haystack portraying the strong and healthy farmer of the olden days completed the effect. On either side of this central revolving thrashing floor the two other illustrative set-ups were mounted on high pedestals. The first of this signified the role of women in aiding agricultural operations in olden days and represented the popular theme of Valli driving birds from a corn field. The other set-up presented a healthy but rustic Marava Woman exibiting extreme sense of courage and bravery in defending against the attacks of a tiger in a lonley country side with the aid of a "muram".

In the beautifully decorated frontage below, typical murals, mouldings and other artistic embellishments depicted the various agricultural operations from sowing to the harvest. Entry into the pavilion and exit were provided on either side of a centrally recessed portion in this frontage, wherein a typical rural setting with shrubbery, grazing yard and a rural folk dance. Thumbi Group circling around a cowherd playing on a flute, etc., were exquisitively represented.

Typical Dam

These frontage decorations covered the interior pavilion wherein the activities of the various Departments were represented by models, illustrative charts, etc. A typical dam cascading waters over the spillway and flanked by huge hillocks on either side was neatly laid in the background reminding the visitor that the dam is the generator of the vital power and water on which the entire agricultural operations rest. In the quadrangle in front of the dam a beautifully laid out lawn lily pond housing a mermaid, etc., was provided for general attraction.



Union Minister Subbarayan at the Agriculture Fair

By a combination of artistic dexterity, colour effect and suitable illumination, the facade of the State Pavilion truly reflected the rich Tamilian heritage of the past and highlighted the premier place agriculture occupied in the social life of historic Tamilnad. The pavilion was a fitting tribute to the magnificent efforts of the Staff of the Public Works Department and others.

"Go Anywhere" Engine

British Railways have produced a locomotive that can operate under electric or Diesel power. It is the first of six being built for experimental operation, and has just come into use at the London depot of the Southern Region.

This "go anywhere" engine was built at the Southern Region works at Eastleigh, Hampshire, by British Railways' engineering staff. It uses electricity on what the Southern Region describes as a "take it or leave it" basis, running under its Diesel power when necessary. This means that the locomotive can run efficiently on the electrified lines, but still go anywhere else on the railway network. In this way it may play a part in streamlining freight services, for its Diesel powered unit enables it to do its work when electric power is not available in the freight marshalling yards.

A Striking contrast

The Industrial picture of Madras State today presents a striking contrast to the picture of Madras, even as late as 1947, wherein one saw industrial activity confined only to a few countries like Madras, Madurai and Coimbatore.

Numerous big, medium, small and village industries have since appeared and are distributed all over the State. And they are thriving. The industrial estates and colonies at Guindy, Virudhunagar, Madurai, Tiruchirappalli, Pettai, Erode, Thanjavur, Marthandam and elsewhere substantially augment production and contribute to the wide dispersal of prosperity.

While the power projects under the Plans have considerably accelerated industrial advancement, the bountiful benefits under the Neiveli Project when it starts functioning full steam, will transform the economy of the State into one predominantly industrial. Meanwhile industry in the State marches serenely ahead.



Every day that passes in this age of science registers new advances as a result of which new and improved techniques and devices emerge to lighten the burden of the house-wife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments both in the Indian scene and elsewhere.

With expanding production in industry and agriculture, economic and efficient packaging of raw materials and manufactured goods has assumed considerable importance in India. Packages must be functional and should be designed to meet the rigid requirements of handling, transport, storage and climatic conditions. In fact, the packaging department forms an essential component of almost every manufacturing unit in advanced economies.

Investigations on various aspects of packaging have been in progress in the Division of Packaging and Containers at the Central Food Technological Research Institute, Mysore. Valuable data have been collected on the performance of packages under various conditions of handling, transport and handling.

Possible Hazards

Depending upon the mode of handling, shape, size and weight, a package might experience during the course of its journey drop hazards of various kinds. Hazards due to shunting of railway wagons, sudden stoppage of high-speed carriers like trucks and take-off and landing of aeroplanes can cause damage to delicate parts of instruments like pointers and suspensions. Cast metal parts and glassware might break, tins may be dented and perishables crushed.

In road, rail, sea or air transport, packages are subjected to sustained vibrations which might generate stresses high enough to cause failure of the equipment or instruments. Food products like biscuits, corn-flakes, fruits and vegetables may disintegrate when loosely packed under such conditions. Studies at the Institute have shown that the leakage of contents, seepage of dry powders from cartons, bursting of thin diaphragms in window cartons, and breakages of glassware are mostly attributable to these effects. In the case of wooden containers, vibrational effects may lead to loosening of nails and weakening of packing case.

During storage or transport, packages are usually stacked to the maximum height possible. Consequently, the bottom layer has to bear the load of the packages above and is subjected to a high degree of compression. If the container is not strong enough, the force of compression is transmitted to the contents resulting in crushing, breakage and similar damages to the contents. This is particularly so with perishables which are packaged in dimensionally weak containers.

During storage or transport of goods, packages are subjected to changing weather and climatic conditions like temperature, humidity, exposure to salt spray, water, rain, dust and sunlight.

Changes in humidity and temperature conditions might cause water to condense inside the package, resulting in fungal growth and rusting of metal parts and lowering of the overall strength of the container and cushioning materials. The nails in the package become loose due to the expansion and shrinkage of wood caused by changing weather conditions.

Odourproof Materials

The importance of the use of moisture and odourproof packaging materials for food products hardly needs emphasis, since all the food products are susceptible to changes in humidity. In the case of perishable products like fruits, vegetables, meat, eggs and fish the ambient

temperature of storage and transport plays a decisive role on the shelf life of the products. During air transport, the package experiences a rarefied atmosphere and low temperature conditions.

Protection against rain, or salt water spray, which are common hazards in land or sea transport, is extremely important ; rain or water spray may cause caking as in the case of cement, the washing away of preservatives like salt in hides and skins and salted fish, loss of colour and gloss of textiles and corrosion of unprotected metal parts. Undue increase in the moisture content may also result, often making the contents unfit for use, especially in the case of food products.

Bricks out of Fly-ash-Clinker

New use of industrial wastes like fly ash and clinker has been developed at the Central Building Research Institute, Roorkee. Bricks suitable for buildings have been prepared from Durgapur fly ash and local clinker by admixture with cement (3 : 9 : 1) and pressing the mixture into mould at 22 per cent moisture level and 20 tons pressure.

The compressive strength and drying shrinkage of such bricks after 28 days of water curing are about 1,175 lb./sq. in. and 0·07 per cent respectively. The bricks may replace ordinary clay bricks in those parts of the country where the quality of clay bricks is poor and the cost is high.

The Seventh Annual Report (1960-61) of the National Research Development Corporation of India reports satisfactory progress in the development and utilisation of inventions emerging from research and technological institutions in India. Several new processes were licensed to industry and several went into production during the period under review. The pine oil unit of Prabhat General Agencies in Hoshiarpur, the baby food plant of Kaira District Co-operative Milk Producers Union, Limited in Anand, and the carboxmethhul cellulose plant of Sardesai Brothers in Bilimora were among the units that went into production. Fifty new licences for exploitation of new products and processes were granted by the Corporation during the year compared to 30 processes licensed in previous year.

At a special function held at Rajaji Hall recently, Governor Bisnuram Medhi gave away prizes to the winners of the State Awards for Elementary School Teachers.



Besides, four new development projects were sanctioned (i) a prototype plant at the Regional Research Laboratory, Hyderabad, for production of high grade activated carbon Hykol 'X' at an estimated cost of Rs. 6·05 lakhs, (ii) a prototype plant at the Central Food Technological Research Institute, Mysore, for the integrated production of protein and oil from groundnuts at an estimated cost of Rs. 14·7 lakhs, (iii) a unit at the National Chemical Laboratory, Poona, for experimental production of aromatic chemicals at a cost of Rs. 5·59 lakhs, and (iv) a pilot plant at the Shri Ram Institute for Industrial Research, Delhi, for the production of p and m-cymenes at an estimated cost of Rs. 0·29 lakhs. In addition, a further grant of Rs. 3·5 lakhs was sanctioned for the project on deionisation of cane juice at the National Sugar Institute, Kanpur.

Record for the year

During the year, 31 inventions were reported for development by 14 institutes (including two from foreign countries) bringing the total number of inventions reported up to the end of March 1961 to 584. Of these, 234 were returned, dropped or withdrawn, leaving 350 effective inventions for development. Investions licensed on payment of premium and/or royalty amounted to 117. Thirty-nine of these have already gone into operation. Ninety-four inventions were released free to industry.

Thirteen new applications were filed for patents in India on behalf of the Indian Institute of Science, Bangalore, Ministry of Railways, Ministry of Steel, Mines and Fuel and Ministry of Food and Agriculture ; 15 Indian patents were procured for the Ministries of Railways and Defence and the Indian Institute of Science, Bangalore ; twenty-eight foreign patents for Suri transmission and fluidised bed technique for textile processing were secured by the Corporation in Australia, Germany, Canada, Japan, France, U.K., U.S.A. and Czechoslovakia.

A simple and quick method for testing the abrasive characteristics of clays used in pencil manufacture and an apparatus designed for carrying out such a test are described in a recent issue of the *Journal of Scientific and Industrial Research*.

The writing quality of pencil lead depends on many factors and the abrasive character of the clays used in making leads is an important consideration. The suitability of clay for use in pencil manufacture is judged by its behaviour during the process of slip manufacture and its effect on the writing quality of the lead after baking. Some clays are reported to wear out the dyes, through which the pencil lead compositions are extruded, very fast. Therefore, the abrasive property of clays used in pencil manufacture is of considerable practical importance. Available processes for testing the abrasive character of clays are elaborate and time consuming. A simple and quick method of determining this important property of the clays would be of considerable help to the pencil industry.

The new method developed at the National Physical Laboratory, New Delhi, consists in determining the loss in weight of a metal test piece subjected to abrasion by clays under controlled conditions. A single test requires about 30 minutes to complete. The method is useful in providing a guidance to the selection of low abrasive power clays. Though primarily intended for comparing the abrasiveness of pencil clays, this method can be used for testing other industrial materials also. The apparatus designed for carrying out the tests is a compact equipment and can be easily fabricated in a workshop.

Improved Electric Holder

An improved electrode holder which enables complete utilization of electrode in the process of welding has been designed at the Regional Research Laboratory, Hyderabad. The mode of operation of the improved holder is the same as in conventional holders. According to details of the invention published in the February 1962 issue of *Vigyan Pragati*, the Hindi monthly of the Council of Scientific and Industrial Research, the electrode cost can be cut by 15 per cent.

At present, a portion of the electrode used in arc welding goes waste because there is no way of holding it except by hand and when the piece is too small to hold near the flame, it has to be discarded.

In the improved holder, a sliding spindle connected to a collet holding the electrode is actuated forward by a spring-controlled lever mechanism which in turn is operated by opening the jaws. By further opening the jaws, the used electrode can be removed and at the same time the welder can introduce the fresh electrode into the collet simultaneously pushing the spindle backwards along with the controlling lever against a spring. After using approximately 80 per cent of the electrode the welder can push forward the spindle to utilise the electrode completely.

Sri Harry Champion, an eminent professor of Forestry, was in the City recently as part of his visit to India under the Colombo Plan Scheme. He met Minister Bhaktavatsalam in the Secretariat and discussed forestry problems in the State.



Seeing in the Dark

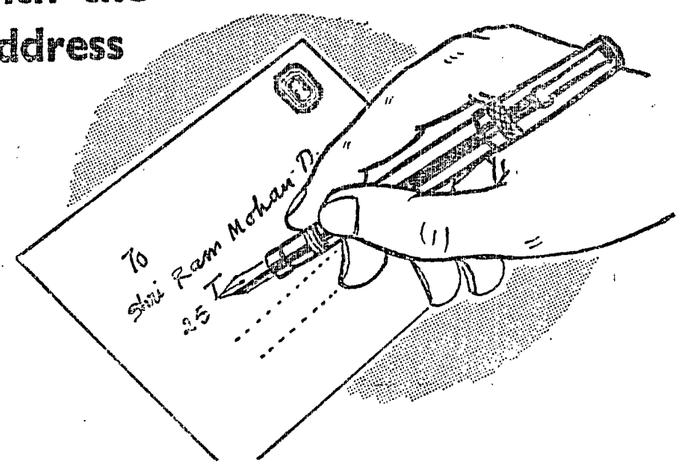
The British Army will put into use, during the coming year, infra-red devices that will enable it to see in the dark. The existence of this new equipment was revealed on February 22, with the publication in London of the Army Estimates for 1962-63, totalling, £523,920,200.

The new device—which will also be fitted to Britain's new main battle tank, The Chieftain, as it undergoes further trials this year—will enable marksmen to see and to shoot in the dark up to a distance of 150 yards. It consists of an infra-red lamp, with a special viewing telescope.

The Army is also to receive infra-red binoculars which, when used in conjunction with an infra-red lamp or a light source, enable observation in the dark. These can be used in driving vehicles which have infra-red filters fitted to the head lamps. Britain is co-operating closely with the United States in the development of these devices.

The Army has also begun training in the use of pilotless aircraft for photographing enemy-held territory—another example of equipment development conducted in the closest co-operation with the U.S.A. This equipment is capable of finding targets far beyond the range of ground observations.

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Culture, Beauty and Gracious Living are the very breath of the Tamilian Way of Life. While the temples of Tamilnad express an extraordinary architectural and sculptural tradition, they have intimately influenced Tamilian living even as they served as places of Worship.

Language and letters, drama and literature, arts and the crafts, music and dance have all flourished under the all-embracing character of the profoundly religious Tamilian culture and traditions.

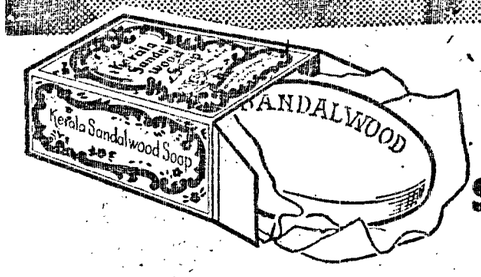
Thus devotion and reverence have combined to mould a culture which is as peerless for its classical values as it is for its sense of dedication and humility.

This surpassing culture is so deeply ingrained in Tamilnad that living the artistic and beautiful life, has become part of the normal, habitual life of the Tamilian householder.

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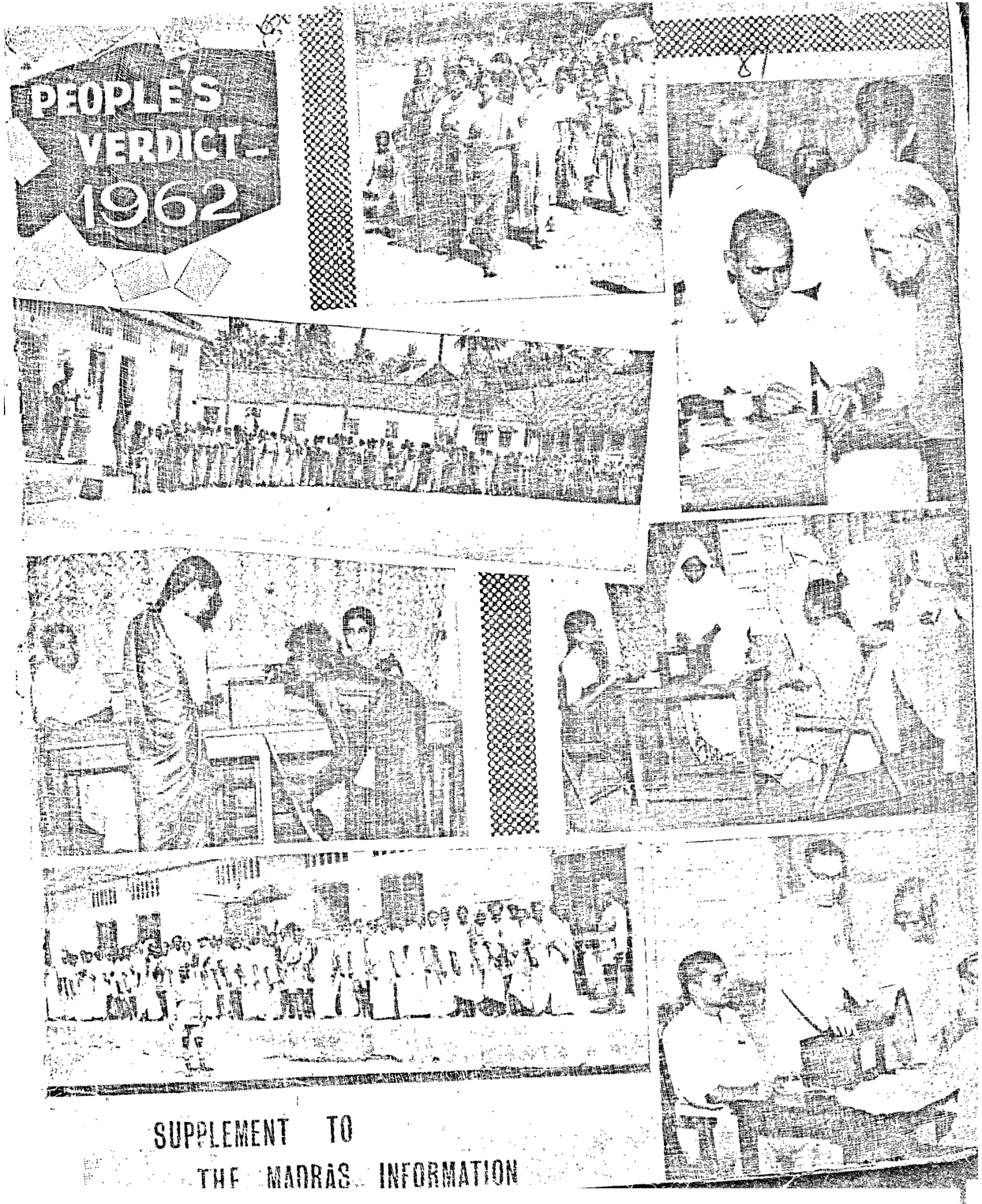




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MADRAS STATE

1957

LEGISLATIVE ASSEMBLY SEATS 205

	Party position.	Votes polled.	Percentage.
Indian National Congress.	**151**	**5,046,576**	**45·34**
Communist Party of India.	**4**	**823,586**	**7·40**
Praja Socialist Party ..	**2**	**293,778**	**2·64**
Bhartiya Jan Sangh ..	**..**	**..**	**..**
Other Parties and Independents.	**48**	**4,967,060**	**44·62**
Total ..		**11,130,996**	

LOK SABHA SEATS 41

	Party position.	Votes polled.	Percentage.
Indian National Congress.	**31**	**5,094,552**	**46·52**
Communist Party of India.	**2**	**1,101,338**	**10·06**
Praja Socialist Party ..	**..**	**399,789**	**3·65**
Bhartiya Jan Sangh ..	**..**	**..**	**..**
Other Parties and Independents.	**8**	**4,355,162**	**39·77**
Total ..		**10,950,841**	

1962

LEGISLATIVE ASSEMBLY SEATS .. 206

	Number of contesting candidates.	Seats won.
Indian National Congress	205	138
Dravida Munnetra Kazhakam ..	142	50
Swatantra	94	6
Forward Bloc	6	3
Communist	68	2
Socialist	7	1
Independents	204	5
Other Parties	67	..
Total ..	793	205

LOK SABHA SEATS 41

	Number of contesting candidates.	Seats won.
Indian National Congress	40	30+
Dravida Munnetra Kazhakam ..	18	7
Communist	14	2
Forward Bloc	1	1
Other Parties and Independents ..	78	..
Total ..	151	41

* One seat includes candidate returned unopposed from Tiruchendur Parliamentary Constituency.

List of Abbreviations

* denotes successful candidates.

† denotes successful candidates in Bye-elections.

Cong.	Indian National Congress.	Comm.	Communist Party of India.	DMK.	Dravida Munnetra Kazhakam.
Ind.	Independents.	PSP.	Praja Socialist Party.	JS.	Bhartiya Jana Sangha.
Repub.	Republican Party.	SC.	Scheduled Caste Candidate.	ST.	Scheduled Tribe Candidate.
T.N.P.	Tamil National Party.	W.T.	We Tamils.	M.L.	Muslim League.
Swa.	Swatantra Party.	Soc. Lab.	Socialist-Labour.	W.	Woman Candidates.

Election Supplement to
The Madras Information

STATE ASSEMBLY

1957 Poll—Total Electorate: 17,514,993. **1962 Poll—Total Electorate: 18,675,438.**

MADRAS CITY

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. WASHERMANPET (96,480).		
1. M. Mayandi Nadar (Cong.) *	11,770	29·49
2. N. Jeevarathnam (Ind.)	11,279	28·26
3. P. M. Lingesan (Ind.)	9,152	22·93
4. A. S. K. Iyengar (Comm.)	7,005	17·56
5. S. Daivasigamoney (Ind.)	707	1·76
2. HARBOUR (76,022).		
1. **Dr. U. Krishna Rao (Cong.) * .. ..**	**15,831**	**54·99**
2. G. Rajamannar Chettiar (P.S.P.).	8,209	28·51
3. Kannan (Ind.)	4,750	16·50
3. BASIN BRIDGE (85,667).		
1. Kumari Anandanayaki (W) (Cong.) *	20,441	56·39
2. N. V. Natarajan (Ind.)	14,367	39·65
3. R. Ramanathan (Ind.)	866	2·40
4. Pachaiyappan (Ind.)	564	1·56
4. PERAMBUR (191,799).		
1. Pakkiriswami Pillai (Ind.) *	34,573	24·60
2. T. S. Govindaswamy (Cong.). ..	31,806	22·63
3. Sathiavanimuthu (W) (SC) (Ind.) * ..	27,638	19·66
4. T. Raiagopal (SC) (Cong.)	23,682	16·85
5. K. P. Sammudiswaran (SC) (Ind.) ..	14,915	10·61
6. Gajapathi (Comm.)	4,233	3·02
7. Karuppannan (SC) (Comm.	3,698	2·63
5. THOUSAND LIGHTS (86,621).		
1. **A. V. P. Asaithambi (Ind.)* .. .**	**17,632**	**54·08**
2. K. Venkatasamy Naidu (Cong.) ..	14,970	44·92
6. EGMORE (88,666).		
1. **Anbazhagan (Ind.)* .. .. ..**	**20,293**	**51·00**
2. Radhakrishnan (Cong.)	16,529	42·21
3. M. Sundara Raj (Ind.)	2,344	5·99

Candidates and Parties.	Votes polled.
1. WASHERMANPET (93,359).	
1. Mayandi Nadar, M. (Cong.)	25,732
2. Vedachalam, M. (D.M.K.)	24,095
3. Jeevanandham, P. (Comm)	10,049
4. Lingesan, P. M. (Swa.)	8,250
2. HARBOUR (76,172).	
1. **Haja Sheriff, K. S. G. .. .. ..**	**26,330**
(Cong.)	
2. Chitrarasu, C. P. (D.M.K.)	23,098
3. Krishnamurthy, B. (Swa.)	3,374
3. BASIN BRIDGE (88,197).	
1. Anandanayaki, T. N. (W)	31,477
(Cong.).	
2. Natarajan, N. V. (D.M.K.)	25,913
3. Kannan, V. S. (Swa.)	3,554
4. Kannan, T. (Ind.)	1,221
4. PERAMBUR (SC) (100,407).	
1. Sulochana, D. (Cong.)	40,451
2. Satyavanimuthu (W) (D.M.K.)	32,309
3. Dhanapal, S. (J.S.)	1,494
5. PURASAWALKAM (94,436).	
1. Bashyam Reddy (Cong.)	27,474
2. Pakkirisamy Pillay (Soc. Lab.)	18,713
3. Govindaswamy (Ind.)	17,566
4. Kalyanasundaram P. C. (J.S.)	1,595
6. THOUSAND LIGHTS (89,518).	
1. Mathiazhagan, K. A. (D.M.K.) ..	27,984
2. Indrani (Chengalvaroyan) (W) (Cong.) ..	25,609
3. Sambandan (T.N.P.)	4,772
4. Balusamy, C. M. (Swa.)	3,011
7. EGMORE (84,322).	
1. **Jothi Venkatachalam (Cong.) .. .. ..**	**29,283**
2. Anbazhagan (D.M.K.)	27,666
3. Narayanasamy Mudaliar, K. (Swa.) ..	2,151
4. Aryasankaran, K. (Ind.)	1,596

MADRAS—*cont.*

7. TRIPLICANE (90,420).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. K. S. G. Haja Sheriff (Cong.)*	**12,990**	**35·91**
2. Appadurai (Ind.)	11,975	33.11
3. Chinna Annamalai (Ind.)	10,278	28·41
4. Kuppuswami (Ind.)	446	1·33
5. Moova Rammia Naidu (Ind.).	265	0·73
6. P. R. Chengalvaroya Chettiar (Ind.).	221	0·61

8. TRIPLICANE (91,042).

Candidates and Parties.	Votes polled.
1. Nedunchezhian, V. R. (D.M.K.)	**33,273**
2. Sivanesan (Cong.)	22,093
3. Varadachari, N. S. (Swa.)	7,418
4. Natarajan, K. N. (Ind.)	1,276

8. MYLAPORE (94,513).

1. C. R. Ramaswamy (Cong.)*	**16,932**	**52·64**
2. Kumari S. Vijayalakshmi (W) (P.S.P.).	12,251	38·08
3. A. K. M. Pitchai (Ind.)	2,986	9·28

9. MYLAPORE (91,931).

1. Aranganaal (D.M.K.)	**25,825**
2. Varadappa Chetty, A. (Cong.)	18,472
3. Vijayalakshmi, S. (P.S.P.) (W)	10,172
4. Sivaraman, M. (Swa.)	6,984
5. Kathirvelu (Ind.)	2,731

9. THIAGARAYANAGAR (111,797).

1. K. Vinayakam (Cong.)*	**16,813**	**45·10**
2. A. S. Jesupatham (Ind.)	12,170	32·64
3. S. Krishnamoorthy (Ind.)	8,296	22·26

10. THIAGARAYANAGAR (128,854).

1. Kanchi Manimozhiar (D.M.K.)	**35,462**
2. Guntur Narasimha Rao (Cong.)	26,834
3. Damodaran, C. (Swa.)	9,196
4. Krishnamurthi, S. (Ind.)	8,002
5. Murugesan, K. (T.N.P.)	4,653
6. Srinivasan, M. K. (Ind.)	1,424
7. Jesupatham, A. S. (Ind.)	566
8. Naidu, M. G. (Ind.)	231

CHINGLEPUT DISTRICT.

10. GUMMIDIPUNDI (75,865).

1. Kamalambujammal (W) (Cong.)*	**9,002**	**26·72**
2. Venugopal Reddi (Ind.)	8,908	26·44
3. Dushyanthulu Raju (Ind.)	7,768	23·04
4. Marimuthu (Ind.)	3,998	11·86
5. T. V. Jeevarathnam (Ind.)	3,152	9·34
6. G. R. Kanniah Naidu (Ind.)	888	2·60

11. GUMMIDIPUNDI (75,560).

1. Raghava Reddi (Swa.)	**19,575**
2. Kamalambujammal (W) (Cong.)	18,946
3. Peddaiya (Ind.)	3,576

11. PONNERI (170,967).

1. V. Govindasami Naidu (Cong.)*	**32,110**	**25·94**
2. T. P. Elumalai (SC) (Cong.)*	**31,392**	**25·34**
3. T. Shanmugam (Ind.)	14,995	12·11
4. Chengam Pillai (SC) (Ind.)	13,639	11·01
5. M. Jayaram Reddi (Ind.)	10,873	8·78
6. C. K. Manickam (SC) (Comm.)	8,306	6·72
7. M. Kuppuswami (SC) (Ind.).	4,872	3·94
8. Elumalai, son of Palayam (SC) (Ind.).	4,570	3·69
9. Thirvenkata Naicker (Ind.)	3,069	2·47

12. PONNERI (SC) (89,125).

1. Elumalai, T. P. (Cong.)	**26,125**
2. Nagalingam (D.M.K.)	15,721
3. Manickam (Comm.)	9,092
4. Dharmalingam (Ind.)	1,035
5. Elumalai, A. P. (Ind.).	995
6. Jeevaratnam (Ind.)	509
7. Ramadoss (Ind.)	429

13. MADHAVARAM (97,264).

1. Govindarajulu Naidu, R. (Cong.)	**29,896**
2. Arasu, A. P. (D.M.K.)	29,646
3. Balaram (Soc. Lab.)	3,364
4. Veeraraghavan (Ind.)	707

CHINGLEPUT DISTRICT—*cont.*

12. SAIDAPET (81,890).

1. A. S. Doraiswami Reddiar (Cong.)*	**14,888**	**55·16**
2. N. P. Loganathan (Ind.)	10,410	38·54
3. A. Kamalanathan (Ind.)	1,703	6·30

13. CHINGLEPUT (142,694).

1. Muthuswamy Naicker (Cong.)*	**26,568**	**24·73**
2. Appavu (SC) (Cong.)*	**25,854**	**24·06**
3. Ramachandran (Ind.)	22,884	21·29
4. Rathinam (SC) (Ind.)	21,682	20·18
5. Paramasivam (SC) (Ind.).	10,453	9·74

14. MADURANTAKAM (159,340).

1. O. Venkatasubba Reddy (Cong.)*	**24,402**	**19·20**
2. O. N. Doraibabu (Ind.)	22,585	17·77
3. V. L. Raja (Ind.)	19,250	15·15
4. Ellappan (SC) (Ind.)*	**18,516**	**14·57**
5. Jothi Venkatachalam (W) (Cong.)	18,345	14·43
6. Kothandarama Reddy (Ind.)	15,784	12·41
7. Angesan (SC) (Ind.)	8,230	6·47

14. SAIDAPET (99,689).

1. Munu Adhi (D.M.K.)	**37,123**
2. Vinayakam (Cong.)	23,902
3. Naidu, N. S. (Soc. Lab.)	2,833

15. KUNNATHUR (SC) (85,427).

1. Appavoo P. (Cong.)	**20,207**
2. Ratnam, A. (Repub.)	19,422
3. Durai Elumalai (WT.)	8,931

16. CHINGLEPUT (76,741).

1. Viswanathan C. G. (D.M.K.)	**27,933**
2. Rajarathna Nayagar, G. (Cong.)	25,809
3. Ramaswamy, T. M. (Ind.)	1,767

15. UTTIRAMERUR (81,928).

1. V. K. Ramaswamy Mudaliar (Ind.)*	**18,385**	**44·26**
2. K. Duraiswamy Nayagar (Cong.).	17,122	38·41
3. Munuswamy (Ind.)	4,706	10·55
4. S. Murugesa Mudaliar (Ind.)	3,416	7·67
5. Jagannathan (Ind.)	939	2·11

17. MADURANTAKAM (SC) (88,704).

1. Parameswaran, B. (Cong.)	**29,743**
2. Ellappan, P. S. (Swa.)	19,424
3. Ariasankaran, K. (Ind.)	6,119
4. Dasarathan, S. (Ind.)	2,274

18. ACHARAPAKKAM (81,633).

1. Venkatasubba Reddy (Cong.)	**27,170**
2. Venka, V. (D.M.K.)	22,748
3. Dorai Babu, O. N. (Soc.)	6,044

19. UTTIRAMERUR (84,189).

1. Sinivasa Reddiar O. (Cong.)	**33,766**
2. Doraisami Naicker, K. (Ind.).	24,266
3. Deenadayalu Naidu (Ind.).	1,705
4. Sundaram Moorthy, T. G. (Soc. Lab.).	1,421
5. Muthumari Pillai, P. (Ind.)	771
6. Chinnakannu Naicker (Swa.)	630
7. Yogi Jagannathan (Ind.)	302

16. KANCHEEPURAM (91,027).

1. C. N. Annadurai Mudaliar (Ind.)*	**31,861**	**51·94**
2. P. S. Srinivasan (Cong.)	20,718	33·78
3. K. S. Parthasarathi (Comm.)	6,742	10·98
4. Chakravarthi Nayagar (Ind.)	1,448	2·36
5. G. Varadarajan (Ind.)	576	0·94

20. KANCHEEPURAM (98,287).

1. Natesa Mudaliar, S. V. (Cong.)	**46,018**
2. Annadurai, C. N. (D.M.K.).	36,828
3. Parasuram Nayagar, M. K. (Ind.).	1,128

CHINGLEPUT DISTRICT—*cont.*

17. SRIPERUMBUDUR (74,870).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **M. Bhaktavatsalam (Cong.)** * ..	21,784	53·05
2. C. V. M. Annamalai (Ind.) ..	17,050	41·52
3. J. Venkatachala Naicker (Ind.) ..	1,211	2·95
4. G. D. Bagyam (W) (Ind.)	1,018	2·48

18. TIRUVALLUR (169,359).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Eakambara Mudaly (Cong.)** * ..	40,214	33·73
2. **V. S. Arunachalam (SC) (Cong.).***	34,689	29·10
3. N. Govindasamy Naidu (Ind.).	17,035	14·29
4. M. Dharmalingam (SC) (Ind.) ..	7,564	6·31
5. K. M. Balu Nayagar (Ind.) ..	6,001	5·04
6. Narayana Nayagar (Ind.) ..	4,569	3·83
7. Sulochana Mudaliar (Ind.) ..	3,248	2·73
8. John Sundaram (Ind.)	2,994	2·51
9. Dhanarajan (Ind.)	2,930	2·46

19. ARKONAM (85,622).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **S. C. Sadayappa Mudaliar (Cong.)** *.	29,669	63·46
2. Thomas (Ind.)	10,527	22·17
3. A. L. C. Krishnasamy Naidu (Ind.)	7,302	15·37

20. SHOLINGHUR (74,186).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **B. Bakthavathsalu Naidu (Cong.)** *	22,991	55·44
2. M. Subramaniam Naicker (Ind.)	4,037	33·96
3. Jayaraj (Ind.)	4,440	10·70

21. CHEYYAR (74,385).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **P. Ramachandran (Cong.)** * ..	26,018	51·23
2. V. Darmalinga Nayagar (Ind.).	24,761	48·77

22. WANDIWASH (160,030).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **M. Ramachandra Reddy (Cong.)** *	44,610	28·12
2. A. Dharma Gounder (Ind.) ..	33,185	20·92
3. **D. Dasarathan (SC) (Cong.)** * ..	22,187	18·89
4. S. Muthulingam (SC) (Ind.) ..	15,747	9·93
5. Ettiappa Gounder (Ind.). ..	12,965	8·20
6. Ramasamy (SC) (Ind.)	7,941	5·10
7. Karunaiprakasam (SC) (Ind.) ..	6,187	3·90
8. Govindaraju (SC) (Ind.) ..	6,081	3·80
9. Damodaram (SC) (Ind.). ..	5,170	3·30
10. Perumal (SC) (Ind.)	4,494	2·84

21. SRIPERUMBUDUR (93,368).

Candidates and Parties.	Votes polled.
1. **Bhakthavatsalam (Cong.)**	33,825
2. Annamalai (D.M.K.)	32,588
3. Ponnuswamy, M. P. (Ind.)	1,732

22. TIRUVALLUR (SC) (74,349).

Candidates and Parties.	Votes polled.
1. **Arunachalam (Cong.)**	21,609
2. Durairaj (D.M.K.)	17,175
3. Dharmalingam (Swa.)	4,269

23. KADAMBATTUR (69,958).

Candidates and Parties.	Votes polled.
1. **Ekambara Mudaliar (Cong.)**	17,314
2. Govindaswamy Naidu (Swa.)	16,767
3. Srinivasan, P. (Ind.)	6,143
4. Chengalvaraya Naidu (Ind.)	2,554
5. Thiruvengadam, K. (Ind.).	2,320

24. TIRUTANI (97,944).

Candidates and Parties.	Votes polled.
1. **Chiranjeevulu Naidu (Ind.)**	36,884
2. Thyagarajan (Cong.)	34,176
3. Ismail (Ind.)	1,975

NORTH ARCOT DISTRICT

25. ARKONAM (87,982).

Candidates and Parties.	Votes polled.
1. Ramasamy Mudali (D.M.K.)	26,586
2. Bakthavatsalu Naidu (Cong.).	25,152
3. Thomas (Repub.)	6,798
4. Duraisamy Reddy (Ind.)	4,787
5. Deenadayalu Naidu (Ind.)	3,161
6. Chokkalinga Reddy (Swa.)	1,728

26. SHOLINGHUR (78,223).

Candidates and Parties.	Votes polled.
1. **Ponnuranga Mudaliar (Cong.)**	33,291
2. Munusamy (D.M.K.)	20,762
3. Periasamy Reddy (Ind.)	4,308
4. Ganapathy Kannappa Mudaliar (Ind.). ..	1,066

27. CHEYYAR (79,544).

Candidates and Parties.	Votes polled.
1. **Govindan, K. (D.M.K.)**	23,250
2. Dharmalinga Naicker, V. (Cong.)	22,892
3. Perumalsamy Naicker (Swa.)	9,225

28. WANDIWASH (SC) (92,928).

Candidates and Parties.	Votes polled.
1. **Muthulingam, S. (D.M.K.)**	34,922
2. Dasarathan, D. (Cong.)	19,160

29. PERANAMALLUR (74,329).

Candidates and Parties.	Votes polled.
1. **Ramachandran, P. (Cong.)**	24,817
2. Annamalai Mudaliar, V. D. (D.M.K.) ..	16,252
3. Ettiappa Gounder, P. (Swa.)	6,670
4. Adikesava Mudaliar, P. K. (Ind.)	2,400

NORTH ARCOT DISTRICT—*cont.*

23. ARCOT (74,691).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **S. Khader Sheriff (Cong.)*** ..	20,643	48·52
2. Latchumanan (Ind.)	11,907	28·33
3. Sambasivam (Ind.)	4,926	11·81
4. G. M. Samy (Ind.)	3,623	8·69
5. A. R. Pachaiappan (Ind.) ..	691	1·65

24. RANIPET (70,501).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Chandrasekara Naicker (Cong.)*.**	12,386	33·63
2. R. A. Subhan (Ind.)	10,759	29·22
3. C. A. Varanathan (Ind.) ..	9,164	24·88
4. Utharanathan (Ind.)	2,635	7·16
5. Srinivasan (Ind.).	1,127	3·06
6. M. Rangaswamy (Ind.)	754	2·06

25. GUDIYATTAM (171,171).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **V. K. Kothandaraman (Comm.)*.**	33,811	21·77
2. **T. Manavalan (SC) (Cong.)*** ..	33,341	21·47
3. Venkatachalam (Cong.) ..	32,462	20·90
4. M. Krishnasami (SC) (Ind.) ..	29,310	18·90
5. Sambasivan (Ind.)	15,593	10·04
6. Pulavar A. Mani Ezhilan (SC) (Ind.).	10,751	6·92

26. VELLORE (89,284).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **M. P. Sarathy (Ind.)***	13,520	45·40
2. Sundara Gounder (Comm.) ..	13,083	33·54
3. V. M. Ramasamy Mudaliar (Cong.).	8,586	21·06

30. ARCOT (82,352).

Candidates and Parties.	Votes polled.
1. **Munirathinam (D.M.K.)**	28,485
2. Khader Sheriff, S. (Cong.)	19,795
3. Ranganatha Naicker, A. G. (Swa). ..	7,198
4. Sadanandam Chettiar (Ind.)	1,727
5. Sundararaj, M. (Ind.)	1,491
6. Ukrapani (Ind.)	422

31. RANIPET (87,022).

Candidates and Parties.	Votes polled.
1. **Abdul Khaleel (D.M.K.)**	24,082
2. Chandrasekhara Naicker, A. E. (Cong.). ..	23,218
3. Varadarajan (Ind.).	9,562
4. Ganesan (Ind.)	2,429
5. Doraisamy , T. (Ind.).	1,183
6. Vallikkannu, V. (Ind.).	391
7. Munisamy Naicker (Ind.).	384

32. KATPADI (85,814).

Candidates and Parties.	Votes polled.
1. **Rajagopal Nayudu, B. (Cong.)** ..	26,389
2. Natarajan (D.M.K.)	20,710
3. Kothandaraman (Comm.)	10,192
4. Kulasekaranayudu, A. (PSP.)	1,219
5. Gopal, G.R. (Ind.).	1,212

33. GUDIYATTAM (SC) (96,430).

Candidates and Parties.	Votes polled.
1. **Manavalan, T. (Cong.)**	25,795
2. Kuppusamy, C. (Repub.)	15,258
3. Munusamy (Comm.)	13,801
4. Perumal, B. (Ind.)	2,506

34. VELLORE (90,028).

Candidates and Parties.	Votes polled.
1. **Jeevarathna Mudaliar, R. (Cong.)**	26,739
2. Sarathy, M. P. (D.M.K.)	26,549
3. Sundaram (Comm.)	11,760
4. Rajammal (W) (Ind.)	412
5. Subramani (Ind.)	378

35. VIRINCHIPURAM (82,644).

Candidates and Parties.	Votes polled.
1. **Sampangi Naidu (D.M.K.)**	23,459
2. Krishnamurthy (Cong.).	11,229
3. Radhakrishnan, R. (Ind.)	5,489
4. Jayaraman, A. M. (Ind.)	2,043
5. Noduncheralathan (Ind.)	1,826
6. Narayanasamy Mudaliar (Swa.). ..	1,339
7. Rangaswamy Reddiar, T.R. (Ind.). ..	587
8. Kuppusamy Gounder, V. P. (Ind.). ..	570

NORTH ARCOT DISTRICT—*cont.*

27. AMBUR (161,510).

1. **V.K. Krishnamoorthy (Cong.)*** ..	25,562	22·48
2. Sampangi Naidu (Ind.)	25,105	22·09
3. S. R. Munusami (SC) (Ind)* ..	17,047	14·99
4. A. M. Rathnasami (SC) (Cong.)	15,842	13·93
5. Athimoolam (SC) (Ind.) ..	15,585	13·71
6. M. B. Rajagopal Naidu (Ind.) ..	14,592	12·80

28. VANIYAMBADI (80,556).

1. **A. A. Rasheed (Cong.)***	18,565	51·37
2. M. P. Vadivelu Gounder (Ind.).	13,930	38·91
3. G. E. Radhakrishnan (Ind.) ..	2,289	6·37
4. C. Govindarajan (Ind.)	1,019	2·85

29. TIRUPPATTUR (76,648).

1. **R. C. Samanna Gounder (Cong.)*.**	18,618	64·00
2. Natesa Pillai (Ind.)	6,609	22·72
3. Krishnasami Iyer (Ind.) ..	2,112	7·26
4. Appasami (Ind.)	1,752	6·02

30. CHENGAM (76,865).

1. **T. Karia Gounder (Cong.)*** ..	20,079	56·43
2. R. Venkatachala Mudaliar (Ind.).	12,806	36·00
3. E. Venkatachala Mudaliar (Ind.)	2,691	7·57

167. POLUR—*vide* page 29 for details

31. ARNI (76,019).

1. **P. Doraisamy Reddiar (Ind.)*** ..	20,237	51·58
2. V. K. Kannan (Cong.)	18,989	48·42

32. THURINJAPURAM (84,704).

1. **M. A. Manickavelu (Cong.)*** ..	21,261	58·64
2. S. Murugian (Ind.)	14,993	41·36

36. AMBUR (SC) (80,473).

1. **Rajagopal (Cong.)**	25,50
2. Munuswamy (Repub.)	13,97
3. Adimoolam (Ind.)	6,98

37. VANIYAMBADI (74,567).

1. **Vadivel (D.M.K.)**	27,275
2. Karia Gounder (Cong.)	20,068
3. Thathappan (Ind.)	2,372

38. TIRUPPATTUR (82,207).

1. **Tiruppathy Gounder (D.M.K.)** ..	32,400
2. Samanna Gounder (Cong.)	19,540

39. CHENGAM (87,168).

1. **Chinnaraji Gounder (D.M.K.)** ..	34,374
2. Shanmugam (Cong.)	25,008
3. Thammayya Doss (Ind.)	1,360
4. Manickam (Ind.)	1,082
5. Rathnavel (Ind.)	440

40. POLUR (82,973).

1. **Kesava Reddi (D.M.K.)**	29,283
2. Perumsami (Cong.)	17,328

41. ARNI (79,330).

1. **Kothandarama Bagavathar, C. (Cong.).**	30,773
2. Narasimhan, A. C. (D.M.K.)	23,055
3. Dharmarasan, M. (T.N.P.)	5,805

42. THURINJAPURAM (87,938).

1. **Murugaiyan (D.M.K.)**	21,163
2. Nataraja Mudaliar (Cong.)	13,865
3. Anpamalai (Ind.)	8,979
4. Chandranathan Kandar (Swa.) ..	1,551
5. Govinda Naidu (Ind.)	1,259
6. Periyanayakam (Ind.)	937
7. Narayanaswami (Ind.)	795
8. Chinthamani Mudali (Ind.)	464

43. TANIPPADI (SC) (100,133).

1. **Arumugam (Cong.)**	33,129
2. Santhanam (D.M.K.)	25,753

Candidates and Parties.	Votes polled.	Percentage of votes polled.

NORTH ARCOT DISTRICT—*cont.*

33. TIRUVANNAMALAI (188,923).

1. **P. U. Shanmugam (Ind.)*** ..	48,447	29·42
2. **C. Santhanam (SC) (Ind.)*** ..	39,622	24·06
3. V. K. Annamalai Kounder (Cong.)	32,273	19·60
4. A. Arumugam (SC) (Cong.) ..	29,328	17·81
5. K. Arunachalam (SC) (Ind.) ..	8,555	5·20
6. S. Chinnasamy (SC) (Ind.) ..	2,537	1·54
7. N. Subbarayan (SC) (Ind.) ..	2,002	1·22
8. M. Perumal Nainar (Ind.) ..	1,888	1·15

44. TIRUVANNAMALAI (99,596).

1. **Palani Pillai (Cong.)**	35,148
2. Shanmugam (D.M.K.)	33,399
3. Kanna Kandar (Swa.)	1,663

SOUTH ARCOT DISTRICT.

34. SATHIAMANGALAM (80,814).

1. **K. Gopal Kounder (Ind.)*** ..	21,298	59.40
2. K. Aranganathan (Cong.) ..	14,558	40·60

45. SATHIAMANGALAM (81,583).

1. **Gopal Kounder (Cong.)**	23,914
2. Anthonisamy (Ind.)	10,115
3. Pachiappa Naicker (Swa.)	6,073

35. GINGEE (87,980).

1. **M. Jangal Reddiar (Ind.)*** ..	18,016	41·64
2. V. Gopal Gounder (Ind.) ..	14,291	33·01
3. Pachaiappa Naicker (Cong.) ..	10,971	25·35

46. GINGEE (89,586).

1. **Rajaram (Cong.)**	29,235
2. Aranganathan (Swa.)	27,494

36. TINDIVANAM (155,419).

1. **P. Veerappa Gounder (Ind.)*** ..	37,443	27·03
2. **M. Jagannathan (SC) (Ind.)*** ..	34,753	25·05
3. Venugopal Koundar (Cong.) ..	28,658	20·65
4. Pichaikuppan (SC) (Cong.) ..	22,941	16·54
5. Kannan (SC) (Ind.)	5,563	4·01
6. Thiruncelakantar (Ind.)	4,730	3·41
7. S. Arumugha Mudaliar (Ind.) ..	4,586	3·31

47. TINDIVANAM (88,723).

1. **Thangavelu (D.M.K.)**	27,687
2. Veerappa Koundar (Cong.)	27,422
3. Murugesan (Comm.)	4,927
4. Krishnan (Ind.)	1,044

37. VALAVANUR (94,114).

1. **A. Govindasamy Nayagar (Ind.)*.**	31,836	61·39
2. K. M. Krishna Goundar (Cong.).	16,256	31·35
3. P. Alagappa Goundar (Ind.) ..	3,769	7·26

48. VANUR (SC) (78,971).

1. **Balakrishnan (D.M.K.)**	22,463
2. Kannan (Cong.)	20,987

49. VALAVANUR (102,634).

1. **Krishna Kounder (Cong.)**	38,580
2. Govindasamy (D.M.K.)	31,718

38. VILLUPURAM (90,763).

1. **Sarangapani Gounder (Cong.)*.**	25,000	50·86
2. Shanmugha Udayar (Ind.) ..	24,147	49·14

50. VILLUPURAM (96,487).

1. **Shanmugam (D.M.K.)**	39,923
2. Sarangapani Kounder (Cong.). ..	26,115
3. Kothandaraman Kounder (Ind.). ..	735
4. Ramalingam (Ind.)	485

39. ULUNDURPET (85,430).

1. **Kandasami Padayachi (Cong.)*.**	21,133	43·20
2. Manonmani Ammal (W) (Ind.).	18,890	38·63
3. Ramasami Padayachi (Ind.) ..	5,815	11·90
4. Chakkarai (Ind.)	3,070	6·27

51. ULUNDURPET (92,580).

1. **Manonmani (Swa.)**	25,234
2. Kandasami Padayachi, M. (Cong.).	22,627
3. Govindasami Gounder, N. S. N. (Ind.). ..	4,536

SOUTH ARCOT DISTRICT—*cont.*

40. NELLIKUPPAM (162,499).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Sivachidambara Ramasamy Padayachi (Cong.)*.**	**42,890**	**27·39**
2. Krishnamoorthy Goundar (Ind.).	40,417	25·81
3. **S. Thangavelu (SC) (Cong.)*** ..	**34,299**	**21·89**
4. Rajangam (SC) (Ind.)	29,492	18·81
5. Perumal (SC) (Ind.)	9,554	6·10

41. CUDDALORE (92,962).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Seenivasa Padayachi (Cong.)*** ..	**21,100**	**41·19**
2. Sambandan (Ind.)	17,044	33·26
3. R. Dhanadapani (Ind.)	13,091	25·55

42. BHUVANAGIRI (90,032).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Samikannu Padayachi (Cong.)*.**	**21,553**	**49·28**
2. R. Balagurusamy (Ind.) ..	7,386	16·89
3. T. M. Somasundiram (Comm.).	7,099	16·23
4. C. Govindarasu (Ind.)	5,668	12·96
5. Gandhi (Ind.)	2,029	4·64

43. CHIDAMBARAM (163,787).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **G. Vagheesam Pillai (Cong.)*** ..	**37,255**	**22·76**
2. **Sami Sahajananda (SC) (Cong.)***	**37,089**	**22·64**
3. Chockalingam (Ind.)	30,345	18·52
4. Sivasubramaniam (SC) (Ind.) ..	26,489	16·17
5. Gopalakrishnan (Ind.)	23,546	14·38
6. V. Kuppusamy (SC) (Ind.) ..	5,420	3·31
7. A. Shanmugam (SC) (Ind.) ..	3,643	2·22

44. VIRDHACHALAM (77,496).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **M. Selvaraj (Ind.)***	**11,189**	**29·11**
2. G. Rajavelu Padayachi (Cong.).	10,350	26·93
3. Ayyasamy Koundan (Comm.) ..	5,343	13·90
4. Paramasivam (Ind.)	4,331	11·27
5. P. N. Sarguru (Ind.)	3,333	8·68
6. Veerasamy Padayachi (Ind.) ..	2,384	6·19
7. P. Kaliaperumal (Ind.)	1,510	3·92

52. NELLIKUPPAM (95,771).

Candidates and Parties.	Votes polled.
1. **Krishnamoorthi Kounder (D.M.K.).**	**37,419**
2. Subbarayalu Reddiar (Cong.)	27,989
3. Ramachandran (Ind.)	1,245

53. KURINJIPPADI (SC) (94,690).

Candidates and Parties.	Votes polled.
1. **Rajangam (D.M.K.)**	**32,046**
2. Jayaraman (Cong.)	21,898
3. Danagopal (Ind.)	2,796

54. CUDDALORE (99,464).

Candidates and Parties.	Votes polled.
1. **Srinivasa Padayachi, P. R. (Cong.).** ..	**27,567**
2. Sambasiva Reddiar (D.M.K.)	21,147
3. Ramaswami Padayachi (Swa.). ..	18,983

55. BHUVANAGIRI (98,934).

Candidates and Parties.	Votes polled.
1. **Ramachandran Rayar (Cong.)** ..	**29,434**
2. Vaithilingam (D.M.K.)	27,964
3. Venkatakrishna Naidu (Ind.)	5,982
4. Balakrishnan (Swa.)	3,358
5. Pattusami (Ind.)	847

56. CHIDAMBARAM (SC) (98,172).

Candidates and Parties.	Votes polled.
1. **Sivasubramanian (Cong.)** ..	**33,438**
2. Arumugham (D.M.K.)	23,837
3. Munusami (Comm.)	5,413

57. KATTUMANNARKOIL (78,512).

Candidates and Parties.	Votes polled.
1. **Krishnamoorthy Padayachi (D.M.K.).** ..	**27,706**
2. Vagheesam Pillai (Cong.)	27,599
3. Govindasami Padayachiar (Swa). ..	3,474

58. VIRDHACHALAM (90,021).

Candidates and Parties.	Votes polled.
1. **Boovaraghavan, G. (Cong.)** ..	**26,990**
2. Selvaraj, M. (D.M.K.)	25,138
3. Kaliaperumal Padayachi, K. (Comm.). ..	3,767
4. Sarguru, P. N. (Ind.)	3,018
5. Namachivoyam, D. (T.N.P.)	1,851

SOUTH ARCOT DISTRICT—*cont.*

45. NALLUR (80,661).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Vedamanickam (Ind.)***	**16,105**	**34·11**
2. K. S. Venkatakrishnan Reddiar (Ind.)	13,394	28·35
3. Narayanasami Pillai (Cong.) ..	11,577	24·52
4. Kathirvel Padayachi (Ind.) ..	4,637	9·82
5. Paramasivam (Ind.)	1,515	3·20

46. TIRUKOILUR (175,837).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **S. A. M. Annamalai Udayar (Ind.)*.**	**41,980**	**24·27**
2. Lakshminarasamma (W) (Cong.).	37,422	21·64
3. **Kuppusami (SC) (Cong.)*** ..	**35,916**	**20·77**
4. Muthusami (SC) (Ind.)	31,036	17·96
5. Kadirvelu Koundar (Ind.) ..	15,179	8·76
6. Ramasami Naidu (Ind.) ..	11,486	6·60

47. KALLAKURICHI (165,468).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Nataraja Odayar (Ind.)*** ..	**25,020**	**21·83**
2. Parthasarathi (Cong.)	24,939	21·76
3. **M. Anandan (SC) (Ind.)*** ..	**24,099**	**21·04**
4. L. Anandan (SC) (Cong.) ..	22,665	19·78
5. Narayanasami (SC) (Ind.) ..	8,331	7·27
6. Alamelu (W) (Ind.)	5,238	4·58
7. Thandavarayan (SC) (Ind.) ..	4,290	3·74

59. NALLUR (88,518).

Candidates and Parties.	Votes polled.
1. **Narayanaswami (Cong.)**	**28,322**
2. Pichamuthu, T. (D.M.K.)	20,209
3. Duraisami, V. (Ind.)	1,323
4. Kattamuthu (Swa.)	1,239
5. Periasami, A. (Ind.)	373

60. TIRUKOILUR (90,641).

Candidates and Parties.	Votes polled.
1. **Lakshminarasimma Ammal (W)(Cong.).** ..	**27,954**
2. Balasubramaniam (D.M.K.)	14,687
3. Mohanadoss, N. (Swa.)	8,465
4. Venugopal (Comm.)	3,430

61. RISHIVANDIYAM (SC) (86,840).

Candidates and Parties.	Votes polled.
1. **Anandan, L. (Co[illegible]**	**25,057**
2. Anandan, M. (D.M.K.)	17,544

62. KALLAKURICHI (SC) (91,264)

Candidates and Parties.	Votes polled.
1. **Chinnasamy, T. (D.M.K.)**	**25,084**
2. Vedamanickam, P. (Cong.)	18,837
3. Sadayan, K. (Swa.)	4,537
4. Kaliaperumal, A. (Ind.)	2,989

63. SANKARAPURAM (80,504).

Candidates and Parties.	Votes polled.
1. **Parthasarathi, K. (Cong.)**	**26,123**
2. Pachaya Pillai, S. P. (D.M.K.) ..	23,441

SALEM DISTRICT.

48. HARUR (184,474).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **P. M. Munusami Gounder (Cong.)*.**	**26,172**	**23·11**
2. **M. K. Mariappan (SC) (Cong.)*.**	**25,676**	**22·72**
3. T. Ponnusami (Ind.)	14,133	12·48
4. C. Theerthagiri (SC) (Ind.) ..	13,689	12·10
5. Poosami (SC) (Comm.)	10,682	9·43
6. Desai Venugopal Naidu (Ind.) ..	9,180	8·11
7. K. Sivaprakasam Mudali (Ind.).	5,661	5·00
8. P. Subramania Chetty (Ind.) ..	4,818	4·26
9. Podujanopagari T. V. Anganna Chettiar (Ind.).	3,161	2·79

64. HARUR (SC) (110,626).

Candidates and Parties.	Votes polled.
1. **Manickam (D.M.K.)**	**26,879**
2. Mariappan (Cong.)	22,411
3. Munisamy (Comm.)	11,204
4. Nagarajan (Ind.)	2,385
5. Thirthagiri (Ind.)	1,259
6. Arumugam (Ind.)	893

65. UTTANGARAI (98,939).

Candidates and Parties.	Votes polled.
1. **Kamalanathan (D.M.K.)**	**37,259**
2. Thirthagiri Gounder (Cong.)	23,313
3. Chennaiyan (Ind.)	3,254

SALEM DISTRICT—*cont.*

49. KRISHNAGIRI (96,518).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **S. Nagaraja Manigar (Cong.)*** ..	23,182	66·23
2. N. Mohan Ram (Ind.)	9,649	27·58
3. M. N. Subharaman (Ind.) ..	2,166	6·19

50. UDDANAPALLI (85,551).

1. **Muni Reddi (Ind.)***	7,447	33·85
2. Venkatakrishna Desai (Cong.) ..	6,498	29·53
3. Srinivasa Mudaliar (Ind.) ..	6,354	28·88
4. M. Krishnasami Gounder (Ind.).	1,703	7·74

51. HOSUR (83,913).

1. **K. Appavoo Pillai (Ind.)*** ..	10,305	39·62
2. N. Ramachandra Reddy (Cong.)	9,257	35·57
3. K. Shamanna (Ind.)	6,460	24·81

52. PENNAGARAM (39,416).

1. **Hemalatha Devi (W) (Cong.)*** ..	8,791	31·59
2. D. K. Gurunath Chettiar (Ind.).	5,536	19·89
3. Thandavan (Ind.)	3,443	12·37
4. M. B. Munusamy Gounder (Ind.).	3,165	11·37
5. S. Kandasami Gounder (Ind.).	3,017	10·84
6. Govindan (Ind.)	2,297	8·26
7. Latchumi (W) (Ind.)	864	3·10
8. Manthiri Thayappa Gounder (Ind.).	717	2·58

53. DHARMAPURI (91,530).

1. **M. Kandasami Kandar (Cong.)*.**	11,661	35·18
2. R. S. Veerappa Chetty (Ind.) ..	11,459	34·59
3. P. M. Kuppusami (Ind.) ..	5,824	17.58
4. P. R. Rajagopal Gounder (Ind.).	4,192	12·65

54. YERCAUD (159,323).

1. **S. Andi Goundan (ST) (Cong.)*.**	23,864	26.23
2. **S. Lakshmana Gounder (Cong.)***	22,747	25·01
3. Raja Paul David (Ind.) ..	19,576	21·53
4. Kuppusami Goundan (ST) (Ind.).	10,471	11·52
5. Chinna Goundan (ST) (Ind.)	8,524	9·37
6. P. K. Chinnusamy (ST) (Ind.) ..	5,768	6·34

66. KRISHNAGIRI (101,069).

Candidates and Parties.	Votes polled.
1. **Sriramulu (D.M.K.)**	38,833
2. Munisamy Gounder (Cong.)	27,583

67. UDDANAPALLI (80,827).

1. **Chinna Munisamy Chetty alias Munisamy Chetty. (Swa.)** ..	12,732
2. Muni Reddy (Cong.)	10,107
3. Srinivasa Mudaliar (Ind.)	9,931
4. Kothandaramiah (Ind.)	9,492

68. HOSUR (92,141).

1. **Ramachandra Reddy (Cong.)** ..	25,577
2. Shamanna (Swa.)	14,101

69. PENNAGARAM (99,007).

1. **Karivengadam, M. V. (D.M.K.)** ..	26,911
2. Hemalatha Devi, S. (W) (Cong.) ..	17,303
3. Veerappa Chettiar, R. S. (Ind.). ..	2,995
4. Muniswami Gounder, B. (Swa.) ..	1,623
5. Rajan, M. R. (Ind.).	1,134

70. DHARMAPURI (100,035).

1. **Veerappa Chettiar, R. S. (Ind.)** ..	24,191
2. Subramania Gounder, M. (D.M.K.) ..	18,754
3. Kandasamy Kandar, M. (Cong.). ..	14,387
4. Rajagopal Gounder, P. R. (Ind.). ..	1,989

71. YERCAUD (ST) (88,851).

1. **Kulandaisami Gounder (Cong.)** ..	19,921
2. Chinnagounder (D.M.K.)	18,048

72. VALAPPADI (79,148)

1. **Ramasamy Udayar (Cong.)** ..	31,154
2. Ponnumalai (D.M.K.)	23,257
3. Kuppusamy (Ind.)	1,202
4. Vaiyamalai (Ind.)	506

SALEM DISTRICT—*cont.*

55. SALEM-I (93,489).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Mariappan (Cong.)***	24,920	45·21
2. V. R. Nedunchezhiyan (Ind.) ..	24,713	44·82
3. Samuel (Comm.)	5,487	9·97

* Kolandai Goundan (Cong.)

56. SALEM-II (74,478).

1. **A. Rathnavel Gounder (Cong.)***	19,755	54·51
2. S. M. Ramiah (Comm.)	11,023	30·41
3. Thiruvengadam (Ind.)	2,298	6·34
4. S. Ariaputhran (Ind.)	2,282	6.30
5. Rajamanickam (Ind.)	883	2·44

57. VEERAPANDY (74,451).

1. **M. R. Kandasamy Mudaliar (Cong.)***	21,264	55·18
2. Chelliah (Ind.)	11,765	30·56
3. K. V. Palanisamy (Ind.) ..	2,838	7·37
4. Shanmuga Mudali (Ind.) ..	1,589	4·13
5. Muthusamy Konan (Ind.) ..	1,062	2·76

58. ATTUR (154,364).

1. **Irusappan (SC) (Ind.)***	30,984	21·50
2. **M. P. Subramaniam (Ind.)*** ..	29,153	20·22
3. A. Sambasiva Reddiar (Cong.)	22,937	15·92
4. M. Arumugham (Ind.)	21,089	14·63
5. A. Doraisamy (SC) (Cong.) ..	13,138	9·12
6. C. Doraisamy (SC) (Comm.) ..	8,663	6·02
7. T. Ramachandran (Comm.) ..	7,187	4·99
8. K. R. Perannan (SC) (Ind.) ..	6,023	4·18
9. Akilandam (W) (Ind.)	4,924	3·42

59. RASIPURAM (78,017).

1. **A. Raja Gounder (Cong.)*** ..	20,983	54·50
2. K. V. K. Ramaswami (Ind.) ..	17,545	45·50

60. SENDAMANGALAM. (77,493).

1. **T. Sivagnanam Pillai (Cong.)*** ..	23,749	58·33
2. Somasundara Goundar (Ind.) ..	16,959	41·67

73. SALEM-I (106,662).

Candidates and Parties.	Votes polled.
1. **Venkatesan (Cong.)**	43,726
2. Krishnan (D.M.K.)	39,838
3. Vasudevan (J.S.)	2,732

74. SALEM-II (85,266).

1. **Rathanavel Gounder (Cong.)** ..	28,811
2. Ramiah (Comm.)	19,976
3. Muthuswami (Swa.)	10,935
4. Chokkalingam (Ind.)	852

75. VEERAPANDY (80,507).

1. **Arumugam (D.M.K.)**	30,840
2. Mariappan (Cong.)	22,171
3. Sidda Chetty (Ind.)	1,450
4. Chinnathambi Gounder (Ind.). ..	937
5. Samuel (Ind.)	895

76. ATTUR (88,586).

1. **Angamuthu Naicker (Cong.)** ..	23,542
2. Sivaperumal (D.M.K.)	19,811
3. Subramaniam (T.N.P.)	13,686
4. Saravana Padayachi (Swa.)	1,888
5. Rangaswamy (Ind.)	1,009

77. TALAIVASAL (SC) (78,445).

1. **Doraiswamy (Cong.)**	22,286
2. Thangavel (D.M.K.)	17,386
3. Irusappan (T.N.P.)	6,402
4. Arumugam (Swa.)	1,507

78. RASIPURAM (78,659).

1. **Sengottuvel (D.M.K.)**	26,846
2. Muthusamy Gounder (Cong.)	26,776
3. Alagappa Udayar (Ind.)	932

79. SENDAMANGALAM (78,650).

1. **Periannan (D.M.K.)**	27,728
2. Thiagaraja Reddiar (Cong.)	24,205

SALEM DISTRICT—*cont.*

61. NAMAKKAL (164,642).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. P. Kolanda Gounder (Cong.)* ..	**38,977**	**30·18**
2. V. Kaliappan (Ind.)	29,575	22·91
3. M. P. Periasami (SC) (Cong.)* ..	**24,240**	**18·77**
4. Marudaveeran (SC) (Ind.) ..	13,105	10·16
5. K. V. Ramasami (Comm.) ..	10,026	7·76
6. N. Nallappa Reddiar (Ind.) ..	6,350	4·91
7. Shanmuga Moopan (Ind.) ..	4,172	3·23
8. Rathnam (SC) (Ind.)	2,695	2·08

62. TIRUCHENGODE (167,353).

1. T. M. Kaliannan (Cong.)* ..	**33,360**	**31·09**
2. R. Kandasami (SC) (Cong.)* ..	**29,546**	**27·57**
3. Rangasami Gounder (Ind.) ..	9,383	8·75
4. Komaran (SC) (P.S.P.)	7,625	7·11
5. Muthusami (SC) (Ind.)	6,610	6·16
6. Dhanakotti (Ind.)	4,897	4·57
7. S. Arumugam Pillai (SC) (Ind.)	3,319	3·10
8. K. C. Marappa Gounder (Ind.)..	3,211	2·99
9. Mariappa Mudali (P.S.P.) ..	3,131	2·92
10. K. N. Natarajan (Ind.)	2,104	1·96
11. Muthu Naicker (Ind.)	1,500	1·40
12. Marimuthu (SC) (Ind.)	1,334	1·24
13. Rathnam Pillai (Ind.)	1,226	1·14

63. SANKARI (86,522).

1. K. S. Subramania Gounder (Cong.)*	**21,408**	**60·10**
2. R. Thandavan (Ind.)	9,064	25·44
3. T. S. Arthanari (Comm.) ..	3,974	11·16
4. Narayanasami (Ind.)	1,178	3·30

64. TARAMANGALAM (73,266).

1. N. S. Sundararajan (Cong.)* ..	**15,752**	**63·46**
2. Chinnappan (Ind.)	5,293	21·33
3. Nallappa Mudaliar (Ind.) ..	2,741	11·05
4. Periasamy Mudali (Ind.) ..	1·033	4·16

65. METTUR (82,184).

1. K. S. Ardhanareeswara Gounder (Cong.)*	**15,491**	**45·62**
2. Surendran (P.S.P.)	11,366	33·50
3. Chinnasamy (Ind.)	5,119	15·11
4. M. A. Kandasamy Gounder (Ind).	1,959	5·77

80. NAMAKKAL (SC) (84,235).

1. Chinnayyan (Cong.)	**26,756**
2. Rasappan (D.M.K.)	24,937
3. Shanmugham (Ind.)	2,129
4. Sundararasan (T.N.P.)	802
5. Shanmughamoopan (Ind.)	567

81. KAPILAMALAI (83,811).

1. Velappa Gounder, V. (D.M.K.) ..	**36,960**
2. Ramalingam Gounder, P. K. (Cong.) ..	20,954

82. MALLASAMUDRAM (SC) (75,078)

1. Nallamuthu (D.M.K.)	**18,718**
2. Kandasamy (Cong.)	12,545
3. Muthu (Ind.)	1,530
4. Vaiyapuri (Ind.)	454

83. TIRUCHENGODE (93,622).

1. Kaliannan (Cong.)	**24,640**
2. Rajavelu (D.M.K.)	21,050
3. Muniappa Gounder (Ind.)	3,406
4. Govindan (Ind.)	1,562

84. SANKARI (86,673).

1. Subramania Gounder (Cong.) ..	**26,513**
2. Pandarinathan (D.M.K.)	17,587
3. Krishnan (Swa.)	10,123
4. Paruvaraju (Ind.)	301

85. TARAMANGALAM (81,534).

1. Sundararajan, N.S. (Cong.) ..	**30,020**
2. Nallathambi Gounder (D.M.K.) ..	26,997

86. METTUR (79,747).

1. Arthanariswara Gounder, S. (Cong.)	**18,065**
2. Surendran, M. (P.S.P.)	17,620
3. Pal Cruz (D.M.K.)	8,497
4. Arthanari, P. (Comm.)	8,295
5. Arulsamy (Ind.)	586

COIMBATORE DISTRICT.

66. BHAVANI (175,870).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. G. G. Gurumurthi (Cong.)* ..	**49,726**	**33·83**
2. P. G. Manickam (SC) (Cong.)*	**40,224**	**27·25**
3. K. Komaraswami Gounder (Ind.)	26,944	18·26
4. A. Subramanian (SC) (Ind.) ..	17,580	11·91
5. K. M. Chenroyan (Ind.)	12,899	8·75

67. GOBICHETTIPALAYAM (91,093).

1. P. G. Karuthiruman (Cong.)* ..	**27,889**	**57·91**
2. Marappan (Comm.)	11,126	23·19
3. Kanniappan (Ind.)	6,350	13·19
4. P. S. Sengodan (Ind.)	2,798	5·80

68. NAMBIYUR (77,537).

K. L. Ramaswamy (Cong.)* .. **Elected uncontested.**

69. PERUNDURAI (72,499).

1. N. K. Palaniswami (Comm.)* ..	**24,205**	**58·59**
2. Manicka Mudaliar (Cong.) ..	17,110	41·41

70. ERODE (95,917).

1. V. S. Manickasundaram (Cong.)*	**19,012**	**37·27**
2. K. T. Raju (Comm.)	15,870	31·13
3. N. Chinnusami (Ind.)	14,531	28·49
4. S. Sidhia Gounder (Ind.) ..	1,584	3·11

71. CHENNIMALAI (80,381).

1. K. R. Nallasivam (Ind.)* ..	**22,289**	**53·00**
2. A. Thangappa Gounder (Cong.) ..	15,085	35·85
3. S. K. Sundaram (Ind.)	4,682	11·15

72. KANGAYAM (97,337).

1. K. G. Palaniswamy Gounder (Cong.)*.	**17,952**	**48·06**
2. P. Muthuswamy Gounder (Ind.).	10,209	27·33
3. V. Muthuswamy Gounder (Ind.).	9,189	24·61

87. BHAVANI (102,272).

1. Ranganayaki, N. K. (Cong.) ..	**32,739**
2. Raja, A. M. (D.M.K.)	22,919
3. Mohamad Ibrahim, J. I. (Comm.) ..	6,649
4. Kuppusami Chettiar, T. A. (Swat.) ..	1,588
5. Vaiyapuri Mudali, S. (Ind.)	1,200
6. Syed Abdul Razak, M. (Ind.). ..	1,010
7. Latchumana Pathan, S. C. (Ind.) ..	315
8. Kaveri Gounder, K. (Ind.) ..	261

88. ANDHIYUR (SC) (88,662).

1. Perumalraju (Cong.)	**22,533**
2. Kalimuthu (D.M.K.)	11,984
3. Thavasi (Ind.)	4,272
4. Karuppan (Ind.)	1,444

89. GOBICHETTIPALAYAM (90,860).

1. Muthuvelappa Gounder (Cong.) ..	**31,977**
2. Sundaramurthi (Swat.)	17,249
3. Marappan, S. M. (Comm.)	15,841

90. NAMBIYUR (76,281).

1. Kaliappa Gounder, A. K. (Cong.) ..	**27,795**
2. Swaminathan, P. A. (D.M.K.) ..	16,275
3. Sami Gounder, S. K. (Swa.) ..	5,867

91. PERUNDURAI (77,326).

1. Nallasenapathi Sarkarai Manradiar, N. (Cong.)	**36,225**
2. Palanisami, N. K. (Comm.)	24,986
3. Kumaraswami, U. R. (Soc.) ..	563
4. Ramasami Gounder, N. (Ind.) ..	242

92. ERODE (113,826).

1. Dakshinamoorthy Gounder (Cong.)	**32,895**
2. Chinnasamy Gounder (Ind.)	25,392
3. Palanisamy (Ind.)	24,769

93. CHENNIMALAI (95,182).

1. Nallasivam (Soc.)	**35,379**
2. Periasamy Gounder (Cong.)	26,978
3. Samiappan (D.M.K.)	5,523
4. Ramaswamy Gounder (Comm.) ..	1,742

94. KANGAYAM (93,651).

1. Nataraja Gounder (Cong.)	**41,006**
2. Palaniswami Gounder (D.M.K.) ..	24,711
3. Lingaswami Gounder (P.S.P.) ..	898

COIMBATORE DISTRICT—*cont.*

Candidates and Parties.	Votes polled.	Percentage of votes polled.
73. DHARAPURAM (96,614).		
1. **A. Senapathi Gounder (Cong.)***	26,164	47·12
2. P. S. Govindaswamy Gounder (Ind.).	25,555	46·03
3. N. Lingaswamy Gounder (P.S.P.)	3,796	6·85
74. UDAMALPET (90,360).		
1. **S. T. Subbayya Gounder (Ind.)***	18,621	33·92
2. N. Mounaguruswamy Naidu (Cong.).	14,903	27·20
3. T. Kandasami Gounder (P.S.P.)	11,093	20·17
4. K. A. Mathiyazhagan (Ind.) ..	10,274	18·71
75. POLLACHI (177,434).		
1. **N. Mahalingam (Cong.)*** ..	52,076	25·64
2. **K. Ponniah (SC) (Cong.)*** ..	49,309	24·27
3. P. Thangavel Gounder (P.S.P.)	33,534	16·50
4. V. K. Rangaswamy (SC) (Comm.).	31,648	15·57
5. A. S. Balasubramaniam (Ind.).	19,391	9·54
6. E. Ramaswamy (SC) (Ind.) ..	11,221	5·52
7. M. Azhagamuthu (SC) (Ind.) ..	4,030	1·98
8. R. Varadappan (SC) (Ind.) ..	2,009	0·98
76. KOILPALAYAM (78,059).		
1. **C. Subramaniam (Cong.)*** ..	27,199	56·27
2. C. Guruswamy Naidu (P.S.P.) ..	18,202	37·65
3. N. Krishnamurthy (Ind.) ..	2,937	6·08
77. PALLADAM (90,803).		
1. **P. S. Chinnadurai (P.S.P.)*** ..	27,111	57·83
2. Kumarasami Gounder (Cong.) ..	17,515	37·36
3. Ponnusami (Ind.)	2,253	4·81
78. TIRUPPUR (94,395).		
1. **K. N. Palaniswamy (Cong.)*** ..	29,519	57·46
2. V. Ponnulinga Gounder (Comm.)	18,976	36·96
3. C. Duraisami (Ind.)	2,873	5·58

Candidates and Parties.	Votes polled.
95. DHARAPURAM (100,631).	
1. **Parvathi Arjunan (Cong.)**	37,842
2. Subramaniam (D.M.K.)	18,059
3. Lingaswami Gounder (P.S.P.)	9,969
96. UDAMALPET (95,170).	
1. **Rajagopalasamy Naicker, R. (Cong.).**	29,529
2. Sadiq Pasha, S. J. (D.M.K.)	25,514
3. Damodaran, G. (Comm.)	10,980
4. Muthusamy Gounder, C. (P.S.P.) ..	4,752
97. ANAMALAI (SC) (83,269).	
1. **Ponniah, K. (Cong.)**	22,474
2. Ramasamy (D.M.K.)	15,767
3. Karuppiah, A. T. (Comm.)	10,376
4. Palanisamy, S. N. (P.S.P.)	3,206
5. Maruthamuthu (Ind.)	1,311
98. POLLACHI (89,032).	
1. **Mahalingam, N. (Cong.)**	38,625
2. Rangaswamy Gounder (D.M.K.) ..	28,721
3. Kandasamy, C. P. (Ind.)	1,586
99. KOILPALAYAM (80,641).	
1. **Muthukaruppanasami Gounder, M. P. (Cong.).**	27,464
2. Gopal, K. (D.M.K.)	13,636
3. Gurusami Naidu (P.S.P.)	11,216
4. Krishnaswamy Gounder, S. (Ind.) ..	1,308
100. PALLADAM (92,464).	
1. **Sengaliappan (Cong.)**	33,437
2. Chinnadurai, P. S. (P.S.P.)	14,736
3. Ramasamy, K. R. (Comm.)	10,247
4. Palanisamy (D.M.K.)	4,778
5. Gopalasamy (Soc.)	1,523
101. TIRUPPUR (106,191).	
1. **Palanisamy Gounder, K. N. (Cong.).** ..	41,748
2. Ponnulinga Gounden (Comm.) ..	26,175
3. Duraisamy (D.M.K.)	7,944
4. Sundaram (Swat.)	4,592

COIMBATORE DISTRICT—*cont.*

Candidates and Parties.	Votes polled.	Percentage of votes polled.
79. AVANASHI (81,634).		
1. **K. Marappa Gounder (Cong.)*** ..	20,716	60·25
2. Karuppa Gounder (Ind.) ..	13,670	39·75
80. SULUR (79,503).		
1. **Kulanthai Ammal (W) (Cong.)***	18,328	44·59
2. Ramani (Comm.)	15,598	37·95
3. Shanmugasundaram (Ind.) ..	4,053	9·86
4. Natarajan (Ind.)	3,126	7·60
81. COIMBATORE-I (93,297).		
1. **Savitri Shanmugham (W) (Cong.)***	20,511	44·04
2. Bupathy (Comm.)	9,938	21·34
3. K. Sivaswamy (Ind.)	7,834	16·82
4. Rasithachalam (Ind.)	3,774	8·10
5. Baba (Ind.)	3,260	7·00
6. Natesan (Ind.)	715	1·53
7. A. K. Ayyaswamy Chettiar (Ind.)	343	0·74
8. Nanjappa Chetty (Ind.) ..	198	0·43
82. COIMBATORE-II (183,799).		
1. **Marudachalam (SC) (Comm.)*** ..	38,938	22·98
2. **Palanisawmi (SC) (Cong.)*** ..	37,662	22·23
3. Kuppuswamy (Cong.)	36,549	21·57
4. P. Veluswami (P.S.P.)	33,188	19·59
5. Rajamanickam (Ind.)	12,636	7·40
6. Sadayappan (Ind.)	10,435	6·17
83. METTUPALAYAM (69,821).		
1. **D. Raghabandhi Devi (W) (Cong.).**	20,690	49·38
2. Madhanman (Ind.)	19,587	46·74
3. C. Swaminatha Chettiar (Ind.)	1,632	3·82

NILGIRIS DISTRICT.

84. COONOOR (89,256).		
1. **J. Matha Gowder (Cong.)*** ..	22,113	44·56
2. H. B. Ari Gowder (Ind.) ..	16,845	33·94
3. V. K. Subramanian (Ind.) ..	5,174	10·42
4. D. Singarani (Ind.)	4,440	8·96
5. J. Hiria Gowder (Ind.)	1,055	2·12

Candidates and Parties.	Votes polled.
102. AVANASHI (80,839).	
1. **Marappa Gounder (Cong.)**	27,009
2. Ponnuswami, N. (Swat.)	12,196
3. Sheriff, I. M. (Comm.)	6,698
4. Ponniya Goundar (D.M.K.)	5,037
103. SULUR (89,754).	
1. **Kulandaiammal (Cong.)**	25,732
2. Chinnayyan (Comm.)	21,375
3. Kumarasamy (P.S.P.)	10,017
4. Rasu (D.M.K.)	6,953
5. Sethupathi (Ind.)	1,364
6. Gopalasamy (Ind.).	955
104. THONDAMUTHUR (81,199).	
1. **Ellama Naidu, V. (Cong.)**	32,520
2. Arputhasamy, L. (Comm.)	12,735
3. Ponnusamy Gounder, V. R. (Swat.) ..	6,725
4. Meyyappan, K. (D.M.K.)	6,054
5. Subbian, N. (Ind.)	2,225
6. Ramalingam, M. (Soc.)	1,485
105. COIMBATORE-I (119,949).	
1. **Chinnadurai (Cong.)**	38,645
2. Rajamanickam (D.M.K.)	21,023
3. Bhupathy (Comm.)	21,012
4. Venkataramana Iyer (Swat.)	8,644
5. Natesan (Ind.)	2,278
6. Krishnaswamy (Ind.)	184
106. COIMBATORE-II (100,764).	
1. **Palanisamy, K. P. (Cong.)**	32,313
2. Maruthachalam, N. (Comm.)	23,948
3. Nagaraj, V. (P.S.P.)	16,362
4. Pechimuthu, V. (D.M.K.)	11,628
5. Arumugam, V. (Soc.)	1,914
6. Subbiah, C. T. (Ind.)	280
107. METTUPALAYAM (76,665).	
1. **Shanmugasundaram (Cong.)** ..	25,398
2. Vellingiri (Comm.)	19,145
3. Krishnasamy (Swat).	7,655
4. Saminatha Chettiar (Ind.)	1,481
5. Nagappan (Ind.)	470
108. COONOOR (102,319).	
1. **Matha Gowder, J. (Cong).** ..	36,668
2. Belli, J. (D.M.K.)	15,103
3. Devaraj, H. B. (Comm.)	11,679
4. Bella Gowder, K. N. (Swat.)	6,849
5. Kanthian (Ind.)	699

NILGIRIS DISTRICT—*cont.*

85. OOTACAMUND (81,929).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. B. K. Linga Gowder (Cong.)*	22,595	56·57
2. K. Bhojan (Ind.)	14,796	37·03
3. S. M. Sanjeevi Raju (Ind.)	2,556	6·40

109. OOTACAMUND (100,904).

Candidates and Parties.	Votes polled.
1. Karchan (Cong.)	32,860
2. Bojan (Swat.)	26,278
3. Rajan (Comm.)	6,514
4. Verghese Joseph (Ind.)	402
5. Ganapathi (Ind.)	237

MADURAI DISTRICT.

86. PALANI (85,382).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. Lakshmipathiraj (Cong.)*	24,772	52·58
2. Venkitasami Gounder (Ind.)	22,342	47·42

110. PALANI (86,709).

Candidates and Parties.	Votes polled.
1. Venkidusamy Gounder (Ind.)	29,908
2. Lakshmipathi Raju (Cong.)	22,174
3. Ramaraj (Comm.)	11,868
4. Thannasi alias Palaniappa Gounder (Ind.)	620

87. KODAIKANAL (93,864).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. M. Alagirisamy (Cong.)*	21,107	47·95
2. Gurusamy (Ind.)	17,552	39·86
3. Gnanavaram (Ind.)	5,365	12·19

111. KODAIKANAL (90,838).

Candidates and Parties.	Votes polled.
1. Alagarsamy (Cong.)	31,062
2. Somasundaram (D.M.K.)	27,671
3. Thangiah Bhoopathi (P.S.P.)	2,879
4. Murugiah (Ind.)	869

88. BODINAYAKANOOR (88,886).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. A. S. Subbaraj (Cong.)*	31,188	58·12
2. M. Muthiah (Ind.)	22,483	41·88

112. BODINAYAKANOOR (91,637).

Candidates and Parties.	Votes polled.
1. Subbaraj (Cong.)	35,398
2. Subbiah (Ind.)	16,759
3. Rajan (Soc.)	12,668

89. UTHAMAPALAYAM (94,840).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. K. Pandiaraj (Cong.)*	30,559	53·60
2. P. T. Rajan (Ind.)	24,256	42·55
3. S. N. Ponnusamy (Ind.)	2,193	3·85

113. UTHAMAPALAYAM (91,106).

Candidates and Parties.	Votes polled.
1. Rajangam (D.M.K.)	28,907
2. Rajagopal (Cong.)	27,368
3. Venkatasamy Gowder (Comm.)	9,674
4. Rengasamy Gowder (Swat.)	1,297

90. THENI (158,034).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. N. R. Thiagarajan (Cong.)*	38,185	26·64
2. S. S. Rajendran (Ind.)	31,404	21·90
3. N. M. Velappan (SC) (Cong.)*	26,673	18·60
4. S. Arunachalam (Ind.)	15,308	10·68
5. A. Ayyanar (SC) (Ind.)	13,163	9·18
6. R. Suruliammal (W) (SC) (P.S.P.)	10,731	7·48
7. P. Selvaraj (SC) (Ind.)	7,960	5·52

114. THENI (80,162).

Candidates and Parties.	Votes polled.
1. Rajendran (D.M.K.)	37,404
2. Thiagarajan (Cong.)	24,610
3. Ramasamy Asari (Ind.)	419

115. ANDIPATTI (SC) (90,409).

Candidates and Parties.	Votes polled.
1. Krishnaveni (Cong.)	19,853
2. Mokkayan (Bloc.)	16,478
3. Selvaraju (Ind.)	5,201
4. Kulandaivelu (Ind.)	1,929

91. THIRUMANGALAM (86,991).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. A. V. P. Periavala Guruva Reddi (Ind.)*	25,844	58·31
2. K. Rajaram (Cong.)	20,281	41·84
3. V. Chitra Gounder (Ind.)	2,352	4·85

116. THIRUMANGALAM (91,765).

Candidates and Parties.	Votes polled.
1. Tiruvenkada Reddiar (Cong.)	34,188
2. Muthurama Thevar (Swat.)	25,919
3. Krishnan (Ind.)	2,846
4. Ayyappa Naidu (Ind.)	852

MADURAI DISTRICT—*cont.*

92. USILAMPATTI (86,904).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. K. Mookiah Thevar (Ind.)*	31,631	66·31
2. P. V. Raj (Cong.)	11,459	24·03
3. Kamana Thevar (Ind.)	4,606	9·66

117. USILAMPATTI (99,021).

Candidates and Parties.	Votes polled.
1. Mookkiathevar (Bloc)	47,069
2. Dhinakarasamy Thevar (Cong.)	22,992

93. MADURAI (EAST) (97,680).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. P. K. R. Lakshmi Kantham (W) (Cong.)*	21,859	50·07
2. N. Sankarayya (Comm.)	17,311	39·64
3. B. K. Rajagopalan (Ind.)	3,421	7·83
4. Sesha Bagavather (Ind.)	1,068	2·46

118. MADURAI (EAST) (101,097).

Candidates and Parties.	Votes polled.
1. Lakshmikantam (Cong.)	36,679
2. Sankariah (Comm.)	27,228
3. Ramuservai (Swa.)	7,404
4. Ramaiah Seshachari (JS)	4,922

94. MADURAI CENTRAL (93,744).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. V. Sankaran (Cong.)*	20,305	47·08
2. S. Muthu (Ind.)	9,872	22·89
3. Bahulayan (P.S.P.)	7,873	18·25
4. K. Viswanathan (Ind.)	4,565	10·58
5. N. S. Muthumalai Pillai (Ind.)	523	1·20

119. MADURAI CENTRAL (84,596).

Candidates and Parties.	Votes polled.
1. Sankaran (Cong.)	32,801
2. Devasagayam (Bloc)	15,445
3. Ayyavoo (Ind.)	8,229
4. Bahulayan (P.S.P.)	3,601

95. THIRUPPARANKUNDRAM (95,174).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. S. Chinnakaruppathevar (Cong.)*	19,258	43·70
2. K. P. Janaki (W) (Comm.)	16,947	38·47
3. N. Muthu Thevar (Ind.)	7,852	17·83

120. THIRUPPARANKUNDRAM (110,842).

Candidates and Parties.	Votes polled.
1. Chinnakaruppa Thevar (Cong.)	35,401
2. Janakiammal (W) (Comm.)	25,179
3. Muthu (D.M.K.)	20,258
4. Muthumaya Thevar (Ind.)	1,616
5. Krishnasamy Nadar (Ind.)	938

121. SAMAYANALLUR (SC) (87,479).

Candidates and Parties.	Votes polled.
1. Kakkan, P. (Cong.)	33,091
2. Muniyandi, G. R. (Comm.)	16,596
3. Vadivel, P. P. (Swa.)	13,671

96. MELUR (170,331).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. P. Kakkan (SC) (Cong.)*	33,123	22·17
2. M. Periyakaruppan Ambalam (Cong.).*	31,461	21·06
3. K. Paramasamy Ambalam (Ind.)	25,583	17·13
4. P. Vadivel (SC) (Ind.)	20,804	13·93
5. I. Samadharmam (SC) (Ind.)	14,575	9·76
6. K. P. S. P. Karuppiah Chettiar (Ind.).	13,672	9·15
7. A. Velusamy (Ind.)	10,150	6·80

122. MELUR (94,071).

Candidates and Parties.	Votes polled.
1. Sivaraman Ambalam, K. M. (Cong.).	986
2. Natarajan, V. V. M. (D.M.K.)	9,984
3. Ponnuchami Ambalam, V. (Swa.)	11,879
4. Veeranan, M. (Comm.)	5,981

123. SHOLAVANDAN (SC) (78,247).

Candidates and Parties.	Votes polled.
1. Ponnammal (Cong.)	25,911
2. Muniyandi (D.M.K.)	18,445
3. Nilamegam (Comm.)	6,473
4. Sonaimuthu (Swa.)	2,942
5. Kanniappan (Ind.)	1,342
6. Subbiah alias Alagumalai (Soc. Lab.).	770

Candidates and Parties.	Votes polled.	Percentage of votes polled.
97. NILAKKOTTAI (152,137).		
1. **W. P. A. R. Chandrasekaran (Cong.)***	43,120	73·60
2. **A. S. Ponnammal (W) (SC) (Cong.).***	29,623	19·23
3. T. G. Krishnamoorthy (Ind.)	29,593	19·22
4. M. Vadivel (SC) (Ind.)	14,965	9·74
5. S. Kanniyappan (SC) (Ind.)	10,805	7·02
6. P. Pichai (P.S.P.)	10,704	6·95
7. T. Avadaiyappan (Ind.)	9,473	6·15
8. S. Vellaikannu (SC) (P.S.P.)	5,673	3·69
98. AUTHOOR (110,089).		
1. **M. A. B. Arumugasamy Chettiar (Cong.)***	22,929	42·24
2. V. S. S. Mani Chettiar (Ind.)	12,669	23·34
3. L. K. A. Jeyaram (Ind.)	10,139	18·67
4. M. N. Kamatchi (Ind.)	6,077	11·18
5. Sadasivam (Ind.)	2,480	4·57
99. OTTANCHATRAM (81,873).		
1. **Karuthappa Gounder (Cong.)***	26,646	73·94
2. Angamuthu Naicker (Ind.)	9,392	26·06
100. DINDIGUL (93,280).		
1. **M. J. Jamal Mohideen (Cong.)***	21,617	48·37
2. A. Balasubramaniam (Comm.)	18,640	42·08
3. R. Janardhanam Naidu (Ind.)	2,922	6·60
4. M. V. Pichaya (Ind.)	1,311	2·95
101. VADAMADURAI (70,949).		
1. **T. Thirumalaimuthu Veerasakkaya Thiruvenkatasamy Naicker (Ind.)***	13,996	44·60
2. Chinnasamy Naidu (Cong.)	12,275	38·60
3. Gopalakrishna Reddiar (P.S.P.)	3,707	11·65
4. Ramalingam (Ind.)	1,830	5·75
102. VEDASANDUR (91,194).		
1. **T. S. Soundara[illegible]machandran (W) (Cong.)***	26,312	50·64
2. Madanagopal (Comm.)	22,745	43·78
3. P. Kandasamy Chetti (Ind.)	2,899	5·58

TIRUCHIRAPPALLI DISTRICT.

Candidates and Parties.	Votes polled.	Percentage of votes polled.
103. ARAVAKURICHI (88,480).		
1. **S. Sadasivam (Cong.)**	24,826	55·03
2. N. Rathinam (Ind.)	15,920	35·43
3. N. Senthilvel (Ind.)	4,291	9·54

Candidates and Parties.	Votes polled.
124. NILAKKOTTAI (90,229).	
1. Abdul Aziz (Cong.)	20,187
2. Anbu Chezhian (D.M.K.)	19,246
3. Viraraghavier (Ind.)	15,586
4. Guruvaiah Naidu (P.S.P.)	6,976
5. Edamalai (Ind.)	1,204
6. Subramaniam (Ind.)	388
125. AUTHOOR (105,730).	
1. **Mani (D.M.K.)**	34,632
2. Arumugasami (Cong.)	29,136
3. Sadasivam (Ind.)	5,080
126. OTTANCHATRAM (85,019).	
1. **Senapathi Gounder, A. (Cong.)**	30,380
2. Nachimuthu Gounder (D.M.K.)	24,327
3. Muniappa Gounder (Ind.)	1,297
127. DINDIGUL (89,114).	
1. **Rengasami (Cong.)**	32,047
2. Balasubramaniyam (Comm.)	29,174
3. Nallakamu (Ind.)	2,708
4. Rajaram (Swa.)	2,617
128. VADAMADURAI (71,585).	
1. **Maruthanayagam Pillai (Cong.)**	27,975
2. Nallathambi (D.M.K.)	18,788
3. Ramarajan (Ind.)	1,495
129. VEDASANDUR (94,573).	
1. **Nanjunda Row (Cong.)**	30,394
2. Madanagopal (Comm.)	25,171
3. Muthusami (D.M.K.)	5,568
4. Subbiah Gounder (Swa.)	1,436
130. ARAVAKURICHI (91,900).	
1. **Sadasivam, S. (Cong.)**	28,372
2. Muthusami Gounder, C. (Swa.)	21,082
3. Abdul Kader Jamali (Ind.)	8,919
4. Thangavel, P. (Ind.)	2,604
5. Subba Naicker, P. (Ind.)	1,704

Candidates and Parties.	Votes polled.	Percentage of votes polled.
104. KARUR (83,526)		
1. **T. M. Nallasamy (Cong.)***	31,611	59·87
2. K. S. Ramasami (Comm.)	10,576	20·03
3. M. Kulandaivel (Ind.)	8,915	16·88
4. M. G. Perumal (Ind.)	1,701	3·22
105. KULITTALAI (89,574).		
1. **M. Karunanidhi (Ind.)***	22,785	47·32
2. K. A. Dharmalingam (Cong.)	14,489	30·09
3. R. Venkatarama Naidu (Ind.)	3,784	7·86
4. S. Shanmugham (Ind.)	3,726	7·74
5. R. Govindan (Ind.)	1,866	3·87
6. R. Rajagopala Iyengar (Ind.)	759	1·58
7. K. P. Veerappan (Ind.)	740	1·54
106. PANJAPATTI (79,117).		
1. **Karunagiri Muthiah (Cong.)***	20,799	54·51
2. P. Ponnambala Gounder (Ind.)	13,852	36·29
3. V. S. M. Abdulla Rowther (Ind.)	3,510	9·20
107. MANAPPARAI (90,585).		
1. **N. P. M. Chinnayya Kavundar (Cong.)***	18,488	55·23
2. A. Rajagopal Pillai (Ind.)	5,487	16·38
3. PL. V. Valmiki Kavundar (Ind.)	5,416	16·18
4. AR. O. AR. Arumugham Pillai (Ind.)	4,088	12·21
108. THIRUMAYAM (90,321).		
1. **V. Ramiah (Cong.)***	28,178	55·84
2. Muthuvairava Ambalagarar (Ind.)	9,619	19·05
3. S. Natarajan Servai (Ind.)	8,867	17·57
4. Kasi Viswanathan (P.S.P.)	3,804	7·54
109. ALANGUDI (154,984).		
1. **Arunachala Thevar (Cong.)***	28,599	20·27
2. **Chinniah (SC) (Cong.)***	22,405	15·88
3. Subbiah (Ind.)	18,592	13·24
4. N. Balakrishnan (Ind.)	18,337	13·00
5. Karuppiah (SC) (P.S.P.)	14,538	10·30
6. A. Arumugham (SC) (Ind.)	10,983	7·78
7. Sengol Udayar (Ind.)	9,482	6·72
8. M. Thangavelu (SC) (Comm.)	9,209	6·53
9. Sheik Dawood (Ind.)	3,037	2·15
10. Periathambi (Ind.)	2,299	1·63
11. Miras Theethappan Kandiyar (Ind.)	1,774	1·25
12. S. R. Muthuvelu (Ind.)	1,765	1·25

Candidates and Parties.	Votes polled.
131. KARUR (89,018).	
1. **Nallasamy, T. M. (Cong.)**	35,969
2. Ramasami, K. S. (Comm.)	20,160
3. Ramasami, R. N. (D.M.K.)	14,373
132. KULITTALAI (101,216).	
1. **Ramanathan (Cong.)**	47,243
2. Rathnam (D.M.K.)	26,525
133. PANJAPATTI (84,244).	
1. **Karunaigiri Muthiah (Cong.)**	25,320
2. Ganapathy (D.M.K.)	15,416
3. Krishnaswamy (Swa.)	2,825
4. Andiyappan (Ind.)	967
5. Karuppasamy (Ind.)	628
134. MANAPPARAI (98,429).	
1. **Chinniah Gounder (Cong.)**	24,048
2. Annavi (D.M.K.)	19,412
3. Nallathambi Gounder (Swa.)	8,044
4. Ponnuswamy Reddiar (Comm.)	3,992
5. Arumugham Pillai (Ind.)	689
6. Muthiah (Ind.)	345
135. THIRUMAYAM (95,588).	
1. **Ramiah, V. (Cong.)**	28,219
2. Balakrishnan (Ind.)	17,916
3. Rama Srinivasan (Swa.)	16,915
4. Muthu (Ind.)	1,703
136. ALANGUDI (SC) (81,983).	
1. **Murugaiyan (D.M.K.)**	31,438
2. Mangappan (Cong.)	18,472
3. Velan (Ind.)	1,636
137. PUDUKKOTTAI (90,179).	
1. **Thyagarajan (D.M.K.)**	37,563
2. Arunachala Thevar (Cong.)	20,252

Candidates and Parties.	Votes polled.	Percentage of votes polled.

TIRUCHIRAPPALLI DISTRICT—*cont.*

110. ANDANALLUR (84,629).

1. **Annamalai Muthuraja (Cong.)***	**21,444**	**62·40**
2. E. P. Mathuram (Ind.)	8,417	24·50
3. A. Rajagopalan (Ind.)	4,496	13·10

111. TIRUCHIRAPPALLI-I (82,474).

1. **E. P. Mathuram (Ind.)*** ..	**21,022**	**51·33**
2. T. Durairaj Pillai (Cong.) ..	19,413	47·40
3. Dr. M. Raju (Ind.)	525	1·27

112. TIRUCHIRAPPALLI-II (90,160).

1. **M. Kalyanasundaram (Comm.)***	**19,026**	**43·29**
2. Subburathinam (Cong.) ..	15,784	35·90
3. K. Kamatchi (Ind.)	9,147	20·81

113. SRIRANGAM (86,694).

1. K. Vasudevan (Cong.)*	23,756	48·93
2. Chitrambalam (Ind.)	6,847	14·71
3. M. Narayanasamy (Ind.) ..	6,221	13·38
4. P. Kathaperumal (Ind.) ..	5,842	12·55
5. P. R. Ramasami (Ind.)	4,854	10·43

114. MUSIRI (153,561).

1. **V. A. Muthaiya (Cong.)*** ..	**34,427**	**21·73**
2. **T. V. Sannasi (SC) (Cong.)*** ..	**32,844**	**20·73**
3. M. P. Muthukkaruppan (Ind.) ..	18,357	11·77
4. Durairaj (SC) (Ind.)	18,093	11·42
5. A. V. Rengasamy Reddiar (Ind.)	15,936	10·07
6. G. Govindarajan (Comm.) ..	11,543	7·27
7. Palaniyandi (SC) (Comm.) ..	8,817	5·58
8. Singaravelu (SC) (Ind.)	5,940	3·75

115. PERAMBALUR (180,411).

1. **Krishnasami (Cong.)***	**38,975**	**22·50**
2. Raja Chidambaram (Ind.) ..	20,883	12·06
3. **K. Periannan (SC) (Cong.)*** ..	**20,375**	**11·76**
4. Adimoolam (Ind.)	17,626	10·17
5. Palanimuthu (SC) (Ind.) ..	14,181	8·18
6. Alagesa Naidu (Ind.)	13,035	7·53
7. P. R. Rathinasami (SC) (Ind.).	11,214	6·47
8. M. Gopal (SC) (Ind.)	10,263	5·92
9. Karuppan (SC) (Ind.)	7,313	4·22
10. Gowdie (Ind.)	4,805	2·77
11. Pichamuthu (SC) (Ind.) ..	4,742	2·74
12. M. K. Pavadai (SC) (Ind.) ..	3,423	1·98
13. K. R. Perumal (SC) (Ind.) ..	3,329	1·92
14. V. Mookan (SC) (Ind.)	3,100	1·78

Candidates and Parties.	Votes polled.

138. ANDANALLUR (88,951).

1. Annamalai Muthuraja (Cong.)	Postponed on account of death of Congress candidate.
2. Annavi (D.M.K.) ..	
3. Maria Arockiam (Ind.) ..	
4. Periasamy (T.N.P.)	

139. TIRUCHIRAPPALLI-I (81,044).

1. **Mani (D.M.K.)**	**31,221**
2. Mathuram (Cong.)	28,379
3. Syed Hussain (Ind.)	1,180

140. TIRUCHIRAPPALLI-II (96,249).

1. **Kalyanasundaram (Comm.)** ..	**38,281**
2. Rajendran (Cong.)	30,436

141. SRIRANGAM (94,735).

1. **Subramanian Chettiar (Cong.)** ..	**39,101**
2. Duraisamy (D.M.K.)	24,651
3. Vasudevan (Swa.)	6,788
4. Angusamy (P.S.P.)	870

142. MUSIRI (SC) (90,547).

1. **Ramalingam (Cong.)**	**32,155**
2. Durairaj (D.M.K.)	28,661
3. Nagammal (Soc.)	1,345
4. Andisamban (Ind.)	649

143. UPPILIAPURAM (76,113).

1. **Muthiah (Cong.)**	**29,435**
2. Pethu Reddiar (D.M.K.)	29,077
3. Sivalingam (Ind.)	3,766

144. PERAMBALUR (91,148).

1. **Alagamuthu (D.M.K.)**	**38,686**
2. Rama Reddiar (Cong.)	31,168

145. VENGALAM (SC) (97,574).

1. **Mani (D.M.K.)**	**24,091**
2. Ayyakannu (Cong.)	22,498
3. Palanimuthu (Swa.)	11,241

Candidates and Parties.	Votes polled.	Percentage of votes polled.

TIRUCHIRAPPALLI DISTRICT—*cont.*

116. LALGUDI (89,815).

1. **S. Lazar (Cong.)***	**30,232**	**55·38**
2. A. P. Dharmalingam (Ind.) ..	24,354	44·62

117. ARIYALUR (90,932).

1. **Ramalinga Padayachi (Cong.)***	**11,741**	**27·45**
2. Narayanan (Ind.)	10,404	24·30
3. Haji Abdul Kadir Jamali (Ind.).	6,992	16·34
4. Dhanaraj (Ind.)	4,797	11·21
5. Manickam (Ind.)	3,069	7·17
6. Arasan (Ind.)	2,640	6·17
7. Thangavelu (Ind.)	2,154	5·04
8. Vadivelu (Ind.)	992	2·32

118. JAYANKONDAM (85,309).

1. **Viswanathan (Cong.)***	**20,232**	**48·37**
2. Jayaramulu Chettiar (Ind.) ..	10,625	25·39
3. Ayyaru (Ind.)	5,133	12·28
4. Baskaran (Ind.)	2,517	6·02
5. Raghava Vandaiyar (Ind.) ..	2,023	4·84
6. Rethinam (Ind.)	1,296	3·10

119. T. PALUR (81,385).

1. **Subbiah (Cong.)***	**17,522**	**43·37**
2. Ramasamy (Ind.)	15,602	38·62
3. Chinnasamy (Ind.)	7,276	18·01

THANJAVUR DISTRICT

120. TIRUVAYAR (82,597).

1. **R. Swaminatha Merkondar (Cong.)***	**19,722**	**43·00**
2. D. Pakshiraja Moovarayar (Ind.)	8,270	18·04
3. S. Swayamprakasam (Ind.) ..	8,077	17·61
4. M. Radhakrishna Gade Rao Saheb (Ind.).	4,648	10·14
5. S. Ramalingam (Comm.) ..	4,096	8·93
6. V. Thiruvengadathu Iyengar (Ind.)	1,047	2·28

121. PAPANASAM (160,721).

1. **Venkitachala Nattar (Cong.)*** ..	**38,971**	**29·68**
2. R. Subramaniam (SC) (Cong.)* ..	31,531	24·01
3. Hariharanathan (Ind.)	17,195	13·10
4. Tajuddeen (Ind.)	11,084	8·44
5. Sami Ayya Pasumpadiyar (Ind.)	9,364	7·13
6. Srinivasan Pillai (Ind.)	7,788	5·93
7. Pattammal (W) (SC) (Ind.) ..	6,075	4·66
8. Chandrasekhara Uday (Ind.)	5,330	4·06
9. Ayyaru (SC) (Ind.)	3,914	2·99

Candidates and Parties.	Votes polled.

146. LALGUDI (98,811).

1. **Dharmalingam (D.M.K.)**	**36,951**
2. Antoniswamy (Cong.)	31,707
3. Thangavel (Swat.)	4,459

147. ARIYALUR (96,922).

1. **Narayanan (D.M.K.)**	**41,721**
2. Viswanathan (Cong.)	17,681
3. Vadivel (T.N.P.)	3,095
4. Balakrishnan (Ind.)	2,346

148. JAYANKONDAM (91,625).

1. **Jagadambal Velayudam (D.M.K.)**	**32,005**
2. Samikkannu Padayachi (Cong.) ..	24,856
3. Subbaraya Chettiar (Ind.)	3,668
4. Manickam (Ind.)	1,526
5. Thangarajan (Ind.)	842
6. Raghavan (Ind.)	374

149. T. PALUR (88,957).

1. **Ramasamy (D.M.K.)**	**40,593**
2. Subbiah (Cong.)	22,969
3. Rathinam (Swat.)	2,540
4. Alagesa Pillai (Ind.)	1,484

150. TIRUVAYAR (86,295).

1. **Palani (Cong.)**	**33,332**
2. Vaiyapuri Nattar (D.M.K.)	24,220
3. Arumugasamy (P.S.P.)	4,441

151. PAPANASAM (SC) (86,481).

1. **Subramanian, R. (Cong.)**	**33,144**
2. Somasundaram, N. (D.M.K.)	28,904

152. SALIAMANGALAM (92,945).

1. **Appavoo Thevar, A. (Cong.)** ..	**36,259**
2. Abdul Samad (Ind.)	11,527
3. Swaminaiyah Pasumbadiar, O.N. (Swat.) ..	10,483
4. Murugesan (Soc.-Lab.)	3,362
5. Krishnasamy, P. (Ind.)	1,974

THANJAVUR DISTRICT—*cont.*

122. KUMBAKONAM (89,621).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **T. Sampath (Cong.)***	**22,613**	**48·65**
2. Neelamegam (Ind.)	9,777	21·04
3. Kasiraman (Ind.)	5,550	11·94
4. Somu Rao (Ind.)	4,229	9·10
5. Ramasamy (Comm.)	2,230	4·79
6. Irusappan (Ind.)	1,697	3·65
7. Ramanatha Vanniar (Ind.) ..	387	0·83

123. ADUTHURAI (97,950).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Ramamirda Thondaman (Cong.)***	**29,516**	**54·17**
2. Mohammed Amirdeen (Ind.) ..	10,114	18·55
3. Mohammed Hussain (Ind.) ..	7,720	14·17
4. Dharmalingam Pillai (Ind.) ..	6,136	11·26
5. P. Arunachalam (Ind.) ..	1,010	1·85

124. MAYURAM (183,122).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **G. Narayanasami Naidu (Cong.)***	**49,188**	**39·83**
2. **P. Jayaraj (SC) (Cong.)*** ..	**26,374**	**16·51**
3. M. Kathamuthu (Comm.) ..	20,498	12·82
4. A. R. Marianathan (SC) (Comm).	15,354	9·62
5. K. Krishnamoorthi (Ind.) ..	12,061	7·56
6. K. Pitchai (Ind.)	12,030	7·53
7. B. Venkatakrishnan (Ind.) ..	9,564	5·99
8. G. Paramananthan (Ind.) ..	8,222	5·15
9. A. Veloo (SC) (Ind.)	4,137	2·59
10. T. Ramu (SC) (Ind.)	2,232	1·40

125. SIRKALI (158,328).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **C. Muthia Pillai (Cong.)*** ..	**48,973**	**29·25**
2. **K. B. S. Mani (SC) (Cong.)*** ..	**47,194**	**28·18**
3. K. Sami Durai Annangar (Comm.)	21,768	13·00
4. V. Velayutham (SC) (Comm.) ..	14,496	8·66
5. P. Velayutham (SC) (Ind.) ..	11,629	6·95
6. C. Jambu (Ind.)	10,363	6·19
7. N. Govindasami Naidu (Ind.)	9,710	5·80
8. Krishnanayagi (W) (SC) (Ind.).	3,278	1·97

153. KUMBAKONAM (85,256).

Candidates and Parties.	Votes polled.
1. Ramaswami (Cong.)	32,397
2. Krishnamoorthy (D.M.K.)	22,701
3. Palanisamy Chettiar (Swat.) ..	6,074
4. Kannaian (Comm.)	3,677
5. Irusappa Bakthar (Ind.)	307

154. ADUTHURAI (100,303).

Candidates and Parties.	Votes polled.
1. Mani, K. S. (D.M.K.)	39,750
2. Ramamirtha Thondaman (Cong.) ..	32,125
3. Mahalingam Padayachi (Ind.) ..	1,330
4. Sathivel (P.S.P.)	1,257

155. KODAVASAL (SC) (89,549).

Candidates and Parties.	Votes polled.
1. **Jayaraj, P. (Cong.)**	**29,319**
2. Appasamy, P. (Comm.)	16,433
3. Veeriah, N. S. (Swat.)	12,083
4. Chinnaiyan, C. (Ind.)	1,961
5. Krishnan, W. (Ind.)	1,006

156. MAYURAM (101,309).

Candidates and Parties.	Votes polled.
1. Narayanasamy Naidu (Cong.) ..	37,362
2. Palanisamy Nadar (D.M.K.)	25,920
3. Gnanasambandan (Comm.)	8,163
4. Angappan (Swat.)	2,378

157. SIRKALI (SC) (86,331).

Candidates and Parties.	Votes polled.
1. Thangavelu, R. (Cong.)	22,434
2. Mani, K. B. S. (Ind.)	16,890
3. Velayutham, P. (D.M.K.)	12,626
4. Velayutham, V. (Comm.)	11,708

158. PORAYAR (85,974).

Candidates and Parties.	Votes polled.
1. Sambandam, K. P. (Cong.)	24,112
2. Ganesan, S. (D.M.K.)	21,018
3. Bharathi Mohan, G. (Comm.)	12,718
4. Chinnasami Ravathaminda Nainar, K. (Swat.) ..	2,826
5. Paul Sathianathan, G. (Ind.)	

126. NANNILAM (165,455).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **M. D. Thiagaraja Pillai (Cong.)***	**45,923**	**25·90**
2. **M. C. Muthukumaraswamy (SC) (Cong.)*.**	**35,258**	**19.88**
3. S. Arunachalam Pillai (Comm.)	28,206	15·92
4. P. Appaswamy (SC) (Comm.) ..	25,515	14·38
5. K. Periaswamy Odayar (Ind.)..	21,571	12·16
6. M. Natesan (SC) (Ind.).. ..	8,617	4·86
7. T. Somasundaram (Ind.) ..	6,288	3·54
8. T. Rajappa (SC) (Ind.) ..	5,971	3·36

127. NAGAPATTINAM (81,753).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **N. S. Ramalingam (Cong.)*** ..	**24,552**	**52·09**
2. P. Jeevanandam (Comm.) ..	13,847	29·38
3. M. Hanifa (Ind.)	6,527	13·85
4. S. Rajagopal Naidu (Ind.) ..	2,207	4·68

128. THIRUTHURAIPUNDI (176,410).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **V. Vedayyan (SC) (Cong.)*** ..	**54,049**	**24.45**
2. **A. Vedaratnam (Cong.)*** ..	**51,168**	**23.16**
3. C. Kandasamy (Comm.) ..	44,593	20·19
4. S. Vadivelu (SC) (Comm.) ..	40,418	18·30
5. N. Dharmalinga Thevar (Ind.)	16,527	7·48
6. M. Ambikapathi (SC) (Ind.) ..	14,161	6·41

129. MANNARGUDI (90,015).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **T. S. Swaminatha Odayar (Cong.)***	**25,095**	**44·59**
2. S. K. Sivananda Saluvar (Ind.)	14,135	25·13
3. P. Venkatesan (Comm.) ..	9,699	17·24
4. N. Arunachalam (Ind.) ..	7,337	13·04

130. GANDARVAKOTTAI (80,716).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Krishnasami Gopalar (Cong.)*** ..	**18,928**	**46·03**
2. Ramachandra Dorai (Ind.) ..	9,839	23·93
3. Thanganuthu Nadar (Ind.) ..	8,553	20·79
4. Marimuthu Odayar (Ind.) ..	1,638	3·98
5. Dharmaraja Merkondar (Ind.)	1,115	2·71
6. Rangasami Odayar (Ind.) ..	1,051	2·56

159. NANNILAM (85,864).

Candidates and Parties.	Votes polled.
1. Thiyagaraja Pillai (Cong.)	26,346
2. Ramiah Mudaliar (D.M.K.)	21,519
3. Sowrirajalu Naidu (Comm.)	18,370

160. TIRUVARUR (SC) (90,165).

Candidates and Parties.	Votes polled.
1. **Ambikapathi, C. M. (Cong.)** ..	**29,384**
2. Vadivelu (Comm.)	23,293
3. Veeran Elayasingam (Swat.)	10,[illegible]8
4. Santhanam, N. (Ind.)	1,[illegible]9

161. NAGAPATTINAM (81,745).

Candidates and Parties.	Votes polled.
1. **Balagangatharan (Cong.)**	**27,447**
2. Bhaktavachalam (Comm.)	2[illegible],355
3. Ahamed (Ind.)	16,186

162. VEDARANYAM (87,047).

Candidates and Parties.	Votes polled.
1. **Ramalingam, N.S. (Cong.)**	**27,200**
2. Dharmalingam (D.M.K.)	17,764
3. Sellathurai Thevar (Comm.)	10,893
4. Veerappa Pillai (Ind.)	6,750
5. Vaithinathan (Ind.)	2,770
6. Samithurai Thevar (Swat.)	2,475

163. THIRUTHURAIPUNDI (87,642).

Candidates and Parties.	Votes polled.
1. **Subbiah (Comm.)**	**45,148**
2. Vedayyan (Cong.)	35,078

164. MANNARGUDI (91,758).

Candidates and Parties.	Votes polled.
1. **Swaminatha Odayar, T. S. (Cong.)**	**37,117**
2. Narayanaswami, P. (D.M.K.)	19,021
3. Thangaraj, R. (Comm.)	15,321

165. THANJAVUR (79,654).

Candidates and Parties.	Votes polled.
1. **Karunanithi (D.M.K.)**	**32,145**
2. Parisutha Nadar (Cong.)	30,217
3. Shanmugavadivel (Ind.)	799

166. THANJAVUR—*vide* page 29 *for* details.

166. GANDARVAKOTTAI (89,012).

Candidates and Parties.	Votes polled.
1. **Krishnaswamy Gopalar, R. (Cong.)** ..	**24,878**
2. Govindarasu Kalingarar (D.M.K.) ..	22,061
3. Ramachandra Dorai (Ind.)	12,303

THANJAVUR DISTRICT—*cont.*

Candidates and Parties.	Votes polled.	Percentage of votes polled.
131. ADIRAMPATNAM (83,913).		
1. A. R. Marimuthu (P.S.P.)* ..	**26,785**	**50·59**
2. N. Sundaresa Thevar (Cong.) ..	16,995	32·10
3. N. Sriram Elango (Ind.) ..	9,166	17·31
132. PATTUKKOTTAI (90,416).		
1. R. Srinivasa Ayyar (Cong.)* ..	**24,237**	**43·13**
2. V. Arunachala Thevar (Ind.) ..	16,435	29·25
3. M. Masilamani (Comm.) ..	15,513	27·62
133. ARANTANGI (88,613).		
1. S. Ramasami Thevar (Ind.)* ..	**17,637**	**43·22**
2. Muthuvel Ambalam (Cong.) ..	14,633	35·85
3. Sheik Abdul Kadir Rowther (Ind.).	4,423	10·84
4. Swaminatha Ayyar (Ind.) ..	2,276	5·58
5. M. Ramaswami Thevar (Ind.) ..	1,838	4·51

Candidates and Parties.	Votes polled.
167. ADIRAMPATNAM (89,621).	
1. Dhandauthapani Pillai (Cong.). ..	**31,503**
2. Marimuthu (P.S.P.)	26,104
3. Subbiah Mudipoondar, V. A. (Comm.). ..	8,949
168. PATTUKKOTTAI (107,001).	
1. Arunachala Thevar, V. (D.M.K.) ..	**35,451**
2. Srinivasa Iyer, R. (Cong.)	28,806
3. Masilamani, M. (Comm.)	15,234
169. ARANTANGI (87,806).	
1. Durai Arasan, A. (D.M.K.) ..	**33,781**
2. Ramanatha Servai, K. (Cong.) ..	25,112
3. Manickam, M. (Ind.)	2,250

RAMANATHAPURAM DISTRICT.

Candidates and Parties.	Votes polled.	Percentage of votes polled.
134. TIRUVADANAI (83,346).		
1. Kr. Rm. Kariamanickamambalam (Ind.)*. †	**13,633**	**30·49**
2. S. Ramakrishnathevar (Cong.).	9,186	20·55
3. Vellayan (Ind.)	8,237	18·43
4. A. L. Pichaikutti Udayar (Ind.).	7,837	17·54
5. Natarasa Thevar (Ind.) ..	5,807	12·99
† Ramakrishna Thevar, S. (Cong.).		
135. KARAIKUDI (86,971).		
1. M. A. Muthiah Chettiar (Cong.)*	**24,223**	**48·32**
2. Ganesan Sa. (Ind.)	22,365	44·65
3. R. M. Subbiah Chettiar (Ind.) ..	2,348	4·69
4. U. P. L. Venkatachalam Chettiar (Ind.)	1,171	2·34
136. TIRUKOSHTIYUR (87,159).		
1. N. V. Chockalingam (Cong.)* ..	**20,611**	**44·22**
2. S. Shanmugam (Comm.) ..	11,533	24·74
3. Kannadasan (Ind.)	9,389	20·14
4. P. A. K. Muhamud Yusuff Lebbai (Ind.)	1,890	4·06
5. N. K. Muthulingam (Ind.) ..	3,184	6·84
137. SIVAGANGA (98,666).		
1. D. Subramaniarajkumar (Ind.)*	**35,237**	**61·39**
2. Saminathan (Cong.)	11,747	20·47
3. V. Veerappan (Ind.)	3,334	5·81
4. S. Manuveludayar (Ind.) ..	2,648	4·62
5. Nithyasamathanam (Ind.) ..	2,455	4·28
6. S. Narayan (Comm.)	1,971	3·43

Candidates and Parties.	Votes polled.
170. TIRUVADANAI (90,297).	
1. Kariamanickam Ambalam (Swat.) ..	**37,612**
2. Ramakrishna Thevar (Cong.)	23,011
3. Ramanuja Josyar (Ind.)	2,187
171. KARAIKUDI (84,983).	
1. Ganesan (Swat.)	**27,890**
2. Subbiah Ambalam (Cong.)	23,282
3. Halasyanathan (Comm.)	5,393
172. TIRUKOSHTIYUR (93,641).	
1. Madhavan (D.M.K.)	**24,833**
2. Chokkalingam Ambalam (Cong.)	23,264
3. Shanmugam (Comm.)	15,615
4. Muthiah Ambalam (Ind.)	3,767
173. SIVAGANGA (120,407).	
1. Swaminathan (Cong.)	**43,410**
2. Kalailingam (Swat.)	34,159
3. Palanichamy (Ind.)	1,958
4. Muthuramalingam (Ind.)	965

RAMANATHAPURAM DISTRICT—*cont.*

Candidates and Parties.	Votes polled.	Percentage of votes polled.
138. RAMANATHAPURAM (96,220).		
1. R. Shanmuga Rajeswara Sethupathi (Ind.)*.	**40,577**	**82·00**
2. G. Mangalasamy (Comm.) ..	8,912	18·00
139. PARAMAKUDI (100,451).		
1. K. Ramachandran (Ind.)* ..	**24,695**	**54·69**
2. G. Govindan (Cong.)	13,398	29·67
3. M. Sathiah (Ind.)	5,023	11·13
4. A. Thiagaraj (Ind.)	2,045	4·51
140. MANAMADURAI (90,168).		
1. R. Chidambara Bharathi (Cong.)*	**18,680**	**44·54**
2. S. Alagu (Ind.)	11,282	26·89
3. R. Sethu Servai (Ind.)	4,994	11·91
4. S. Sakthivel (Ind.)	4,992	11·91
5. N. Ayyakutti Thevar (Ind.) ..	1,988	4·75
141. MUDUKULATHUR (186,050).		
1. U. Muthuramalinga Thevar (Ind.)*†	**55,333**	**32·79**
2. A. Perumal (SC.) (Ind.)*	**53,571**	**31·77**
3. Chinniah Servai (Cong.)	32,767	19·42
4. A. Krishnan (SC.) (Cong.) ..	27,013	16·02
5. T. L. Sasivarnathevar (Ind.)	..	..
142. ARUPPUKOTTAI (79,794).		
1. M. D. Ramasami (Ind.)*† ..	**31,765**	**55·13**
2. A. V. Thiruppathi alias Thiruvengadam Reddiar (Cong.)	25,849	44·87
Sowdi S. Sundara Bharathi (Ind.) †		
143. SATTUR (90,740).		
1. K. Kamaraja Nadar (Cong.)* ..	**36,400**	**53·46**
2. Jayarama Reddiar (Ind.) ..	31,683	46·54
144. SIVAKASI (87,423).		
1. S. Ramasami Naidu (Cong.)* ..	**25,421**	**53·72**
2. P. Muthuramanuja Thevar (Ind.)	11,471	24·23
3. A. Subbiah (Ind.)	8,767	18·53
4. V. Karuppiah (Ind.)	1,665	3·52

Candidates and Parties.	Votes polled.
174. RAMANATHAPURAM (107,593).	
1. Shanmuga Rajeswara Sethupathi (Cong.)	**44,942**
2. Abdul Rahim (M.L.) ..	18,363
3. Padmanabhan (Swa.)	5,058
4. Kodangi (Ind.)	2,238
5. Sathiah (Ind.)	1,977
175. PARAMAKUDI (106,433).	
1. Srinivasa Iyengar (Cong.)	**33,301**
2. Thangavelan (D.M.K.)	22,439
3. Muthusami (Comm.)	10,313
4. Ramasami Thevar (Swa.)	3,945
5. Velu (Ind.)	2,091
6. Shanmugam Servai (P. S. P.)	2,283
176. MANAMADURAI (92,565).	
1. Seemaichamy (Swa.)	**33,895**
2. Amin Nainar Hoeth (Cong.)	26,627
3. Ramachandran (W.T.)	1,534
177. TIRUCHULI (SC) (90,401).	
1. Perumal (Bloc.)	**28,524**
2. Vellathurai (Cong.)	18,428
3. Muthu (Ind.)	4,038
178. MUDUKULATHUR (124,265).	
1. Srinivasa Thevar (Bloc.)	**37,162**
2. Kasinathadorai (Cong.)	34,217
3. Karuppiah (Ind.)	3,908
179. ARUPPUKKOTTAI (84,282).	
1. Kadambavanasundaram (Cong.) ..	**35,597**
2. Sowdi Sundarabharathi (Bloc). ..	28,583
3. Arumugam (Ind.)	1,084
180. SATTUR (101,991).	
1. Kamaraj Nadar (Cong.)	**49,950**
2. Ramamoorthi, P. (Swa.)	33,506
3. Ramasami Reddiar, R. (Ind.)	2,811
181. SIVAKASI (95,665).	
1. Ramasamy Naidu (Cong.)	**35,726**
2. Duraisamy Thevar, K. (Swa.) ..	23,078
3. Prakasam, M. (Ind.)	3,203

RAMANATHAPURAM DISTRICT—*cont.*

145. SRIVILLIPUTHUR (192,625).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. R. Krishnasami Naidu (Cong.) *	**49,498**	**26·22**
2. A. Chinnasami (SC.) (Cong.) * ..	**31,070**	**16·46**
3. S. Alagarsami (Comm.) ..	26,181	13·89
4. Gurusami (Ind.)	20,250	10·73
5. G. A. Appan (SC.) (Ind.) ..	18,214	9·65
6. M. Singappan (SC.) (Ind.) ..	18,047	9·55
7. P. S. Chinnaverkata Raja (Ind.)	9,781	5·18
8. S. Chelliah (SC.) (Ind.) ..	8,551	4·53
9. K. Karuppannan (SC.) (Ind.) ..	5,386	2·85
10. K. A. Ramasami Raja (Ind.) ..	1,022	0·54
11. Dharmar Thevar (Ind.) ..	758	0·40

182. SRIVILLIPUTHUR (SC.) (92,752).

Candidates and Parties.	Votes polled.
1. Chelliah (Cong.)	**36,122**
2. Gurusamy alias Andi (D.M.K.) ..	26,595

183. RAJAPALAYAM (103,902).

Candidates and Parties.	Votes polled.
1. Krishnasamy Naidu (Cong.) ..	**41,692**
2. Ramakrishnan Raja (Swa.)	19,165
3. Alagirisamy (Comm.)	18,063
4. Chelliah (Ind.)	1,674

TIRUNELVELI DISTRICT.

146. KOILPATTI (78,841).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. V. Suppaya Naicker (Ind.)* ..	**11,425**	**31·76**
2. Selvaraj (Cong.)	10,726	29·85
3. Alagirisamy (Comm.)	9,901	27·54
4. Ponnusamy (Ind.)	3,898	10·85

184. KOILPATTI (81,603).

Candidates and Parties.	Votes polled.
1. Venugopalakrishnasamy (Cong.) ..	**22,158**
2. Appasamy (Swa.)	18,059
3. Alagarsamy (Comm.)	15,387
4. Periasamy (D.M.K.)	5,080
5. Venkatarama Naidu (Ind.)	543

147. KADAMBUR (161,364).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. K. Ramasubbu (Cong.)* ..	**34,155**	**29·28**
2. Sangili (SC.) (Cong.)* ..	**27,787**	**23·81**
3. S. Arunachala Nadar (Ind.) ..	13,447	11·53
4. V. Suppayan (SC.) (Ind.) ..	9,867	8·46
5. Mari Naicker (Ind.)	9,096	7·80
6. M. Mariappan (Ind.)	8,865	7·60
7. Muthia (SC.) (Comm.)	6,770	5·80
8. Velayudam (SC.) (Ind.)	6,669	5·72

185. KADAMBUR (SC.) (75,730).

Candidates and Parties.	Votes polled.
1. Sangili (Cong.)	**19,200**
2. Muthiah (Swa.)	17,838
3. Rajammal (W) (Ind.)	1,137

186. OTTAPIDARAM (100,686)

Candidates and Parties.	Votes polled.
1. Ramakrishna Naicker (Cong.) ..	**30,067**
2. Vaiyappan (Swa.)	19,906
3. Nagu (Comm.)	18,103

148. TUTICORIN (85,697).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. Ponnusami (Cong.)* †	**17,438**	**36·79**
2. M. S. Sivasami (Ind.)	15,298	32·28
3. S. A. Muruganandam (Comm.)	14,661	30·93

†Sunder Singh (Cong.) ..

187. TUTICORIN (95,771).

Candidates and Parties.	Votes polled.
1. Ponnusamy Nadar (Cong.)	**31,280**
2. Ramalingam (D.M.K.)	19,924
3. Isaac (Comm.)	10,534
4. Venkatakrishnan (Swa.)	9,545

149. SRIVAIKUNTAM (91,557).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. A. P. C. Veerabahu (Cong.)* ..	**29,849**	**61·06**
2. Y. Perumal (Ind.)	10,943	22·39
3. Jagaveera Rajendran (Ind.) ..	6,300	12·89
4. P. Cheeni (Ind.)	1,792	3·66

188. SRIVAIKUNTAM (93,753).

Candidates and Parties.	Votes polled.
1. Veerabaghu (Cong.)	**29,949**
2. Pechi (D.M.K.)	12,844
3. Ganapathi (Swa.)	10,639
4. Perumal (Ind.)	5,951
5. Packianathan (Ind.)	2,655

TIRUNELVELI DISTRICT—*cont.*

150. TIRUNELVELI (173,695).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. Rajathi Kunchithapatham (W) (Cong.)*	**33,839**	**27·25**
2. Somasundaram (SC.) (Cong.)* ..	**29,646**	**20·80**
3. Kandiah (Ind.)	16,886	11·91
4. Mohammed Ismail Rowther (P.S.P.).	15,695	11·02
5. Ponnusami (SC.) (P.S.P.) ..	12,388	8·67
6. Esakimuthu (SC.) (Ind.) ..	7,834	5·49
7. Jacob (Ind.)	4,834	3·38
8. Chelliah (SC.) (Ind.)	4,822	3.37
9. Sankarasubramania Iyer (Ind.)	2,791	1·95
10. Sundaram (Ind.)	2,781	1·95
11. Kannappa Pillai (Ind.)	2,760	1·94
12. Paradesi (SC.) (Ind.)	1,769	1·24
13. Ramudu (Ind.)	1,469	1·03

189. TIRUNELVELI (96,617).

Candidates and Parties.	Votes polled.
1. Rajathi Kunchithapatham (W) (Cong.)	**25,935**
2. Ramasami (Sundaram) (Swa.) ..	24,514
3. Ahmed Ibrahim (Ind.)	18,091
4. Muthiah Pillai (P.S.P.)	809
5. Rajagopalachari (Ind.)	702
6. Narasimha Rao (Ind.)	299

151. ALANGULAM (94,908).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. Veluchamy Thevar (Ind.)* ..	**19,458**	**51·65**
2. Challapandian (Cong.) ..	15,362	40·77
3. Ambalavana Pillai (Ind.) ..	2,858	7·58

190. GANGAIKONDAN (SC.) (98,562).

Candidates and Parties.	Votes polled.
1. Arumugam, R. S. (Cong.)	**17,548**
2. Chelliah (Ind.)	13,780
3. Velu (D.M.K.)	9,926
4. Raman (Swa.)	6,556
5. Chidambaranathan (Ind.)	1,105
6. Ponnuchamy (Ind.)	511
7. Arunachalam Kudumban (Ind.) ..	449
8. Baliah (Ind.)	302

191. ALANGULAM (95,066).

Candidates and Parties.	Votes polled.
1. Chellapandian, S. (Cong.)	**32,650**
2. Pandian, N. H. M. (Swa.)	22,438
3. Arunachalam Nadar, V. (D.M.K.) ..	8,387

192. PULIYANGUDI (SC) (91,260).

Candidates and Parties.	Votes polled.
1. Urukavala Kudumban (Cong.) ..	**23,485**
2. Durairaj (D.M.K.)	13,458
3. Periasami (Comm.)	8,673
4. Karadi Madasami (Swa.)	7,453
5. Shanmugam (Ind.)	1,950

152. SANKARANKOIL (174,765).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. Urkavalan (SC.) (Cong.)* ..	**40,397**	**27·80**
2. A. R. Subbiah Mudaliar (Cong.)*	**34,771**	**23·93**
3. Adinamilagi (Ind.)	21,907	15·08
4. S. Uthaman (SC.) (P.S.P.) ..	12,374	8·51
5. Vallathurai (Ind.)	10,310	7·09
6. Shanmugam (SC.) (Ind.) ..	9,937	6·84
7. Subbiah (SC.) (Ind.)	9,104	6·27
8. Ganapathy (Ind.)	6,511	4·48
9. Pandiaraj (Cong.)		

193. SANKARANKOIL (89,446).

Candidates and Parties.	Votes polled.
1. Abdul Majid Sahib, S. M. (Cong.) ..	**32,799**
2. Krishnan Servai, S. (D.M.K.)	16,383
3. Balasubramanian Chettiar, M.K. (Swa.).	10,391
4. Ayyadurai, K. (Ind.)	3,001

153. TENKASI (82,107).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. K. Sattanatha Karayalar (Ind.)*	**31,145**	**52·89**
2. I. A. Chidambaram Pillai (Cong.)	25,499	43·29
3. A. Srinivasan (Ind.)	2,243	3·82

194. TENKASI (91,752)

Candidates and Parties.	Votes polled.
1. Subbiah Mudaliar (Cong.)	**29,684**
2. Reboi Sahib (Ind.)	16,882
3. Shanmugam (Comm.)	13,003
4. Sankaranarayanier (Swa.)	4,138
5. Palanichamy (Ind.)	2,139
6. Muthiah Thevar (Ind.)	1,117

TIRUNELVELI DISTRICT—*cont.*

154. AMBASAMUDRAM (95,325).

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. **Gomathisankara Deekshidar (Cong.)***	25,552	50·52
2. Nallasivan (Comm.)	18,191	35·96
3. S. Kandasamy (Ind.)	5,516	10·91
4. Annamalai (Ind.)	1,316	2·61

155. KADAYAM (89,030).

1. **D. S. Athimoolam (Ind.)*** ..	33,097	56·33
2. A. Balagan (Cong.)	23,503	40·00
3. S. Thirumalai (Ind.)	2,147	3·67

156. TIRUCHENDUR (99,432).

1. **M. S. Selvaraj (Cong.)***	30,106	63·59
2. M. R. Meganathan (Ind.) ..	15,529	32·79
3. O. Ponswami (Ind.)	955	2·03
4. Sigamani (Ind.)	750	1·59

157. SATTANGULAM (101,233).

1. **S. B. Adityan (Ind.)***	33,636	57·74
2. S. Kandasamy (Cong.)	22,429	38·50
3. M. Arunachalam (Ind.)	1,115	1·91
4. A. P. V. Athimuthu (Ind.) ..	1,083	1·85

158. RADHAPURAM (92,611).

1. **A. V. Thomas (Cong.)***	24,953	58·78
2. Kartheesan (Ind.)	13,244	31·19
3. M. Gnanamuthu (Ind.)	2,389	5·63
4. Abraham Nadar (Ind.)	1,867	4·40

159. NANGUNERI (83,654).

1. **M. G. Sankar (Cong.)***	21,786	50·17
2. S. Madasami (Ind.)	16,898	38·88
3. E. Thothadri (Ind.)	3,336	7·67
4. Kumarasami (Ind.)	1,425	3·28

KANYAKUMARI DISTRICT.

160. KANYAKUMARI (71,781).

1. **T. S. Ramaswamy Pillai (Ind.)***	24,557	44·04
2. Natarajan (Cong.)	23,316	41·83
3. Vivekanandam (Ind.)	6,866	12·31
4. Kumaraswamy Pillai (Ind.) ..	1,013	1·82

161. NAGERCOIL (90,534).

1. **Chidambaranatha Nadar (Cong.).***	44,073	63·71
2. C. Sankar (Comm.)	21,163	30·59
3. Muthuswamy (Ind.)	2,949	4·26
4. Doraswamy Nadar (Ind.) ..	999.	1·44

195. AMBASAMUDRAM (91,722).

Candidates and Parties.	Votes polled.
1. **Gomatisankara Dikshithar (Cong.)**	25,883
2. Nallasivan (Comm.)	20,216
3. Rathinavel Pandian (D.M.K.) ..	17,167
4. Viswanathan (Swa.)	3,907
5. Annamalai (Ind.)	707

196. KADAYAM (93,773).

1. Balagan (Cong.)	46,160
2. Ananthakrishnan (Comm.)	13,821
3. Thomas (Swa.)	8,154

197. TIRUCHENDUR (101,280).

1. **Selvarajan, M.S. (Cong.)**	39,944
2. Aditanar, Si. Pa. (Ind.)	27,994
3. Kasali Maraikayar, N. K. (Ind.). ..	569
4. Gnanaraj, B. (Ind.)	361

198. SATTANGULAM (98,249).

1. **Kosalram, K.T. (Cong.)**	43,428
2. Rajasingh, A. P. (Ind.)	17,351
3. Selladurai Vallikutti, K. (Swa.). ..	2,698

199. RADHAPURAM (94,639).

1. **Soundarapandian, N. (Cong.)** ..	42,334
2. Carmel, P. R. (Swa.)	19,271
3. Arul Doss Thillai Pazham, N. (Ind.).	1,189
4. Perumal Mudaliar, K. S. (Ind.). ..	356

200. NANGUNERI (86,398).

1. **Sankar, M.G. (Cong.)**	28,548
2. Madasamy, S. (Swa.)	23,211
3. Muthumanickam, P. (Comm.) ..	9,996
4. Muthiah Nadar, S. (Ind.)	3,173

201. KANYAKUMARI (80,199).

1. **Natarajan (Cong.)**	46,263
2. Rassiah (P.S.P.)	9,825
3. Poomoney (Ind.)	1,324

202. NAGERCOIL (99,408).

1. **Chidambaranatha Nadar (Cong.)** ..	37,079
2. Balan (D.M.K.)	17,388
3. Ram (Comm.)	14,098

KANYAKUMARI DISTRICT—*cont.*

162. COLACHEL (78,859).

1. **Lourdammal (W) (Cong.)*** ..	14,055	40·75
2. S. Doraiswamy (Ind.)	12,443	36·04
3. R. K. Ram (Ind.)	3,309	9·59
4. P. Johnson (Ind.)	2,875	8·33
5. S. M. Shahul Hamid (Ind.) ..	1,826	5·29

163. KILLIYOOR (66,513).

1. **A. Nesamony (Cong.)*** .. **Elected-uncontested.**

164. PADMANABHAPURAM (77,102).

1. **Thompson Dharmaraj Daniel (Cong.)***	29,276	80·15
2. S. Muthukaruppa Pillai (Ind.).	7,250	19·85

165. VILAVANCODE (67,159).

1. **M. William (Cong.)*** .. **Elected-uncontested.**

166. THANJAVUR (81,430).

1. **A. Y. S. Parisutha Nadar (Cong.)***	21,810	51·35
2. R. Gopalakrishnan (Ind.) ..	11,809	27·81
3. S. Bethanna Nadar (Ind.) ..	8,858	20·84

167. POLUR (82,019).

1. **S. M. Annamalai (Ind.)*** ..	17,222	42·95
2. T. B. Kesava Reddiar (Ind.) ..	10,616	26·49
3. V. Krishnakanthan (Cong.) ..	7,613	18·99
4. Vediappa Mudaliar (Ind.) ..	4,059	10·13
5. Purushothama Mudali (Ind.) ..	578	1·44

203. COLACHEL (88,634).

1. **Swamidhas Nadar, A. (Ind.)** ..	36,054
2. Lourdhammal (Cong.)	28,275
3. Russel (Ind.)	471

204. KILLIYOOR (78,086).

1. **Poonappan Nadar, R. (Cong.)** ..	25,278
2. Devadas, G. (Ind.)	9,872
3. Gabriel, A. (Ind.)	4,271
4. Abraham, V. (Ind.)	2,676

205. PADMANABHAPURAM (87,999).

1. **Kunjan Nadar (Rayan Nadar) (Ind.)**	23,747
2. Francis (Comm.)	11,572
3. Thompson Tharma Raj Daniel (Cong.). ..	10,287
4. Nesamony (Ind.)	5,492

206. VILAVANCODE (76,820).

1. **William, M. (Cong.)**	30,386
2. Gnanasigamony, D. M. (Comm.). ..	21,388
3. Gnanasigamony, D. (Ind.)	441

1957 Poll—Total electorate, 17,514,993.

1962 Poll—Total electorate, 18,669,080.

LOK SABHA

Candidates and Parties.	Votes polled.	Percentage of votes polled.
1. MADRAS (NORTH) (449,968).		
1. **S. C. C. Anthony Pillai (Ind.)*** ..	86,139	48.72
2. T. Chengalvarayan (Cong.) ..	76,141	43·06
3. G. Rajamannar Chettiar (PSP.).	14,555	8·22
2. MADRAS (SOUTH) (472,017).		
1. **T. T. Krishnamachari (Cong.)*.**	81,390	45·93
2. P. Balasubramania Mudaliar (Ind.).	71,284	40·23
3. H. D. Rajah (Ind.)	24,516	13·84
3. CHINGLEPUT (802,716).		
1. **Dr. A. Krishnaswamy (Ind.)*** ..	188,481	26.81
2. O. V. Alagesa Mudaliar (Cong.).	186,753	26·57
3. **N. Sivaraj (SC) (Ind.)***	**153,741**	**21.83**
4. R. Maragatham Chandrasekar (SC) (Cong.).	148,675	21·15
5. R. Rajaram (Ind.)	25,347	3·61
4. TIRUVALLUR (405,032).		
1. **R. Govindarajulu Naidu (Cong.)*.**	120,363	64·90
2. A. Raghava Reddy (Ind.) ..	65,083	35·10
5. VELLORE (801,572).		
1. **N. R. Munisamy (Cong.)*** ..	144,377	19.24
2. **M. Muthukrishnan (SC) (Cong.)*.**	126,132	16.81
3. G. M. Annalthango (Ind.) ..	117,680	15·69
4. J. P. Ganesha Mudaliar (Ind.) ..	102,619	13·68
5. M. Krishnasami (SC) (Ind.) ..	89,311	11·90
6. Sambanda Mudaliar (Ind.) ..	74,501	9·93
7. A. Jayaraman (SC) (Ind.) ..	57,425	7·65
8. V. R. Venkatesan (Ind.) ..	22,970	3·05
9. R. T. S. Moorthy (SC) (Ind.) ..	15,350	2·05

Candidates and Parties.	Votes polled.
1. MADRAS (NORTH) (452,645).	
1. **Srinivasan, Dr. P. (Cong.)**	122,16
2. Abdus Samad (Ind.)	113,31
3. Anthoni Pillai, S. C. C. (Soc. Lab.) ..	80,22
4. Rajamannar (Ind.)	5,50
5. Ramanathan, R. (Ind.)	3,07
2. MADRAS (SOUTH) (486,728).	
1. **Manoharan, K. (D.M.K.)**	151,91
2. Ramaswamy, C. R. (Cong.)	89,77
3. Sampath, E. V. K. (T.N.P.)	63,76
4. Ganapathy, M. (Ind.)	34,16
3. SRIPERUMBUDUR (SC) (465,133).	
1. **Sivasankaran, P. (D.M.K.)**	157,73
2. Munusami, K. (Cong.)	142,36
4. CHINGLEPUT (429,553).	
1. **Alagesan, O. V. (Cong.)**	169,98
2. Krishnaswami, A. (Ind.)	150,11
5. TIRUVALLUR (484,018).	
1. **Govindasamy Naidu (Cong.)** ..	157,34
2. Gopal, M. (D.M.K.)	143,90
3. Sulochana Mudaliar, P. (Ind.) ..	13,76
4. Arumuga Mudaliar, K. (Ind.)	13,34
6. VELLORE (434,404).	
1. **Abdul Wahid (Cong.)**	114,87
2. Sivaraj, N. (Repub.)	90,90
3. Rajarathnam (Comm.)	47,18
4. Purushothama Reddiar, T. R. (Ind.). ..	6,63
5. Vilwanatha Mudaliar (Ind.)	5,72
6. Ganesa Mudaliar (P.S.P.)	5,11
7. Annalthango, G. M. (Ind.)	4,87
8. Mohammed Pasha (Ind.)	3,50
9. Rangasami Naidu (Ind.)	1,16
7. WANDIWASH (SC) (416,676).	
1. **Jayaraman (Cong.)**	111,053
2. Krishnasamy, M. (Repub.)	100,256
3. Pulavar Mani Ezhilan (Swa.). ..	57,190
4. Gangadaran (Ind.)	13,414

Candidates and Parties.	Votes polled.	Percentage of votes polled.
6. THIRUVANNAMALAI (426,665).		
1. **Dharmalingam (Ind.)***	84,309	41·74
2. C. Neelakantan (Cong.)	74,070	36·66
3. T. P. Thayuman (Ind.)	25,145	12·46
4. Munisami, N. (Ind.)	18,436	9·14
7. TINDIVANAM (418,327).		
1. **Shanmugham (Ind.)***	73,737	36·36
2. V. Munusami (Ind.)	65,012	32·06
3. Nagarajan (Cong.)	64,082	31·58
8. CUDDALORE (431,659).		
1. **T. D. Muthukumaraswamy Naidu (Ind.)*.**	98,605	42·56
2. S. Radhakrishnan (Cong.) ..	98,546	42·53
3. N. D. Govindaswamy Kachirayar (Ind.).	34,549	14·91
9. CHIDAMBARAM (840,006).		
1. **R. Kanagasabai Pillai (Cong.)*.**	176,501	23·20
2. **Elayaperumal (SC) (Cong.)*** ..	175,589	23.09
3. Arumugham (SC) (Ind.)	118,491	15·58
4. Dandapani Padayachi (Ind.) ..	109,521	14·40
5. Kulandaimoopan (Ind.)	85,943	11·30
6. Kattimuthu (SC) (Ind.)	62,114	8·17
7. Kaliamurthi (SC) (Ind.)	32,381	4·26

Candidates and Parties.	Votes polled.
8. TIRUVANNAMALAI (449,968).	
1. **Dharmalingam (D.M.K.)**	141,254
2. Neelakantan (Cong.)	137,528
3. Arjuna Gounder (Ind.)	9,574
9. TINDIVANAM (441,497).	
1. **Venkatasubba Reddiar (Cong.)** ..	132,330
2. Ramamoorthi Gounder (Swa.) ..	118,033
3. Shanmugha Gounder (Ind.)	23,356
10. CUDDALORE (479,031).	
1. **Ramabadra Naidu (D.M.K.)** ..	160,811
2. Muthukumaraswami Naidu (Cong.) ..	125,424
3. Tillai Govindan (Ind.)	19,752
4. Shariff (Ind.)	6,981
11. CHIDAMBARAM (457,267).	
1. **Kanagasabai (Cong.)**	140,731
2. Thillaivillalan (D.M.K.)	136,671
3. Govindasami Kachirayar (Swa.) ..	18,021
4. Subramanian (Ind.)	10,249
5. Rathinam (Ind.)	9,666
12. TIRUKOILUR (SC) (427,767).	
1. **Elaya Perumal (Cong.)**	134,815
2. Govindaraju (D.M.K.)	117,115

Candidates and Parties.	Votes polled.	Percentage of votes polled.
10. TIRUPPATTUR (418,543).		
1. **A. Duraisami Gounder (Cong.)*.**	71,564	44·57
2. C. P. Chinnaraj (Ind.)	42,875	26·70
3. S. S. V. Govindasami Chetty (Ind.).	22,867	14·23
4. Krishnasami Iyer (Ind.) ..	8,639	5·35
5. V. Rangasami Gounder (Ind.) ..	8,509	5·30
6. D. Varadarajan (Ind.)	6,175	3·86
11. KRISHNAGIRI (446,928).		
1. **C. R. Narasimhan (Cong.)*** ..	57,683	40·60
2. G. D. Naidu (Ind.)	57,316	39·76
3. R. Muthulingam (Ind.)	15,607	10·82
4. R. Jagannathan (Ind.)	13,588	9·42
12. SALEM (401,741).		
1. **S. V. Ramasami (Cong.)*** ..	85,342	47·18
2. S. K. Babie Kandasami (Ind.).	30,764	17·01
3. A. Ganesasankaran (Ind.) ..	29,529	16·32
4. B. V. Govindaraj (Ind.).. ..	26,878	14·86
5. Manicka Mudaliar (Ind.) ..	8,370	4·63
13. TIRUCHENGODE (409,325).		
1. **Dr. P. Subbarayan (Cong.)*** ..	86,935	57·73
2. Palaniappa Bakthar (PSP) ..	26,240	17·41
3. Ramalingam (Ind.)	23,719	15·75
4. Paramasiva Gounder (Ind.) ..	13,718	9·11
14. NAMAKKAL (836,631).		
1. **E. V. K. Sampath (Ind.)*** ..	182,066	23·80
2. S. R. Arumugam (SC) (Cong.)*	164,221	21·46
3. T. A. M. Subramania Chettiar (Cong.)	155,531	20·32
4. Sundararajan (SC) (Ind.) ..	150,673	19·71
5. Kesavalal Kalidass Sait (Ind.).	70,673	9·24
6. Paramasiva Gounder (Ind.) ..	41,848	5·47

Candidates and Parties.	Votes polled.
13. TIRUPPATTUR (453,447).	
1. **Muthu Gounder, R. (D.M.K.)** ..	151,938
2. Doraisamy Goundan (Cong.)	118,303
3. Sivaprakasam (Ind.)	11,372
4. Abdul Karim (Ind.)	8,457
5. Chinnasamy, V. M. (Ind.)	4,454
14. KRISHNAGIRI (473,080).	
1. **Rajaram, K. (D.M.K.)**	127,508
2. Narasimhan, C. R. (Cong.)	118,907
3. Balakrishnan, T. D. (Ind.).	14,965
15. SALEM (440,434).	
1. **Ramaswamy, S. V. (Cong.)**	147,525
2. Rajagopal, K. (D.M.K.)	135,787
3. Periasamy, R. K. (Ind.)	5,605
4. Periasamy, T. S. (Ind.)	5,493
5. Srinivasan, J. (J.S.)	4,581
16. TIRUCHENGODE (416,657).	
1. **Subbarayan, P. (Cong.)**	109,799
2. Kandappan, S. (D.M.K.)	97,635
3. Govindasami, S. (PSP)	39,937
4. Maruthuvamani, A. R. (Ind.). ..	3,634
17. NAMAKKAL (SC) (408,580).	
1. **Ramasami, V. K. (Cong.)** ..	118,603
2. Vadivelu, M. P. (D.M.K.)	109,652
3. Palanimuthu, S. (T.N.P.)	28,621
4. Seerangan (Ind.)	13,722
18. ERODE (478,370).	
1. **Paramasiva Gounder (Cong.)** ..	156,739
2. Narayanan (D.M.K.)	117,561
3. Balasubramaniam, S. (Soc.)	37,581
4. Muthusamy Gounder, K. (Ind.). ..	16,901
5. Chinnasamy (Ind.)	13,785

Candidates and Parties.	Votes polled.	Percentage of votes polled.
15. GOBICHETTIPALAYAM (416,999)		
1. **Ramasami Gounder (Cong.)*** ..	115,365	60·70
2. Jothinath Singh (Comm.) ..	74,734	39·30
16. NILGIRIS (402,143)		
1. **C. Nanjappan (Cong.)***	122,388	59·16
2. P. S. Bharathi (Ind.)	56,754	27·43
3. P. N. Mariappan (Ind.) ..	27,727	13·41
17. COIMBATORE (462,294)		
1. **Parvathi (W) (Comm.)***	110,454	47·76
2. P. S. Rangasami (Cong.) ..	95,442	41·27
3. Palanisami (SC) (Ind.)	25,349	10·97
18. POLLACHI (442,467)		
1. **P. R. Ramakrishnan (Cong.)*** ..	139,984	53·11
2. Garusami Naicker (P.S.P) ..	123,618	46·89
19. PERIYAKULAM (435,624)		
1. **R. Narayanasamy (Cong.)*** ..	116,715	50·10
2. Muthiah (Ind.)	64,867	27·86
3. M. V. Sethu Rao (Ind.) ..	19,238	8·26
4. M. K. M. Meeran (Ind.)	16,282	6·98
5. S. S. Marisamy (Ind.)	15,838	6·80
20. MADURAI (460,493)		
1. **K. T. K. Thangamani (Comm.)*.**	79,374	35·01
2. T. K. Rama (Cong.)	78,286	34·53
3. Sasivarna Thevar (Ind.) ..	64,765	28·58
4. Venkatarama Iyer (Ind.) ..	4,249	1·88

Candidates and Parties.	Votes polled.
19. GOBICHETTIPALAYAM (435,401)	
1. **Karuthiruman, P. G. (Cong.)** ..	142,993
2. Ramasamy Gounder, K. M. (Ind.). ..	71,558
3. Jothinath Singh (Comm.)	61,327
4. Athanibapu (Ind.)	11,429
20. NILGIRIS (450,481)	
1. **Akkammadevi (Cong.)**	163,420
2. Madhanan, M.E. (Comm.)	75,299
3. Bheeman, A. K. (Swa.)	72,337
21. COIMBATORE (509,869)	
1. **Ramakrishnan, P. R. (Cong.)** ..	151,019
2. Parvathi Krishnan (Comm.)	108,458
3. Sundaram, K. (Swa.)	74,932
4. Somasundaram (D.M.K.)	41,724
5. Arunachalam, V. N. (Soc.)	7,516
6. Arumugham, S. (Ind.)	2,977
22. POLLACHI (448,744)	
1. **Subramaniam, C. (Cong.)**	176,512
2. Ramaswamy, R. M. (Swa.)	76,415
3. Thangavel Gounder (Ind.)	46,922
4. Ramanujam (Ind.)	13,142
23. PERIYAKULAM (444,139)	
1. **Malaisamy Thevar (Cong.)**	146,829
2. Muthiah (Ind.)	143,930
3. Ponnuchamy (Ind.)	12,357
24. MADURAI (487,321)	
1. **Subbaraman, N. M. R. (Cong.)** ..	140,574
2. Thangamani, K. T. K. (Comm.). ..	123,386
3. Marisamy, S. S. (Swa.)	91,459
25. MELUR (SC) (421,613)	
1. **Maruthiah, P. (Cong.)**	155,629
2. Sivaprakasam, V. S. (Swa.)	142,710

Candidates and Parties.	Votes polled.	Percentage of votes polled.
21. DINDIGUL (855,235)		
1. M. Ghulam Mohideen (Cong.)*.	**225,510**	**27·99**
2. S. C. Balakrishna (SC) (Cong.)*.	**170,995**	**21·21**
3. Krishnasamy (Comm.)	132,070	16·40
4. R. Muniyandi (SC) (Comm.) ..	94,038	11·67
5. A. Desiar (SC) (Ind.)	77,680	9·64
6. Pitchaimuthu (SC) (Ind.) ..	63,645	7·91
7. Janakai N. Karuppa Pillai (Ind.).	41,724	5·18
22. KARUR (427,431)		
1. K. Periasami Gounder (Cong.)*.	**105,399**	**50·91**
2. V. R. Seshiyan (Ind.)	73,135	35·21
3. Rajachidambaram (Ind.) ..	14,369	6·94
4 V. Perumal (Ind.)	14,168	6·84
23. TIRUCHIRAPPALLI (417,789)		
1. M. K. M. Abdul Salam (Cong)*.	**91,910**	**42·59**
2. K. Ananda Nambiar (Comm.) ..	50,785	23·54
3. M. S. Mani (Ind.)	42,161	19·54
4. C. M. Srinivasan (Ind.)	13,804	6·41
5. N. Rukmani (W) (Ind.) ..	10,765	4·99
6. Rengasami (Ind.)	6,327	2·93
24. PERAMBALUR (442,543)		
1. M. Palaniandi (Cong.)*	**112,497**	**48·74**
2. V. Boovaraghaswamy Padayachi (Ind.).	47,133	20·42
3. Mannarmannan (Ind.)	43,983	19·05
4. Rajachidambaram (Ind.) ..	27,165	11·79
25. PUDUKKOTTAI (419,435)		
1. R. Ramanathan Chettiar (Cong.)*.	**111,694**	**50·13**
2. K. M. Vallatharasu (P.S.P.) ..	46,242	20·75
3. V. Nagu Servai (Comm.) ..	45,383	20·37
4. S. Soundararajan (Ind.) ..	19,432	8·75

Candidates and Parties.	Votes polled.
26. DINDIGUL (461,145)	
1. Soundaram Ramachandran, T. S. (Cong.)	**138,574**
2. Abdul Khader, M. S. (D.M.K.). ..	84,921
3. Krishnaswamy, N. (Comm.)	80,406
4. Sakuntala (Swa.)	16,673
27. KARUR (461,862)	
1. Ramanathan Chettiar (Cong.) ..	**139,385**
2. Ponnambala Goundar (Swa.)	100,229
3. Karuppiah (Comm.)	47,232
28. TIRUCHIRAPPALLI (438,690)	
1. Anantha Nambiar (Comm.)	**155,706**
2. Abdul Salam (Cong.)	147,332
3. Subramanian (Ind.)	23,796
29. PERAMBALUR (473,412)	
1. Sezhiyan (E. R.) (D.M.K.)	**188,926**
2. Palaniyandi (Gong.)	133,536
3. Danaraju (Ind.)	15,539
30. PUDUKKOTTAI (446,368)	
1. Umanath (Comm.)	**134,162**
2. Alagusundaram Chettiar (Cong.). ..	103,944
3. Nagappa Chettiar (Swa.)	60,073

Candidates and Parties.	Votes polled.	Percentage of votes polled.
26. KUMBAKONAM (429,889)		
1. C. R. Pattabhiraman (Cong.)* ..	**127,631**	**58·72**
2. S. A. Rahim (P.S.P.)	60,309	27·74
3. R. M. Seshadri (Ind.)	29,346	13·54
27. NAGAPATTINAM (855,083)		
1. K. R. Sambandam (Cong.)* ..	**252,275**	**26·95**
2. M. Ayyakannu (SC) (Cong.)* ..	**216,890**	**23·17**
3. A. K. Subbiah (SC) (Comm.) ..	151,704	16·21
4. P. Ramamoorthy (Comm.) ..	124,205	13·26
5. K. Manoharam (Ind.)	78,983	8·44
6. S. M. R. Arumugam Pillai (Ind.).	57,507	6·14
7. V. Veerasamy (SC) (Ind.) ..	54,597	5·83
28. RAMANATHAPURAM (468,851)		
1. P. Subbiah Ambalam (Cong.)* ..	**89,701**	**37·61**
2. R. K. Ramakrishnan (Ind.) ..	50,668	21·24
3. P. Chellathurai (Ind.)	40,464	16·96
4. R. H. Nathan (Comm.) ..	38,122	15·98
5. D. L. Nagasundaram (Ind.) ..	19,547	8·21

Candidates and Parties.	Votes polled.
31. KUMBAKONAM (451,280)	
1. Pattabiraman, C. R. (Cong).. ..	**155,389**
2. Srinivasan, T. K. (D.M.K.)	144,490
3. Rahim, S. A. (P.S.P.)	18,268
4. Krishnamoorthy, T. S. (Ind.)	7,820
5. Irusappa Bakthar (Ind.)	3,187
32. MAYURAM (SC) (449,027)	
1. Maragatham Chandrasekhar (Cong.)	**149,330**
2. Subiravelu (D.M.K.)	106,059
3. Veerappan (Comm.)	71,098
33. NAGAPATTINAM (448,357)	
1. Gopalasamy Thenkondar (Cong.) ..	**161,421**
2. Kandasamy Thevar (Comm.)	129,004
3. Mytheen Sayabu, A. M. (Ind.). ..	56,412
4. Mohamed Cassim Rowther (Ind.). ..	4,252
34. THANJAVUR (453,163)	
1. Vairava Thevar (Cong.).	**143,185**
2. Vailátharasu (P.S.P.)	115,112
3. Swayamprakasam, S. (Swa.)	70,259
35. RAMANATHAPURAM (517,361)	
1. Arunachalam, N. (Cong.)	**145,396**
2. Salivateeswaran (Swa.)	114,513
3. Mangalasamy (Comm.)	75,079
4. Raman Chetty (Ind.)	10,376
5. Ramakrishnan, R. K. (Ind.)	8,089
36. ARUPPUKKOTTAI (496,604)	
1. Muthuramalinga Thevar, U. (Bloc.)	**175,772**
2. Arumugasami (Cong.)	155,919
3. Lakshmanasubba Rajalu (Ind.), ..	8,148
37. KOILPATTI (SC) (454,673)	
1. Balakrishnan, S. C. (Cong)	**150,175**
2. Velu Kudumban (Swa.)	93,843
3. Palian, K. (Comm.)	69,231

Candidates and Parties.	Votes polled.	Percentage of votes polled.
29. TIRUNELVELI (445,857)		
1. P. T. Thanu Pillai (Cong.)* ..	**105,703**	**50·74**
2. Sankaranarayana Moopanar (Ind.).	54,319	26·05
3. Ramanujam (P.S.P.)	30,603	14·68
4. Sivasankaran Chettiar (Ind.) ..	17,761	8·53
30. TENKASI (441,227)		
1. M. Sankarapandian (Cong.)* ..	**125,821**	**59,97**
2. N. Shanmugam (Comm.) ..	121,021	49·03
31. TIRUCHENDUR (448,411)		
1. T. Ganapathy (Cong.)*	**Elected uncontested.**	
32. NAGERCOIL (380,167)		
1. Thanulingom Nadar (Cong.)* ..	**143,288**	**75·77**
2. Chellaswamy (Ind.)	45,798	24·23
33. SRIVILLIPUTHUR (876,837)		
1. U. Muthuramalinga Thevar (Ind.)*.	**206,999**	**24·17**
2. S. S. Natarajan (Cong.) ..	167,676	19·58
3. R. S. Arumugam (SC) (Cong.)*.	**150,087**	**17·53**
4. A. Velu (SC) (Ind.)	133,996	15·65
5. V. V. Ramasamy (Ind.) ..	80,227	9·37
6. M. Ramadoss (SC) (Comm.) ..	51,155	5·97
7. K. S. Krishnan (SC) (Ind.) ..	37,886	4·43
8. A. Srinivasan (Comm.)	28,293	3·30
34. THANJAVUR (425,088)		
1. R. Venkataraman (Cong.)*† ..	**135,310**	**57·93**
2. K. M. Vallatharasu (P.S.P.) ..	98,222	42·07

†A. Vairavan Servai (Cong.)

Candidates and Parties.	Votes polled.
38. TIRUNELVELI (476,895)	
1. Muthiah (Cong).	**151,822**
2. Mariadoss Rathasamy (Swa.)	129,805
3. Mangala Ponnambalam (P.S.P.). ..	30,674
4. Rajagopalachari, S. (Ind.)	6,072
39. TENKASI (458,062)	
1. Swamy, M. P. (Cong.) .. .	**165,169**
2. Muruganandam, S. A. (Comm.). ..	93,729
3. Hameed (Swa.)	64,036
40. TIRUCHENDUR (460,593)	
Krishnamachariar, T. T. (Cong.) ..	**Elected unopposed.**
41. NAGERCOIL (430,947)	
1. Nesamony (Cong.)	**157,188**
2. Vivekananda (Ind.)	81,317
3. Zachariah (Ind.)	20,403
4. John Russel (Ind.)	19,698

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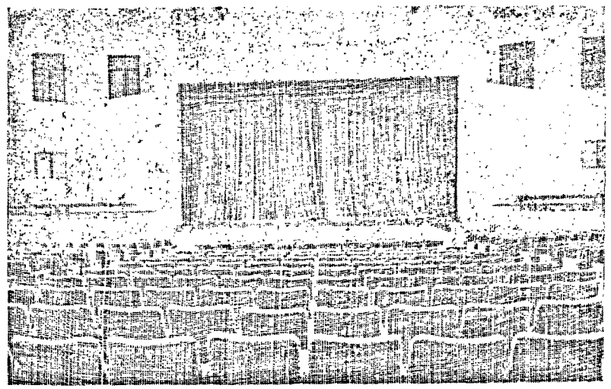
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MADRAS INFORMATION

MAY 1962

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This month's cover

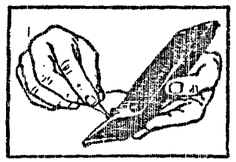
A happy picture of President Prasad and Premier Nehru provides this month's cover theme. India's first President lays down office this month. To mark the occasion, this issue carries a two-page photo story inside highlighting events of distinction during a memorable career.

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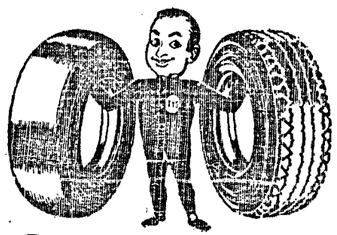


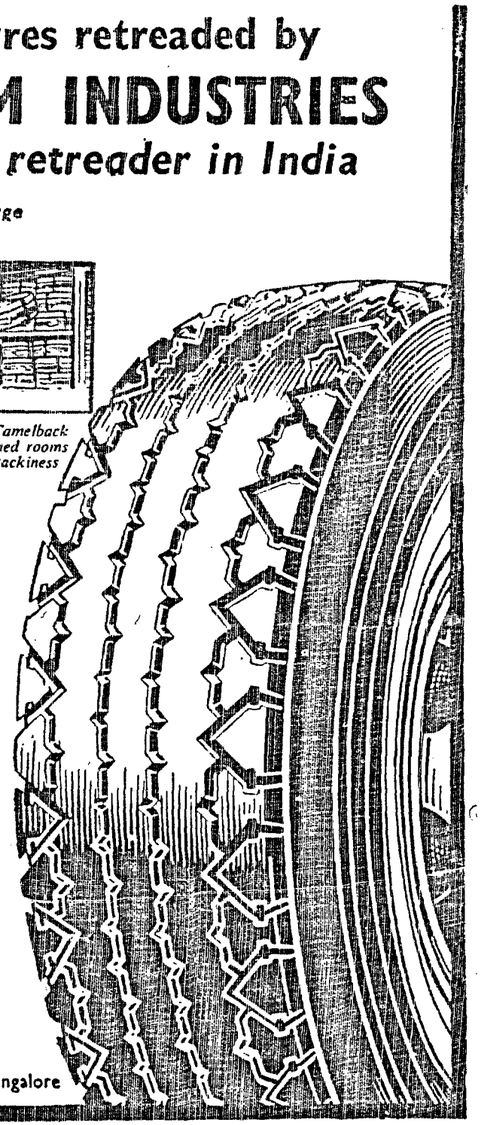
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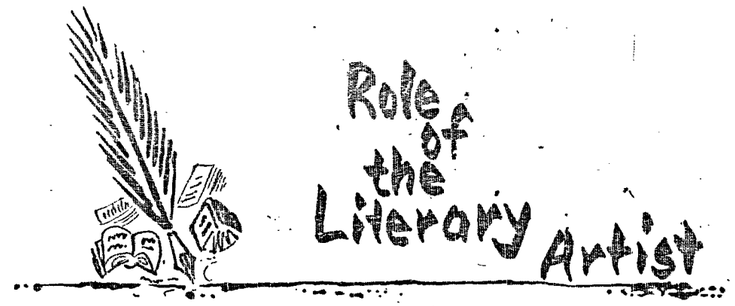
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DR. S. RADHAKRISHNAN, *Vice-President of India.*

Presenting the Sahitya Akademi awards for 1961 to eleven authors in various Indian languages at New Delhi recently, the Vice-President Dr. Radhakrishnan stated that the attempt of the Akademi to bring together the writers in the different languages of the country was one essential way of communication of ideas, moods and sentiments and an effective means of integration. He also dwelt at some length on the function of literature and the role of the writer in society. This feature presents excerpts from the Vice-President's address on the occasion.

Literature as its very name in Sanskrit implies, makes for fellowship, togetherness, reconciliation of peoples. It exalts generally the qualities of mercy and compassion. In the long stretch of over 3,000 years of creative literature in our country, the qualities exhalted are those of mercy and compassion and not hatred and oppression.

As you know the Ramayana starts with a sense of grief by the author when he saw a bird shot drop down. Kalidasa tells us not to put that sharp arrow into the tender flesh of the deer. There is only one real objective of all great literature. It is *karuna* or compassion.

Every generation is charged with the attempt to remake the world. It is charged with the task of healing the divisions, breaking down the antagonisms which divide the world. In our own country to-day there are so many fissiparous tendencies cropping up and one way in which we can break down these divisions and effect consolidation at the level of mind and heart is by means of literature. Every great work of literature is based on some essential experience. Experience may be brief or long. It may be at childhood or adolescence; intense passions of joy and sorrow, these are not peculiar to races or nations. They are common to the whole of humanity.

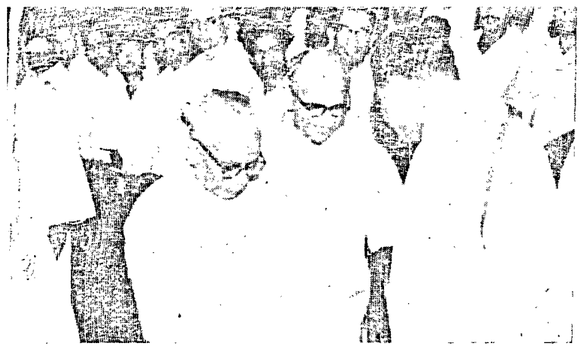
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No frontiers

A great work of literature generally negates frontiers and in these days of wide communication I have no doubt that the great works will be read not only in our country but in other countries just as we read the great works of other countries here. A literary artist is not limited merely to mirroring the social life. It is his duty to break down bad social forms and practices and raise the human quality. Mere mirroring things as they are may

Sri C. Subramaniam, addressing the Secretariat Officers' Association as the out-going Finance Minister at the Farewel Party given by the Association to him at the Secretariat on March 13, 1962.





Sri S. Chellapandian, unanimously elected Speaker of the Madras Assembly is being led to the Chair by Sri M. Bhaktavatsalam, leader of the House and Sri V. R. Nedunchezian, leader of the Opposition.

be a kind of realism, describing Utopias may be a kind of romanticism but we have to effect a balance between what things are and what we aim at.

It is our hope in this country to make the human face a little more noble, the human heart a little more tender and the human life a little more dignified. We are all attempting to raise the quality of human life. The most effective means for achieving this purpose is by outstanding literary contributions. Empires and nations may rise or fall but these works have an enduring value.

A great Function

At a time like this when we are divided among ourselves and the world is divided and is threatened with destruction, what is essential is to establish some kind of solidarity. That is what all literary artists, if they are true to themselves, should aim at. A true piece of literature is not merely a tract for the times but it is a work for all time, if it is a true piece of literature, if the man has intensity of experience and is able to express his ideas in clear and shining words, in penetrating ways, these things will endure for long.

The most effective means of achieving national integration and international solidarity is by means of these literary productions. Literary artists have therefore a great function in our society and in our country. It is, therefore, their duty to reckon with the evils from which we are suffering, educate the human mind, remove those evils and establish a more decent kind of society. It is the only way in which we can improve the quality of life of our people.

Sahitya Akademi Awards

At a function in New Delhi on March 31, the Sahitya Akademi Awards for 1961 were presented to eleven authors in various Indian languages, by Dr. Radhakrishnan. The awards were made for books of outstanding merit in the respective languages, written during last year. The award for Oriya given posthumously to Pandit Godavaris Misra was received by the author's wife while the one for Kannada, awarded to Dr. A. R. Krishna Shastri could not be presented because the author was unable to come due to illness.

The authors who received the awards from The Vice-President were: Shri Birendra Kumar Bhattachraya (Assamese), Dr. Shashibhushan Das Gupta (Bengali), Shri Ramsinghji Rathod (Gujerati), Shri Bhagwati Charan Verma (Hindi), Shri Rahman Rahi (Kashmiri), Dr. D. N. Gokhale (Marathi), Sardar Nanak Singh (Punjabi), Mahamahopadhyaya Giridhar Sharma Chaturvedi (Sanskrit), Dr. M. Varadarajan (Tamil), Shri Balantrapu Rajanikanta Rao (Telugu) and Shri Imitiaz Ali 'Arshi' (Urdu).

A Long Tradition

Educating THE BLIND IN INDIA

SRI B. A. NANDAGOPAL, *Principal, Government School for the Blind, Pocnamallee.*

While the theme for World Health Day last year was 'Prevention of Accidents' and the year before was devoted to a study of the causes and cure of mental illness, the subject chosen for this year is 'blindness', another vital public health problem. 'Preserve Light, Prevent Blindness' is the slogan adopted for World Health Day this year (April 7). In this feature, the author makes the point that given the necessary education and aid, the blind could lead lives as nearly useful as thier sighted brethren.

One of the most significant welfare services in our country at present is that of the blind. The task is stupendous. It is a task of educating, training and employing two million blind persons. Only a handful of the blind had the benefit of education till recently and fewer still had the satisfication of being self-supporting and self-respecting citizens.

We have a long tradition of blind welfare in our country. The first "school" was started in 1890's. Several "schools" have sprung up since throughout the length and breadth of the country. In 1944, there were 32 schools with a total strength of 1,212. Several of these were not able to work to full capacity. In 1944, 1,059 seats were vacant in those schools which proves that they had not made themselves popular with the general public. I feel that this reluctance of the public to accept these schools was mainly due to the disapproval of the work done by them. No self-respecting parent would relegate his blind child to an asylum. Nor would he send a child to an institution where the child is not prepared for a respectable future.

Governmental attention

Since independence, the welfare of the blind has been receiving the attention of the Government of India and State Governments in large measure. Government feel that the blind, just as any other person, have a right to get educated, trained and be allowed opportunities to be self-respecting citizens of the country.

Several educationists were sent overseas to study what was being done there for the blind. In 1955, a seminar was held at Mussorie to find out ways and means

Building and lands at Nagapattinam belonging to the Malayan authorities were recently handed over to the State Fishseries Department at a formal function held at the Chamber of Sri N. S. S. Manradiar, Minister for Co-operation and Fisheries, who presided on the occasion.





Smt. Medhi' wife of the Governor of Madras, at the Baby Show held in the City recently by the Indian Council for Child Welfare. She presided and distributed prizes.

of improving the education of the blind. Practically all the institutions of the blind in our country were represented. The conclusions of the seminar were far-reaching. They made all concerned think afresh about the problem. They were inspired with new ideals. Several facts regarding the possibilities of educating the blind with almost the same aims and objectives as those for the sighted children were brought home to the participants. In short, the old asylums were recommended to be reconstituted into regular "schools" in the proper sense of the terms Government have since given several generous incentives to the voluntary agencies to improve the existing school, and to open new ones.

Nearly as Normal

It is safe to assume that a blind child is as normal ar any other child except for vision. The other senses are likely to be as keen as those of any normal child. The blind children are as intelligent as the normal children. They also have the same propensities and aspiration. as their sighted companions. But, unfortunately, the blind are forced to withdraw themselves from society and to feel that their role in life is just to vegetate or to eke out their living by appealing to mercy or compassions of others.

Training Needs

The residual faculties and senses should enable most of the blind children to acquire enough knowledge and techniques to enable them to earn a livelihood. They can lead dignified lives when grown up. All that a blind child needs is proper explanation of the world in terms which do not involve sight. It is for this purpose, that the imagination and sympathy of an educator or an employer is to be evoked. Once the concepts are reduced to those of hearing or touch or smell, etc., the blind child is on par with the sighted, if not better.

A blind person needs training to identify things by their shape, texture, weight, smell, etc.. whereas a sighted person is trained to identify objects mostly by sight. The modern schools for the blind are based on this principle Once the teacher gets an insight into the problem, the whole process is both interesting and easy of achievement.

Bharati Braille

Reading and writing is done by the blind through a special technique. An arbitrary code of raised dots was devised by a Frenchman called Louis Braille to enable the blind to read and write. This system of raised dots is known as "Braille". The blind persons gently run their fingers along the raised dots, sense the patterns of dots and read on. With the aid of a special apparatus they can easily emboss on any paper such Braille script also. There was a time when there were different systems of "Braille" for the same language. Thanks to the direction of the Government of India, the various codes of Braille were unified into one, known as "Bharati Braille". This code is now used for all the Indian languages. This idea, started by India, has resulted in unifying the codes of all the languages of the world. Now Braille script is more or less common to all the languages in the world including those of the Chinese group.

Taylor Frame

Similarly, arithmetics is taught by a special apparatus known as Taylor Frame comprising a metal frame with holes in the form of an eight-cornered star. This hole admits a peg in eight different positions. The peg has a bar on one end and two points at the other end. Thus, sixteen symbols could be made with these pegs. The numbers 1 to 9 and 0 are represented by ten such positions. Then the remaining six positions are used for the arithmetic symbols like the plus, minus, multiplication, decimal and equals. There are several other methods of teaching arithmetic by such a tangible process. With the aid of these frames practically all numerical work can be done by the blind.

Developing personality

Education does not mean just the ability to read and write. The development of personality is as vital, if not more. The blind child is full of energy and has its own propensities. These have to be channelized into proper direction. It is a mistake to think that blind students could be happy with sedentary life. As in sighted schools, it is of paramount importance to find opportunities for blind students to take interest in extra curricular activities.

After a blind child is initiated into the habit of understanding the world with his residuary senses, it would be a good principle to allow him to have independence of locomotion and provide for him opportunities to mix with society. If properly guided, they would like participation in all the activities that sighted children love. They would like to climb trees, participate in sports, swim, go for excursions and explore the world. In good schools for the blind, scouting and girl guide movements are quite popular.

Sense of achievement

They are quite capable of earning first aid and do social service. Such activities not only give them a sense of achievement but also demonstrate to the world their capabilities. Nothing will dispel false ideas about the blind as a first-hand observation of their talent to move about the town unaided, carry on a chat with all the social graces and perform their duties with a sense of pride. I feel that all good schools should necessarily provide opportunities for the formation of such healthy habits and manners.

All schools for the blind give free instruction. Most of them give free boarding and lodging too. But these facilities are not known to many in the country. So the parents of many blind children live in utter ignorance and allow the precious tender years of the child to be spent in futility. Education must be started as soon as the child is ready for it. Afterwards, the child would develop wrong attitudes to education. It is particularly true in the case of blind children. The task of teachers of the blind would therefore become more difficult with problems of dispelling several phobias, rigidity in movements, desparir and perhaps abnegation.

The biggest Hurdle

The biggest hurdle organisers of schools for the blind experience is the dearth of qualified teachers. No systematic attempt has been made in many of the States in this direction. The Government of India is exploring ways and means of organising good teachers training courses. It is to be hoped that before long this need would be met. Meanwhile, in certain States like Madras, teachers are given specialised training in teaching the blind on an *ad hoc* basis. The actual number of educatable blind really needs an army of teachers.

The number of schools for the blind in our country has been rapidly increasing recently. By a conservative estimate, there might be about 80 schools at present. Even this number is but a fraction of the need. It is equally gratifying to find larger number of the blind getting through Government and University examinations. It has become an accepted fact that a blind boy can go through the University course and even conduct research in subjects not involving laboratory work. This development is due to the active interest that Government evinces in this problem and the generous financial help that it offers to blind students and voluntary institutions for the blind.

Rightful place

If the education of the blind should become universal. I feel that society would be purged of its false notion about the blind, educated about the tremendous potentialities of the blind and persuaded to give all possible help to the blind to rebuild their lives. It is then that the grand welfare schemes that are being drawn and financed by Government can bear fruit. It is then alone that the blind may have their rightful place in society and live as respectable and self-supporting citizens.

Nutrition Bodies for States

The establishment of a nutrition division and the formation of a Food and Nutrition Board or a Nutrition Advisory Committee in each state has been recommended by the National Nutrition Advisory Committee. After discussing the School Health Committee's recommendations, the Committee expressed the view that the school meal programme suggested by the School Health Committee was the minimum and urged Government to implement it. The Committee has urged the need for increased production of vegetables. The Committee has endorsed the working Group's recommendations that milk supply schemes should be started in every city or town with a population of more than one lakh and has recommended that State Governments might be again addressed in regard to the prohibition of the use of milk in the preparation of sweet-meats only.

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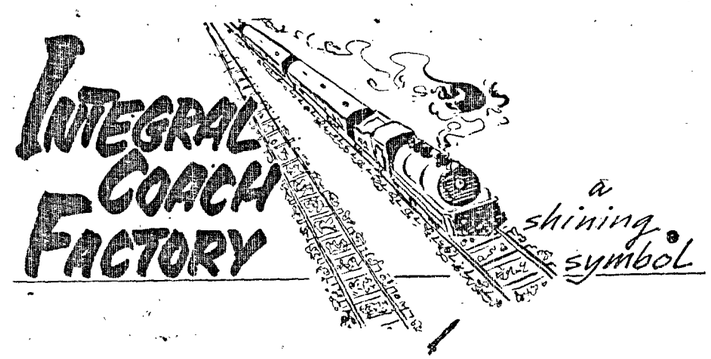
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THE NILGIRIS



Integral Coach Factory a shining symbol

SRI I. HYDARI, *Chief Administrative Officer, I.C.F., Madras.*

Set up to achieve self-sufficiency in passenger coaches for the Indian Railways, the Integral Coach Factory, Madras, has maintained production rates far ahead of targets. Increasing productivity and efficient workmanship are accounting for the factory's remarkable achievements and the prospects of developing a valuable export market are bright. In this article, presented in connection with Railway Week observed from April 10 to 16, 1962 to coincide with the 109th anniversary of the running of the first train in India, the author records the achievements of the I.C.F., and makes the point that the Indian workman is second to none in the world.

In a short span of its productive life of seven years, I.C.F. has come to be looked upon as a shining symbol of Industrial Development. Like 'Taj Mahal' in the north representing 'India of Yesterday', the Integral Coach Factory in the south represents 'India of To-day.' The factory builds all-welded steel coaches of modern integral type. They distinguish themselves particularly by virtue of their considerably lighter weight with enhanced safety when compared with the "timber construction coaches". Since its inception, the factory has built 2,280 coaches. The I.C.F. coach is about 7 tons lighter than the conventional coach of 42 tons, which means more coaches and, thus more passengers per train, and, naturally, reduced operating costs. The interior of the coach has been sprayed with an insulating material to minimise discomforts on account of radiation of heat in summer.

The new First-Class coach is of corridor type, with 7 compartments of which 5 have four berths each and 2 are coupes. The seats have been fitted with foam rubber cushions and provide wide and comfortable space, both for sitting and sleeping. Each berth has a reading lamp and a fan, with independent switches. About 30 c.ft. of space has been provided below the seats for luggage. Besides, two fixed tables, one folding table and one light luggage rack are provided to hold small packages. Moving space between the berths is nearly 26 sq.ft. (3'6"×7'7"). Four bath-rooms, two at each end, are well ventilated and fitted with shower baths.

Justice Ganapathia Pillai releasing the book 'Soolamani' published by the Saiva Siddhanta Book Publishing Society at a formal function presided over by Finance Minister Bhakthavatsalam.



This factory was originally set-up as a shell unit at a project cost of Rs. 7·35 crores in the First Five-Year Plan. The permanent furnishing annexe is an expansion project at a cost of Rs. 3·69 crores, provided in the II and III Plans. The complete factory (shell and furnishing units) together with its technical training school, the township and other portions, is spread over an area of about 500 acres.

The shell factory was designed, built and equipped within a short period of 3 years, starting from September 1952. The layout of this factory, which is equipped on the most modern lines and is one of the biggest coach building units in the world, follows the sequence of operations and is based on careful method studies to obtain an uninterrupted flow of manufacture. With the increased and diversified programme of production, I.C.F. now is gearing itself further to build all types of railway coaches for all guages.

Targets exceeded

The factory inaugurated by the Prime Minister in 1955, has repeatedly beaten its targets successfully reaching its full production rate of 350 coach shells per year (in single shift working) nearly two years ahead of schedule. It is now producing about 600 coach shells per year, with almost all components either made in the factory itself or procured from small scale and other indigenous industries which have developed on account of I.C.F. A partial second shift introduced in this factory from April 1959, has been gradually extended to its present strength of about 25 per cent of the day shift.

In the permanent furnishing section, the present outturn rate of about 250 coaches per year will be raised gradually so that shells produced in the factory will be furnished in the furnishing annexe. The exceedingly satisfactory progress in the outturn and the hard work and enthusiasm shown by its workmen, have encouraged I.C.F. to undertake an ambitious plan to produce 3,526 coaches during the Third Plan, more than twice the production in the Second Plan. On account of the increased production from this factory, a proposal to set up a separate M.G. Coach Factory has been held in abeyance, and the requirements of metre gauge coaching stock have also been included in I.C.F.'s Third Plan programme. This programme further includes A.C. Electric Multiple Unit stock required for the Calcutta Electric services on suburban sections.

I.C.F. is thus, scheduled to build, during the III Plan period, 1,912 Broad Gauge coaches including 235 TLRs, 462 first classes, 592 composite first and third classes, 462 EMU trailer coaches and 161 EMU motor coaches. Production for metre gauge lines will total to 1,614 coaches consisting of 853 third classes, 345 first classes, 73 motor vans and 343 motor and parcel vans.

Governor Bishnuram Medhi and Smt. Medhi, with the Tibetan Amdo Dance Troupe, which gave performences in the City recently at the S.I.E.T. auditorium in aid of Tibetan refugees.



First-rate Workmen

The factory at present provides employment to about 8,600 persons including 4,350 workshop staff in the shell unit and 1,750 in the furnishing annexe. A number of Indian technical personnel were sent to our collaborators in Switzerland for specialised training and 40 Swiss experts also helped us here during the first three years to supply the "Know-How."

It has been the experience of I.C.F. that the Indian worker is second to none in the world given equal opportunities and facilities. The I.C.F. workmen have picked up the technical know-how in the planning and manufacture of all-welded light-weight coaches. All foreign experts have already left. With the increase in production the efficiency of the average I.C.F. worker has been improving from year to year. Initially it took about 19,600 man-hours to produce a 'T' coach shell. It has steadily improved, batch by batch, and come down to about 8,600 man-hours per shell, in the latest batch of the same type of shell. The man-hours taken by our collaborators for producing a similar coach shell at their works in Switzerland, were about 8,400.

Incentive System

To stimulate still greater effort in our workmen, an incentive system of payment, based on scientific time studies, has been introduced in this factory since January 1960. As a result, the unit man-hours have further come down to about 7,000 in case of even the new 'F'-type of coach.

The capital outlay on this factory and its township works out to Rs. 9.4 crores. Considerable economies have been achieved in its set-up and working. For example the cost of I.C.F. built 'T' shell has come down from Rs. 1,86,000 to about Rs. 80,000 only, including overheads and depreciation. The ex-works cost of a similar shell imported from Switzerland was about Rs. 1,07,000; its landed cost in India working out to Rs. 1,87,000.

On the furnishing side, the cost of furnishing a 'T' coach is about Rs. 60,000 and when imported this figure was Rs. 1,23,000. We are, therefore, saving about Rs. 1,70,000 on each coach. During the last 6½ years of its existence, the factory's similar savings total more than three times the capital invested in it.

Self-sufficiency

Initially, materials worth about Rs. 37,000 per coach had to be imported. This figure, at present, is about Rs. 22,000. When the requisite steel is made available from the Indian Steel Plants, the cost of imported materials will come down to only about Rs. 5,000 per coach.

A couple of years ago, India was importing Railway coaches form abroad. Within such a short span, the performance of this factory has been such as to make India self-sufficient, in the matter of passenger coaches required for rehabilitation as well as modernisation of the Indian Railways. The quality of I.C.F. build coaches has also been recognised to be of a high standard and our production costs are found to be very competitive compared to even the highly industrialised countires.



A scene from the programme of dances by the Tibetan Amdo Dance Troup.

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DA 61/181

Publicity Week Feature

The Weights and Measures Organizations

SRI S. MONI, *Controller of Weights and Measures, Madras.*

Metric Weights were made compulsory to the exclusion of other weights from April 1, 1962, and from October 1, 1962, metric length measures will become compulsory. In connection with the Publicity Week relating to the Metric System observed recently, special article is presented on the Weights and Measures Organization in the State.

Metric reform is being carried out to facilitate quicker and easier transactions. Still, its enforcement on millions accustomed to other systems presents a number of complicated problems, even though the metric is admittedly reasonable and simple. Shopping values acquired over decades are difficult to readjust. The work of the weights and Measures Organisation therefore calls for patience, sympathy and understanding on the enforcement side.

Responsibilities

Apart from the human aspect of its work, the responsibilities of the organisation are manifold. The public must be made conscious of the change; trading communities have to be persuaded to replace the old weighing and measuring instruments which, in some cases, may involve even costly equipments; a sufficient number of manufacturers, repairers and dealers has to be licensed for supplies of new weights and measures; facilities have to be given for recalibration of some weighing instruments which cannot be replaced.

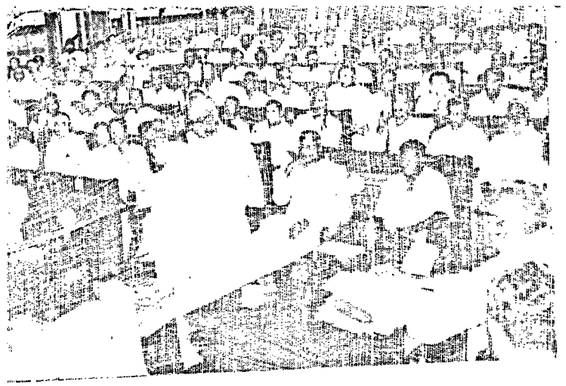
Each and every weight, measure or weighing instrument intended for use in trade after the notified dates should be stamped by the Weights and Measures Department Inspectors for ensuring accuracy. They have to be *reverified and re-stamped* once in two years in some cases, and once a year in some cases, to remedy defects due to wear and tear in the course of business. If trade does not fall in line with the provisions of the Act and Rules even after persuation, the Department takes steps to remove physically old weights and in bad cases, prosecutions have to be launched. This is done only after preparing the trade fully for the change-over and giving merchants sufficient time to adopt new weights and measures and fully acquainting them with the fact that after the given date in a notified area, it will be *illegal* to use in trade, old weights and measures.

Primary units

The primary metric units for articles in common daily use are kilogram (for weight), litre (for capacity) and metre (for length). One may like to know how the accuracy of commercial weights and measures is ensured by the Weights and Measures Organisation. *The most important function* of the Inspector is that of ensuring accurcy in commercial weights and measures. There is actually a chain of standards inter-connected for accuracy, the last of which is the working standard used by the Inspector of Weights and Measures for checking commercial weights and measures. This is represented by (1) International Standards (Maintained by the International Bureau of Weights and Measures, France); (2) National Standards (Proto types of the International Standards obtained by the Government of India from the International Bureau and kept in the National Physical Laboratory, New Delhi. Verified with reference to the International Standards once *in ten years*); (3) Referencet Sandards (One set to be maintained by the Controller of Weights and Measures of each State, verified with reference to National Standards *once in five years* (4) Secondary Standards (Used to set

Revenue Minister Ramaiah, inaugurated the Metric Publicity Week at Rajaji Hall, held in connection with the compulsory enforcement from April 1962, of the metric system of weights all over the State.





Chief Minister Kamaraj, taking the oath at the oath taking ceremony of new members of the Assembly, held in the Assembly Hall, recently.

and correct the working standards entrusted to the Inspectors of Weights and Measures. Verified against reference standards once in *five years*); (5) Working Standards (Supplied to every Inspector of Weights and Measures to verify and check commercial weights. (Checked with secondary standards every year).

Two factors

The standards are kept and maintained with the greatest care because the success of the whole system depends upon two factors—that the standards from which the working standards are copied are preserved to ensure the highest possible degree of accuracy, that commercial weights which may get maladjusted or may undergo wear and tear are reverified periodically.

Authorised weights

It may also interest the reader to know what 'authorised commercial metric weights and measures' are, and how they are used in trade.

Weights—(*a*) *Cast iron weights.*—These are generally used by merchants dealing in commodities like grocery, confectionery, vegetables, fruits, firewood, charcoal, cotton, cotton waste, tea, coffee, dry fruits, spices, oil seeds, oils, oilcakes, etc. The denominations of cast iron weights are only from 50 kilograms to 100 grams and for weights and lower denominations merchants can use brass commercial weights. Cast iron metric weights are hexogonal in shape, tapering at the bottom and have a lead hole in the bottom where the Inspector stamps them showing his number and the period in which they are stamped. Their denominations are marked both in Tamil and Devanagari. The trader is expected to maintain them without defacement of the stamp.

(*b*) Brass commercial weights are round in shape and are in denominations of 1 kilogram to 1 gram. There are no lead holes for weights in the denominations of 10 grams and below. The Inspector affixes his seal at the bottom of the weight with the year and his seal number. These weights are used by traders for the same purpose served by commercial cast iron weights, where weights required are only below 100 grams.

(*c*) *Bullion Weights, Bullion Sheet Metal, Carat Weights and Carat Sheet Metal Weights:* These weights are used by traders in bullion, precious metals, precious stones, jewellery, saffron and such costly articles.

Denomination

The details of denominations for these weights and materials used are: (1) *Bullion weights*: (*a*) *Denominations*—From 20 kgs. to 1 gram; (*b*) *Materials used*—These weights should be made of cast brass or cast bronze, or processed from brass rods; (2) *Bullion sheet Metal Weights*: (*a*) *Denominations*—from 500 mgs. to 1 mg.; (*b*) *Materials used*—These weights should be made of, stainless steel, aluminium, brass or nickel silver sheets; (3) *Carat Weights*: (*a*) *Denominations*—(i) Knob weights—From 500 c to 5 c; (*b*) *Materials used*—These weights should be made from rolled, drawn or extruded material and not cast; they should be made of brass, nickel silver, nickel chromium or bronze; (4) *Carat Sheet Metal Weights* (*a*) *Denominations*—2 c, 1 c, 50/100c, 20/100 c, 10/100 c, 5/100 c, 2/100c, 1/100c and 5/100 c. (*b*) *Materials used*—Weights from 3c to 20/100 c should be made of brass, aluminium, nickel silver, nickel chromium or bronze (Weights of denominations from 10/100 c. to 0.5/100 c should be made of aluminium sheet).

The tolerance of error allowed for these weights is very low. Milligram weights are certified for accuracy and *not stamped*. Bullion sheet metal weights are round while carat sheet metal weights are square. Both are bent upwards to enable the user to pick it up with a pair of forceps.

Three types

Measures are of three types, conical, pouring and dipping. They can be manufactured in brass or copper coated with lead, stainless steel and aluminium. Conical measures are solely used for mineral oils. The others are used by the milk trade, etc. "Dry measures" so called because they are in use for measuring out dry grains—are made in G.I. or black sheets, brass or aluminium alloy, and are in denominations of 40 litres to 100 milli litre. Denominations of 5 litre and above have handles on either side of the measures. Glass measures are used by chemists and druggists and they are tested with test measures and the seal of the Inspector is etched on the top portion of the glass, just above the top graduation.

Metre sticks are made of mild steel, copper and plated with nickel. Each commercial stick is measured against

the standard, checked and stamped for accuracy. Link Measures, woven tape and steel tape are also tested in the same way.

Beam scales

There are four types of beam scales viz., A. B. C. and D class scales. A class scales are used for very fine weighment and they are manufactured to maintain high standard of sensitivity. They are generally in use in Laboratories and their capacity ranges from 20 kgs. to 2 grams. B class balances are those used by the bullion trade with authorised capacities from 20 grams to 100 kgs. and are intended for use for weighing bullion, precious metal, jewellery, precious stones, saffron and expensive commodities. They are made of mild steel, brass or aluminium alloy. C Class balances are those used by grocers and traders in confectionery, tea, coffee, dry food, spices, oil seeds, etc. They are manufactured in mild steel. They are the largest in number among beam scales in common use and Inspectors stamp them with a seal on the lead just under the centre knife-edge. The capacity for this type of balances ranges from 100 grams to 1,000 kgs. D class balances are used for merchants dealing in scrap iron, fuel, charcoal, cotton waste, etc. Their capacities range from 200 grams to 1,000 kgs. Beam balances have to be suspended on a stand except in the case of those used by hawkers. On these balances the manufacturers name or the trade mark and their capacity has to be indicated in Devanagari and English.

Weighing Machines

Weighing machines are classified as platform weighing machines, steel yards, counter machines, spring balances, weigh bridges and automatic weighing machines. Platform scales are generally used by traders who have got large quantities of commodities to be weighed and their capacity ranges from 50 kgs. to 2,000 kgs. They are used in rice mill trade without exception. Steel yards are mostly used in the cotton trade. They are in capacities from 10 kgs to 300 kgs. Counter weighing machines have two pans, on either side and are used in confectionery and sundry trades. Spring balances are of two kinds (1) Those intended for commercial use and (2) those intended for domestic use. There are a number of non-standard spring balances not good enough for commercial use in the market and traders have to be careful before purchasing these non-standard balances, because they will not be stapmed by the authorities and are therfore not allowed for commercial use. Weigh bridges are used by big factories where large loads have to be weighed and have a capacity from 1,000 kgs. to 2,00,000 kgs.

Further Programme

Metric weights have already been compulsorily introduced in the City and in the Districts of North Arcot, South Arcot, and Chingleput. The further programme of implementation of the Metric System in the State is as follows:

There is compulsory enforcement of metric weights from 1st April 1962 *throughout the State*. After this date the use of old weights and weighing instruments are illegal. From 1st October 1962 length measures will be made compulsory throughout the State. Capacity measures will be compulsorily introduced in the districts of Madras, Chingleput, South Arcot and North Arcot with effect from 1st April 1962 and in the districts of Thanjavur, Tiruchirappalli, Salem and Ramanathapuram these will become compulsory from 1st October 1962. In the remaining districts viz., Madurai, Tirunelveli, Kanyakumari, Coimbatore and the Nilgiris these will become compulsory from 1st April 1963.

Useful hints

The public may find the following hints useful (1) Before making your purchase, please check that the trader is using metric weights, measures and weighing instruments duly stamped; (2) Please look out for a proper display of the certificate of verification of the Department. This applies specially in regard to the bullion trades because you are making very valuable purchases; (3) Except in the case of hawkers please see that beam scales are permanently suspended on a stand and that the pans are supported by metallic chains and the scales are used to weigh articles upto the marked capacity on the beam; (4) and finally ask for prices of commodities only in terms of metric units.

Greatest help

The last is the most important. This will be the greatest measure of public co-operation towards the reform in this State. Once the purchaser starts demanding commodities in terms of convenient denominations of weights and measures in the metric system instead of asking in terms of exact metric equivalents the ball is set rolling. Familiarity with metric units will soon become an established fact.

Picture taken during the First Graduation Ceremony held recently at the Seva Samajam Girls' Training Instituted Adyar, Finance Minister Bhakthavatsalam Presided.





Under the rural housing scheme for Scheduled Castes an attempt is being made by the Harijan Welfare Department to build houses, pucca and cheap, paying adequate regard to the requisites of soundness in construction. This feature gives details of the two projects successfully undertaken by the department at Davalaverampatti and Palayacottai, two villages in Tiruchirappalli district.

Under the housing scheme for the Scheduled Caste, etc., houses are constructed by the Harijan Welfare Department at a cost of Rs. 750 each with a subsidy of Rs. 550 the balance of Rs. 200 being met by the beneficiaries, either by contributing labour in the construction or by cash payment of Rs. 200 given to him as loan. In this scheme twin blocks are constructed at a cost of Rs. 1,500 per block of two houses.

To minimise the burden of loan to the beneficiaries attempt was made to construct houses as economically as possible with due regard to the soundness of the structures in two places in Tiruchirappalli district, viz, Davalaveerampatti Land Farming Colony and Palayakottai village.

Dr. Bockelmann, Lord Mayor of Frankfurt (West Germany) and Mrs. Bockelmann, who visited the City recently were received on arrival at the airport by the Mayor of Madras and other officials.



All conveniences

At Davalaveerampatti where a Land Farming Colony has been organised, a subsidy of Rs. 2,750 was sanctioned to the colonists for the construction of five houses. But actually six houses were constructed with the amount sanctioned for five houses at a cost of Rs. 460 per house, economically and with all conveniences for a family.

These houses have been constructed with a main hall in the middle measuring 16′ 0″×8′ 0″ with a front verandah 2′ 6″ width to the entire length of 16′ 0″, and a kitchen of 8′ 0″ × 6″ 0″ in rear and an open platform. Foundation in Random Rubble Masonry has been taken down to a depth of 1′ 6′ below the ground level and the basement is fixed at 1′ 6″ above the ground level. The width of the Random Rubble Masonry in foundation is 1′ 9″ upto ground level and 1′ 3″ width upto basement level.

The superstructure

The superstructure is constructed with brick masonry walls 9″ thick in mud mortar. Two country wood doors with locking arrangements, one country wood window with iron bars and Mangalore tiled roofing over palmyrah rafters and country wood reapers based on country wood wall plates were provided for these houses. The flooring of the building is finished with brick jelly concrete 4″ thick in cement mortar and plastered with cement. The walls of the houses are cement plastered and whitewashed. The doors and windows are painted and rafters are tarred.

Cost of one block

The materials used for one block of two houses and the expenditure incurred for construction exclusive of unskilled labour value put forth by the beneficiaries are furnished below,—

	Rs.	NP.
Bricks 12,000 Nos.	60	00
Cement 24 bags	160	00
Window 2 Nos.	40	00
Palmyrah rafters	50	00
Reepers (1,000 ft)	90	00
Tiles 1.200	230	00
Iron mails, etc.	20	00
Carpenter	80	00
Mason	150	00
Other charges	40	00
Total cost of one block of two houses	920	00

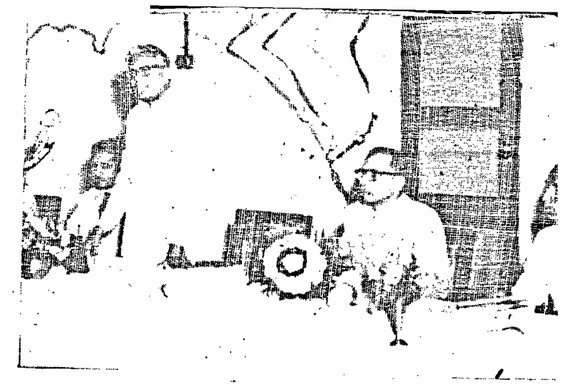
Thus there is a saving of Rs. 180 per block of two houses resulting in a total saving of Rs. 450 in these five houses. This amount was utilised for construction of one more house. Thus with the subsidy of five houses, three twin blocks of houses were constructed in the colony.

Brick kilns at site

The required bricks and lime for the buildings were manufactured by putting up kilns at the site where the houses were constructed, utilising the labour of the beneficiaries. Normally in this area cost of 1,000 bricks is Rs. 25 but on account of the manufacture of bricks in the site itself the cost incurred for 1,000 bricks came to Rs. 5 only being the cost of fuel, etc., as the earth was available at site and moulding was done by the beneficiaries themselves. For foundation and basement rough stones available at site were utilised free of cost. Palmyrah and wood were purchased locally at cheaper rates and local artisans and masons were engaged and paid wages. For unskilled labour, services of the beneficiaries were fully utilised.

In Palayacottai

In Palayakottai village, five houses were constructed side by side in a row as there was plenty of vacant space both in front and in the rear to enable the beneficiaries to have free movement and accommodation for cattle, etc. By this method of construction there is a saving of two walls resulting in saving of Rs. 150 for the entire construction. This amount has been utilised for carting rough stones required for foundation and basement, as they are not available at the site in this village and for making four doors. The materials used for the construction of five houses in a row and the cost thereof are furnished below.



Industries Minister Venkataraman, delivering the valedictory address to the supervisory trainees at the Industrial Co-operative Training Institute, Washermanpet.

	Rs.	NP.
Rough Stones 3000 Nos.	180	00
Bricks 30,000	170	00
Cement 60 bags	400	00
Doors 10 Nos.	300	00
Windows 5 Nos.	100	00
Palmyrah rafters	125	00
Reepers 2,500 feet	225	00
Tiles 3,000 Nos.	575	00
Irion nails, etc.	50	00
Carpenter	200	00
Mason	375	00
Other charges (for foundation work white-washing, etc.)	50	00
Total cost of five houses constructed in a row.	2,750	00

Pucca and cheap

Thus the cost of one house comes to Rs. 550. For the construction of these houses the same specifications as detailed in the case of Davalaveerampatti village were adopted.

Thus pucca cheap houses have been constructed economically in the two villages to enable the beneficiaries to live comfortably with their families without any burden of loan. Such construction was possible as the beneficiaries were very co-operative under the close supervision and guidance of the local officers.

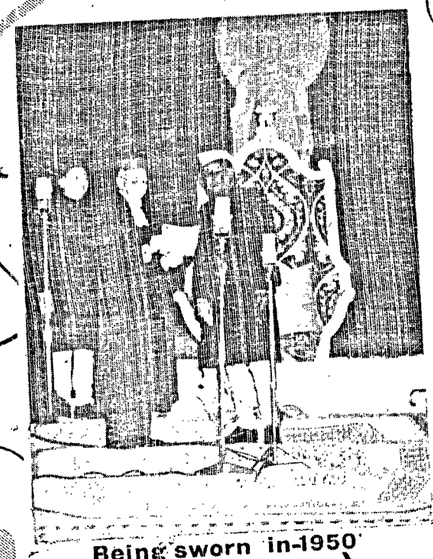
ACROSS *the years*



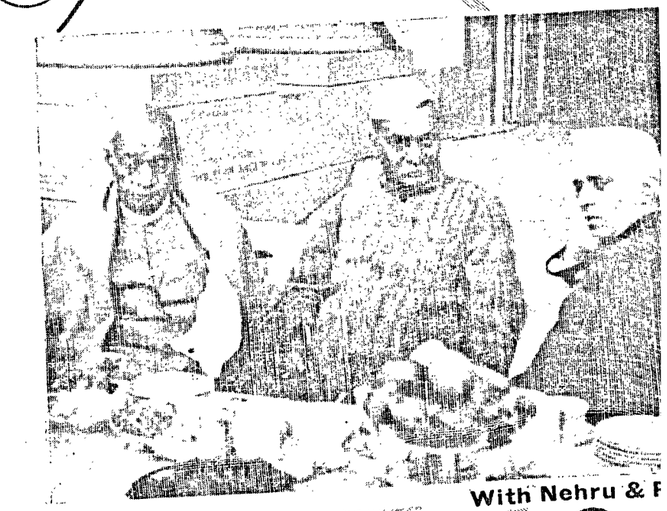
With Gandhiji



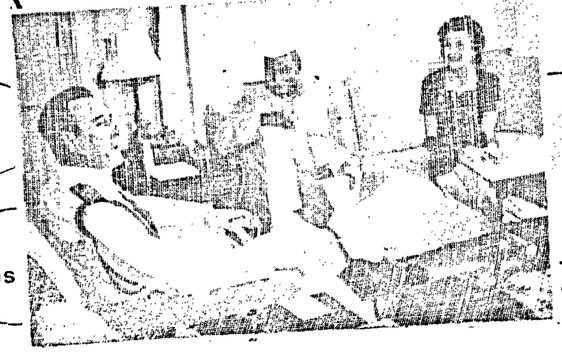
With peasants



Being sworn in-1950



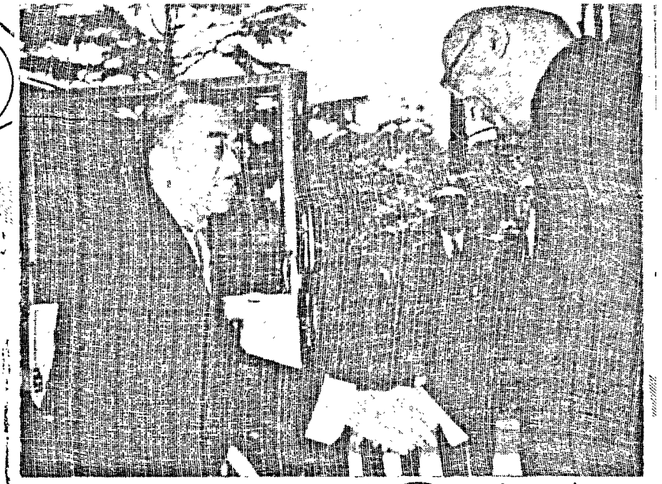
With Nehru & F



With the Mountbattens



With Polish Prime Minister



With Emperor Hirohito in Japan



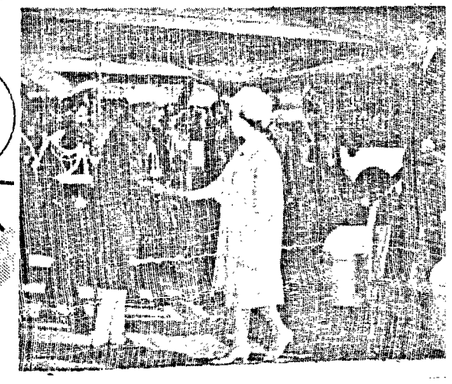
With Kruschev at Kremlin

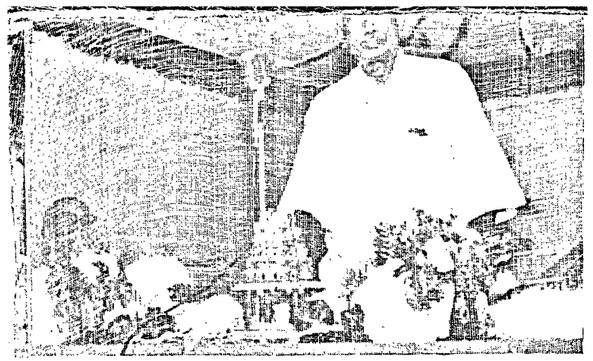


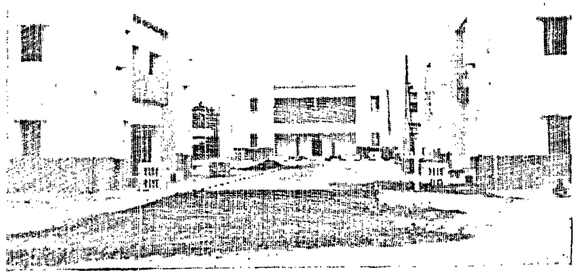
With Eisenhower

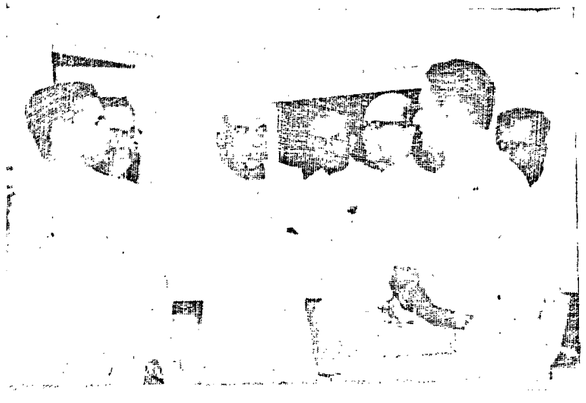


Greeting Queen Elizabeth









KAMARAJ NAGAR

The Government Press, Madras, is a large Government organisation in the State. It was working with a strength of a little over 1,000 workers in 1959. After introduction of the second shift the strength rose beyond 3,000. The necessity for finding residential accommodation to a fairly good percentage of the workers was engaging the attention of the Government, since most of the employees were living in insanitary quarters resulting in a high rate of absenteeism.

At a Conference held in 1950 of the representatives of the employees and the employers in the presence of the Minister for Industries and Labour, a decision was taken that at least 40% of the workers should be provided with residential accommodation by the employers. The Government decided that a housing scheme should be started for the benefit of the Government Press Workers on a 20 acres area near Arunachaleeswarar Koil Street, Tondiarpet, Madras-21 and sanctioned the construction of 200 single-roomed tenements and 100 double-roomed tenements at an estimated cost of about Rs. 21.50 lakhs. The Chief Minister was kind enough to lay the foundation stone for the housing colony on 14-1-1959. The then Minister for Electricity Sri V. Ramiah presided over the function.

The Colony named as 'Kamaraj Nagar' has now been completed with all amenities like electricity, water-supply, drainage, road, etc., all within a period of about 3 years from the date of laying the foundation stone. It was formally inaugurated in April, 1962, by Sri K. Kamaraj, Chief Minister, Sri G. Bhoovaraghan, Minister for Information and Government Press, presided on the occasion.

Pictures on the left:—The Chief Minister inaugurating Kamaraj Nagar—Government Press Workers' Housing Colony at Tondiarpet; a view of the colony; The Chief Minister, Minister Bhoovaraghan and other officials inside one of the Colony houses.

A Great Boon



In connection with Warehousing Week celebrated all over the country from April 16, 1962, for greater liaison with the people, this article by Sri D. C. Das, Managing Director, Central Warehousing Corporation, is presented. Demonstrations of the latest methods of scientific storage of agricultural commodities were arranged at the Warehouses throughout the country during the week.

On May 27 last year, Shri Hari Singh, a retired Head Master who has now taken to agriculture came to the market at Moga (Punjab) with 42 bags of wheat. Arrivals in the market that day were heavy and the best price offered to him was only Rs. 89 per quintal. This was far below his expectations. He was in a dilemma. He knew prices were bound to improve. But taking the wheat back to the village would have meant more expenditure over cartage. Then there was the question of storage. Damage due to moisture, insects and pests might even offset the advantage that he would have gained from better prices.

Thousands of cultivators like Shri Hari Singh are in the same dilemma. Prices are low immediately after harvest. But the cultivator needs cash urgently to meet his obligations. He is thus compelled to sell his produce in a market which is weighted against him. Fortunately for Shri Hari Singh, a Central warehouse was functioning at Moga. He, therefore, kept his produce there. On October 16, he came to the market and was able to obtain a good price. He observed "every body in the market liked my wheat. It appeared that it had come straight from the threshing ground. I was able to make a profit of Rs. 300 on the wheat after I had paid the warehouse charges".

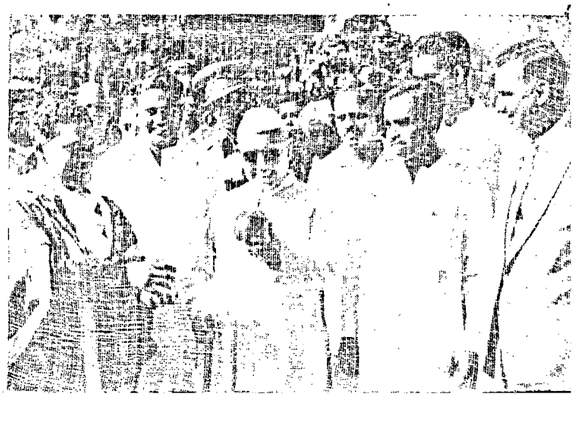
One of Thousands

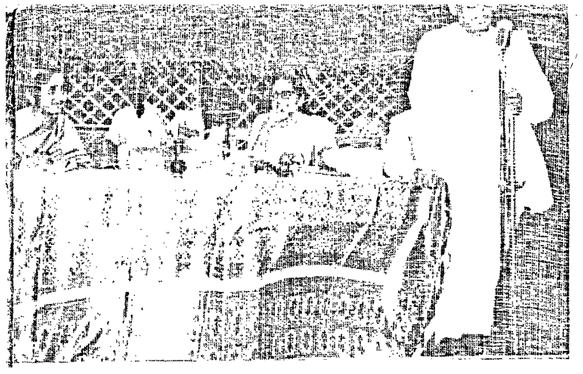
Shri Hari Singh is one of the thousands of cultivators in this country who are being benefited every year by the warehouses opened by the Central Warehousing Corporation and the 14 State Warehousing Corporations. The Warehousing scheme was launched nearly four years ago to help the people in realising a fair value for agricultural commodities. Commodities are preserved in these warehouses in a scientific manner safe from the ravages of their traditional enemies-moisture rats and insects. On the strength of the warehouse receipt the depositor can get an advance up to 75 per cent of the value of his goods. Ware-houses thus satisfy both the needs—scientific storage and easy credit.

Diverse Problem

Though the Warehousing scheme has been functioning for nearly four years, few people are aware of the diverse problems which have to be solved. The first amongst them is the question of scientific storage. Every commodity has its storage problems and if the scheme is to play its role, the producer has to be assured of satisfactory storage for all that he grows. Warehouses have thus to provide proper scientific storage for the spices of Kerala, 'gur' of west U.P., turmeric and groundnut of South Maharashtra, jute of Bengal, cotton of Vidarbha and food-grains and pulses almost everywhere. This involves

Governor Bishnuram Madhi, who inaugurated the 39th Annual Flower Show, held recently by the City Corporation at My Ladye's Garden is seen appreciatively examining a fine specimen of brinjal.





Finance Minister Bhakthavatsalam addressing at a recent function, held in connection with the first anniversary of the Literary Association of the Satyamurti High School, Bala Mandir.

breaking new ground and also practical demonstration of the fact that the new methods are much better than those which are being practised through the ages. Also, we have to remember that anything up to 60 commodities belonging to hundreds of peopole might be kept in a large warehouse. Not only is it necessary that the storage is satisfactory but also that the goods of every party are easily identified.

Working Experience

The Warehousing Corporations wanted to start their activities early. Buildings take a long time in construction and the producer could not be made to wait for the buildings to be constructed. Warehouses were thus started in hired accommodation to begin with. This gave the necessary working experience about the potential of every centre. The Central Corporation which now has nearly 60 warehouses has decided to construct its own buildings at nearly 50 centres. At seven of these, buildings are now ready and at three other places construction is at present going on.

The Corporation also intends to open two cold storages one at Calcutta and the other at Delhi. Preliminary surveys for cold storages at some other places have also been completed. At the end of the Second Plan the Central Corporation had 40 warehouses and 60 more were to be opened during the Third Plan period. Nearly 20 out of these have been opened in the first year of the Plan itself.

Important Aspect

An important aspect of the Warehousing scheme is the credit facility that depositors get from scheduled banks. The quantum of advance has been rising steadily. On June 30, 1961 outstanding advances against warehouse receipts stood at Rs. 7·20 crores as against Rs. 5 crores at the end of 1960–61 and Rs. 2.86 crores at the end of 1959–60.

Besides running its own warehouses at larger centres, the Central Warehousing Corporation is also a 50 per cent share-holder in the 14 State Warehousing Corporations which open warehouses at comparatively smaller places. These Corporations now have more than 350 warehouses as against 42 three years ago. Their number is expected to go up to 600 at the end of the Third Plan period. The State Corporations have already undertaken construction at nearly 40 centres.

Boon to Farmer

From the very inception of the scheme efforts have been made to associate the people with the running of warehouses Advisory Committees with representatives of producers bankers and traders are functioning at almost all warehouses so that the message of warehousing might reach the people. During the last four years warehousing has come to play an important part in our rural economy. It gives much needed assistance to the producer and at the same time saves valuable commodities from deterioration. Warehousing thus helps in making the country self-sufficient in foodgrains, in earning foreign exchange and also helps the producer.

Central Warehouses

The number of Central warehouses in the country increased from 40 to 60 during 1961–62 Originally, only 7 warehouses were to be opened during the year, but this figure was subsequently raised to 20 in order to provide storage and credit facilities to the people in as many centres as possible. This is the largest number of Central warehouses to be opened in any year so far.

A Beneficial Science



METEOROLOGY TO THE AID OF AGRICULTURE

SRI P. K. KRISHNA RAO, *Director-General of Observatories*

The Second World Meteorological Day was observed recently by the Madras Regional Meteorological Centre. The theme specially chosen for this year's celebrations was "Meteorology in relation to Agriculture and Food Production." This article presented in connection with the 'Day' outlines how the Agricultural Meteorology division was set up in 1932 under the India Meteorological Department and the good work it has been doing since then in the promotion of Agricultural meteorology.

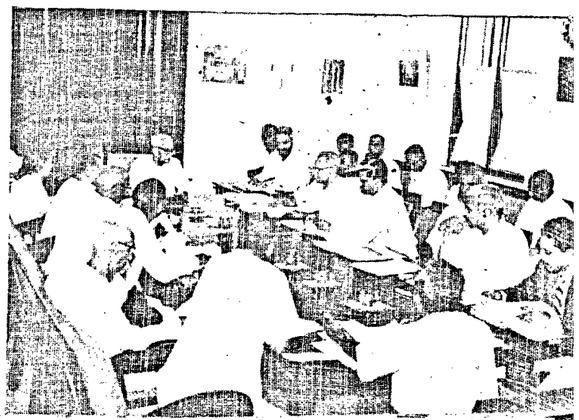
Weather, as a single factor, exercises as great a control on crop yield as all other factors like crop variety, manuring, irrigation, etc., put together. The vagaries of the monsoon, with floods and droughts, are well known, and it has been truly said that the India budget is a gamble on the monsoon rains. In fact, the setting up of the Indian Meteorological Department as a central organisation in 1875 was due to the occurrence of repeated famines on a country-wide scale and the need felt to make a serious study of the meteorology of the country with special reference to the variability in the monsoon rains. Although the India Meteorological Department came into existence about 85 years ago and the importance of meteorology to agriculture had long been recognised it was only in 1932 that a special division for the study of agricultural meteorology was established as a result of a recommendation of the Royal Commission for Agriculture in 1928.

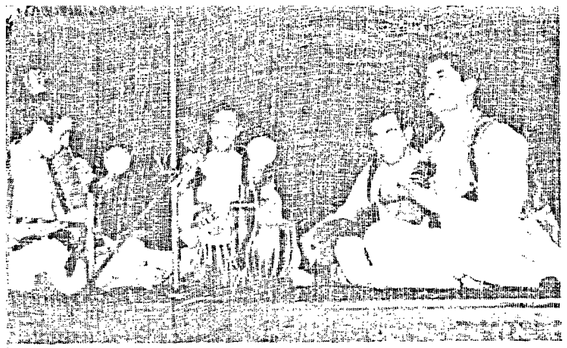
The Agricultural Meteorology Division was set up under the India Meteorological Department in August, 1932, with funds provided by the Indian Council of Agricultural Research. After watching the progress of work for a few years and on the recommendation of the I.C.A.R., the Government of India decided to take over the work from the Council on a temporary basis in 1940 and on a permanent basis in 1943.

Objectives

Agricultural Meteorology is concerned with the study of all meteorological problems which have a direct or indirect bearing on agriculture. The aims and objects of the Division of Agricultural Meteorology of the India Meteorological Department are broadly to conduct experiments and evolve instruments and techniques of investigation which will lead to an understanding of the processes by which climate affects crop growth and yield as well as the pests and diseases by which the crops are adversely

Finance Minister Bhakthavatsalam, presiding over the meeting of the State Khadi and Village Industries Board, held recently in the Cabinet Room of the Secretariat.





An event during the programme of music by a nine-member cultural delegation of artistes from Afghanistan, which gave recitals in the City recently at the Annamalai Manram.

affected; to examine past data of crop outturn and weather factors and to determine the nature of relationship between the two; to arrange to obtain detailed and systematic meteorological and crop observations and records in agricultural farms and inside important crops with a view to collect information suitable for study of crop weather relationships; to promote the study of scientific aspects of Agricultural Meteorology and border land problems in radiation, soil physics, plant physiology, etc.; to act as a liaison unit between meteorology and agriculture by co-operating with State Departments of Agriculture, Agricultural Research Workers, Agricultural Institutions, etc., and advising them on meteorological aspects of agricultural problems; to find out what types of weather forecasts and warnings are most usefu to farmers and keep the meteorological forecasting offices informed of the requirements.

The Agricultural Meteorology Division which celebrated its silver jubilee in 1957 has been actively pursuing these objects and aims during the last 30 years, gradually expanding its activities from a small beginning in 1932.

Weather Service

Certain optimum conditions of rainfall, temperature, wind, cloudiness, etc., are required for the healthy growth and good yield of crops. But the weather conditions actually experienced by a crop deviate considerably from the statistically determined mean conditions during its life - cycle. The deviations occur in the form of floods and droughts or untimely rainfall, unseasonal cloudiness, cold waves, storms, etc. The farmers would therefore like to know when the rains are likely to set in, whether there will be prolonged spells of rain or of droughts, and when thunderstorms, hailstorms, heat waves or cold waves, gales, cyclones, etc., are likely to occur.

Such information, received sufficiently in advance, would enable farmers to plan agricultural operations like preparation of seed bed, sowing, transplantation, harvesting threshing, etc., with proper timing and maximum efficiency and to take precautionary measures to minimise the economic loss caused by the adverse weather phenomena. It is essential that the weather forecasters in a meteorological office should know the actual weather conditions favourable for the different phases of growth of each crop in the different parts of the country and also know what are the weather conditions which are injurious to crop growth about the occurrence of which the farmers should be warned.

Calendars

For this purpose, the Agricultural Meteorology Division has prepared "Crop Weather Calendars" numbering about 300 for the important crops grown in the various districts of the country. These are diagrams which give, in an easily understandable form, detailed weather conditions which are normal for and detrimental to the various phases of growth of the crops based on information received from the various agricultural authorities and the knowledge of the normal weather conditions over the various parts of the country.

These crop weather calendars have been supplied to the various weather forecasting centres in order to serve as a guide for issue of the forecasts and warnings. These calendars which are periodically reviewed and revised are useful not only to the Meteorological Department but also to agricultural departments and others. This method of representing the weather requirement of crops in their different phases has been much appreciated all over the world.

Forecasts

Weather forecasting service is provided by the five regional main forecasting offices at Bombay, Calcutta, Delhi, Madras and Nagpur. These offices issue the Farmers Weather Bulletins in their respective areas. These bulletins contain district-wise forecasts for the next 36 hours with an outlook for the subsequent two days. Whenever any weather detrimental to the crops in the fields is expected, as indicated in the crop weather calendar for that crop, that feature is specially mentioned in the bulletins.

These bulletins indicate specially the dates of first onset of rain at sowing time and the probable rainfall intensities and duration; breaks in the rains and their probable duration; date of re-start of a period of rain; spells of heavy rainfall; untimely rainfall; occurrence of adverse weather phenomena like heavy rain, frost, hail, squalls, etc., and their probable intensity, duration and distribution.

Daily Broadcasts

The Farmers' Weather Bulletins are translated into the local languages and broadcast by the Regional Stations of the All-India Radio in their daily rural programmes so that the farmers in the remote villages listening to village or community radio sets can get the information. This system of daily broadcasts of Farmers' Weather Bulletins was started in 1945 and has expanded with the increasing number of Broadcasting stations. These broadcasts are now made from 29 All-India Radio stations in 20 languages. The Farmers' Weather Bulletins are also supplied to newspapers for publication. Any individual can also subscribe for the daily telegraphic supply of the bulletins pertaining to his area, at a nominal cost.

A restricted scheme for the dissemination of special weather warning messages through selected Community Project Centres has been in operation since 1955. At present, the scheme is limited in extent and caters only to about 400 Community Project Centres which have telegraph offices near them.

For C.D. Centres

According to this scheme, special weather messages are issued by the five main forecasting centres by high priority landline telegrams to the Community Project Centres giving (*a*) warning against weather phenomena of general interest to the farmers, *e.g.*, onset of monsoon, heavy rains, long breaks in monsoon rains, withdrawal of monsoon, etc., and (*b*) special warnings against weather phenomena, which, according to the Crop Weather Calendar, affect the crops usually grown in the districts concerned. These messages when received are translated by the Community Project officials into the local languages and disseminated to agriculturists in their respective blocks.

There are sometimes long delays in the warning messages reaching the community project centres and after they reach the centres there are delays in their being distributed to the villages. Although the organization could be improved by quicker communications, the best way of arranging that weather forecasts and warnings reach the villages is undoubtedly by radio. This requires that the provision of radio receiving sets in villages should be accelerated so that all villages can receive the Farmers Weather Bulletins.

Crop Weather Scheme

In order to assess quantitatively the effect of various weather elements on the different growth features of crops, an all-India Co-ordinated Crop Weather Scheme has been in operation since 1945. The scheme envisages the recording, on an uniform basis, of observations on crops including their pests and diseases and weather conditions at a network of selected experimental farms in India and studying the data so recorded and collected to find out crop weather relationships. These observations are being recorded at present on one or more of five important crops, viz., paddy, wheat, jowar, sugarcane and cotton, at a network of about 55 stations distributed all over the country.

The crop observations are recorded according to the method of random sampling developed in the Agricultural Meteorology Division after considerable experimentation. The data is recorded and tabulated in a uniform manner at all the stations on standard forms specially designed for the purpose. Statistical studies of the data collected so far have led to interesting and valuable, though tentative, inferences with regard to crop weather relationships.

Scientific basis

When crop weather data becomes available for a sufficiently long period, they will be useful to express the yield of crops (at a particular station in a particular year) as a function of the different meteorological factors like rainfall, sunshine, temperature, etc., experienced by the crop during its growth; to decide on a scientific basis the suitability of different parts of the country for growing different crops from the point of view of climate; to enable plant breeders to develop the most suitable varieties for different tracts of the country and to pass the knowledge on to farmers; to improve weather service to farmers as a result of reliable knowledge of crop weather relationships.

Besides the crop weather stations, agricultural meteorological observatories are also functioning at about 50 more experimental farms in connection with the research programmes of the farms themselves. These include a number of soil conservation research centres. Thus there are about 105 agricultural meteorological observatories in the country, maintained by the Agricultural Departments and institutions with technical help and advice from the Agricultural Meteorological Division of the India

A view of the audience at the performance by musicians from Afghanistan.





Finance Minister Bhakthavatsalam, inaugurating the Service Week celebrations of the Tamilnad Secretariat Association observed last month.

Meteorological Department. These observatories are quite distinct from the ordinary meteorological observatories which are about 400 in number.

As regards pests and diseases of crops, in addition to the quantitative observations recorded at the crop weather stations, qualitative observations are also recorded at a larger network of about 150 stations. These observations are important because the incidence and spread of crops, pests and diseases are very much dependent on meteorological conditions and the efficient and safe use of pesticides and insecticides to fight the pests and diseases is also dependent on suitable meteorological conditions.

Useful Science

Phenology is the science which studies the recurrence of phases of animal and vegetable life in relation to the march of seasons. It is probable that phenological observations, i.e., dates of events like leafing, flowering, fruiting, leaf-fall, migration of birds, appearance of insects, etc., may provide indications of the nature of coming season. Phenological observations regarding the date of occurrence of leafing, flowering, fruiting, maturing of fruit, etc., are being recorded at a network of about 300 stations in respect of mango, neem, tamarind and babul. It is expected that when these data are accumulated for a sufficiently long period and analysed, they will give information of use to agriculture.

For example, the fruit trade is likely to be helped by a knowledge of the dates of flowering and maturing of fruits in different parts of the country as it would help in planning the flow of produce to big markets in different parts of the country.

Crop-weather data collected from the network of crop-weather stations are being published in the form of crop weather diagrams. These diagrams show at a glance the different growth features of each crop from sowing to harvest at each crop-weather station together with the meteorological conditions associated with these growth features and their departure from normal.

A proper distribution of the seasonal rainfall and other weather elements with respect to time and space is very essential for good crop yield. Prolonged spells of abnormal weather in the form of heavy rains or drought, very low temperatures or very high temperatures are injurious to growth and yield. The Agricultural Meteorology Division keeps a vigilant watch on the progress of weather by preparing and maintaining up-to-date charts showing the week-by-week progress of important weather elements like rainfall, temperature and humidity in the different meteorological sub-divisions of India, which show at a glance the abnormal features of weather, if any, in each subdivision.

Assessment Charts

A chart is also kept showing the week-by-week progress of crops based on telegraphic information received from the different States. Based on these charts, an objective assessment made purely on meteorological considerations of the crop prospects for each meteorological sub-division and for the country as a whole is made at the beginning of each month and supplied to the Ministry of Food and Agriculture. This has served as an unbiassed assessment of the crop position in India for keeping a critical watch on the progress of crops in different parts of the country in different seasons.

It is necessary to have accurate information regarding the water requirements of crops for the planning of irrigation and for the proper utilisation of irrigation waters. Water requirements of crops vary with soil, climate and crops. For the determination of water requirements of crops, one has to determine accurately the loss of water by evapotranspiration from cropped fields. A considerable amount of work has been done in this connection in the Agrimet Division by making use of direct methods, like the volumetric and gravimetric methods.

Evapotranspiration

A beginning has also been made for evolving a formula by which values of evapotranspiration from a cropped field may be computed from observations of simple meteorological observations like temperature, wind speed and vapour pressure. Further work in this connection is in progress. When a suitable formula is derived, it will be possible to recommend it for adoption for the measurement of evapotranspiration in various parts of the country.

Solar energy is the ultimate source of all energy on the earth and is an important factor for plant growth. The accurate measurement of solar radiation is therefore of great importance to agricultural meteorology. Radiation measurements are now being made at selected stations and it is hoped that in the near future many agricultural meteorological stations will be equipped with simple radiation recording instruments.

Important Centre

The Central Agricultural Meteorological Observatory located in the farms of the Agricultural College, Poona, is the most important centre for experimental investigations in agricultural meteorology. The observatory is equipped with nearly 90 eye-reading and self recording instruments, for the recording of meteorological, micro-climatic, radiation and evaporation observations.

All field experiments which are recommended to various agricultural meteorological observatories are first conducted here and developed. It is here that the experiments for the development of techniques for measuring evapotranspiration are being conducted.

Micro Meteorology

A considerable amount of work has been done and is in progress at this centre on micro-metecrology, i.e., meteorology, of the air layers within the first 50 or 60 feet above the ground; heat and moisture balance at the ground; movement of moisture through soil and on development of new instruments for agricultural meteorological purposes. The observatory also serves as the training centre in agro-meteorological work for the officers of the agricultural and allied departments of the different States of India. Workers from foreign countries have also been trained in agricultural meteorological work by the Division of Agricultural Meteorology at Poona.

There are many other aspects in which meteorology is of importance and service to agriculture and food production. Mention may be made of the dependence of incidence of attacks of pests and diseases of crops on meteorological conditions on which are also dependent the efficient, economic and safe use of chemical pesticides and insecticides. The serious devastation of crops caused by locust swarms is well known. The breeding of locusts and their movement are so very largely dependent on antecedent and current meteorological conditions that the meteorology of locust movement is becoming a separate subject by itself and is one of international importance.

Fisheries

The dependence of crop pests and diseases on meteorology is a subject which deserves greater study than we have been able to do till now. Mention may also be made of the studies required of the dependence of fisheries on weather, wind, currents and temperatures over the sea so that the catch of fish may be made in an economical manner so as to get the maximum catch with the minimum effort made at the right time.

Other important subjects of agricultural interest in which meteorology plays a part is soil conservation, meteorology with reference to agriculture in arid and semi-arid areas, use of shelter belts, dry-farming, evaporation control, frost prevention, study of loss of crops due to hailstorm damage and importance of dew in agriculture. The Agricultural Meteorology Division will pay increased attention to all these problems in the years to come.

Collaboration

International collaboration and co-operation in agricultural meteorology is effected through the World Meteorological Organisation which has a Technical Commission in Agricultural Meteorology. The India Meteorological Department is represented on this Technical Commission and some of its technical working groups and is playing its full part.

The Chief developments in agricultural meteorology included in the third Five-Year Plan of the India Meteorological Department are the machine processing and study of the accumulated crop weather data of a large number of crop-weather stations, preparation of an Agro-climatological Atlas of India and carrying out experiments on measurement of evapotranspiration.

It is obvious that what the farmer needs most is a reliable forecast, at least a week or so ahead, of such conditions as are of importance for agricultural operations and of conditions which are injurious to crops which he should guard against.

The Dire Need

At present, the meteorological service issues forecasts only about 36 hours ahead with a broad outlook for a further 36 or 48 hours ahead. This short range forecast, though useful, does not meet the full requirement of the farmers. Medium range forecasts for three days to a week or so ahead is the dire need. This is the position all over the world and many meteorological services are making efforts to investigate and devise methods of medium range forecasting.

India Meteorological Department is also working on this problem and although the problem is very difficult and requires long and concentrated research, let us hope that our efforts may bear fruit so that we may be of better service to

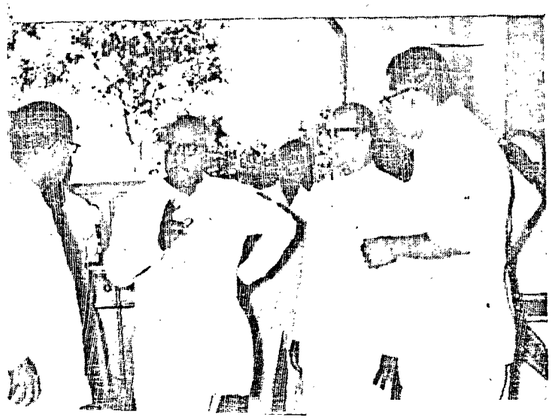


Every day that passes in this Age of Science registers some important advance or other as a result of which new and improved devices emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This features takes note of such developments both in India and elsewhere.

In designing a package which is both functional and economical a number of factors have to be taken into consideration such as packaging characteristics of the product, the material used for packaging and cushioning, size and shape of package and orientation of the contents. Investigations undertaken at the Central Food Technological Research Institute, Mysore, have led to certain useful findings.

The materials used in the construction of packages should have adequate strength and should not deteriorate during handling, transport and storage. The common materials used in the fabrication of packages are wood bamboo, corrugated and fibre boards and textile fabrics. Cans, glass bottles, paper, paper boards, films, foils, plastics and a variety of laminates are mostly used for unit packs. In the case of a wooden box the species of wood, thickness of the planks, size and spacing of nails, tensile strength of steel strap or wire, type of joint and style of construction all play a significant role in the ultimate strength of the container.

Public Works Minister Ramaiah, who visitend the Concrete and Soil Research laboratories of the P.W.D. soon after taking charge of his new portfolio is seen in the picture with officials who accompanied him.



Baskets

Similarly, puncture resistance, bursting and crushing strength (wet and dry) are important factors governing the ultimate strength of boxes made of corrugated or fibre board.

Bamboo is used for the fabrication of baskets for perishables like fruits, vegetables, eggs, live poultry and fish. At present, the type and style of baskets used do not give adequate protection to the contents because of poor compression strength. Studies carried out at the Institute have shown that by reinforcing the basket with $\frac{1}{8}$—$\frac{1}{4}$ in. thick strips on all the four corners and around the bottom and top perimeters and along the two diagonals of the lid, the baskets could be made sufficiently strong. Bamboo-strip crates could be used instead of reed crates to pack glass and ceramic articles so as to obtain the desired compression strength and resilience.

Hessian

Textile fabrics, particularly hessian, are largely used as packaging material for a variety of goods like cereals, cereal flours, sugar, chemicals, fertilisers and cement and for baling textiles and cotton. Gunny bags do not give protection against moisture, insects and external contamination. Work conducted at this Institute has shown that laminating the gunny bags with polyethylene (using bitumen as a bonding agent) gives the desired protection for food products. Insectproofing of the bags has been achieved by impregnating the bags with suitable insecticides. A recent trend is the use of multi-walled paper bags for the packaging of cement, flours, sugar, carbon black and a variety of inert materials in fine powder form.

Paper and paper products are among the most widely used packaging materials. Impregnated paper, coated paper, wax paper, laminated materials consisting of aluminium foils, plastics and cellulose films are also widely used depending upon the product and the degree of protection required.

Cushioning materials

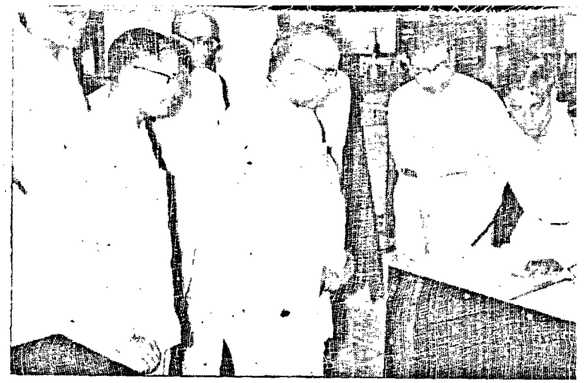
While designing the master container the choice of a cushioning material is important to ensure protection of the contents from damage to the vulnerable parts and fragile items and denting of tins. The most commonly used cushioning materials are straw, wood-wool paper shavings and sawdust. Recently materials like foam rubber, rubberised hair and foam plastics have come into use. The cushion should be such that it would not collapse, settle or lose its resilience due to fatigue or changes in climatic conditions during transport. Besides, it should not contaminate the contents in any way. The characteristics of the cushion and its thickness should be such that it can damp out the vibrations and absorb the shock energy without exerting much stress on the contents. The extent of cushioning to be used is determined by assessing the transport hazards as well as the fragility of the contents.

If the fragility of the product is the same in all the three directions and it bears fully on the sides of the container, the volume of the cushioning materials must be equal on all the six faces. For instance, while designing a package for mica bricks by adjusting the thickness of the cushion on the sides so as to be inverse proportional to the area of the sides, the breakages of the individual bricks has been reduced from 33 to about 5 per cent.

In the packaging of fruits and vegetables, the most common cushioning material used is paddy straw or green leaves. Experiments have shown that although paddy straw is ideally suited for this purpose it should be free from sharp edges and infection. Since fruits and vegetables respire and transpire the heat, carbon dioxide, ethulene and water vapour produced thereby should be dissipated quickly by the cushioning materials used.

Fruist and Vegetables

Of all perishables eggs have received a great deal of attention on account of their high fragility. Moulded pulp containers and paper board cartons have been designed to prevent contact between the eggs. Often some partitions are used to maintain the correct orientation of the units. Wood and similar resilient materials can be used as cushion since they can undergo a slight distortion. By suitable nesting with wooden strips it is possible to isolate each item so that impact shocks are localised. This principle has been made use of in designing a package for glass bottles without the use of any cushioning material.



The various research studies and different equipments in the Concret and Soil Research laboratories of the P.W.D. were explained to Minister Ramaiah during his recent visit to the place.

Optimum Size

Studies have been conducted at the Central Food Technological Research Institute on the optimum size and shape of a package so that it is easy to handle and save space in transport. The shape of the package should be such that it is easy to be stacked with a stable base. In certain cases like the package for carboys which require to be placed always on one stable base, it should have a pyramidal top. Hooks or ropes fixed on the sides of the container should be flush with the sides. While packing unit packs the shape of the master container should be as near a cube as possible taking into account the characteristics of the unit pack in each direction. Studies on the packaging of free flowing solid materials in cartons have indicated that it is possible to minimize seepage by reducing the number of layers on the broad side of the carton, and making the pack as a whole snug fit.

Orientation of Units

The orientation of units in the package also affects its performance. Arrangement of the units should be such that they bear on each other with a maximum possible area, avoiding point and line contacts. The excessive breakage of glass bottles generally noted is mostly due to this cause and their inherent fragility and high stresses developed during shocks. Partitioning with a resilient material would increase the area of contact thus distributing the total force over a large area and minimising the chances of breakage. It is also important that the pack as a whole is snug fit so that the items do not get displaced during transport and hit against each other.

At present fruits like mangoes are packaged in conical baskets arranged in three layers. It has been found that by changing this pattern to two layers the crushing of the fruits is considerably reduced. This work has resulted in the design of a container of a rectangular shape holding the same number of fruits as the present conical baskets.

Census 1961 : Provisional Figures

Madras State Population Taluk-wise

	Total.	*Males.*	*Females.*
Madras District	1,728,892	909,452	819,440
Chingleput District	2,193,721	1,120,146	1,073,575
Ponneri Taluk	230,704	118,178	112,526
Tiruvallur Taluk	270,324	137,380	132,944
Tiruttani Taluk	213,833	108,038	105,795
Sriperumbudur Taluk	235,687	120,846	114,841
Saidapet Taluk	392,468	205,841	186,627
Chingleput Taluk	246,827	125,884	120,943
Kancheepuram Taluk	321,816	161,604	160,212
Madurantakam Taluk	282,062	142,375	139,687
North Arcot District	3,141,983	1,580,023	1,561,960
Arkonam Taluk	253,380	227,368	126,012
Wallajapet Taluk	361,724	181,876	179,848
Gudiyatham Taluk	384,412	194,499	189,913
Tiruppattur Taluk	407,217	205,372	201,845
Vellore Taluk	407,872	205,003	202,869
Arni Taluk	169,620	84,398	85,222
Cheyyar Taluk	209,845	105,028	104,817
Wandiwash Taluk	221,174	110,626	110,548
Polur Taluk	245,483	122,982	122,501
Chengam Taluk	222,476	112,438	110,038
Tiruvannamalai Taluk	258,780	130,033	128,347
South Arcot District	3,042,120	1,533,815	1,507,305
Gingee Taluk	254,273	128,015	126,258
Tindivanam Taluk	352,347	177,487	174,860
Villupuram Taluk	356,334	180,633	175,701
Tirukoilur Taluk	398,135	200,797	197,338
Kallakurichi Taluk	382,821	191,877	190,944
Vriddhachalam Taluk	353,224	177,622	175,602
Cuddalore Taluk	511,336	261,026	250,310
Chidambaram Taluk	432,650	216,358	216,292
Salem District	3,826,349	1,946,374	1,879,975
Hosur Taluk	349,240	190,494	158,746
Krishnagiri Taluk	416,824	211,683	205,141
Harur Taluk	215,457	108,723	106,734
Dharmapuri Taluk	375,033	189,150	185,883
Omalur Taluk	424,817	216,581	208,236
Yercaud Taluk	23,721	12,316	11,405
Salem Taluk	616,518	313,227	303,291
Sankari Taluk	242,312	123,231	119,081
Tiruchengode Taluk	246,345	123,209	123,136
Rasipuram Taluk	200,746	100,621	100,125
Athur Taluk	295,236	148,756	146,480
Namakkal Taluk	420,100	208,383	211,717

	Total.	*Males.*	*Females.*
Coimbatore District	3,541,401	1,802,585	1,738,816
Bhavani Taluk	252,241	128,749	123,492
Gobi Taluk	401,944	202,416	199,528
Erode Taluk	511,381	258,770	252,611
Dharapuram Taluk	322,073	162,109	159,964
Palladam Taluk	389,481	196,150	193,331
Avanashi Taluk	294,933	149,953	144,980
Coimbatore Taluk	728,868	380,381	348,487
Pollachi Taluk	419,510	213,358	206,152
Udamalpet Taluk	220,970	110,699	110,271
Nilgiris District	409,440	213,926	195,514
Gudalore Taluk	66,061	34,812	31,249
Ootacamund Taluk	169,611	89,294	80,317
Coonoor Taluk	173,768	89,820	83,948
Madurai District	3,204,866	1,606,809	1,598,057
Dindigul Taluk	597,256	298,866	298,390
Palani Taluk	288,832	143,724	145,108
Kodaikanal Taluk	50,695	26,047	24,647
Periakulam Taluk	654,565	329,101	325,464
Nilakottai Taluk	290,845	145,191	145,654
Melur Taluk	242,354	119,651	122,703
Madurai Taluk	669,935	339,510	330,425
Tirumangalam Taluk	410,384	204,719	205,665
Tiruchirappalli District	3,169,599	1,580,243	1,589,356
Perambalur Taluk	286,610	142,452	144,158
Udayarpalayam Taluk	457,666	119,521	218,145
Lalgudi Taluk	266,030	131,305	134,725
Musiri Taluk	369,504	182,955	186,549
Karur Taluk	345,457	170,748	174,709
Kulithalai Taluk	439,340	220,208	219,132
Tiruchirappalli Taluk	502,500	255,830	246,670
Kolathur Taluk	169,267	84,740	84,527
Alangudi Taluk	190,401	95,593	94,808
Tirumayam Taluk	162,824	76,891	85,933
Thanjavur District	3,249,960	1,612,973	1,636,987
Sirkali Taluk	185,808	92,171	93,637
Mayuram Taluk	364,151	179,411	184,740
Kumbakonam Taluk	368,017	183,225	184,792
Nannilam Taluk	266,926	130,546	136,380
Papanasam Taluk	233,088	115,285	117,803
Thanjavur Taluk	363,261	181,100	181,161
Orathanad Taluk	194,308	97,259	97,049
Mannargudi Taluk	273,998	135,626	138,372
Nagapattinam Taluk	278,950	138,405	140,545
Tiruthuraipoondi Taluk	274,845	136,935	179,910
Pattukottai Taluk	290,656	145,447	145,209
Aranthangi Taluk	155,952	76,563	79,389
Ramanathapuram District	2,420,943	1,176,371	1,244,572
Tirupathur Taluk	313,498	151,543	161,955
Sivaganga Taluk	266,333	129,501	136,832
Thiruvadanai Taluk	217,540	104,630	112,910
Paramakudi Taluk	225,487	107,559	117,928
Ramanathapuram Taluk	192,279	90,852	101,427
Mudukulathur Taluk	233,731	111,977	121,754
Aruppukottai Taluk	269,244	131,702	137,542
Sathur Taluk	353,915	176,055	177,860
Srivilliputhur Taluk	348,910	172,552	176,364

	Tatol,	Males,	Females.
Tirunelveli District	2,729,467	1,330,907	1,398,560
Sankaranayanarkoil Taluk	335,002	166,762	168,240
Koilpatti Taluk	412,678	202,603	210,075
Srivaikuntam Taluk	330,803	162,364	168,439
Tirunelveli Taluk	338,017	165,781	172,236
Thenkasi Taluk	335,497	166,216	169,281
Senkotta Taluk	66,466	32,971	33,495
Ambasamudram Taluk	293,340	142,386	160,954
Nanguneri Taluk	325,378	154,914	170,464
Tiruchendur Taluk	292,286	136,910	155,376
Kanyakumari District	996,852	504,013	492,839
Vilavancode Taluk	317,213	161,741	155,472
Kalkulam Taluk	340,513	172,779	167,734
Thevala Taluk	62,267	31,154	31,113
Agastheeswaram Taluk	276,859	138,339	138,520

Sangeet Natak Akademi Awards for 1961-62.

The General Council of the Sangeet Natak Akademi has selected nine artistes for the annual Akademi Awards in the fields of music, dance and drama for the year 1961–62. The fields of culture chosen for the awards included Dance : Bharatnatyam, Kathak and Odissi ; Hindustani and Karnatak schools of music (instrumental and vocal), Drama (Direction and Acting in Hindi, Tamil, Bengali and Punjabi language theatre). The following are the artistes selected for the awards : *Music* : Ustad Bade Gulam Ali Khan—Hindustani (Vocal) ; Pandit Ravi Shankar—Hindustani Instrumental (Sitar) ; Smt. D. K. Pattammal—Karnatak (Vocal) ; Shri T. Subramania Pillai—Karnatak Instrumental (Nagaswaram). *Dance :* Smt, Muthuratnambal—Bharatnatyam ; Shri M. S. Kalyanpurkar—Kathak; *Drama* : E. Alkazi—Direction ; Smt. Tripti Mitra—Acting in Bengali ; Shri T.K. Shanmugam—Acting in Tamil.

In addition to the existing Fellows, the following artistes have been selected as the Fellows of the Akademi : Shri Gopeswar Banerjee, Shri Papanasam Sivan, Shri Udai Shankar and Shri Annaswamy Bhagavatar.

Madras State Population Municipality-wise

Name of municipalities.	Total.	Males.	Females.
Ooty	50,140	26,372	23,768
Coonoor	30,890	16,008	14,682
Dindigul	92,949	47,304	45,643
Palni	39,832	20,564	19,268
Periakulam	36,355	18,148	18,187
Cumbum	32,517	16,187	16,328
Bodi	44,914	22,521	22,393
Madurai	424,810	217,638	207,172
Mayuram	51,393	26,007	25,386
Kumbakonam	92,581	46,029	46,552
Thanjavur	111,099	56,135	54,964
Nagapattinam	59,063	29,426	29,637
Mannargudi	33,558	16,761	16,797
Tiruvarur	30,137	15,139	14,998
Karaikudi	43,698	21,752	21,946
Devakottai	25,524	12,396	13,128
Ramanathapuram	26,890	13,207	13,683
Aruppukottai	50,200	24,917	25,283
Virudhunagar	54,827	27,790	27,037
Sivakasi	30,690	15,442	15,248
Srivilliputhur	46,816	22,550	24,266
Rajapalayam	71,203	35,865	35,338
Tuticorin	124,230	63,188	61,042
Palayamcottai	51,002	25,879	25,123
Tiruvallur	19,757	10,148	9,609
Chingleput	25,977	13,793	12,184
Kancheepuram	92,714	46,624	46,090
Tiruvottiyur	37,571	19,386	18,185
Arkonam	30,658	15,794	14,864
Ranipet	22,974	11,565	11,409
Arcot	25,029	12,643	12,386
Walajah	13,179	6,620	6,559
Gudiyatham	50,384	25,331	25,053
Vaniyambadi	42,048	20,779	21,269
Tiruppattur	30,799	15,619	15,180
Vellore	113,742	57,451	56,291
Ambur	39,455	19,400	20,055
Arni	31,351	15,700	15,651
Tiruvannamalai	46,441	23,547	22,894
Salem	249,145	127,304	121,841
Namakkal	23,871	12,021	11,850
Gobichettipalayam	27,004	13,673	13,331
Erode	73,762	37,890	35,872
Dharapuram	26,490	13,058	13,432
Tiruppur	79,773	41,287	38,486
Mettupalayam	36,496	18,509	17,987
Coimbatore	286,305	151,901	134,404
Pollachi	54,369	28,013	26,356
Udumalpet	28,345	14,292	14,053
Tirunelveli	87,988	43,997	43,991
Melapalayam	38,806	18,305	20,501
Shencottah	20,528	10,145	10,383

Name of municipalities.	*Total.*	*Males.*	*Females.*
Kuzhithurai	13,708	6,960	6,748
Padmanabhapuram	14,491	7,113	7,378
Colachel	15,673	8,083	7,590
Nagercoil	106,207	53,359	52,848
Tindivanam	34,342	17,468	16,874
Villupuram	43,496	22,258	21,238
Cuddalore	79,168	39,796	39,372
Chidambaram	40,694	20,520	20,174
Karur	50,564	25,630	24,934
Srirangam	41,949	20,823	21,126
Tiruchirappalli	249,862	128,443	121,419
Pudukottai	50,488	25,738	24,750
Madras City	1,728,892	909,452	819,440

Indian Railways—1960-61

With an increase of only 50 per cent in the number of wagons owned by them, 41 per cent in their installed tractive effort and nine per cent in track kilometrage during 1960–61, the Indian Railways have handled an increased volume of traffic of the order of nearly 100 per cent over the level of 1950–51 in terms of net tonne kilometres.

This is revealed in a popular handbook entitled "Indian Railways—1960–61", just published by the Ministry of Railways. The handbook presents in simple, non-technical language a brief account of the performance of the Railways during the financial year 1960–61.

The book, which is available from the Manager of Government Publications, Delhi, also contains 28 charts, 22 Statistical tables and a small scale railway map of India.

Literate Population in the State

District.	*Taluk.*	*Total.*		*Rural.*		*Urban.*	
		Males.	*Females.*	*Males.*	*Females.*	*Males.*	*Females.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Madras ..	.. ..	633,203	395,213	..	..	633,203	395,123
Chingleput ..	Ponneri	35,658	10,770	30,511	8,547	5,147	2,223
	Tiruvallore ..	49,871	17,637	43,674	14,168	6,197	3,469
	Tiruttani	37,507	8,454	31,681	6,437	5,826	2,017
	Sriperumbudur ..	52,577	19,111	39,354	13,136	13,223	5,975
	Saidapet	111,940	51,867	53,358	18,677	58,582	33,190
	Chingleput	49,432	16,592	35,933	9,081	13,499	7,511
	Kancheepuram ..	68,320	24,402	35,128	9,282	33,192	15,120
	Madurantakam ..	45,282	13,168	40,542	10,828	4,740	2,340
North Arcot ..	Arkonam	47,083	14,055	33,009	6,861	14,074	7,194
	Wallajapet ..	76,054	25,477	52,321	13,210	23,733	12,267
	Gudiyatham ..	71,133	23,016	51,210	14,804	19,923	8,212
	Tirupattur	65,284	25,464	38,172	9,142	27,112	16,322
	Vellore	92,661	41,708	40,774	11,498	51,887	30,210
	Arni	35,335	10,417	25,784	5,482	9,551	4,935
	Cheyyar	39,838	9,727	35,476	7,894	4,362	1,833
	Wandiwash ..	42,352	10,029	38,499	8,363	3,853	1,666
	Polur	42,664	10,280	34,763	7,126	7,901	3,154
	Chengam	28,524	6,671	28,524	6,671	..	..
	Tiruvannamalai ..	46,205	13,852	32,488	7,037	13,717	6,815
South Arcot ..	Gingee	45,690	11,755	45,690	11,755	..	..
	Dindivanam ..	63,320	17,355	51,115	11,515	12,205	5,840
	Villupuram ..	69,174	22,716	53,177	14,135	15,997	8,581
	Tirukkovilur ..	73,673	21,224	67,404	17,511	6,269	3,713
	Kallakurichi ..	66,363	19,794	60,014	16,993	6,349	2,801
	Vridachalam ..	77,827	19,532	71,573	16,566	6,254	2,966
	Cuddalore	118,262	41,221	74,253	18,463	44,009	22,758
	Chidambaram ..	108,577	37,696	80,978	22,793	27,599	14,903
Salem	Hosur	35,288	9,860	29,265	6,573	6,023	3,287
	Krishnagiri ..	52,725	16,788	43,289	11,274	9,436	5,514
	Harur	25,389	6,656	22,898	5,541	2,491	1,115
	Dharmapuri ..	46,872	15,597	38,384	11,121	8,488	4,476
	Omalur	58,428	18,769	42,337	11,065	16,091	7,704
	Yercaud	3,365	1,135	3,365	1,135	..	..
	Salem	123,896	53,656	42,395	11,268	81,501	42,388
	Sankari	27,770	7,034	23,011	5,607	4,759	1,427
	Tiruchengode ..	34,825	10,256	22,325	4,672	12,500	5,588
	Rasipuram ..	35,197	11,861	24,895	7,143	10,302	4,718
	Attur	49,521	14,034	41,751	10,263	7,770	3,771
	Namakkal	75,337	22,260	65,305	16,792	10,032	5,468
Coimbatore ..	Bhavani	39,151	11,399	32,837	8,645	6,314	2,754
	Gobichettipalayam	65,410	20,098	50,700	12,807	14,710	7,291
	Erode	108,048	36,855	75,391	19,328	32,657	17,527
	Dharapuram ..	63,964	17,587	56,360	12,993	7,604	4,594
	Palladam	87,225	28,376	55,489	14,052	31,736	14,324
	Avanashi	57,157	17,362	39,222	9,217	17,935	8,145
	Coimbatore ..	218,554	105,489	64,684	21,694	153,870	83,795
	Pollachi	96,240	36,252	50,393	15,920	45,847	20,332
	Udumalpet ..	47,364	17,698	37,769	11,878	9,595	5,820

The Nilgiris ..	Gudalore	14,306	6,075	4,868	2,102	9,438	3,973
	Ootacamund ..	42,584	16,838	22,751	5,585	19,833	11,25
	Coonoor	46,321	19,930	23,011	7,613	23,310	12,317
Madurai ..	Dindigul	125,892	43,224	91,330	24,679	34,562	18,545
	Palani	61,196	18,584	43,058	10,071	18,138	8,513
	Kodaikanal ..	13,400	5,443	9,225	2,783	4,175	2,660
	Periyakulam ..	155,566	56,467	92,815	28,415	62,751	28,052
	Nilakottai	64,919	21,956	55,109	17,038	9,810	4,918
	Melur	48,268	11,552	39,969	7,444	8,299	4,198
	Madurai	212,386	113,374	38,611	11,921	173,775	101,453
	Tirumangalam ..	91,781	28,047	77,145	20,338	14,636	7,709
Tiruchirappalli	Perumbalur ..	56,581	14,738	51,328	12,564	5,253	2,174
	Udayarpalayam ..	88,600	18,222	79,338	14,505	9,262	3,719
	Lalgudi	63,895	22,232	51,553	16,512	12,342	5,720
	Musiri	88,237	29,537	69,397	20,806	18,840	8,731
	Karur	78,017	25,162	52,375	11,682	25,642	13,480
	Kulittalai	76,850	19,180	68,369	14,830	8,481	4,350
	Tiruchirappalli ..	151,426	84,418	35,888	12,202	115,538	72,216
	Kulathur	26,784	5,082	26,784	5,082	..	..
	Alangudi	47,169	15,264	25,266	3,232	21,903	12,032
	Tirumayam ..	32,263	11,270	25,567	7,246	6,696	4,024
Thanjavur ..	Sirkali	39,117	14,097	30,029	9,480	9,088	4,617
	Mayuram	94,320	42,681	67,871	25,404	26,449	17,277
	Kumbakonam ..	94,916	43,942	53,126	17,904	41,790	26,038
	Nannilam	62,893	24,210	58,475	21,899	4,418	2,311
	Papanasam	53,459	20,945	41,990	15,350	11,469	5,595
	Thanjavur	96,476	44,049	51,305	17,151	45,171	26,898
	Orathanadu ..	37,293	7,096	34,507	5,898	2,786	1,198
	Mannargudi ..	65,670	26,435	48,286	15,005	17,384	11,430
	Nagapattinam ..	74,908	32,692	44,765	16,032	30,143	16,660
	Thiruthuraipundi ..	68,152	23,305	55,358	17,132	12,794	6,173
	Pattukottai ..	63,693	17,192	51,589	11,373	12,104	5,819
	Arantangi	33,060	8,847	29,179	6,904	3,881	1,943
Ramanathapuram	Tirupattur ..	76,148	32,528	46,406	14,974	29,742	17,554
	Sivaganga	59,695	17,110	45,527	9,674	14,168	7,436
	Thiruvadanai ..	51,234	17,351	39,514	10,264	11,720	7,087
	Paramakudi ..	51,037	15,546	35,598	7,405	15,439	8,141
	Ramanathapuram	43,613	23,472	25,331	11,226	18,282	12,246
	Mudukulathur ..	46,878	13,936	41,886	10,122	4,992	3,814
	Aruppukottai ..	67,050	22,249	49,375	13,633	17,675	8,616
	Sattur	94,738	39,348	59,707	19,478	35,031	19,870
	Srivilliputhur ..	77,954	27,672	39,050	10,247	38,904	17,425
Tirunelveli ..	Sankaranainarkoil ..	67,302	19,290	50,372	13,770	16,930	5,520
	Kovilpatti	95,911	34,215	75,083	24,190	20,828	10,025
	Srivaikuntam ..	93,767	54,519	41,364	19,272	52,403	35,247
	Tirunelveli	92,571	47,410	29,100	11,399	63,471	36,011
	Tenkasi	72,198	23,014	51,940	15,031	20,258	7,983
	Shencottah ..	16,318	6,304	10,061	3,123	6,257	3,181
	Ambasamudram ..	74,287	36,216	41,685	17,836	32,602	18,380
	Nanguneri	76,033	46,743	64,859	38,636	11,174	8,107
	Tiruchendur ..	76,536	60,685	44,632	33,707	31,904	26,978
Kanyakumari	Vilavancode ..	85,060	57,333	80,467	53,844	4,593	3,489
	Kalkulam	90,459	66,976	81,994	60,540	8,465	6,436
	Thovala	18,348	11,940	18,348	11,940	..	..
	Agastheeswaram ..	89,427	64,634	53,014	37,618	36,413	27,016

Breath of Life

Culture, Beauty and Gracious Living are the very breath of the Tamilian Way of Life. While the temples of Tamilnad express an extraordinary architectural and sculptural tradition, they have intimately influenced Tamilian living even as they served as places of Worship.

Language and letters, drama and literature, arts and the crafts, music and dance have all flourished under the all-embracing character of the profoundly religious Tamilian culture and traditions.

Thus devotion and reverence have combined to mould a culture which is as peerless for its classical values as it is for its sense of dedication and humility.

This surpassing culture is so deeply ingrained in Tamilnad that living the artistic and beautiful life, has become part of the normal, habitual life of the Tamilian householder.

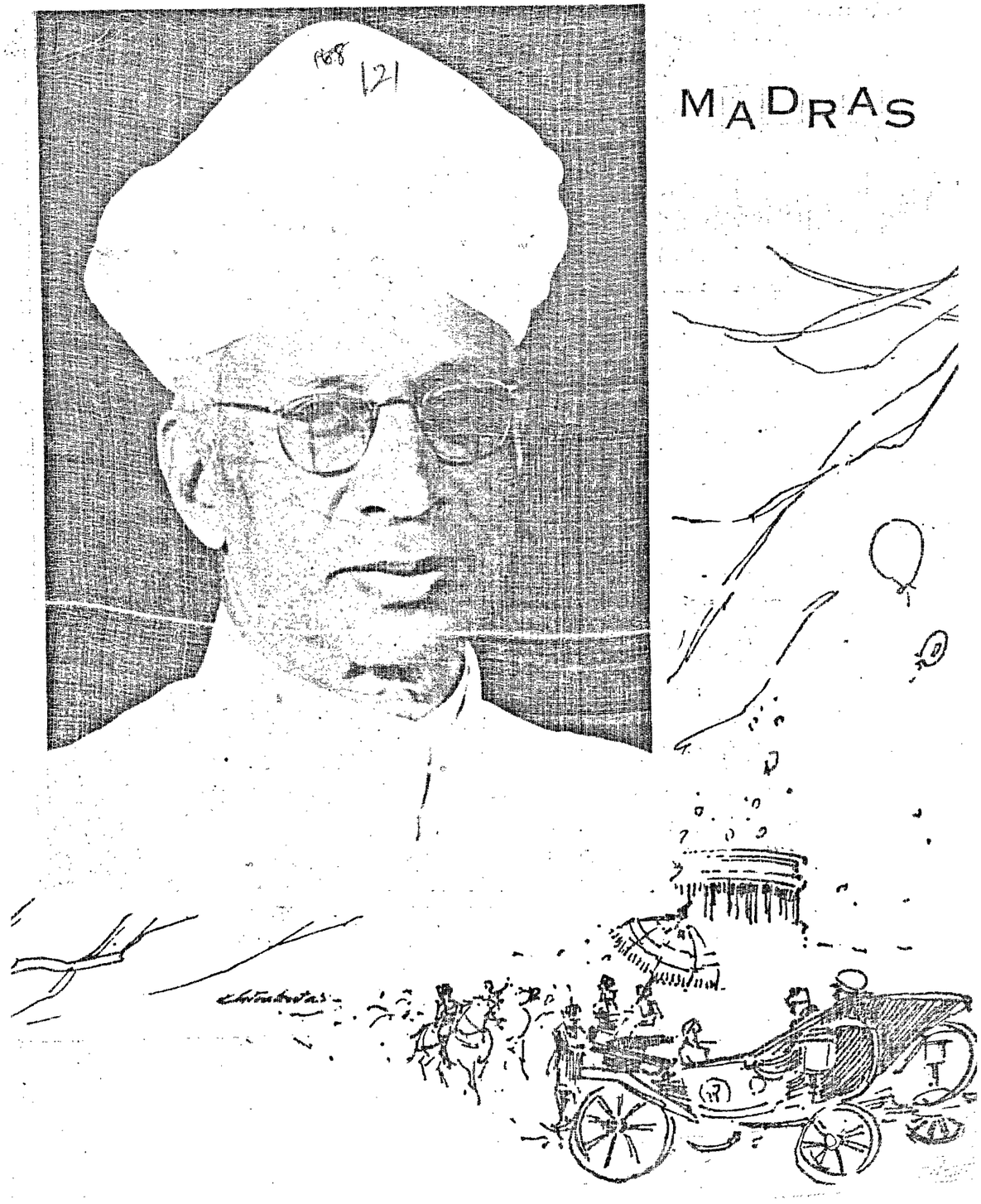
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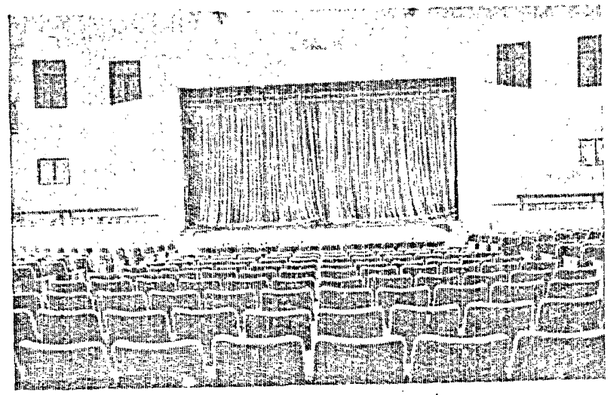
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A THEATRE THAT CHILDREN LOVE



The Children's Theatre in the Government Estate, Mount Road, is a place that children love. Every week-end, films that educate children are exhibited here mixed with comic cartoons that delight them.

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MADRAS INFORMATION

JUNE 1962

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This month's cover

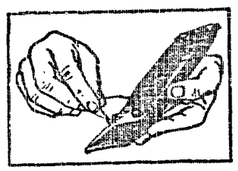
In a tribute to the new President, Dr. Radhakrishnan, on his assumption of office on May 13 last the outgoing President, Sri Rajendra Prasad said that in his election, Plato's ideal of Philosopher-Kings had been realised; only men like him imbued with spiritualism and the highest ethical values could save the world. The new President is our cover theme for the month.

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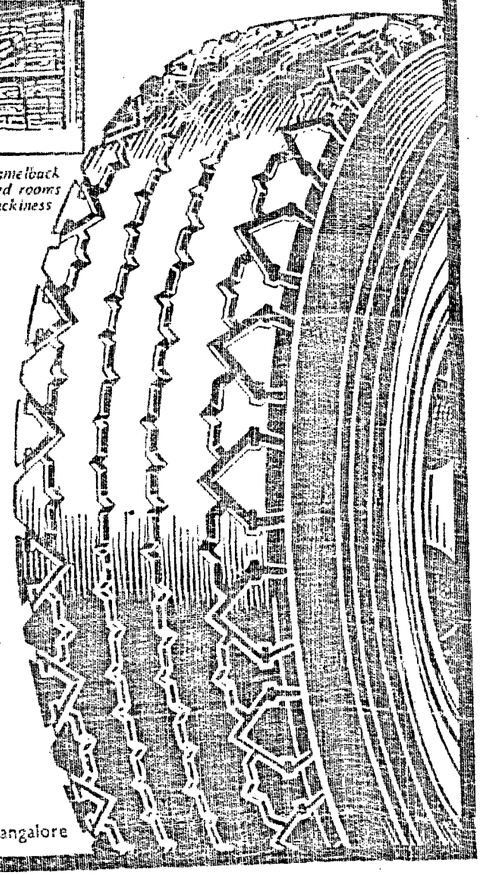
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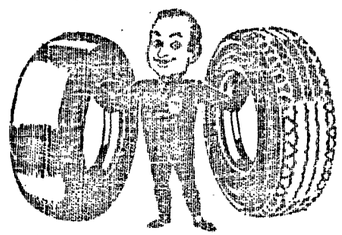
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GAZETTEERS -Old and New

DR. A. RAMASWAMI, *State Editor, Madras District Gazetteers.*

" Unsphinx this Riddle for me,
for my shelves have no Gazetteer "

—Charles Lamb.

The old District Gazetteers which grew out of the still older district Manuals served in a limited way as sources of information to the officials about the districts under their charge. The range of the topics dealt with in these gazetteers was limited, due to the less crying demands of the time. Much of the material collected and featured in these gazetteers has gradually gone out of date as a result of events during the last forty years.

National Project

The revision and rewriting of gazetteers is one of the national projects launched by the Indian Government. Under this scheme, the District Gazetteers, the State Gazetteers and the Gazetteers of India will be entirely rewritten. Almost all the States in India are now having an organisation for the revision of their gazetteers. The Gazetteers, as planned at present, will provide an account of the physical and natural features of the regions they cover and also give a lucid exposition of the social, political, economic and cultural life of the people inhabiting them. In a Welfare State, the officials, administrators and educators have to undertake increasing responsibilities and they have to be informed on a variety of objects. To them the District and State Gazetteers will serve the purpose of handy and authentic reference volumes.

Interesting Origin

The word 'Gazetteer', has a very interesting origin. It was originally applied to one who wrote a 'Gazetter'. * In later days, the word was used to refer to a 'geographical dictionary of an area', embodying descriptive, historical, economic and other information about the people and important places. In this generally accepted modern sense, it was first used as the equivalent for a 'geographical index' by Lawrence Echard in 1704. In course of time however the scope and dimensions of the particular compilation widened considerably.

The Gazetteer to-day is much different from a geographical dictionary, nor is it a guide-book, directory or a socio-economic survey of an area. It has for its objective the presentation of an accurate and graphic account of the area covered and the people inhabiting those areas in such a way that it will be of interest and use both to the specialist and the layman.

Modern Variety

During the 17th and 18th centuries, many gazetteers of the modern comprehensive variety were written. England, France and Germany led other countries in this field. 'Blackie's Imperial Gazetteer' (Scotland, 1850), Longman's 'Gazetteer of the World' (London, 1895), Joannes 'Dictionnaire' for France and her colonies (1856-1905), 'Nouveau Dictionnaire de Geographie Universelle' (Paris, 1879-1900) and Ritters' 'Geographisch-Statisches Lexicon' (Germany, 1874) were some of the well known gazetteers published in those countries during the period.

* 'Gazette' was a kind of literary newspaper first published in single sheets at Venice in the sixteenth century and was sold for a 'Gazet' (derived from 'Gazzetta', a small Venetian coin) which is generally supposed to have been the price of the original newspaper. The word 'Gazette' nowadays however generally refers to an official periodical published under the authority of the Government.



Chief Minister Kamaraj, inaugurated the introduction of the Madras City Municipal (Amendment) Act, 1961, at a formal function at the Corporation Stadium, recently. Minister Majid Presided.

In the matter of treatment and presentation, the Commercial Gazetteer of Great Britain published in recent times is almost the nearest approximation to the Gazetteers published in India. It not only gives the precise location of towns and villages, large and small, in Britain, but also provides in a permanent form a record of the number of families, population and where available, estimates of industrial population of people in urban Britain.

Standard British Works

This Gazetteer, a unique combination of economic, social and topographic details, is a standard work of commercial and scholastic reference. The other prominent gazetteers issued in the English language are the Survey of the Gazetteers of the British Isles, which contains place names arranged in alphabetical order, their population and other census data, the Railway and Commercial Gazetteers of Britain (9th Edition, 1938), which give up-to-date information about the railway system, stations, etc., and the Chamber's World Gazetteer issued in 1959, a handy, up-to-date reference book of the world to-day, in which all places of some significance in the world—continents, countries, states, provinces, cities, towns and even villages, where these have particular importance, are described and arranged alphabetically. The Gazetteers are used by businessmen, teachers, and by almost all people, and they serve the part of an all purpose companion.

Early Indian Gazetteers

In India, gazetteer making began very early. The travelogues of foreigners like Fa Hian, Hiuen Tsiang, Ibn Batuta and Marco Polo served the purpose of gazetteers for India and kept the outside world informed of her progress at different times. Later on, when the East India Company, essentially a trading organisation, came into possession of extensive areas of land, the need for an intimate knowledge of the land and the people it had to rule over came to be deeply felt. This need was further accentuated as there were wide variations in the various regions brought under the Company's administration. The colonial administrators sent out from England had to be sufficiently informed about the country and its people.

Several Publications

Several gazetteers relating to India were therefore published by both Governmental and non-Governmental agencies. Of these mention may be made of Mr. Walter Hamilton's "East India Gazetteer"; "The Bengal and Agra Guide and Gazetteer"; Thornton's "Gazetteer of the Territories under the Government of the Viceroy of India and the Native States on the Continent of India"; and "A Gazetteer of Southern India" published in Madras in 1885 by Pharoah and Company. Edward Thornton's Gazetteer when it was first presented to the public was the only compilation of its kind in India. Subsequently in 1881 at the instance of the Government of India, Dr. W. W. Hunter, the then Director-General of Statistics to the Government of India, brought out in nine volumes the "Imperial Gazetteer of India". Between 1885 and 1887, Dr. Hunter revised these Gazetteers and issued them in fourteen volumes. Later on a new edition of the "Imperial Gazetteer of India" was also issued in twenty-five volumes from the Clarendon Press, Oxford, between the years 1907 and 1909.

Gazetteers were also compiled for the districts in the various provinces in British India. In the province of Madras between 1868 and 1898, Manuals were prepared for most of the districts. These Manuals written in inimitable literary style are extremly readable and are a store-house of much interesting information. They were written mainly by British civilians like Le Fanu, Nelson, Nicholson and others.

Under Alien Rule

The turn of the twentieth century saw the British Empire in India entering an era of consolidation after the initial period of teething trouble. Nation building and welfare departments like Education, Public Health, Agriculture and Irrigation were organised. The need was felt for undertaking the important task of presenting a vivid picture of the problems encountered in the various activities of the Government in the districts in the past and an idea of the future plans for development of the regions, so that the alien administrator could direct his thoughts and activities towards the realisation of the objects of alien rule.

Between the years 1904 and 1918, officials of the Madras Presidency like William Logan, W. Francis, F. G. Richards and H. R. Pate prepared a number of District Gazetteers

MADRAS DISTRICT GAZETTEERS—OLD AND NEW.

District.	Manuals.		Old Gazetteers.				New Gazetteers.
			'A' Volume or Volume I		'B' Volumes Volumes II and III.		
	Year of publication.	Author.	Year of publication.	Author.	Volume II (with statistics) year of publication.	Volume III (with statistics) year of publication.	Year of publication.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 Chingleput ..	1879 ..	C. Stewart Crole.	..	..	1904 1915	1933	..
2 Coimbatore ..	1887 .. (In two parts).	F. A. Nicholson	..	..	1905 1915	..	In Press.
	1898 Volume II (Second Revised Edition).	Do.	..	..	1933*	..	..
3 Kanyakumari (District constituted in 1956).	..	....	..	..	..	..	..
4 Madras ..	..	....	..	..	..	..	..
5 Madurai	1868 (in five parts).	J. H. Nelson ..	1906	W. Francis I.C.S.	1905 1915†	1933	1960.
6 Nilgiris	1880 (in two parts)	H. B. Grigg ..	1908	Do.	1930† 1905 1915 1928	1933	..
7 North Arcot ..	1895 (Volumes I and II)	Arthur F. Cox	..	..	1905 1915 1929	1933	..
8 Ramanathapuram	A Manual for the Old Zamindari (year not known).	(Not known)	..	..	1915 1929	1933	..
9 Salem	1883 (Volumes I and II)	H. Le Fanu ..	1918 (Parts I and II)	F. G. Richards, I.C.S.	1905 1915 1932†	..	..
10 South Arcot ..	1878 (Parts I to IV)	J. H. Garstin ..	1906	W. Francis, I.C.S.	1915† 1932†	..	In Press.
11 Thanjavur ..	Parts I and II (year not known).	T. Venkataswami.	1915	F. R. Hemingway, I.C.S.	1905 1915†	..	1957.
12 Tiruchirappalli.	1878 (Parts I and II).	Lewis Moore ..	1907	Do.	1933† 1905 1915	1933	..
13 Tirunelveli ..	1881 ..	The Right Rev. R. Caldwell.	1917	H. R. Pate, I.C.S.	1931† 1905 1934†	..	..

* This edition contains a supplement to the District Manual (Revised Edition, 1898).
† The asterisk denotes that the edition contains a supplement to volume I.

The Gazetteers given in the table are available only in some of the oldest libraries in the State like the Madras Record Office and Connemara Libraries.

with separate volumes for statistics. These early District Gazetteers provided a wealth of information about the districts in their various facets—geography, geology, administration, industry, trade, commerce, the people, etc.

Changing Conditions

The old District Gazetteers were no doubt excellent pieces of work noted for their diction and authenticity. But nearly a half-century had passed since their initial publication. Far-reaching researches, historic, archaeological and antiquarian, had since been done. Revolutionary changes had taken place in national life and administration. In the changed and changing conditions of India, the old gazetteers were found inadequate and out of date on many aspects. Particularly, they failed to depict national aspirations and available opportunities for the development of existing economic resources. Apart from these, the social and economic development inaugurated by the successive Five Year Plans after India became a sovereign democratic republic required adequate coverage in the gazetteers.

Revision Undertaken

The States of Madras and Bombay promoted the early attempts to replace the gazetteers which were fast becoming out of date and out of place. Between the years 1928 and 1935 in Madras the statistical volumes were revised and re-issued incorporating in them the supplementary information that were collected for the main volumes. But the main body of the District Gazetteers were, however, left undisturbed. It was in the year 1954, that the Government of Madras decided to prepare a set of new gazetteers for all the districts. They were to serve as valuable guides to the administrators and as standard volumes of reference for the public on all matters connected with the districts.

Dr. B. S. Baliga, the late Curator of the Madras Record Office, succeeded in re-writing four District Gazetteers for Tanjore, Madurai, South Arcot and Coimbatore according to a plan of his own. Of these, the District Gazetteers of Tanjore and Madurai have been published in the years 1957 and 1960. The District Gazetteer of South Arcot is now in the Press and that of Coimbatore awaits publication. A salient feature in these new gazetteers brought out by him is the allocation of adequate space for covering the history of nationalism and freedom movements.

Union Government Scheme

Realising the national importance and the value of gazetteers in a developing country, the Ministry of Scientific Research and Cultural Affairs of the Government of India sponsored a scheme for the revision of the Indian Gazetteers and agreed to award grants to the State Governments to meet a part of the expenditure on the revision of their District Gazetteers.

The Ministry of Scientific Research and Cultural Affairs, which generally co-ordinates the work on the District Gazetteers carried on by the different States has supplied a draft pattern for the chapters of the District Gazetteers. The pattern is generally followed by all the gazetteers compiled after 1956 but for slight variations to suit local requirements.

The New Pattern

According to the new pattern the whole District Gazetteer is broadly divided into 19 chapters and it covers a wide range of subjects like History, Geography, Geology, Agriculture, Irrigation, Land Revenue, Land Reforms, Industries, Trade, Transport, Law and Order, Education, Judicial Administration, Local Self-Government, Medical and Public Health Services, Employment and Economic Trends, etc. There is to be also a fair sprinkling of maps and tables in the new gazetteers. As the district gazetteers of all the States are to be prepared according to a set pattern both in respect of contents and get-up, the net result will be a very impressive array of gazetteers basically uniform for the whole country which will enable the reader to lay his fingers quickly on the right place in the gazetteers and collect the required information. It will indeed be a great day when a guide-book to all these District Gazetteers is prepared which will help the inquisitive reader find out easily the reference to a particular subject in these gazetteers with the help of an alphabetical index.

Work in the State

The Office of the State Editor was created by the Government of Madras in the year 1961. The rewriting of the other District Gazetteers of the State is now in progress with the help of specialised staff appointed for the purpose. It consists of Compilers working at the headquarters who are helped by special revenue officials working in the districts. The draft chapters of the gazetteers are scrutinised by the Heads of Departments, Collectors and other authorities in their various fields and also by the Editor, Indian Gazettees in the Ministry of Scientific Research and Cultural Affairs.

The District Gazetteers are undoubtedly works of national importance and have a definite role to play in national life and development. It is hoped that the gazetteers written according to the new pattern will serve the needs of modern India, a developing democratic State by fulfilling their role of developing the consciousness of political unity and the cultural oneness of India.

Metric Reform in the State

SRI R. TIRUMALAI, *Additional Secretary to Government.*

The Metric System is so called because the metre is adopted as the primary unit. Its main advantage is its simple relationship among the primary units of length, capacity and mass. Normal trade and commerce require the use of weights and measures based on weight, capacity and volumes and under the metric system the higher and lower secondary units are obtained either by multiplying the unit concerned by 10 or taking a tenth of it. In other words, this is decimal system, applied to weights and measures. We are already familiar with the decimal system of coinage.

The Metric System has already spread over 85 per cent of the world's population. Among notable exceptions are the English speaking countries and the countries which have been for a long time under British influence. In our country the need for changing to the Metric System came to be realised only after we gained independence. It may however be of interest to know that the Metric System has roots in ideas which originated in India. As our Prime Minister has observed "the Metric System is a glorious great invention of India and the Indian minds. It is ours in the same way as our invention of the sign of the Zero".

Main Units

The main units for the adoption of the Metric System with which every one has to become familiar are :—For mass Kilogram ; for length—Metre ; for capacity—Litre ; for area—Square Metre ; for volume—Cubic Metre ; for electrical current—Ampere ; for temperatures—Degree Kelvin ; for light—Candela ; for time—Second.

Whereas the ampere is already in universal use and so also the unit of time, in respect of length, mass and the capacity—the most commonly understood units—a medley of units are in existence all over the country and it is no small task to carry out a reform eliminating the different units and introducing new uniform units, which affect the every day life of any citizen.

Transitional Period

However, realising the practical difficulties in switching over to the Metric System all on a sudden, when our Parliament passed the Standards of Weights and Measures Act, 1956 to adopt the Metric System, it also allowed a transitional period of 10 years for its complete enforcement. It is only by 1966, that the entire country must go metric.

The need for a smooth carrying out of this reform cannot be over-emphasized. The adoption of the system is therefore only voluntary in the beginning, in various units. After the people get familiar with it, the system is made compulsory. During the transitional periods, though the law is in force, the use of Metric units is not obligatory because trade has to be prevailed upon to deal in Metric Units and manufacture of sufficient units of replacement made, simultaneously educating the public.

Think Metric

The change over to the new units of weights and measures is even more difficult. While Coinage is a Government monopoly, Metric Weights and Measures have to be manufactured and distributed by a number of manufacturers and dealers. On the part of the public, it does not merely mean knowing the names of the new units of weights and measures, their sub-multiples and multiples and theoretically knowing their metric equivalents of the old weights and measures. The conversion tables released by the Government (and the trade in some cases) can reach only

Forestry implement being explained to Finance Minister Bhakthavatsalam at the Annual Forest Officers' Conference held recently at the Presidency College. Minister Manradiar who inaugurated the Conference is looking on.



the literates but it is very difficult to obliterate from the minds of even the literate, the old concepts and make them "think metric" all on a sudden. It is only by slow persuation and with the active co-operation of the trade that the public can get accustomed to the Metric System.

Gradual Change

To facilitate this process, various dates have been fixed for gradual change from the transitional period to compulsory introduction. Compulsory enforcement means that with effect from the notified date it will be illegal for traders to carry on transactions in weights or measures other than in metric units for use in commerce and trade.

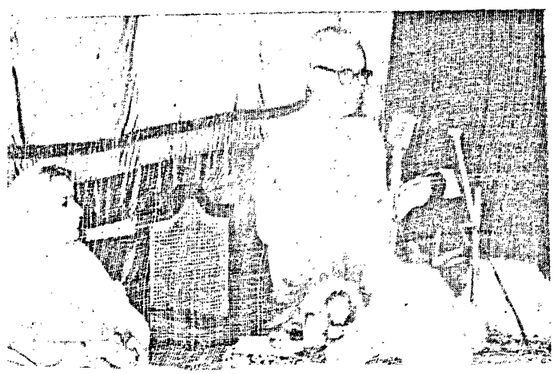
The Madras Weights and Measures Enforcement Act (Act No. XX of 1958) provides for the enforcement of standards of weights and measures in the State. But the introduction of weights in 1958 was more formal. It was only from 1st October 1960 that the use of metric weights became compulsory in the districts of Madras, Chingleput, South Arcot and North Arcot, i.e., after allowing for a two year transitional period for both the public and trade to get familiar with the new concept. The use of metric weight has become compulsory in the following trades in Madras State with effect from 1st October 1960 :—(*a*) The markets established under the Madras Commercial Crops Markets Act, 1933 (Madras Act XX of 1933), (*b*) Factories engaged in manufacture of Vanaspathi and soap.

Big Landmark

All over the country, not merely in Madras State, weights and measures have become compulsory on 1st October 1960 in respect of the Indian Airlines, most Government Departments and undertakings relating to technical, scientific and marketing data, commercial and industrial undertakings purchasing stores and drugs and also relating to weather, irrigation and power, cotton factories, textile mills, iron and steel factories engaged in the engineering industry, cement, manufacture of heavy chemicals, salt, paper, refractories, copper, aluminium, lead, antimony, tin, copper and raw rubber.

In short, the commencement of October 1960, was the first important landmark in the introduction of metric weights and measures not only in Madras State, but all over India. The use of metric weights became compulsory not only in certain areas and regulated trades but also in certain industries and trades which concerned the entire country. For the first time the public felt the impact of the changeover to the Metric System in the first phase of the introduction of the metric reform, when certain areas alone were chosen. It was feared by the trade in these areas that their trade with non-notified areas may be affected. This distinction was purposely intended to enable even the non-notified areas to quote in terms of metric units and thereby quicken the process of changing over to metric units in their trade. Though there was some initial difficulty, trade has now got over it.

Education Minister Bhakthavatsalam presiding over the inauguration of the State Council for Women's Education by Smt. Raksha Saran, Chairman, National Council for Women's Education, at the Children's Theatre.



Big Step Forward

But even so, the change on 1st October 1960 has covered only 10 per cent of the area of the country. The year 1962 marks a much bigger step forward, being the second stage of enforcement covering a larger area for the entire country including Madras. In Madras State the use of metric weights which was optional from 1st October 1960 in districts other than Madras, Chingleput, North Arcot, South Arcot has become compulsory from 1st April 1962. Thus in the entire Madras State the use of metric weights (i.e., both weights and weight instruments) has become compulsory from 1st April 1962.

The use of Metric Capacity Measures (pouring, dipping, conical and dry) also becomes compulsory in Madras, Chingleput, North Arcot and South Arcot from 1st April 1962. In this area these measures have been allowed for general use since 1961 with option to use old measures for a period of one year, and here, instead of the seer and the Madras Measure, the litre will come into force for trade purposes after 1st April 1962. From 1st October 1962 onwards the use of linear measures for trade (metre instead of yard) becomes compulsory throughout the State.

The change over to metric weights on 1st April 1962 is the most far-reaching reform at the moment and it will be worthwhile to remind ourselves of the general principles on which the units for wholesale and retail prices have been derived, for selecting the correct unit of commodities. They are :—In place of the tolas, ask for and use gram ; In place of the seer, pound, viss, ask for and use kilogram ; in place of the maund, hundred weight and candy, ask and use a quintal (100 kilogram) ; in place of the long or short ton, ask for and use the metric tonne, viz., (1,000 kilograms).

The use of old weights such as the tola, seer, pound, maund hundredweight, candy and ton for trade and commerce has become illegal after 1st April 1962 throughout the State.

Traders in Districts

On the part of the two traders in the districts of compulsory introduction it is necessary that they should purchase requisite quantities of metric weights and re-calibrate scales in Metric series for use for trade in their premises. Also, only beam scales and spring balances conforming to specifications will be stamped and allowed for use in trade.

The use of capacity measures has become compulsory in the Districts of Madras, Chingleput, South Arcot and North Arcot on 1st April 1962. In Madras State the use of capacity measures for measuring out dry grains is a peculiar feature. Instead of the heaped measures (Madras Measures or *Padi*) the struck measure will come into being. Roughly one Madras Measure heaped will be equal to 2 litres struck.

Enforcement Staff

The enforcement of the provisions of the Weights and Measures Act of 1956 is the responsibility of the State Government. The staff of the Department is being enlarged to cope with the increased work of enforcement. Each district will have one Assistant Controller and an area covering 3,000 trading establishments will be under the charge of a Weights and Measures Inspector from 1st April 1962, onwards. The officers of the Weights and Measures Department will contact the trading community and do propaganda among the public, but in this reform much depends upon the co-operation of the public and the trading community in particular for it to be successful.



A view of the gathering at the inauguration of the State Council for Women's Education.

A Revolution

The adoption of decimal coinage and the metric system have actually revolutionized mathematical and scientific thought and have made the computation of results of scientific knowledge easier. Metric conversion represents a national revolution in industry which must, in the long run, lead to more economical production. Such a conversion, when applied to our daily transactions, will result in a changeover to a system using units always having the same content whether with reference to weights and measures of length, area, volume, capacity or weight. Such a change, is obviously necessary for the country to be in line with progressive countries in the world. These units must become sooner than later the language of purchase and sale all over the country.

Welfare of Ex-Servicemen

The Soldiers', Sailors' and Airmen's Board Organization, taken over by the Government of Madras 13 years ago, has considerably expanded. The rehabilitation of ex-servicemen has been centred around the formation of Co-operatives of various types for ex-servicemen, some of which are progressing well. Substantial financial aid is also being given to the ex-servicemen of Madras State not only from the Madras State Ex-Services Personnel Benevolent Fund but also from various Corps Benevolent and Welfare Funds administered by Commands and Units. Besides giving financial assistance, the Soldiers', Sailors' and Airmen's Boards are making special efforts to place ex-servicemen in suitable employment through the Employment offices in the State.

Cut here and keep for use

BUY in KILOS

Metric Weights are now compulsory throughout the country.
Use of old weights is illegal.

CONVERSION TABLE FOR PRICES (VISS TO KILOGRAM)

NAYE PAISE PER VISS TO NAYE PAISE PER KILOGRAM

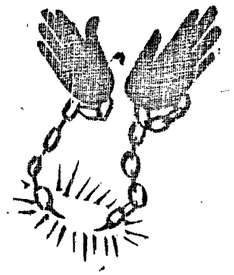
nP/Viss	nP/kg	nP/Viss	nP/kg	nP/Viss	nP/kg	nP/Viss	nP/kg	nP/Viss	nP/kg
1	1	21	15	41	29	61	44	81	58
2	1	22	16	42	30	62	44	82	59
3	2	23	16	43	31	63	45	83	59
4	3	24	17	44	31	64	46	84	60
5	4	25	18	45	32	65	46	85	61
6	4	26	19	46	33	66	47	86	61
7	5	27	19	47	34	67	48	87	62
8	6	28	20	48	34	68	49	88	63
9	6	29	21	49	35	69	49	89	64
10	7	30	21	50	36	70	50	90	64
11	8	31	22	51	36	71	51	91	65
12	9	32	23	52	37	72	51	92	66
13	9	33	24	53	38	73	52	93	66
14	10	34	24	54	39	74	53	94	67
15	11	35	25	55	39	75	54	95	68
16	11	36	26	56	40	76	54	96	69
17	12	37	26	57	41	77	55	97	69
18	13	38	27	58	41	78	56	98	70
19	14	39	28	59	42	79	56	99	71
20	14	40	29	60	43	80	57	100	71

RUPEES PER VISS TO RUPEES PER KILOGRAM

Rs/Viss	Rs/kg	Rs/Viss	Rs/kg	Rs/Viss	Rs/kg	Rs/Viss	Rs/kg	Rs/Viss	Rs/kg
1	0·71	11	7·86	21	15·00	31	22·15	41	29·29
2	1·43	12	8·57	22	15·72	32	22·86	42	30·01
3	2·14	13	9·29	23	16·43	33	23·58	43	30·72
4	2·86	14	10·00	24	17·15	34	24·29	44	31·44
5	3·57	15	10·72	25	17·86	35	25·01	45	32·15
6	4·29	16	11·43	26	18·58	36	25·72	46	32·87
7	5·00	17	12·15	27	19·29	37	26·44	47	33·58
8	5·72	18	12·86	28	20·00	38	27·15	48	34·29
9	6·43	19	13·57	29	20·72	39	27·86	49	35·01
10	7·14	20	14·29	30	21·43	40	28·58	50	35·72

1 KILOGRAM (1000 GRAMS) = 28 PALAMS Approx.

ISSUED BY GOVERNMENT OF INDIA DA 61/901



FREEDOM MOVEMENTS IN MODERN ASIA

PROFESSOR JOHN GALLAGHER

In a recent broadcast in the National programme of talks of All India Radio, Professor John Gallagher of Trinity College, Cambridge, made the point that the freedom movements of Modern Asia had to be understood and interpreted in the light of the changing contours of history and not in the light of standards and notions more relevant to a study of the 19th century national movements of Europe. It may be recalled in this connection that the First Asian History Congress was recently held in this country.

Round about 1900 most of South and of South-East Asia was ruled by European overloads. It was true that in east China, and in the west, the Arab countries were free from white rule—but this was only on paper and only on sufferance, because western imperialism was already draining the power out of Peking and Constantinople. Much of the continent then, had collapsed into colonialism; and the parts which had not, looked as though they were going the same way. Yet half a century later, all this had changed. Now, Asia consisted of independent states, and the overloads had departed, while the only traces of the old system were such places as Macao, West Irian and Goa—fossils from an earlier age, castaways marooned by the tides of history.

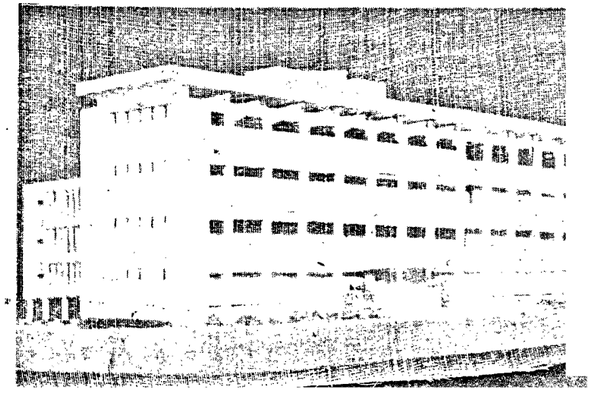
How had these massive changes come about? Of course, we all think we know the answer; because of the rise of Asian nationalism—But nationalism is a glib and slippery concept, and we must be careful how we handle it.

There was a great deal of nationalism about European politics in the nineteenth century, when Germans and Italians, Irishmen and Poles were demanding their independence. Historians have worked hard to chart the rise, the growth, the struggles, the triumph of these movements. They have talked of a new middle class, produced by economic change and the unifying of the market, intent on Self-government, united by common ties to the lower orders, with whom they stood shoulder to shoulder on the barricades, to seize by bullets an independence they could not achieve by ballots. On the whole, it is a convincing analysis, so convincing that the historians of Asia have been tempted to apply it to the Freedom Movements here.

No Cant No Prejudice

But is it worth exporting, this notion from the Europe of the nineteenth century into the Asia of the twentieth?

Model of the State Housing Board Office building, for which Industries Minister Venkataraman recently laid the Corner Stone inside the compound of the Chingleput Collector's Office.



Or would the Asians be well advised to apply import controls to it? Now obviously we must not try to answe this question in terms of cant or sentiment or prejudice. Let us deal with it by looking at some facts about modern Asian nationalism. And while we are about it, let us not restrict ourselves to looking at the Indian case alone—for that would be to fall into the same error of self-centredness of which the European historians are so rightly accused. Instead of that, let us look at Asian Freedom Movements in general. The results may be surprising.

They are surprising because these movements have so much in common. One and all, the modern political movements of Asia seem to have passed through the same phases, although on different time tables. The first of these phases came when Asians were exposed to the full blast of Western influence.

Fascinating at First

It is worth remembering that the conflict between traditional values and modernising impulses is not new; on the contrary, the Arabs, Chinese, the Indian, the people of South-east Asia were already acquainted with it by the nineteenth century, and with the lacerations, anxieties which it brings. Very often, the first reaction of their intellectual leaders was to welcome the coming of this new rationalism and these new techniques.

To Ram Mohan Roy in India, to the devotees of French literature in Lebanon and Indo-China and Syria, to the reforming civil servants in China, to the town-dwellers in Indonesia, the ideas and the gadgets of the West were at first fascinating. They took to European literature as eagerly as they put on European dress (although in both cases they thought it prudent to shelter their women from this new look). And they strove to modernise Islam and Hinduism and Confucianism as earnestly as they studied western economics.

Chief Minister Kamaraj inaugurating the St. Thomas Mount Automatic Telephone Exchange.



But in every case this initial enthusiasm for the new learning provoked a sharp reaction in favour of the old. Obviously, there were great risks in these novelties. Flirting with the values of the West might be exciting; but what if it led to a divorce from the values of the East? And so the traditionalists attacked all this indiscriminate borrowing from abroad. The Afghani insisted that the essence of Islam had to be protected against synthetic religion; in India the Arya Samaj, in Indonesia the Darkhat Islam, in China the Confucian scholars, all stressed the unique virtue of their native creeds, not as encapsulating the truth, but also as symbolising their difference from the crimes and follies of the white man. The phase of flirtation was drawing to a close. The phase of violent quarelling was about to begin.

Now was the point when the nationalist movements in all these countries began to be important. Previously, they had tended to consist of small clubs of well-to-do lawyers; or of lawyers who wanted to be well-to-do. But the emergence of a group which spurned western values but mastered western organisation and method gave these movements a weight and a depth which had been beyond their powers hitherto. By asserting the primacy of native values, by claiming that the native religion was in danger, by appealing to the native past against the foreign present, the leaders of these movements now grouped successfully for mass support. Deeper and deeper levels of society could now be enlisted in the struggle.

Mass Movements

Young men from mofussil or the backlands could now be jerked out of apathy and hustled into *hartals* or taken out in processions. And as time went by, the movements were to win over the peasantry, as the new agitators told them that indebtedness in the Punjab or share-cropping in Indo-China or landlessness in Java were not inevitable and were not unchangeable.

Once these Freedom Movements succeeded in getting down to grass roots, then foreign rule was doomed. Any imperialism must depend on the collaboration of its most intelligent subjects or on the neutrality of the remainder. But this time Government House could hope neither for the help of the one nor for the apathy of the other. It only remained for the foreign rulers to pack their bags and to set off for the airport.

The Two Groups

Everyone knows all this, but it is the implications which are important. Come to think of it, how have I been analysing these movements? Clearly, not in terms of some middle class produced by a unified market. On the contrary, the argument has been developed around two groups, the westernisers and the traditionalists. Who were these people? They were intellectuals, and often they belonged to notable and affluent families. To borrow a word from the sociologists, they were the *elite* that is, the group which in any society enjoys positions of leadership and esteem (or which thinks it ought to be enjoying them).

These Asian *elites* had been downgraded by the coming of European dominance. But this dominance offered new opportunities for those of them who could learn the new techniques, for those of them, in other words, who were the most adaptable.

Here was their chance to come up again. They grasped at it—in some countries more firmly than in others. In the process they quarrelled among themselves—as we have seen; some were ready to stomach a total westernisation, others wanted the know-how without the neurosis.

In the event, it was usually the more traditionally minded who won; for more than their opponents, they had the slogans and the platform which could appeal to a mass audience. But were the traditional *elite* was not so strong, then the westernising impulse counted for more among the nationalist leaders, and they tilted the movement in the direction of Marxism. If China has become a Communist State whereas India has not, this is merely another way of saying that the Indian traditional *elite* has proved stronger and more adaptable than the Chinese traditional *elite*. If India has not repudiated her own continuity and her own civilisation, this is largely because of the staying power of her leadership groups.

Bold Rewriting Needed

But that is by the way....The point to notice is this. Wherever we may hunt for the motor forces behind these nationalist movements, whether among discontented peasants or religious revivalists or unemployed intellectuals, it is plain where we are not going to find the driving power. It will not come from a middle class of the European pattern, a class formed by economic growth and defined by economic function. In China such a class has never existed anyway.



Equipment at the St. Thomas Mount Automatic Telephone Exchange being explained to the Chief Minister.

In India and Indonesia the movements may have been headed by professional men, but the professions had been formed by colonial governments for their own convenience, and they were not the consequences of some industrial revolution. Colonies do not have industrial revolutions. But if we cannot root these movements in middle class political agitation, then we shall have to deny that they belong to the same category as the nationalist movements in Europe. Therefore we shall have to consider them as separate fields of study and work out new techniques to investigate them.

No Aping

And this brings me back to my starting point. Most of the history of these movements in Asia has not been written like this. It has been written on the assumption that they were structurally identical with the movements in Europe during the previous century. We have been thinking about the wrong revolutions in the wrong places at the wrong times. So there is nothing for it but to undertake a bold rewriting of the history of the Freedom Movements of Asia. It will not be done by aping the methods of European historiography. It must not be done by lazily borrowing the concepts of Marxism, for there is no doctrine more rooted in a European-centred view. It cannot be done without rethinking the problem in terms of Asian experience, Asian social systems, Asian culture patterns. Here is a large and vital task. It is time for us to make a start on it.

Improved Seeds for Madras

In Madras, the production and distribution of improved strains of paddy and millets in villages have been entrusted to Panchayats. This has been done on the recommendation of the Seed Multiplication Team of the Committee on Plan Projects. The size of the State seed farms in suitable localities have also been extended to 100 acres. This, it is expected, will reduce working costs per acre and help to overcome the existing shortage of foundation seeds of pulses, groundnut and millets.



The formal opening of the new Employees' State Insurance Hospital in the City by Chief Minister Kamaraj marked another milestone in medical relief. Pictures show: (1) A view of the Hospital. (2) The Chief Minister inspecting the Operation Theatre. (3) Smt. Jothi Venkatachalam, Minister for Healths, who declared open the T.B. Block inside one of the Wards. (4) View of the T.B. Block. (6) The General Ward.

A Feather in the Cap

Employees' State Insurance Hospital

The Employees' State Insurance Hospital recently opened at Kilpauk in the City is yet another feather in the City's cap. It has grown from the 78-bed hospital in rented buildings on Poonamalle High Road, first of its kind in India, which was inaugurated on Deepavali Day in 1955 by President Rajendra Prasad, to provide in-patient facilities for insured workers. This feature gives an account of the new hospital.

The 350-bed Employees' State Insurance Hospital at Kilpauk in the City of Madras declared open on April 22nd last is a welcome addition to existing hospitals in the City which are already overcrowded. Though this hospital is meant exclusively for insured workers, yet to that extent it will be relieving congestion in other hospitals.

The hospital has been planned in three stages: In the first stage, a fully equipped out-patient department and wards for 175 beds (including 25 T.B. beds) will be provided. In the second and third stages, the number of beds will be increased by 188 and 200 respectively. The first stage work was technically sanctioned at a cost of Rs. 29·6 lakhs and the buildings have since been completed. An additional sum of Rs. 11·00 lakhs has also been sanctioned for taking up the second stage in continuation of the first stage. The third stage is expected to be taken up in due course.

Easy Access

The 15-acre site chosen for the Employees' State Insurance Hospital lies by the side of the Mental Hospital opposite to Madavakkam tank road, and is within easy access of the industrial sector of the City. The site is fairly outside congested parts of the City and is ideal.

The hospital is modern and provides for all sections as full-fledged hospital. The following have been provided for in the scheme: Out-patient Department; Casualty Department; Blood Bank Department; Office and Administration; X-Ray Block; Kitchen Block; Gynæcology Clinic; Occupation therapy and Gymnasium; Operation theatre; Minor Operation; Wards (150 General beds plus 25 beds for T.B. patients). Residential accommodation for one Superintendent, eight Civil Assistant Surgeons, one head nurse, other nurses and 50 other employees has also been provided under the scheme.

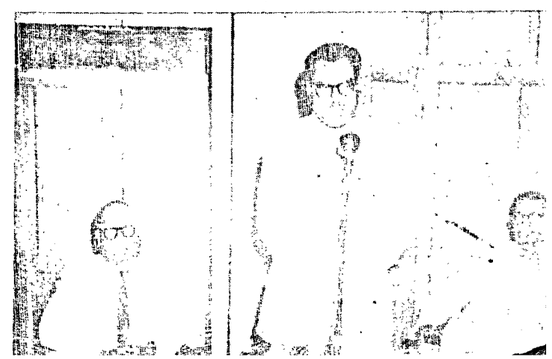
The State Public Works Department has evolved a suitable plan for the main hospital building after careful planning in consultation with the Employees' State Insurance Corporation. While meeting the requirements of the Employees' State Insurance Corporation the plans were finally drawn up to suit local conditions and with an eye on economy.

The main hospital buildings, providing for 150 beds in the first stage, consists of a two-storeyed structure with a plinth area of 48,400 sq. ft. The ground floor accommodates the Out-patient, Casualty, Blood bank, Office, X-Ray, Kitchen, Gynæcology departments and a ward of 36 beds. The operation theatre and other wards are located in the first floor.

Noteworthy Feature

A noteworthy feature of this hospital is that the operation theatre will be air-conditioned which facility is not available for the present in other hospitals in the City except the General Hospital. Further, the wards will consist of cubicles, some with 3 beds and others with 6 beds in each. This arrangement will give a sense of privacy to the patient, facilitate grouping of patients of similar category and help avoid sentimental and psychological feelings usually generated among sick patients lying together in a big ward. A passenger-*cum*-bed lift is also proposed to be erected as the building will eventually consist of four floors. A T.B. Ward of 25 beds is located in separate buildings.

Sri N. S. S. Manradiar, Minister for Co-operation, presided over a function at the State Co-operative Bank Building, held recently in connection with Warehousing Week.





The Elementary Education Teachers' Association, Egmore, held a formal function at the Children's Theatre recently to present clothes to Children. Minister Bhakthavatsalam distributed the clothes on the occasion.

The State Government sanctioned Rs. 27·00 lakhs in December 1959 for the construction of buildings alone under the scheme. A further sum of Rs. 1·00 lakh was sanctioned for air-conditioning the operation theatre. The Employees' State Insurance Corporation has to bear the entire cost of the building as well as the cost of establishment of a separate P.W.D. Division for execution as well as 3 per cent of total cost towards other supervision charges. The periodical maintenance and repairs will be done by the State Government and the Employees' State Insurance Corporation will meet this cost and also centage charges.

Due to careful planning, design and construction of the main and auxiliary buildings, the anticipated outlay on the scheme is expected to be only about Rs. 25·00 lakhs against the technical sanction of Rs. 29·60 lakhs, thus effecting a saving of Rs. 4·60 lakhs. The main building has been designed with adequate foundations to take up finally four storeys though the present construction forming the first stage is limited to two storeys only. Open foundation has been adopted as no serious foundation problem arose. By judicial use of R. C. columns along with ordinary foundations, brick masonry-load bearing walls, and R. C. C. slab and beam constructions, it has been possible to economise construction costs. While designing this large building, due consideration was given to architectural values without sacrificing internal planning for the sake of appearance.

The lay-out has been designed placing proper accent on the disposition of the various buildings and taking into account relative importance and future expansion. The buildings have been oriented to take maximum advantage of the prevailing winds and at the same time avoid the direct beating of the sun. The formation of lawns and the network of roads connecting the various buildings go to make an attractive and pleasing lay-out. The quarters have been judiciously segregated but still within easy reach of the hospital buildings.

The building work was commenced in June 1960 and it is to the credit of all concerned that this scheme has been completed within a period of 22 months in spite of the acute shortage of steel and cement in the early stages.

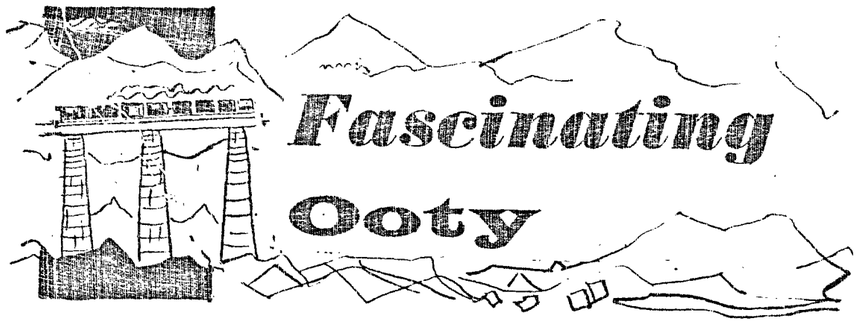
Interesting Facts

It will be interesting to note that 2,600 tons of cement, 350 tons of steel and 70 lakhs of bricks have been used in the execution of this building project. The total length of water pipes laid in the campus is about 1¼ miles. The network of road laid around the buildings runs to 2½ miles.

The provision of water supply presented a problem in that only 10,000 gallons of Corporation water could be made available against the full demand of 25,000 gallons per day. Therefore, it became necessary to provide for separate water supply arrangements from wells inside the hospital compound. Two systems of pipe line have been installed, one for drinking water supply and the other for other general purposes. There was a drain running across the site, and suitable diversion arrangement are being made by providing covered drain along the southern boundary of the site.

Increase in Tractors

The number of tractors working in India has gone up by more than 60 per cent in the last five years. In 1956, the figure stood at about 21,000 and it went up to over 34,000 in 1961. Till 1960, the requirements of tractors were met solely by imports. In the same year, an Indian firm started production of tractors, the capacity of the unit being about 6,000 tractors a year. Most of the requirements in tractors is still being met by imports. The Third Plan envisages the production of about 10,000 tractors annually by 1965-66 and licences have already been issued to five firms with a total annual capacity of 14,500 tractors by the end of the Plan period.



The season is on at Ootacamund, lovely summer resort of the South. Many who have been to the place and enjoyed themselves may not be aware of the fascinating history of the place and how it came about. In fact, the place remained unknown till about 1602 when a man of God, a Portuguese Priest, led an expedition and came upon the Todas living there. This feature recounts the story of Ootacamund and describes places of interest for the tourist.

Set amidst most grandiose and beautiful scenery is lovely Nilgiris, "the little Switzerland of India". Taking its name from the blue haze which the high mountain walls present to those gazing at them from the plains (Nilam means blue and Giri means hills) Nilgiris is one of the most salubrious health resorts in the world. The Nilgiri hills mark the meeting point of the Eastern and Western Ghats—the mountain ranges which contain between them the table land of the Deccan. The Nilgiri range holds in its fold the three hill stations, Ootacamund, Coonoor and Kotagiri.

Undiscovered

The Nilgiris remained undiscovered till about 1602 when a Portuguese priest by the name of Ferreiri led an expedition to the hills and came upon its Toda inhabitants. After this, the next civilised enterprise was not undertaken till 200 years later, when Dr. Buchanan, acting under orders from the Government of India to explore commercial and agricultural conditions in and about Mysore, came upon these hills. But his expedition proved abortive.

In 1812, a Surveyor named Keys and his apprentice Macmahon, were sent up by the Collector of Coimbatore to make a detailed study of the plan of the hills. These two, often regarded as the earliest Europeans to have climbed the hills, left behind reports which were however not complete.

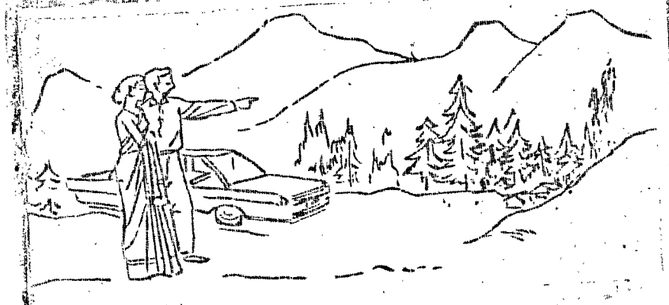
Stone House

Six years later, Mr. John Sullivan, then Collector of Coimbatore sent two of his enterprising assistants to the hills to continue the pioneering exploratory work. Encouraged by their work, the Collector mea ad trip himself and quite soon established his residence on the hills, becoming thereby the first European to build a house in Ootacamund. This house called "Stone House" was completed in 1823. After that more Europeans started settling on the hills and soon afterwards, the Governors of Madras made it their regular resort during summer months. The Duke of Buckingham, when he was Governor, took keen interest in the building of the new Government House and the arrangement of its gardens.

The development of the Nilgiris was rapid thereafter as residents grew in number, the popularity of the Hill Station among visitors spread and amenities began to be provided. The first post office was opened in 1826, the first hospital in 1829; the Municipality was established in 1863; the Collector's Office in 1866; and a library in 1878.



Stone House

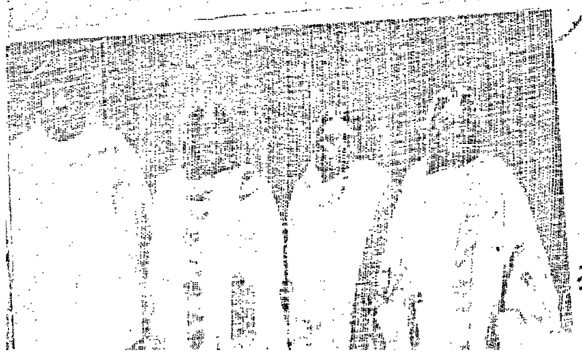


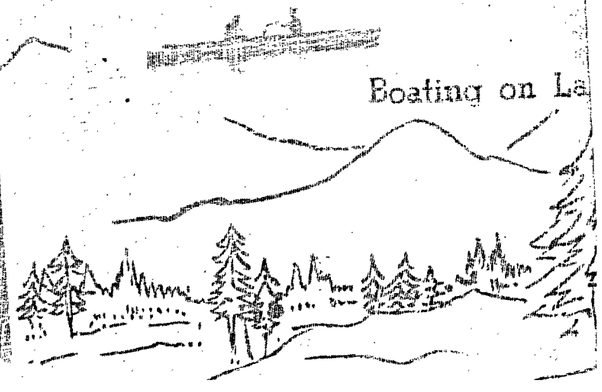


Lovely Spot

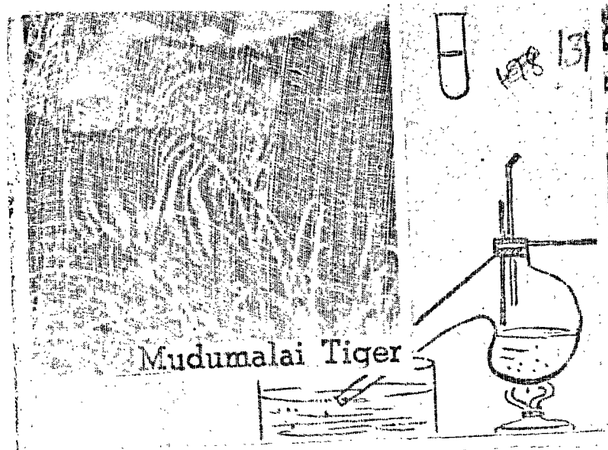


Sheep Grazing





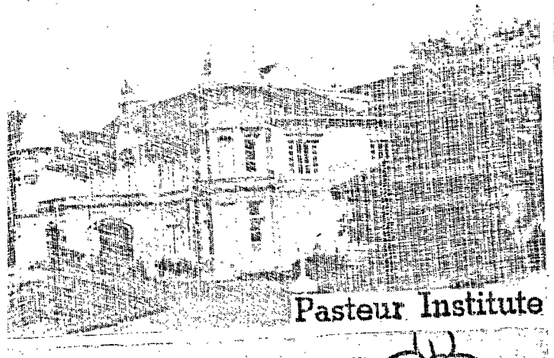
Boating on La



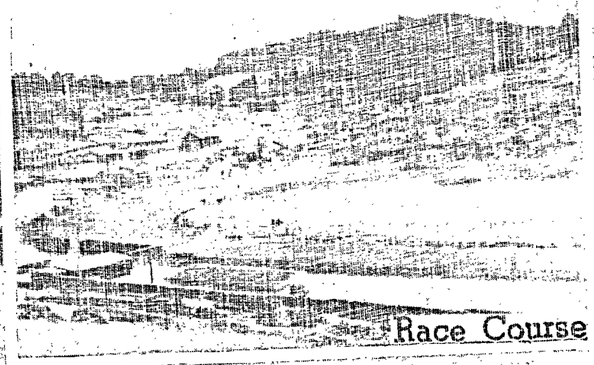
Mudumalai Tiger



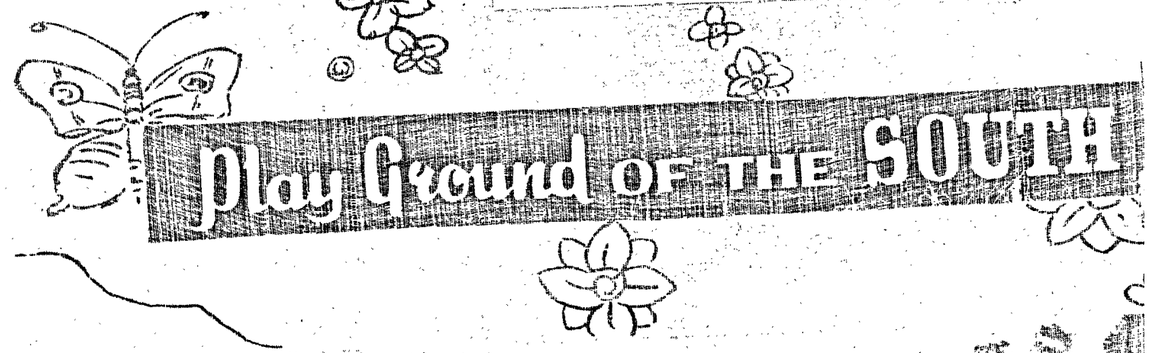
Sim's Park

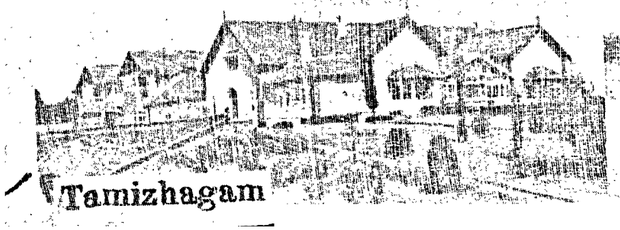


Pasteur Institute

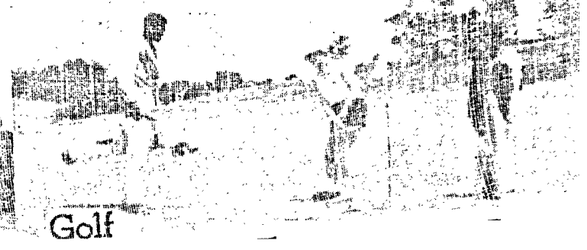


Race Course

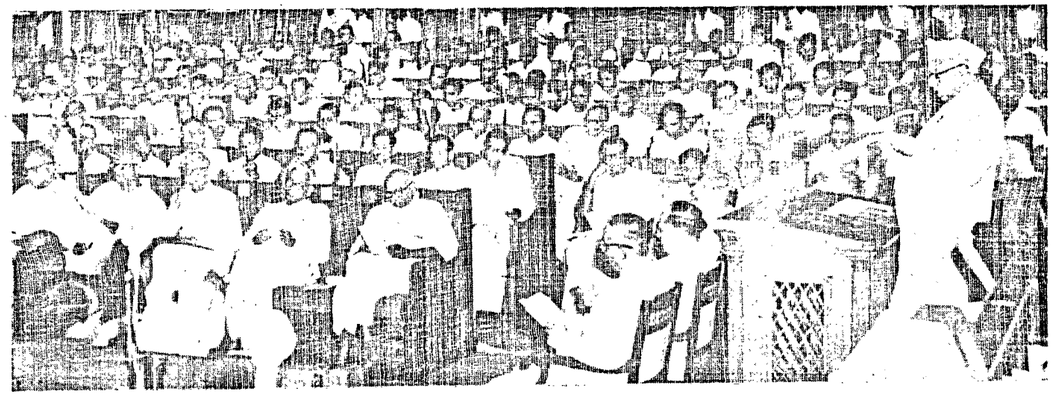




Tamizhagam



Golf



Governor Medhi, addressing the Joint session of the Madras Legislature recently held in the Assembly Hall.

Ootacamund, familiarly known as Ooty, stands at an altitude of 7,500 feet and ranks among the most charming and certainly the most exquisite scenic spots in India Its climate is both bracing and equable. Its natural scenery is magnificent; its hills, ravines, woods and grass downs appeal to the æsthetic sense. Sports and games of all kinds and all facilities for a gay social life are available for the holidaying tourist while for the introvert and the nature lover, the walks and drives in and around Ootacamund are a veritable paradise.

To describe Ooty as the Queen of Hill Stations would not be adequate at a time when half a dozen hill stations claim the same title. There may be queens and queens, but Ooty is certainly the unchallenged Queen of Hill Stations.

Main Features

One of the main features which distinguishes Ooty from other hill stations is the length of motorable roads. The town has an area of 14 square miles, which no othe hill station can boast of. Besides, it has the appearance of a vast park with its broad well-kept roads, traversing a country of beautiful gardens and extensive stretches of turf studded with ornamental trees.

One can live in Ootacamund throughout the year unlike in other hill stations. Even though the altitude of Ooty is 7,500 feet, it does not experience snow during winter. This is due to its altitude and its proximity to the equator. Tourists can visit the place throughout the year.

Ooty gets an average of 50 inches rain from the middle of June to the middle of August during the south-west monsoon. The summer season lasts from March to October and there is plenty of gaiety and entertainment during the period.

The Botanical Gardens is one of the best in the East. The high standard of maintenance and the availability of several hundreds of exotic ornamental and economic plants for observation and study give these gardens a unique position among the public gardens of India.

The annual Spring Flower Show of the Nilgiris Horticultural Society and the Dog Show of the South India Kennel Club, held here every year during May are other attractions. The Toda huts on the top of the Gardens are worth a study for their historical and authropological interest.

DODABETTA PEAK standing at an altitude of 8,640 feet is claimed to be the highest peak in Madras State. It is six miles from Ooty and a good motorable road leads up to the summit. From the top on a clear day one can have a panoramic view of the extensive Mysore plateau, the distant Coimbatore plains and of the other hill stations on the Nilgiris.

Splendid Scene

The lake at Ooty presents a splendid scene, bordered as it is, by tall oaks, poplars and eucalyptus trees. There is a boat house also and one of the seasonal attractions at Ooty is boating on the lake. Pony ride along the lake side is another big attraction. There is also an excellen 18-hole golf course attached to the Ooty Gymkhana Club to cater for lovers of this game.

WENLOCK DOWNS is undulating landscape covering 40 square miles. Situated about five miles away from Ootacamund on the Mysore road, this is perhaps the most beautiful 'spot' in the Nilgiris, and has few to equal it anywhere in India. To see the sunset from the Golf Club on the Downs, especially in September and October, is a glorious experience.

STEPHEN'S CHURCH, built in 1830 is the oldest church in the Nilgiris. The wooden arches of the church are said to have been taken from the Palace of Tippu Sultan. Within the Church are tablets to the memory of Sullivan, the founder of Ootacamund, his wife and other members of the family. Kandal Cross two miles from Ooty is another All-India Catholic Pilgrim centre.

Second Largest

COONOOR is the second largest of the hill stations in the Nilgiris. It lies about 12 miles below Ootacamund at an altitude of 6,000 feet. The climate here is mild and congenial and some people prefer it to Ooty for this reason.

Coonoor gets rains from the north-east monsoon which sets in about the middle of October and lasts for about two months. Like its sister station Ootacamund, Coonoor has equal facilities for tourists. There are many places in and around Coonoor which are worth visiting: Sims Park Pasteur Institute, Government Silk Farm, Lady Canning Seat, Dolphin's Nose, Lamb's rock, Laws falls, Ralleigh Dam.

Remarkable Quietude

KOTAGIRI is about 14 miles from Coonoor and 18 miles from Ootacamund at an altitude of 6,500 feet. Kotagiri enjoys a climate midway between that of Coonoor and Ooty. It offers to the visitors beautiful natural surroundings, remarkable quietude and opportunities for real rest and relaxation. The places that can be visited are Rangaswamy Peak, Rangaswamy Pillar, and St. Catherine's falls.

MUDUMALAI WILD LIFE SANCTUARY: This sanctuary is 40 miles from Ootacamund on the Ootacamund Mysore road. It has an area of 125 square miles with an average elevation of 3,000 feet. The chief wild animals seen in the Sanctuary among other species are, Tiger, Panther, Sloth bear, Elephants, Bison, Sambar, Chittal, Barking Deer, etc. There is a fine forest Rest House "Abayaranyam" having two suites of rooms with attached Khansama.

Power Projects

Nilgiris has many Hydro-Electric projects which are worth a visit. The Pykara Hydro-Electric scheme, the first power project of the Government of Madras undertaken in 1929 has the highest head (3,080 feet) plant in Asia. The Moyar Hydro-Electric scheme utilises the tail race water of Pykara Power House.

The Kundah Hydro-Electric scheme is the sixth Hydro-Electric project and the biggest scheme so far undertaken by Madras State. The Scheme envisages the utilisation of the Hydro Potential available in the Kundah basin in the Nilgiris by constructing five Power Houses. The scheme is financed by the Government of Canada under the Colombo Plan.

Shikar and Fishing

The Nilgiri plateau is famous for the great variety of game that it offers. Among the big game found in the area are Bison, Spotted Deer, Tiger, Ibex, Sambar, the four-horned Antelope and the Panther. The river in and around Mukerti and Avalanche abound in fish such as Trout, Mahseer and Carp varieties. The Nilgiris Wild Life Association at Ooty provides the Shikari with pack and riding ponies and makes other arrangements for Shikar and fishing trips.

Investment and Income-Tax Rebate

A scheme announced by the Union Finance Minister in his recent Budget speech is of particular interest. It has now been decided that the moneys deposited in the 10 and 15-year Accounts of the Cumulative Time Deposit Scheme run by Post Offices will also be allowed to earn a rebate of Income tax as in the case of Life Insurance premia and contributions to Provident Funds but within the same maximum limits. This concession will be specially attractive to self-employed persons or employees in commercial undertakings who are not eligible to contribute to any recognized Provident Funds.

Destination Prosperity . . .

A decade of Planning in Madras State has prepared the ground for the emergence of a prosperous and modernized society.

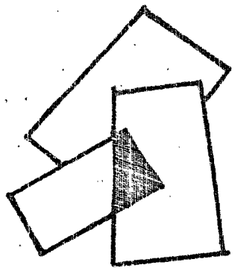
The power pumpset has transformed agricultural outlook and the peasant in the village to-day is happy. He has adopted improved farming techniques and produces and earns more at less cost and labour.

The benefits of education, electricity and communications are progressively reaching the remotest villages in the State. New Industries and Factories representing big, medium, small and rural enterprises have appeared fairly distributed all over the State and provide gainful employment to the people.

The State is now geared up for the spurt of effort that will usher in the industrialized society wherein material prosperity will lead to larger goals.

PLANNING LEADS THE WAY

Four-Fold Step Up



ALUMINIUM That Shining Metal

The four-fold increase in the indigenous production of aluminium targetted for the Third Plan under the Plan Programme of Industrialization is a reflection of the vital role of this shining metal in the implementation of its engineering and heavy industries, power and transport programmes. This feature reviews progress achieved and the prospects ahead.

The demand for aluminium in 1965–66, as assessed by a committee set up by the Ministry of Commerce and Industry, is expected to be of the order of 155,500 tons consisting of 55,000 tons of electrical grade and 60,500 tons of commercial grade. The electrical grade is mainly required for transmission and distribution lines, bus bars and die-castings and for substitution in power cables and house-wiring. The principal uses of the commercial grade are domestic utensils, aluminium alloys, packing (foils), building construction, food, farming and sugar industries.

During Third Plan

It is therefore, proposed in the Third Plan that the indigenous production of aluminium should be stepped up from the level of 18,000 tons in 1961–62 to 80,000 tons in 1965–66. During this period imports of aluminium will register an overall decrease from 40,000 tons to 35,000 tons.

Specific proposals to instal an additional capacity of 69,000 tons have already been licensed and it is expected that when all these schemes are implemented a total capacity of 87,305 tons for aluminium would have been installed.

Three New Units

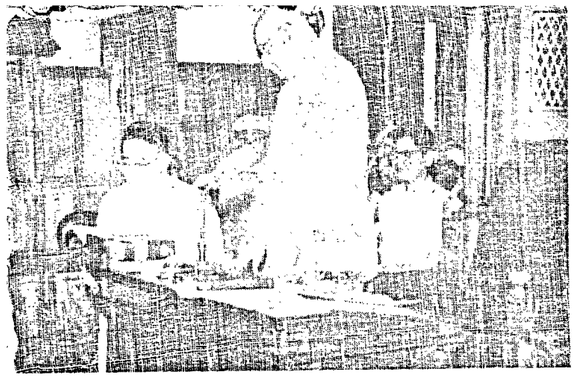
The proposals licensed so far include expansion of the smelters at Hirakud and Alwaye by 10,000 and 5,000 tons each, expansion of the Asansol production unit by 5,000 tons and the commissioning of three new units at Rihand, Koyna and Mettur. The new units at Rihand and Koyna will have a capacity of about 19,000 tons each while the capacity of the Mettur unit will be about 10,000 tons. Most of the schemes are expected to be completed even by the middle of the Plan period and the whole programme is expected to be completed well ahead of the schedule.

Overall Investment

Of the total production of 87,000 tons of aluminium in 1965-66, the production of electrolytic grade of aluminium will be only 28,000 tons as against an anticipated demand of about 55,000 tons for this grade. There is, therefore, considerable justification for increasing the Plan target even for the Third Five-Year Plan.

Information Minister Bhoovaraghan, recently visited the Government Press and went round the various sections.





New members of the Legislative Council were recently sworn-in by Council Chairman Cherian. Picture shows Sri P. V. Rajamannar, nominated member, being sworn-in.

The overall investment of the development programme of aluminium industry under the Third Plan is estimated at Rs. 65 crores. A production programme of this order will also require 375,000 tons of bauxite, 16,000 tons of caustic soda, 58,000 tons of petroleum coke and 200,000 k.w. of power.

Progress under Second Plan

During the Second Plan period, the production capacity of aluminium was stepped up from 7,500 tons in 1955-56 to about 18,100 tons in 1960-61, as against the Plan target of 25,000 tons of actual production in 1960-61. The shortfall was mainly accounted by the fact that one of the three projects, proposed in the Plan, the establishment of a new smelter with a capacity of 10,000 tons at Salem in Madras by the National Industrial Development Corporation—did not materialise because of the difficulties experienced during the Plan period particularly in the matter of foreign exchange. Ultimately, it was decided to develop this project as a private sector undertaking.

Thanks, however, to the versatile quality of this metal, the demand for it during the Second Plan period showed an unexpected increase. As against the original expectation of about 30,000 tons of aluminium by 1960-61, the actual demand was of the order of about 45,000 tons. The investment in this industry during the Second Plan period was about Rs. 12 crores as against Rs. 22 crores anticipated at the time of formulating the programme.

New Process

Realising the vital role of aluminium, and the need for ensuring adequate supply of petroleum coke which is required by this industry, it has been decided that the production programme of the public sector refineries at Nunmati and Barauni should include sufficient facilities for the production of petroleum coke.

Aluminium industry is enjoying tariff protection and has, therefore, the responsibility to offer relief to the consumer by economising the costs of manufacture of aluminium. In this connection considerable interest is being evinced in the new process for aluminium production, reported to be under investigation in Canada. The new process, which is expected to herald the first major technological change in the method of manufacturing aluminium gives promise of considerable savings in the production cost, particularly a substantial reduction in capital costs. The experimental plant is expected to be completed in 1962 but it will require full scale operation of the plant for two years before ascertaining precisely the consequent capital and operational savings.

Machine Tool Design Institute

The Government of India have decided to locate the Central Machine Tool Design Institute at Bangalore. The main objectives of the Institute, which will be set up with Czechoslovak collaboration and assistance, will be to design and develop machine tools and to standardize machine tools and to train designers and design personnel for the machine tool industry. The project will cost over one crore of rupees. The Czechoslovak assistance will be to the extent of Rs. 60 lakhs. A Governing Council presided over by Prof. M. S. Thacker, Director-General of the Council of Scientific and Industrial Research, will manage the affairs of the Institute.

Successful Marketing

Nilgiris Potato Growers' Co-operative Society

Co-operation is a field in which Madras State has been very much in the forefront. The success of the co-operative principle is vital for progress and the success of every Co-operative institution in the State is a vindication of this principle. This feature gives an account of a successful co-operative marketing society in the State which from small beginnings 25 years ago has expanded into a big institution. It recently celebrated its Silver Jubilee.

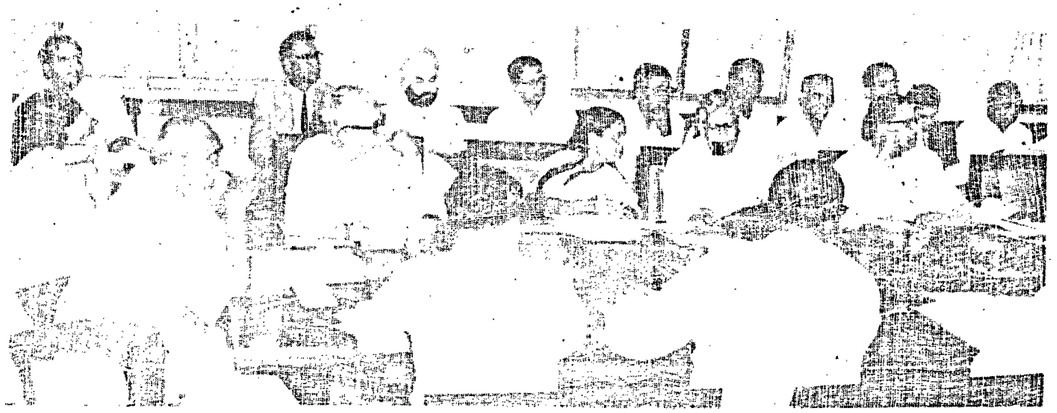
The Nilgiris Potato Growers' Co-operative Marketing Society which completed 25 years on February 9, 1962 has been conducting business at a steady rate of profit. For the co-operative year ending June 1961 the net profit is tentatively estimated at nearly Rs. 2·63 lakhs. It started with only 116 members in 1935 and the membership now stands at 4,192. This includes 4,039 individual potato growers, 131 primary societies and 21 agricultural banks within the area of operations of the society.

From humble beginnings, the society has gradually acquired a firm foothold in the potato trade. In 1951, the society had handled only about 1,300 potato bags. In 1950-61, (i.e.) within a span of about 10 years, the operation of the society expanded to such an extent that it was able to handle over two lakhs bags of potato worth about 62 lakhs of rupees. At present, the society's business accounts for nearly 35 per cent of the total production of potatoes in Nilgiris district.

It is significant that the marketing operations of the society include a large volume of inter-state trade. Taking advantage of preferential rail movement of agricultural produce sponsored by the co-operatives, the society has been able to market the produce in consuming centres such as Calcutta, Bombay and Cuttack.

A Bold Scheme

The marketing operations of the society are characterised by a very bold scheme called the "Price Guarantee Scheme". Under this scheme, the members of the co-operative are guaranteed a reasonable minimum for the potatoes brought to the society for marketing. In case the potatoes fetch a lower rate, the society bears the loss. In case of higher prices, the concerned members get the benefit proportionately to the value of the produce entrusted to the society for marketing. During the year 1960-61, the society incurred a loss of nearly Rs. 36,000 under the Price Guarantee Scheme. However, the society



Chief Minister Kamaraj, presiding over the meeting of the State Development Committee held recently in the Cabinet Room of the Secretariat.

was able to bear this loss without serious difficulty as it had earned a marketing commission of Rs. 1,20,000 at the rate of Re. 1 per bag of 200 lb. of potatoes.

In addition to undertaking marketing of potatoes the society is also assisting its members by providing pledge loans. During 1960-61, the amount of pledge advances given was of the order of over Rs. 7 lakhs. Another very significant activity of the society relates to what is known as the control credit scheme.

Katcha Godowns Too

The society constructed its first manure mixing godown at Mettupalayam in Kendiyur Road in the year 1953 at a cost of Rs. 53,000 out of General Funds. Towards this the society got a subsidy of Rs. 7,500 from the Government. About 10,000 bags of manure can be stocked in this godown. Another godown was constructed at Mettupalayam in 1958, for collecting potatoes, with Government loan and subsidy of Rs. 44,500 and Rs. 12,500 respectively, the loan being repayable with interest in 10 years.

The society has also put up katcha godowns during 1960-61 at available vacant site belonging to the society. It has also put up katcha godowns at the newly purchased site adjoining the existing potato godown. In all these godowns about 7,500 bags of potatoes can be kept at a time leaving space for other purposes such as cleaning, sorting and grading to facilitate marketing. During the off-season these godowns are used for stocking manure ingredients like bonemeal, groundnut cake, superphosphate, etc., which may number about 20,000 bags at a time.

The society obtained a loan of Rs. 76,000 repayable with interest in 20 years for construction of a godown in the site owned by the society at Ootacamund. Government have given a subsidy of Rs. 12,000 for this purpose. The construction of the godown is completed. The capacity of this godown will be about 25,000 bags.

In addition to the owned godowns, the society has taken 18 godowns on rent both at Ootacamund and Mettupalayam and it incurs an expenditure of Rs. 2,000 per month under this. The society has also obtained a loan of Rs. 22,500 from the Government for putting up a godown at Mettupalayam, at the site adjoining the Manure Godown at Kendiyur Road, at an estimated cost of Rs. 30,000.

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Towards Better Industrial Relations



The three-tier countrywide scheme of workers' education is aimed at building a better industrial society through educating labour to function as a constructive, responsible and well-informed force developing trade unionism on sound lines. This article recounts the progress of the scheme run by an autonomous Central Board consisting of representatives of workers, employers, educational institutions and Government.

Over 22,000 industrial workers in various parts of the country have received training in trade union methods and philosophy under the three-tier countrywide scheme of workers' education. Additionally, nearly 10,000 workers are now undergoing training at various centres. By the end of the current Plan, a substantial portion of the working force is expected to be covered under this scheme.

The object is "to create over a period of time, despite lack of general education, of a well-informed, constructive and responsible minded industrial labour force capable of organizing and running trade unions on sound lines without leaning heavily on outsiders and without lending themselves to exploitation by extraneous interests".

Three Stages

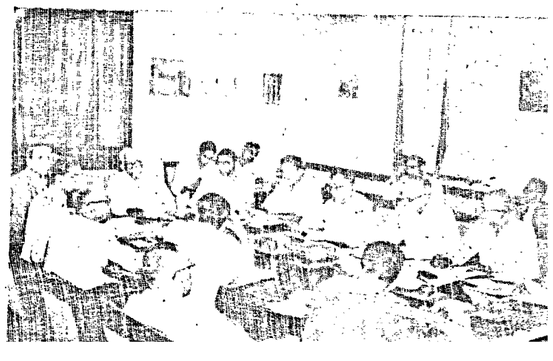
The scheme run by an autonomous Central Board, consisting of representatives of workers, employers, educational institutions and the Government, comprises three stages of training. The first stage consists of training of top level instructors known as Teacher-Administrators who are post-graduate in one of the social sciences. After successfully completing the course, they conduct whole-time training courses for selected workers who are called Worker-Teachers. This course is open to whole-time trade union officials also. This is the second stage of the scheme. The workers so trained revert to their places of employment and conduct programmes at the unit level for the rank and file of workers. This constitutes the third and final stage.

A number of Regional Centres have also been set up to supervise the work at the unit level. They assist and guide Worker-Teachers in conducting classes. The syllabi for the three levels of training were framed by a special committee and approved by the Central Board. They are now proposed to be revised in the light of practical experience gained so far. The syllabi at the regional and unit levels are adjusted to suit local conditions. The medium of instruction at the regional and unit level is the regional language.

Teacher-Administrators

The first training course of Teacher-Administrators was held at Bombay in November 1958. Forty-three of the trainees were direct recruits for service under the Board

Minister Bhakthavatsalam presiding over a meeting of the State Committee for Employment held recently in the Secretariat.



while fourteen trainees were trade union nominees. The candidates were generally holders of a second-class master's degree in Economics or other Social Sciences. Preference was given to persons with practical field experience in labour, social work and other allied activities. On completion of the training the union nominees reverted to their organisations to conduct workers' education programmes.

The second course for Teacher-Administrators was conducted in Calcutta in 1959–60. The qualifications were relaxed in favour of those possessing a minimum of three years field experience in labour, social work, etc. In such cases only a second-class Bachelors' degree was insisted upon. The course embraced 43 trainees including 19 Trade Union nominees of whom 10 were from the public sector. The remaining twenty-four candidates were subject to a written and oral test at the conclusion of the course.

Worker-Teachers

The third training course for Teacher-Administrators was held in Bombay in the third week of July, 1961. The Educational qualifications were the same as for the second course. Thirty-six candidates including 16 nominees of trade unions of whom 10 were from the private sector were admitted to the course. Nineteen candidates were direct recruits. The Government of Uttar Pradesh had also deputed one of its officers from the Labour Department to undergo training. The course was over in January, 1962.

By the end of December, 1961 there were thirteen Regional Centres out of which three were residential. The first Worker-Teacher training course began at the centres in Indore, Delhi, Hyderabad, Dhanbad, Calcutta, Bombay, Bangalore, Kanpur, Alwaye, Nagpur, Madras, Yamuna Nagar and Tinsukia. By the end of 1961 about 1,600 Worker-Teachers were trained in 69 sessions while 307 were under training during December 1961.

As regards the rank and file of workers so far nearly 600 unit-level classes have been established. They have trained over 22,000 workers and about 10,000 are under training. These classes function largely in the factory premises; in a few cases they are also conducted in Government Labour Welfare Centres and labour colonies.

Special Courses

The Central Board provides grants-in-aid to trade unions and selected educational bodies to institute workers' education programmes under their own auspices. It sanctioned funds for organising "correspondence courses" and a workshop on the "role of trade unions in workers' education" to the Indian Adult Education Association, New Delhi and to the Rashtriya Mill Mazdoor Sangh, Bombay to finance their workers' education programmes. Grants were also given to the Servants of People Society, New Delhi, and the Indian Sugar Mills Workers' Federation, Lucknow, for starting trade union colleges. The Indian Adult Education Association has also been given a grant for a workshop on methods and techniques of workers' education.

The Board organises special courses of short duration for specified classes of workers and trade union officials. A beginning was made in this direction by setting up a short-term course of one month's duration for the members of Works Committee at Kandri Mines, near Nagpur. The Bangalore Centre organised two short-term courses for the members of the Works Committees at the Indian Telephone Industries Limited, and the Government Porcelain Factory, Limited. The Calcutta Centre organised a short-term course for the members of Works Committees of the Jai Engineering Works Limited, the Maya Engineering Works Limited, the Pankaj Industries Limited and the Bharat Woollen Mills Limited.

Useful Seminar

A seminar arranged for the members of Works Committees at Bombay was attended by over 170 delegates. Arrangements are on hand to organise seminars on Workers' Participation in Management at Bombay and Calcutta.

Additionally the Regional Centres at Nagpur and Madras conducted temporary sub-regional centres at Akola in Vidarbha and Coimbatore in Madras State. Subsistence allowance was given to the trainees from outlying areas at Yamunanagar Centre. The Regional Centres at Indore, Dhanbad and Alwaye were converted into residential ones.

A programme has been undertaken to integrate the Coal Mines Labour Welfare Fund's adult education classes with the workers' education scheme. Some of the subjects of the Worker-Teacher training course have also been introduced in the syllabus of training centres run by the Directorate-General of Employment and Training.

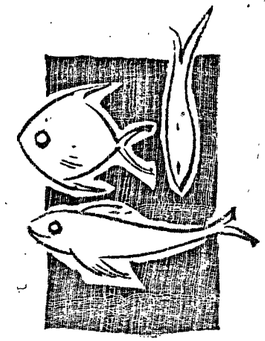
Central Industries

An effort is made to keep the Teacher-Administrators and Worker-Teachers abreast of modern trends. For this purpose refresher courses are arranged. It is now proposed to set up a Central Training Institute to conduct training courses for Teacher-Administrators and special courses of short duration and also refresher courses for Teacher-Administrators.

A sum of rupees two crores has been provided for workers' education in the Third Plan. The proposals envisage the opening of four additional workers' education centres every year, two of which will be residential conducting one training course every year for Teacher-Administrators; making adequate provision for grants-in-aid to trade unions and educational and other bodies conducting workers' education programmes and for the production of audio visual aids and literature for workers.

An Improved Method

TUNNEL DRYER FOR *Preserving* FISH



SRI S. T. CHARI, *Fisheries Technological Station, Tuticorin.*

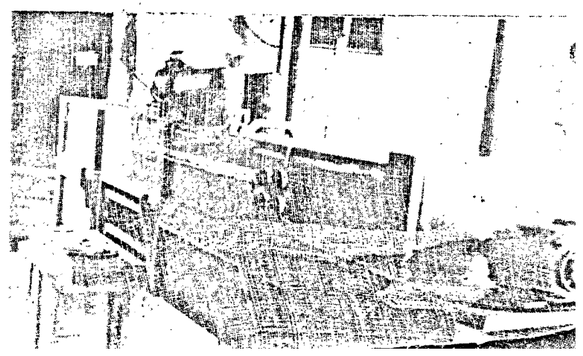
The common method of sun drying salted fish depends on the weather factor and the prevalence of right humidity conditions. But, today, technology in the artificial drying of food for preservation has advanced to such an extent that the vagaries of nature do not matter and preserved food of quality and standard could be had. This article discusses the tunnel type dryer and its merits both in respect of performance and economy.

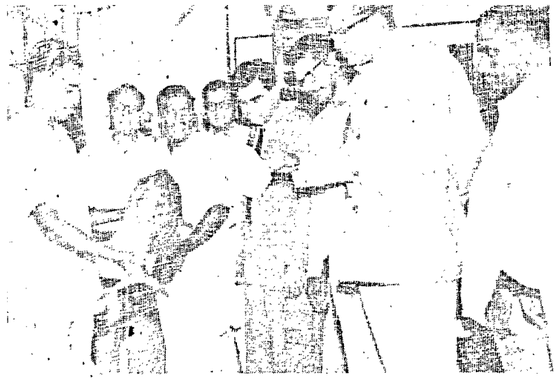
Salt curing and drying of fish has been a method of preservation of fish known to man since the pre-historic ages and is still widely prevalent as a major method of preserving excess catch of fish in most of the countries. Salt by itself is not a preservative but acts as a means of removing water from the flesh and coupled with drying and the penetration of salt into the flesh by osmosis, the water content in the cells of the fish tissue is brought to such a level that bacterial and enzymatic actions are arrested to a very small rate. The most common method of drying salt struck fish is by sun drying it which is simple and cheap if weather is suitable. But modern methods of food processing and technology in the artificial drying of food have advanced to such an extent that fish can be dried independent of the vagaries of nature by resorting to artificial drying which at the same time produces a better quality and standard finished product.

Essential Principle

Salt fish dryers have been made in different sizes and from different designs. The essential principle is to simulate a condition so that the fish get dried under the optimum conditions of temperature and relative humidity and undesirable changes in flavour, texture, or cooking of the fish do not occur besides getting a uniformly dried standard quality product. "Turbo" type of dryers, batch type of dryer, and tunnel type of dryer are being used in many of the advanced countries, as such artificial drying is independant of weather conditions and drying can go on

The Tunnel Dryer.





Minister Manradiar recently opened the Cold Storage Plant at the Fisheries Inspection Bangalow at Ennore.

throughout day and night. Spoilage is practically elimi. nated and the overall drying cost compares favourably with outdoor drying.

For a tropical country like ours, and especially in the coast line where most of the fish-curing is done, the air is warm during sunny days and at the same time humidity also tends to be too much and drying takes a longer time than would have been the case under conditions of less humidity. Sometimes it happens that during monsoon days, fishermen bring home sizeable catch, but have to philosophically allow them to go waste in the absence of the right conditions for curing and drying them. After experiments it has been found that our fish can stand drying at a temperature of 41° to 42°C and with a relative humidity of 55 per cent without ill effects. Therefore a suitable type of tunnel dryer has been designed to serve as a laboratory model.

Better Than Others

The tunnel type dryer has been found suitable as drying conditions can be controlled more accurately than in the other commercial types of dryers. In this type of dryer, air under controlled conditions is forced upon fish kept in trays and the air which is pre-heated is recirculated, or admitted with fresh air or exhausted by automatic controls. The laboratory model is 12′ long 2′ in height and 1′ in breadth. There are two chambers and a door in the front to enable fish trays to be kept.

The air is forced over electric heated coils on the top chambers by means of a motor and the heated air after striking one end of the dryer, flows over the fish kept in the lower chamber, thus removing the moisture of the wet fish. This air can be recirculated by the same electric fan that originally forces it on the electric coils or it can be exhausted by means of another electric fan controlled by a remote hygrometer control which maintains the proper humidity of the air inside. Eight trays of size 3′×1′ with a carrying capacity of 50 to 60 lb. of fish can be kept in shelves. A continuous stream of the controlled air (Tem. 41° to 42°C and relative humidity 55 to 60 per cent) with a velocity of 350 to 400 feet per minute is blown across the product which gets dried, the time of drying varying according to the initial moisture content and the thickness of the fish or the fish fillets.

Successful Experiments

This type of dryer has been recently installed at the Fisheries Technological Station, Tuticorin and experiments conducted were successful and satisfactory. This is ideally suitable for drying non-fatty lean varieties and small fish like White Bait, Silver Bellies, Ribbon fish, Sole, etc., This can also be used for drying salted fish like Mackerel, Sardines, Jew fish. For bigger fish which are salted and thick, the fish should be so cut or scored that as much surface area of the fish is ripped open to be exposed to the forced air circulation. It is proposed to instal bigger types of such dryers as an experimental measure for demonstration purposes in the field at the Fish-curing yards at Cape Comorin and Colachel.

Rural Industries Planning

The Government of India have decided to constitute a Rural Industries Planning Committee. The Committee will review the progress of industries in rural areas, advise on problems of policy and planning relating to them and recommend programmes for the intensive development of village and small industries in rural areas, including co-ordinated area and regional plans of development and pilot projects. The Committee will have 14 members, including the Deputy Chairman and two members of the Planning Commission, three Central Ministers and Shri Jai Prakash Narayan, Shri Shankar Rao Deo, Srimathi Kamala Devi Chattopadhayaya and Prof. D. R. Gadgil.

Facts and Figures

Preventing Accidents on Railways

Though train-miles run on the Indian Government Railways increased during the last decade, there has been a progressive decline in the number of accidents. An analysis of causes responsible for accidents and the measures taken by Government to prevent their occurrence are detailed in this feature.

Analytical studies made into past accidents on the Indian Railways indicate that accidents, either with high or low "risk potentialities" occur due to several factors. Among them are: failure of Railway staff or failure of the human element, failure of equipment, sabotage or tampering with track and accidental.

Notwithstanding progressive decrease in the number of accidents, the objective of measures adopted by the Railways is to prevent accidents altogether, or at least to bring them down to the minimum.

Measures Adopted

Measures adopted by the Railways for preventing accidents broadly fall under four categories. They are: (*a*) ge eral, (*b*) locomotive and rolling stock (*c*) signalling and interlocking devices and (*d*) track security and maintenance..

An analysis into the causes of accidents conducted by the Railways reveal that disregard of rudimentary precautions by the staff has been responsible for a number of accidents. A sustained effort is, therefore, being made to raise the safety consciousness of the staff and a definite course of lessons of prevention of accidents has been introduced both in initial training and refresher course stages of all the Railway training schools. Also, a scheme of awarding running Safety Shields to stations and yards, as also to divisions and districts, showing the best performance from the point of view of lowest incidence of accidents on each railway has been introduced.

The 'Chalk Test'

As for locomotive and rolling stock, the Railways subject vital components, such as stirrup hangers and spring hangers on rolling stock to the chalk-test as they pass through workshops with a view to carefully examining such components after chalking for existence of cracks and flaws. The fittings of the self-cleaning arrangements in the smoke boxes of locos are thoroughly examined to secure them properly in position in order to avoid the possibility of a sudden blow-back of the fire through the fire hole. Besides, the wagons and locos are carefully examined at the originating points as well as stations en route to prevent the possibility of tank wagons catching fire.

Safety Gear

In the sphere of signalling and interlocking devices, measures adopted include installing safety gear on the open line to eliminate human element in train operations, maintenance of the existing gear in efficient condition and their frequent inspection. During 1960-61 alone, the safety arrangements adopted were interlocking of 160 non-interlocked stations, provision of modified interlocking at 212 stations, raising of standards of interlocking at 99 stations, fitting of detectors at 452 non-interlocked stations, provision of token instruments on single line sections in replacement of paper line clear at 144 stations, provision of last stop signal controls through line clear at stations and lock and block working on double line section at stations, interlocking of 94 level crossing gates with signals and provision of track circuiting in two large yards.

Track Security

As for track security, the responsibility for ensuring safety of railway tracks against sabotage, criminal interference such as tampering with the track, rests with the State Governments. Yet the Railway Administration adopted several measures including greater vigilance of the Railway Protection Force and closer collaboration with the States Police to prevent these acts. Besides, the Indian Railways Act, 1890, was amended in March 1962 to provide for deterrent punishment of the criminally-inclined persons who indulge in this type of crime.

VISIT

Mudumalai Wild Life Sanctuary

To See herds of Gaur, Elephants, spotted Deer and Sambar; small parties of House Deer, Barking Deer and Four-horned Antelope in natural surroundings; the Tiger, Panther, Sloth Bear, common Langur and the Malabar Squirrel too.

To see a paradise for bird watchers sheltering Grackle, Golden Oriole, Paradise Fly-catcher, Orange Minivets, Jerdon's chloropsis and a host of brilliantly plumaged perching and ground birds.

LOCATION: Situated along Ootacamund-Mysore Road 42 miles from Ootacamund—approachable by bus. Nearest Railway Station: Ootacamund. Nearest Airport: Coimbatore.

Best visiting time: APRIL to JUNE

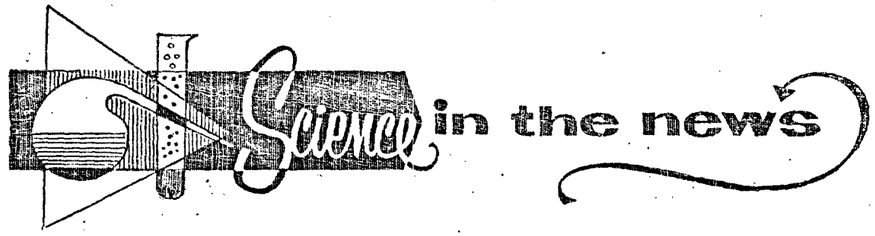
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THE NILGIRIS



Every day that passes in this Age of Science registers new advances as a result of which fresh and improved techniques emerge to lighten the burden of the house-wife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments both at home and abroad.

Pilot plant investigations on production and market studies on the use of semicoke as a domestic fuel at the Regional Research Laboratory, Hyderbad, have shown that low temperature carbonisation can be established as an economic industry in India.

The primary aim of low temperature carbonisation of coal is to produce a soft coke for domestic use. To be economic, however, it is necessary to ensure proper utilisation of the principal byproducts obtained in the process. Low temperature tar can be further processed to valuable products like road tar, creosote oil, timber creosote, illuminants and tar acids. Investigations conducted during the past eight years at the Hyderabad Laboratory with a prototype pilot plant of the Lurgi-Spuelgas type (25 tons coal throughput per day) have proved that all the products can be profitably marketed and low temperature carbonisation can be established as an economic industry in India.

Based on these pilot plant studies, the economics of low temperature carbonisation has been worked out for plants throughput capacities up to 1600 tons of sized coal per day. In 100, 280 and 400-ton plants, tar is processed only into road tar, creosote oil and fuel oil. Extraction of tar acids using current methods in these plants is not considered economical.

Costs Reduced

For an 800-ton plant the ex-works cost of semicoke from Andhra Pradesh coals works out to about Rs. 55 per ton, starting with a coal price of about Rs. 28 per ton. The production cost is substantially reduced from Rs. 81·51 to Rs. 63·22 per ton of semicoke as the capacity is increased from 100 to 400 tons of Singareni coal per day. For higher capacities (up to 1,600 tons per day) it works out to Rs. 60.55; byproducts processing effects substantial economy, and the cost is further reduced to Rs. 53·10 in a 1,600-ton plant.

The cost of Jambad semicoke is lower (Rs. 38.40 per ton) due to the lower cost of Jambad coal and higher taryields. To these cost prices, plant profits, transport charges and agent's commission should be added. Taking these into account, the selling price of semicoke would be about Rs. 85–100 per ton. Charcoal, against which semicoke is expected to compete, is sold in the local market at a price of Rs. 150–200 per ton depending upon seasonal fluctuations; in Bombay the price of charcoal is much higher.

Chief Minister Kamaraj, recently laid the foundation stone for the Government Public Works Workshops and Store Workers' Colony at Tondiarpet. Public Works Minister Ramaiah presiding.



Seeds have to be cleaned and dried to make them safe for storage. The drying may have to be varied in degree to make them fit for storage or even for transit in tropical conditions. Usually the two forms of treatment are applied separately. A device developed in U.K. combines the two operations into one.

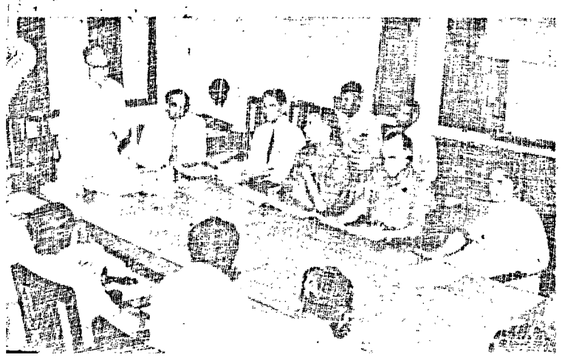
The apparatus, which can be fitted to any existing cleaning machinery, consists of a hopper in which the seeds are pre-heated and a set of cleaning screens on which the seeds are dried while the screens are being agitated to remove foreign matter and to allow them to pass through. The hopper is made of fibre-glass frames with galvanised mesh panels. It has a central chamber into which a fan draws warmed air from an electrical heater unit at the top. The seeds are fed into a 8-inch gap between the inner and outer cylinders and are drawn off at the bottom for serving to the screens.

The screens are heated by a low-voltage current and their temperature can be raised to 77°C. The moisture extraction rate varies with different seeds; one ton of seed wheat with an initial moisture content of 19 per cent can be dried to a moisture content of 14 per cent an hour. Other normal throughput rates include 9 cwt. an hour for grasses and 14 cwt. an hour for mustard. The cost of the new apparatus is a little more than half the cost of a separate unit of similar capacity.

Treatment of Wood

A new process for anti-shrink treatment of wood which is equally effective on coniferous and hard woods has been developed at the U.S. Forest Products Laboratory, Wisconsin. The process can be used to stabilise rifle stocks against shrinking and swelling due to humidity variations.

Industries Minister Venkataraman presiding over a meeting of the Madras State Soldiers' Sailors' and Airmen's Board, held recently in the Committee Room of the Secretariat.



Reversing the traditional procedure, the stocks are first shaped and semi-inletted from fresh-cut green wood. Then they are heavily treated with the stabilising chemical polyethylene glycol-1000, and then kiln dried. Best dimensional stability results from treatments that imparts a glycol retention of 20–30 per cent (by weight of dry wood) in the thin, critical areas. Only a small portion of the chemical penetrates the thick part of the butt.

The preferred treatment consists of soaking the green precarved stocks for 45–60 days in a 30 per cent solution of glycol maintained at 75°F. The glycol inhibits shrink, swell and warp by bulking the wood fibre cells where the large molecules of the stabilising chemical displace the natural moisture of the wood.

Flame-Proof Rubber

Many attempts have been made to render natural rubber flame-resistant by compounding with some combustion retarding materials such as chlorinated hydrocarbons, ammonium salts, borates and metallic oxides. The high loadings of these materials which are usually required, however, may have a markedly adverse effect on the elastic properties of the products and may also cause processing difficulties in latter applications.

A new approach to this problem, developed at the laboratories of the Natural Rubber Producer's Research Association of Malaya, involves the chemical modification of natural rubber so that flame resistance is 'built into' the rubber molecule. This also eliminates the possibility of the loss of combustion-retarding components by leaching or other physical means. The modification required is achieved by reacting rubber in the latex form with the polythalogenated compound trichlorobromomethane (20 per cent).

The loss in tensile strengths by this process may be partly made up by a technique similar to masterbatching, in which a more highly modified latex is blended with sufficient natural latex to reduce the chlorobromomethane content to the required level (e.g. 12 per cent).

One suggested application for these flame-resistant rubbers is in the bonding of hair pads for upholstery and packaging purposes. Another possible application of the latex is in the production of foam rubber.

New in Tanning

Though most village tanneries employ bag tanning sometimes, when the hides are badly cured it is not possible to stich them into bags. In such cases a vegetable, chrome-vegetable combination tannage process developed at the Central Leather Research Institute, Madras, is advantageous. In this method, bag tanning pits are not necessary and the process can be carried out in a small pit or vat even in the open.

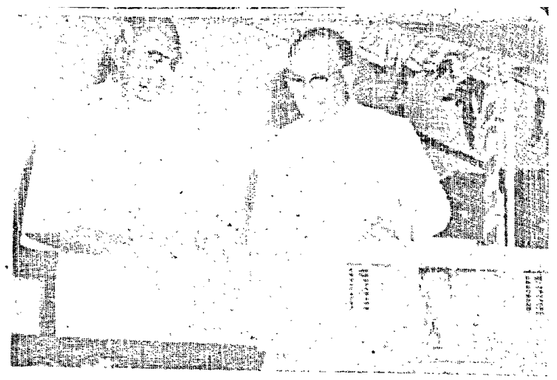
New Gas Turbine Car

Britain's latest gas-turbine car, the Rover T-4—the most advanced vehicle of its type in the world—was shown to the press in London recently. It is a modern-looking, front-wheel-drive, five-passenger saloon, with the engine laid out compactly beneath a down-sweeping bonnet. In the driving compartment there are only two controls—accelerator and brake pedals.

The Rover T-4 is a pre-production model designed to evaluate the problems of mass-producing a gas-turbine car. Mr. C. S. King, Chief Design Engineer, said that Rovers had obtained for their 140 h.p. engine a highly efficient cast turbine which has a fuel consumption equivalent to 17–20 miles a gallon on the road at high speed. With a simple combustion system using only one spark plug, the engine has been designed to idle at 40,000 revolutions per minute with low fuel consumption. This eliminates most of the delay between opening the throttle and getting the car away.

Television and Rolling Stock

A closed-circuit television system perfected by the British firm of Electric and Musical Industries, Limited (E.M.I.) will help to speed the flow of freight on Indian Railways. A spokesman of the firm said in London that one of E.M.I.'s subsidiaries—the Gramophone Company



Chief Minister Kamaraj, was shown model of house intended for domestic servants during the recent function, when he laid the corner stone for the Community Hall of the Lloyds Road, Rental Housing Scheme.

Limited, of Dum Dum—had been awarded a contract to supply the closed-circuit television equipment to the Central Railway.

He went on to explain that the system would be installed in the All-India Tele-communication and Railway School at Secunderabad. "The system will enable the moving of freight wagons to be checked on a central monitoring television screen. The operator will be able to see the entire marshalling area without moving from his chair and in this way the movement of rolling stock will be speeded up."

E.M.I. closed-circuit television equipment is currently being used all over the world, finding applications in the fields of banking, security and traffic control, and in many sections of industry.

Peptone and Meat Extract

A simple integrated process for the preparation of peptone and meat extract concentrate employed in the maintenance and propagation of micro-organisms has been developed at the Central Drug Research Institute, Lucknow, it is reported. The preparations, manufactured from locally available raw materials, compare favourably with foreign brands as regards general properties, chemical composition, "growth-promoting" efficiency and sensitivity to antibiotics.

At present substantial quantities of well-known brands of peptone such as 'Difco' or 'Oxiod' and beef extract such as 'Bovril' or 'Lab-Lemco' are imported into India. Indigenous production of these valuable pharmaceuticals appears to be negligible.

A Song in your Heart . . . .

A summer spent in Kodaikanal, lovely Hill Station in South India, puts a Song in Your Heart. The season is invariably wonderful. The Sunshine is pleasant and the Climate is just right. The beautiful lake, the waterfalls, the wooded slopes, the rocks, the giant trees and flowers of myriad hues provide endless visual delights. Prospects for Hiking and Climbing are excellent.

Further South, historic Madurai, City of Festivals and Fairs and Seat of Tamilian Learning and Culture, beckons the Tourist. The Meenakshi temple here, Temple of Temples, represents all the superlative values that contributed to the greatness of South Indian Architecture and Sculpture.

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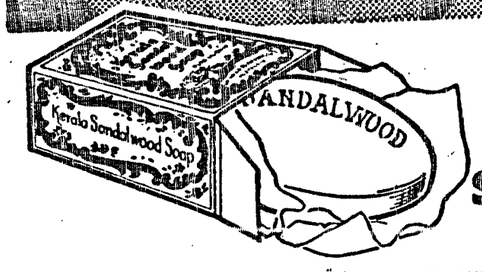
Thus devotion and reverence have combined to mould a culture which is as peerless for its classical values as it is for its sense of dedication and humility.

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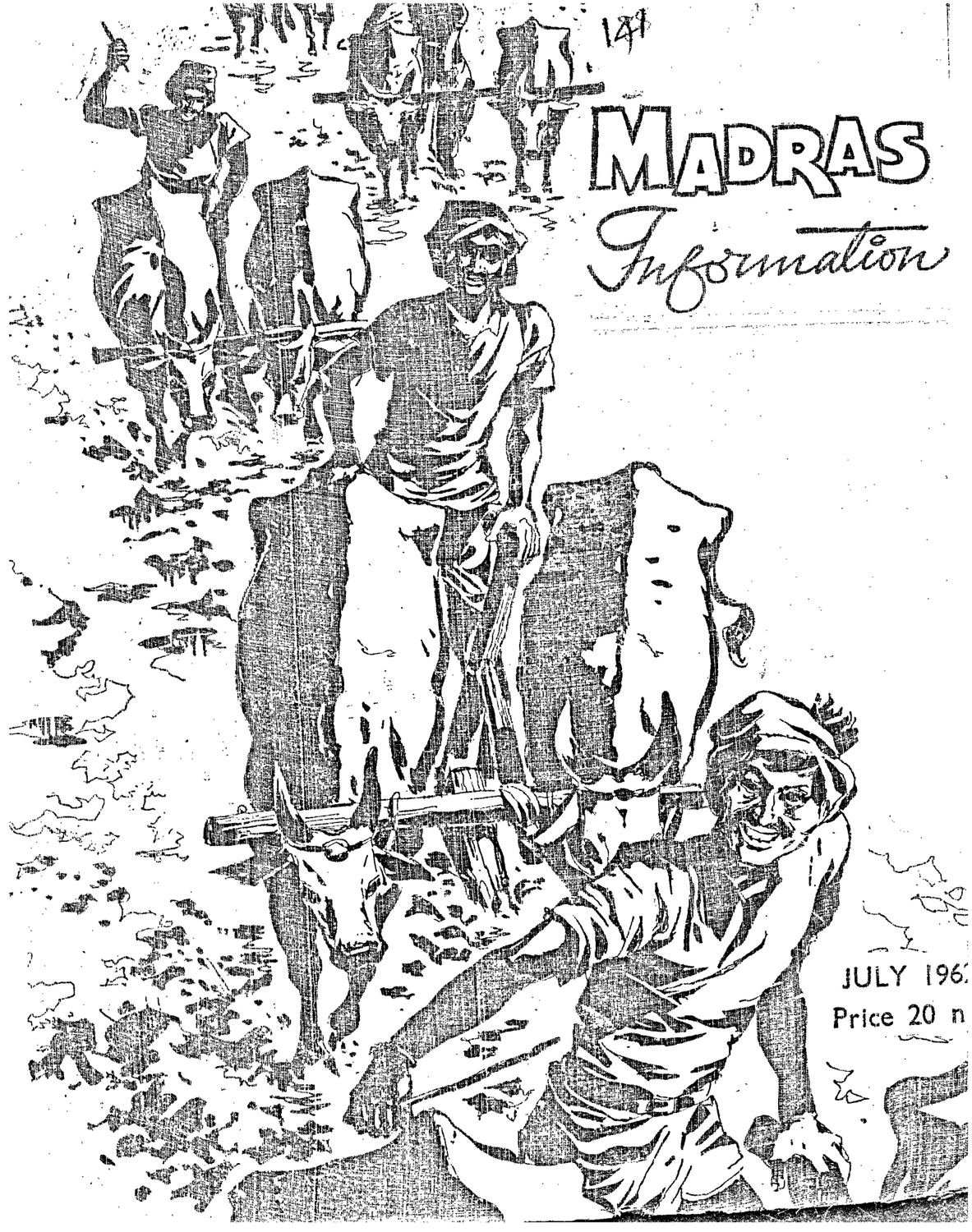


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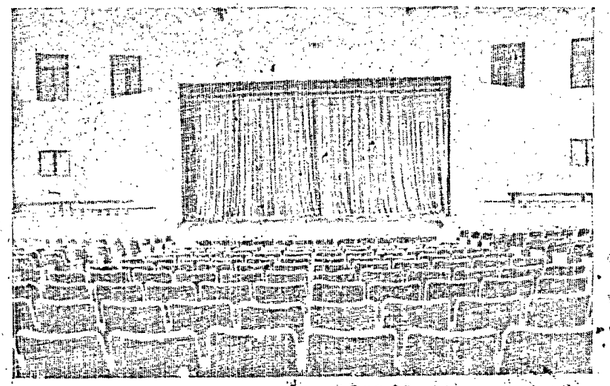
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JULY 1962

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THIS MONTH'S COVER

Spring is drawing to a close and the Tamil month of Adi which heralds the sowing season is near. The peasant who has been lying fallow, relaxing and planning the sowing operations, now sets forth into the field and starts cultivation work. Son of the Soil that he is, the benefit that the season of 'fallowness' has conferred on him could be seen in the energy, zest and gusto with which he plunges into the endeavour to make Mother Earth yield her best.

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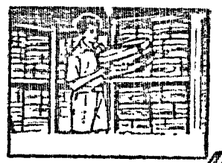
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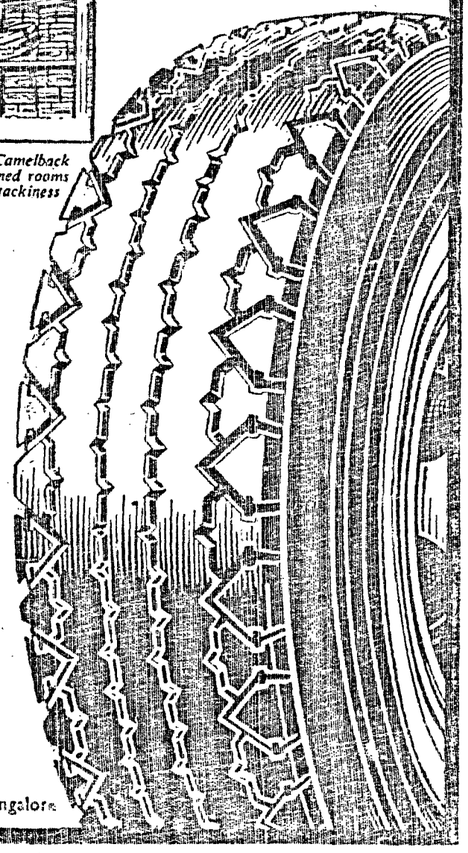
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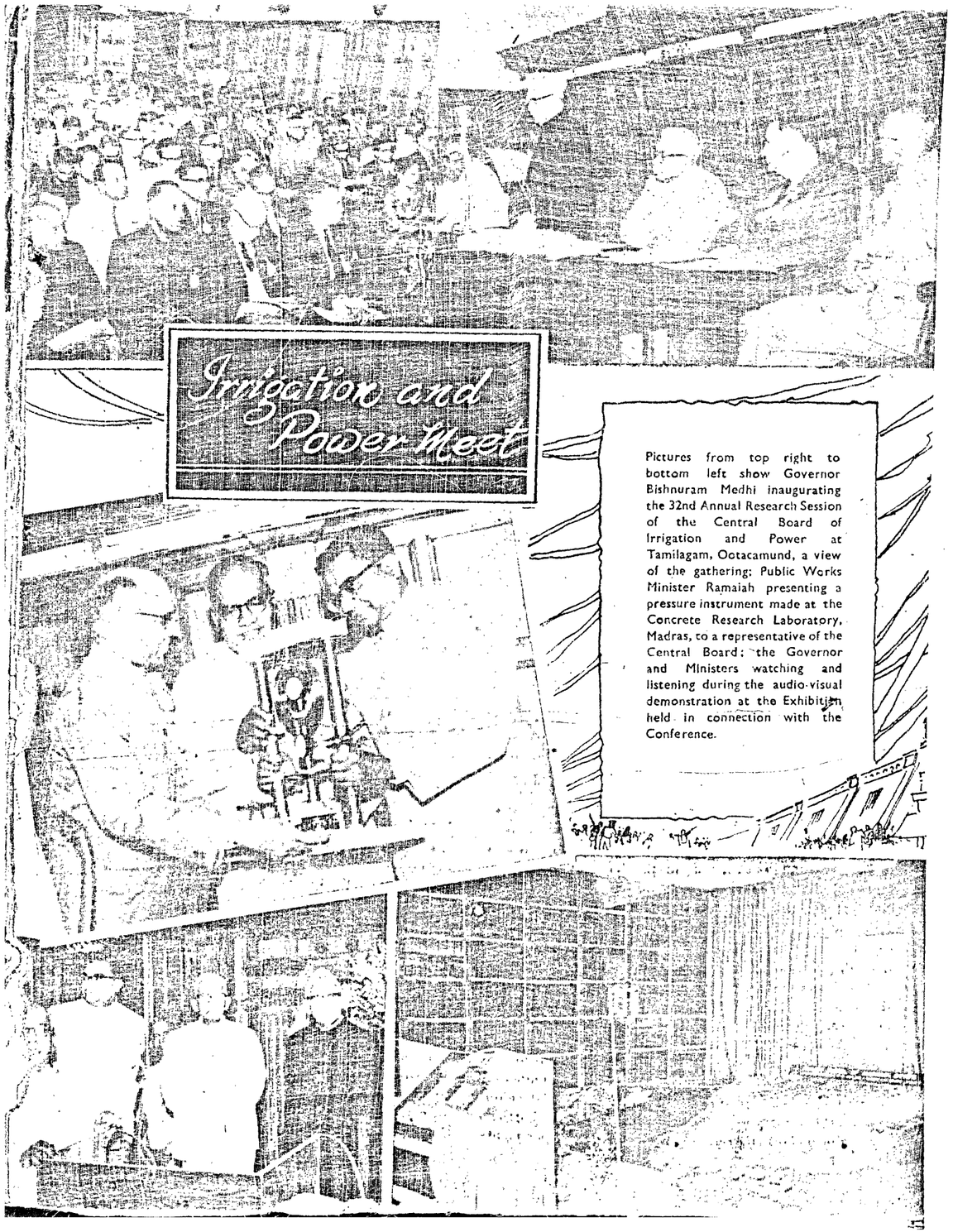
SRI BISHNURAM MEDHI, *Governor of Madras.*

Inaugurating the 32nd Annual Research Session of the Central Board of Irrigation and Power at Ootacamund recently, the Governor of Madras, paid a handsome tribute to the role of the engineer in National development. Food production, the Governor said, is dependent not only on the farmer but also on the engineers who build the dams and reservoirs. He also stressed the importance of research in engineering. This feature is an extract from the Governor's inaugural address.

Ever since man appeared on this earth and learned to cultivate and grow crops for his food, he should have thought of irrigation in some way or other. Old stone inscriptions and monumental irrigation works still in service in this State, all testify to the fact that the Chola and Pandya Kings have been vying with one another in this field. It will be interesting to note that the Grand Anicut in the Cauvery basin in Thanjavur district built by the famous Karikal Chola, is said to be as old as the second century A. D. and most of the distributaries are reported to be even older belonging to pre-Christian era. The engineering skill that our ancients have displayed in the many monumental works that are still in service is really remarkable. It follows therefore that engineering is an age-old profession and engineers can take pride in the fact that their work and performance are related very closely with the development of a country and the provision of amenities to the people. But for the grand conception and skilful execution of a number of river-valley schemes by our engineers, any planned development of the country would have been impossible. Further, our engineers both in irrigation and electricity departments have done splendid work in harnessing the natural water resources of the country. Their work is very hazardous and their toil very utilitarian and fruitful.

Inter-related Work

It needs no particular emphasis to say that our food production is dependent not only on those engaged in agriculture, but also on those who build our dams and reservoirs for irrigation and generation of power and as flood control measure. In places where there are no surface water for irrigational facilities, water has to be tapped from the bowels of the earth for being utilised for the fields and electricity pumps have to be used in order to have the necessary quantity of water in quicker time. Thus, our food production programme is largely inter-twined with the work of our engineers, both electrical and irrigation. For that matter, every department of public activity is inter-related with every other, and this ensures harmonious and comfortable living possible. I would like to pay my own tribute of admiration and gratitude to those nation-builders who assist in the creation of a new India by utilising



Pictures from top right to bottom left show Governor Bishnuram Medhi inaugurating the 32nd Annual Research Session of the Central Board of Irrigation and Power at Tamilagam, Ootacamund, a view of the gathering; Public Works Minister Ramaiah presenting a pressure instrument made at the Concrete Research Laboratory, Madras, to a representative of the Central Board; the Governor and Ministers watching and listening during the audio-visual demonstration at the Exhibition held in connection with the Conference.

their knowledge and modern techniques for the furtherance of the welfare of the people. It is good that they should meet together periodically and compare notes on their work and knowledge and the result of their research, both theoretical and practical, so that it will be possible for them all to share that knowledge and experience and chalk out a uniform approach to all problems.

Comprehensive Schemes

Ever since the attainment of independence we have launched upon comprehensive schemes involving several projects for the purpose of increasing production in the industrial as well as in the agricultural fields. The main aim that underlies all the successive Five-Year Plans is to increase production both in agricultural and industrial fields and to have a better standard of living for our people. A number of irrigation and hydro-electric schemes have been undertaken and some are still under construction in order to store water and assure water-supply to dry tracts and also produce electricity in order to run our various industrial installations and work pumpsets and other accessories for increased production of food. These are going on apace according to programme and the part that the engineers are playing in the development programme of the country is indeed promising. They had ample opportunities to demonstrate their expert knowledge and practical skill not only in the matter of formulating schemes but also in their actual execution. It should be their endeavour to be in constant touch with the latest developments in the scientific field particularly in engineering and irrigation so that they could adopt the latest modern methods and techniques in the execution of our projects and cut down the cost to enable larger number of schemes being taken up our speeding up the march towards building up a prosperous country.

Utmost Economy

It will be also necessary for them to go deep into several problems that confront us, particularly in having our schemes executed and construction completed in the most economical manner. We have to still catch up with the progress achieved by more advanced nations. After obtaining political independence, our fight is in the economical front for liquidation of poverty, disease and illiteracy. In undertaking large schemes involving crores and crores of rupees, it is necessary to adopt the most economical methods of construction in order to bring our expenditure to the minimum, at the same time, without reducing efficiency. This can be achieved no doubt by applying your minds in making research in this direction.

It is a matter for gratification to note that we have already a number of Research Stations going into different aspects of engineering problems and we should expect these Research Stations to give their considered views in all matters of engineering interest which could be freely discussed and conclusions arrived.

Research Indispensable

Any department of life and activity has to build up its own research centre if it has to keep pace with modern scientific and technological advancement. Resea is very indispensable to engineering. So far as M ras State is concerned, the total outlay during the firs two Five-Year Plan Projects was Rs. 31·46 crores; 3·75 lhs acres have been brought under irrigation under th o-jects completed, representing 90 per cent of their ul te potential. Our Third Plan allotment under irrig is Rs. 27·42 crores and the great Parambikulam yar Project will be carried out to completion besides ing final touches to some of the Second Plan schemes. The benefit of electricity has been given to about 11,000 v ages at the end of the Second Plan and it is proposed to cov the remaining 8,000 villages at the end of the Third ive-Year Plan to help in increasing agricultural production as well in the development of cottage and small-scale industries in the rural areas.

Neglected Sources

The Madras State has already made use of the bulk of the available water resources and therefore there is no possiblity of any large-scale irrigation project being taken up. What we are executing under even the Third Plan are only smaller schemes. There are 37,000 minor irrigation works in the State serving about 2·50 million acres, i.e., 40 per cent of the total irrigated area in the State, and stress is now being laid on the question of restoration of neglected sources and work is being done for the improvement of the existing works, excavation of supply channels is, construction of anicuts and also on the formation of newtanks. Most of our tanks are very old and they require renewal. The scheme popularly known as desilting-cum-reclamation scheme enables the tanks not only to regain their lost capacity but also the foreshore, patta or poramboke lands are relieved of submersion troubles and by depositing the silt on the foreshore lands, large areas are reclaimed and brought under cultivation. The huge area of waterspread becomes reduced and thereby th evaporation losses are minimised.

A New Idea

Just as in the case of electricity a zonal grid has be planned, which eventually will be linked with the ent country, it should also be possible to have a network



The Eighth quarterly Prize Bond Draw was inaugurated on June 1, 1962 by Minister Bhoovaraghan at the Rajaji Hall.

waterways throughout the country, so that the problem of diverting waters where they are surplus to other dry tracts can be satisfactorily solved. It is up to you engineers with all the help you have from the Research sections of your departments to plan and execute schemes which could integrate the water sources of the entire country in such a way that there should be no question of any huge floods in one part of the country while, at the same time, you hear of lack of water-supply in some other part.

As I have already told you, Madras State has utilized almost every drop of available water, and it has to depend upon supply of water from other sources in other States where it is surplus. We have already some instances of Inter-Statal enterprises like the Neyyar Dam in Kanyakumari district down south and the Parambikulam-Aliyar Project which is under construction. We have also the illustrious example of the Periyar dam constructed during the latter part of the last centure which involved the diversion across a watershed of a fair portion of the Periyar which for centuries had been flowing into the Arabian Sea unutilised. That diversion has been responsible for irrigating an extent of 135,000 acres in Ramanathapuram and Madurai districts. The building of that Dam itself was a tribute to the great engineers who, unmindful of the variety and magnitude of the task overcame the handicaps like the uninhabited and inhospitable nature of the country, unwelcome and unwanted incessant rains, the dense jungle infested with wild animals and the swarms of leeches as well as the cursed malaria fever, and successfully completed the work particularly when modern methods of dam construction were unknown.

The Only Method

So far as our power generation is concerned, by the end of the Third Plan, we propose to increase our power generation to 1,131,000 K.W. The Neyveli Lignite Project will bring us power to the extent of 226,000 K.W. Even after all these schemes are implemented, Madras will still be in deficit of power to meet the needs of a large number of industries contemplated to be taken up during the Third Plan period. Investigations of the Kodayar-Hydro-Electric Scheme in Kanyakumari district are in progress and a preliminary investigation of the Hogenakkal Hydro-Electric-*cum*-Flood Moderation Scheme has indicated that two power stations can be located in the course of the Cauvery river. As the Cauvery is an inter-Statal river, the approval of the concerned authorities has to be obtained before the work on further investigation is started. The only method of improving our installed capacity and generation is by setting up an atomic plant of 500,000 K.W. capacity and assured power supply resulting therefrom will give a fillip to the establishment of new industries and expansion of the existing units with the concomitant increase of productivity and standard of living. What is necessary is an immediate recognition and an awareness on the part of the people of the principle of the integrated growth and development of the country without any parochial or insular considerations. Ours is a vast country with a huge population and an integrated development of water and other resources of the country means help and assistance to all parts of the country wherever there is need, so that the prosperity can be shared equitably by all people living in this great country.

Fish Preservation

An adjunct to preservation of fish by traditional methods such as sun-drying and salting has been found as a result of investigations carried out at the Fisheries Technological Research Station, Ernakulam. This new process makes use of the chemical propionic acid. It is very effective in suppressing red halophile growth and mould attack in wet-salted and pickled fish and considerably increases the storage life of fish.

Many Research Stations

Improving Irrigation Techniques

SRI U. ANANDA RAO, *Special Chief Engineer, Parambikulam Aliyar Project.*

In the course of his Presidential address at the 32nd Annual Reasearch Session of the Central Board of Irrigation and Power, the Special Chief Engineer, Parambikulam-Aliyar Project, stated that the Research Stations established all over the country were fulfilling the endeavours of the Central Board to advance the techniques of irrigation and power development. He also listed the various research stations and enumerated the extent and scope of the work that they were doing.

At present, there are 19 Irrigation Research Stations in India concurrently engaged on various research problems relating to medium and major projects of the respective States and doing research on fundamental and basic problems which have suitably been allotted to them by the Central Board of Irrigation and Power.

The Irrigation Research Institute, Roorkee, U.P., has been conducting flume studies on Design of Channels and exclusion of sediment through reservoir outlets besides carrying out experiments on design of Sarda Barrage undersluices.

Hydraulic Structures

The Andhra Pradesh Engineering Research Laboratories have been engaged on model studies mostly concerned with Nagarjunasagar dam project and other local problems in addition to studies on Engineering properties of Soils and Concrete Mix Design.

The Central Water and Power Research Station, Poona, has done considerable work on River Training and Studies on Designs of Hydraulic Structures. This Station has been consulted on several specific problems on Harbours and Estuaries, for which studies, it has developed a special technique for detecting the movement of bed material in sea coasts and estuaries by using fluorescent material in collaboration with the National Chemical Laboratory. Some experiments with fluorescent tracers have successfully been carried out in Balari, in Hooghly and at Mangalore Port and At Varsova (Bombay). However, the application of fluorescent tracer technique is at present restricted to bed material comprising of sand and silt and the possibilities of extending it to finer materials, particularly in the clay range, is being looked into. Certain instruments such as Wave Height Recorder with capacitance type Probe, Current Meter and Bed Profile Recorder are being developed. The Station also conducted prototype experiments on Volute Syphones at Hirebhasgar dam in September 1961 under the direction of a Special committee set up by the Central Board of Irrigation and Power for the Fundamental and Basic Research Programme.

The Silt and Construction Materials Directorate, New Delhi, has been testing Engineering properties of Soils, Concrete Mix Design and Silt Samplers for measuring silt in flowing water. The Indian Institute of Science, Bangalore, continued further studies on the phenomenon of Cavitation and the inception of cavitation damage on plates of different materials. They have also done much useful work on Soil Mechanics problems and Air-entrainment studies on Hydraulic Jump. Certain instruments like

A Government Fair Price Shop was recently inaugurated at Todhunternagar, Saidapet.





Chief Minister Kamaraj. recently inaugurated the Coimbatore District Police Families' Welfare Co-operative Cottage Industrial Society for making woollen socks and hosetops at the New Madhar Sangham building in the Armed Reserve Colony, Coimbatore.

Probes for the Hot Wire Anemometer and air concentration measuring device, etc., are also being perfected in the Institution.

The Soil Mechanics and Research Division, Chepauk, Madras, and the Irrigation Research Division, Poondi, have made further progress on testing of Soils and on the Engineering properties of Soils. Their work on use of Flys Ash as puzzolana and investigation of uplift pressure below weirs by model tests and use of cut-oofs and sloping filters in earth dams have considerable merit and usefulness in River Valley Developments. Evaporation studies in tanks and small reservoirs with the use of Cetyl Alcohol are also being conducted. They have also done large scale model studies in respect of Parambikulam-Aliyar Project and Kundah Project.

The Land Reclamation, Irrigation and Power Research Institute, Punjab, Amritsar, has done good work on models for Flood control and Irrigation works, diversion of channels on Sutlej river, training the Sone nadi and similar other works connected with specific local problems Considerable experience has been gained in reclamation of saline-*cum*-alkaline soils and study of sub-soil water in Rewari and adjoining areas.

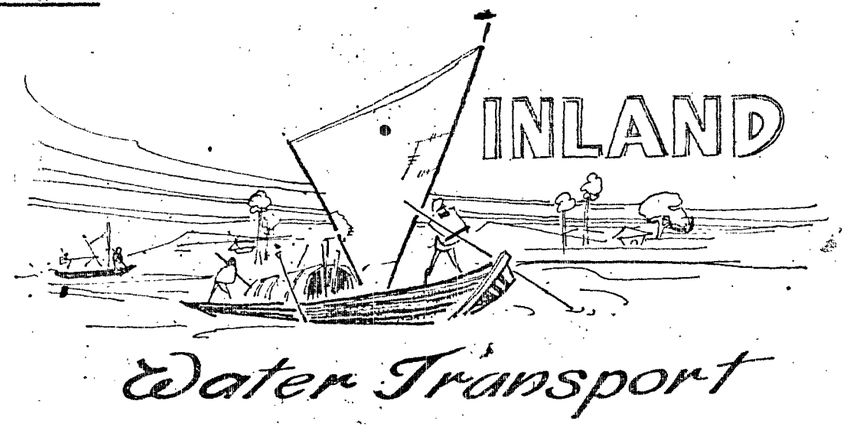
The Mysore Engineering Research Station, Krishnarajasagar, has been carrying out useful work in conducting experiments and suggesting suitable designs for spillways and protective works for the Sharavathy hydro-electric project. Experimental investigations on bearing capacitiec of soils, and basic study on meandering and braiding o channels, are being continued besides study of the specific problems of the State.

Koyna Laboratory

The Koyna Research Laboratory concentrated on the production of economical quality concrete for the dams underground tunnel works and power house. Experimental studies were also done to establish useful criteria in the design of low water-cement ratio concrete. In the Hirakud Research Station, quality control studies pertaining to mostly Hirakud dam project are being made. Tests on large size-blocks of masonry measuring $2\frac{1}{2}$ ft. cubes have also been conducted.

The newly established Engineering Research Institute at Baroda, has been doing laboratory experiments on the design of Bentonite grout mix for foundations of Ukai dam. This station has a great part to play in the water resources development of the newly formed Gujarat State. In the River Research Institute, West Bengal, the work on the study of rugosity co-efficient of lined and unlined channels is being continued, besides other important studies such as sedimentatation in streams and reservoirs, meandering, braiding and avulsion of streams and rivers and their prevention, etc.

In the Bihar Institute of Hydraulic and Allied Research; study of gravel pack for tubewell is being pursued. In the youngest Research Station at Peechi, Kerala, a start has been made on model studies of dams and appurtenant works. It may generally be remarked that excellent work is being carried out in all the Research Stations and Electricity Boards.



Inland waterways played an important role in the country's transport system till the middle of the 19th century. With the development of railways and roads and the withdrawal of the large volumes of water for irrigation in the upper reaches of rivers, its importance declined. This feature gives details of Plan programmes aimed at reviving and developing inland water transport.

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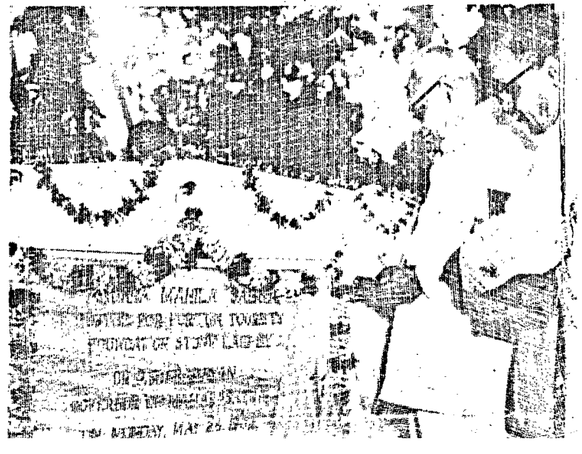
There are at present about 5,500 miles of navigable waterways, of which the important ones are the Ganga, the Brahmaputra, the Godavari and the Krishna, the backwaters and canals of Kerala, the Buckingham canal and the Mahanadhi canals in Orissa.

One of the measures adopted during the First Five-Year Plan to develop inland water transport was the setting up of the Ganga-Brahmaputra Water Transport Board—a joint venture of the Union Government and the State Governments of Uttar Pradesh, Bihar, West Bengal and Assam in March 1952.

The Board was assigned the task of co-ordinating activities of the participating Governments in regard to the development of water transport of the Ganga-Brahmaputra System and of administering pilot projects for testing the feasibility of operating modern craft on shallow waterways. The Board operates a push-tow service between Patna and Buxar and another between Patna and Rajmahal.

During the Second Plan, apart from grants given to the Joint Steamer Companies to replace their fleet which carry

Dr. P. Subbaroyan, Governor of Maharashtra, laid the foundation stone for the Andhra Mahila Sabha hostel for foreign students at a formal function in the City recently.





Chief Minister Kamaraj, who presided over the recent Regional Conference of Representatives of Voluntary Organizations inaugurated by Smt. Kamaladevi Chattopadhyaya at the Rajaji Hall is seen in the picture with some of the representatives.

the bulk of the water-borne traffic between Assam and the rest of India, a project to extend the west-coast canal from Badagara to Mahe in Kerala was taken up. The Kerala Government set up a Corporation in 1958 to take over from the private operators the passenger motor boats plying between Quilon and Ernakulam. Provision was also made for experimental dredging of the Buckingham canal in Andhra Pradesh and Madras.

During the Third Five-Year Plan, loan assistance is to be provided to the Joint Steamer Companies; and the river port at Pandu and the navigational works in the D.V.C. canal are to be completed.

Among the new schemes to be undertaken during the next five years are; a pilot towing Project to be undertaken by the Ganga-Brahmaputra Board in Sunderbans; setting up of a central organisation to advise on matters relating to inland water transport; purchase of dredgers and launches for Sunderbans and Brahmaputra; improvement of the foreshores at Gauhati; and, training establishments. Schemes costing Rs. 6·6 crores for inland water transport have been included in the Third Five-Year Plan.

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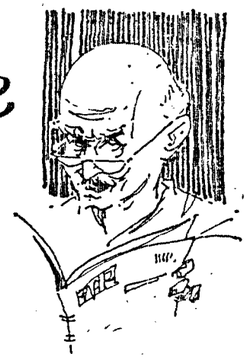
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A Humanitarian Scheme

Pension for the OLD



The Old Age Pension Scheme recently introduced by the Madras Government is proving popular. Applications are daily flowing in and are being scrutinized. Particulars relating to the Scheme, who are eligible for the benefit, to whom applications are to be addressed, etc., and a specimen application form are all incorporated in this feature.

The Government of Madras recently passed orders sanctioning the old age pension scheme. It came into effect from April 1, 1962. This scheme provides for a pension of Rs. 20 p.m. to destitutes 65 years of age and over and to destitutes 60 years of age and over who are incapacitated to earn a living due to blindness, leprosy, insanity, paralysis or loss of limb. A person will be considered a destitute if he is without any income or source of income and has no relatives of 20 years of age and over of the following categories; son, son's son and husband/wife.

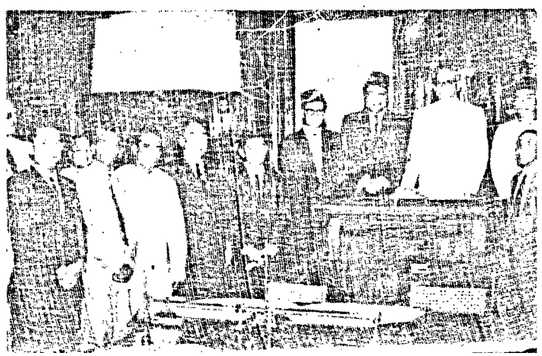
Applications for old age pension should be sent to the Tahsildar of the taluk in which the destitute ordinarily resides. No Court-fee stamp need be affixed to the application. Application forms can be obtained from the Taluk Offices, offices of Panchayat Unions and Panchayats, Village Officers, Municipal Officers and the office of the Corporation of Madras. If printed forms are not available, the application may be submitted in a copy of the printed form made on plain paper. A specimen form is given at the end of this note.

The Competent Authority

The Revenue Divisional Officer of the Division in which the destitute is residing is the authority competent to sanction the pension. In the Districts of the Nilgiris and Madras, however, the Treasury Officer and Personal Assistant to the Collector, respectively, are the sanctioning authorities. There is provision for one appeal against the order of the sanctioning authority to the Collector of the District. The decision of the District Collector will be final.

The amount of pension will be sent to the pensioner to his address through postal money order without deducting the money order commission. It is the duty of the pensioner to intimate any change of address to the Tahsildar who pays the pension. If the new address lies in some other taluk, arrangements will be made to remit the pension by the Tahsildar in whose jurisdiction the new residence of the pensioner is situated.

Malayan Legislative Councillors who recently visited the City were guests at party given to them by Speaker Chellapandian. They visited the Assembly and Council Chambers.



SPECIMEN FORM.

FORM O.A.P. I.

Application for Old Age Pension.

District.

Taluk.

Village.

Town.

1 Name of the applicant.

2 Male or female.

3 Name of the father or husband.

4 Full address.

5 (*a*) Whether the applicant is incapacitated to earn a living due to blindness, leprosy, insanity, paralysis or loss of limb. If so, give details.

(*b*) Age (age on the date of application).
(Proofs for the stated age enclosed/not enclosed. If enclosed, whether they are original or copies).

6 Identification marks.—
1.
2.

7 Details of the applicant's relatives and their ages.—
(*a*) Son/sons .. .. .. Age.
(*b*) Son's son/ sons .. .. Age.
(*c*) Wife/husband .. .. Age.

Note.—Relevant items only shall be filled in with their ages. Irrelevant items shall be scored out. Names of the relatives need not be furnished. Only their ages shall be furnished, e.g., if there is no son, strike off (*a*); if there are no relatives strike off (*a*) to (*c*).

8 Whether the relative/relatives have any income or source of income.

9 Whether any of the relatives is continuously missing. If so, the details (name, age and date from which missing, etc.)

10 I hereby certify that—
(*a*) I have no income or source of income for living.
(*b*) I have/ have not submitted application for the grant of old age pension previously.
(*c*) I am a native of Madras State/I am domiciled in Madras State for the past years.
(*d*) All the particulars furnished by me are correct to the best of my knowledge.

Place.

Date *Signature of the applicant or left thumb-impression.

*In case the destitute is unable to sign or affix His/Her thumb impression, because of insanity, the application may be signed by the guardian who undertakes to support the destitute with the pension.

11. Certificate—

This certificate shall be furnished by a member of the Lok Sabha, Rajya Sabha, Legislative Assembly, Legislative Council, Municipal Council, Corporation Council, or a Panchayat President or the manager of a poor house or similar charitable institution or a Gazetted Government Servant of the State or Central Government.

I know Sri/Srimathi (son/ wife of) for the last years. His/ her identification marks are given below:—

1.

2.

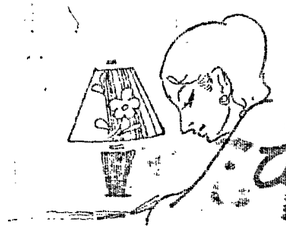
He/She is sane/insane.

Date. Signature of the person who gives the certificate with full address and designation.

Chief Minister Kamaraj, addressing reporters at a party given to Ministers by the Madras Reporters Guild.



In the Community's Interest



Women's Education

Smt. RAKSHA SARAN, *Chairman, National Council for Women's Welfare.*

Inaugurating the Madras Council for Women's Education in the City recently Smt. Raksha Saran, Chairman, National Council for Women's Education, surveyed the progress of women's education in the country with particular reference to Madras State. She also outlined the Problems that would have to be specifically and specially studied by the State Council for fulfilment of targets under the programme for training and educating women.

Madras State has also established a State Council for Women's Education to co-ordinate all the activities for the education, training and employment of women and has fallen in line with the other States. With the setting up of a State Council in Madras, we have now State Councils in all the States except Kerala. And when Madras, which is one of the best administered States in the country, has done, this, there is little doubt that Kerala will soon follow suit.

If the problem in the backward States is mainly for adopting special measures for increasing the enrolment of girls, the problem in comparatively progressive States like Madras extends further. The question of organising suitable training programmes and introducing placement schemes for employing women has to receive greater attention in such States.

In Madras

The position of women in this State is undoubtedly above the all-India averages for all stages of education. The literates in Madras have increased to 43 per cent for men and 17·3 per cent for women. Ten years ago the percentage for women was only 9·5. This means that their number has almost doubled during the first decade of planned development. Though this is heartening, a big gap still exists between the education of boys and girls in this State. For a country like ours which is the biggest democracy in the world, it is very important that education should spread fast. The introduction of the Panchayati Raj, at the district Block and Village levels and the important role assigned to democratic bodies and the co-operative movement and consequent need to elect proper representatives to Legislature and other bodies render it imperative that in as short a period as possible a substantial proportion of our men and women should become literates. This is essential as much in their own interest and that of the community as a whole.

High Priority, Targets

With the accent on universalising primary education given in the whole Asian Region to-day, one can expect that in the coming years girls' education will be given very high priority. Quicker results can, however, be expected only if this programme is linked with the adult education programmes for women. This was also the view of experts who considered the problem of girls' education in Asian countries at a UNESCO meeting held recently in Bangkok.

As for the State of Madras, it has been planned to raise the percentage of girls from 58 to 93 at the primary stage by 1966 and all boys, of course, would have been enrolled by then. In absolute figures this means that out of a total

of 14 lakhs of additional children, the number of girls to be enrolled would be about 10 lakhs. As for middle and secondary stages, the targets proposed are 21·5 per cent and 11 per cent for girls as against 50·1 per cent and 23·4 per cent for boys. In absolute figures, 87,000 girls at the middle stage and 58,000 girls at the secondary stage will be additonally enrolled. Though the targets at the middle and secondary stages cannot be considered ambitious, it would still mean considerable expansion at these stages and with the setting up of the State Council for promoting women's education, the targets would have to be reviewed annually.

Enrolment Spurt

There are reports indicating a big spurt in enrolment in Class I from many States last year as a result of enrolment drives and other propaganda among parents. While this is true in the case of boys, the same cannot unfortunately be said to be the case of girls. In States like Uttar Pradesh, the targets for boys have far exceeded but for girls as against a target of 2·25 lakhs of additional girls for 1961–62 only one lakh has been enrolled. Similar position obtains in many other States though there are a few States like Gujarat where the enrolment of girls has also exceeded the targets fixed. As for Madras, we do not have the break up between the enrolment of boys and girls to show that girls' targets have been reached. One thing is clear that if the inducement programme is taken up seriously, even girls' enrolment can be increased far more rapidly. We will then have to face the problem of finding more money.

An Investment

The conception that education is investment and therefore, more money has to be found for the type of education that will produce patriotic, knowledgeable and useful citizens—both men and women—sure of gainful employment is the present trend and there is growing realisation everywhere—planners and administrators at all levels—that the present meagre public expenditure on education has to be increased. Today we are spending only about Rs. 7 per head as public expenditure on education whereas, other countries are spending far more. For example, Soviet Union spends, roughly in Indian currency, Rs. 600 per head, America Rs. 460 per head. This is by no means limited to Western countries only. Even Asian countries are spending more than we do. For example, Japan is spending Rs. 75 per head, Philippines, Rs. 30 per head, Thailand Rs. 15 per head and even Burma Rs. 10 per head. It is hoped that in our country also the public expenditure on education would increase considerably in coming years and this will also mean more money for women's education.

Education Budget

That takes us to the question of allotting more money for education in our Budgets. With the exception of Kerala, where the public expenditure percentage on education is 37 which is highest in the world, no other State in the country has been able to set apart more than 20 per cent of the Budget. From the figures of 1959–60 for Madras State it is seen that out of a total revenue of about Rs. 73 crores, the expenditure on education here was about 14 crores. When all the essential needs of education are taken into consideration, there is a very strong case to increase the allotment for education in all the State Budgets. It is hoped Madras will take steps to see that at least 25 per cent of the Budget is allotted for education. This, along with their successful and popular voluntary programmes, will enable the State Government to take up some more significant measures to improve education in this State. It is already noticed that in the State Plan for 1961-66 provision has been made for free education to all poor children up to school leaving stage and that the cost on account of this will be about one crore for girls.

Teachers' Salaries

This plea is particularly meant to attract the right kind of teachers. For this the State Government have to come forward with bold steps to achieve a certain minimum salary for all the teachers. Excellent results have been achieved wherever teachers are free from financial worries. In the Philippines, everybody considers the teaching profession to be very noble but the salary which the teachers receive today is so low that the right type of persons are not interested in taking up the profession. The salary grades are woefully low. In spite of a number of revisions, they do not compare in any way with the salary scales that exist in other parts of the world including neighbouring countries like Ceylon and Burma. Even amongst the Indian States, there are such vast differences. The primary teacher is getting including all allowances, only about Rs. 50 in some States whereas two or three States have made an attempt at least to ensure that they will get about Rs. 100 per month. In Delhi, the primary teachers get a minimum of Rs. 138 including all allowances, which is the highest in the country and in Punjab a primary school teacher gets Rs. 100 and in Gujarat and Maharashtra, they get about Rs. 95.

An accepted fact

It is an accepted fact everywhere that women are better fitted by nature, aptitude and interests to teach the younger

children and therefore, the Government of India recommended to the States that at the primary stage the policy should be to appoint as many women teachers as possible. This is important not only to increase the number of girls going to school but also to improve the quality of education. Madras has already about 33·4 per cent of women in the elementary and secondary grades as against the country's average of about 20 per cent. It is hoped that the State of Madras will be able to show the way by seeing that this percentage is raised to at least 50 by the end of the Third Plan.

As the Plan stands today, the State Government will not be able to raise the percentage beyond 34·5 by 1966, whereas at the same time the additional number of teachers to be appointed would be more than 53,000 of which women are expected to be only 19,000 or so. There is, therefore, urgent need to take special steps to increase the number of women teachers so that at least half the number of teachers at the primary stage would be women. This is particularly necessary as about 10 lakhs of the total 14 lakhs of additional number of children to be enrolled at the primary stage during the current Plan period will be girls in this State. Moreover every year about eight thousand girls are passing matriculation and good many of them can also take advantage of the condensed education courses for women from rural areas. The scheme of adult literacy schools of the State Government can also be modified to increase the supply of qualified women. But all these will be possible only if the State Government decides that half their teachers at the primary shall be women by 1966.

Supplementary Schemes

The National Council has already moved the Government to sanction a supplementary special scheme for increasing the number of women teachers at an outlay of not less than 10 crores of rupees. This assistance will be available on the basis of hundred per cent grant from the Centre. Assurance has been given time and again that women's education will not suffer for lack of funds.

Besides, the Government in the Union Ministry of Education and the Planning Commission have finalised a new scheme for assistance to voluntary organisations in the field of women's education for starting continuation classes for girls or other developmental activities like starting of hostels in middle and secondary schools for girls. The grant from the Central Government will be available up to 75 per cent of the non-recurring and recurring expenditure. As for the buildings, this grant will be up to rupees fifty thousand.

Bifurcated Course

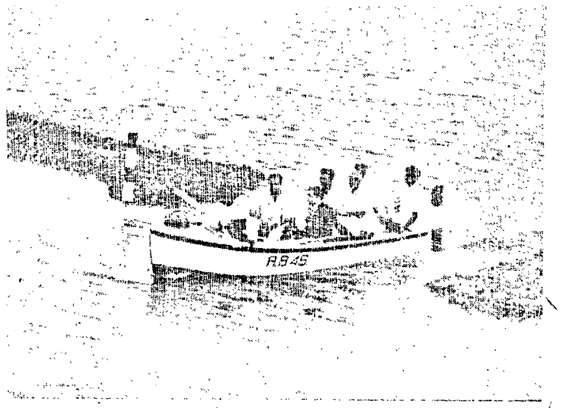
Regarding the courses of study for girls at the secondary stage the complaint that under the diversified system of courses girls do not have enough choice perhaps may not be applicable to Madras. These courses which have been introduced in the schools in this State include secretarial courses, home science courses, music, drawing and painting which will all be of particular interest to girls, and apart from this, for all other courses like engineering, textile technology, agriculture, girls are being admitted in larger numbers than before though the increase is gradual. Twenty-seven girls schools out of 163 have already introduced such bifurcated courses and 10 of such schools, have home science and secretarial courses. This is a very good beginning. In this connection the National Council has taken up the question of modifying the curriculam for girls.

When certain modifications and alterations are made to curriculum, it will be more related to their individual and social needs. That women will have to work to supplement the family income is a social necessity in the present context. This they will have to do without neglecting their domestic responsibilities. Training and employment of women on a part-time basis would be one of the solutions. This question is now under consideration.

The minimum programme

Now that Madras has the State Council which has the advantage of the association of officials and non-officials, there is every hope that this Council will grow into an effective instrument to see that all the programmes for girls' education, their training and employment are implemented in a co-ordinated manner. For helping the State Councils in discharging their functions the National Council and the Union Ministry of Education has already suggested a minimum programme. The State Government will extend all facilities and co-operation for the State Council to take up this minimum programme to promote women's education with greater speed and efficiency. The State Government have already agreed to treat girls' education as a special problem for some years to come. The State Government have also fixed separate targets for the enrolment of girls. Special provisions amounting to Rs. 43 lakhs have also been made to overcome the difficulties of girls. This provision which will be utilized for providing quarters for women teachers and hostels for middle and secondary schools for girls is in addition to the normal programme of educational development available for both boys and girls.

There are then the auxiliary programmes of mid-day meals and school uniforms which help poor children to go to school. Madras has already taken the lead in both these programmes and the voluntary programme to supply school uniform to poor children has been of immense use to



Minister Manradiar who recently inaugurated the Angler's Club in the City is seen boating around the fish pond.

girls. In fact Madras has all the experience to harness community efforts for school buildings, equipment, teaching aids, etc., through their popular school improvement scheme.

Vocational Training

Besides, many departments and organisations, are concerned in planning and execution of one scheme or the other for vocational training of women. For example, industrial training centres have been set up in 24 centres in the Madras State which will have a capacity of about 7,000 by the end of 1966. The Ministry of Labour has already agreed to start women's sections in all these centres to start vocational training courses which will be of interest to girls and at the same time have an employment potential. The usefulness of such courses is known and there is already one centre exclusively for women in Madras which is the Stri Seva Mandir. It is for the State Council now to take this up with the agencies concerned to see that all these training centres start women's sections and admit suitable women for training. There is also the question of starting polytechnics in the State for which a provision of Rs. 30 lakhs has already been made in the State. This has also to be followed up.

In short the minimum programme suggested for the State Council will mainly ensure that financial and physical targets fixed for girls both under general and special programmes are actually fulfilled. Concentrated attention will have to be paid to such of the areas or pockets in the State which are very backward. All these will have to be specifically and specially studied by the State Council.

Political Pensions

The total number of political pensions is about 5,500 and the amount involved is about Rs. 25 lakhs per annum. The bulk of pensioners are the descendants and dependants of former ruling families in India. Then there are certain families which were deprived of their means of livelihood as a result of extension of the British rule. Some are former rulers, the liability for paying whom was assumed by the British Government on transfer of its territory.

The number who draw more than Rs. 100 per mensem is less than 300. The general principle underlying a political pension is that it should not be discontinued during the lifetime of the existing holders. In certain special cases, owing to the part played by the individuals in the Freedom Struggle of 1857, the Central Government has granted maintenance allowances to their descendants.

HEALTH IN INDIA

Sri V. SRINIVASAN, *Director-General of Health Services.*

In this article, the Director-General of Health Services, outlines the major objectives of the health programme pursued since Independence and the results achieved in the control of communicable diseases, the promotion of training programmes, environmental sanitation, medical care and other services and family planning.

Before Independence the Government of the day did not accord that much importance to health as it deserved. The two important subjects, education and health, were included within the scope of local self-government. However, a little before the advent of independence, they appointed the Health Survey and Development Committee (otherwise known as the Bhore Committee) to review the situation and make comprehensive recommendations for the adoption of systematic measures for promotion of health and well-being of the people. The report of this Committee which was published in 1946 is a classical document and it may be said that its recommendations since then have been the guiding principles of policy in relation to health matters.

Constitutionally, "Health" is a State subject, the responsibility of the Central Government being for international health, inter-provincial health matters and higher education and research. But, over a large field of matters included in the concurrent list, the Central Government has a collateral responsibility, and it can be said that during the last 15 years health has received an overall comprehensive countrywide consideration.

First Objective

It was realised quite early that before any major progress was possible, the first objective should be to get out of way the more easily preventible and controllable diseases, which were mainly communicable diseases. The second objective was the initiation of large scale training programmes to help provide the personnel required for the greatly expanded activities. The next great and urgent requirement was that a determined effort should be made to improve environmental sanitation.

One of the most important problems facing the health administration was of a fundamental nature, viz., the improvement of nutrition of the population which is a basic factor in all health plans. Side by side, with these programmes, the provision of increased facilities for medical care and attention and services such as maternal and child health and school health received considerable attention.

New Problems

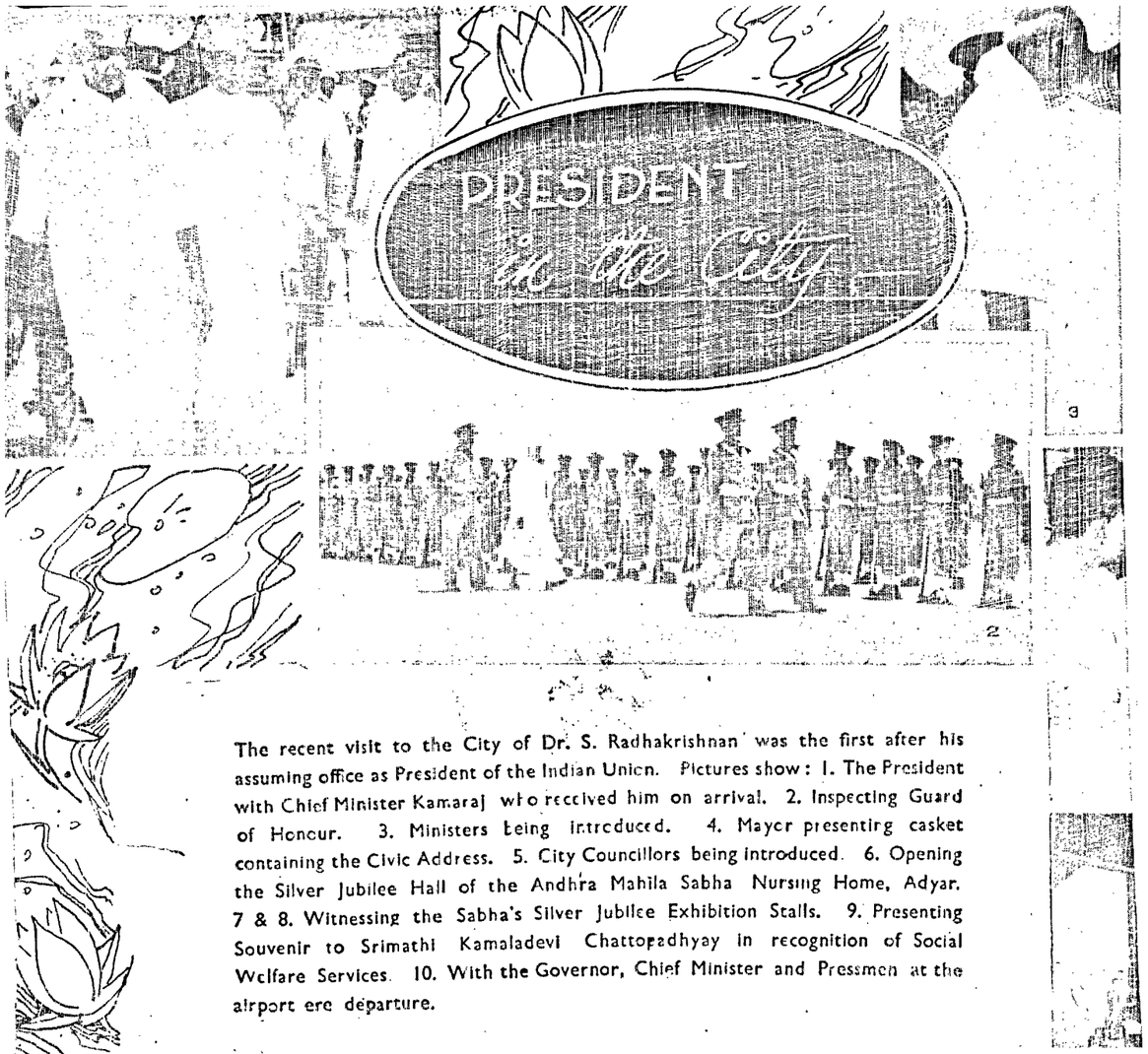
While all the above activities fall directly in the field of health administration, activity in allied spheres also have had a profound effect on health. The large scale industrial development in the country involving migration of people, rapid and unplanned growth of cities and industrial areas created problems in respect of housing, sanitation and nutrition.

The rapid expansion of education and improvement of economic status of the people created a great demand for better services and the existing services were found to be quite inadequate. Therefore, considerable effort was required to provide and improve such facilities.

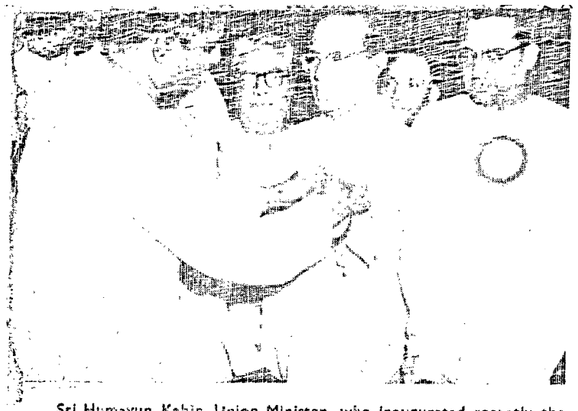
Population Rise

Another important factor influencing the health plan which has also a profound effect on the Five-Year Plans

PRESIDENT in the City



The recent visit to the City of Dr. S. Radhakrishnan was the first after his assuming office as President of the Indian Union. Pictures show: 1. The President with Chief Minister Kamaraj who received him on arrival. 2. Inspecting Guard of Honour. 3. Ministers being introduced. 4. Mayor presenting casket containing the Civic Address. 5. City Councillors being introduced. 6. Opening the Silver Jubilee Hall of the Andhra Mahila Sabha Nursing Home, Adyar. 7 & 8. Witnessing the Sabha's Silver Jubilee Exhibition Stalls. 9. Presenting Souvenir to Srimathi Kamaladevi Chattopadhyay in recognition of Social Welfare Services. 10. With the Governor, Chief Minister and Pressmen at the airport ere departure.



Sri Humayun Kabir, Union Minister who inaugurated recently the first All-India Conference of the Federation of All-India Tamil Writers held in the City has the Conference badge pinned on him.

as a whole is the rapid growth of population. The population of India which was 235 millions at the beginning of the century now stands at 438 millions. If the fact that the country has been divided and a part of it now forms Pakistan is taken into account, the significance of such a rapid increase of population can be visualised. It has, therefore, been accepted as a matter of fundamental importance and as a main strategic plank in India's planned development that a determined effort should be made to check the growth of population with a view ultimately to stabilisation of the population at an optimum level.

It will thus be seen that broadly speaking activities in the field of health fall into five categories: control of communicable diseases; training programmes; environmental sanitation; provision of medical care and other services and family planning.

Communicable diseases

Before Independence malaria accounted for one-third of all hospital attendance and in addition to considerable mortality, was responsible for widespread morbidity. Naturally, the control and ultimately the eradication of this disease was of the greatest importance. If this disease could be eliminated, the benefits would be enormous and striking. Fortunately, as a result of the discoveries during the war, a method was available which was independent of any effort by the persons suffering from the disease and by which a large scale attack could be made upon this disease.

Accordingly, the National Malaria Control Programme was started in 1953. The importance attached to this campaign can be seen from the fact that during the First and Second Five-Year Plans a sum of Rs. 67.08 crores has been expended on it, and the outlay during the Third Five-Year Plan is about Rs. 55 crores. The campaign is the largest single public health programme ever undertaken in any part of the world.

Spectacular results

The magnitude of the scheme can be visualised by the fact that every single residential habitation in the rural areas is visited twice a year and sprayed with D.D.T. In addition, during the next few years, every single house is to be visited twice a month to find out if any case of fever has occured and if so, to treat it in on the spot.

Even before the programme has reached its peak, the results have been spectacular. The mortality from this disease has been reduced to practically nil. The morbidity has been brought down by about 80 per cent. Other indices such as the spleen rate, the infant parasite rate, etc., have shown remarkable reduction. There is every prospect that the campaign will be maintained at its present tempo and brought to successful conclusion so that by the end of the Third Plan the eradication of this disease will be near achievement.

The Big Scourge

The next big scourge to be tackled is tuberculosis. It is estimated that about 5 million people are suffering from this disease and therefore large-scale measures are called for. The attack against this disease has been three-fold. Firstly, to protect the susceptible population be means of B.C.G. vaccination, second, to provide increased facilities for isolation of infective cases and third, to investigate, discover and bring to treatment cases through the setting up of a network of clinics throughout the country.

Next to malaria campaign the B.C.G. vaccination campaign is the biggest. Already, approximately half the population of the country has been tuberculin tested and over one-fourth vaccinated against T.B. The campaign is being continued with emphasis shifting towards the younger age groups who are more susceptible to the disease.

It is planned that there should be at least one tuberculosis clinic in every district, which would be the centre from which all anti-tuberculosis activity would radiate. Facilities for mass radiology and survey of population have been made available in several centres, and increasing resort made to domiciliary treatment. Side by side, measures have been taken to make available at reasonable cost drugs needed for treatment.

A Major Problem

Leprosy has always been a major problem. The incidence is quite high in certain areas. A determined campaign has been initiated to fight this disease. Fortunately, because of the discovery of effective chemo-therapeutic drugs it is possible to treat patients at their homes without disturbing their social and other conditions. Over 110 survey, treatment and education centres have been established in permanently endemic areas. Over 15 million people have already been surveyed and nearly a million patients have been put under treatment; The campaign is being continued on an increasing scale.

Smallpox can be very easily prevented, as we have an efficient method of vaccination. The problem of carrying out vaccinations over vast tracts of the country on a large population, however, presents many administrative difficulties. But in view of the certainty of being able to prevent the disease, it has been realised that it is essential to tackle this problem in a determined manner. The Smallpox Eradication Campaign has, therefore, been started.

During the Third Plan, it is proposed to vaccinate the entire population. Once this is done, all that is necessary is to continue the primary vaccination of all the new-borns and re-vaccination of school going children. A provision of about Rs. 5 crores has been made for the campaign in the Third Plan.

A Widespread Malady

Filariasis is a widespread problem. It was formerly believed that the disease was limited to the coastal areas, but recent observations have shown that it exists in many places far inland even in such unexpected areas as the interior of the Punjab. The problems in connection with this disease are quite different from those of other communicable diseases. We have no certain chemo-therapeutic drug against it nor are the vectors susceptible to known insecticides. The campaign against it has, therefore, to be limited to engineering work and to anti-larval measures which are time-consuming. Progress can only be slow. A provision of Rs. 2.37 crores has been made for this programme in the Third Plan.

Other communicable diseases such as cholera, trachoma etc., are all being vigorously tackled, though not on a mass eradication scale. But there is little doubt that with malaria, smallpox and leprosy out of the way and tuberculosis well under control, these other diseases will be tackled more systematically and completely.

Training Programmes

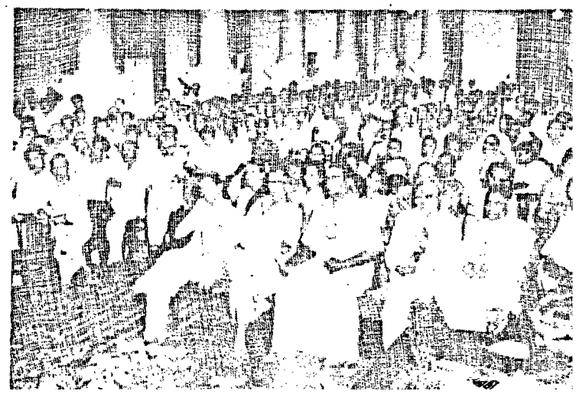
It was realised early that to meet the requirements of increased health activities trained personnel of all kinds will be needed in large numbers and, therefore, many training programmes were started. In 1947, there were 19 medical colleges in the country. Today, there are 62. The number of medical students has increased from about 1,000 to about 6,000 per year.

While the position in respect of basic doctors was not too difficult, the situation with regard to specialists and teachers was acute. After the Bhore Committee's recommendations, Government decided to set up, as a first step, the All-India Institute of Medical Sciences as a centre for higher training of specialists and research workers. At the same time, they upgraded certain department of specific medical colleges to enable them to take in more candidates for higher training of specialists and research workers.

Study Scholarships

Simultaneously, Government drew up a scheme of scholarships for sending abroad a large number of Indians

A view of the gathering at the inauguration of the All-India Conference of the Federation of All-India Tamil Writers.



AWARD FOR GALLANTRY



The award of the Police Medal for Gallantry Police Constable Anandapappu Chellian of Tirunelveli district has recently been approved by the President of India. Sri Chellian has earned the award for exemplary courage and devotion to duty shown during a sudden and murderous attack on him on June 20, 1961.

At about 10-00 p.m. on the 20th June 1961, Police Constable No. 2538, Shri Anandapappu Chellian and Police Constable No. 310, Shri T. P. Albert of the Sendamaram outpost, Tirunelveli district, were returning on cycles in single file from shandy beat duty at Pampukoil. At an isolated place constable Anandapappu Chellian who was leading was suddenly set upon by Thangiah, a notorious decoit who has escaped from jail, with the object of seizing the musket he was carrying.

Thangiah attacked the constable with a long aruval and inflicted a deep wound on his left hand. Constable Chellian abandoned his cycle, and despite the injury to his hand, grappled with the decoit and prevented him from wresting his musket. The decoit then drew a bitchuva and stabbed constable Chellian in the chest and other places. Constable Chellian called to Constable Albert to shoot his assailant, but Constable Albert hesitated for fear of injuring Constable Chellian. When however he found that the decoit was gaining the upper hand, he fired three shots at him aiming low. Thereupon the decoit rushed at Constable Albert brandishing the aruval and bitchuva but before he could use either, was shot dead.

for higher training. Nearly 200 students were sent to abroad between the years 1946 and 1951. Since that time mainly due to foreign exchange difficulties, the Government of India had to depend on International and bilaterial agencies such as W.H.O., T.C.M., Colombo Plan, Rockefeller Foundation Ford Foundation, etc. to assist in higher training of medical personnel. Under these schemes, nearly 861 persons have so far been awarded fellowships.

During the Third Five-Year Plan, a provision of Rs. 3·5 crores has been set apart specifically for the development of post-graduate medical education. No specific provision was made in the First and Second Five-Year Plans. It is hoped to establish several centres for advanced training during the Third Five-Year Plan.

Training of Nurses

Many big schemes have been taken up for the training of nurses. It was estimated that at the beginning of the First Plan there were hardly 9,000 nurses in the country. Now there are over 15,000 qualified nurses and by the end of the Third Plan it is estimated that this number would have risen to about 25,000. A shorter training scheme for nurses and the auxiliary nurse-midwives course has been started; 200 such centres have been started so far and the output is estimated to be 20,000 at the end of the Third Plan.

Other categories of personnel, such as auxiliary health workers for the primary health centres, laboratory technicians, radiographers, malaria inspectors, sanitary inspectors etc., are being trained in increasing numbers.

Environmental Sanitation

It has been estimated that nearly one-fifth of the population of the country does not have any easily accessible source of drinking water. Another 40 per cent of the population has very inadequate supplies and of an unsatisfactory nature. In many of the larger cities also the supplies cannot be considered adequate. It will be obvious therefore, that provision of safe and adequate water-supply is a first and essential requirement of every health plan. During the First Five-Year Plan, a sum of Rs. 12 crores was provided for urban water-supply schemes and Rs. 17 crores for rural water-supply and sanitation schemes. During the Second Plan, Rs. 50 crores were provided for urban and Rs. 45 crores for the rural water-supply and

sanitation schemes. During the Third Plan a provision of Rs. 89 crores for urban and Rs. 67 crores for rural water-supply and sanitation has been made. As a result of the work done during the two Plans, many municipalities and a large number of villages have now got protected water-supply.

Medical Care

The provision of general health services to the people has been based on the setting up of a network of primary health centres. These would provide a comprehensive health service to the population in rural areas. The centres would feed subsidiary hospitals. The district hospital and health establishment would be the central point from which the primary health centres and other health activity would be controlled and co-ordinated.

During the First and Second Plan Periods, nearly 2,250 primary health centres were set up. The number is proposed to be increased to 5,000 by the end of the Third Plan. Each primary Health Centre will have a main centre and three sub-centres, located in each community development block to begin with. As development proceeds, more centres are visualised in each block. It is visualised that there will be one major centre in every district where all types of specialist services will be provided.

Family Planning

India is one of the few countries in the world which has officially adopted family planning as a national policy. The importance attached to this programme can be seen from the fact that during the First Plan, a provision of Rs. 65 lakhs was made, during the Second Plan, it was increased to Rs. 4·97 crores and during the Third Plan it is nearly Rs. 27 crores.

A vast educational campaign using all available means of mass communication, such as broadcast talks, films, exhibitions, orientation camps where groups of villagers are assembled and encouraged to discuss family planning has been launched.

Schemes have been initiated for the training of a large number of workers such as doctors, nurses, social workers and health educators. Three main centres for training family planning personnel have been established and about 15 subsidiary training centres are being set up. Contraceptives are made available to the public, free to the indigent population and at subsidised rates to others.

In addition, special family planning clinics in urban areas and in rural areas have been set up where family planning advice, guidance and services are provided. A interesting feature is the increasing adoption of voluntary sterilization of men and women. It is remarkable that the population has readily accepted this method and one has only to see the demand for such facilities to appreciate it.

Overall Improvement

The over-all improvement in health and medical care will be appreciated by the fact that general morbidity rate which was approximately ·21 in the beginning of 1946 has come down to approximately ·04. The infant mortality rate has come down from over 200 to less than 100 and the expectation of life has increased from 27 years to 42 years.

There is no doubt that with improved economic prosperity and self-sufficiency in the fields of food and industry increasingly large sums will be available for social servies in which "health" will also get a large share, and one can look forward to the achievement of a very satisfactory level of health of the people who would be served by good health services.

Women's Education

The Union Ministry of Education has decided to extend financial assistance to voluntary organisations engaged in specified activities in the field of education of girls and women. Assistance will be extended on a sharing basis for projects of an experimental or educationally significant nature, provision of laboratories and libraries and construction of hostels. The new scheme has been implemented on the recommendation of the National Council for Women's Education.

New 15-Year Cumulative Time Deposit Savings Scheme

With effect from 1st June 1962, a new 15-year account with a maximum monthly deposit of Rs. 300 has been introduced. The existing limit of monthly deposits in the 10-year account has also been increased to Rs. 200 with effect from the same date.

INCOME-TAX REBATE

As in the case of Life Insurance Premia and Contributions to Provident Funds, the deposits made in the 10 and 15-year accounts will be eligible for earning a rebate on Income-Tax, subject to the overall limit of Rs. 10,000 or ¼ of income, whichever is less.

TAX-FREE INTEREST

The Deposits in the 10 and 15-year accounts earn a return of 3·8 and 4·3 per cent, compound interest, free of income-tax.

Further particulars from the nearest Post Office Savings Bank.

SAVE REGULARLY WITH CUMULATIVE TIME DEPOSITS

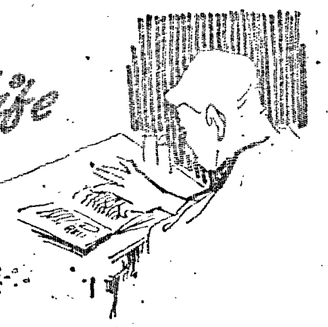
5-YEAR/10-YEAR AND THE NEW 15-YEAR ACCOUNTS

NATIONAL SAVINGS ORGANIZATION

DA 62/160

'A Day in My Life'

GADGETS make life Easy for the BLIND



JOHN JARVIS.

Have you ever stopped to think what you would need, would want most, if you were blind? In this article on Blind Welfare in Britain, John Jarvis, the International Correspondent of the Royal Institute for the Blind in London, gives one answer: a host of gadgets that will help the blind to live an independent life. Jarvis is an authority on the subject for he has been totally blind since baby hood.

I wonder if you ever consider how much we all take for granted in this increasingly mechanical age in which we live? We blind people are often just as guilty as anyone else in this respect. Most of us give far too little thought to all the research and development work which countless people spend in an effort to make life easier and pleasanter for us. Let me illustrate my point by describing some of the ways in which I myself made use of the results of their labours on one quite ordinary day of my life.

All in a Day

My Braille alarm clock woke me as usual at exactly the right time. The dots embossed on its dials had enabled me to set it accurately the night before. My wife was away, spending a long week-end with relatives, so I had to get my own breakfast. To make sure that my bread was cut straight and even, all I had to do was to put the loaf into a holder with a slot to guide the knife. When I pushed the lever on my special tea caddy, only one spoonful of tea fell in the teapot. Had I wanted another I would have had to push the lever again. In this way I always know how much tea I am using.

The weather forecast said "unsettled," as it so often does in England, so I passed my fingers over my Braille barometer as I left the kitchen. It had gone down quite a lot overnight, so I must not forget my raincoat. I scrambled into it and set off down the stairs, but not before picking up my folding white stick, an aid I would never be without when walking alone in our large cities. As soon as people see it in my hand, they immediately offer me all the help I need in crossing streets and when catching trains. When I am in familiar surroundings, I fold it up and slip it into my pocket. As I opened the front door, I picked up three packets of Braille from the mat: a letter from France, another from India and a magazine from Brazil, as I discovered when I had time to read them in the train. There was not a single stamp on any of them, for Braille now travels post free between one country and another. I met a friend in the train, full of apologies because he had forgotten to give me his new address. I made a note of it in Braille, there and then, on the little pocket writing frame I always carry with me.

In my office that day, I made many more notes on a larger writing frame which never leaves my desk. When I wanted to dictate some letters, one of the blind girls from the typing room came in and took them down on her Braille shorthand-machine as fast as I could string my thoughts together. In the pauses, while I was wrestling with a difficult phrase, we could hear the presses in the printing works downstairs. Their rhythmic thump floated up to us as they turned out more new Braille books and magazines and music in a steady flow, as they do for five full days each and every week.

I did not need any special equipment to tell me how hungry I was towards the end of the morning, but a quick touch on the hands of my Braille watch told me that we still had half an hour to go to lunchtime.

Evening with Friends

My wife was still away until late that evening, so I had invited some friends round for a rubber of bridge. We played with cards marked in Braille as well as in the usual way, and I kept a record of the score on a specially designed board. If only one friend instead of three had come in, we could have settled down to an evening of chess or draughts with the help of boards and pieces adapted for the blind. The week before I had played in a chess tournament in town, and taken my Braille chess clock with me so that I could keep as close a check on the time my opponent was taking for his moves as he did on mine.

When my friends had gone, I felt my Braille watch again. Ten past ten! I had not yet had time to listen to any news on the radio, so I must not miss the bulletin at half-past. To make sure of catching the opening headlines, I set my Braille timer to ring two minutes before the half-hour. The timer is really intended to help blind housewives not to burn the cakes or the Sunday joint, but it served my purpose as well.

Reading in Bed

Before my wife came in at eleven, there was just time to get out my arithmetic frame and add up what I had spent on the housekeeping in her absence. And when she arrived, and was making the last cup of tea of the day, the pocket writing frame came out again to mark a Braille title on the sleeve of a gramophone record she had brought me as a present.

The night air was chilly as we undressed and the Braille thermometer that hangs behind the bedroom door showed a temperature of only 52°F. "Don't bother about the evening paper tonight" I told my wife. "I'll read us a couple of chapters of that thriller we started before you left last week." And so I did, with the Braille book snugly tucked away under the bedclothes. And I am afraid I did not spare a thought for all the inventors of clocks and watches, and walking-sticks and writing-frames for the blind, and of the other two to three hundred special gadgets which I have not had time to mention.

Employment Exchanges for the Handicapped

Each State will have a special employment exchange for the physically handicapped by the end of the Third Five-Year Plan. The first such exchange was established in Bombay in March 1959, followed by the second in Delhi in April 1961 and the third in Madras in April 1962. These three exchanges have been able to find employment for 410 handicapped persons, up to 1962. Of these persons employed, 177 are blind, 82 deaf and 151 cripples. All Central Government Departments have been requested to consider the applications of handicapped persons with sympathy. A centre to impart training to adult deaf in engineering and non-engineering occupations is proposed to be set up at Hyderabad during the current financial year.

'Death Ray' Vacuum Cleaner

What's New in Medicine

Until a few decades ago, various factors hampered the progress of medicine and as a result no great impression was made on the death-rate. But in recent years research and development in the field of medicine has been phenomenal and both the Surgeon and the Physician enjoy the benefits of an infinite range of aids not only to stem fatality but also to reduce and relieve human suffering. This feature records news and recent developments in medicine.

A new "death ray" vacuum cleaner, which in recent trials has proved itself 99·8 per cent efficient in killing germs, has been designed by a British firm for use in hospitals. The machine employs banks of ultra-violet lamps which emit rays powerful enough to kill millions of germs every few seconds.

The cleaner is intended to combat cross-infection in hospitals. Scientists have been trying for a long time to prevent the spread of germs which have become resistant to antibiotic drugs such as penicillin and streptomycin. Sucked into hospital vacuum cleaners at one end, these organisms have been blown out at the other, to infect patients with a new and sometimes incurable disease.

Mr. F. J. Elvy, managing director of the firm, said: "we hit on the idea of killing the germs as they passed through the cleaner by concentrating a death ray on them. With the aid of Associated Electrical Industries' lighting scientists, ultra violet lamps were incorporated in a specially shaped housing. The germ-laden air was blown in a predetermined path over the lamps.

"It took nearly two years of intensive research to obtain an air-flow which ensured that the bacteria were subjected to the light rays long enough for them to be killed". The manufacturers are to seek the aid of pathologists in several countries before introducing their "death ray" vacuum cleaner.

Teletherapy Unit for Madras

A Caesium 137 Teletherapy Unit for use at short source to skin distance (S.S.D.) has been designed and built by the Atomic Energy Establishment, Trombay. The first unit will be installed at the Cancer Institute, Adyar, Madras, for the treatment of patients with tumours relatively close to the skin in the head and neck.

The word teletherapy, though not new, has been recently redefined to mean the treatment of patients with beams of gamma radiation emanating from Radioactive sources. In the older history of radiation therapy, radium was the only element available for this purpose, but this was limited to some extent by its high cost. With the advent of nuclear energy and the potential availability of very large amounts of radioactive substances, like cobalt-60 and Caesium-137, many new vistas have been opened in the field of Radiation Therapy.

Caesium-137 is probably the most outstanding teletherapy source. It produces gamma rays at a supervoltage energy (0.661 MEV). At this energy there are some advantages to the patients, skin sparing effects and the comparative absence of differential bone absorption are added attractions over conventional X-ray therapy machines, especially for treating comparatively superficial lesions lying deep to the bone. In addition to some of the clinical advantages mentioned above, caesium has a long half life of 33 years and hence the recalibration of treatment times would be necessary only at an interval of one and a half to two years. It is a fission product and is produced in large quantities in a reactor and in the long run should be very cheap. It is the considered opinion of many people that Caesium-137 offers advantages in short and medium source to skin distance units.

The teletherapy unit consists of a lead filled sphere in which the radioactive source is located. The source can be switched into "operating" or "shielded" positions remotely by an air-operated motor and drive. The control

unit consists of an electric timer which can be set for the required duration of irradiation. It also has the usual safety elements that ensure that there is no undue risk due to mal-operation or failure of power. Building of this prototype unit has established the feasibility of producing such machines in India.

Stabilization of Vitamins

The effect of different containers and storage conditions on the stability of vitamins in pharmaceutical preparations has been under study at the Central Drug Research Institute at Lucknow. Tests have been carried out at various temperatures for evaluting the shelf lives of vitamins B-1 and C in twelve different pharmaceutical formulations. The percentage retention values of these vitamins after twelve months of storage at 27°C equal the corresponding values for six months of storage at 37°C.

The shelf life of different formulations containing vitamins, B-1, B-2, B-6 and niacinamide in four different vehicles has been exmined for one year at 37°C with special reference to the incompatibility of B-1 with other B complex vitamins, air space, nature of vehicles and stabilizers.

Vitamins, B-2, B-6 and niacinamide are quite stable, whereas 50 per cent of vitamin B-1 deteriorates after storage for one year. The deterioration of vitamin B-1 in the presence of vitamin B-2 is dependent on the concentration of nicotinamid Both vitamin B-6 and panthenol are compatible with vitamin B-1.

Fighting Leprosy

British scientists may be the first to grow human leprosy germs in the test tube—thereby solving one of the main problems hampering research in the disease. Doctors at the National Institute of Medical Research in London have already discovered how to grow rat leprosy germs in the cells of rat connective tissue. Now they have made human leprosy cells expand in a culture medium rich in cane sugar, and hope soon to make the germs divide and multiply. Once this is done, the way is open for proper testing of drugs.

A factor that has hampered progress in the fight against leprosy is the slowness of action of the germs causing the disease. Whereas other germs divide and multiply in 20 minutes—multiplying their numbers by 4,000 times in four hours—the leprosy germ takes 10 to 14 days to make the first division into two. That is why it has been difficult t test drugs for their action against the disease. It has bee necessary to rely on the similarity between the lepros bacillus, known scientifically as Mycobacterium lepra and that causing tuberculosis, and to assume that drug effective in treating the latter will be equally effectiv against the first. This does happen, but it is difficult t determine on this basis the best drug for the job. Whe leprosy germs can be grown in the test tube, selection an testing of drugs will be easier.

LAND RECLAMATION IN ATTUR

The Madras Government have recently sanctioned a pilot scheme for developing 1,000 acres of waste land in Ramanaickenpalayam under a programme of land reclamation in Attur taluk in Salem district.

The scheme contemplates parcelling out the land into suitable units each extending to 10 acres for reclamation and development of the land, erecting a well with electric motor and pump set for each unit, for executing soil conservation measures so that the land could be brought under cultivation immediately without further investment on the part of the assignee and for the assignment of land to landless poor, preferably Harijans, at the rate of a unit for a family.

It is also proposed to form a Co-operative Society for every 20 such farmers (200 acres) so that the assignees could have necessary facilities for housing, cultivation and purchase of other accessories. The beneficiaries will be selected before the commencement of the scheme and will be associated with the development work, presumably, in the form of hired labour. The cost of development of the land will be recovered in twenty annual instalments, the first instalment being commenced after a period of three years from the date of assignment of the land. The assignment will be provisional and will be confirmed only after all the dues have been recovered.

'Interferon'

Successful trials with monkey-grown interferon, th substance that is made in animal tissue cells to comba viruses that attack them, have just been carried out b

Dr. Alick Isaacs, the scientist who discovered the substance with Dr. J. Lindemann at Britain's National Institute for Medical Research in London.

In the first trial with human volunteers, drawn from the technical staffs of four laboratories—Glaxo, Wellcome Research, Imperial Chemical Industries and the National Institute for Medical Research—which are colloborating to produce interferon on a commercial scale, an attempt was made to see if interferon could prevent the anti-smallpox vaccine from "taking". This vaccine is actually the vaccinia virus which causes a mild attack of cowpox and the development in the blood of the substances that prevent attack by smallpox. If interferon can prevent virus attack, it should prevent the vaccine from "taking", and this is what it did.

In the experiment, all 38 volunteers were injected in two spots on the arm—at one spot with an innocuous control fluid, and at the other with interferon solution. Twenty four hours later, both spots were vaccinated with anti-smallpox vaccine. In this way each volunteer acted as his own control. In 24 of the volunteers the vaccine took at the control site only and no sore appeared at the spot that had been treated with interferon. Among the remainder, in eight cases sores appeared at both sites, but those at the interferon-treated site were much smaller than those at the control-treated site.

This majority result, together with encouraging results in treating virus-caused eye infections with the same interferon solution, is considered a good beginning in view of the lack of information on correct dose rates. The next step will be to see if interferon can be used to prevent or treat the common cold. This will be done at the Medical Research Council's Common Cold Research Unit at Salisbury. Other work will be carried out to improve the poteney and purity of the preparation.

Artificial Kidney and Malaria

The successful use of an artificial kidney in the treatment of acute cases of malaria and blackwater fever is reported in a recent issue of the British Medical Journal. Professor A. W. Woodruff, Wellcome Professor of Clinical Tropical Medicine at the University of London, and Air Commodore R.C. Jackson of Princess Mary's R.A.F. Hospital at Halton, Buckinghamshire, point out that acute renal failure is a complication which for generations has been a most dreaded consequence of severe malaria and blackwater fever.

Discussing the case histories of what they believe to be the first patients with malarial renal failure being managed with the aid of an artificial kidney, they say these show that this modern therapy is giving improved chances of survival. All the patients treated had contracted malaria in Africa, and the doctors point out that with rapid air services, the chances of patients developing malaria in temperate zones are increasing. But they stress that all the cases had omitted to take malaria prophylactics.

MINIATURE TELEPHONE FOR DIVERS

An underwater "telephone" about the size of a penny is being developed by the British Admiralty Experimental diving unit for use in diving apparatus. Two Admiralty officials have described the new telephone equipment in a paper "Diving and Salvage", prepared for the Institution of Civil Engineers.

The "surface-demand" diving apparatus allows swimmers to work to a depth of 120 ft. The underwater telephone, based on the bone-conductor type of deaf aid, works by transmitting and receiving vibrations in the bones of the head caused by speech.

A Song in your Heart . . . .

A summer spent in Kodaikanal, lovely Hill Station in South India, puts a Song in Your Heart. The season is invariably wonderful. The Sunshine is pleasant and the Climate is just right. The beautiful lake, the waterfalls, the wooded slopes, the rocks, the giant trees and flowers of myriad hues provide endless visual delights. Prospects for Hiking and Climbing are excellent.

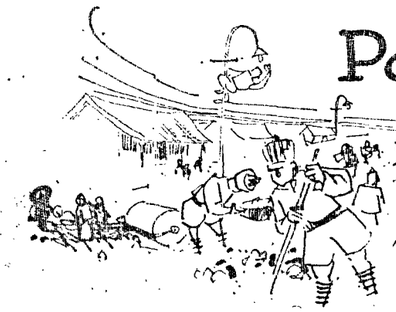
Further South, historic Madurai, City of Festivals and Fairs and Seat of Tamilian Learning and Culture, beckons the Tourist. The Meenakshi temple here, Temple of Temples, represents all the superlative values that contributed to the greatness of South Indian Architecture and Sculpture.

The invigorating Courtallam Falls further down offer incomparable pleasures for holiday-making in Summer Months.

And watching the glorious Sunrise and Sunset from Kanyakumari, the Land's End, provides experience of a Joy without Parallel.

So, Do not Tarry . . . . .

VISIT MADRAS STATE



Police Aid VILLAGE Development

The policeman is no longer regarded with fear by the people. Since freedom, his relationship with the people and his increasing indentification with their interests have won for him their confidence. This is nowhere more evident than in the villages of Madras State where policemen frequently troop in, armed not with the customary lathi and the rifle but with unusual armoury consisting of crow-bars, pick-axes and spades. Enlisting the villagers' co-operation, they undertake works of reconstruction and improvement in the village and when the work is completed, the village certainly does wear a new aspect. This feature gives a brief review of the work done in Madras villages for the year 1961 *under the Police Village Development Scheme.*

In Chingleput district construction of an extension block to a school building was completed at Nazarathpet, a children's park at Medavakkam is in process of compeltion, a madhar sangham building was completed at Alandur, construction of a Veterinary hospital at Poonamallee had progressed, a road was laid at Mettupalayam village, ground was levelled for the Bala Mandir's playground for children at Mylapore and the road from Pattabiram to Poonamallee was repaired.

In South Arcot

In South Arcot district road development work was undertaken in the villages Thegavādai, Kondangi, Sathputhur, Peral, Siral, Kumarateh, Kidukkankuppam and Sathampadi. Road improvements were undertaken over a distance of two furlongs only in Kidukkankuppam and Sathampadi villages for the Panchayat Board soon santioned a sum of Rs. 3,000 and further Shramadan was stopped and further work handed over to the Panchayats. Construction of Children Parks was undertaken in all the villages and completed by the Shramadan of both Police Officers and men.

In Madurai Urban the approach road to Poondi village is being metalled, plants have been planted on either side of the road, a reading room-*cum*-open air theatre was constructed, a well in front of a School was deepened and the construction of a parapet wall around the well taken up.

In Madurai North a mile long road between Vadugappatti village and Madurai Usilampatti was laid, construction of a park in Vadugappatti village and restoration of one choultry taken up and completed. Formaion of a Harijan Colony at Allikundam is progressing.

In Tirunelveli district the construction of roads in Karayadi Pacheri, Thuthukuli Pacheri and Arasankulam villages to the nearest road point was undertaken.

In North Arcot construction of building works undertaken in Naganadhi, Vellore Town and K. V. Kuppam Villages were not completed for want of materials.

In Salem district putting up a mud road for a distance of about 1½ miles was undertaken by the Police and about four furlongs were completed for the period from 25th October to 31st December 1961.

In Kanyakumari district a road leading to Vilhi Veedu Village was completed on 22nd March 1961 engaging 30 Armed Reserve men and 70 villagers for 12 days. As a part of village development in this district, the Police undertook to lay out a road of about 1¼ miles in length to connect the main village Kamakurichi, with the Nagercoil-Colachel road at the 8th mile stone. A party of 20 Armed Reserve men under a Sergeant commenced the work on October 10, 1961 and completed it on November 10, 1961.

In Thanjavur district a road about 9 furlongs from the Kattukottai Harijan Colony to Kizhathirupanthuruthi was undertaken on December 17, 1961 and completed on January 30, 1962 with the help of a Section of the Armed Reserve and 30 to 40 villagers.

In Coimbatore district a road to a distance of about four furlongs was laid in Theethipalayam village. In Ramanathapuram district the village of Anamkootam in Sivakasi taluk Police station limit was selected for development work during the year. Work will be commenced shortly.

In Tiruchirappalli district formation of a gravel road of about 2 furlongs from Pudur Uthamanur to the Primary Health Centre was completed in April 1960. No fresh scheme could be undertaken as the Armed Reserve was engaged with "Heavy Escort" and bandobust duties during the latter part of 1961. In the Nilgiris district provision of recreation ground for children in Kavaratty School was completed within a fortnight from the date on which work was commenced in October 1961.

Assistance to Theatres

The Ministry of Scientific Research and Cultural Affairs has decided to extend the scheme of "Assistance to Theatres" for the production of new plays during the year 1962-63. Forty plays—seven in Bengali, five in Hindi, four each in Tamil and Gujarati, three each in Telugi, Assamese, Malayalam, Kannada and Marathi, two each in Punjabi and Oriya and one in Manipuri—were approved for production by 39 theatre groups all over the country during 1961-62. The grant will, as far as possible, be distributed on a regional basis taking into account productions in all Indian languages.

Rapid Analysis of Coal



Every day that passes in this Age of Science registers new advances as a result of which fresh and improved techniques emerge to lighten the burden of the housewife, the common artisan, the small business man and the big industrialist. This feature takes note of such developments both at home and abroad.

A new process for the rapid analysis of coal to determine its ash and moisture content has been evolved at the Central Fuel Research Institute, Jealgora. Through this process, coal samples can now be analysed in ten minutes as against eight hours taken by the earlier known processes. Another advantage of the new method is that it is also applicable to wet coal which emerges from coal washing plants. It does away with the need for drying, crushing, and ignition, thereby enabling both continuous operation of the washing plants and proper control over the quality of washed coal.

Coal is one of the basic raw materials for almost all the major industries and the quality of coal has a vital bearing not only on the efficiency of production but also, in several cases, on the life of heating systems. The percentage of ash present and the physical and chemical nature of ash are the primary factors which determine the quality of coal with respect to its calorific value and other characteristics.

Iron and steel works, cement and fertilisers industries and the railways are some of the major consumers of coal and the consignments received from day to day vary considerably in their ash content. Before use every bulk consignment is to be analysed. The methods of analysis currently in use are time consuming—one analysis taking about eight hours.

New Oat Variety

A new oat variety for breakfast food industry has been introduced by the Indian Agricultural Research Institute, New Delhi. The plant introduction Organisation of the Institute, which procures from all over the world plant material which could be directly or indirectly utilised to meet the requirements of this country, has introduced the Australian oat variety 'Kent' which yield grains of the desired quality for the breakfast food industry.

This newly started industry in the country has been facing considerable difficulties because of the non-availability of local material of desired quality and shortage of foreign exchange for purposes of import.

Trials conducted with a set of Australian, American and European varieties showed that the variety 'Kent' is highly satisfactory. Efforts are now being made to multiply its seeds.

Puppet Leather

The Central Leather Research Institute, Madras, has developed a new process for making puppet leather using sulpho-chlorinated oil. The leather produced by this process is readily wettable and washable, and also preserves the natural shine and colour of the original skin.

The process is suitable for tanning on a cottage scale.

Preserving Fish

An adjunct to preservation of fish by traditional methods such as sun-drying and salting has been found out as a result of investigations carried out at the Fisheries Technological Research Station, Ernakulam. This new

process makes use of the chemical, propionic acid, and is very effective in suppressing red halophile growth and mould attack in wet-salted and pickled fish and considerably increases the storage life of fish.

Propionic acid can be safely used for fish preservation. It has already been listed under permissible food addivities in Germany and the U.S.A. It is a natural constitutent of cheese and dairy products. Propionic acid can be incorporated easily since its sodium and calcium salts are soluble white powders which can be pre-mixed with the salt employed for curing.

Standards for Mica

A team of eight mica experts of the American Society for Testing Materials is now engaged in the formulation of visual standards for Indian mica, a mineral of vital importance to electronic and allied industries. The project has been undertaken at the request of the Mica Expert Promotion Council of India. A matched set of Indian mica samples, selected as a result of the study, will serve as a visual standard for comparison in India.

For the most part, mica has to be prepared for use by hand. After being mined, the mineral is cleaned, the edges trimmed, and the layers of mica split into thin sheets along natural cleavages with meticulous care. Attempts to develop mechanical splitters have been made, but for the most part without success. The value of mica depends on its thermal properties, as also on how free it is of minor flaws, waviness, strains and other defects which impair its resistance to the flow of electricity.

Surface Coatings

A process has been developed at the Regional Research Laboratory, Hyderabad, for preparing a resin for use as surface coating starting from castor oil, resin, glycerol, sodium sulphate and small quantity of maletic anhydride. Till now this type of surface coating material named resin varnish, was not known to be manufactured in India or abroad.

The films of the varnishes prepared from the resin possess good drying characteristics. They are fairly resistant to water. The process is ready for commercial exploitation. The equipment for setting up a commercial unit can be mostly fabricated locally.

New Rice-Drier

A new machine for drying parboiled rice which is quick and efficient has been introduced in rice-growing countries, by a British firm (Alvan Blanch Development Co. Ltd., Chelworth, Malmesbury, Wiltshire). It is announced that 15 of the firms' grain driers have gone to Ceylon—an order worth over £ 12,000. Another 10 are to follow soon.

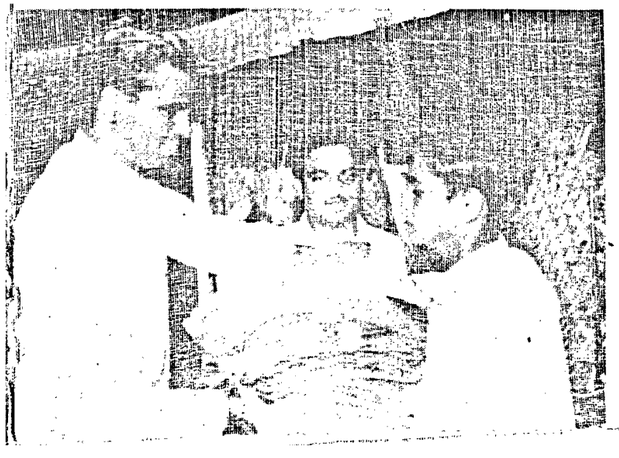
Only small modifications have been necessary to the standard British type of grain drier. The main one has been the removal of the cold-air unit and an enlargement of the hot-air factor. The parboiled rice starts off with a moisture content of about 50 per cent and this has to be reduced to 10 per cent a removal requirement of 40 per cent, about eight times the normal need for grain in Britain.

The traditional method of drying rice paddy by spreading it out and turning it in the sun has hazards in wet weather. The new drier, it is claimed, provides the answer to the problem.

Aquafarming

Experiments in aquafarming—developing the sea as a source of food—are taking place in Britain this summer as a

Minister Bhoovaraghan, who presided, distributing clothes to children on Parents Day at the Corporation Higher Elementary School, Puliyur.



Destination Prosperity . . .

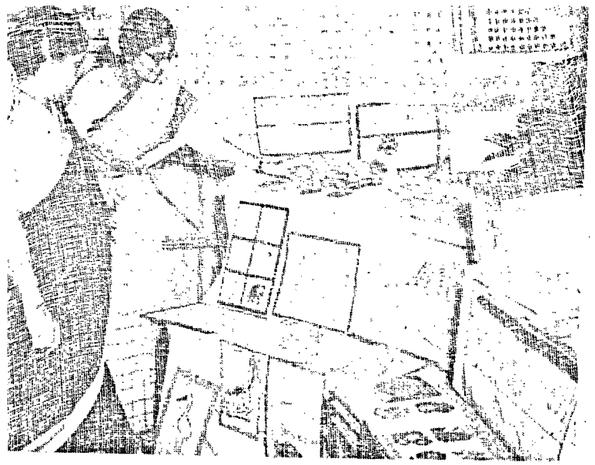
A decade of Planning in Madras State has prepared the ground for the emergence of a prosperous and modernized society.

The power pumpset has transformed agricultural outlook and the peasant in the village to-day is happy. He has adopted improved farming techniques and produces and earns more at less cost and labour.

The benefits of education, electricity and communications are progressively reaching the remotest villages in the State. New Industries and Factories representing big, medium, small and rural enterprises have appeared fairly distributed all over the State and provide gainful employment to the people.

The State is now geared up for the spurt of effort that will usher in the industrialized society wherein material prosperity will lead to larger goals.

PLANNING LEADS THE WAY



Srimathi Durga Bai Deshmukh recently inaugurated at the Bala Mandir the production unit of small industries under the Socio-economic programme of the Central School of the Social Welfare Board.

prelude to the second World Congress of Undersea Activities to be held in London in October.

Eggs of fish produced in laboratories of the British Ministry of Agriculture, Fisheries and Food will be placed in tanks at the Port Erin Marine Laboratories in the Isle of Man to judge the survival rate of the fish from the eggs. Of the thousands of eggs produced in natural conditions, only a very few fish reach full maturity owing to the limited food in the spawning grounds. British scientists are carrying out experiments in the hope that by producing eggs in a laboratory and "planting" them in areas where food is more abundant they will increase the survival rate of the embryo fish.

At the Ministry's laboratories at Lowestoft, Eastern England, they have achieved a 30 per cent survival rate for the fish eggs, whereas the survival rate in the natural conditions is much less than one per cent. The next stage is to seek to produce vast numbers of the larvae in the sea-water tanks before extending the experiment to coastal waters.

Scholarships for the handicapped

Blind, deaf and orthopaedically handicapped students are to receive Government scholarships for higher education and technical or professional training. The age limits for the blind and deaf students is between 16 and 30 years and for the orthopaedically handicapped between 12 and 30. The scholarships will be awarded through the Education Departments of the State Governments and the Union Territories. In Goa, Daman and Diu and Dadra and Nagar Haveli the Administrators will award the scholarship.

Breath of Life

Culture, Beauty and Gracious Living are the very breath of the Tamilian Way of Life. While the temples of Tamilnad express an extraordinary architectural and sculptural tradition, they have intimately influenced Tamilian living even as they served as places of Worship.

Language and letters, drama and literature, arts and the crafts, music and dance have all flourished under the all-embracing character of the profoundly religious Tamilian culture and traditions.

Thus devotion and reverence have combined to mould a culture which is as peerless for its classical values as it is for its sense of dedication and humility.

This surpassing culture is so deeply ingrained in Tamilnad that living the artistic and beautiful life, has become part of the normal, habitual life of the Tamilian householder.

Registered No. M-4767

PUT
HIM
ON ...

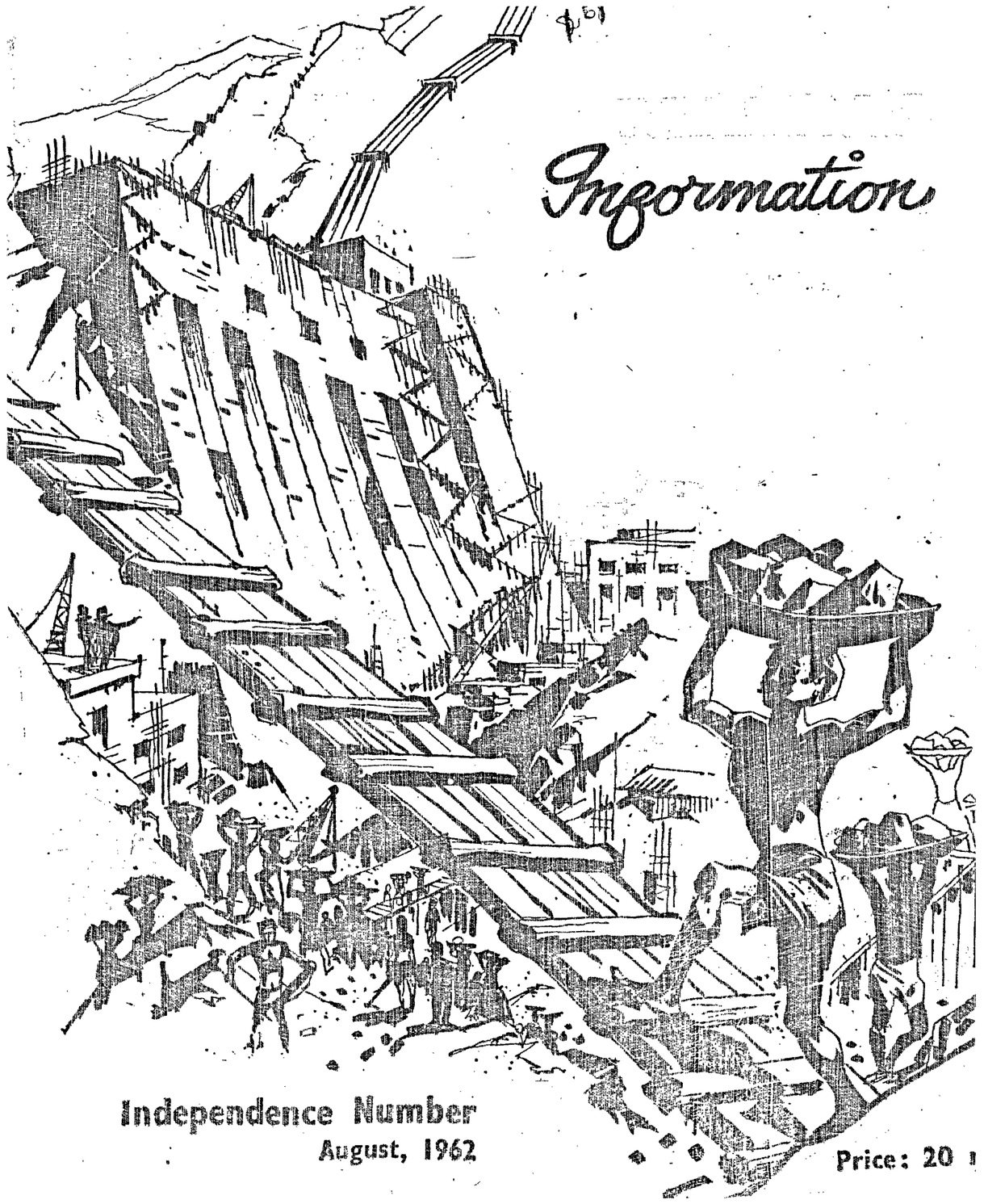
Sea Gold comes to you as gold from the sea supplying you Vitamins A & D so essential for your children's growth and your health.



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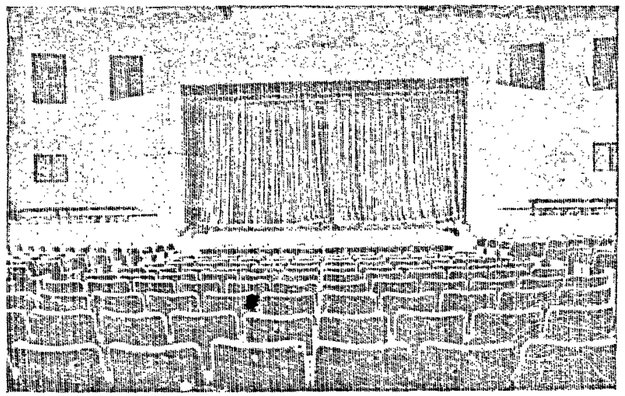
Information



Independence Number
August, 1962

Price: 20 n

A THEATRE THAT CHILDREN LOVE



The Children's Theatre in the Government Estate, Mount Road, is a place that children love. Every week-end, films that educate children are exhibited here mixed with comic cartoons that delight them.

It is a joy to watch their innocent faces aglow with pleasure after enjoying the shows at this luxury theatre.

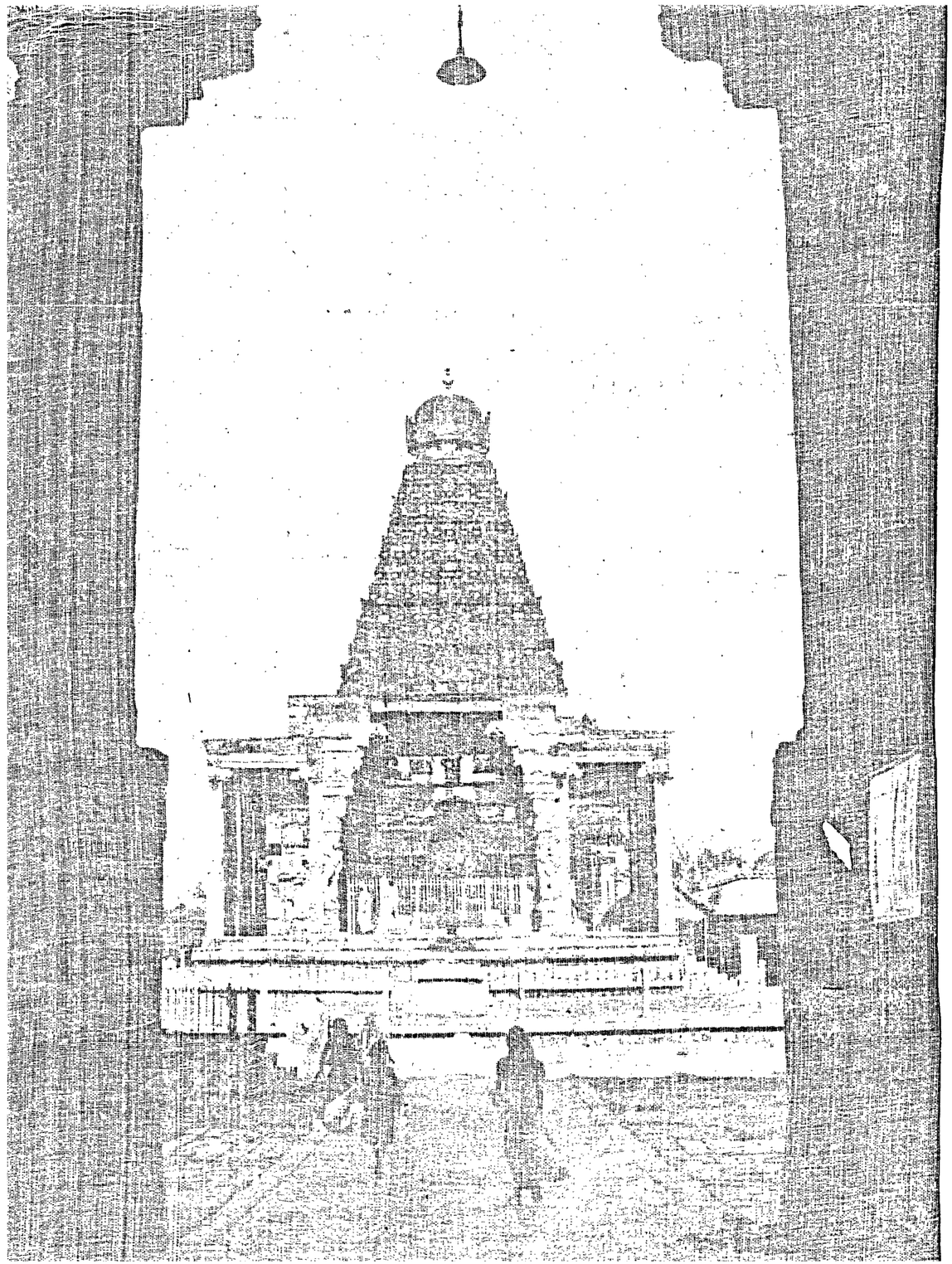
Hundreds of children attend the shows at this theatre and have a happy time. Why not send your children too?

Madras Information

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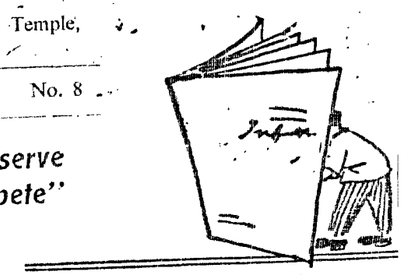
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(*Facing Page*: The Great Temple, Thanjavur.)

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"We Seek to serve and Not to Compete"

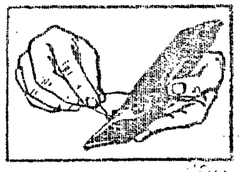


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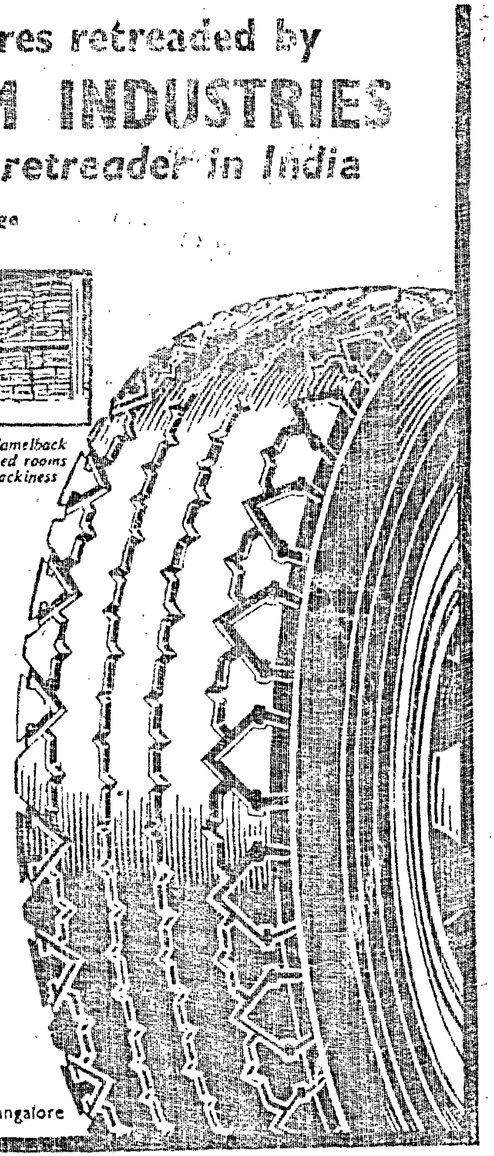
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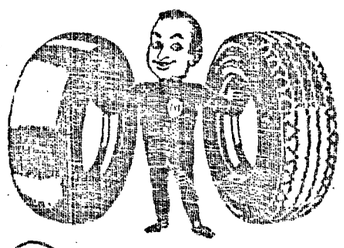
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Retreading at its best

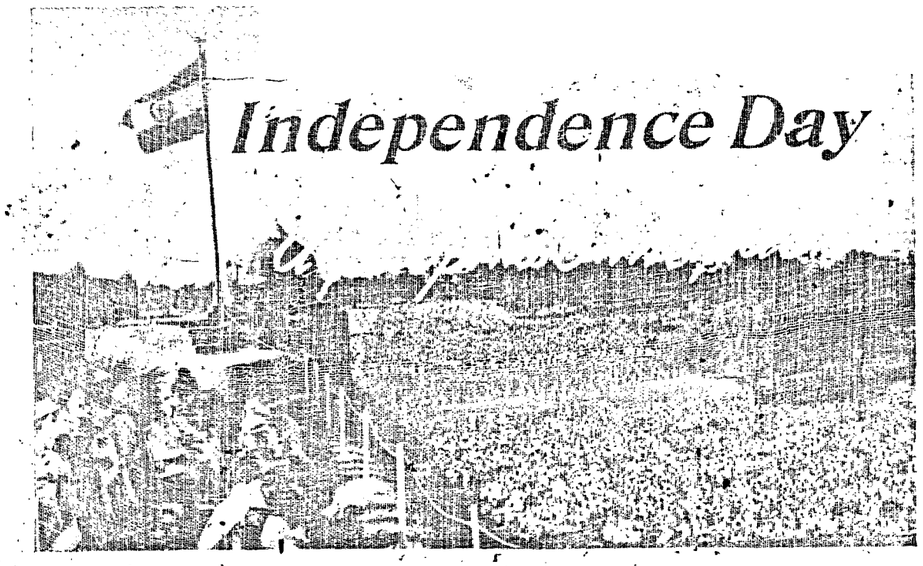
Sundaram Industries Private Limited

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Lest we forget



August 15, 1947, is the birthday of Free India. It marks for her the end of an old era, the beginning of a new age.

The new Dominion of India was born at the stroke of mid-night on Thursday when the Constituent Assembly, at its historic Session, assumed power for the governance of the country and signified its approval of the choice of Lord Mountbatton as the First Governor-General of the Dominion.

Earlier addressing a hushed House, Dr. Rajendra Prasad, President, paid a tribute to the memory of those who had sacrificed themselves for the attainment of independence. "Let us also pay our tribute of love and reverence to Mahatma Gandhi who has been our beacon-light, our guide and philsopher during the last 30 years or more", Dr. Rajendra Prasad added.

THIS MONTH'S COVER.

Building the Nation

To-day's energy, to-day's ambition and, Planning will result in a little less care and a more joy for tomorrow.

In building the nation, in carving the better future, the efforts of one and all are essential. The building is being built by the effort of so many persons both technical and non-technical. So also the building of the nation requires the will for hardworking of its people. The words of Prime Minister Nehru are worth quoting in this context.

"We want no sluggards; we want no slow people who always complain. I want men who work as crusaders. Can you conceive of a bigger thing than to build up this immense country of ours".

Dr. Rajendra Prasad assured the minorities in India that they would receive fair and just treatment. "They will enjoy all the rights and privileges of citizenship," he said, "and will be expected in their turn, to render loyalty to the country in which they live and to its constitution".

"We are embarking on a great task and we shall do our best to serve it" Dr. Rajendra Prasad concluded.

Moving a resolution that members of the Assembly do dedicate themselves to the service of India and her people, Pandit Jawaharlal Nehru, in an inspiring address, declared: "The service of India means the service of the millions that suffer. The ambition of the greatest man of our generation has been to wipe out every tear from every eye. That may be beyond us. But so long as there are tears and suffering, so long our work will not be over."

The resolution was passed unanimously, and members took the pledge at the stroke of twelve. After accepting the National Flag presented by Mrs. Hansa Mehta on behalf of the women of India the Assembly adjourned to meet again on Friday morning.

Why August was selected?

It was in August 1942 that the entire nation rose in revolt against the foreign rule in India. The "Quit India" call of Indian National Congress and the "DO OR DIE" mandate of Mahatma Gandhi set the Indian People moving with the fury of the elements which shook to its very roots the alien British rule over our land.

The August Revolution and its ultimate success bequeaths to India certain definite objectives which have to be attained. The historic "Quit India" resolution of the A.I.C.C. on August 5, 1942 had declared that the Congress aims at the establishment of such a government in the country which would as part of its "Primary functions," "Promote the well-being of the workers in the fields, factories and elsewhere to whom essentially all power and authority must belong."

This August Revolution concept has been concretised in post-independence years in the Socialist objective of the nation. The Socialist objective represents the target the Indian people are out to achieve, and the will to achieve it. The Socialist objective is the legacy of the August Revolution and for its attainment the Indian People will bring to bear all their irresistible force and power which found such eloquent and glorious manifestation in 1942.

India Office Closes down.

At midnight to-day, the India Office ceases to be even a relic of the past—it simply, yet completely, disappears—perhaps unwept, unhonoured, and unsung. So closes down without ceremony or fuss, what was a citadel of authority over India.

This political institution, which has been for three generations the target of barbed shafts of criticism from India, has wound up its affairs, and to-morrow the last Secretary of State will proceed to Balmoral to hand over the seal of office to the King.

Lord Listowal will still remain the Secretary of State for Burma, but most of its staff, including the Publicity Adviser Mr. Joyce will go to the Department of Commonwealth Relations.

The actual building, elegantly furnished and replete with almost priceless paintings and other relics of India, will pass on to the possession of the Foreign Office, the staff of which have been there already as "squatters" on the first floor for the past few weeks.

Lord Listowal met this evening Indian correspondents informally at tea and bade them farewell.

The "Hindu", Aug. 16, 1947.

15 YEARS OF INDEPENDENCE

A bird's eye view of Achievements

Ten years of planned endeavour in the independent India has enabled the Planners and the people to visualise a marked advance towards self-sustaining growth in the course of next five-years. This means that the country will develop a capacity to produce capital goods and equipment required, to support the scale of development envisaged and there will be adequate savings and investment in the economy to yield a progressively rising level of income.

Madras State had a fair measure of success in implementing the first two Plans. The two plans during which a sum of about Rs. 270 crores was spent on various development schemes have substantially strengthened the industrial, agricultural and educational infra-structure of the State.

The increase in agricultural production, the generation of additional blocks of electric power, the commencement of the integrated Neyveli Lignite Project and the expansion of technical education facilities have each helped to lay the base for further industrial and commercial growth in the State both in public and private sectors.

Industrial Base

The First Five-Year Plan of the residuary Madras State provided for an outlay of Rs. 86·4 crores in the State sector of which Rs. 80 crores, i.e., nearly 93 per cent was spent during the period. Particular emphasis was laid in this Plan on food production. Significant development was the expansion of Power Grid. Community Development movement commenced operation during this Plan.

The Financial outlay of the Second Plan of the reorganised Madras State was fixed at Rs. 172 crorers but the actual outlay was almost Rs. 186 crores. During the Second Plan, the State continued to lay emphasis on food production and expansion of industrial opportunities through power development. Almost all the available sources of water in the State have been tapped. The development of power received top priority in this Plan.

Production of Food

Madras State has reason to feel gratified about the results achieved in the sphere of agricultural production during the First two Five-Year Plans. At the commencement of the First Five-Year Plan, production of foodgrains in Madras was of the

order of 38-lakh tons and this had, by the end of the First Plan, increased to 44-lakh tons. During the Second Five-Year Plan period, in spite of an acute scarcity of chemical fertilisers, the State achieved an increase of 9-lakh tons. We have placed before us a target of 70-lakh tons to be attained by the end of the Third Five-Year Plan and this would entail an additional production of 17 lakh tons.

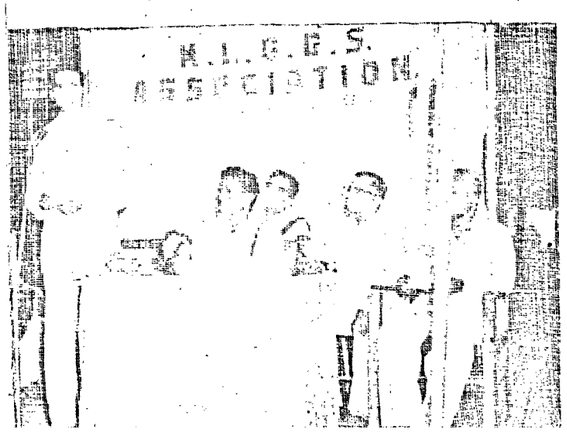
Food-Self-sufficiency achieved

The experience in the First two Plans gave a measure of confidence in the increase of food production. We have now achieved self-sufficiency in a year of normal seasonal conditions but it is essential to be self-sufficient even in an adverse year. The target in the Second Plan was an additional food production of 12·79 lakh tons as against which the achievement has been only about 7 or 8 lakh tons. The main reason for the short-fall has been the shortage of chemical fertilisers.

In order to increase agricultural production, "Package Programme" was introduced with the assistance of the Ford Foundation Scheme. It provides for the intensification of agricultural production on a pilot basis for five years. This scheme was introduced in Thanjavur district in 1960-61.

Agricultural production was stepped up by the supply of electricity to the villages. By the end of Second Plan, 116,000 electric pump-sets were installed in the villages.

Sri Bhuvarahan, Minister for Information and Publicity inaugurated the 14th Anniversary of the Last Grade Governemnt servants Asscciation at Chepauk on 30th June 1962.



Cattle wealth

In the last decade many schemes have been implemented for the development of cattle wealth. The most important of Animal Husbandry schemes is the Key Village Scheme aimed at all-round development of cattle by adoption of scientific methods of feeding, breeding, management and disease control. Two hundred and thirty-four Key Villages have been set up. Thirty-nine Artificial Insemination Centres have been opened.

The dairy farm at Ootacamund has been taken over from the municipality and there are Plans for development of Jersy breed of cattle in this Farm. A provision of Rs. 2·55 lakhs has been made for the purpose in 1962-63. There are now five livestock farms in Hosur, Pudukkottai, Chettinad, Ootacamund, and Orthanad and it is proposed in the current year to open another livestock farm in Tirunelveli district. The Government have sanctioned the establishment of 25 Veterinary Dispensaries in 1961-62 and in 1962-63 have programmed to start 30 such Veterinary Dispensaries.

Forests Development

As against the target of 33 per cent of land-area under forests for All-India, we have only 17 per-cent now. An intensive programme was taken up in the Second Plan to increase the area under forests and a sum of Rs. 148 lakhs was spent on forest development in that Plan as against Rs. 24 lakhs in the First Plan.

In the Second Plan, 47,000 acres were covered with cashew, 89,000 acres with fuel trees, 20,000 acres with wattle, 3,000 acres with blue-gum, 10,000 acres with teak, 3,000 acres with casuarina and 3,000 acres with bamboo. Besides, 11,000 acres were developed as pasturage.

A major scheme of the New Plan is the generation of farm forests in villages. A beginning has been made on 2,300 acres in six Development Blocks in the districts of Chingleput, South Arcot and North Arcot. Farm forests are expected to cover 260,000 acres in the Third Plan for which a provision of Rs. 75 lakhs has been made.

Fishing Harbours

The Government are also seeking to develop fishing harbours and provide landing facilities at suitable river mouths. Under this scheme, the port of Cuddalore has been taken up and most of the construction has been completed. The site for the development of a fishing harbour at Nagapattinam Port has been purchased recently, while model studies on the Royapuram harbour have almost been completed and preliminary estimates have been prepared. During 1962-63, preliminary steps are proposed to be taken for the provision of fishing harbours at Colachel and Tuticorin.

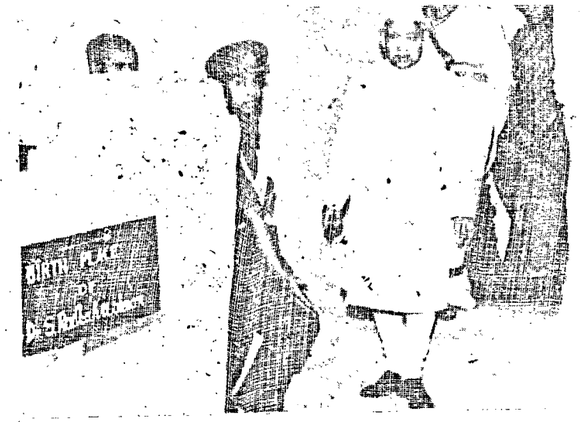
Irrigation Projects

Out of the targeted area of 2·92 lakhs of acres for irrigation during the Second Plan period, 2·62 lakhs of acres have been brought under cultivation thus indicating a very high degree of exploitation of the irrigation potential created. The Parambikulam-Aliyar Project—the biggest irrigation project now under execution—is in good progress and with the completion of Aliyar Dam—the first in a chain of dams to be constructed under the project—water is expected to be let down by the middle of October 1962, for irrigation over an area of 10,000 acres in Pollachi taluk.

During the Second Plan eleven major schemes were completed to bring 2·09-lakh acres under new irrigation and to stabilise supplies to 1·24-lakh acres. The area with an assured supply from river channels, is at present at 25·36-lakh acres as against 21·95-lakh acres at the beginning of the First Plan.

Impressive Record

In the matter of development and utilisation of the power resources, Madras has an impressive record. The State ranks first in rural electrification and in utilisation of power for agricultural purposes.



Governor Sri Bishnuram Medhi, during his visit to Tiruttani visited the home where the President Radhakrishnan was born.

In the development of power which is the basis for industrial development, the Government have registered substantial progress. Of the total plan outlay of Rs. 290·89 crores, a very large portion, namely, 100 crores has been earmarked for power development. The installed capacity of the Electricity System which was of the order of 156,000 kilowatts at the beginning of the First Plan has now increased to 571,000 kilowatts. With the execution of Kundah Hydro-Electric Schemes, Periyar Second Stage extensions and Periyar Hydro-Electric Schemes, we will be adding to our Grid a capacity of 560,000 kilowatts. Further, with the commissioning of the Thermal Plant as part of the Neyveli Lignite Project, power to the extent of 181,000 kilowatts will be fed into the Madras Grid. The work relating to Kundah I and II stages has been completed except for the Upper Bhavani Dam which is expected to be completed in 1963-64. The Kundah III Stage extension scheme, which has secured Canadian assistance to the extent of 22 million dollars, is being pushed through with the utmost expedition. The civil works on the Mettur Tunnel Hydro-Electric Scheme are well advanced and orders have been placed in the Soviet Union for the generators and other equipment required for the Project.

Progress of Education

In the field of Education, Madras, has set up proud records. There was a tremendous expansion in elementary education during the last seven or 8 years.

There are now over 28,000 elementary schools as against only 16,000 schools at the commencement of the First Plan. The progress in terms of enrolment of pupils is even more significant. There are 39·3 lakhs of pupils in elementary schools (of the age-group 6–11), as against 18·5 lakhs at the beginning of the First Plan. Nearly 94 per cent of boys of age-group 6–11 have been enrolled. The percentage of girls of school-going age at school has also increased from 32·5 in 1951–52 to 57 per cent. The objective of enrolling all children between the ages of 6 to 11 before the end of the Third Five-Year Plan period is, on present indications, likely to be achieved well ahead of the schedule. Apart from a general awakening among the people and their realisation of the value of education, the Mid-day Meals Programme has been largely responsible for the very satisfactory results achieved in the enrolment of children. The scheme now covers nearly one-third of the children at school and in order to make it fully effective, the Government have made the Presidents of the Panchayats also the Chairmen of the Mid-day Meals Committee. The Harijan and women members of the Panchayats have also been made members of these Committees.

The Mid-day Meals Scheme has also been enriched in quality, thanks to the liberal assistance given by the CARE Organisation, America, to the extent of Rs. 3 crores in the form of rice, wheat, milk powder and vegetable oil during 1961–62.

Demand For Schools

The expansion of elementary education has also led to keen demands for the opening of higher elementary and high schools all over the State With the provision of free education for all poor children up to the secondary stage, the need has been felt for the opening of more higher elementary and high schools. Collegiate education has also registered a striking advance in this State in the last few years and the Government now have 43 colleges for men and 16 for women. The Government formulated the scheme of full-fee concessions up to the completion of secondary education for children of all parents up to an income limit of Rs. 1,500 per annum. The expenditure on education is now of the order of Rs. 25 crores per annum. Triple benefit scheme, i.e., "Payment of Pension-Provident Fund-Insurance" scheme for all categories of teachers in aided schools has been ordered.

NEYVELI THERMAL POWER STATION.

The first unit of the Neyveli Thermal Power Station was inaugurated by the President of India on August 5, 1962.

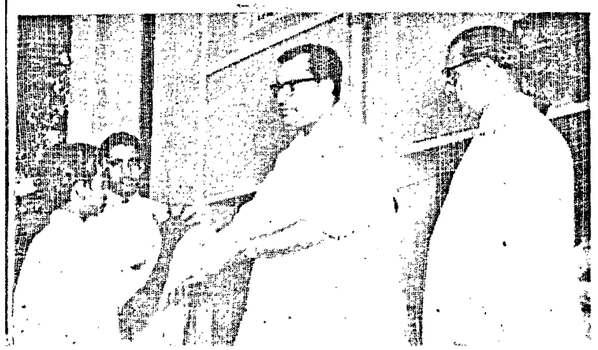
The thermal power station, being set up under the Indo-Soviet Rouble Credit Agreement, will have five generating sets of 50,000 KW each.

The Integrated Neyveli Lignite Project envisages the mining of 3·5 million tons of lignite per annum, out of which 1·5 million tons are to be utilised in a thermal power station with an installed capacity of 250,000 KW, about half a million tons on the production of Urea fertilizer and the remaining quantity of about 1·5 million tons of lignite to be briquetted and carbonised, to yield about 380,000 tons of carbonised briquettes for use as domestic and industrial fuel.

Work on the construction of other power units is proceeding steadily and the entire power station is expected to be commissioned early in 1964.

The power generating capacity of the Neyveli plant is likely to be increased from 250,000 KW to 400,000 KW during the Third Five-Year Plan.

Sri Nallasenapathi Sarkarai Manradiar, Minister for Co-operation, distributed Uniforms to school children at Ramakrishna Mission, Sarada Girls School, T'Nagar, Madras, on 16th July 1962.



During the Second Plan period, the Government had established two new Engineering Colleges and fourteen Polytechnics enabling a two-fold increase in admissions in degree courses and a three-fold increase in admissions for diploma courses. The programme for expansion of facilities for technical education in the Third Plan period has been fixed with due regard to the additional requirements of man-power in the State and Central Plans. The Government have also taken into account the needs of the private sector and allowed for migration of a certain number of engineering personnel to the other parts of the country.

There are now ten Engineering Colleges and six Medical Colleges in the State besides the Indian Institute of Technology.

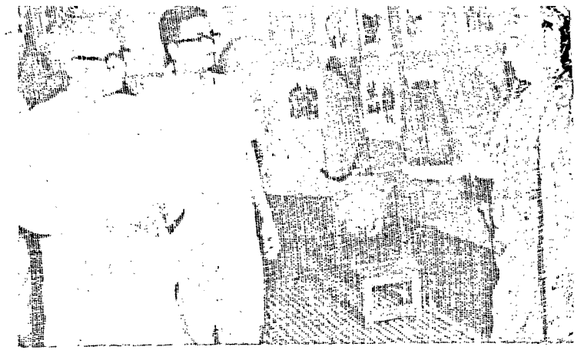
Promotion of Public Health

Rupees 4·27 crores have been spent on rural water-supply schemes and Rs. 7·4 crores in urban water-supply schemes in the last two Plans. 14,000 wells have been sunk in the villages and 340 composite schemes implemented in the last two Plans.

The water-supply and drainage problem in the City of Madras calls for special attention. A sum of Rs. 1 crore has been spent on this during the Second Plan. A number of schemes to eradicate Malaria, Filaria and Small-pox are under implementation. As against 12,000 hospital beds in the beginning of the First Plan, to-day there are 21,500 beds.

Variety of Industries

The progress that has been made in industrial sphere in the past ten years is quite remarkable. The State has made significant progress in the establishment of a variety of engineering industries. The skill and intelligence of its workmen and the enterprise of its businessman have made up for the lack of natural resources to a great degree.



The Anthropology exhibition was inaugurated by Sri M. Bhaktavatsalam, Minister for Finance and Education at Museum Theatre, Egmore, on 6th July 1962.

The provision under industries for the Second Plan has been Rs. 999·99 lakhs. The main emphasis was on setting up of heavy and large-scale industries in order to make the country industrially advanced. Big projects like the Neyveli Project form part of the Central Plan are being implemented by the Government of India. Enterprises such as establishment of sugar mills, cement factories and cotton mills fall in the private sector. Government are interested in the development of industries and have given encouragement to new industrial concerns by participating in their share capital structure.

So far as the State Plan is concerned, the development of village and small industries including handloom and khadi has been envisaged. This programme is emphasised on the ground that development of cottage and small industries provides employment to the un-employed and under-employed and to a great extent increases the production of consumer goods which are quite essential for the common man.

Industrial Estates and Colonies

The object of establishing industrial estates and colonies was to provide factory units at a reasonable rent to small industrialists in the private sector with the full facilities of industrial services. The

Second Five-Year Plan of the State provided an amount of Rs. 95·00 lakhs for constructing 170 units of various sizes. Against these targets, an expenditure of Rs. 154·08 lakhs has been incurred and 213 factory units have been constructed.

The Industrial Estate, Guindy was set up in this State in the year 1958 with 52 units. One hundred and twenty-eight factory units have been constructed in this State up to the end of the Second Plan. These units have provided employment for about 1,200 persons with an annual turnover of 150 lakhs. The factories in the Guindy Estate have made wise selection of new and specialized manufacturing lines as a result of which there has not been a single instance of marketing problem.

The other important estate in this State is the one started at Virudhunagar with 15 factory units, which have all been allotted to private industrialists.

The industrial Colony at Madurai started functioning in April 1959 with 12 factory units. This colony engaged, on an average, 200 workers per month with a monthly turnover of Rs. 2 lakhs.

The implementation of the various schemes for the development of Industries under the Second Five-Year Plan both in the Public and Private Sectors has resulted in an increased demand for trained personnel in various trades. In order to meet this growing demand, schemes for turning out trained personnel in large numbers in the technical line have been included in the Second Five-Year Plan.

E. S. I. Scheme

The Employees' State Insurance Scheme has been extended to five centres in this State thus bringing the total number of workers covered by this scheme to 2·21 lakhs. Dindigul, Tirunelveli and Kumbakonam are the centres to which the scheme has been recently extended. The Government have also extended the scheme of medical care to the families of insured workers in 12 out of the 20 centres. A new Employees' State Insurance Hospital for the exclusive use of Employees' State Insurance patients with a bed strength of 175 together with staff quarters has been constructed at a cost of Rs. 27 lakhs at Kilpauk, Madras.

Textile mills.

The first factories to be established in Madras State were textile mills. In 1950, there were 72 mills with 17 lakhs spindless and 7,400 looms. By 1956, 31 more mills had been set up increasing the spindles to 21·7 lakhs and looms to 8,016. In the five years following 1956, the spindleage has gone up to 30·6 lakhs representing 22 per cent of the total spindleage of 135·4 lakhs in the whole of India.

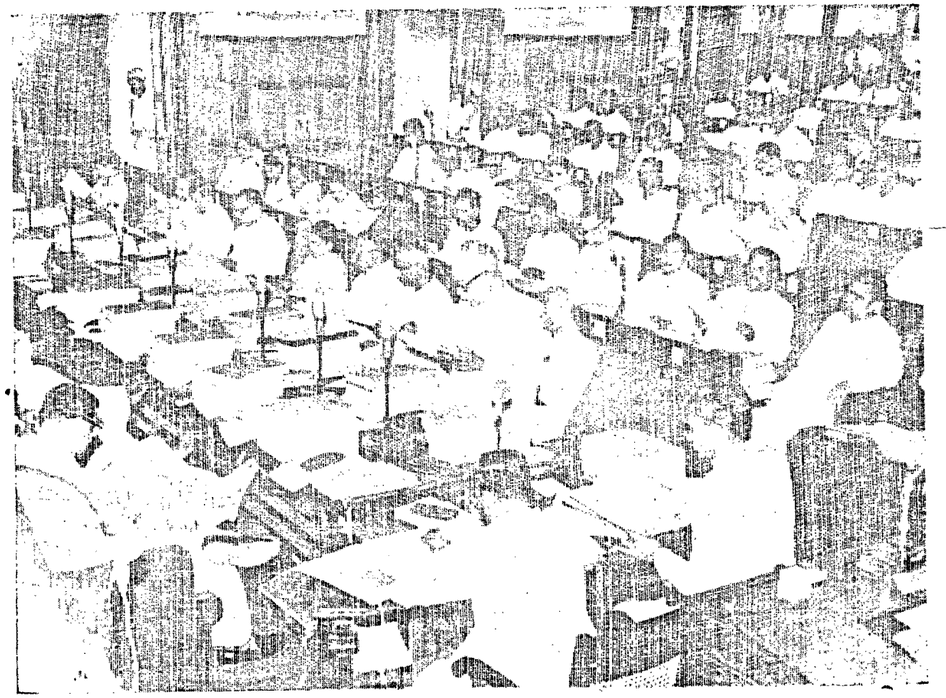
A significant advance in the manufacture of textiles is the increasing use of synthetic fibres.

Significant progress has been made in Engineering industries. A number of factories have come up in the neighbourhood of Madras City and in Coimbatore district and are contributing appreciably to the industrial development of the State.

During the Second Plan Period, 908 Industrial Companies were registered in this State. Of these, 66 were public limited companies and 842 were private limited companies. The authorised share capital of the public limited companies is Rs. 53·36 crores out of which the paid-up capital is Rs. 4·53 crores. The authorised share capital of the 842 private limited companies is Rs. 106·68 crores and the paid-up capital is Rs. 42—64 crores.

Housing

The State Housing Board has taken on hand a large programme for bulk acquisition of lands in the neighbourhood of large towns like Madras, Madurai, Coimbatore and Tiruchirappalli, so that developed plots at fair or economic rates could be made available for purposes of housing. The outlay on this programme of bulk acquisition exceeds appreciably the plan provision of Rs. 170 lakhs for the purpose. The State Housing Board is also implementing the other schemes like Low Income Group Housing, Middle Income Group



Sri M. Bhaktavatsalam, Finance Minister, presents the Budget in the Legislative Assembly.

Housing and Rental Housing Scheme. The programme of the State Housing Board for this year is of the order of Rs. 527 lakhs which will be partly covered by loans and grants to the extent of Rs. 264 lakhs from the State Government.

Roads Development

In the beginning of the First Plan there were 14,400 miles of State highways and 6,800 miles of rural roads. During the First Plan, 1,643 miles have metalled and 2,850 miles of new roads laid. During the Second Plan, 2,860 miles of roads have been improved and 1,830 miles of new roads laid. Thus, in the last ten years 4,680 miles of roads have been newly laid or improved. Besides, we have also incurred substantial, outlays on the maintenance of road. Thirty-one major bridges and 104 minor bridges have been built on State Highways. Twelve major bridges and 120 minor bridges have so far been built on roads under the District Boards. The annual outlay on roads is now of the order of Rs. 5 crores of which about Rs. 3 crores is on maintenance. A sum of Rs. 11 crores has been set apart for the construction of roads in the Third Plan.

Welfare Schemes

A total outlay of Rs. 50·81 lakhs was provided in the Second Five-Year Plan for grant-in-aid schemes drawn up for ameliorating the Backward

Classes. A sum of Rs. 147·28 lakhs comes under the Central sector as Centrally sponsored schemes.

Thirty-two thousand nine hundred and eighty-nine house sites have been acquired for the benefit of Harijans. Twelve thousand three hundred and seventy-eight houses have been constructed for the benefit of Scheduled Castes.

Propaganda against untouchability was carried on by 105 Deputy Sevaks appointed for the purpose. Twenty-five community centres have been started in selected villages to look after the social and medical needs of the Harijans. Lump-sum grants have been given to three non-official agencies, viz., the Harijan Sevak Sangh, Madras, Depressed Classes League and Sri Sathgura Sarva Samarasa Sangham in furtherence of their efforts for removal of untouchability. Social workers have also been encouraged by award of medals.

Social Welfare and Women's Welfare have been given an important place in the Plan. The State Government play their part in co-ordinating the work of different voluntary organisations and giving them financial assistance. A sum of Rs. 27·71 lakhs has been set apart in the Plan for Social Welfare Schemes.

The schemes included in the Second Plan were executed by three departments, viz. the Inspector-General of Prisons, the Director of Women's Welfare and the Chief Inspector of Aprroved Schools and Vigilance Service.

Ten years of hard work implementing the plan has taken us forward. But we have not moved far enough, fast enough. We have to travel long and hard before we could reach our goal. We should therefore be vigilant, Assessing our achivements and our tasks ahead, Sri M. Bhaktavatsalam, Finance Minister of Madras said:

"In our Plans, we had to attach equal importance to improvement of production as well as expansion of welfare services like Education, Medical Relief, Housing, etc. Our experiments in economic planning are unique and are watched with interest by people elsewhere. Our Plans may look ambitious and staggering in absolute terms. But they are quite modest in relation to our needs. It is therefore all the more necessary that we should fulfil these plans in their entirety and guard against short-falls in the attainment of targets both in physical and financial terms. We fulfilled most of the targets set in our Second Plan and substantially exceeded the targets in certain crucial fields. This was possible because we had an efficient administrative machinery and because we mobilised the necessary resources both in the form of additional taxation and borrowing. Our administrative machinery still continues to be efficient and what we need is only additional resources for providing the sinews of development".

Oil Prospects in Madras Bright

Sri K. D. Malaviya, Union Minister for Mines and Fuel, said that the prospects of oil being available in Madras State had brightened up somewhat.

In his view the chances of Madras having oil industry had risen from 30 per cent last year to 45 per cent this year.

As regards the location of an oil refinery in this State, Sri Malaviya said, he expected to get the report of the Italian petroleum undertaking, ENI, in the course of the next four or five months. Anything definite on the question could be said only after examining that report.

Centenary Feature



[The Madras High Court during the 100 years of its existance had produced eminent Judges and erudite lawyers. The picture of Madras High Court during these years can be described as one of roseate view and brilliance. The article published here gives a note about the origin of the High Court of Judicature at Madras.]

The High Court of Judicature at Madras, its origin to the Court of the Governor-in-Council established by the East India Company by a Resolution of the Council on 18th March 1678. The Council, as a Court of Judicature, was sitting twice a week for trial of all cases, except petty ones, by Jury in accordance with the Laws of England. This Court continued till 1686 when a Court of Admiralty superseded it. This Admiralty Court was superseded by the Mayor's Court in 1727 which consisted of a Mayor and ten Aldermen. There was an appeal in certain cases from the Mayor's Court to the Governor-in-Council. The Mayor's Court continued till 1797.

Pursuant to the authority vested on him by the Statue 37 Geo. III C. 142 to establish by Charter or Letters Patent under the Great Seal, Courts of Judicature at Madras, His Majesty established the Court of Recorder of Madras, on 20th February 1798. This Court of Recorder took over the Mayor's Court and the jurisdiction of the former extended to Civil, Criminal, Ecclesiastical and Admiralty Cases. The First Recorder was Sir Thomas Andrew Strange. This Court for the first time enrolled members to the Bar, and continued to exist till it was replaced by the Supreme Court of Judicature at Madras.

Supreme Court at Madras.

The King, by virtue of the powers conferred on him by Act 39 and 40 Geo. III, C. 79, established a Supreme Court of Judicature at Madras under Letters Patent, dated 26th December 1800, with full powers to exercise Civil, Criminal, Admiralty and Ecclesiastical Jurisdiction both as to

Natives and British subjects and with such power and authorities, privileges and immunities as were expedient for its better administration. Besides the Supreme Court, there were—

(1) The Court of Sudder Dewanny Adawlut dealing with Appeals in Civil cases from the Provincial Courts;

(2) the Court of Sudder Foujdarry Adawlut dealing with Appeals from the Provincial Criminal Courts;

(3) Provincial Civil and Criminal Courts;

(4) Courts of Small Causes in the Presidency Town and in the Province;

(5) Courts of Magistrates in the Presidency Town.

The Supreme Court of Judicature of Madras consisted of a Chief Justice and two Puisne Judges. The Recorder Sir Thomas Andrew Strange became the first Chief Justice of the Supreme Court. The Court exercised powers approximate to those of the Court of the King's Bench. The Court had its own seal bearing His Majesty's Arms. All writs were issued in the name of the King, and the processes were to be executed by the Sheriff. The Court was also authorised to admit and enrol Advocates and Attorneys and to appoint Clerks and other Officers and to settle a table of fees. This Court was also to be the Court of Oyer and Terminer and General Gaol Delivery in and for *Fort St. George* and the Town of Madras and the limits thereof, and was invested with the same powers and authorities as exercised by the Judges of the Court of Oyer and Terminer and General Gaol Delivery in England with full powers to reprieve and suspend execution of capital sentence.

High Courts in India.

The Indian High Courts, Act, 1861, authorised the Crown to establish the High Courts in India. The Act provided for, the constitution of such High Courts, the tenure of office, precedence and salaries of the Judges and for filling up the vacancy in the Office of the Judge. It was *inter alia* enacted therein that, upon the establishment of a High Court of Judicature at Madras, the Supreme Court of Madras, the Courts of Sudder Dewanny Adawlut and Foujdarry Adawlut at Madras should be abolished and the records and documents of the several Courts so abolished should become and be records and documents of the High Court and that the persons who at the time of establishment of such High Court were Judges of the Supreme Court of Judicature and permanent Judges of the Courts of Sudder Dewanny or Sudder Foujdarry Adawlut of the same Presidency, should be and become Judges of the High Court without further appointment. Provision was also made therein for the jurisdiction and powers of the High Courts and for Superintendence over Subordinate Courts.

HIGH COURT, MADRAS.

LIST OF CHIEF JUDGES.

Sir Thomas Strange was the first Chief Justice of the Supreme Court of Judicature in Madras.	
Sir Colley Harman Scotland.	1862–1871
Sir Walter Morgan	1871–1879
Sir Charles Arthur Turner.	1879–1885
Sir Arthur John Hammond Collins, Q.C.	1885–1899
Sir Charles Arnold White.	1899–1914
Sir John Edward Power Wallis, P.C.	1914–1921
Sir Walter George Salis Schwabe, K. C.	1921–1924
Sir (Victor) Murray Coutts-Trotter.	1924–1929
Sir Horace Owen Compton Beasley.	1929–1937
Sir Alfred Henry Lionel Leach.	1937–1947
Mr. Frederic William Gentle.	1947–1948
Dr. Pakala Venkata Rajamannar.	1948–1961

In pursuance of the authority given by section 1 of the aforesaid Act 24 and 25 vic. C. 104 passed on 6th August, 1861 Her Majesty by Letters Patent under great Seal of the United Kingdom bearing date 26th June 1862, and published in the *Fort St. George Gazette* erected and established at Madras for the Presidency of Madras, a High Court of Judicature and did thereby constitute the said Court to be a Court Record and did ordain and appoint that the said High Court of Judicature be called the High Court of Judicature at Madras, consisting of a Chief Justice being Sir Colley Harman Scotland and five other Puisane Judges being Adam Bittlestone, William Ambrose Morehead, Thomas Lumsden Strange, Henry Dominic Philips and Hatley Frere. Of them the Chief Justice and Bittlestone were Barristers and the other four were members of the Civil Service.

The High Court of Judicature at Madras came into existence on 15th August, 1862. The inauguration was performed in a simple manner and as the full Court assembling in the building which is now occupied by the Collector of Madras, the Chief Justice made a speech explaining the new arrangements in regard to disposal of Civil and Criminal work. The rules and orders of the Court laid the foundation for the present Constitution of the Bar.

The High Courts Act, 1865.

The *High Courts Act*, 1865, empowered the Governor-General-in-Council to alter the local limits of the jurisdiction of the High Courts subject to disallowance of the order by the Crown also extended the term for granting fresh Letters Patent for the High Courts in India. In pursuance thereof, fresh Letters Patent were issued, revoking the Letters Patent, dated 26th June 1862 except the one issued by His Majesty King George III on 26th December 1800 (establishing a Supreme Court of Judicature at Madras). The Amended Letters Patent, dated 28th December 1865 did ordain that, notwithstanding the revocation of the Letters Patent of 1862, the High Court of Judicature at Madras shall be and continue as a Court of Record, as from the time of original erection and establishment thereof and that all proceedings commenced in the said High Court prior to the publication of these Letters Patent shall be continued as if they had commenced in the said High Court after the date of such publication.

The Next Step.

The High Court was empowered to have and use its own seal bearing a device and impression of the Royal Arms of Her Majesty with an exergue or label surrounding the same with the inscription "The seal of the High Court at Madras".

The next important step in the History of this Institution is the construction of the present High Court Buildings at a cost of nearly 12·98 lakhs of rupees with provision for the Chambers of the legal practitioners. This building was occupied on 12th July, 1892 when it was formally opened by Lord Wenlock, Governor of Madras, in the presence of Sir Arthur Collins, the Chief Justice and Muthuswamy Ayyar, Parker, Wilkinson and Best, Puisne Judges.

The High Courts Act, 1911, increased the maximum number of Judges of the High Courts to twenty and gave His Majesty power to establish

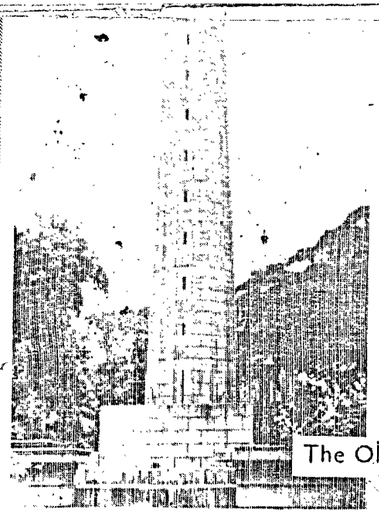
OATH ON "TULASI."

Inside the premises of the present High Court Campus and very near the Old light house there was a temple of which the family of Chinnayya Mudali was the trustee. It seems that the temple was dedicated to the family deity of Chinnayya Mudali—The tulasi used in the temple were taken from the temple to the Court building to administer the oath to witnesses before examining the witnesses in cases.

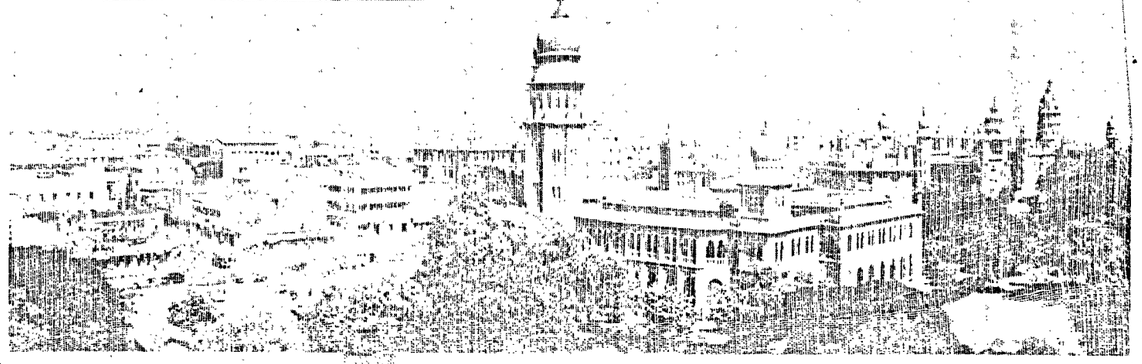
The temple was later shifted to another, site near Devaraja Mudali street and China Bazaar Road under the orders of the Company for reasons of internal security.

—*From Love's "Vestiges of Old Madras."*

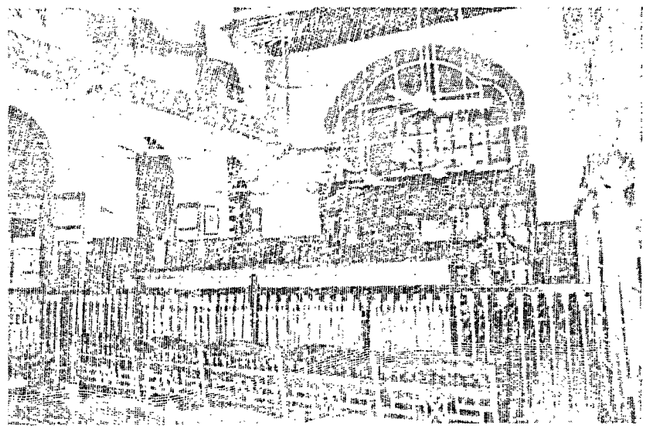
THE MADRAS HIGH COURT CENTENARY



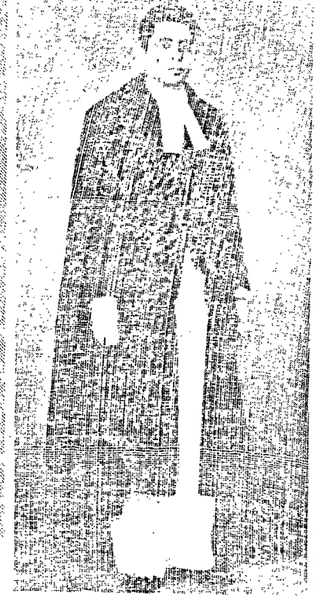
The Old light House



The High Court Buildings



The Court of The Chief Justice

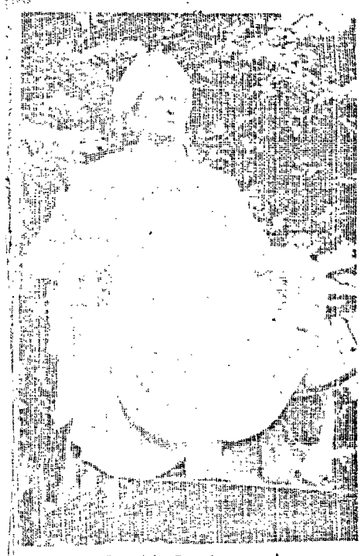


Sri P. V. Rajamannar
First Indian Chief Justice



ting: Justice K. Srinivasan, Justice G. R. Jagadisan,
tice S. Ganapathia Pillai, Chief Justice S. Ramachandra
r, Justice M. Ananthanarayanan,
tice K. Veeraswami, Justice T. Venkatadri,

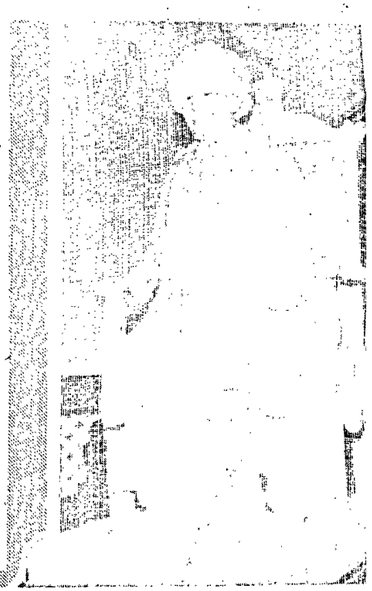
Standing: Registrar S. K. Gajendram Naidu, Justice R. Sadasivam, Justice P. S. Kailasam, Justice P. Ramakrishnan, Justice Haji P. Kunhamad Kutty, Justice K. S. Venkataraman, Master V. T. Kandasamy



Justice Sri V. Bashyam Iyengar



Barrister Earl Norton



Justice Sri T. Muthuswamy Iyer

SOME INTERESTING FACTS.

In 1802 there was nothing like a High Court in Madras.

Sudder Dewany Adawalut (Civil and Appellate) Sudder Fouldarry Adawlut (Criminal) were the only two type of Courts run by East India Company. They were located in the palatial building "Sudder Gardens" in Alwarpet. Very near the building, condemned prisoners were hanged from a big scaffold.

First Bench was constituted in August 15, 1862. It contained five Judges.

Justice Thomas Andrew Lumisden Strange was the first Chief Judge and Thomas Sydney Smith was the first Advocate-General. Sri V. Bashyam Iyengar is the first Indian to be appointed as Advocate-General.

Mr. H. Irvin designed the imposing structure of the present building. Cost of construction was Rs. 12.98 lakhs. Building opened by the then Governor Wenlock which was marked by the booming of 17 guns.

First Indian to be appointed as Judge is Sir T. Muthuswami Iyer. He held this office from 1878 to 1895. In 1891 he acted as the Chief justice for some time.

Other Indian Judges who acted as Chief Justices for some time were Sri S. Subramanya Iyer, (1899, 1903, 1904, 1905), Abdur Rahim (1916, 1919). C. V. Kumaraswamy Sastri (1926, 1929) Vepa Ramesam (1931, 1933, 1935) M. Venkatasubba Rao (1935, 1936) C. Madhavan Nair (1935, 1958), P. Rajagopalan (1947, 1948, 1961) including the present Chief Justice there were 14 persons who held this post since 1862—There were 115 Judges so far.

The first Indian to be appointed as permanent Chief Justice was Sri P. V. Rajamannar.

additional High Courts and the Governor-General-in-Council power to appoint additional Judges for periods of two years.

The Government of India Act, 1915

These High Court Acts were repealed by the *Government of India Act*, 1915. That Act fixed the maximum number of Judges as twenty, and provided for the term of Office of the Judges, Precedence, Salaries, etc. Provision was also made for filling up the vacancies arising in the Office of the Chief Justice and other Judges.

The jurisdiction and powers of the High Courts including their powers of Superintendence over the Subordinate Courts were defined.

The High Court is the highest Court of Civil and Criminal Jurisdiction, exercising both Original and Appellate Jurisdiction, the former being confined to the City of Madras. Subordinate to the High Court are the Courts of the District Judges, Subordinate Judges and District Munsifs which dispose of Civil work and Courts of the Sessions Judges and Magistrates to dispose of Criminal work. Village Munsifs and Village Panchayat Courts also dispose of Civil Suits of the value not exceeding Rs. 200 (formerly they were exercising jurisdiction over suits of the value of Rs. 50 and with the consent of parties of the value over Rs. 200).

Thirty years after

In the year 1935, Parliament passed the Government of India Act, 1935, providing for the Constitution of a Federal Court in India with Appellate Jurisdiction over the High Courts in India besides its own Original Jurisdiction as provided for in the Act.

The Letters Patent provided for an Appeal to the Privy Council from a final order of the High Court in Civil matters where the value of the subject matter was not less than Rs. 10,000 subject to the declaration by the High Court as a fit case for appeal. Similarly, Appeal lay to the Privy Council in Criminal matters involving questions of law and on the grant of a similar certificate by the High Court.

Section 205 of the Government of India Act, 1935, provided for an appeal to the Federa

Court from any judgment, decree or final order of the High Court on a Certificate by it that the case involved a substantial question of law as to the interpretation of the provisions of the Act or any order of the Council made thereunder. It was the duty of the High Court to consider in every case whether or not such question was involved and of its own motion to give or withhold the certificate.

Section 208 of the said Act provided for Appeals from the decision of the Federal Court to His Majesty in Council on certificate granted by the Federal Court.

Constitution of India

After the advent of the *Constitution of India* of 26th January 1960 replacing the Government on India Act, 1935, the Federal Court established by virtue of the provisions of the Government of India Act 1935, was superseded by the Supreme Court of India. All Appeals from the orders of the High Court lay to the Supreme Court of India and not to the Privy Council. By India Act VII of 1950, the seal of the High Court was replaced by a new one bearing the device and impression of the Asoka Capital within the exergue or label surrounding the same, with the following inscriptions "The Seal of the High Court at Madras" and "Satyameva Jayate" in Devanagari script. The power of the High Court as regards superintendence over all Courts and Tribunals within its juri[illegible] the power to issue writs have been preserved and enlarged by the Constitution.

In 1953, the Andhra State Act effected the bifurcation of the State of Madras and constitution of a separate High Court of Andhra with jurisdiction over thirteen districts. Consequent on the formation of the High Court of Andhra on 5th July, 1954 the strength of the Judges of the Madras High Court was fixed at 12 by Notification of the Government of India, dated 3rd July 1954. Some districts which were originally under the jurisdiction of the High Court of Madras were transferred to the High Court of Andhra.

The States Re-organisation Act, 1956, further reduced the number of districts under the Appellate Jurisdiction of the Madras High Court.

JUDICIAL REFORMS

Judicial administration in the State has been marked by three important reforms, viz., separation of the Judiciary from the Executive, abolition of trial by jury in sessions and the transfer of a good part of the jurisdiction of the original side to the City Civil Court. The separation of the judiciary was introduced by Sri K. Lashyam who was Law Minister in the Prakasam Ministry and Sri P. V. Balakrishna Aiyar worked out the details. A study of the working of the scheme was undertaken by a three-member Committee of Enquiry under the Chairmanship of Sri P. Rajagopalan, former Judge of the Madras High Court. It was he who was responsible for the compilation of the manual of instruction for the guidance of the stipendiary magistrates in the State. Madras was the first State to introduce this scheme and one could be proud that it was to-day working very satisfactorily.

The transfer of a good part of the jurisdiction of the original side to the City Civil Court and enhancing the City Civil Courts pecuniary jurisdiction had reduced the work in the High Court to a great extent.

The abolition of the trial by jury at the sessions court has been done by the Government on the ground that the system "affords no aid to the adminstration of justice" and it is also in accordance with the recommendation of the Law Commission.

Executive and the Judiciary.

In pursuance of the directive principle contained in Article 50 of the Constitution, the Scheme of

Separation of the Judiciary from the Executive was implemented in this State gradually.

In 1954, there was a move for the abolition of the Original Civil Jurisdiction of the Madras High Court. In 1955, the Madras City Civil Court Act, 1892, was amended enhancing the Original Jurisdiction of that Court to Rs. 50,000 and correspondingly curtailing the Original Civil Jurisdiction of this High Court to that extent. In the same year, the Original Criminal Jurisdiction of this High Court was abolished, thus bringing to an end the Sessions Jurisdiction of the High Court. A separate Court of Session was constituted in the City of Madras with an Officer of the rank of a District Judge as its Presiding Officer.

EVOLUTION OF THE BAR

The history of the Madras Bar is the history of the struggle against the privilege position of the British section of the Bar and the winning of autonomy for the Bar.

Originally there have been three branches of the profession, Advocates, Vakils and Attorneys. Since the passing of the Bar Councils Act, 1926, the Advocates and Vakils have merged into one class namely Advocates.

Before the assumptions of sovereignity by the Crown in 1858 there were two sets of Courts; one for the Towns of Bombay, Madras and Calcutta and another for the moffusil. The moffusil courts were the creation of East India Company and others were created by the Crown.

In 1865, a new Letters Patent was issued and new rules made under it permitted the authorisation of a Vakil class to practise in the High Court in all its jurisdiction. The Vakils were thus entitled to practise in the High Court, but they appeared in Court generally with Barristers to lead them. These Barristers alone addressed the Court. This soon affected the Vakils and a question was raised as to whether the rule that authorised them to plead in court was intra vires of the Court. This was decided in favour of Vakils.

Insolvency Court

The Court for the relief of Insolvent debtors was subordinate to the High Court. That the Vakils were entitled to appear in the subordinate courts was maintained by the Madras Law Journal but under advice from Mr. V. Bashyam Ayyangar they did not raise the question in Court. When, however, the status was repealed and the Insolvency Act of 1907 was passed vesting the jurisdiction in the High Court itself, the Vakils put forward a claim, but the decision went against them, as the Act referred only to Advocates and Attorneys and made no reference to Vakils.

But when in 1926 the Bar Councils Act was passed and the Vakils were enrolled as Advocates it was held that they could appear in the Insolvency Court.

In the Presidency Town of Bombay and Calcutta the exclusive right of the Barristers remained even after the Bar Councils Act. They had a different history and the question was not settled therein the way in which the Madras Full Bench had settled it.

The precedence of Barristers over Vakils irrespective of their standing was retained by the Act for the benefit of Barristers though it was never claimed as against senior lawers in this Court even by an Advocate of the eminence of Sri Grant.

Sir V. Bhashyam Ayyangar was the Chief Architect of the fortunes of Madras Vakil Bar. He was an apprentice under Mr. Spring Branson and the master thought very highly of his pupil.

The Bar Councils Act ended the rivalry of the two sections. In fact from the days of Sir V. Bhashyam Ayyangar, the European Bar had slowly weakened and never again recovered their place though a few continued.

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Panchayat Raj is a mighty school of the Nation to train millions of people in the exercise of responsibility of administration

DEMOCRATIC DECENTRALIZATION

A Successful Experiment

Shri BISHNURAM MEDHI, *Governor of Madras*

[Excerpts from the speech of Shri Bishnuram Medhi, Governor of Madras, while he inaugurated the Panchayats Development Consultation Committee on Administration and Works recently held at Ootacamund.]

The year 1961 was important in the history of local administration in the State because it saw the completion of the scheme of the formation of Panchayats and Panchayat Unions in pursuance of our policy of democratic decentralization, entrusting them with necessary powers and authority to enable them to function as units of self-Government as laid down in the Constitution. Our planners have realised from the very beginning that without public co-operation and active support, no plan for the regeneration of the country can ever succeed. The introduction of the scheme of Community Development with its emphasis on self help by the villagers was an important step, and it formed the first stage in the scheme of securing public co-operation and support for development works.

The scheme of Community Development has helped us in securing substantial progress in rural areas. The Second Five Year Plan stressed the need for creating a well organised democratic structure of administration within the district and suggested the linking of village panchayats with popular organisations at a higher level. Then there was the Balvant Rai Mehta Report, and it



Sri R. A. Gopalaswami, Chief Secretary, is seen addressing the Panchayat Presidents

was finally decided to implement the scheme of reorganisation of Panchayats in order to suit the modern conditions and to entrust to the Panchayat Unions with sufficient powers and authority for effectively carrying out the work of Community Development.

System not new

The system of village panchayats is indigenous to the Indian soil. Records which throw light on the history of local administration in our State bear eloquent testimony to the fact that there was a system of popular election in good old days in village republics. We need not on this occasion dilate very much on the details of these records but suffice it to say that the process of self-Government suffered a set-back during the years of foreign rule in our country. It is but appropriate that we should not only revive the old system of village rule but also improve upon it in order to suit modern conditions and rouse the consciousness and enthusiasm of the people in villages to play their destined part in effectively carrying on the developmental activities in our march towards all-round prosperity to be shared equitably by all.

It was Mahatma Gandhi who realised in the course of his political struggle for freedom that if the co-operation of the villagers, irrespective of caste and creed, could be secured for the non-violent struggle which he launched, Swaraj would come automatically. His dream proved true and when his message reached the remote parts of this vast country, all the people living in different regions rallied round him with a sense of unity of all sections and communities and strengthened the movement, with the result, Swaraj was ours in the year 1947—a feat without any parallel in the history of the world. The real glow of Swaraj will reach the villages only when the common people take part in the administration of the country.

An important landmark

The scheme of democratic decentralisation which has been introduced now and which has begun to work satisfactorily through the organisation of panchayats and panchayat unions is indeed the most important step which can be described to be a landmark next to the attainment of political Independence. I need not emphasize the fact that in attempting a reform of this nature which involves the reorganisation of the administrative machinery, several problem of a complicated nature are likely to arise, requiring quick judgment and considerable ingenuity on the part of the officers and others entrusted with the implementation of the scheme.

It needs no emphasis that the proper functioning of Panchayat Raj invests very great responsibility on every individual, whether he be a villager or an elected representative or an officer who gives necessary advice and guidance for its proper working. One fundamental change that has happened is that the official who has been functioning with full powers will be receding into the background giving his place to representative bodies of the people. He transforms himself into an advisor and guide. He who has been taking decisions will not hereafter take decisions but will only help the people to arrive at decisions. The duty of the official is not expected to stop with mere giving of advice but he should try to convince the people that the advice given by him is just and based on facts, so that the people's representatives gladly accept his advice. He must also appreciate the fact that it is within the powers of the people to reject the advice. In order to promote mutual understanding it is essential that the officials will fully realise and appreciate this changed role in the new set-up. Similarly, very great responsibilities fall on the non-official individual also. It will be his duty to give due consideration to the advice of the officers, and considerations like party, relations, community and friends, should not affect the decisions to be taken on the advice of the officers. In a well-knit decentralised democratic set-up, the different units will be equal partners in administering the country, one will not be subordinate to the other, but each will derive strength from the other.

"Panchayats, Panchayat Raj, Co-operatives and the like will make a very great difference to the whole basis of both our democracy and our economy. While these things function, they lay a foundation for automatic progress, i.e., the people do it themselves. That is the only ultimate way of doing these things."

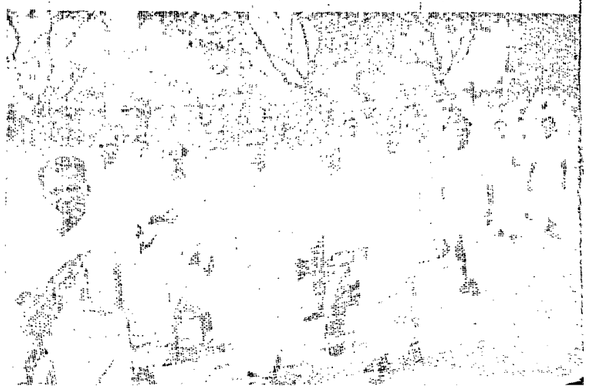
—Prime Minister Nehru (at N.D.C. Council—12-9-1960).

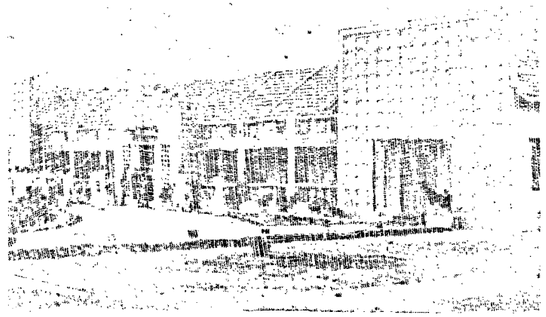
Equal Partners

The success of the Panchayat self-Government will depend as much on the efficiency, impartiality, loyalty and faith in the democracy on the part of the Executive Officers as on the ability, honesty and impartiality of the elected representatives of the people. The elected representatives and the executive officers would have to function as equal partners in the new experiment in democratic decentralisation to ensure its success. The Administrative Service had made valuable contribution in the successful development of Indian democracy and had also laid rich traditions. They are now expected to make similar contributions to the building up of democratic institutions up to the village level for the realisation of our goal of people's Raj, so that everyone, particularly those living in the rural areas, may feel that it is their own country in whose making they have an effective voice and share.

Prior to the introduction of this scheme, there has been at the State.
Consultative Committee on Community Development to advise the Government on matters relating to the implementation of the Community Development Programme. With the reorganisation of Panchayats and the ushering into being of Panchayat Unions which are entrusted with the work of Community Development and execution of Plan schemes, it is necessary to review their work at State-level, and the Informal Consultative Committee on Community Development has now therefore given place to three Panchayat Dev lopment Consultative Committees which signify a transition of the Community Development Programme to its present position. These Panchayat Development Consultative Committees will have on them representatives of the District Development Councils. The Panchayat Unions have representatives of Panchayats and the District Development Councils also have representatives of the Panchayat Unions. It is but natural that Committees at State-level should also have representatives from the District Development Council. The most important purpose that will be served by establishing such a line of communication between the people and the Government is to promote efficient implementation of the Five-Year Plan with the fullest possible participation by the people. The Panchayats and the Panchayat Unions are executive agencies which not only formulate their Plans but also actually execute them. The District Development Councils are designed to bring together the Chairmen of the Panchayat Union Councils and the Chief District Officers of Development Departments in order to review progress, locate difficulties and take steps to remove them.

Picture shows a group of Chairmen of Panchayat Union Councils arriving for the three day conference held at Tiruchirappalli from 14th to 16th July 1962.





Panchayat Union Building near Kancheepuram, was recently opened by Sri Kamaraj, Chief Minister.

The new Panchayat Development Consultative Committees which are three in number, one in charge of Administration and Works, another in charge of Production and the third in charge of Welfare Services, are designed to pool the experience thus gained in districts and provide the Government with first-hand information on how development programmes are working in the rural areas and advise on the action to be taken from time to time, in order to facilitate the implementation of developmental activities undertaken by Panchayats and Panchayat Unions as part of the National Five-Year Plan. The representatives of the District Development Council on these Consultative Committees will gain first-hand knowledge of the problems as they appear at State-level and they will carry back to their districts such knowledge and information obtained at State-level and impart it to their District Development Councils, and this process will continue down to the Panchayat, and this will no doubt strengthen mutual understanding and secure co-operation and promote goodwill among the different tiers of local administration.

Members of the Consultative Committee on Works and Administration have a great responsibility. First of all, they will have to understand and appreciate the main principles governing the entire scheme of democratic decentralisation. They have to appreciate the great role that they will play at this State-level committee, and they have the advantage of knowing the wishes of the people of the villages from their representatives on Panchayats and Panchayat Unions and placing before these Committees for further discussion and for arriving at conclusions. They can also explain to the members of the Panchayat Unions and Panchayats the full implications of each case.

What Panchayats can achieve?

What Panchayat Raj can achieve was never more evident than when a new school building was opened recently in a small, remote fishing village, Dhoni Revu, on an island off Pulicat Lake, 30 miles north of Madras.

The island village surrounded on the three sides by sea and backwaters and by the Buckingham canal on the fourth has less than a population of 1,000 fishermen, including Muslims who are traditional boat builders. The most note worthy feature of life in this village which is cut off from modern civilisation is the unity and peace that prevail among the people and their will to march forward educationally and in other ways.

The school building was constructed at a cost of Rs.8,500, the Minjur Panchayat Union and the Fisheries Department jointly financing the project, while the people themselves shared a portion of the expenditure. It was, by and large the willing co-operation of the people and their hard work that made it possible for the authorities to construct the building. Most of the building materils including bricks, wood, etc., had to be brought to the island by boats, and this was done by the villagers.

The new awakening that had come over the people in regard to the importance of education was clearly demonstrated when men, women and children of the village gathered in their hundreds at the opening function.

The State and Welfare in India

By Sri R. F. ISAR, I.C.S.,
Secretary to Government, Home Department, Government of Madras.

"For man, when perfected, is the best of animals, but when separated from law and justice, he is the worst of all....wherefore, if we have not virtue, he is the most unholy and the most savage of animals and the most full of lust and gluttony. But justice is the bond of men in states, and the administration of justice, which is the determination of what is just, is the principle of order in political society."

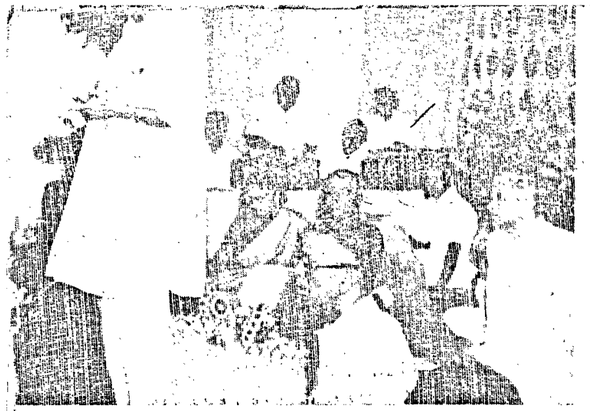
(Aristotle, The Politics, Book I.)

"JUSTICE, social, economic and political", is according to the opening page of the Constitution of India, the first thing that the people of India, after resolving to constitute India into a Sovereign Democratic Republic, seek to secure for themselves. This declared purpose is further developed and elucidated in the chapter on Fundamental Rights and in the immediately following chapter on the Directive Principles of State Policy. Thus, so far as constitutional provisions—the recording of high and noble intentions—are concerned, the distributive justice of the State of free India has been settled. What remains is, for these generous and magnanimous resolves to be translated by action into things concrete, tangible, perceptible by the ordinary man. Execution of this task in the field of social and economic justice is the chief aim of the Indian Five-Year Plans.

Concept of Welfare State

The concept of welfare as the main objective of State policy and action is not one that derives to any great degree from the practice of Indian kingships of the past. Welfare, as we understand it now, fell rather in the domain of religious charity and of the practical insurance afforded by social institutions such as caste and the joint family. The civilizations of mankind is a mighty river in whose waters mingle the contributions of numberless tributaries. India has excelled in its own special offerings—the speculations of philosophy, the fervours of religious devotion, the search for intuitive knowledge. But in law, political theory and the development of institutions, India carried on for centuries with much less developed concepts. This of course does not mean that the long periods in our history, for instance Gupta, Chola or Mughal, were lacking insplendour and magnificence. But it is a fact that in the realm of man-in-society, the dominant ideas with which the State of free India now functions have been shaped by political, social and industrial changes that have occurred in the last few centuries in the outside world.

As a brief exercise, we can go chronologically backwards from the present and name the sources—Kingsley Martin and the New Statesman, Harold Laski and the London School of Economics, the



Sri Kamaraj, Chief Minister addressing the Madras State Panchayats Union Council held at Tiruchirappalli from 14th to 16th July 1952.

anti-Fascist movement of the Thirties, the British Labour Party, the Russian Revolution of 1917, British Liberalism and humanitarianism in the 19th century, the British Industrial Revolution, the French and American Revolutions of the 18th century, the new scientific rationalism of the 17th and 18th. What makes the modern Indian scene of unusual interest is the fact that under the special influence of Gandhiji, some at least of these shaping forces were channelled into the mould of traditionally Indian moral ideas.

New Relationship

European visitors to India in the 17th and 18th centuries, such as Bernier, Tavernier, etc., wrote descriptive accounts of the empires and kingdoms they found in the country. But from the time of Clive and Warren Hastings onwards, when India began increasingly to come under British control, publicists devoted most of their attention to the new relationship that have come to be established between Britain and India. For over fifty years from the end of the 18th century, a fierce controversy raged between the mercantilists and the new industrialists of the British Industrial Revolution. The former were interested in continuing the relationship of the 17th and 18th centuries. They wished to continue the traditional trade with India, to buy cheap, especially the fabulous Indian cottons, and to sell them to the hungry markets of Europe. From this it followed that they wished to preserve the Indian textile industries on the one hand and on the other, were none too happy about the new cotton textile industry of England. The industrialists, on the contrary, wanted to make India the main market for the rapidly expanding British textile manufactures. This aim necessarily involved destruction of the Indian textile industry and because this was organised in small towns and villages on a small-scale, domestic basis, its destruction let India in for the first time in her history for revolutionary changes in her social and economic order, the effects of which were more drastic and shattering than any foreign invasion that she had so far known. The manufacturers of course won the day. Indian cottons were first driven out of European markets and India herself, the very mother country of cottons, was inundated with British cottons.

Letters of Karl Marx

This essential reality of the new colonial relationship was naturally not much referred to in British writings of the time about India. There is, however, one group of writings in which this reality is brutally exposed. These are the letters of Karl Marx and Friederich Engels on India. Neither of them had ever been to the East. But in 1853, Marx sent a series of despatches from London to the New York Daily Tribune in connection with the Parliamentary debates then going on on the subject of the charter of the East India Company which was due to expire in 1854. When we consider all the sanctimonious humbug that was being written about India at this time, we cannot fail to find a consuming interest in what was the first ruthlessly analytical exposition of the realities of the colonial relationship between India and Britain.

This relationship is not the theme of my article and consequently I will give only a brief extract that bears on the question of concepts of welfare in India. "There have been in Asia, generally," from immemorial times" says Marx "but three departments of Government, that of finance or plunder of the interior, that of war or plunder of the exterior; and finally, the department of public works. In style, this indeed good stuff; pithy, trenchant, acidulated. Bad news, one might say, for our Defence and Finance Departments. But there is a very substantial content to it as well which is indeed remarkable when we consider that Marx spent most of his time in the British Museum. He continues: "Climate and territorial conditions, especially the vast tracts of desert, extending from the Sahara, through Arabia, Persia, India and Tartary, to the most elevated Asiatic highlands, constituted artificial irrigation by canals and waterworks, the basis of Oriental agriculture. As in Egypt and India, inundations are used for fertilizing the soil in Mesopotamia, Persia, etc.,; advantage is taken of a high level for feeding irrigative canals. This prime necessity of an economical and common use of water, which in the Occident drove private enterprise to voluntary association, as in Flanders and Italy, necessitated in the Orient, where civilisation was too low and the territorial extent too vast to call into life voluntary association, the interference of the centralising power of Government. Hence an economical function devolved upon all Asiatic Governments, the function of providing public works. This artificial fertilisation of the soil, dependent on a Central Government, and immediately decaying with the neglect of irrigation and drainage, explains the otherwise strange fact that we now find whole territories barren and desert that were once brilliantly cultivated, as Palmyra, Petra, the ruins in Yemen, and large provinces of Egypt, Persia and Hindustan; it also explains how a single war of devastation has been able to depopulate a country for centuries and to strip it of all its civilisation."

War for plunder

If what Marx says about Asian Governments of the past is true, then obviously "we, the people of India", have come a long long way, in the shape of our resolve to secure for ourselves political, social and economic justice. Let us examine Marx's epigram. We can hardly disagree that war is plunder of the exterior. As recently as 1914, the European Nations went into the First World War in a state of great emotional exaltation—each

Madras State Leads in Panchayat Administration

Sri S. K. Dey, Union Minister for Community Development, Co-operation and Panchayat Raj, commended the progress of the panchayat raj institutions in Madras State.

He said that the special emphasis that was being laid in Madras State on the development of scientific methods of agriculture, family planning and the growth of children's education through the panchayat raj institutions were something 'very highly commendable' and could be emulated by all States with advantage.

The mid-day meal scheme, which Madras State had pioneered was now going to be pursued in all States. Similarly, it was hoped that the women and youth movements on which the State proposed to lay emphasis, could also be emulated by the other States.

Madras is going on with panchayat raj very vitally. I have not only no misgivings but great hopes of Madras and the lead that she is bound to give in many aspects of panchayat raj movement, which is emerging from stage to stage.

First Rank for Madras.

"Panchayat raj comes very naturally to the mind of a person in Tamil Nad, because he can easily comprehend the significance of the philosophy behind it; namely, that people at each level must try to manage their own affairs to the maximum extent they could and remit what they cannot do to the next level above them and thus contribute to the evolution of an inter-woven democracy which will link up the gram sabha with the Lok Sabha at the national level".

He ranked Madras as the first and Andhra Pradesh and Maharashtra, which were doing very well in the implementation of panchayat raj, the second, followed by Rajasthan, Orissa and Punjab.

New 15-Year Cumulative Time Deposit Savings Scheme

With effect from 1st June 1962, a new 15-year account with a maximum monthly deposit of Rs. 300 has been introduced. The existing limit of monthly deposits in the 10-year account has also been increased to Rs. 200 with effect from the same date.

INCOME-TAX REBATE

As in the case of Life Insurance Premia and Contributions to Provident Funds, the deposits made in the 10 and 15-year accounts will be eligible for earning a rebate on Income-Tax, subject to the overall limit of Rs. 10,000 or ⅓ of income, whichever is less.

TAX-FREE INTEREST

The Deposits in the 10 and 15-year accounts earn a return of 3·8 and 4·3 per cent, compound interest, free of income-tax.

Further particulars from the nearest Post Office Savings Bank.

SAVE REGULARLY WITH CUMULATIVE TIME DEPOSITS

5-YEAR/10-YEAR AND THE NEW 15-YEAR ACCOUNTS

NATIONAL SAVINGS ORGANIZATION

DA 42/62

calling upon the Almighty, each taking the name of its Sovereign and longing for heroism and sacrifice. After the Second World War, we are all somewhat disillusioned and, apart from a few fanatics, are generally agreed that war is a filthy and degrading business. We no longer believe in holy wars, just wars, preventive wars and such claptrap. Wars are fought in substance to plunder the other fellow and there is not much else to it, except of course that if you are attacked, you defend yourself.

Fiscal Policy

Quite a lot of people, especially in the private sector, will agree with Marx about the department of finance. No doubt they overlook the fact that, if there were little or no public sector, the fiscal policy of the State would in effect reflect *their* aims and purposes and in that situation, somebody else, e.g., the have-nots, would be agreeing with the description. In the past, the interior was plundered to pay for costly wars and to build palaces and Stately pleasure domes for the great and powerful. Now it is heavily taxed, it is to pay for Five-Year Plans, reduce dependence on foreign aid and bring the country's economy nearer to D-Day, the day when it becomes self-generating. The whole content has changed. What Marx had in mind was one of the key factors in Oriental kingship, viz., the proportion of the crop that the king took from the peasant. Traditionally, this was supposed to be not more than one-sixth but in practice was generally very much more. A strong king might manage to control his tax collectors within a certain limit of territory. But with primitive transport and means of communication and no effective administrative structure, the king had necessarily to farm out the revenue assessed on the villages. This jagir was not private property; the jagirdar who obtained the grant from the king was not a landlord in the western sense. He had only managed to secure from the sole proprietor of all land in the kingdom, viz., the Crown, the right to collect the assessed revenue and to remit to the king's coffers a certain sum, keeping the rest for himself. (This right was not hereditary, it escheated to the Crown on the holder's death. During life, it was held absolutely at the kings' pleasure.) The peasant being squeezed to pay much more than one half, say in Bijapur or Orissa, could expect little protection from the Emperor sitting in Delhi. A rapacious Imperial Viceroy, or under him a Subhadar, could easily reduce a flourishing Province or Subah to ruin, with great profit to his own pocket but very little to that of his Imperial master. When the central power was manifestly weakening, this plundering of the interior in the form of excessive tax demands became greatly exacerbated. India has had peace now for many generations but in 1853, when Marx wrote, the country had very recent memories of the terror of the Mahrattas roaming almost at will between the Sutlej, the Hughli and the Cauvery demanding chautha.

Role of the King

The role of the king in irrigation works was obviously of central and decisive importance. Our ancient Cauvery works are a near and illuminating example. In hot, arid lands, artificial irrigation is the first condition for agriculture and the size of the works necessary determined the architect. Village communes were too small and in the East, the next organised entity up the politico-socio-economic ladder was the Central power itself. Thus landed property, even in its feudal forms, did not develop because in the circumstances it could have no economic raison d'etre. The British, said Marx, took over the old functions in respect of the interior (finance) and exerior (war) but neglected public works, thus failing in his opinion, in the sole but key welfare activity of an eastern Sovereign.

British dug their own graves

The British dug the grave of their own Empire in India by bringing social and economic revolution to our country and letting us acquire the liberal, scientific and rationalist ideas with which to think about our human condition. All this happened in a period of world history when the globe was opened up and the world market was created. The anguish and turmoil of two World wars broke up the old world order. New structures are being

created. Ours is one. Out of the inevitable memory of our ancient sorrows and our comparatively recent historical experience, "we, the people of India" have set out on a path which we hope will lead us to an Aristotelian justice, the harmonious entelechy not simply of the few free citizens of a Greek City-State based on slave production, but of a whole sovereign people, for whom there is a positive content to the concepts on the first page of our Constitution.

We have consciously and deliberately debarred ourselves from quick, drastic remedies. A great social change is proceeding, slow perhaps but, we believe, sure, because based on a wide concept of welfare. We may allow ourselves to hope that posterity, when it salutes our revivified country, crowned as she is by the Himalaya, the warm ocean her foot-stool, will remember this generation which, as Prime Minister Nehru puts it, "is condemned, in her service, to hard labour for life."

India's Livestock Population: 10 percent increase since 1956.

The total livestock population in India is placed at 336·53 million, according to provisional estimates of the 1961 Livestock Census released by the Directorate of Economics and Statistics of the Union Ministry of Food and Agriculture. The 1956 census figure was 306·50 million. Thus, there has been an increase of 9·8 per cent in five years.

The number of cattle has gone up by 10·7 per cent from 158·65 million to 175·67 million. Males over three years increased by 11·7 per cent from 64·87 million to 72·48 million. Females over three years increased by 8·8 per cent from 48·49 million to 54·32 million. Youngstock rose by 11·6 per cent from 43·80 million to 48·87 million.

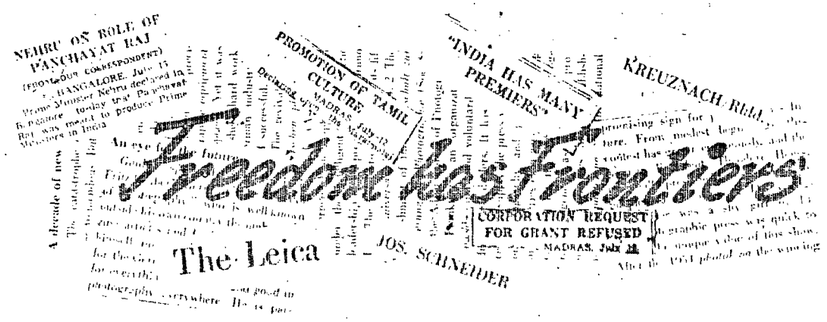
The number of buffaloes has risen by 13·9 per cent from 44·92 million to 51·14 million. Males over three years increased by 17·7 per cent from 6·51 million to 7·66 million. Females over three years increased by 12·1 per cent from 22·34 million to 25·03 million. Youngstock rose by 14·8 per cent from 16·07 million to 18·45 million.

Sheep and goats have registered increase of 2·6 per cent (from 39·25 million to 40·26 million) and 9·8 per cent (from 55·41 million to 60·81 million) respectively.

The number of horses and ponies has declined from 1·48 million to 1·35 million.

Pe[illegible] has recorded an increase of 23·5 per cent from 94·68 million to 116·[illegible]n.

"We Indians are among the Freest people in the World"



By Sri K. BALARAMAN,
Deputy Editor, "The Hindu", Madras.

No less dangerous than the external threat to her territory that India is facing to-day is the threat that disruptive, internal forces are posing to her body politic. Various communal, regional, separatist and totalitarian-minded groups are carrying on explosive agitations which, if not checked in time, could well lead to her social and geographical dismemberment. The menace of these groups is all the sharper because they all claim to function within the four corners of the Constitution. They are using—or abusing—the rights given to them by the Constitution to destroy its very foundations.

India is one of the few countries in the world where all the known democratic freedoms are guaranteed to the citizens. When I returned to India after spending 13 eventful years in the United States, which has aptly been called the Home of Liberty, I was astonished at the scope and extent of freedom which prevails in our own country and how little we all realise it or appreciate it. We are among the freest people in the world. Freedom of religion, freedom of thought, freedom of expression, freedom of the press, freedom of association and so on are all guaranteed to us under our Constitution and enforced by the courts.

A Precious Flower

But I cannot help feeling that [illegible] are taking our freedom for granted and are no[illegible]oing enough to protect and preserve it. Freed[illegible] is a rare and precious flower which has caref[illegible] to be nurtured if it is not to wither away. [illegible]e have won our democratic rights after centu[illegible]s of continuous striving for them. It is not unf[illegible] foreign rule alone that we did not enjoy them. We have really never had them at any time in our history.

Our kings and princes in fo[illegible]er times had the absolute power of life and deat[illegible] over their subjects. Persons accused of treason could be trampled to death by elephants, put to the sword or tortured to death in various ways. The ruler had a state-wide network of spies and informers who reported to

Visitors











1. Mr. Breznev, President, U.S.S.R., visited Madras.
2. Royal Visitors from Malaya.
3. Mr. Geoffery De Fencitas, Member of the British Parliament having a chat with M.L.As.

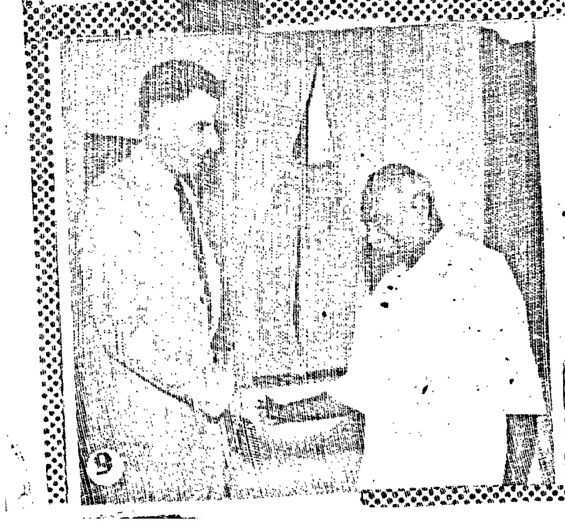
9. Chief Minister receiving Mr. Galbraith, U.S. Ambassador in India.
10. Sri Archibald Nye, Former Governor of Madras at Raj Bhvan.

On Abroad











4. Mr. Kerampman, Danish Premier, welcomed at the Airport.
5. Mayor of Frankfurt with his wife visited the city
6. Mr. Immanuel Birnbaum, West German editor received by the Governor.

7. Film Stars of other countries came to Madras to partake in International Film Festival.
8. Mr. Okumara, Nigerian Minister evince keen interest in hand-loom weaving.

him on what people were saying or doing. An unwise remark or criticism could cost the speaker his life. Property was not legally defensible either ; any time the ruler wanted funds to wage a war, he could plunder a merchant or levy a new tax. There was forced labour in those days. A new dam; a new palace or temple required hundreds of thousands of labourers and they were lucky if they were properly fed and looked after, while they were giving free labour.

The rule of law

Let us look at the picture to-day. We enjoy the whole gamut of civil liberties and the rule of the law. The Government as well as the people must obey the law. Parliamentary Government ensures that laws are passed by the elected representatives of the people, that consent is obtained for the levy of taxes and that the money obtained is spent for the benefit of all. The personnel of the administration right down to the policemen cannot take arbitrary action. The Government's staff can be sued in the courts. Nobody can be arrested without a warrant ; the prosecution even of criminals cannot be postponed. Every person is innocent till he is proved guilty. It is for the prosecution to prove guilt and the accused has the benefit of trained lawyers.

Citizens can freely criticise the actions of the Government. So can the newspapers who, day in , day out, report the actions of the Government and reflect the reactions of the public to them.

ESSENTIAL FOR DEMOCRACY

It is too well known that a free press and democracy are closely inter-related. Whatever one might think of the views expressed by the individual papers it goes without saying that a strong press produces a vital and essential safeguard for the working democracy.

—S. RADHAKRISHNAN
President of India.

The citizens can form every kind of associations trade union, musical societies, sports clubs, and so on. The Government does not enquire into such voluntary associations, except when they transgress the ordinary laws. Political parties of any kind may be formed to press for programmes considered desirable by groups of citizens. They can organise public meetings, processions and demonstrations. They can print their own literature and put forward individuals for election to the municipal, State or Central Assemblies.

Definite Limits

There are, however, definite limits to the exercise of the freedom mentioned above. The Constitution, which the representatives of the people themselves framed, is the supreme law of the land. It sets out the geographical limits of the nation which cannot be questioned or given away. Changes like the reorganisation of States can be made only by Parliament, which is the supreme legislative body, in accordance with the Constitution. The laws of the nation must be observed by all. When political agitation reaches the point of treason or violence, the power of the State in the shape of the Army or the Police can be used against the agitators. The State will intervene if any community or minority is attacked by another, or if the authority of the State is violently attacked.

No part of the nation can contract out of the State without the consent of the rest. This was a principle enforced by the United States in the Civil War of 1857. Thirteen Southern States, claiming the right of secession from the Union, banded themselves into a separate group called the Confederate States of America. President Abraham Lincoln thereupon sent the Union troops into action against them. After a bloody Civil War which lasted four years, the Confederacy was defeated and the Union was preserved.

The principle that no part of the Union can secede without the consent of the rest applies to all nations.

Conflicting claims

India is a poor country and its natural resources are limited. A large part of these resources have

to be spent on defence, because the country is threatened by Pakistan and China. The majority of the States are backward and each region clamours for more economic assistance. These conflicting claims can be solved by democratic planning which clearly states that the more backward a region is, the greater must be the attention paid to it. But it must not be forgotten that it is better for all concerned that wealth should be created rapidly and that a good coal mine in an advanced region will benefit the whole country more than a poor coal mine in a backward place. The country is one and its men, machines, money and products can move freely over the whole area.

No excessive demands

It was this " mobility " of capital and labour that made the United States the richest country in the world. It can make India rich, if provincially-minded people do not make excessive demands for themselves. They are, of course, quite free to make their speeches, and elect their members, but if they decide to go beyond the Constitution and the law in making excessive demands, they will come up against the power of the Central Government which cannot afford to favour one State more than another merely because it gives more trouble.

No country can survive which permits its territory to be nibbled away either from within or without or allows its social harmony to be disrupted. All the fundamental rights and civil liberties guaranteed to us under our Constitution are necessarily subject to the maintenance of social harmony and geographical one-ness. These rights are meant to gain democartic objectives in an orderly community.

The Ku Klux Klan

People who disturb social harmony are really, threatening our democratic institutions and freedom. The preaching of hatreds against a particular region or community or class, however much it may appear to be within the letter of the law, is a violation of the democratic principle and no responsible Government can tolerate it.

The case of the Ku Klux Klan in America comes to mind. This group was originally started as a

NO UNLIMITED FREEDOM

" The Press is of a very great importance in a Democratic Society. If it is to be real importance, it must be an independent Press. If the Press was restricted from functioning freely then it would lose the purpose. But of course there could be no unlimited freedom for any one, not even the Prime Minister ".

—PRIME MINISTER JAWAHARLAL NEHRU.

" high class, mystic, social, patriotic, benevolent association " to promote " real patriotism " and " pure Americanism ". It attracted much popular support but soon grew into a monstrous racist organization and began a campaign of hatred and terrorism against Negro, Jewish, Catholic and other minorities. The Federal Government ultimately intervened to crush it and the Government's hands were strengthened by the fact that responsible people all over the country had begun to wake up to the danger that the Klan posed.

No Exception

Freedom consists in the observance of the law and there can be no exception to this golden rule. Freedom thus has its frontiers. Liberty is one thing and licence entirely another. Self-imposed restrictions are necessary if liberty is to be preserved from degenarating into licence. If citizens do not observe the Constitution in the letter and in the spirit, it cannot but bring about enforcement action from the Government.

Though all the fundamental freedoms, like freedom of speech, of association, and of the press are fully guaranteed under the American Constitution, the Communist Party has been outlawed in that country since 1954. This was challenged before the Supreme Court as unconstitutional but the Court sustained it. Membership in the party, however, was not made a crime by itself but many of its leaders have been sent to jail under the

Internal Security Act for advocating the violent overthrow of the Government. That Act also provides for the registration of Communists and for their internment in times of emergency. The U.S. Congress enacted all this legislation when it found that the Communists were using the Constitution to subvert it and thus constituted a threat to the country's body politic.

A Warning

Adolf Hitler used the Weimar Constitution actualy to end constitutional Government and to replace democracy with a fascist dictatorship. Those who may seek to abuse the very freedoms guaranteed by the Indian Constitution to threaten the nation's unity and integrity are of a similar brand. Their's is, in reality, a threat to our hard-won freedom itself. Such men or groups deserve no quarter from either the Government or the people.

The Fourth Estate

The Press has a particular responsibility in fostering the rule of the law and social harmony. With literacy going forward by leaps and bounds, the press influence as a moulder of public opinion is almost limitless. It can lead the people along the green avenues of orderly progress and national amity or push them into the gutters of hate and lawlessness. Unfortunately, at this formative juncture in the life of our nation, an unhealthy trend has become visible on the press horizon. A yellow press has reared its ugly head which has already begun to outdo its older overseas counterparts in sheer sensationalism and irresponsibility. It is providing a classic example of abuse of press freedom and apart from the harm it is doing to the national welfare, its activity can recoil on the head of the entire Fourth Estate itself. The Government, it should not be forgotten, is armed with enough power both under the common law and under the Constitution (Article 19 (2)) to clamp down on the press and it is to the Government's credit that it has so far chosen not to do so. But there is always a last straw which can break the Government camel's back and it would be well for all to remember this.

All-Time Record Wheat output in 1961—62

Wheat output in 1961-62 is an all-time record. Total production is estimated at 11·62 million tons.

The All-India Final Estimate of Wheat for 1961-62 released by the Directorate of Economics and Statistics, Ministry of Food and Agriculture, puts the area and production at 33,240,000 acres and 11,620,000 tons respectively. The partially revised estimates for 1960-61 were 32,047,000 acres and 10,818,000 tons respectively.

An increase in acreage under wheat crop has been reported by all the wheat-growing States except Gujarat and Maharashtra. Increase in production has been reported by all the wheat growing States except Bihar and Mysore. Increase in total production has been achieved despite the fact that the crop was affected by the severe cold spell in December and January in parts of Bihar, Uttar Pradesh, Punjab and Rajasthan.

All Aids to Increase Food Production

Techniques and Tools in Agriculture

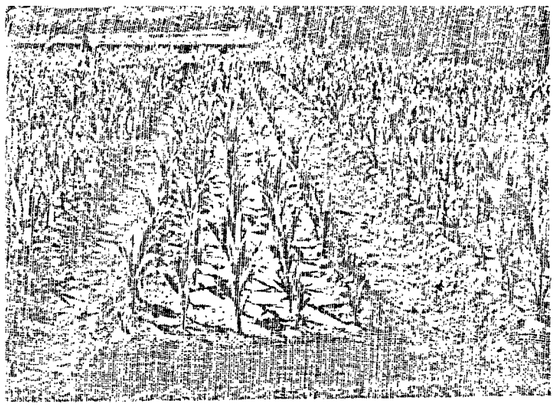
Sri V.KARTHIKEYAN, I.A.S.,
Director of Agriculture, Madras.

Technological developments in Agriculture have revolutionised the Agricultural Industry of the country and have made us beneficiaries of a great break-through in our Agricultural Programme. It has been made possible to raise two crops the place of one and one in the place of none. Technology in its broadest sense is any practice that is an application of the results of research. Many technological developments embracing tools, soils, seeds and sowing, manures, irrigation, Plant Protection, Horticulture, etc. have led to an all round improvement of the Agricultural Industry and contributed to increased production.

Throughout the centuries, farmers all over the world were using only the wooden plough. It is only in the turn of this century that iron ploughs which give a better tilth and a thorough inversion and therefore better crop, have been replacing the wooden plough. In advanced countries, power-operated tractors have completely revolutionized tillage. In this country, however, on account of the numerous fragmented farms, the wooden ploughs have not been eliminated, though intensive propaganda has been done for over 50 years. With a view to effect a quick mass coverage by the iron ploughs a pilot scheme has been started in the five selected ditricts of Chingleput, South Arcot, Thanjavur, Tiruchirappalli and Coimbatore for the manufacture and distribution of light iron ploughs such as Mehr ploughs and mould board ploughs under the aegis of the State, on loan-cum-subsidy basis at 25 per cent subsidy and 75 per cent loan or on cash terms. During the year 1961-62, when the Scheme was first put into operation, 23,000 ploughs were distributed in the above-mentioned five districts. During the year 1962-63, it is proposed to distribute 1·50 lakhs of improved ploughs.

Burmese settun at work.





Good crop of paddy planted in line

Burmese Sattun is another improved implement widely used by the ryots for puddling and trampling green manure leaves. As it is an effective and economic tool capable of being manufactured locally by village blacksmiths, it has caught the imagination of the farmers. Another improved tool is the Japanese Rotary Intercultivator for intercultivating paddy crop. This helps in better utilisation of the manure supplied.

In dry areas, Junior Hoes, Oil cakes and H.M. Cutnakes supplied by the Department are effective.

A simple and economic transplanting machine and harvester are the only tools yet to be devised by the Department and research is underway for it. To popularise these improved implements in Block areas they are distributed to the farmers at half cost.

Universal Otto Frame

This is a new type of implement evolved by Messrs. Voltas, Limited, Madras. This is just like a small tractor-like implement with a disc plough, a cultivator and a cart attachment to be drawn by a pair of bullocks. As the cost of this implement is only Rs. 1,500 the Government for the benefit of the lower middle class ryots have introduced a scheme for the distribution of this implement under Hire Purchase Scheme. During 1961-62, 19 Otto Frames were distributed. During the year 1962-63 it is proposed to distribute 50 such units at a total cost of Rs. 75,000.

Two soil testing laboratories, one in Coimbatore and the other in Aduthurai with a capacity for testing 10,000 samples a year are working and the farmers are availing of them, getting their soils tested and getting suitable recommendations for manure schedule to be adopted by them. This has enabled a number of progressive farmers to apply correct doses of balanced fertilizers and maximise production with minimum cost. This also helps in the efficient use of available fertilizers.

Soil Conservation Schemes have been in operation even before the commencement of the First Five-Year Plan. An area of 2,16,030 acres has been so far tackled under the Scheme. The need for additional cultivable lands is so pressing that the question of bringing as much of the land under the plough as possible is being pursued in all possible ways. By hiring out tractors to ryots an area of 184,009 acres has been tackled. Besides this, tractors and bull-dozers are supplied to cultivators under the hire purchase system and the cost of the units is recovered in seven annual instalments.

Tractor Hire Purchase

Tractors are supplied under hire purchase scheme to farmers up to a maximum financial limit of Rs. 20,000 per ryot and the cost is recovered in 5 to 7 years. For bringing more area under mechanised farming, 40 tractors were distributed during 1961-62. In 1962-63, 60 tractors are expected to be distributed.

Proposals are under way for starting Seed Testing Unit for testing seeds for purity, quality and viability with the aid of Ford Foundation.

Treatment of seeds against seed borne diseases is a new technique introduced in scientific Agriculture. Arcron for sugarcane sulphur for chickpea and agrosan or ceresan for other seeds are being distributed in very large quantities to the farmers during the sowing season for treating seeds in seed treating drums. In the Intensive Agricultural District Programme area this practice is being systematically adopted by many farmers.

Use of improved seeds is another revolutionising technique in modern agriculture and the expected additional production by this practice alone is about 15 per cent.

In Paddy 72 improved strains suited to different tracts, seasons and situations have been released and about 63 per cent of the rice area is covered by these strains yielding an extra estimated out-turn of 215 lakh tons.

In Millets, 34 improved strains have been released and about 40 per cent of the Millet area is under improved strains.

Seed Multiplication and distribution

Seed multiplication in paddy and millets is done at the first stage in the State Seed Farms, run by the Department. These primary seeds are distributed to selected ryots in a Panchayat area for further multiplication and final distribution. These selected ryots are designated as Gramasahayaks and they are responsible for multiplying the primary seeds given by the Department and distributing them to the farmers within the Panchayat area. They get a subsidy of Rs. 2 per railway maund of certified seed so distributed. To keep up purity and quality, seeds have to be changed once in three years. In other words, every year the improved seed distributed is to cover only one-third of the area under that crop in that panchayat. This scheme is entrusted to the panchayats in order to make it a peoples' programme of agricultural improvement.

Technological development in cotton production has contributed to higher yield and better quality staple length has been increased from ½" to ¾" in Karunganni and from 7/8" to 1-1/8" in Cambodia and the lint yield has been raised from 80 lb. to 120 lb. per acre in Karunganni and from 150 lb. to 400 lb. per acre in Cambodia. MCU 2 a summer cotton has covered about 90 per cent of the total summer area. K-2 and K-5 strains of Karunganni have covered 99 per cent and 90 per cent of their respective zones.

Research in oil seeds

For the single crop, rice follows an introduced strain, P. 216 F is suitable to Thanjavur and Tiruchirappalli districts and yields 800 to 1,000 lb per acre within 5 months of its duration.

Research in Oilseeds was started in 1930 in the main oilseed crops of groundnut, gingelly, castor and coconut. Four high yielding strains of groundnut, viz., TMV. 1, 2, 3 and 4 evolved so far have covered a very large area. During the second Plan an area of 237,000 acres was covered under the improved strains and by the end of the Third Plan an additional area of 1,158,000 acres is expected to be covered. Intensive research is being done to improve the yields and also the Agronomic practices such as spacing, rotation and optimum fertilizer application.

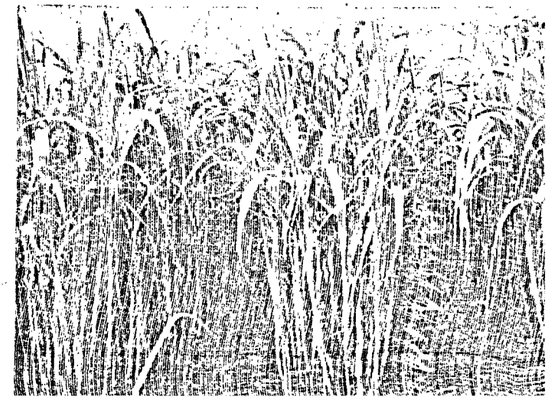
1. With the object of multiplying nucleus seeds of improved strains of groundnut and castor, four zonal nucleus farms are run at Pollachi, Srivilliputhur, Tindivanam and Salem.

2. To increase production of oilseeds, a scheme has been proposed in project areas of Lower Bhavani, Manimuttar, Cauvery, Mettur, Sathanur and Krishnagiri.

3. A compact area has also been proposed to be selected in Tindivanam for intensive development of groundnut. Plant protection squads have been formed at Villipuram, Coimbatore and Madurai for control of Red Hairy Caterpillar of groundnut. Pesticides are issued at half rate for oil seeds crops.

4. Aerial spraying of insecticides against groundnut Red Hairy Caterpillar is also arranged at the request of ryots. Last year for the first time in the history of this State, an area of approximately 10,000 acres was covered by aerial spraying.

Good crop of sugar cane.





CUTTING OF TREES CRIMINAL

PRIME MINISTER INAUGURATES 13th VANA MAHOTSAVA

Prime Minister, Shri Jawaharlal Nehru said that cutting of healthy trees was criminal and should be made punishable by law.

Inaugurating the 13th Vana Mahotsava celebrations at the Delhi Zoological Park, the Prime Minister Said: "When I see a healthy tree being cut, it pains me. It is as if the head of a human being has been cut. Those who cut trees should be punished and it would be better if there is a law to punish those who cut healthy trees."

The Prime Minister said that while millions of trees are planted on the Vana Mahotsava day, they are not looked after later. Neglect is almost a crime. It would be better if the number of trees planted is less but every tree that is planted must be cared for.

The Prime Minister said that Vana Mahotsava can be successful only when we develop love for the trees and care for them. When such relationship is established, the trees will grow rapidly and in their turn serve the people who have planted them.

In this connection the Prime Minister also exhorted those running the Zoological Gardens to develop love for the animals there. The Minister said that, those who do not have any love for animals had no right to be associated with the Zoo.

5. Free distribution of castor seeds to the cultivator is also done to encourage the practice of mixed cropping.

Sugarcane Productions

There are 1·44 lakhs of acres under sugarcane. The latest improved varieties of sugarcane suitable to the State are CO. 419, CO. 449, CO. 527, CO. 658, CO. 740, CO. 785 and CO. 449 i the best of the mid season canes with an average yield of 41·57 tons of cane per acre. CO. 419 is the best of all Coimbatore canes with a maximum yield of 51·77 tons per acre. The entire area under sugarcane is covered by improved varieties.

Thorough preparation of land is greatly stressed upon, ploughing of lands with iron ploughs and ridge ploughs are advocated. The implements can also be got at half rates in Blocks. Use of tractors for ploughig and trenching has become very popular especially in factory areas.

The importance of raising short crop nurseries for getting fine, healthy and disease-free setts is stressed among growers. Financial assistance is given to the ryots by way of premium to nursery men who raise the short crop nurseries for seed purposes at the rate of Rs. 10 for each 15,000 number of sets (to cover one acre) supplied and transport subsidy is given to the planter at the rate of Rs. 20 per acre for a distance of less than six miles and Rs. 40 per acre for more than six miles. The need for application of optimum dose of manure at the opportune time is also stressed. Manual demonstration plots are laid out in cane growers' field to drive home the advantages of intensive manuring. A subsidy of Rs. 50 is paid in cash to those who lay out a typical manurial demonstration plot as per departmental advice. Besides, loans under the Intensive Manuring Scheme are granted at the rate of Rs. 150 per acre to a maximum of Rs. 500 for purchase chemical fertilizers and manuring the crop.

Pesticides are also sold at 50 per cent rates to sugarcane growers for taking up prompt sett treatment and control measures against pests and diseases control.

Development of horticultural technology has produced many choice varieties in several fruits such as mango, papaya, sapota and grapes.

In papaya, the improved variety CO. 1 bears 30 to 40 fruits per tree, each of which weights about 3 lb. with a very pleasant flavour and taste. Ana-E. Shahe grape has been successfully introduced as a desert crop. High yielding varieties of sweet potato and tapioca have been selected and popularised. The World's best variety of cocoa, Criolla is under propagation and a large number of seedlings are being distributed every year. Model Orchard-*cum*-Nurseries have been established in three districts to distribute good quality fruit plant materials and also to disseminate improved horticultural practices. Loans at Rs. 65 per acre for rejuvenation of old orchards, loan for new orchards, recoverable after the 5th year of starting of the orchard are given. By the end of Second Plan, long term loans have been granted for starting new orchards in an area of 1,236 acres and short term loans for rejuvenating old orchards in an area of 945 acres.

As cashewnut is a dollar-earning crop, the area under it is being increased under the Cashew Development Scheme. Loans at Rs. 80 per acre are granted under the scheme and an area of 10,753 acres has been brought under this crop so far.

Distribution of good quality seedlings and dissemination of improved cultural and manurial practices are being attended to by the Coconut Development and Extension staff.

Seedlings produced in the Government Nurseries are distributed to ryots at subsidised rates. So far, 504,540 of coconut seedlings have been distributed. It has been programmed to distribute 247,500 numbers of seedlings every year.

Manurial demonstration plots are laid out in ryots' fields and Rs. 50 are given to the ryot who lays out such plots.

Pesticides and plant protection appliances are given to the coconut growers for taking up timely plant protection measures at 50 per cent of cost.

For control of Nephantis Serinopa "Parasite Breeding Stations" have been established in important coconut growing areas and parasites are freely released in affected gardens.

Planting of coconut in swampy areas has been demonstrated by the establishment of coconut gardens in Kazhuveli swamp areas.

Special staff has also been posted for raising coconut plantations in the coastal areas of Ramanathapuram.

Revolutionary Factor

Irrigation is another revolutionising factor in boosting up crop production. During the last 20 years, the area receiving irrigation has increased by about 25 per cent. The Madras State has harnessed fully all the water resources for crop production and the scope for implementation of gravitational flow schemes is limited; yet, only 38 per cent of the net cultivated area is under irrigation. It has therefore to depend on underground water springs for providing additional irrigation facilities.

A scheme for sinking filter point tube wells has been in operation in the State from the year 1951. So far, 5,273 points have been successfully sunk. These help the ryots in raising paddy nursery early in the season for the first crop and also in providing irrigation facilities to the off-season crops like cotton or groundnut raised in single crop paddy lands after the harvest of paddy. These also provide irrigation facilities to small farms for intensive crop production. Loans are given to bonafide agriculturists at a nominal rate of interest for sinking filter point tube wells in their holdings. Besides this scheme, there are several other schemes such as bore-wells, river-pumping and tube-wells and sub-artesian wells schemes working in the State benefiting agriculturists. Loans are granted under all the schemes at a nominal rate of interest. Subsidies at 10 per cent of the loan are granted subject to a maximum of Rs. 500 in each case towards the cost of sinking of sub-artesian wells.

Oil-engines available in the Department of Agriculture are also hired out to needy, poor and deserving cultivators at concessional rates of hire charges for irrigation purposes. Oil engines, electric motors and pumsets are supplied to cultivators under the Hire Purchase Schemes. 5,357 oil engines and 4,238 electric motors and pumsets have so far been distributed on the hire purchase basis.

Manures and Manuring

Five different schemes are in operation to exploit the local manurial resources of the State. Loans are granted to 740 Panchayats for implementing these schemes, each having a population range between 2,000 to 4,000. They have been granted loan under the scheme of night soil composting to the tune of Rs. 20 lakhs in the Second Plan. More panchayats will be brought under this in the Third Plan.

With a view to ensure sanitary disposal of night soil preventing health hazards and to conserve the same for composting in smaller villages, a new scheme was started for construction of Wardha type and water-seal type of latrines in selected villages with a population of less than 1,000. This facilitates composting in situ of night soil with rubbish collected from street sweepings and farm wastes. This is a new scheme and the entire cost is borne by the Government as a grant to the local body.

Scheme for production of rural compost is entrusted to the Panchayats and Panchayat Unions for implementation. This scheme is operated by the Panchayats and subsidies are also granted to individual farmers at Rs. 6 per standard pit (15′×8′×3′) dug and filled in for the first year for an individual.

Urban compost scheme has been in operation from 1944. 64 Municipalities, 270 Town Panchayats and 4 Township Committees besides the Corporation of Madras are engaged in the preparation of urban compost. At the end of the First Plan the production stood at 2·38 lakhs tons which rose up steadily to 3·90 lakhs tons in the

Second Plan. It is proposed to increase it to 6 lakhs tons by the Third Plan period. Loans are granted to Panchayats for purchase of conservancy vehicles and other requisites for maintaining yards. To meet out any loss that is incurred by the Panchayats in the manufacture and distribution of compost, a subsidy of Rs. 4 is granted per standard pit dug.

To popularise widespread use of green manuring, green manure seeds are supplied at 20 per cent subsidised rate and a premium is paid at Rs. 2 per maund of seed purchased by the Department. Interest-free cultivation advances are also given to the ryots at the rate of Rs. 15 per acre for growing green manure crops in their fields.

Production to increase

These techniques and tools supported by the several concessions given by the Government are expected to increase the agricultural production of the State by 20·5 per cent in the Third Plan. Use of fertilisers, which are becoming very popular is expected to boost up production by another 12·5 per cent contributing to an overall increase of 33 per cent. The biggest innovation or revolution in this agricultural production programme which is likely to have far-reaching effects is the entrustment of this programme to the Village Panchayats under the direction of the Panchayat Union Councils. This ensures people's participation in the programme, as these councils prepare the Village Production Plans in which every cultivator plays his part. Each Union is allotted Rs. 2,00,000 for incurring expenditure to implement the Agricultural Production Programme over a period of five years of which one lakh is granted as matching grant and the other lakh granted as a non-matching outright grant. The Panchayats are the best agency to assess the resources available, resources required for the village plans and to mobilise them.

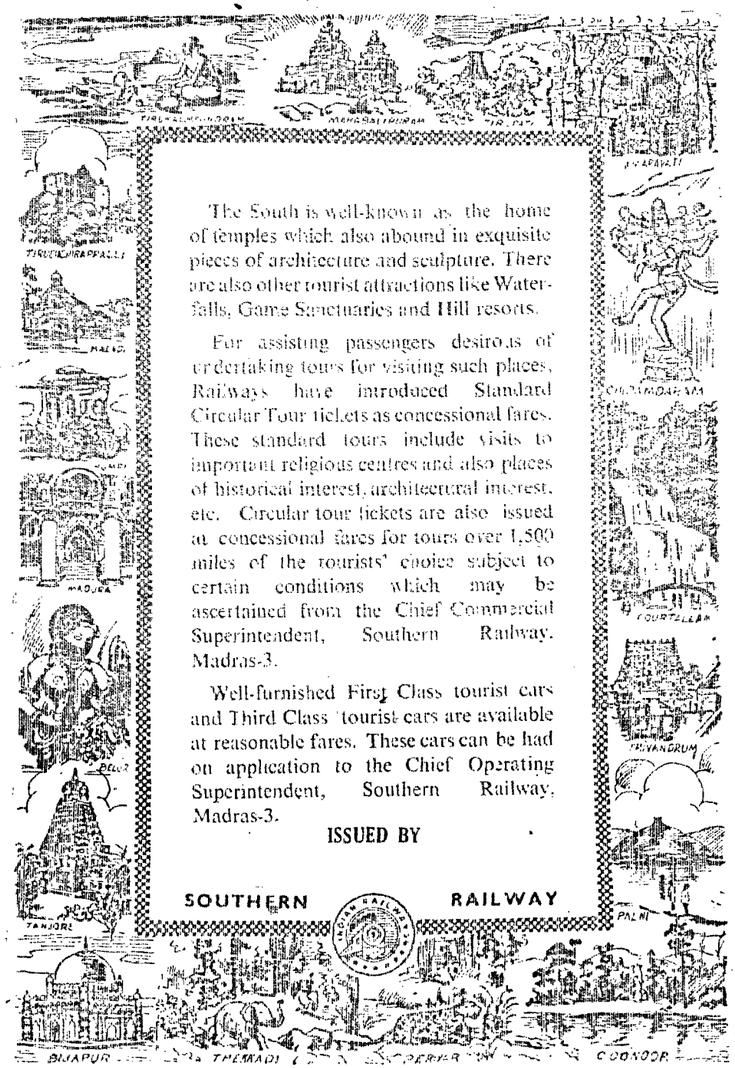
Intensive Scheme

In the Intensive Agricultural District Programme areas, this effort is very much intensified by placing these tools and techniques within walking distance of the farmer, giving them loans at Rs. 125 per acre to buy the agricultural requisits including tools and adopt the techniques, and by providing adequate technical assistance in the shape of experts' advice within easy reach. These measures are expected to raise production of rice from 1,350 lb. to 1,610 lb.

Finally our Agricultural Production Programme must continue to wrestle with the difficult problems of the farmer's bargaining power and release him from distress sale at harvest time. The Intensive Agricultural District Programme solves it by arranging marketing the produce through Co-operatives and providing facilities for loan for the farmers through Co-operatives for all their essential needs. The progress of the nation depends on how much impact these tools and techniques make on the mass of cultivators and how quickly and effectively they take to the advances in technology.

Length of roads in Madras State

	Miles.
Length of roads in Madras State as on 15th August 1947 (Excluding Kanyakumari district.	19,427
Length of roads in Madras State as on 31st March 1961 (including Kanyakumari district.	25,871



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CHANGING Economic Ideals

Professor V. SHANMUGASUNDARAM.
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The definition of economics, that it is study of the material requirements of mankind may have to be given up, though not out of any conviction on the part of the economists of the new school at least on the account that economics, as it is understood by men in industry, commerce and government, is more extensive in its coverage than what the definition permits. It would be no act of generosity on the part of the academic economist to accommodate those who liberally interpret the scope of economics. The evolution of this science has followed alternatively one or the other of the following courses.

With developments in new theories of organization of the production of goods to cater for human wants, there has been a deliberate alteration of existing models of facilitating the satisfaction of human wants. This forms a course of ideas which influences action.

New Problems

The other course is a reversal of it. Due to exigencies, governmental, racial or sociological, certain situations arise and throw up new problems of human wants. The aftermath of every war which is waged on a large scale has been prolific in economic action even before thought in economic terms has been bestowed on it. The spectacular development that has taken place both in the dependent colonies of the existing empires and in politically free countries of the world after the end of the second world war may be mentioned in this context. Countries both free and dependent have recorded rapid progress. Economics which have not yet attempted to devise plans for development have also pursued a make shift policy of priority in investment and production. Consequently, planning in action appears to have preceded in these economies before planning in theory was initiated. In Indonesia, in Malaya and in Burma, the documentation of the economic plan was done many years after a certain planning action has been in force. In India too, the Five Year Plan was finalised a year after the initiation of the first phase of the plan.

As in the sphere of the psychology of normal group behaviour, so in the practice of national economic behaviour, either theory provides the basis of action or action formulates the theory of



Governor Sri Bishnuram Medhi planted a sapling at Raj Bhavan on Vanamahotsava Day

behaviour. It is idle therefore to doubt the desirability of one course in preference to or to the exclusion of the other. Even when an explicit acceptance of a theory does not precede an action programme, there is imperceptible guidance arising out of traditions or exigencies which constitute the motivation for action. It is also possible in such cases that those who are in charge of an action programme are unaware of the basis of their action and do not alert themselves to an awareness of it so long as the consequences of action are immediately perceptible and advantageous. The forecasting role of theory is thus superfluous.

Important features

Educational investment and encouragement of healthy-population are important features of modern economic policy. In these spheres the State of Madras has demonstrated its potentialities for rapid growth. After nearly two decades of preoccupation with theories, neo-versions of theories and pure models of materialistic construction of society, during which quest, economists have alienated the sympathy of other disciplinarians. They have returned to their own in recent decades. Writers like J.S. Mill, and in earlier years Adam Smith, dismissed all ideas of reckoning man and his abilities as part of wealth. Marshall, who considered human beings as indisputable facets of capital, nevertheless wondered what place such a capital had in the market. Economic growth as a new discipline of modern economics is undoing the materialist interpretation of the economist's role. Physical capital cannot be used without human resources. The measurability of the latter is however questionable but the indispensability of it cannot be disputed. It is a feature of the economics of faith.

Investment in Man

In the State of Madras during the last one decade, and more particularly during the second plan period there has been phenomenal increase in the investment in man, mainly in education. Educational investment cannot hold out a promise of immediate return. Nor can the effect of education be measured quantitatively or qualitatively. A rough indication of the number of persons educated, years of instruction in school or collegiate education would at best be tentative measures of educational investment. The flowering of knowledge, the awakening of one's potentialities, the interningling of cultivated minds, the atmosphere of higher level of education and the social purposiveness that blossoms out of educated groups are the manifold advantages which are beyond measurement in economics. A simple aggregation of the number of persons educated even in a particular category like medicine or engineering, pure sciences or humanities may not reveal the picture. A multiplication of social results and the rise in human values in geometric progression can well be visualised in a community which has given of its best to education. A realization of what education

can do, is strong after the effect of break through in economic growth has been demonstrated by investment in technical education. Soon after the recent spectacular achievements of the scientists in pure theory, centres of learning in the United States have evinced considerable interest in the study of economics of education, more appropriately titled investment of human capital. The development of human resources is acknowledgedly the central issue of economic growth in the United States. The preoccupation of economists in respect of material capital has created a lacuna in the factors that go to generate goods and services for human welfare [1]. The deterioration of material capital can be repaired. But the deterioration in human capital is beyond repair except within medical limits, and the effects of such deterioration, mental, moral and physical are communicated to succeeding generations of people. Like the recurrence of a trade cycle consequent upon under-investment or over-consumption the economic cycle of poverty and affluence may [2] be attributed to disregard of or attention to human resources. The non-availability of material goods is exaggerated as the cause of poverty. But it is seldom understood that notwithstanding material goods and money available for spending, the rarety of skills, the uniformly sluggish character of human effort, and the low level of intelligence and its application are obstacles to economic growth and development. Without a broad base of educated personnel to choose from, the inevitability of choosing the less competent or the least competent for avocations would pose a serious threat to economic growth. The pattern of investment to develop human resources has a similarity to the pattern of investment between categories of material activity. The different types of complementarity of skills [3] and adequate quantums in different levels of a given skill may have to be ensured.

It is in this context that one can be optimistic about the priority for investment in education almost as a matter of faith that has occurred in the Madras State.

The Changing Ideals

The changing economic ideals of the oriental people during the last two decades is partly governed by the course of action preceding thinking and theorising. That economics ought to plan, that they ought to pursue welfare goals, that national governments must be strong, that they should be highly sensitive to international delimitation of territorial rights, that trade ought to be protected and regulated, or that certain means of production ought to come within the purview of state ownership and control may be cited as programmes of action long canvassed for in the past in many industrial economies of Europe. The leaders of the oriental peoples during the last two decades have inherited the intellectual legacy of the West European economies. They have had opportunities to be fascinated by such actions in their formative years and they appear to have opted for initiating programmes of action, when in the fullness of time, they have had decision making opportunities.

A person taught to laugh or to smile, it is surmised, will in due course believe in being happy and cheerful. A child compelled to utter truth, learns the virtue called speaking truth. A peasant having seen his great grandfathers toiling on the farm almost to the last days of their lives up to the eighties or nineties in health and cheer, tends to believe in the gospel health through work till breath lasts. On this parlance is the course of action which leads those in the sphere of action to get confirmed in the virtue of such action.

Economic Behaviour

It is logical to concede that these two studies of economic behaviour are briefly to be styled faith-economics and rational economics. Faith induced economics have no less claim to stability and development than reasoning induced economic

1 Schultz, Theodore, W. Investments in Human Capital American Economic Review Vol. II, March 61, pages 11 to 13.

2 Creamer, Daniel—Personal income During business cycles, National Bureau of Economic Research, New York, pages IX to XV.

3 Fabricant Solomon, Basic facts on Productivity change (National Bureau of Economic Research) occasional papers 63 New York, 1959.

programmes of action so long as faith is obvious and reasoning is not amenable to immediacy of application. The zealous advocates of planning in an oriental economy are often at fault not so much in planning, as in erroneously trotting out an argument that they believe in planning and so they are planners. It may well be that they were planners and they have come to believe in planning. To an administrator, it is of little consequence so long as the results of planning are conducive to the durability of Government and to the achievement of other goals of state policy. But to critical students of economic theory, these varied phenomena of economic behaviour pose a few issues. How are deliberate actions initiated after considerable theoretical construction and how do the contexts of events give rise to new economic philsophies? While it is not the purpose of this paper to attempt an answer to this question, the causation of at least actions preceding thinking may be viewed from a few relevant angles. This cult seems to have many devotees.

The real concern

The happiness and welfare of an individual or a group of individuals is a product of joint prescription of related disciplines. The diagnosis of an economic malady attempted purely from one known system of economic knowledge is often inadequate and futile. An inter-disciplinary approach of a politico-economic or even socio-economic prescription is given after a diagnosis of a national economic illness.

At the stages of experimentation, the theoretical foundation is not the real concern. An attempt to resolve an issue and to offer a solution is dominant in the minds of the analysts. Stumbling up on a relevant solution is not also ruled out and in such a case one would not demand of the man of action the theory of his behaviour any more than one would demand of the winner in the Olympics, data pertaining to the minute-wise readings of his physical movements. He may not be aware of it: his concern is not to measure it. A successful olympic sportsman would nevertheless be a prized possession of a professional coach who would analyse the anatomical and physiological movements of the sportsman with the extraordinary precision and curiosity of a theoretician. An economic administrator need be no more ashamed of having initiated a line of action unaware of its theoretical foundation any more than an olympic sportsman who is guardedly not curious about the physiology of his body. This is not to plead in favour of ignorance and to make a virtue of it. It is rather to dispel the abnormal and self-critical attitude of many men in charge of the policies of action who become unduly and hopelessly suspicious of their own lines of action. A reversal of economic policy is not comparable to the reversal of a railway engine or an automobile. The front and reverse gears cannot be applied as frequently in the onward and backward movement of a national economic behaviour. The time lag between these two movements is wide and the procedure calls for considerable caution. It is of no avail therefore for one to be obsessed by the logicality of an action based on faith. An action is on faith or on reason, but seldom on both.

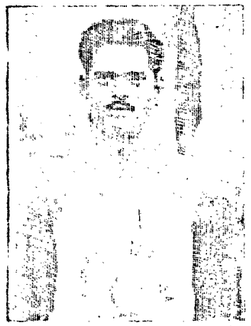
The imponderables in the consequences of human action are many. Unlike the operation of a medicine, the operation of human institutions leaves far too many unforeseen results. On this account logic and calculations appear to be highly restricted [1]. The econometric and mathematical models of development which are in the refined stages of use and reliability are nevertheless subject to the limitations arising out of the imponderables of human nature [2]. An administrative model for development planning in India would fall short of certain expectations on account of changes in the attitude of labour or of international political groups. For these unpredictable changes, logic has no answer.

From another angle, the limitations of theoretical thoroughness before launching upon a course of action may be appraised. Economists along with other social scientists have to serve a common and overhall purpose of man's quest for living and for choice of right modes of happiness. A single discipline like economics, cannot offer a solution. Inevitability of a search for solution by a group of social scientists may have to be conceded and specialization seems dangerous if not ineffective. On this score the edifice of a welfare state seems to have the justification on faith, if not on logic.

1 Steiner, George A.: Government's role in Economic life. MacGraw Hill Book Co., New York, Inc. 1953, pp. 116 and 117.

2 Burns, Arthur F: The Frontiers of Economic Knowledge, (National Bureau of Economic Research, New York), 1954, pp. 46/52.

3 Tinbergen, J.: On the Theory of Economic Policy (Second Edition), North Holland Publishing Co., Amsterdam, 1955, Chap X, pp. 74/78.



Police Sportsman's Sacrifice

Fifteenth March 1962, proved to be a sad day for the Police Force and a mournful one for the family of deceased Police Constable Alagu Thevar who breathed his last due to the stab wounds received while making a bold bid to effect the arrest of K.D. Chinnadorai, wanted in a robbery case. Late Police constable Alagu Thevar who was working in Cumbum Police Station in Madurai North district hastened along with a head-constable and a civilian informant at about 3 a.m. on 15th March 1962 to the hut where the wanted K.D. was in hiding. The police constable who had excelled himself in sports for field events of Discuss Throw, Hammer Throw and Shot Put was the first to enter the said hut as is normal with most sportsmen. The desperate K.D. whipped out a bitchuva from his waist by surprise and stabbed at the thigh, abdomen and hip of the unarmed late police constable and escaped even after a last minute brave scuffle by the latter and companions. The police constable died on reaching the hospital the same morning. The late police constable had a brilliant sports career and had represented the district, range and State in Hammer Throw with a best throw of 118'4" and had fared creditable in the district and Range sports in Shot Put and Discuss Throw. He had served in the Army from 10th April 1941 to 28th September 1946 and joined the Police Force on 12th August 1947. His rare courage is a fitting example for any policeman or sportsman to emulate. The Police Department appreciato this noble dedication to duty and extend their heart felt sympathy to the bereaved wife, five children and other relatives of the deceased police constable.

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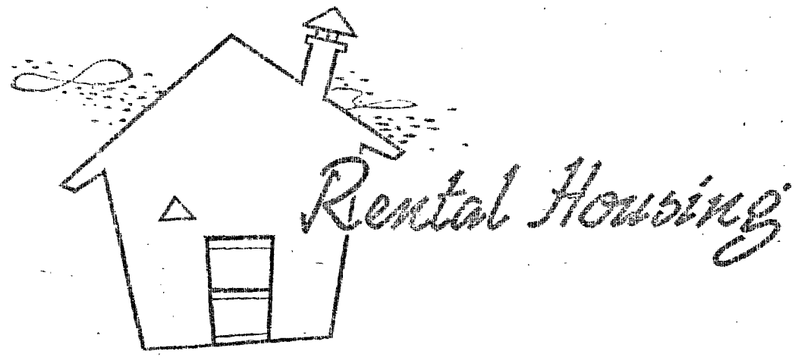
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Rental Housing

Sri D. GNANAOLIVU, M.A., I.A.S.,
Chairman, State Housing Board, and Joint Secretary to Government, Madras.

The policy of the Madras State Government has always been to retain a portion of the houses and flats built from public funds by public agencies on a rental basis, so that those who sojourn in Madras City for limited periods, or those who may work for some time and then go back to their home towns or villages, will be provided rental housing on a non-profit, non-speculative basis in public interest. This policy is on the lines of the activities of Public Bodies sponsored by their Governments at Washington, New York and London.

The history of non-profit and non-speculative Housing, so far as the Madras State Housing Board is concerned, began with the Cox Square Scheme in Chintadripet, Madras. Work on the Scheme was begun in the year 1949, with the object of clearing the notorious slum then known as "Cox Cheri", in the heart of the City. By the time the work on the first block of buildings was completed, it was obvious that the scheme could not be pushed through as a slum improvement scheme, for the simple reason that it was far beyond the means of the slum dwellers to pay the economic rent of the apartments (i.e., Rs. 42 per mensem). They are rehabilitated later in tenements to close-by, and are paying subsidised rent of rupees three per mensem.

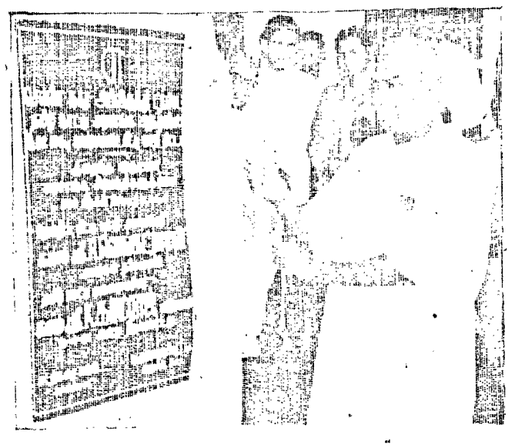
Cox Square, which consists of two, 3-storeyed blocks of 24 apartments each, was finally let out to low-income members of the public. Thus was born the first rental scheme of the City Improvement Trust, the fore-runner of the present State Housing Board. The eagerness with which the public came rushing forward to obtain rental apartments gave the satisfaction derivable from a successful project. Each apartment consists of a bed room, living room, kitchen, bath and F.O.L. The upper floors have balconies. A copious supply of water has been provided from a pump connected to the Corporation main, and all modern amenities are provided. The rent of Rs. 42 per mensem collected is much cheaper than what was demanded for similar accommodation

available in the neighbourhood. The construction, the location, and the security the public felt against arbitrary raising of rent, were the chief factors which attracted the public to the apartments. They are situated a bit away from the main road, but not far from it; a small playground, shops, and a garden are provided. The rent collected is exclusive of service charges such as electricity and water-supply. Each apartment is provided with a separate electric meter but water-supply charges are shared equally. The rent is worked out on the basis of no-profit, no-loss, and includes only (1) percentage return on capital cost; (2) maintenance charges; (3) repayment of capital on a long term basis.

C.I.T. Nagar Scheme

At the time when work on the Cox Cheri apartments was started, the City Improvement Trust had also undertaken another slum improvement clearance programme, this time in the City Improvement Trust Nagar Area, Saidapet. The slum improvement work as such did not create any difficulties at all, as the slum dwellers were being rehoused in adjoining land, in open developed plots. Gradually, the Trust was getting into its possession, the sites vacated by them. In order to utilise the land properly, the Trust had to start building houses, because the land belonged to the Government and could not be assigned to private individuals: nor could the land be left unoccupied as there would be every chance of unauthorised occupation. Small houses were built using standard materials, out of the amount allotted for research. The main line of research at first was in the direction of architectural design. The houses soon became extremely popular, and there was great demand for them. Criticism from tenants was welcomed. As the cost of construction was low compared with other agencies, and as the rent was fixed on a no-profits, no-loss basis, the houses could not but be attractive. Another factor which helped to reduce the rent was, the Trust did not have to incur any capital expenditure towards the cost of the land which belonged to the Government. Tenants were able to get small garden-houses with enclosed compounds, and all modern amenities, at rents as low as Rs. 20 per month, and criticism was welcomed, not resented. Thirty-five such houses were constructed in the "Model House Road" behind the City Improvement Trust office.

Sri Kamaraj, Chief Minister opened the fore-shore estate, which contained houses for N.G.O.s on rental basis.

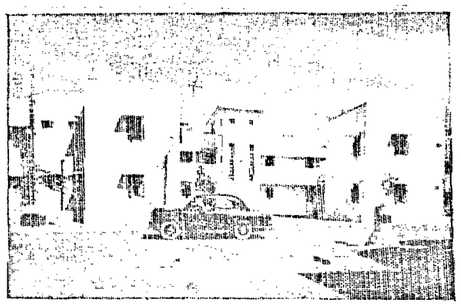


Model Hutments

There was also another piece of Government land in the slum area, which could not be built upon by any Government or other agency except the Trust. Advantage was taken of the situation to develop various smaller, experimental "hutments". The plinth area remaining the same, various types of construction including prestressed concrete and "shell-design" were used, with a view to reduce the plinth area cost without sacrificing quality. Although the processes mentioned above reduce the plinth area cost, the Trust holds the record in being the first to apply the processes to slum improvements. The availability of pucca hutments with modern amenities, at rents ranging from Rs. 8 to Rs. 12 per mensem again attracted a large number of applicants. The result was the formation of a "Model Hutment Road" also.

Nandanam Scheme

From what has been said above, it will be obvious that the Trust's Rental Scheme passed through an evolutionary phase. With the experience gained so far, it was possible for the then City Improvement Trust to launch upon its first, regular Rental Housing Scheme. This was the "Government Farm" Housing Scheme started in 1952, in the area now it known as "Nandanam", Alwarpet. Thirty-six rental houses were constructed in a planned lay-out, after developing the land suitably. By adopting the methods of construction and execution mentioned below, considerable economy was achieved, and the benefit was passed on to the tenant. Contract for the supply of doors and windows on a mass scale was let out separately, which ensured quality, speed, and economy. For the roof, reinforced concrete precast 'T' beam construction was adopted. The beams were mass produced on a 5 H.P., Allam Vibrator, which ensured good construction. The then cost of each house was about Rs. 5,000. The State Government allots every year some funds for such local rental schemes.



A view of the houses in the foreshore estate

Foreshore estate

In the City Improvement Trust Foreshore Estate, Santhome, a scheme for housing 500 slum dwellers (mostly fishermen) was started in 1959, but later, early in 1961, this was changed into rental housing for low paid State Government employees. Unlike the other scheme areas, this particular one suffers from the low level of the foreshore, relative to the level of the Corporation sewer-main. Further, it was not possible for the Corporation to take up the additional load. Hence, in this case, an independent disposal had to be thought of. This was evolved finally in the form of "lagoons", which have proved a very efficacious method of sewage disposal. Facing some water difficulty, well water was supplied for washing purposes to the apartments, and the Corporation's protected water supply stopped on the Estate roads, and is used only for drinking purposes.

In order to reduce the rents, the Union Government and the All-India Conference of Housing Ministers recommend computation of rents as if loan is returnable in 40 or 50 years (though the borrowing agency should return the loan in 30 years as undertaken). This disposes of the problem of a fictitious profit accruing after the loan is repaid in 30 years. As a matter of fact, the rent is fixed once for all without reference to market value, or taking into consideration the depreciation and consequent excess of improvement charges over routine maintenance. By fixing the period of the loan as 50 years, this apparent anomaly is resolved in favour of the tenant, as 50 years is the usual anticipated life of the building.

The "good will"

During the period of fourteen years of its existence, the City Improvement Trust (now called the Madras Housing Unit of the State Housing Board) gradually evolved rules for the provision of various little conveniences for the tenant; this good will is an "extra" over and above the fair rent which has been evolved, and the sturdy and safe houses offered to him. His various little additional needs have been studied and codified.

To sum up the experience of the State Housing Board, the cost of building materials and labour charges are soaring up. Great effort and forethought are needed in procuring and stocking the materials required. Costs of buildings cannot be brought down sufficiently to keep the rent within 10 per cent of the income of the allottee, but, with due care, it is often possible to work within the limit of 10 per cent of pay *plus* house rent allowance.



At the State-level, there are various departmental, rental schemes with State funds—for Government Press workers, Government Transport workers, and so on. But the rents are standard, and subsidised to a certain extent—never exceeding ten per cent of the pay.

Hamilton Bridge scheme

In the All-India sphere, 25 per cent of the Low Income Group funds of the Plan, and 25 per cent of the Middle Income Group funds (from the Life Insurance Corporation) are being utilised—mostly by Municipalities at Madurai, Tiruchirappalli, Coimbatore, etc.—for rental housing on a no-profit, no-loss basis. Only a few months ago, the State Housing Board's Madras Housing Unit, (successor of City Improvement Trust, has launched a Scheme of building three-storeyed flats, six in a block, next to its Foreshore Estate, Santhome. For the first time in Madras, such rental flats are under construction in the public sector, which will be available to the general public, the funds therefor being drawn from the allocations under the Union Government's Low Income Group and Middle Income Group Housing Schemes. The total cost will be about, Rs. 18 lakhs for 72 families. Further in the current Hamilton Bridge Scheme of the State Housing Board, out of 300 grounds (one ground = 2,400 square feet), 100 grounds are being handed over to the Telephone Department for rental flats for their employees at the sugestion of the State Government. In the balance area of 200 grounds, the Housing Board proposes to build three kinds of three-storeyed rental blocks, which will remain in the public sector. For about Rs. 60 lakhs, about 400 and odd such storeyed apartments and flats will be constructed in the current year, taking funds from the L.I.G., as well as the M.I.G. Schemes. Also roughly one-third of the flats will be reserved for low-paid State Government Employees, the cost of these flats being met from the Union Government's new Scheme for providing rental accommodation for this class of State employees.

For low paid Government servants

Under the above Union Schemes for the benefit of low-paid State Government employees, as mentioned at the outset, 500 apartments have already been provided in the City Improvement Trust Foreshore Estate, Santhome. At least 150 more will become available in the Composite Colony in the above Hamilton Bridge Scheme in Lloyds Road. Under the same Scheme, last year the construction of 96 three-storeyed rental flats in the Kilpauk Garden Area by the City Improvement Trust, and 176 similar apartments in Tedhunter Nagar by the State Public Works Department was begun, and is half way through. These may be available for occupation in another 3 to 6 months. It is expected that the rents of all the flats and apartments built under this scheme, financed from L.I.C. funds, will be on an economic basis, so that the loan will be repaid without any strain on the State's finances.

Housing in Rural Areas

Ten thousand villages will be brought under the purview of the Centrally sponsored Village Housing Projects Scheme during the Third Plan period in a bid to improve the housing conditions in rural areas. At present, the scheme is limited only to five thousand villages.

Funds for the scheme will also be raised proportionately from about Rs. 12½ crores to about Rs. 25 crores for the Plan period. This is one of the dozen far reaching recommendations made by the Village Housing Seminar to improve environments and housing in rural areas of the country.

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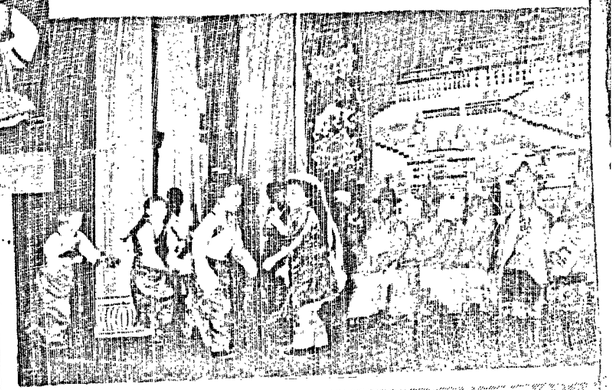
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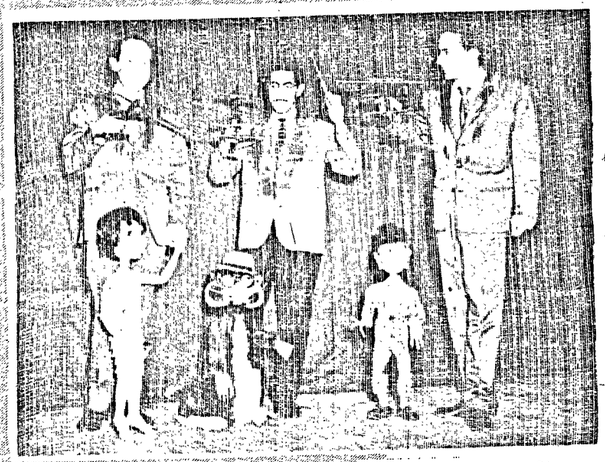
SUPPLIERS OF GOODS FOR BETTER LIVING



Bulgarian Troupe



Tibetian Show



French Puppet Show

Visit of Cultural Troupes

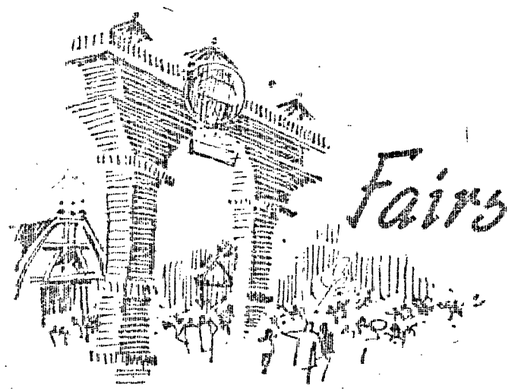


Chow dancers

BIHAR



Rajasthani Dancers



Fairs & Festivals

It was Sir George Birdwood, eminent statesman and author, who said over half a century ago that English education had made the educated classes in India feel disgusted with the traditions and festivals, with their homes and shrines. The statement was correct to the letter and spirit as applied to the times when it was made and up a score of years thereafter. After the attainment of independence, great efforts are being taken to renovate the temples, to conduct the festivals, etc. The growth of nationalism in India has been accompanied by the revival of culture and interest of the past history of this country.

Man was always fond of festivals or (ursavas) aversince the begining of creation; he was there fore characterised as UTSAVAPRIYA by Kalidasa.

Festivals like the samana where men and women mixed freely and unconventionally are referred to in the Rig Veda. Women were dedicated to the services of Gods in temples, where the villagers gathered for common worship and spent the night particularly moonlit nights, in revelry, dance and song.

Maidens were won by chivalrous feats and this and similar other happy events like victories in war or birth of children were celebrated with great eclat.

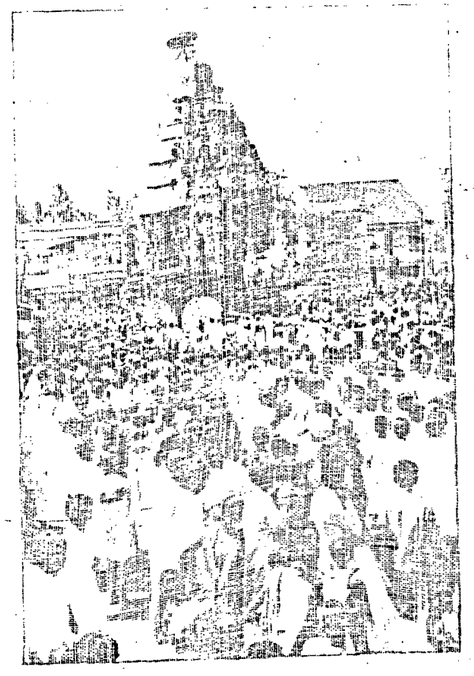
Vasanthotsava or the advent of spring or the accession of a new monarch was also made the occasion for similar joyous festivals. Courtesans are also referred to in the Rig Veda, as for example in the ushassuktha but we are not in a position to judge whether they had come to occupy the honoured position in society they came to occupy in the third or second century B.C. in Vatsyanana's Kamasutra

Though the influence of the Dharmasastras and the Vedantha philosophy tended to make the people more and more puritanic in their outlook on life, festivities connected with marriage, birth of children official promotions, etc., could never be pushed out of society.

The festivals of Tamilnad are as varigated as they are enchanting. Everyone of them has a religious background. Yet not two festivals are alike. Some of them are purely pastoral reflecting as they do the simple choices of peasant life. Some others are rooted in tradition and are wovan around with episodes in our cultures. Yet others are temple festivals which while projecting the inspiring stories of Gods and Saints before the eyes and minds with appropriate rituals music and other paraferndia beckon man to the path of duty and devotion.

South India particularly Tamilnad has been truely a land of temples. Perhaps most of the enduring force which underlines the apparent diversity and provides the common forum and social and spiritual contacts and exchange has been the temples through the ages. In most of the

Car festival at Mylapore.



1971

temples the annual festivals takes place som time between the months of March and June. Festival usually lasts for 10 days. Elaborate procession are taken out along the streets around the shrine both in the morning and in the evening with the principal deity decorated with flowers on mounts or Vahanas resembling animals, birds, etc.

The practice of taking out the idols in procession, along the principal streets surrounding the temple originated with the idea that all classes of people irrespective of community should be afforded an opportunity to have dharsan of the God and offer worship.

For the processions, however, there is a set of idols made of panchaloks (alloy of five metals) known as the Uthasava procession (deity) Prior to a procession, the diety in the stone image is ritually transferred to this metal image. In temples observing strict ritual, the doors of the sanctum sanctorum are locked and none may worship the stone image, while the metal image is out in procession.

In every Hindu temple there is the moola stanam (sanctum sanctorum) where are installed the idols (usually made of stone) of the Gods. Daily worship is offered to these idols which are permanently placed in the sanctum sanctorum and should not be moved at all. People who go inside the temple usually worship at this shrine.

The Hindus are a profoundly religious people. Their goal of life is self-realisation or attainment of God consiousness.

No nation on this earth rejoices with festivals (Uthsava) qualified by fasts (Upavasa) and vigil (keeping awake at night) as the Hindus. To get up very early in the morning, take a bath, meditate before the sun rise, study Gita, Ramayana, Bhagavata and Upanishads is the habit of every devout Hindu. These festivals give ample opportunities for him to think about God. They fill his heart with religious zeal and fervour.



Aruvathumoovar festival at Mylapore

Every festival day reminds him the glory of God and his "Lilas" the necessity of self-realisation and thus goads him to soar higher and higher in the realisation of eternal bliss ultimately to merge himself in the light of lights

Man gets tired on account of hard work and monotonous actions. He wants some change or variety. He wants relaxation. He wants something to cheer him up. These festivals made him cheerful and happy and give him rest and peace. The observance of festivals goes a long way to protect religion, to destroy viciousness, to remove disease, to contribute health and happiness and to activate noble and rituous qualities which will lead to the attainment of eternal bliss.

During Deepavali and Pongal a general cleaning up takes place. Houses are white washed. New clothes are purchased. This is hygienic. It will contribute to the health of the inhabitants of the house.

Hindu festivals and fasts are almost numberless. In every month there will be some sort of festival. The Tamil calender is studded with festivals. Every month when the moon enters the constallation of Kiritika, people throng the temple of Muruga and worship him.

Folk art forms have survived through the centuries in the villages of India and have brought to the daily routine of hard work moments of happy and creative relaxation. Rural festivals are enlivened by folk songs and dances and in many villages of India the huts of the simple peasant dwelling are decorated with paintings in virile line and bright colour. Right from the beginning the Community Development Programme has recognised the importance of revitalising these art traditions and many recreation centres have been established all over India. Community dancing, folks songs and other arts are being nourished to new vitality in these centres.

Lofty Gopurams

The temples are erected in a spirit of reverance and emotive dedication and are as such, religious consciousness of the people. The Hindu temple becomes a complete symbol for the union of the individual with the Divine and lofty spire expressing something of the human desire to reach out and mingle with the ultimate the God.

A rich heritage of Tamils



Folk Arts of Tamilnad

Srimathi N. SHYAMALA, M. Litt., B.

The word "FOLK" may generally signify the unlettered masses or people of the country-side who do not possess the culture characteristics of urban areas. They are a group in whom the economic, educational and cultural diversity of the City is much less pronounced, whose modes of life and customs, whose lore and songs are known and shared by one and all in the group. One can find a great similarity among their cultural traditions. Their arts express their thoughts, feelings, hopes and aspirations, joys and sorrows and moods. These spring spontaneously from their life. They are simple, natural, unsophisticated and free from any kind of inhibition.

Simplicity in art is admittedly a virtue. It reflects nearness to nature and to its fundamental laws of rhythm and beauty. A deep reverential study of the folk arts of our people is bound to enrich our "Classical" arts, for the latter are as much a culmination of the former as they are products of aesthetical laws propounded by thinkers and seers.

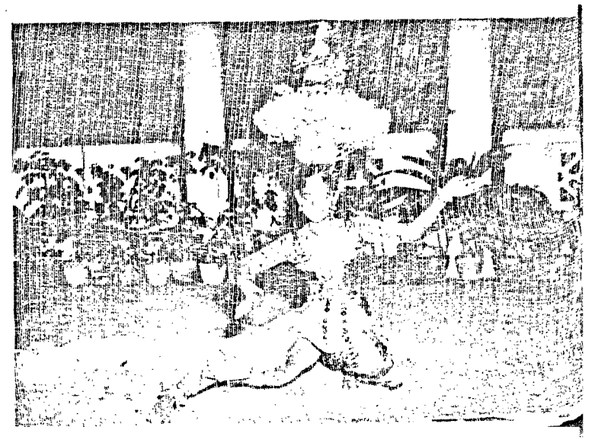
Nature's Children

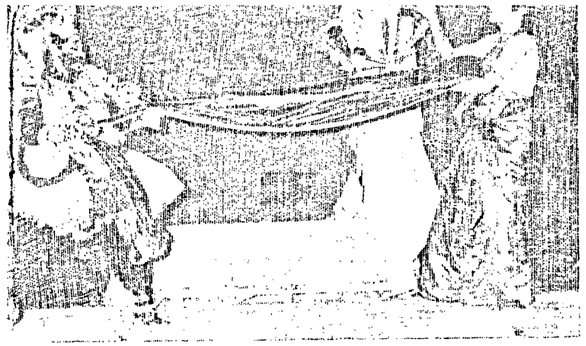
The rustic folk are Nature's Children. The folk artists' imagination is spontaneous, daring and without preconception. It is elemental.

The main difference between folk arts and classical arts is that the former, unlike the latter, has not been systematised and has no supporting theory or grammer. It is an unschooled art. The beautiful terracotta dolls made by the villagers, their simple drawings on the walls of houses, the pretty, though seemingly—complicated designs of 'Kolams' in the front-yard of their houses are all not only reflections of their wonderful imagination, but are indicative of their easy, natural approach to music and dance as well.

This glorious land of the Tamils, besides its hoary traditions in architecture, sculpture, the classical arts and literature, is also the repository of a rich heritage of folk songs and dances. The

Karagam Dance





Therukkuthu (Street Drama)

ancient Tamil classics: Tholkappiyam, Silappadigaram, Agananooru, Puranannooru, all contain numerous references to fine arts of the folk type. Rural life has been a spontaneous and perennial song from time immemorial. Its arts have always been deeply associated with all social and religious functions, with all festivities of happiness and joy. People irrespective of caste, colour or creed, men and women, young and old, have found joy in participating in these cultural events and are profoundly familiar with the happy life that they promote.

Rich variety

Folk arts may be broadly classified under three heads viz., Folk Music, Folk Dance and Folk Drama. Folk music includes songs of work and worship, marriage and ceremonial songs, children's songs and play songs and folk concerts like Villupattu, Lavani, Kaichilambupattu by professional troupes, etc. Folk dance includes Kummi, Kolattam, Pinnal Kolattam, Oyilkummi, Karagam, Kavadi, Poikkal Kudirai, Kaniyan Koothu, Chakkai Attam, Pulivesham, Vanindanai, etc. Drama includes Therukkuthu, Bommalattam and Pagalvesham. All these comprise both the rustic and the refined types.

Despite the boons of technology, the task of an agriculturer or a labourer still remains a laborious one. Yet, he cleverly manages to relieve the burden of his work and increase his productivity and efficiency with the help of song. It is by song and chant that his labour is regulated and stimulated. Evidently, labour set to music is labour lightened. However hard and monotonous the work may be, whether it be the various agricultural operations, fishing, load carrying or mixing mortar, his motto is 'Sing while you work and work while you sing'.

They steal the show

A large number of folk songs is meant to be sung by groups, for most of the work is turned out of collective effort. There are some that are sung exclusively by men, others exclusively by women, and a few by both. However it is the women, who sing the first song to the new born child, who get the lion's share. Numerous ceremonies and functions mark their lives, and not one is allowed to pass without music. They sing and lull the child to sleep, they sing to greet her coming of age, they sing to celebrate her marriage and nuptial. In fact, they flood every conceivable occasion with song. Their 'nonbus' and 'vratas' are many, and each is marked by song. When inevitable Death comes, they have a song ("Oppari") for that too!

A nation is best known through its plays and pastimes. The rustic folk of Tamilnad have their own recreational programmes to spend leisure hours in an artistic manner. They sing and dance in some central place of the village. Here too, it is the women who steal the show. To watch them perform a Kummi or a Kolattam on a moonlit night is a feast to the ear and eye.

Professional Artistes

Besides these entertainments provided by the people themselves, there are professional artistes who give ballad music concerts and dances either in groups are solo, and stage dramas, especially during festivities that usually fall during summer months. Simplicity is the notable feature of these programmes. With minimum effort, the maximum effect is produced, be it ballad singing, instrumental music or the dance and drama both of which involves costume and other stage aids.

These professional troupes are engaged to provide entertainments to the people, particularly during festivals when villagers from far and near attend the celebrations, some walking long

distances and others arriving by cannopied and decorated bullock-carts. They camp in shady groves, cook their own food and offer worship to the deity in whose honour the festival is held. They attend all night shows of folk entertainments and return to their homes with a sense of exhilaration. Ballads on Puranic and historical heroes are sung or performed on the stage in drama form for nights in succession, and crowds sit under the sky and listen and watch them with rapt attention.

Folk Festivals

Folk Festivals abound in dances also. Besides the main attraction of the ballad or the drama, there are always attractive dance items such as Karagam, Kavadi, Poikkal Kudirai, etc. The line of distinction between the amateur and professional dances is thin. Even so is the difference between the secular and the religious. In the beginning, perhaps, there were no professional or dancing groups. Everything was in the nature of community dancing or the religious rite. Gradually, however, specialisation by a few gave rise to professional troupes who, on account of the greater organisation and orderliness of their performances found favour with the people.

Work and Worship

Generally, all folk arts have a rich spiritual atmosphere which is sometimes subtle and sometimes strong. They are full of Gods and Goddesses and incidents and stories from their lives are the constant theme. The rustic mother with pride and joy rocks her baby, be it first or sixteenth born, imagining it to be Rama or Krishna. The untutored village children play about in the field, reciting sweet rhymes that describe their family deities. The labourers at work in different quarters sing in the name of the Sun God, the Rain Goi, the Elephant God and all the other deities they worship. A newly married couple is always linked up with the names of Rama and Sita, Radha and Krishna and all their marriages and ceremonial songs are full of religious tradition.

The beggar wandering from place to place sings only devotional songs. No theme other than the mythological and puranic is selected for ballad singing or for other folk concert and dance on festive occasions. Thus, even the most trivial is somehow linked up with the Divine. This devotion only emphasises the fact that the villager whose life is one of hard toil has a constant thought of the Divine, be he in the field or at any other work. Thus his work becomes his highest form of worship, though of course, he formally attends a function in his tiny village temple once or twice a year.

It is of special interest that one is able to experience the vitality of folk music and dance, only when they are heard and seen in their natural setting. The peasants can sing only when they are at a particular piece of work and in the customary environment. To join them in their work is a thrilling experience. As a collector of folk music and dance, I had the experience of actually taking part in their various activities, recreational music and dance, and felt the thrill of it while doing extensive research on the subject throughout the Madras State for a thesis, and later on as the Research Officer for folk arts for the Madras State Sangita Nataka Sangam.

Temple Culture

The temples of Tamilnad have been greatly responsible for a continuous interaction of cultural forces between the classes and the masses, the refined and the rustic. These temples provided periodical festivals in which music—particularly of the nagaswaram—occupied a prominent place. The masses greatly benefited by it. Many of the great musicians of the past lived in villages.

Kummi—Kolattam





Dummy Horse Dance

Keeping their ears and mind open to all healthy influences, they did not think it beneath their dignity to assimilate in their music, such artistic forms as came to them from the masses. Whatever they felt would add to the beauty of their own art, they incorporated without hesitation.

There has thus always been a continuous process of free exchange. There is evidence of this in the fact that the 'chayas' (melodic contours) of many of the important ragas of carnatic music are seen in the folk melodies of Tamilnad: a typical example of this interaction of culture. Kuravanjis and other dance dramas staged in temples especially during festivals are midway between the rustic and refined types of arts and contain the essence of both. All these traditions add up to a social background wherein simple living and high thinking was the way of life and wherein the classes and the masses lived together and shared everything.

Unwritten Treasure

This cultural treasure "still remains unwritten, for they hang from the living lips of the rural communities," as the late Mahamahopadhyaya Dr. U. V. Swaminatha Iyer remarked. It is high time that these beautiful songs with their original tunes are collected and preserved. The folk songs have received some attention at the hands of scholars, mainly in regard to their literary content. The music content has languished for want of attention. Collection and preservation of this treasure is not an easy job. The poor, ignorant villager is shy and retiring, suspicious of the inquisitive intruder. To make the rustic woman come out with a song calls for the greatest powers of persuasion, apart from sympathy, understanding and genuine love of the people and their song. Add to these the need to write down in notation or record all the songs on tape on the spot!

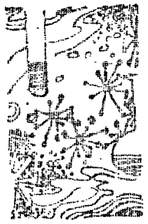
Nothing however, should daunt research workers in this field—not the blazing sun, nor even the need to stand in knee-deep slush and participate in their agricultural operations. Even during the process of collection, there is the problem of selection for it has now-a-days become an extremely difficult matter to sift the genuine and authentic folk songs from those which owe their inspiration to the films.

I have the satisfaction that, after five years of hard work, I was able to collect and put down in musical notation, about 350 original folk songs.

Challenging Responsibility

Our villagers have always had a good deal of artistic creative faculty and they still have it. Most of their tunes and texts are all their own. They have enjoyed dance, drama and music for they were also participants. When they are impressed by something new, they are inspired by it and not merely led to imitate it. These talents and virtues must be kept alive and the folk arts preserved in all their vitality and gusto. This is a challenging responsibility of the Government and the people.

A great factor in this direction is the enthusiasm shown by the Government for the revival of these arts by generous aids through various agencies such as the All India Radio, Sangit Natak Akademy, Community Development Projects, etc. Herein lies a great opportunity as well as a great danger. While there is abundant opportunity for the genuine worker and student in the cause of the folk arts, there is equal danger of charlatans taking the field. The need of the hour is, therefore, dedicated workers who will help preserve the abundant wealth of folk arts and, at the same time, pass on the benefits of their classical training to the masses.



Scientific Terminology & SCIENTIFIC PROGRESS

Prof. D. S. KOTHARI.

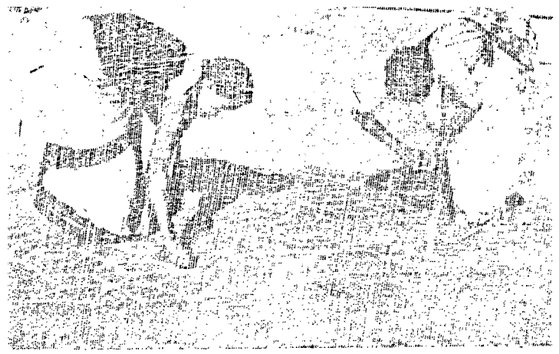
Science fixes the meaning of a term, language fixes the word. The meaning is universal, the word is local or regional. It is in this sense that there is a common or universal "Language of Science" in a multilingual world.

The shape of the modern world is being determined to an ever increasing extent by science and its impact on man and things. Science has powerful, unifying and cultural influence because of the universality of the principles it seeks and discovers, and because its cultivation cuts across sectarian, national and ideological frontiers. It gives first place to *co-operation* and not competition, and its roots lie deep in man's highest capabilities and aspirations.

The basis of scientific progress has always been free discussion, exchange of knowledge and active communication between scientists. This is now largely carried through the medium of professional journals supplemented by national and international conferences. Currently, something like a million original scientific and technical papers and some fifty thousand (scientific and technical) books and about the same number of reports are published every year; and the two most widely used languages for communication of the results of research and exchange of scientific knowledge are English and Russian. German and French come next, but their importance is now less than what it was, say, twenty years ago. More than 50 per cent of the scientific literature is published in English. The eminent position which these languages occupy is but a reflection of the contribution to knowledge made by people speaking these languages.

Science and Language

The essential ingredient of scientific thinking and communication is the use of a precisely defined terminology, more or less special to each branch of science, and though the word describing it varies generally from one language to another, the content is precisely identical, by definition. (For example, velocity is "geschwindigkeit" in German, "vitesse" in French, "skorost" in Russian, and "sokudo" in Japanese). For a scientific term the meaning is completely conserved in passing from one language to another, no matter how different



Rangoli-Kolam.

the two languages are, but the word standing for it varies in general. Outside science, the meaning of a word is not sharply defined, but carries a "penumbra or cloud" around it which does not remain the same on translation.

International Terminology

An important but rather small part of scientific terminology consists of words that are the same in all or most of the important (European) languages. Briefly termed "international terminology," it includes the symbols of elements and their compounds, physical units and constants, symbols and signs for mathematical operations, and the binomial Latin names for plants and animals.

Technical words which describe physical concepts and properties of things (e.g., mass, force, power, thermodynamic assembly and group) can be classified into two broad categories :—

(*a*) words taken from "ordinary speech" and given a precise scientific meaning ;

(*b*) words which seldom occur in "ordinary speech" but are specially imported or evolved for scientific purposes.

Examples of the first category are words like *work, cell, class* and *charge*, and examples of the second category are *isotope, isobar, gas, radio activity and quantisation*.

Growth in India

In India the problem of scientific terminology in the regional languages is of outstanding current interest and importance. In dealing with this problem, it is necessary to consider separately the requirements of advanced study and research and those of school education and popularization of science.

In the first case the scientific terminology and the language of which it is a part, must provide access to the fast accumulating new knowledge and serve as a channel for exchange of knowledge. For this English is the obvious choice. An adequate knowledge of this language and facility in its use must be an essential requirement for the successful completion of the post-graduate course in science and for the degree course in professional subjects such as engineering and medicine. In fact, for some years to come this might with profit apply to the under-graduate course as well.

Also, it is most important in relation to our progress in science and technology that there should be a provision for the study of the Russian language in the Universities and the Professional Colleges.

The medium for school education, for the training of craftsmen and skilled workmen and for popularization of science on a large-scale has to be the language of the region concerned.

It would be obviously unpractical to contemplate one scientific terminology for all the different regional languages in the country. A common terminology, scientific or otherwise, can be based on a common language only. For example, there is no common scientific terminology in the European languages.

At the under-graduate stage use should be made of the terminology in the regional language and also the scientific terminology in English. In fact this "double terminology" would be necessary for the next few years as at the college stage of education, text books in the regional languages as well as in English would have to be used. The use of the two terminologies in parallel, as it were, would help enrich indirectly the local languages.

Practical advantage

The immense practical advantage of acquiring knowledge particularly at the school stage in one's own language is one of the main reasons for evolving separate scientific terminologies in the main regional languages. It is, in general, not practical to implant words describing "concepts" from one language into an essentially different language. One word leads to several associated words and to import the whole lot would almost amount to replacing one language by another. For example the word "to conduct" gives the frequently used technical terms, such as "conduction", "conductor", "super-conductor", "conductivity" and "conductance".

Other compelling reasons for evolving separate scientific terminologies in the regional languages include the fact that basic concepts of science often have their roots in primitive experience. The training of skilled workmen and craftsmen could most easily be carried out in the language of the region concerned. Further, the large-scale "popularization" of science can be achieved only if done in the regional language. In an age of science a language would lose much of its *value* and vigour, even its viability, if it lacks an adequate vocabulary to express the facts and ideas of science.

Pioneering Work

In India a considerable amount of pioneering work has already been done by a number of organisations in different parts of the country, and in particular by the Central Hindi Directorate of the Union Ministry of Education.

Glossaries of scientific terms required up to the higher-secondary level have been prepared in practically all the science subjects. However, much still remains to be done. Apart from the preparation of terminology for use at the under-graduate level (and above) and to meet the demand for "popularization of science" the work already done needs to be given a "final shape" and the new terminology brought into effective use. Related to this is the problem of text books. Earnest consideration should be given to the preparation of standard text books of science for use at the school level. Suitable authors (a team of active scientists and school/college teachers) may be invited on a national basis to produce standard text books which could be translated in different languages.

This will not only serve to coordinate scientific terminologies in the regional languages but would also lay the foundation of a sound science education.

Standard terminology

The Government of India have set up a Central Commission for Scientific Terminology to deal with the general principles to guide the preparation of scientific termilologies in Indian languages, under take preparation of a standarad terminology in Hindi, coordinate the terminologies in the regional languages, and take steps to reduce the gap between the preparation and actual utilisation of the new terminology.

In selecting or evolving Hindi equivalents for technical words, as far as practicable, we should choose words (subject to the requirements of easy intelligibility and accuracy of meaning) which are common between as many of the regional languages as possible, apart from transliteration to suit the different grammers. (In seeking to make scientific words or roots of words common between different languages, care must be taken not to make the terminology unduly terse, purist or remote for the "users" of the terminology who, in general, will possess little knowledge of classical languages and etymology.) In inventing new Hindi words the possibility of using the current English words should be always kept in view. Incorporation of suitable English words would enrich the language. New words should not be coined merely for the sake of it.

A dynamic Process

The development of scientific terminology in newly developing countries must be viewed as a dynamic process which has an impact on, and which in its turn is influenced by the growth and progress of science and language in the country. One is dealing with a creative and dynamic situation and as such one should not attempt to solve the problem for all time. We should seek a solution which would make the process of learning of science easy in the context of the present and the near future. It should also facilitate dissemination of science in the community, and help to create in the country more and better science all-round.

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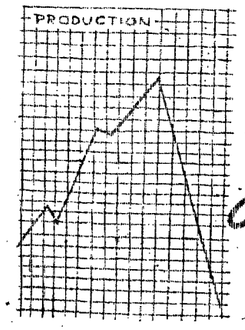
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Secretary.



Labour Problems

Excerpts from the speech of Sri M. Bhaktavatsalam, Minister for Labou made at 12th meeting of the State Labour Advisory Board

The labour policy of the Government is contiaued to be geared up to the needs of industry and labour within the frame work of planned economy. Progress in improving industrial relations is made possible by co-operation between employees and trade unions.

A code of discipline is being evolved and the Government attached great importance to the education of the workers.

A holiday home is being provided at Government cost near Mahabalipuram. The activities now taken up by the Labour Department include labour welfare, regulation of working conditions and fixation of minimum wages in all industries. It is proposed to extend the employee's State Insurance scheme to suitable workers and their families in 12 new centres. The scheme is now in operation in 20 centres.

The reorganisation of the Labour and Factories Department with a view to secure greater efficiency was considered particularly necessary in the context of rapid industrialisation in the State when there is a migration of large numbers of people from the villages, wholly strangers to industrial and mechanical surroundings, into the cities to find employment in the factories and industrial establishments which are springing up everywhere. This naturally leads to an increase in the incidence of accidents. With a view to tackle this problem systematically, the Factory Inspectorate was relieved of its responsibility for inspections under the Madras Shops and Establishments Act and other non-technical enactments. Furthermore, the post of a separate Inspector of Factories was sanctioned for the collection and analysis of accident statistics and generally taking steps to promote safety-consciousness and reduce the number of accidents in industry. Arrangements are also being made for the

exhibition of safety films to industrial labour. There is also a proposal by the Government of India to start a Regional Labour Museum at Madras for industrial safety, health and welfare. Refresher courses on accident prevention are also being conducted for the benefit of managements and labour. There are about 5,803 factories in Madras State and out of a total of 17,828 accidents last year, only 21 were fatal accidents.

The Motor Transport Worker's Act, 1961 has been notified to take effect from 31st March this year in the State of Madras. This satisfies a long-felt need of the motor transport workers and provides for the regulation of their working hours, leave with wages, supply of uniforms, welfare amenities, etc. Government have sanctioned additional staff for strengthening the inspectorate for the purpose of enforcing the new legislation.

In December 1961, Government appointed a Special Officer to enquire into the working conditions of Washermen in the State. Subsequently he was entrusted with an enquiry into the grievances of film extras also. He has completed his enquiries and his reports are awaited.

Industrial Peace

The maintenance of industrial peace in the State is, of course, one of the major responsibilities of the Labour Department and the results achieved in this direction during the year have been extremely satisfactory. There were 147 strikes during the year 1961 resulting in 191,988 mandays lost as against 331 strikes in 1960 resulting in 765,990 mandays lost.

Out of the 8,489 complaints received by the State Industrial Relations Machinery, the vast majority of cases were amicably settled as a result of the efforts of the departmental officers to 221 cases were referred for adjudication during the year. Out of these, three cases were referred for arbitration. This progress in industrial relations would not have been possible but for the continued co-operation of the employers and the trade unions of workers. In this connection, I must mention the beneficial influence of the Code of Discipline in industry which has engendered a healthy climate in this State in the sphere of industrial relations. The growing awareness by labour and managements of their responsibilities under the Code as reflected in the marked fall in the number of mandays lost as a result of stoppages is a most heartening development. Besides the All India Organisations of employers and labour, 394 trade unions and 64 employers' organisations in this State have accepted the Code of Discipline so far. There is a State Evaluation and Implementation Committee which hears complaints of breach of the Code of Discipline brings about out of court settlements, undertakes case studies, takes preventive action in major disputes and other steps calculated to ensure good industrial relations. A sub-committee of this body has been exploring the possibilities of out of court settlement of cases pending before the High Court and Supreme Court and has achieved a modest measure of success, 4 cases having been settled out of court as a result of its efforts.

Industrial relations

Government have under consideration a proposal to strengthen the Industrial relations Machinery further by stationing Assistant Commissioners of Labour at important industrial centres like Madras, Coimbatore and Madurai so that their services would be readily available for settling major disputes in the area. They could also relieve the Labour officers of the burden of hearing appeals under the Madras Catering Establishments Act and Madras Beedi Industrial Premises (Regulation of Conditions of Work) Act and enable them to concentrate on the work of conciliation. Already Government have accepted the proposal to have a Labour Officer's headquarters at Virudhunagar so as to ensure better distribution of work among the Labour officers at Madurai and Tirunelveli.

Wage Boards

The Government of India have constituted Wage Boards for the major industries in the country and the recommendations of the Central Wage Boards for the Cotton textiles, Cement and Sugar industries have already been published and to a large extent implemented. As far as this State is concerned, out of 135 mills in the textile industry

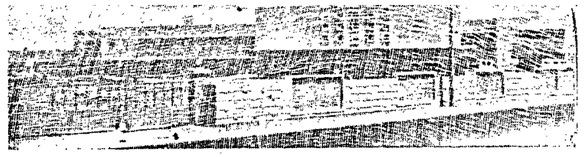
128 have implemented the recommendations in full and 4 mills have partially implemented them. The other 3 mills have not been able to implement the recommendations on account of closure in one case and certain special difficulties in other two cases. The implementation of the recommendation in respect of the clerical staff was in abeyance for a considerable period as a result of the regional committees appointed for the purpose being unable to come to any definite agreement but the deadlock was eventually resolved by the Government formulating a scheme for its implementation in consultation with the parties concerned.

The recommendations of the Cement and Sugar Wage Boards have also been implemented with the exception of a few cases relating to such items as fitment in the scales, etc. There has been a dispute in regard to the payment of Dearness allowance in Associated Cement Company, Ltd., Madukkarai, under the Wage Board Recommendations and the Chairman of the Bonus Commission has agreed to use his good Offices for bringing about a settlement. The recommendations for interim increases in the wages of staff and labour made by the Wage Boards for the Rubber and Tea Plantations are also being implemented by the planters in the State.

The issue relating to the payment of bonus to the workers in the plantations in this State has been amicably settled on an industry-wise basis for the years 1960 and 1961.

Minimum Rate of Wages

During the year minimum rates of wages have been revised for the employments in oil mills, rice, flour or Dhall mills and Mica Works. Very recently, Government have also notified the revised minimum rates of wages for employment in public motor transport. Recommendations for revision of minimum rates of wages for tanneries-*cum*-leather factories have also been received by the Government and are under consideration. Committees have been constituted for the revision of minimum rates of wages for employment in (1) Scented and Chewing tobacco manufactory; (2) employment in Road construction or in building operations and in stone breaking and stone



Employees State Insurance Hospital in the city which was opened recently

crusing; and (3) employment in stone breaking and stone crushing carried on in mines and quarries. Constitution of an Advisory Committee for the revision of minimum rates of wages in respect of the employment under local authorities is under consideration of the Government.

Industrial Housing Schemes

During the Second Five-Year Plan, under the Subsidised Industrial Housing Scheme, Government have sanctioned 23 schemes for the construction of 1,700 houses at an estimated cost of Rs.69·94 lakhs, out of which 500 houses covered by 14 schemes are intended for the workers employed in the Industrial Estate and the remaining 9 schemes for the construction of 1,200 houses are intended for workers employed under private employers. Out of the 1,700 houses referred to above, construction of 1,138 houses has been completed and the remaining are in various stages of construction.

Under the scheme, during the Third Five-Year Plan Government of India have made a provision of Rs. 125 lakhs for the construction of houses for industrial workers. A provision of Rs. 25 lakhs has been made for the construction of houses through private employers under the Third Fiver Year Plan. Out of this, a provision of Rs. 5 lakhs has been made in the budget for the year 1961-62 and a sum of Rs. 1,85,363 has been disbursed to the managements of Visalakshi Mills and Meenakshi Mills, Ltd., Madurai, upto the end of 31st March 1962. Another Rs. 5 lakhs provided in the budget for this year will be distributed by way of loan to the managements based on the stages of construction.

Under the Plantation Labour Housing Scheme, an amount of Rs. 3·46 lakhs was provided for during the Second Five-Year Plan out of which Rs. 2,73,600 has been sanctioned for the construction of houses for plantation labour in 8 plantations. There is a provision of 5 lakhs for this purpose in the Third Five-Year Plan.



A ward in the E.S.I. Hospital

As regards the work of employment assistance, a new Employment office for the physically handicapped has been set up with effect form 1st of April this year. An employment office was also opened at Neyveli in October 1961 especially for catering to the man-power requirements of the Neyveli Lignite Corporation, Government of India, at Neyveli. Employment Counselling units have also been established at Madras, Madurai, Tiruchirappalli and Coimbatore to advise youth in the choice of careers, occupation or training courses and two more units will be established at Vellore and Cuddalore shortly.

Employment assistance

An important landmark in the progress of the Employee's State Insurance Scheme in the State has been the extension of medical facilities under the Act to the families of insured persons. Approximately 39,000 family units are now provided with this benefit under this scheme in this State, and the extension of this service to other areas is under consideration.

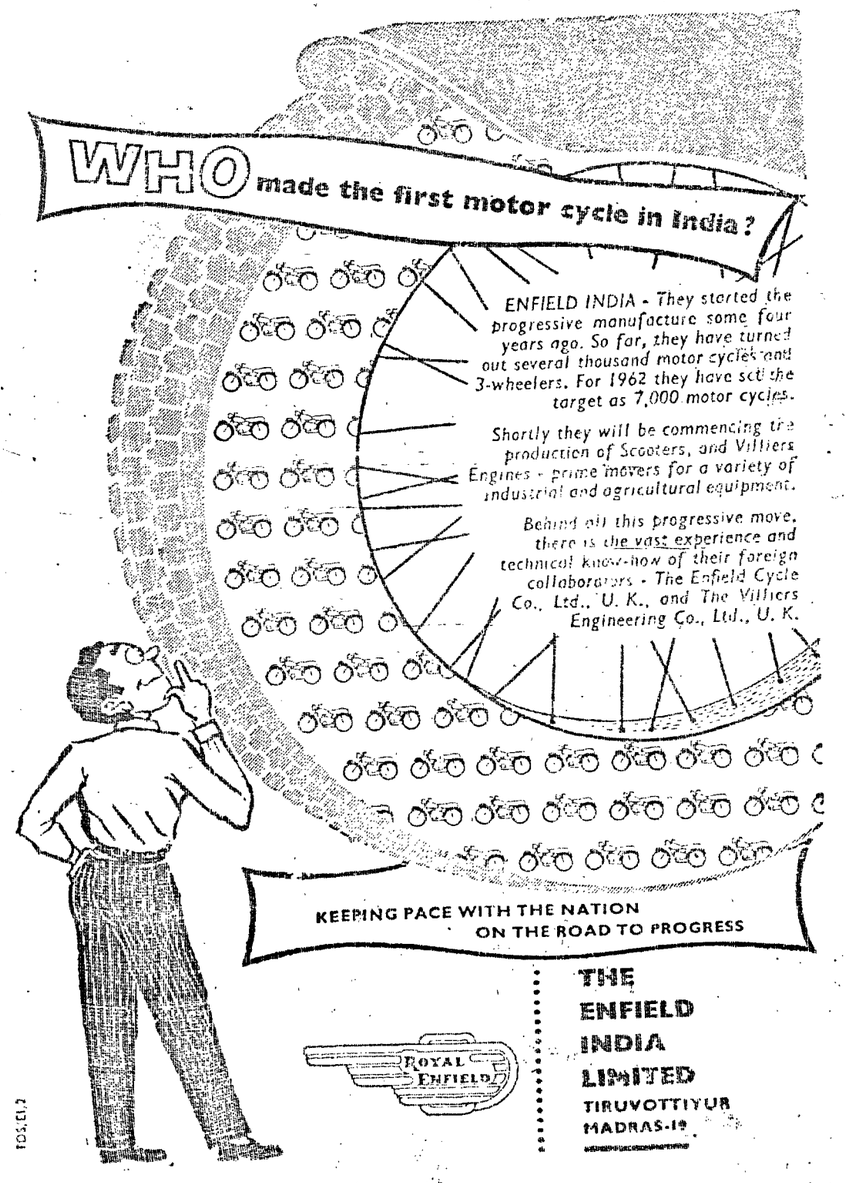
In the City of Madras, a full-fledged E.S.I. Hospital has been constructed at a cost of Rs. 27 lakhs with a bed strength of 175 at present and it has been functioning since last April. The hospital will have 863 beds. Steps are being taken for the construction of similar hopitals at Coimbatore and Madurai.

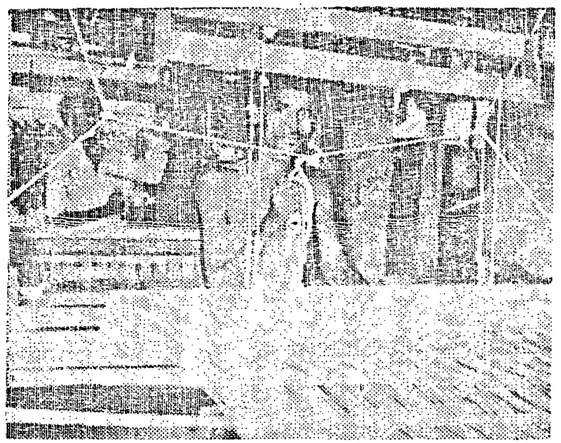
Education Scheme

The Worker's Education Scheme with its object of creating a well-informed and responsible industrial labour force capable of organising and running trade unions on sound lines has been making steady progress in this State. 112 worker Teachers drawn from various factories have been trained during the year and these worker teachers would in their turn conduct classes for their fellow workers. Trade Union leadership has to grow out of the ranks of the workers and this process will be steadily accelerataed as the workers education programme gathers momentum.

Sri M. Bhaktavatsalam, Minister for Labour addressing the Labour Advisory Board Meeting.







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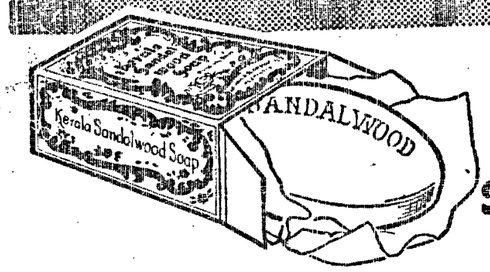
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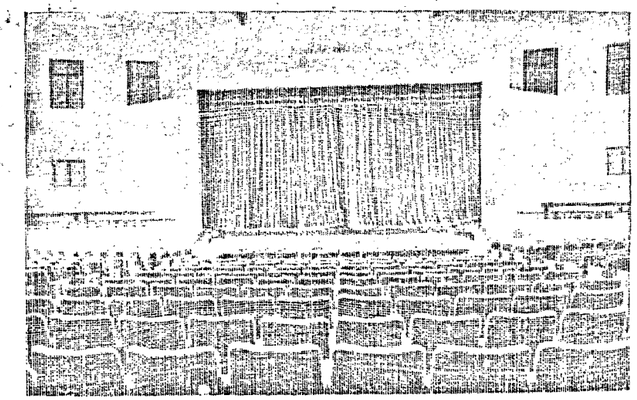




SEPTEMBER '62

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MADRAS Information

SEPTEMBER 1962

Volume XVI — No: 9

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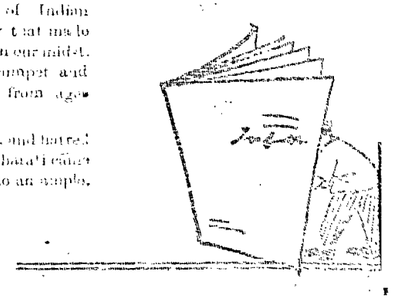
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THIS MONTH'S COVER

September 11th is the birthday of Kavi Subramanya Bharathi (1882–1921).

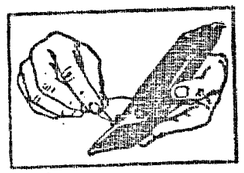
He was the morning star of the Tamil Renaissance and a poet of Indian nationalism, as his swadesi mitram he lived but brilliant summer in our midst. His voice sounded like a trumpet and stirred a stupified people from age-long slumber.

I was throng, love of country, and hatred of foreign domination that Bharati came to discover himself as heir to an ample and unparalleled heritage.

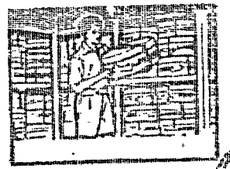


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Qualities of a Good Administrator

Dr. ZAKIR HUSAIN, *Vice-President of India*

The Vice-President Dr. Zakir Husain, asked the Indian Administrator to develop an attitude of "Complete service to the country". He emphasised the importance of ensuring "absolute impartiality towards and equal commitment to work for the welfare of all citizens". He said that the proper education and training of the administrator was one of the most urgent tasks of our democratic society. He added that "a sound, sane, sympathetic administration is the back bone of organised social existence". He was presiding over the Annual Day celebrations of the School of Public Administration at New Delhi.

The following is the full text of his speech :—

"It makes me happy to associate myself with any piece of educational work conscientiously and intelligently performed. It makes me particularly happy to associate myself with this School which, as the educational and training wing of the Indian Institute of Public Administration, is engaged in a work of considerable significance for the progress and prosperity of the country we all seek to serve. For sound, sane, sympathetic administration is the backbone of organised social existence.

Urgent task

The proper education and training of the administrator is one of the most urgent tasks of our democratic society.

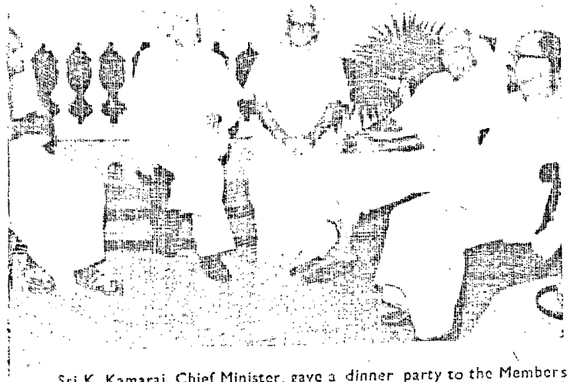
The process of education, if it is allowed to proceed unhampered, provides some, usually much, information, some, usually a few skills and trends, with highly variable success, to produce some attitudes among the educated.

"I do not wish to say anything about the skills. You will know if you don't have them. Their absence is usually unmistakable. With reference to information, I would like to say that unfortunately educational work not unoften reduces itself to the transmission of information accumulated by others. I am always tempted to remind people of the Persian proverb that seems to me to enshrine great wisdom : an ounce of information would require ten of understanding. The amounts in the original Persian are a maund and ten maunds, but that would be a rather heavy dosage for the sensitive stomach of the modern man. Yes, an ounce of information demands ten of understanding. The examinations are usually concerned with the one ounce, life needs the ten. You would not mind if I suggest to you how you can make information a real source of education and of developing understanding. You can do it if you don't accept information passively but work it up yourself. Information that you acquire yourself or information which you use to solve problems becomes transformed from an inert load into an active formative agent. I think the case study method introduced in your School will introduce you to this alchemy. I hope it will become a part of your intellectual make up.

Attitudes of Administrator

"With regard to attitudes, I have something to say—attitudes of the administrator and attitudes towards the administrator.

"I take the second first. We in this country have still a rather confused attitude towards our administrative machinery—perhaps understandably so. Before Independence, this administrative machinery was the operative agency of foreign rule. For long years it was thus in a static mass of apathetic, hopeless, visionless, inarticulate humanity, unmindful, by and large, of its obligations, ignorant of its rights and forgetful of its destiny. In its early



Sri K. Kamaraj, Chief Minister, gave a dinner party to the Members of the Legislature on 30th July 1962. Photo shows the Chief Minister with the Chairman, Legislative Council, the Speaker, Legislative Assembly and other Members

days, this administrative machinery, in spite of its being the tool of a foreign domination, was even liked and respected for its efficiency, its impartiality and its incorruptibility. But operating in a population, uneducated and illiterate, ridden with poverty and disease, politically dead and socially stagnant, without a word of valid criticism or a stirring of legitimate protest, would corrode and demoralise even the best administrative apparatus. The apparatus of British administration in this country was no exception and, in spite of the very limited scope of its operation mainly for the maintenance of law and order in a police state it deteriorated as it grew. And when the inarticulate began to speak up and the hopeless regained hope and the visionless began to march against the twilight of the coming day, this apparatus of administration, harnessed as it was to foreign rule became from the nature of the case, antagonistic to the national aspirations of the people, it increasingly lost touch with them. It alienated their sympathies. It came to be regarded not only with suspicion but with hostility as an engine of exploitation and oppression, geared to a system of government which Gandhiji brandmarked indelibly as 'Satanic'."

Inheritance

"This has caused considerable damage to our present administration when circumstances have so radically changed. The present administration has inherited some of that exclusive forbidding touch-me-not-ness, some of that stand-offish sense of superiority, some of that lack of sympathetic understanding which was associated with the administrator of the past. It also inherited, perhaps, some of that lack of initiative only natural in a circumstance where points of initiative were mostly occupied by the foreigner. It also inherited some of those narrower loyalties of community and caste and language and region which could flourish and grow under foreign rule, for allegiance to those narrower loyalties did not place any higher and larger loyalty in jeopardy. These and similar habits and attitudes cling to the administrator as remnants of a past they can never do too much to shake off. The people too, on their side, still seem, at times, to look upon the administration as if it were not their own, seem to enjoy finding fault with it, seem not infrequently to take delight in the use of their ingenuity to evade what the administrator is commissioned to enforce.

Administration of the people

"This is thoroughly bad—the one side as bad as the other for things have so fundamentally changed. We are face to face with a new life with new problems. The attitude of the people and that of the administrator have to undergo a radical mutual change. The people have to realise that the administration *is their own, their* instrument for the execution of *their* will. The administration has to realise unmistakably that it is such an instrument and to take pride in the privilege of being able to serve and through service to educate its masters, the people.

"In order to enable you to do this, you will have to develop attitudes which a prescribed syllabus cannot do much to foster. They are essentially a product of the process of self-education—and in cases like yours self-education is the best part of education. I would mention a few attitudes which I think the Indian administrator should endeavour to develop in himself.

Prefer Service to Rule

"The first is the attitude of consciously and consistently preferring service to rule. In the expanding democratic life of this country, there is not much room for people who find their greatest satisfaction in imposing their will on others and in demanding and receiving unquestioning compliance. The administrator to-day has to work among people who after long years of sullen unquestioning compliance have at last come into their own. The basis of that compliance has radically changed. The obedience to the dictates of an alien power backed by force has been replaced by a democratic Government of the people's choice, committed to their service and ultimately responsible to them. Unquestioning obedience has to give place to intelligent and understanding acceptance.

"This should affect your whole attitude to human relations with the people in general and with the teams in which you work, your attitude to your superiors and inferiors. It will perhaps lead you to evolve a technique of open and frank communication in good faith allowing no tales to be secretively carried to you or by you. It will perhaps help you in not being in a hurry to judge or to let down a subordinate and in not making special pets or favourites. It will perhaps give you an inner resistance against sycophants. It will, perhaps, give you a quality of self-criticism and inner vigilance which may enable you to resist what pleases you to hear. A person who has developed this pattern of attitudes can fruitfully co-operate with others and get the hearty co-operation of others. And this is to be one of the outstanding qualities of future administrators in our country."

Loyalty to People

"Finally, there is the attitude of absolute impartiality towards and equal commitment to work for the welfare of all citizens it is your privilege to serve. You should learn to see your face resolutely against any narrow sectional loyalties. Your loyalty is to the people of India without any distinction, to their politically organised society, the Indian Union. Your action—even sub-consciously should not be actuated by any narrower loyalty. For remember that is a cancer that can eat into the vitals of our body politic and damage it, may be beyond possibility of repair. You should resolve, each one of you, to cut it out and wait for no one to do it before you."

"If you succeed in developing these attitudes, you will be anxious, wherever you may be placed to do whatever lies in your power to enlist the active and effective co-operation of every Indian villager in the great enterprise of building up a life free from hunger, want, ignorance and disease, a pattern of non-exploitative and graceful living together. It is a great dream and does not seem easy to realise, but given (1) the administrator, with utter devotion to public interest, with imagination and vision, initiative and judgment, open-mindedness and tact and (2) at the base of our political and social existence, an upright, diligent, independent peasant who would respond intelligently to the great challenge of change and improvement as it reaches him from the best minds of the country and who is capable of keeping the administration straight, not letting it dominate and not permitting it to be corrupt, you given these two, the dream can be realised. I trust it will be realised. Blessed are they who can make a contribution to its realisation."

Integrated Women's Programme - Madras Model Recommended

States have been asked to integrate on the Madras pattern, the various agencies working for women's welfare in order to bring about a more effective implementation of the programmes. A strong recommendation to this effect has been made by the Women's Advisory Committee of the Community Development Ministry, at its meeting last month. Madras State has given a lead by integrating the three agencies working for women's welfare—Women's Welfare Department, State Social Welfare Board and the Community Development personnel. These have been welded into a single administrative agency. The Madras model, it was felt, could be adopted by other States with modifications to suit local exigency.

Under the Madras scheme, at the district level each Development District has a committee consisting of the Chairman of the Block level Committees in the district and co-opting four voluntary social workers. It is presided over by the respective member of the State Social Welfare Board in that district. A departmental officer at the district level is the ex-officio Secretary of this Committee. She renders advice and guidance to the Block Committees and to the workers. At the block level, work is administered by a committee of Panchayat Unions called the Women's Welfare Committee. It is composed of the Chairman of the Panchayat Union and two women members of the Panchayat in the block and two voluntary women workers to be co-opted with the State Board's recommendation. It is stipulated that the chairman shall be a woman. Besides these steps, the Madras Government have also constituted a Women's Welfare Committee at the panchayat level

NEW DEAL FOR TEACHERS



President Dr. Radhakrishnan's birthday (September 5) is being celebrated all over the country as the Teachers' Day. This article highlights the various measures taken by the Government of India and the Government of Madras during the last few years to raise the status of teachers in society.

Builders of the nation—School teachers will be given a new deal when the National Foundation for Teachers' Welfare starts working.

With an ex-gratia grant of Rs. 5 lakhs from the Government of India and a target of Rs. 5 crores to be raised from the people, the Foundation is to channelise private philanthropy for the laudable object of providing assistance to teachers in indigent circumstances. It would look after the welfare, the intellectual, the moral and the physical welfare, of teachers and their families.

"Plain Trust"

The Foundation, which will be supervised by a Board of Trustees headed by the Union Education Minister, is conceived of as a "plain trust" that is, a trust the property of which is in the nature of current or recurrent voluntary contributions (and any investments representing accumulations thereof) all of which are capable of being expended.

Eventually it may happen that the foundation may become a mixed trust inasmuch as it may also acquire property in the nature of perpetual endowment so that the capital, whether it be the form of monetary investment or landed interest, has to be kept in tact and the use of the income only is available.

The National Foundation would also set up its units in States and Union Territories. To enlist local support, special emphasis would be given to the interest of the principal areas of collection. This is the only way of ensuring that local acts of private giving are not deemed to be merged in some vast undifferentiated pool of charity. A certain percentage of collection would be retained in the State for expenditure on Trust purposes. The balance would flow to the parent Trust of the National Foundation for equalisation purposes. This will ensure that the regional beneficial area is retained and included in an extended area. It would also be desirable to give powers to the National Foundation (parent trust) to transfer funds from one part of the country to another.

Although it would be free to receive donations throughout the year, the Foundation would observe a particular day—Teachers' Day, when a special concerted drive ought be launched to associate with this act of private charity as large a number of persons as possible.

It is not a substitute for the measures that Government would continue to take to improve the teachers' working conditions. It only provides the means through which the community can give concrete expression to its respect for the teacher.

Other Welfare Measures

For the last fifteen years, the Government of India are constantly endeavouring to improve the condition of teachers.

A comprehensive review of salary scales of primary school teachers was made at the end of the First Five-Year Plan. It was found that the pay scales of primary and secondary teachers were still very low, though annual average salary of a primary school teacher had gone up from Rs. 644 in 1951-52 to Rs. 651 in 1955-56. A special scheme was, therefore, introduced in the Second Five-Year Plan under which assistance was given to State Governments on a 50 per cent basis for upgrading the pay scales of primary and secondary teachers. Most State Governments and Union Territories have upgraded the scales of pay of teachers. At the end of the Second Plan the annual average salary of a primary school teacher had gone up to Rs. 815.

In the Third Plan period, the effect for improving salary scales, extension of Provident Fund Schemes and provision of other essential amenities, is to be intensified. It is hoped that annual average salary in 1965-66 will rise to Rs. 900.

A Word to Teachers

"This country has grown by perpetual self-renewal. It has kept its vitality today because it has the capacity to cast away things which were obnoxious and we must have that kind of capacity even today. Our teachers therefore are the reservoirs of this new spirit, the new spirit of adventure in intellectual matters, in social matters and in political matters. If you do not have that spirit, you can't communicate that spirit to the youth, who are trusted to your care. Therefore, I appeal to the teachers that if the generous youth, hospitable youth, adventurous youth, courageous youth whom we have in this country, if they are to be utilised for building up a new country, a new India, a new society, the beginning must come from the teachers themselves. They must know what this country stands for and they must be able to communicate that vitality, not merely instruction."

Let me tell you, the boys don't care for what you teach them but they care for the example you set. It is not merely the instruction which you impart to them in the class room but the kind of life you lead. You think that they don't see it but they have eyes to see and ears to hear. They know everything about their teachers and if they have no respect for the teachers it is because they know more than they ought to know, more than what you expect them to know. Therefore, it is education, it is instruction, it is knowledge and it is also the example which the teachers give.

—Dr. Radhakrishnan.

Another far reaching scheme aimed at providing financial relief to school teachers is now being implemented by the Union Education Ministry. Under this Scheme, talented children of primary and secondary school teachers are given scholarships for higher studies. A total of 500 fresh scholarships are being awarded each year on an All-India basis for the courses of studies which the selected scholars wish to follow. The scholarships once awarde are tenable from the start of the University course till the end of the chosen course of study.

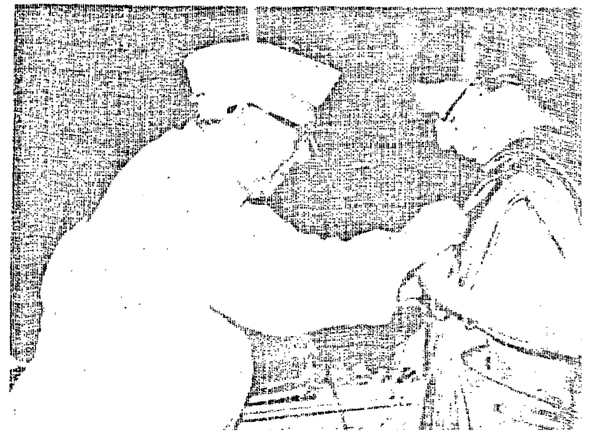
To attract talented persons in the teaching profession, a scheme of "loan scholarships" is now being worked out. Intelligent and deserving students would be given the scholarship. In the matter of repayment of loans, a rebate of ten per cent would be allowed for every year of service put in the teaching profession.

The Union Education Ministry has also taken up with the Railway Ministry the question of revival of the travel concession to teachers, which was suspended because of alleged misuse by some.

National awards

In order to raise the prestige of teachers and to give public recognition to distinguised teachers who have rendered meritorious service to the community in their professional life, the Government of India have instituted what is known as "National Awards for Teachers" since 1958-59. Each award consists of a certificate of merit and a cash sum of Rs. 500. In the first year the number of Awards was limited to 32, it has since been raised to 85. The awards are given away by the highest executive of the land—the President of India—at a special annual function held at the capital.

Presentation of State awards to Elementary School Teachers. Kumari Kanakasundaram of Madras is receiving the Medal from the Governor.



Benefits for the Teachers

A number of concessions have been extended by the Government of Madras to teachers towards improving their standards of living. Since 1956 their emoluments have been increased by Rs. 17 per mensem at a cost of Rs. 2 crores per annum to the Government.

During the Second Plan period, the Triple Benefit Scheme (Provident Fund, Pension and Insurance) and free education to the children of the teachers have been introduced. Particulars of some of these benefits are given below :—

(1) Conferring of pension benefit to teachers in both elementary and secondary schools, drawing a salary of Rs. 100 and below who retire after 1st April 1955 (in 1956).

(2) Free education up to S.S.L.C. for children of elementary school teachers (in 1957).

(3) An increase of pay and dearness allowance of Rs. 12 for all teachers (in 1956-57).

(4) Extension of free education to children of high school teachers (in 1958).

(5) Extension of pension scheme to teachers in high schools and training schools including general schools (in 1958).

(6) An additional amount of Rs. 5 to the dearness allowance was given with effect from December 1958 (in 1959).

(7) Elementary school teacher was given an increase in emoluments of Rs. 17 per mensem. The recommendations of the Pay Commission on the salary of the teachers have also been accepted in full (in 1960).

As a result of the revised scales of pay introduced from June 1960, the pensionary benefit of Headmasters, B.T. Assistants, etc., of non-Government secondary and training schools has been liberalised so as to increase the maximum pension to Rs. 75 per month in the case of Headmasters and Rs. 60 per month in the case of B.T. Assistants, Ist Grade Pandits, etc.

(8) (i) The employment of trained graduates as Headmasters of higher elementary or senior basic schools with a strength of 400 and above on the scale of grant (Rs. 140–250) applicable to such teachers in aided secondary schools is permitted.

(ii) With a view to improving the teaching of Tamil in higher elementary or senior basic schools, the employment of separate Tamil Pandits in such schools with four or more sections in new Standard VI and above is permitted.

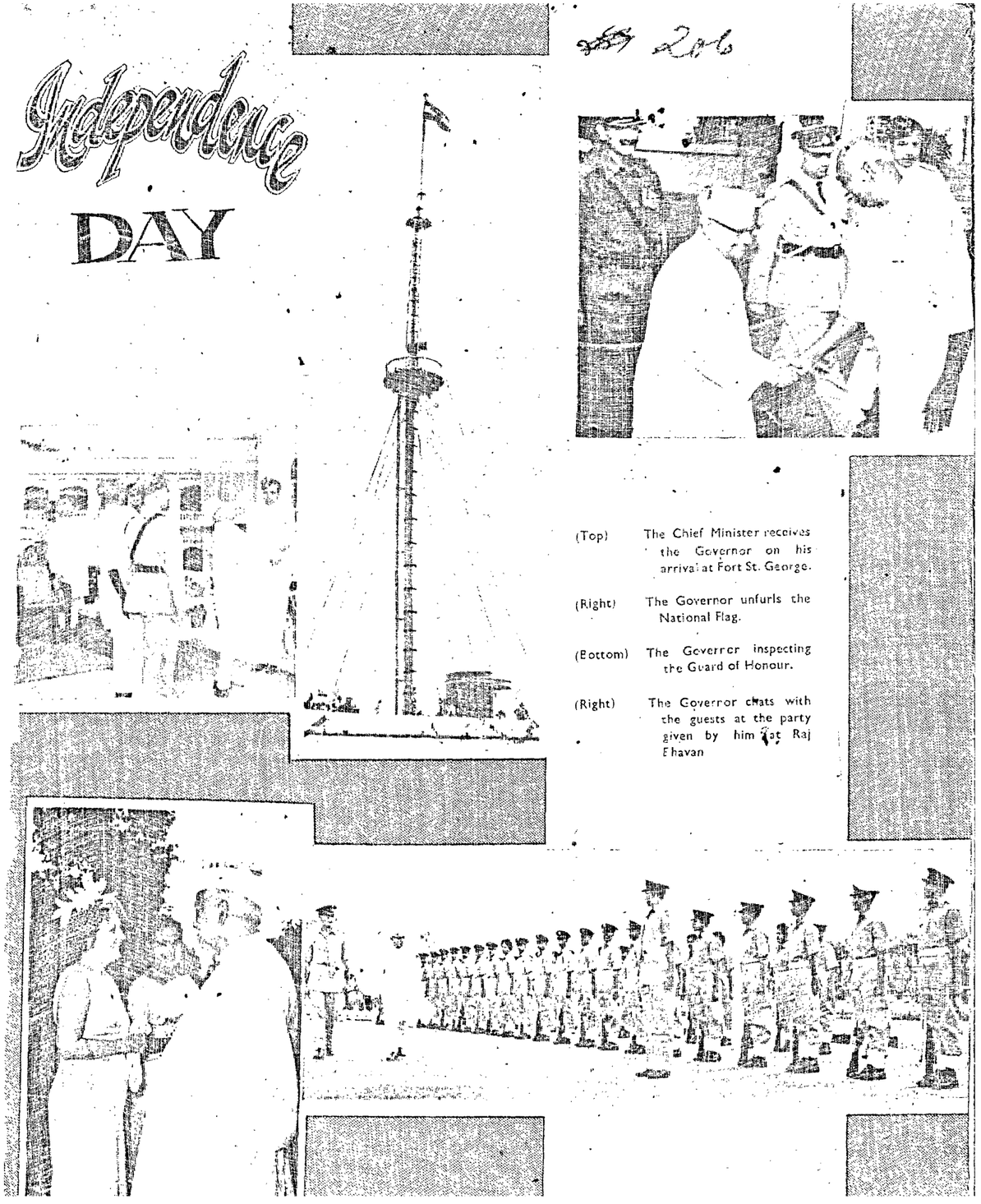
The scales of grants to teachers in aided schools are the same as the revised scales of pay for corresponding categories of teachers in Government service.

(9) The scheme instituted by Government for recognition of meritorious services rendered by elementary school teachers is in force from 1959-60. The annual awards are conferred on two teachers selected from each education district in the State and each award is in the form of a cash prize of Rs. 200 in prize bonds and a certificate of merit. For 1960-61, 47 teachers received the awards in 1961-62; each of them was also given a silver medal worth about Rs. 30. The awards for 1961-62 will be made in 1962-63.

(10) The scheme giving loans to students in engineering education envisages the grant of interest-free loans to students studying in the Post-matric professional courses in this State to the children of N.G.O. servants and teachers in elementary and secondary schools in the first instance.

The photograph published along with the article "The Techniques and Tools in Agriculture" on page 38 of the last issue of "Madras Information" is that of "a well raised coconut nursery."

Independence DAY



(Top) The Chief Minister receives the Governor on his arrival at Fort St. George.

(Right) The Governor unfurls the National Flag.

(Bottom) The Governor inspecting the Guard of Honour.

(Right) The Governor chats with the guests at the party given by him at Raj Bhavan

Industrial Pattern & Prospects

SRI T. K. PALANIAPPAN, M.A., I.A.S.,
Secretary to Government, Industries, Labour and Co-operation Department, Madras.

** The progress that have been made in the industrial sphere in the past ten years is quite remarkable.*

** Not only has Madras been successful in harnessing all the available water sources for both irrigation and power but the State has also made significant progress in the establishment of a variety of engineering industries.*

** The skill and intelligence of its workmen and the enterprise of its businessman have made up for the lack of natural resources to a decree which is remarkable.*

** The pragmatic and realistic policies of the Madras Government have made no small contribution of this development.*

** The growing industrial complex around Madras City along the main arteries to the north, west and south bears testimony to the dynamics of industrial development that has been made progress during the past decade.*

Madras has all along been agricultural in character. A good proportion of its cultivated area is irrigated and with the wide-spread use of fertilisers, the yield per acre of most crops has increased but the benefit of this increased production is set off by the excessive population. Unless the surplus working force engaged in agriculture is reduced and that force diverted to industries, it will be impossible to achieve an increase per worker output and per capita income of the population depending on agriculture.

Development of industries is not only the most important source of employment but is also the base for technological and institutional changes which are important pre-requisites of economic growth. The principal factors that decide the pattern of industrial growth of a State are its natural resources, raw materials, availability of water and power, and transport facilities for the quick movement of both raw materials and finished products.

Congenial Climate

Madras State is not rich in mineral or forest resources. Its water resources are limited and it has to face considerable difficulties in getting transported iron, steel, coal and other fuel, from the northern States where the steel plants and coal fields are located. But Madras is favourably placed in respect of certain factors such as availability of skilled labour, efficient engineering and managerial personnel, extensive electrification, fairly well-developed roads, and transport system within the State, constructive labour union leadership, political stability and sound administration; as a result, the climate for industrial growth is congenial for industrial entrepreneurs to invest their earnings in industries. Raw materials locally available in the State are utilised to produce consumption goods like textiles, sugar, vegetable oils and leather. In planning for industrial development, it is important to choose industries which are linked with further industrial development.

Public Sector Projects

The Public Sector projects on which work has already commenced are the Surgical Instruments Factory at Guindy, which will be producing about 2·5 million pieces of surgical instruments, the Raw Film Factory at Ootacamund which will produce cinema, X-ray and photographic films, the Teleprinter Factory, Guindy, and the High Pressure Boiler Factory, Tiruchirappalli. The Integrated Neyveli Project which envisages the mining of 3·5 million tons of lignite per annum and establishment of a power station with an installed capacity of 400 M.W. is expected to revolutionise the industrial growth in the State.

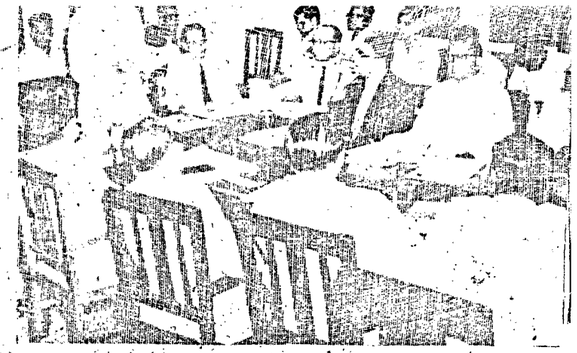
The Integral Coach Factory at Perambur, is now producing about 600 coaches per annum. A furnishing unit has also been established which will go into full production by the middle of the Third Plan, thereby enabling all coach shells now produced to be fully furnished before their departure from the factory premises.

A rapidly increasing demand for iron and steel products and the difficulties experienced in bringing them from factories in the north has necessitated the efforts for setting up an iron and steel plant using the substantial deposits of magnetite iron ore and the flux grade limestone available in Salem district and Neyveli lignite. With the completion of the Integrated Neyveli Project and the development of Steel and Aluminium Industries, the prospect of setting up a large number of engineering industries around these areas is bright.

Engineering Industries

The Private Sector Engineering industries, the second largest group of industries both in terms of employment and output, have registered considerable growth in recent years. A large number of engineering workshops were set up for the manufacture of diversified engineering products. The range of production is quite impressive. The Standard Motors, Vandalur, licensed for a capacity of 3,000 small cars per annum has reached full capacity and has a programme to increase the output to 6,000 cars and 1,000—1,500 one-ton trucks per annum. Ashok Leyland, Madras, licensed for the manufacture of 5,400 chassis and 1,200 heavy duty Titan chassis per annum are producing about 2,400 comet chassis and 60 heavy duty Titan chassis per annum. Other companies such as Simpsons, India Pistons, T.V.S. and Union Company have been licensed to manufacture diesel engines and automobile components and accessories. The T.I. Cycles of India, Ambattur, producing about 3 lakhs cycles per annum is one of the biggest cycle manufacturing units in the country. The manufacture of scooters and engines for scooters and motor cycles has been programmed by the Enfield India, Limited, Madras.

Iron and steel materials, are in short supply in this State and development works of various departments of this Government are often held up for want of these structural materials. The Public Works Department alone would be requiring about 80,000 tons of iron and steel material during the Third Plan period. It is, therefore,



The State Industries Development Committee Meeting was held at the Secretariat on July 24th 1962 Sri R. Venkataraman, Minister for Industries presided.

considered necessary to set up a steel re-rolling mill in the public Sector with an annual production capacity of 20,000 tons.

Textile Mills

Industries based on agricultural raw materials are textiles, sugar, food processing and forest-based industries. There are about 134 textile mills in this State out of which 109 are purely spinning mills and 25 are composite mills and they account for 3·14 million spindles, out of a total of 13·66 million spindles in the country. The textile mills are mostly concentrated in Coimbatore and Madurai districts. Twelve new spinning mills have been licensed during the year 1961–62, of which four are in the co-operative sector. The Madras Government have taken special care to have the new mills located in underdeveloped and unserved areas. It is proposed to set up during the Third Plan period four more co-operative spinning mills. The Government are considering the feasibility of setting up a co-operative mill in each district. South India Viscose, Limited, has set up a factory at Sirumugai in Coimbatore district for manufacture of staple fibre and rayon yarn and it has been in production from January 1962.

Sugar Production

In 1953, there were only 3 sugar factories in this State, one at Nellikuppam (South Arcot district), one at Pugalur, Tiruchirappalli district and another at Pandiarajapuram, Madurai district, with a total crushing capacity of 3,500 tons of cane per day. During the Second Plan period, two factories in the private sector and three factories in the co-operative sector went into production with a total crushing capacity of 4,200 tons of cane per day. The present production of sugar in the eight factories is about 127,500 metric tons. Licences have been issued to the following eight new sugar factories :—

(1) Kothari Sugars, Limited, Lalgudi, Tiruchirappalli district.

(2) Aruna Sugars, Limited, Pennadam, South Arcot district.

(3) Salem Sugar Mills, Limited, Mohanur, Salem district.

(4) Champaka Sugar Plantations, Limited, Kumarapuram, Thanjavur district.

(5) National Co-operative Sugar Factory, Samayanallur, Madurai district.

(6) Sakthi Sugar Factory, Kavundapadi, Gobichettipalayam taluk, Coimbatore district.

(7) Kallakurichi Co-operative Sugar Mills, Kallakurichi, South Arcot district.

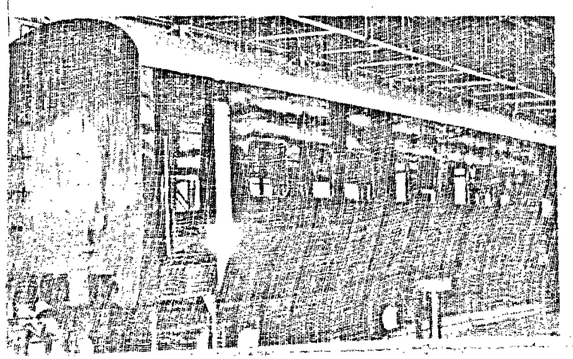
(8) South India Steel and Sugars, Limited, Mundiampakkam, Villupuram taluk, South Arcot district.

Three of these are likely to go into production in 1963. In view of the surplus sugar position in the country, the chances of licensing additional sugar factories in the immediate future are nil. Proper utilisation of some of the by-products of sugar industry such as molasses, bagasse, etc., needs no emphasis. A licence has been granted for setting up a central 2 million gallon power alcohol plant in Tiruchirappalli district. Eight firms have been granted licences for setting up paper, pulp and straw board factories in the State. Seshasayee Paper and Boards, Limited, whose factory is being set near Erode will have a capacity of 20,000 tons of paper per annum and is expected to go into production in 1963. The other factories are also expected to come up soon. The Government of India have for the present banned further licensing of paper industry but they would consider small paper mills with a capacity of less than ten tons a day.

Mineral-Based Industries

Barring the Cement Industry, the prospects for other mineral based industries are only modest. At present four units manufacture portland cement in the State—one at Madukkarai, Coimbatore district, another at Dalmiapuram, Tiruchirappalli district, the third at Thulukkapatti in Ramanathapuram district and the fourth at Talayuthu in Tirunelveli district with a total capacity of 1,486,710 tons per annum. A licence has been granted for setting up a new cement factory at Sankaridurg, Salem district. It is likely that another factory might be set up in Karur-Dindigul region where large deposits of limestone have been reported. An application for setting up another cement factory at Pamban is under the consideration of the Government of India.

A finished Railway Coach at the Integral Coach Factory, Perambur.



The State has the largest deposit of high grade magnesite in India, an important refractory material. Licences under the Industries (Development and Regulation) Act have been issued to six factories for a total capacity of 125,844 tons of refractories. Two units have been licensed for the manufacture of sanitary ware—one at Ranipet for 1248 tons and another at Cuddalore for 1,200 tons of sanitaryware and 1,800 tons of glazed wall tiles. Licences have also been granted to two units for the manufacture of insulators for a total capacity of 3,000 tons of H.T. and 1,200 tons of L.T. Insulators. One of them will be set up at Serakuppam, Vadalur and the other at Saidapet, Chingleput district.

Manufacture of Chemicals

Madras is one of the largest producers of common salt which is an important raw material for manufacturing chemicals such as caustic soda, soda ash and chlorine, which find application in a wide variety of industries. The Dhrangadhra Chemicals, Limited, Sahupuram, Tirunelveli district and Mettur Chemicals, Limited, Mettur, manufacture Caustic Soda. There is no soda ash factory in this State now. A soda ash plant of a capacity of 200 tons per day can be set up in this State at a place along the Coast line. The Industrial Chemicals, Talayuthu, licensed to produce 10,000 tons of calcium carbide is now working to capacity. The Dhrangadhra Chemicals, Limited, has also recently been granted a licence to manufacture calcium carbide, P.V.C., high test hypochlorite and Trichlor and Perchlor Ethylene. There is good scope for manufacturing Ammonium Chloride (fertiliser) also in this factory. Another P.V.C. factory will be set up at Mettur by India Cements, Limited.

Bitterns, the thick liquor left behind, after the salt crystals are separated from brine, is the source of several valuable chemicals such as pottasium chloride, magnesium sulphate, magnesium chloride, bromine and gypsum. Wimco and Seshasayee Brothers, Limited, have recently obtained licences for the manufacture of certain marine chemicals and they propose to set up the factories near Vedaranyam, Point Calimere in Thanjavur district.

The Neyveli Lignite Corporation is expected to produce 70,000 tons of nitrogen in the form of urea and Parry and Company, Madras, has been licensed to produce 8,100 tons of nitrogen in the form of Ammonium Phosphate. Kothari and Sons have been licensed to set up a factory at Tuticorin to manufacture 3.96 lakh tons of Ammonium Phosphate (63,360 tons of Nitrogen). When all the licensed factories go into production, the State will become self-sufficient in regard to nitrogenous fertilisers.

The present installed capacity of super phosphate is about 1.25 lakh tons distributed between Shaw Wallace and Company, Avadi (75,000 tons) and Parry and Company, Ranipet (50,000 tons). Three more units have been licensed for a total capacity of 1.28 lakh tons—one at Ennore (48,000 tons), another at Cuddalore (40,000 tons) and the third at Coimbatore (40,000 tons). Licensing for a further capacity of 70,000 tons in terms of super phosphate may be necessary to bridge the gap.

Regional Distribution

Madras City and the neighbouring localities of the Chingleput district have the largest concentration of engineering industries with consumers ranging near in manufacturing units. The Chemical and other industries, are, however, dispersed in different districts with reference to nearness of raw materials and the economic location of these industries. While every attempt is being made to avoid a regional imbalance in the distribution of industries within the State, it is difficult to channelise industrial growth on any rigid pattern.

The pattern of the existing regional dispersal of large scale industries licensed under the Industries (Development and Regulation) Act, 1951, is shown in the table below :—

TABLE.

District.	*Number of industrial undertakings.*
Madras	90
Chingleput	74
North Arcot	6
South Arcot	10
Coimbatore	134
Nilgiris	2
Salem	24
Thanjavur	7
Tiruchirappalli	18
Madurai	21
Ramanathapuram	40
Tirunelveli	27
Kanyakumari	3

With the completion of the Integrated Lignite Project and the Steel Plant at Salem, a large number of light engineering industries may be expected to come up in Salem, Coimbatore, South Arcot and Madras. The establishment of three alloy steel plants in the State will also promote new engineering industries such as ball and roller bearings, machine tools and various types of industrial machinery. There is a great scope for the manufacture of automobile ancillary part such as pistons, valves, clutch plates, break-linings ball-bearings, shock-absorbers, electrical equipment for automobiles, service equipments, etc. In the South, the coastal districts of Thanjavur, Tirunelveli and Ramanatha puram would be suitable for the development of a large number of chemical industries. The setting up of a soda ash plant in one of the coastal districts where salt would be available in adequate quantities will be worthwhile. The possibilities of setting up petro-chemical industries are being examined by the sub-committee appointed for the purpose. In areas where large scale industries have less scope for development, small scale industries will fill the gap.

There are very few major undertakings engaged in the manufacture of paints and varnishes in this State. The current production of paint and varnishes in the country is about 50,000 tons. The Government of India have decided to licence additional capacity and intensify the export in the Third Five-Year Plan period. Therefore, there is good scope for this industry in this State.

Hides and Skins

Madras State is one of the largest producers of hides and skins in the country. Tanning materials such as Avaram Bark and Myrobalams are plenty in Madras and the adjoining States. They are famous for imparting characteristic colour and tanning properties. The industry has been in the hands of small scale and cottage tanners. With the establishment of the Leather Technological Institutes and the availability of technical personnel, the East India kips and skins which are being exported in semi-tanned condition can be processed, finished and exported according to the needs of the European countries. This industry could profitably be set up in Vaniambadi and Ambur in North Arcot district where there is a large number of small tanneries. There is a good prospect for setting up a shoe manufacturing factory like the Bata's in this place.

The achievements of Madras State in implementing the industrial programme have not been insignificant. There is yet need for more coordinated efforts for planning for the future. Data on many aspects of industrialising every district in this State are being collected. No substantial effect is possible unless entrepreneurs come

forward in large numbers to invest their capital in industries. Indian investors, like investors everywhere, look for investment in an industrial project which has an assured market, good management and prospects for growth. They need information and guidance about what they should do by way of formalities to obtain licences from the Government and eventually establish the projects they have in view. The Government have decided to set up an Information Centre which will collect and publish basic data on the possibilities of setting up new industries and maintain information files on all matters affecting development of industries in this State.

Government Assistance

The Government have been providing the necessary impetus, encouragement and assistance to enable industries to develop. Whenever industrialists were in need of assistance for securing lands needed for setting up industries, the Government have been making lands available to them either by acquiring suitable private lands or by assigning Government poramboke lands if available. Electric power is supplied to industralists at economic rates where the cost of power consumed constitutes a significant portion of the production cost. The Madras Industrial Investment Corporation grants financial assistance to industries for purchase of machinery, working capital, building, etc. These incentives will encourage industrialists to stake their future in industrial development and build an economy that will place the State on the road to full employment and better living standards.

The Licensing Committee of the Government of India has indicated that there are prospects for licensing industries for the manufacture of C.I. Castings, steel forgings structurals, chilled iron shots and grits, box strappings, processed food products, flame-proof motors, steel rolled rings, and plate glass. Eventhough a large capacity for castings and forgings has been planned, further capacity could be licensed for mechanised units capable of manufacturing quality castings. The demand for chilled iron shots and grits being a general use item will go on increasing with the development in mechanised foundries. Steel rolled rings find use as races in the ball and roller bearings required for axle boxes. It is estimated by 1965-66 over 3 lakhs numbers of steel rolled rings may be required. They are not being manufactured in the country now and it would be worth while to establish a unit in this State.

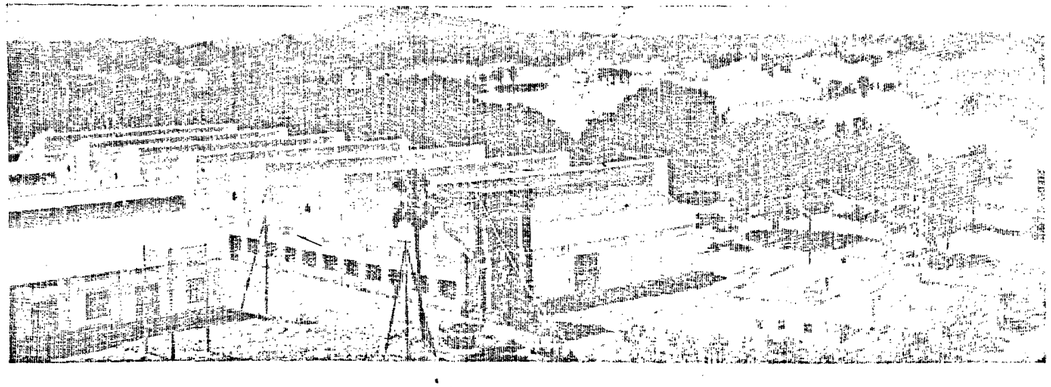
Preservation of food articles by accelerated freeze-drying is another promising line. An industry of this nature may be a good foreign exchange earner and can be set up in Nilgiris district. Plate glass is required for manufacture of safety glass for automobile industry, mirrors, table tops, etc. There is not much production of plate glass in India and a substantial part of our requirements is being met by imports. An economical unit of plate glass manufacture must have a capacity of 10 million square feet or 18,000 tons per annum.

Other industries which offer scope for establishment in this State are manufacture of electrical instruments, radio components, automobile accessories, transformers, electrical meters, etc. There are several other industries which offer good scope for development.

Small Industries

The development of small scale industries is an accepted objective of our national economic policy and an effective method for raising the employment potential and national

A view of the Industrial Estate, Guindy, Madras.



income, for meeting the increasing demand for consumer goods and for decentralisation of industrial activity. The small scale industries development programme has a vital role to play in the social and economic life of our nation which has a commendable record of achievement of the Second Five-Year Plan obejctives and which is making rapid progress in the Third Five-Year Plan programme. In this historic nation building activity, Madras State has made a notable progress during the Second Five-Year Plan by the necessary impetus given through the establishment of several industrial estates and colonies, tool room shops, common service facility schemes, pilot production centres, training and demonstration centres, social welfare schemes, technical information section, raw material depots, industrial co-operatives and sales depots, and the provision of loans under the State Aid to Industries Act. However, much remains to be done before we can hope to catch up with the more industrially advanced states in this country. It is acknowledged on all hands that the growth of small scale industries is not a transitional phase in the process of the economic growth of the country but has to stay as a permanent feature of our economy.

To carry the message of the development of small scale industries further and to accelerate the tempo of the work due consideration has been given while formulating the programme for the Third Plan period. Small scale industries have to function mainly in the private sector. Outlays in the State Plan have therefore been devoted to making adequate financial and technical facilities available to them. Considerable emphasis has been laid on the programme of giving loans under the State Aid to Industries Act. The problem of developing small industries is indeed so big that the different aspects regarding materials, production, technical skill, quality control, finance and marketing, etc., cannot be tackled separately but have to be considered together.

Systematic Survey

A prerequisite for industrial expansion anywhere is a proper and systematic survey of the existing industries and potentialities for starting new industries. The economic investigation team attached to the Small Industries Service Institute, Madras is conducting such surveys in the districts and the results are published as area survey reports which are available to the industrialists. Under the programme of District Surveys, the State Industries Department have also sanctioned staff for collecting statistics of the existing units. In order to ensure the success of the small scale industries provision of common services and other facilities have to be made for the benefit of entrepreneurs. Under the programme for the provision of Common Service facilities of the State Government, it is proposed to open four more Common Lease Shops besides expansion of the Common Lease Shop, Guindy, one more Forge and Heat Treatment Shop at Coimbatore besides the expansion of the existing Forge and Heat Treatment shop at Guindy and one Saw Mill and Wood Working unit at Karugadi. The service facility centres such as the Precision Instrument Shop, Guindy, the Pressed Metal Products Unit at Wall-tax Road and the Leather Finishing Unit at Ambur will be expanded. In view of the popularity gained by the Tool Room Shops it has been proposed to expand the existing Tool Room Shops at Guindy and Erode and set up seven more Tool Rooms in other Industrial Estates. Establishment of seven General Purposes Engineering Workshops have been sanctioned at Karur, Namakkal, Tiruppur, Villupuram, Nagercoil, Mayavaram and Tuticorin. Provision for Technical aids such as opening of Technical Information Centre, Testing Laboratory, Tool and Die Designing Centre and securing the services of foreign and Indian Experts in specialised fields, provision of training facilities by opening training institute for wood working, die sinking, forging, ceramics, tool and die making etc., are some of the important features introduced under the Third Plan Programme.

State Aid to Industries

It is recognised that the spurt in industrial growth is closely linked with the availabiltity of capital by way of credit and advances. Due to the liberalisation of rules regarding the provision of loans under the State Aid to Industries Act the results achieved in this State are encouraging. A sum of Rs. 127 lakhs has been provided for sanction of loans to the small industrialists during the Third Plan period. A sum of Rs. 33·74 lakhs was sanctioned to the industrialists during 1961-62. It is hoped that the credit guarantee scheme of the Reserve Bank of India and the assistance rendered by the State Bank of India will go a long way in helping the small industrialists. The Industrial Co-operative Bank which was started recently will meet the much needed credit requirements of the Industrial Co-opeatives and other entrepreneurs.

Industrial Estates

Past experience shows that the industrial estates have made notable contribution to industrial growth by creating the necessary climate for the starting of new industries. The total provision for Industrial Estates during the Third Plan is Rs. 4·08 crores including Rs. 1.08 crores for Co-operative Industrial Estates. The schemes for the establishment of private industrial estates submitted by the sponsors are examined and approved by the



A view of the spinning mill.

Government on the merits of each case and assistance is given under the following pattern of assistance :—

(i) The private industrialists and co-operatives should raise by way of share capital at least one-fifth of the total cost of the industrial estate including the cost of land.

(ii) The State Government will advance loans in respect of the balance share capital after the initial share capital is subscribed.

(iii) The loans advanced will be repayable in fifteen years.

(iv) The rate of interest will be three per cent per annum during the first five years to be stepped up to 4½ per cent by an increase of ½ per cent per annum during every year thereafter.

(v) The free services of an Administrative Officer for each of the estates will be sanctioned for an initial period of three years wherever necessary.

The different types of Government Industrial Estates to be established at various places tentatively proposed are as follows :—

Name of the Scheme.	*Physical Targets.*
1. Work-sheds in Tirunelveli and Tiruchirappalli districts and at Walltax Road, Madras.	44 sheds.
2. Estates in places with a population less than 20,000 one at Theni and one for Ceramics at Vridhachalam.	2 estates.
3. Estates in places with a population up to 50,000 at Pudukkottai, Kanniyakumari, Arkonnam, Krishnagiri and Kolpatti.	5 estates.
4. Estates in places with a population up to one lakh at Dindigal, Kumbakonam, Rajapalayam and Nagercoil.	4 Do.
5. Estates in places with a population of over one lakh at Ambathur and for Leather at Perambur.	2 Do.
6. Developed plots in bigger towns at Ambathur and Guindy.	684 acres.
7. Expansion of the Estates started during the Second Plan.	100 Additional units.

Industrial Training

To meet the heavy demand on the number of technically trained personnel consequent on the rapid pace of industrialisation it is proposed to increase the seating capacity in the existing Industrial Training Institutes and Centres and under different training schemes and to start new Industrial Training Institutes and Centres so that each district will have an adequate number of Industrial Training Institutes and not less than 5,026 trained craftsmen would be turned out every year on an average.

As was indicated earlier, the main initiative in starting small scale industries and in making our State one of the foremost in the field of small scale industrial development rests with the private industrialists while the Government will provide the various facilities for such development. The State Government have spared no pains in placing a variety of incentives and adequate facilities before the public for the promotion of small scale industries. It is hoped that our people will utilise these facilities to the maximum and make our State a shining example to the rest of the country.

Use of the Word 'Leper'

The Government of India have, in a communication to all the State Governments and Administrations of Union Territories, advised that the use of the word 'leper' for persons suffering from leprosy should be dropped. The Union Government are of the opinion that the words 'leprosy patients' or 'persons suffering from leprosy' may be used instead. They have suggested that instructions to this effect may be issued to voluntary organisations and institutions engaged in leprosy work.

Great Boon to Madras State Industries

Commissioning of The NEYVELI Thermal Plant

T. M. S. MANI, I.C.S., *Managing Director, Neyveli Lignite Corporation.*

The President of India, Dr. S. Radhakrishnan, inaugurated the Commissioning of Unit No. 1 of the Neyveli Thermal Power Station, one of the main component schemes of the Integrated Lignite Project, costing in all about Rs. 113 crores, at a function at Neyveli on the morning of Sunday, August 5, 1962.

The Neyveli Thermal Power Station which satisfies the longfelt need for additional power generation in the State will have an installed capacity of 250 mW in its first stage comprising five units of 50 mW each. The station is going to play a very important part in meeting the demand for power and thereby in the industrialisation of the State. The power generated will be fed into the Madras State Electricity Board Grid after meeting the power requirements of the constituent units of the Neyveli Integrated Project, viz., the lignite mine, the fertilizer plant, the briquetting and carbonizing plant and the clay washing plant (including the township).

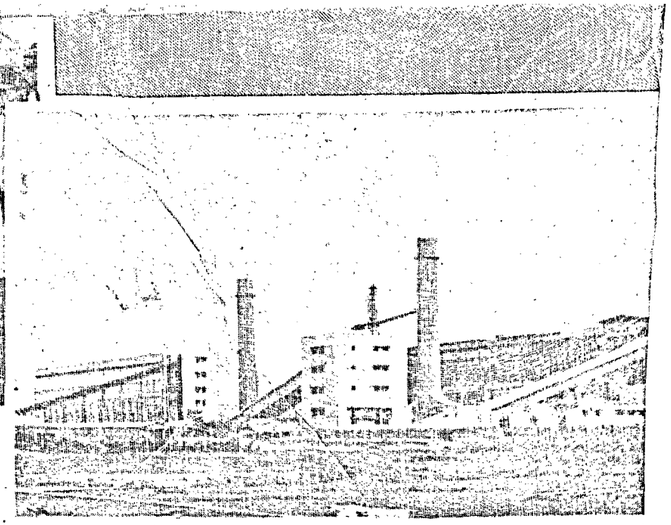
(The following is the welcome address of Sri T. M. S. Mani made on the occasion.)

The shortage of firm power and indigenous fuels has tended to retard industrial development in the Madras State. Power is needed also for working agricultural pumpsets, the limits of use of surface water having been reached. But, obtaining supplies of coal from elsewhere in India, besides being expensive and difficult, would impose a further burden on rail transport, already strained to the limits of its capacity. The large reserves of lignite in this district furnish a solution to this problem and constitute the basis for the Integrated Lignite Project. Indirectly and ultimately, the Project will also help to conserve coal resources elsewhere in the country. The Integrated Project comprises a scheme for mining of 3½ million tons of lignite per annum, and schemes for its utilisation, to generate electric power in a Thermal Power Station with five units of 50 mW each, to produce 152,000 tons of urea per annum, and to manufacture 380,000 tons of carbonised lignite briquettes for use as domestic fuel.

The control of the high pressure artesian aquifers in the mining area, which exert an upward thrust of about 6 to 8 tons to the square feet on the base of the lignite seam, is a unique feature. The High Pressure-High Temperature Thermal Power Station will be the first and largest of its kind in the south of India and the first of such stations in the entire country, utilising lignite as fuel. The Fertiliser unit will be the largest urea producing plant in the world, employing the total recycle process.

The Mining Scheme was formally inaugurated by our Prime Minister on the 20th of May 1957. Meanwhile, a Project Report for the Power Generation Scheme was drawn up by the Planning Cell of the Central Water and Power Commission. But, difficulties in providing the foreign exchange needed, delayed further action. The implementation of the Power Generation Scheme was made possible by the timely and generous offer, by the Government of the U.S.S.R. of the financial credit and technical assistance required. Work on the Power Station





The President's Visit

1. The President was received by the Chief Minister at the Meenambakkam Airport.

2. President Dr. Radhakrishnan inaugurated the Neyveli Thermal Power Station on 5th August 1962.

3. The view of the Neyveli Thermal Station.

4. He is seen examining a cake of Lignite at the open cut mine.

5. Seeing round the Power Plant.

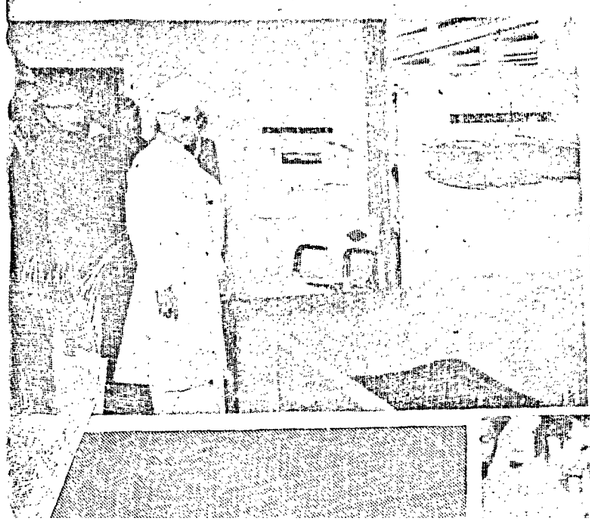
6 and 7. The President is seen watching the mining operations. Along with him are seen the Governor, the Chief Minister, Sri C. Subramaniam, Union Minister for Heavy Industries and Sri T. M. S. Mani.

8. Welcome address was presented by the Chidambaram Municipality to the President.

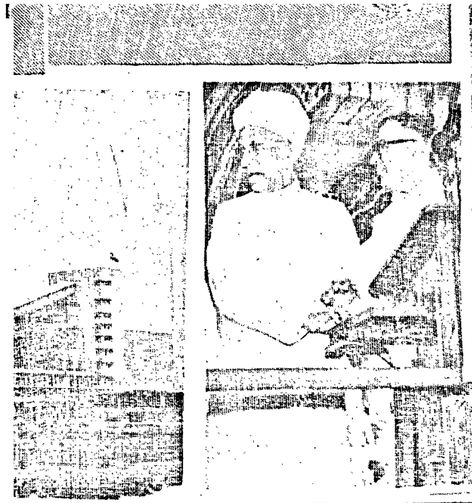
9. The President declared open the new Mathematics and Psychology Block at Annamalai University, Chidambaram.

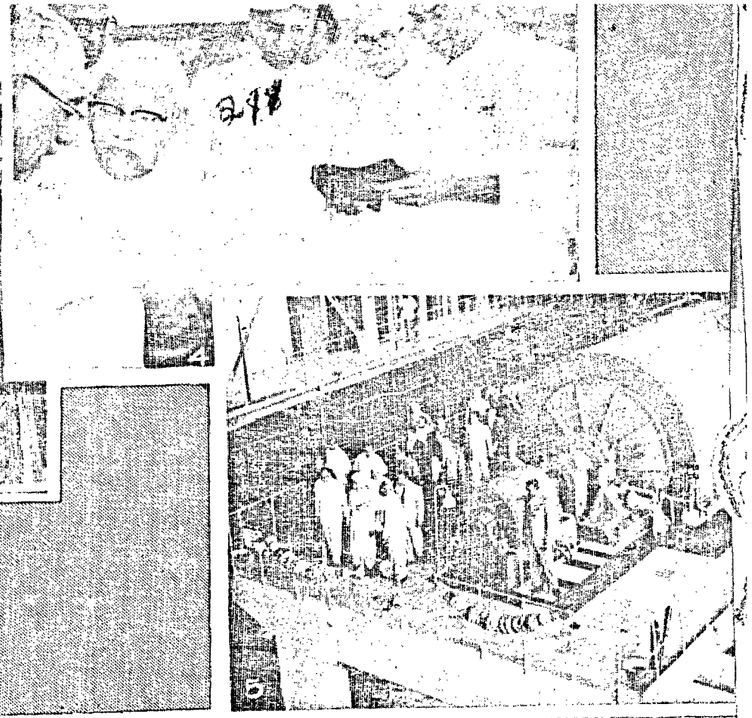
10 The President visited the famous Nataraja Temple at Chidambaram.

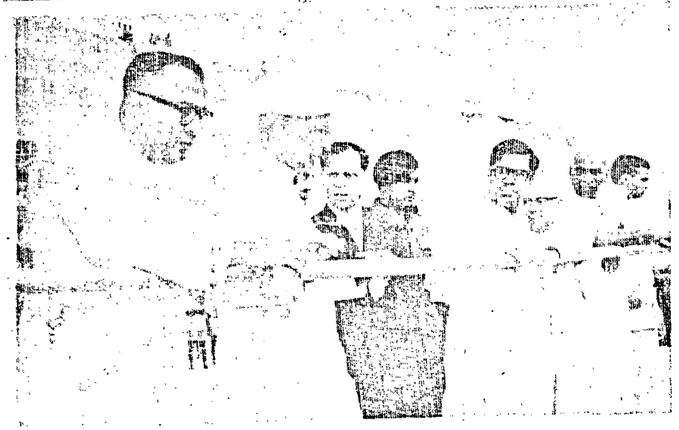
11. The President visited the Christian College High School. He was an old student of this institution

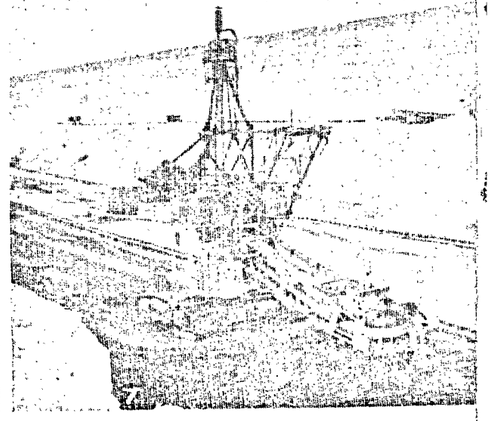
















is proceeding smoothly, thanks to the co-ordinated effort of the Governments of the U.S.S.R. and India, and of the Soviet and Indian personnel working on the Scheme. While civil works were started in September 1959, the erection of the first 50mW Unit was commenced in June 1961, and completed in April 1962, in practically record time.

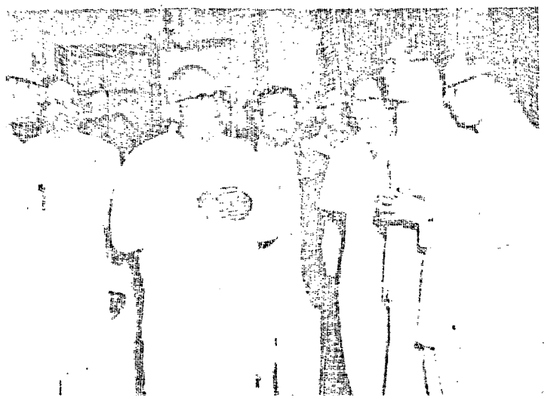
Good Progress

The Unit has undergone trial runs satisfactorily. Reasonably good progress has been made in the erection of the Second Unit, and it is hoped that it would be regularly commissioned by about November next, and the other units after that, at intervals of about 5 or 6 months. The success being achieved by such co-operative and co-ordinated effort has made us put forward proposals for the expansion of the capacity of the Power Station to 400 mW, in the first instance, during the Third Plan period, with further Soviet financial and technical aid. The draft Project Report for the expansion will soon be got ready. In the meantime, notices have been issued inviting tenders for the supply of additional mining machinery, to expand the output of the mine from 3½ million tons to 4·8 million tons in the first instance and later to 6 million tons per annum.

Unique aspect

This Project is unique in another respect as well. Foreign technical personnel from various countries such as the United Kingdom, Germany, Italy and the United States were, or have been, and will be living happily in our Township, and working amicably in the several constituent schemes. Neyveli promises to be a shining example not only of what can be done in the fight against poverty and want, caused by under or unbalanced, development of the resources of a country, but of peaceful co-existence, discipline and tolerance of people of various countries working for the common good.

Sri V. Ramiah, Minister for Revenue, is seen with the delegates of the All India Conference of Controllers of Weights and Measures at the Rajaji Hall, on 7th September 1962.



NEYVELI POWER STATION

The Neyveli Thermal Power Station is the first lignite burning station in India.

This will be the only station which gets its full requirements of water entirely from artesian ground water sources.

This is the only large power station in India which receives its supply of lignite directly from the mines through belt conveyors with storage kept to the minimum, the main storage being the mine itself.

Neyveli Thermal Station with an installed capacity of 250 m.W. (5 units of 50 m.W. each) under the first stage and additional 150 m.W. under the second stage will help to firm up hydro power in the Madras State and thereby ensure steady power supply throughout the year.

Out of the power generated under stage I, the surplus power will be pumped into the Madras Grid after meeting the power demands of the constituent industrial units at Neyveli.

The power generated at Neyveli will suffice to supply electrical energy to.—

(1) 10,000 *villages, or*

(2) 80,000 *agricultural pump sets, or*

(3) 500 *large Industries, or*

(4) 600,000 *low tension consumers (namely) small scale industries, domestic services, commercial services and other miscellaneous services.*

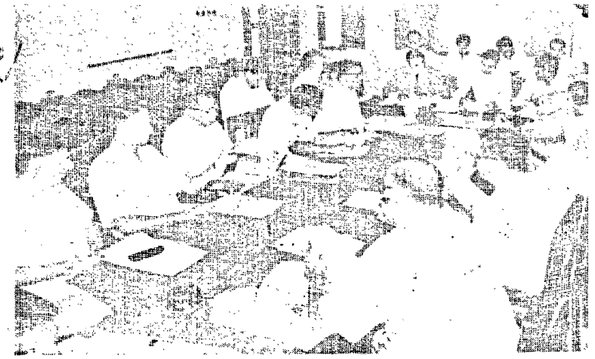
Details of the Thermal Station

The Thermal Station will have an installed capacity of 250,000 k.W. and will have five units of 50,000 k.W. each. The cost of the Power Generation Scheme alone is expected to be about Rs. 29 crores and the foreign currency part of this is being financed from out of the 500 million rouble credit offered by the Government of U.S.S.R. to the Government of India in 1957. The Station will generate 250 M.W. of electric power annually by utilising about 1½ million tons of lignite. The detailed Project Report for the setting up of the power station was prepared by Messrs. Technopromexport, Moscow, a Soviet, firm, in collaboration with the officers of the Planning Cell of the Central Water and Power Commission. After approval of the Project Report by the Government of India, contracts were concluded in 1959 with the firms in U.S.S.R. according to which the entrie machinery and equipment, except a few items is being supplied by Messrs. Technopromexport, Moscow, and the erection equipment mostly by Messrs. Machinoexport, Moscow.

Transportation Problem

The machinery and equipment commenced to arrive at the Madras Harbour from April 1960 onwards. Many of the packages were oversized and could not be transported by rail. The transport of the huge sized packages by road also presented serious problems and constituted a major project by itself. Some of the bridges and culverts on the road from Madras to Neyveli had to be propped up and strengthened to stand the heavy load. A temporary steel bridge was also constructed across the Buckingham Canal at Madras. Several diversions across the river beds had also to be formed. With the co-operation of the authorities of the Port Trust, the Railways and the Madras Government, the Heavy and over-sized packages were successfully unloaded at the harbour and transported to Neyveli by the Corporation's 120-ton tractor trailer.

The civil works were commenced towards the end of 1959. The work on the erection of machinery and equipment of Unit 1 of the Power Station, in close proximity to the lignite mine, was commenced in June 1961 and completed in March-April 1962. The lignite required for the power station will be transported from the mines direct by means of a long conveyor, probably one of the longest single conveyors in the East and fed into the Lignite Receiving Bunker. Trial and test runs were made from May 1962, and the power generated during the trial runs was successfully pumped into the Madras Grid.



The reconstituted State Tourists Traffic Advisory Committee, met at the Secretariat on 13th September 1962. Sri G. Bhuvarahan, Minister for Information and Publicity, presided

Compilation of the History of Tamil People

The Government of Madras have been considering for some time past, the various proposals for the preparation of an authentic history of Tamilnad. They have now decided that an authentic history of Tamils with reference to social, economical, cultural religious and political aspect of the Tamil people down the ages with particular reference to the common man should be brought out under the auspices of the Government.

The Government have accordingly sanctioned the scheme of the preparation and publication of an authentic history of the Tamil people at an approximate cost of Rs. 7 lakhs within the next five years.

"The History of Tamil People" will cover the ancient, medieval and modern eras in four volumes. Each volume will consist of about a thousand pages, with illustrations, maps, charts, etc. The Ancient Period of this long history would be from pre-historic days up to the end of the 9th Century. The Medieval Period would be from the 10th Century to 1350 A.D. The modern periods would be from 1350 A.D. to 1857 A.D. (I Part) and from 1857 A.D. to 1947 A.D. (II Part).

SMALL SCALE INDUSTRIES IN MADRAS STATE

SRI P. SABANAYAGAM, I.A.S.,
Director of Industries and Commerce, Madras.

Attainment of Political Freedom from foreign rule was only the first essential phase of our liberation. The next is liberation from foreign dependency for our basic needs and for the improvement of living conditions. The only means of achieving this cherished desire is by well balanced, integrated and decentralised industrialisation. Indian industrial economy unfortunately developed at opposite ends, large scale industry from abroad by foreign interests and cottage industries from the past by hereditary, craftsmen. The experience of large number of small industries growing during the Second World War for providing certain essential articles and providing employment, to a very large number of workers convinced the authorities that given sufficient encouragement it would be possible to place the Small Scale Industry on a stable basis.

The principal needs of Small Scale Industries are technical guidance in the better utilisation of tools and machines, supply of raw materials and power at reasonable rates, adequate finance on fair and easy terms, availability of factory space (Industrial Estates) and provision of service facilities. To fulfil these needs, several schemes have been formulated during Second Plan Period. These include :—nineteen Model Production Units, six Demonstration and Training Centres, nineteen Common Service Facility Workshops, five Social Welfare Centres, one Technical Information Centre, one Raw Materials depot and eleven Sales Depots were set up. Besides, bulk provisions were also made for granting loans to Small Industries under State Aid and subsidy over power rates for organising Industrial Co-operatives and for securing the services of foreign experts. During the Plan Period, most of the Model Production Units envisaged have gone into production manufacturing a variety of articles.

The common service facility workshops, now functioning provide servicing facilities in the fields of tools, dyes, jigs, fixtures, precision works, drop forging, heat treat parts, wood works, sheet metal articles, electro-plat rts, textile mill parts, agricultural implements, tin iners, brass articles, foot wear, etc. About 650 entrepreneurs, artisans and industrial co-operatives have so far taken advantage of the servicing facilities. Thirteen industrial co-operatives have been organised. The Technical Information Centres and the Raw Materials Depot to supply essential raw materials such as iron, steel, and coal have already started functioning.

Under the State Aid to Industries Act, loans to the extent of Rs. 62·61 lakhs, under liberalised terms and conditions, were sanctioned to 7,659 small industries from 1956–1957 to 1958–59. The policy of the Government in the grant of loans has been that the industires for the development of which aid is sought should have an important bearing on the economic development of the country and should be (*a*) new or nascent industries (*b*) industries to be introduced into areas where such Industries are underdeveloped (*c*) Cottage Industries or small Scale Industries or (*d*) Old or Established Industries. With a view to give fillip to the development of Cottage and Small Scale Industries Government have reduced the rate of interest chargeable on loans not exeeding Rs. 50,000 to 3 per cent per annum. For Industrial Co-operatives, the rate is $2\frac{1}{2}$ per cent per annum.

Industrial Estates

Perhaps the most important among the schemes is the establishment of Industrial Estates and Colonies where the several facilities have been integrated and incentives offered to Small Industrialists. Such estates provide on a rental basis (at subsidised rates for a few years) good accommodation and other basic common facilities to groups of Small entrepreneurs who would otherwise find it difficult to secure these facilities at a reasonable price.

Out of the ten estates and colonies programmed during the Second Plan, Industrial Estates have been established at Guindy and Virudhunagar and Industrial Colonies at Madurai, Erode, Tiruchirappalli, Thanjavur, Pettai, Marthandam and Katpadi. Another Industrial Colony at Salem is expected to start functioning shortly. At Guindy the biggest of all the estates and colonies in the State, there are 128 units occupied by 93 different entrepreneurs. These factories, besides converting valuable foreign exchange, provide employment for about 2,500 persons with an annual turnover of Rs. 1·75 crores which could be incresed further with adequate supply of raw materials. The total number of sheds constructed in all the estates is 237.

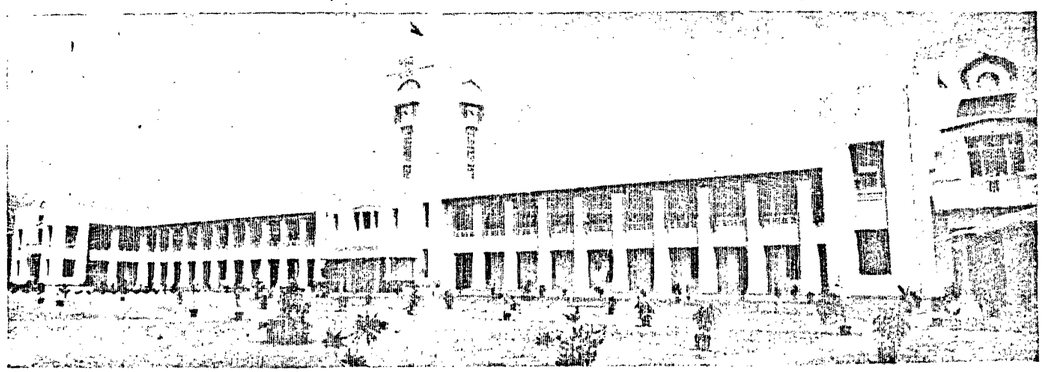
For the benefit of workers employed in the units in the Estate and Colonies, 592 labour tenements under subsidised Industrial Housing Scheme, have been constructed and they are given to the workers at subsidised rates of rent. Amenities such as approach roads, water-supply, electricity and modern sanitation have been provided.

The State has a well organised programme of technical training both institutional and inplant. The State Directorate of Industries has set up a number of training-*cum*-production or demonstration centres in the State where training will be given to selected artisans in particular trades. Mention may also be made of the apprenticeship Training Schemes and the evening classes of workers.

Third Plan Targets

A total provision of Rs. 11·20 crores has been made for the development of Small Scale Industries and Industrial Estates during the Third Plan. Ten more Industrial Estates will be set up in the Third Plan period. The Programme includes the expansion of existing service facilities and the pilot production centres and the establishment of new ones. Creation of a staff school to train the technical staff on the administrative side and the administrative staff on the technical side, getting foreign experts in various fields of industrial developments to get under-studies trained by them are some of the other measures contemplated.

The Government College of Technology, Coimbatore.





State Handloom Committee, met at the Secretariat on July 27th 1962, Sri R. Venkataraman. Minister of Industries, presided.

During the Third Plan Period, a functional Industrial Estate for Footwear and Leather goods and a Ceramic Industrial Estate are being set up and Industrial Estates by private agencies and co-operatives with the assistance of the Government are also coming up.

Towards achievement of rural industrialisation, it is proposed to set up in 50 villages, Small General Purpose Rural Workshops costing not more than Rs. 50, 000 each.

To augment the credit facilities to the Small Scale Industries, the Madras State Industrial Co-operative Bank Limited, with an authorised share capital of Rs. 30 lakhs of which 51 per cent will be held by the Government has been set up at the Industrial Estate, Guindy. The objective of the Bank is to provide assistance of long term loans to over 2,000 Industrial Co-operatives and 5,000 Small Scale Industries scattered throughout the State.

Emergence of New Class

Thanks to the Small Scale Industries Programme, there is already an awakening among the people to start more industries. An outstanding achievement of the programme is that it has led to the emergence of a new class of entrepreneurs viz., the educated class. Many who were pursuing other avocations in life have now become entrepreneurs themselves. Further the work-sheds proposed to be set up at the village level are expected to generate industrial activity in the villages. This is in short an attempt to solve the unemployment problem at the source in the sense that it is expected to check the migration of skill and enterprise to urban areas.

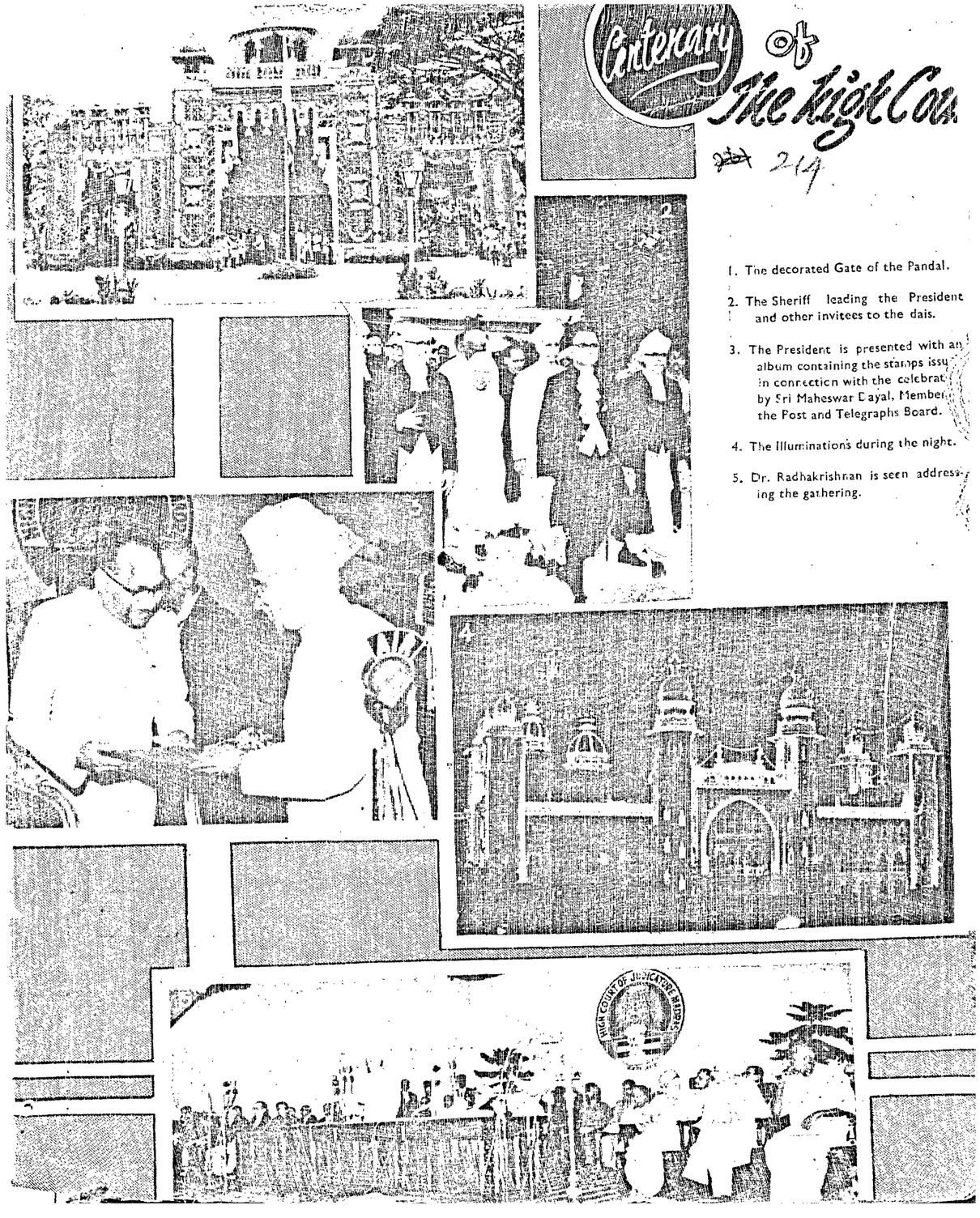
The development that has already taken place is heartening and the State looks forward to the future with confidence.

Japanese Machinery for Small Industries.

The Government of India have allocated a sum of Rs. 30 lakhs out of the Second Yen Credit to the National Small Industries Corporation for import of plant and machinery from Japan for distribution to the small industrialists on hire-purchase terms.

The Japan Small Plant Committee, Tokyo, will assist the National Small Industries Corporation in obtaining reasonable quotations for Japanese plant and machinery of standard quality. The small industrialists of India will be able to choose the machines. The Japan Small Plant Committee will help in consolidation of small contracts by recommending a representative supplier who will obtain the export permits and undertake other formalities required in Japan.

An agreement embodying the procedure to be observed in obtaining the quotations and for placing the orders was signed at New Delhi recently between the National Small Industries Corporation and the Japan Small Plant Committee.



1. The decorated Gate of the Pandal.
2. The Sheriff leading the President and other invitees to the dais.
3. The President is presented with an album containing the stamps issued in connection with the celebrations by Sri Maheswar Dayal, Member, the Post and Telegraphs Board.
4. The Illuminations during the night.
5. Dr. Radhakrishnan is seen addressing the gathering.

TECHNICAL EDUCATION IN INDEPENDENT INDIA

SRI HUMAYUN KABIR,
Union Minister for Scientific Research and Cultural Affairs.

Since Independence and particularly in the last ten years, there has been a phenomenal expansion of Technical Education in the country at all levels. In 1950, there were only 40 institutions for the first degree courses in Engineering and Technology and 86 institutions for diploma courses. Their admission capacity was 4,120 students for the degree courses and 5,000 students for diploma courses. By 1961, the number of Institutions for degree courses increased to 100 and that for diploma courses to 196. The admission capacity of the institutions also increased to over 13,850 students for degree courses and 25,570 students for diploma courses.

The large expansion of Technical Education is the result of conscious and deliberate efforts made by the Central and the State Governments to provide facilities in an adequate scale for the training of technical personnel required for various development projects in industry, commerce, power generation, communications, defence, etc. This policy is reflected in a number of schemes undertaken during the First and the Second Five-Year Plan periods for the establishment of new technical institutions and to expand and improve the existing ones. During the Second Plan period alone, 26 engineering colleges and 84 polytechnics were established in different parts of the country. An amount of Rs. 90 crores was also provided by the Central Government and the State Governments for technical education in the First and Second Plans.

Sandwich Course

The diploma courses are conducted at the institutions called Polytechnics. These courses occupy an important position in technical education in India as very large numbers of holders of these diplomas are required. They are designed to train technicians, who will eventually occupy supervisory positions like junior engineers, foreman supervisors, overseers, etc., in industry and other technical organisations. The courses are of three years duration after High School Education (10 year's schooling; Secondary School-Leaving Certificate; Matriculation) and have a practical bias. A view has however been advanced in recent years that the practical knowledge and experience required by a technician cannot be given to him in an adequate measure in a course that is wholly institution based and as such the present three-year diploma courses do not always produce the right type of personnel.

The All-India Council for Technical Education has, therefore devised a "sandwich course" of four years in which practical training in industry and institutional studies alternate in suitable layers. The scheme has been introduced at selected centres in co-operation with Industry. As the training facilities expand, the "sandwich" course will become an important feature of technical education in India. The diploma courses are offered in the main fields of civil, mechanical and electrical engineering. A few institutions also offer courses in textile technology, leather technology, mining engineering, metallurgy, automobile engineering, telecommunication engineering, radio engineering, printing technology and other fields according to regional requirements for technical personnel at this level.

First Degree Courses

The first degree courses are conducted at engineering colleges and higher technological institutes. The object of the first degree courses is to train technologists, some of whom may eventually become designers, research engineers or specialists in various fields either after further studies at post-graduate level or experience in the profession or both. These courses are not concerned with preparing persons for specific positions or jobs in industry, but are designed to give a broad-based education in scientific principles and methods underlying technology. The duration of the courses was generally four years with a pass in Intermediate Science as the minimum admission qualification. The Intermediate in Science, a preparatory state for University course in Science or technology is of two years duration after the High School education extending over a period of ten years, i.e., after Matriculation or the Secondary School-Leaving Certificate. With the reorganisation of Secondary education, the Intermediate Course is being abolished. The new pattern envisages a 11-year schooling that prepares candidates for life and direct entry to University reducing the length of B.A. or B.Sc. course to 3 years. As a result of these changes, the first degree engineering course will be of five years duration after the Higher Secondary stage. The first degree courses are offered in the main fields of Technology, viz., civil engineering, mechanical engineering, electrical engineering, eletrical communication enginering, chemical engineering, mining, metallurgy, textile technolology, agricultural engineering, leather technology and architecture courses in instrument technology, automobile engineering, aeronautical engineering, marine engineering and production engineering are also offered by some institutions at first degree or equivalent level.

The Crux of the Problem

In addition to a quantitative expansion of training facilities, there has been a qualitative improvement of standards. The crux of the problem of standards in technical education is three-fold, teacher, equipment and buildings. The All-India Council for Technical Education and its Regional Committees have carried out a comprehensive survey of the state of each institution in the country and have formulated schemes for its improvements and developments which envisage provision of adequate instructional facilities including teachers that are necessary for maintaining high standards. On the recommendations of the All-India Council, large grants are being given to the institutions by the Central Government, State Governments and the University Grants Commission for buildings, equipments, staff and maintenance.

Engineering education to be effective in terms of a national plan must be dynamic. It must facilitate adaptability to changing conditions in technology. It must constantly raise the level of attainments of the products of technical institutions. India needs not only skilled workers and technicians but also design engineers and engineer scientists. Before 1947, there was hardly any institution that provided facilitites for post-graduate studies and research in engineering. Indian students had to go abroad for advanced training. Today, over a dozen institutions have been developed within the country where facilities for post-graduate studies and research work are available for over 500 scholars and the facilities are being steadily expanded. The fields of study also cover a wide range some of which, as for instance power engineering, dam construction and irrigation engineering, production engineering and aeronautical engineering are especially important to the economic development of the country. The facilities for post-graduate studies and research will be increased in the course of next five years in order to provide for over 2,000 scholars.

Technical Institutes

As a first step towards the development of advance technical education in the country, the Central Government decided to establish a chain of four higher technological institutes. The first institute was started in 1951 at Kharagpur and has been fully established and developed. Equipped with all Faculties, viz., Liberal Arts, Fundamental Sciences and the various Technologies that are necessary for the realisation of the highest ideals of technical education, the Institute provides facilities for the education and training of well over 1,500 students in the under-graduate

Portraits of Tiruvalluvar, Dr. Varadarajulu Naidu and Tiruppur Kumaran were unveiled at a function held under the auspices of the Corporation of Madras.



courses and 300 students offered training include naval architecture and marine engineering, fuel and combustion engineering, production technology, geo-physics, foundry engineering, etc., and are designed to meet the special requirements of industrial and other developmental projects for high grade technologists. The other three Higher Technological Institutes are in process of development in Bombay, Madras and Kanpur. The Bombay Institute started functioning in 1958 and the Madras and Kanpur Institutes in 1959 and 1960 respectively. All these Institutes are being planned in the same comprehensive scale as the Kharagpur Institute and when completed will take the technical education in the country several steps further. Each will be a fully residential institution designed to promote corporate life among students and teachers and will provide facilities for about 1,500 students in the under-graduate courses and about 500 students for post-graduate courses and research. In the establishment and development of these institutions, technical assistance from foreign countries has been secured. The Bombay Institute is being assisted by the Soviet Union, the Madras Institute by West Germany and the Kanpur Institute by the U.S.A. A new College of Engineering and Technology is being established at Delhi with assistance provided by the United Kingdom.

Training for Skilled Workers

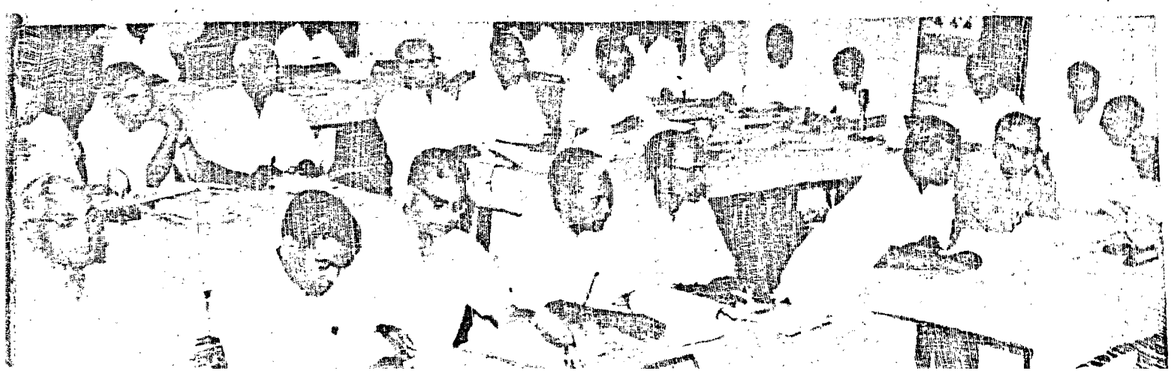
Another important centre of post-graduate studies in engineering is the Institute of Science, Bangalore, that has been developed in the last ten years both for advanced training and for research in various fields. For specialised courses such as mining engineering and metallurgy, a number of centres have been established both for degree and diploma courses. For printing technology, four regional schools, one each at Madras, Calcutta, Allahabad and Bombay have been established.

The position stated above gives a brief account of the progress made in the field of technical education at the diploma, first degree, post-graduate and research level the facilities that are available to-day, for the courses/ studies in technical education at different levels, the pattern and the objectives of these courses. Besides this, thought has been given by the All-India Council for Technical Education and this Ministry to the vocational and industrial training or education at the level of skilled workers. So far, the skilled workers were trained in different ways at different age levels with varying but not wholly satisfactory results. It was felt that the rapid and large-scale industrial development of the country will progress if it was supported by an adequate educational system which would not only train engineers and technologists but a strong cadre of skilled workers of fine quality and with an enlightened mind who constitute the base of technical manpower. On the other hand, secondary education, which is in the process of being reorganised, is recognised on all hands as a terminal stage for most boys in India and education of a boy between the age of 14 to 17 should therefore be such that it prepares him adequately to enter life. The question has been as to how to provide diversified opportunities for education and training to a majority of students after 14 for gainful occupation in life. The answer has been found in Junior Technical Schools, a special type of Secondary technical education designed specially for students who wish to enter industry. The School offers a three-year integrated course in general education, technical education and technical training in various engineering trades. In each year of the course, general education, technical studies, workshop training are so integrated that all these three elements constitute the base for the total development of the candidate. So far 38 Junior Technical Schools have been established.

Teacher Training Programme

In order to meet the shortage of teachers that has arisen as a result of this rapid expansion of technical education, a Teacher Training Programme has been organised at

The Panchayat Development consultative



selected centres in the country. Under this scheme, bright young graduates are selected and trained for periods up to three years as under-graduates to senior Professors. Nearly 195 candidates are undergoing training at present and it is proposed to expand the programme in order to train larger number of teachers for the new institutions to be established during the Third Plan period. In addition, a large number of teachers have been sent abroad for advanced training, many of whom have come back and are serving in our institutions.

A scheme of revised salary scales for teachers of technical institutions has been sanctioned in order to attract well qualified and experienced persons to the teaching positions. The revised salary scales compare favourably with those offered by industry, Government departments and other organisations to technical personnel.

In order to assist poor but meritorious students in their technical studies, a scheme of Merit-*cum*-Means Scholarships has been sanctioned and is in operation. Under the scheme, over 2,000 scholarships have been awarded to degree and diploma students in all our technical institutions. Eight hundred research scholarships have also been instituted to assist research scholars in their work in Universities and other research centres. In order to encourage research of the highest standard possible, 80 National Research Fellowships have been instituted.

The All-India Council

All this expansion has been possible due to the energetic and farsighted approach to the problem by the Central Government on the advice of the All-India Council for Technical Education. The Council represents all the interests which are concerned with technical education. It consists of representatives of all State Governments, Ministries of the Central Government, Parliament, industry, Commerce, labour, professional and learned societies, Universities, Technical Institutions and various other concerned interests. Its functioning *inter alia* include the preparation of plans for the development of technical education on an all-India basis, assessment of the requirements for technical manpower of different types and suggesting measures to meet them, suggesting improvements in the pattern of technical education from time to time to suit changing conditions, establishing liaison between industry, Government departments and other organisations on one hand and technical institutions on the other, co-ordinating the activities of States, recommending grants and other forms of assistance that might be given by the Centre to the State Government Institutions, Universities, Institutions and other organisations for development of technical education. Presided over by the Minister of Scientific Research and Cultural Affairs at its Secretariat, the Council functions with fewer handicaps than most other advisory bodies. As a matter of convention, the recommendations of the Council are generally accepted by the Centre and State Governments. For the proper discharge of its functions the Council has set up a co-ordinating committee, four Regional Commitees and seven Boards of Technical Studies. The Boards of Studies advise the Council on all academic aspects, viz., the pattern of technical education, duration, standard, and contents of the courses, etc. The Boards also lay down the minimum standards of instructional facilities required for the conduct of various courses by technical institutions. The Regional Committees assist the Council in promoting a co-ordinated development of technical education in the regions. Schemes for the establishment of new institutions and improvement and development of existing institutions are formulated by the Regional Committees. The Regional Committees also keep a constant watch over the progress of institutions in their respective regions and render expert advice and assistance to the institutions concerned. The Co-ordinating Committee is the Executive of the Council and co-ordinates the work of the Regional Committees and the Boards of Studies.

Committee on Production Programmes, met at Rajaji Hall, Madras, on 26th August 1962.





The State Labour Advisory Board met at the Secretariat on 3rd September 1962. Sri M. Bhaktavatchalam, Minister for Labour presided.

The problem now facing the country is improvement of the quality of technical education and a proper allocation of facilities among different levels. Before independence, technical education was not only inadequate in quantity but there was also not enough diversification within and among different levels. Engineering was mostly confined to Civil Engineering and it is only during the last decade that large scale facilities for other and many new types of engineering have been developed. Similarly, the proportion between engineering and technical graduates and skilled and semi-skilled workers in different fields of technology was not worked out on any scientific basis. The ratio of graduates to diploma holders was also 1:1, while in most industrially advanced countries there are at least four diploma holders for every graduate. The result was that many graduates were used for work which do not require training at the University level, while on the other side there was always shortage of persons in the intermediary ranks. This imbalance has been partially corrected and at the end of the Second Plan, the proportion of graduates to diploma holders is about 1 : 2. Even this is not fully satisfactory and our aim should be to increase the facilities at the diploma level at an accelerated pace so that by the end of the Fourth Five-Year Plan, if not earlier, a healthier balance between the levels may be established.

One other change which is imperative in the modern age is improved scientific content of engineering and technical courses. It is true that some elementary science has always formed part of the training for both degree and diploma students, but developments in the modern age have proved that a much higher standard of science is required for carrying out the tasks which technology must fulfil in the modern age. This has special importance for India as our engineers and technologists in the past have been mainly executives and administrators and not pioneers or designers. It is however clear that no country can hold its own in the modern world unless it has trained manpower which is able to execute all known processes and at the same time develop and initiate new processes of their own.

Age of Technocrats

Attempts are being made to improve the standard of engineering and technical education through the incorporation of more science. Simultaneously it has been recognised that humanities must also be included in scientific and technical courses. The technologist of today is not merely an expert dealing with processes and machines but also increasingly an administrator who has to deal with large masses of men. The modern age is essentially an age of technocrats and these technocrats cannot perform their functions satisfatorily unless they are imbued with the values which govern relations of men. In fact, advance in scientific and technical knowledge may become a menace rather than a blessing for man unless the scientists and technocrats of today incorporate in their nature, qualities of understanding and compassion which have throughout the ages bound human beings into one society.

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GOVT. HOSPITAL COMPLETES 50 YEARS

The Government Royapettah Hospital has completed fifty years of useful service to the public of South Madras. It is celebrating its Golden Jubilee on September 15.

The Royapettah Hospital, being the only hospital in the Southern area of the city, has to cater to the medical needs of nearly a third of the metropolitan population. For many years the hospital has remained static while the population of South Madras has increased phenomenally.

Honorary Hospital

It is interesting to recall that some 15 years ago the institution was known in doctors' parlance as "an honorary hospital". But it is an admitted fact that from 1919 to the early fifties no worthwhile change has taken place in the hospital which used to be an asylum for the neglected and a place for treatments of butlers and servants of European residents of the city.

The year 1912 (May 29) witnessed the birth of this hospital as a municipal corporation venture during the time of Surgeon-General W. B. Bannerman. Till the year 1919 it was maintained by municipal funds although the staff were paid by the Government.

Humble Beginning

Starting from humble beginnings the hospital is now a major institution with 230 beds and having on its staff 14 paid medical officers, 26 honorary doctors and as many as 35 nurses and provisions for 26 house surgeons. Since its administration has passed into the hands of the Government, there has been practically no expansion. It was only in the 'fifties' when the Tuberculosis Institute was shifted from the Temple Gardens on Peters Road to Tambaram that the authorities thought of developing the hospital. The area vacated by the Institute was acquired by the Hospital as an annexe to provide for its expansion.

Hospital officials claim that the institution had always been a springboard to many physicians and surgeons. Originally a clinical institution for L.M.P. students, the hospital now imparts training to G.C.I.M. students and is shortly to extend the training to M.B.B.S. students. As far as facilities are concerned, the institution is just as good as the other two major hospitals—Government General Hospital and Stanley Medical Hospital—excepting in highly specialised branches like neuro-surgery.

Interesting anecdots

There are some interesting anecdots in the long history of the institution. Lt.-Col. Donawan, a superintendent of the hospital simultaneously with Dr. Leishman of Calcutta, discovered the causative organism of 'Kala-azar' fever. The great discovery is claimed to have been made in one of the rooms in the main block.

Another famous physician who worked in the hospital was Dr. M. L. Kamath who did very valuable work in the field of Beri Beri.

The front view of the Goverment Royapettah Hospital which will celebrate its Golden Jubilee on September 15.



The great improvement was in 1941 when the bed strength was increased to 120. The number of paid and Honorary Medical Officers remained, however, the same; but four more nurses were posted. Between 1941 to 1944, there were no significant changes probably due to the Second World War. However towards the end of 1945, the bed strength was once again increased, this time to 150 with one more paid doctor and six more nurses. The next major change in the bed strength was in 1950 when "Temple Gardens" across the road was vacated by the Government T. B. Institute and was acquired as annexe to the Royapettah Hospital with additional accommodation for 80 beds—82 for Medical (with a small number for Children) and 18 for Emergency T. B. Cases. With this expansion of bed strength the number of paid doctors were increased to 7 and the Hony. Assistant Medical Officers to 13 and the nursing strength was also correspondingly increased to 29. A new T. B. Clinic was then built and the X-ray Department which was till then accommodated in a cramped room in the present Casualty section was also moved into this block towards the end of 1955. To Dr. P. R. Kalyanasundaram (now the Chief Medical Officer, Neyveli Lignite Project) and to Dr. R. S. Kesavaraj go the credit of this phase of the expansion. In 1958 when Dr. A. Umapathi Mudaliar was the Superintendent, the opening of Out-patient Department was sanctioned for this hospital. The staff by now had risen to 12 paid and 26 Hony. Medical Officers with the nursing staff to 42 excluding the nursing superintendent and head nurses.

Family Planning Clinic

Family Planning Clinic was started in this hospital in 1958 and since 1960 intensive famiply lanning by Surgical methods which has become so popular with the masses is being done here.

During the post-war years South Madras has its own share of expansion. This has resulted in the overcrowding of the Out-patient departments (the attendance of which is about 1,800 a day) and rush for admission to the wards. The average daily census of this hospital is around 380 against the sanctioned bed strength of 230. The out-patients of the different department has been working in shifts in the same room and even then enormous crowds that swell the out-patients have become unwieldy. Naturally additional accommodation had to be found both for the out-patients as well as for the in-patients. A new building constructed at a cost of about Rs. 8½ lakhs in the annexe which is to be opened will house all the out-patient departments, casualty and X-ray on the ground floor and about 5 beds for E.N.T. Ophthalmic and Dental together with an Operation Theatre in the first floor and the Administrative Rooms and the Bio-chemical, Bacteriological and Pathological laboratories and Lecture Hall in the second floor. This would certainly ease the condition of the out-patient departments, but the desperate need for in-patient accommodation still continues. With the South Madras population going up almost 10 times since the early days of this hospital, it is but just that at least 500 more beds are provided for this hospital. With the enthusiasm of the present Superintendent, Dr. M. V. Krishnamurthi who has been largely responsible for the new Out-patient Block and several other improvements, it is hoped that in the near future a large modern well-equipped new block shall be added to this hospital and thus accomplishing the long felt necessity for a modern General Hospital in South Madras.

On an average some 2,000 patients daily make use of the out-patients facilities provided by this institution. The Casualty Department which works round the clock treats roughly 100 cases a day ranging from the most complicated multitude fractures and loss of limbs to simple scorpion bite. Not only are all the 230 beds in the hospital always occupied but nearly half as many patients are accommodated on the floor and treated.

New Hope For Leprosy Patients

A special tribute to the work being carried out by Dr. Paul Brand and the training scheme organized by him at the Christian Medical College and Hospital at Vellore, Madras State, is paid in the annual report for 1961 of the British Leprosy Relief Association (BELRA).

The report, just released, says that during the year the Vellore scheme made good progress. The claw-like hands and feet and paralysed eye-lids which throughout the ages have been part of the mutilations resulting from leprosy are now being restored by replacing the damaged muscles and tendons with healthy ones transplanted from other parts of the body.

Doctors and surgeons from many parts of the Commonwealth are now at Vellore attending the special courses of instruction at the hands of Dr. Paul Brand. On return to their respective countries, these doctors and surgeons will be able to play an extremely important role in repairing some of the ravages caused by the disease. Thus a very important step forward is being taken towards the rehabilitation of leprosy sufferers, many of whom will eventually be able to take their proper place in society.

During the year BELRA made grants totalling over £40,000 to help combat leprosy in Commonwealth countries. Of this amount, nearly £4,000 went to three leprosaria in India and the year also saw the introduction in India, of the child adoption scheme, financed by voluntary contributions from citizens in Britain.

Besides the Christian Medical College and Hospital at Vellore, other Indian centres receiving financial aid from BELRA were the Mary Calvert Holdsworth Memorial Hospital at Mysore and the Kasturba Kushta Nivaran Nilayam at Malavanthangal (Madras State).

The Exhibition organised in connection with the World's Health Day was declared open by Srimathi Jyothi Venkatachalam, Minister for Health, on 21st August 1962, at the Medical College, Madras.





Sewing machines were presented to Mathar Sangams at Poonamallee Panchayat Union on the Independence day. Sri M. Bhaktha-vatsalam, Finance Minister, is seen presenting a machine to a representative of Mathar Sangam.

Schemes for Women Teacher Output in Third Plan

Dr. K. L. Shrimali, Union Minister of Education, affirmed in the Lok Sabha that the General Advisory Board of Education, had, in their session at Jaipur in January this year, recommended the inclusion of proper schemes for increasing the output of women teachers in the Third Five-Year Plan.

The following schemes suggested by the National Council for Women's Education for increasing the number of women teachers were also recommended to the State Governments for acceptance and implementation in addition to those already taken up in the Second Plan:—

(i) Opening of new training institutions.

(ii) Attaching of training sections for women teachers to girls secondary schools.

(iii) Reservation of seats for women in co-educational training institutions.

(iv) Giving financial assistance to girls from rural areas to go in for training.

(v) Pre-selection of trainees at the secondary stage, and

(vi) Development of middle school and secondary education for girls.

Automatic Telephone Exchange for Salem

Another landmark in the development of Tele-communications in the Madras State would be the inauguration of the new automatic telephone exchange on the 14th July 1962. This would be the fourth major automatic telephone system in the Madras State, the other three being Madras, Coimbatore and Madurai, which are already working. The new automatic telephone exchange was inaugurated by Dr. P. Subbarayan, Governor of Maharashtra.

As early as 1936, the Posts and Telegraph Department extended telephone facilities to Salem town by installing a 50 line RAX (auto-exchange) with nearly 30 working connections. Ever since that date, the growth of demand for new telephones has been phenomenal. Trunk facility was provided by connecting this place to Jalarpet which was connected beyond to Madras and Bangalore at that time. In 1944 the small automatic exchange had to be replaced by a 100 line manual exchange to cope up with the increasing demand and since then there has been a steady growth and the capacity of the exchange was increased in 1949, in 1951, in 1956, in 1960 and again in 1961. In view of this increasing demand, it was decided in 1955 to have an auto-exchange initially with 1,400 connections. As certain delay was anticipated in the materialisation of the project, the manual exchange capacity was in the meanwhile steadily expanded upto 1,000 lines which was the maximum capacity which could be had within the available accommodation.

Project for 1,600 lines

The project for 1,600 lines auto exchange at Salem was sanctioned in 1958 at a cost of Rs. 19 lakhs excluding the cost of building. A plan for construction of suitable Posts and Telegraph Office building at the old P.O. building site was conceived and finally revised in 1955 to accommodate the proposed auto-exchange. The building was constructed by the Central Public Works Department at a cost of Rs. 5 lakhs. It was seen that the original sanctioned project of 1,600 lines was insufficient to meet the demands and hence a project for installing additional 700 lines was also sanctioned in 1960 at an estimated cost of Rs. 14 lakhs.

The installation of the first phase of 1,600 lines was taken up in October 1961 and the exchange was put into service on 14th July 1962. The present auto-exchange has a capacity of 1,600 lines with a number of Private Branch Exchanges working into it. The present manual exchange has got 981 connections working into it. There are 1,000 more subscribers in the waiting list. About 200 new connections have been given at the time of the inauguration of this new automatic exchange along with the transfer of all the existing 981 subscribers. Another 300 more connections will be provided gradually by the end of October 1962. The second phase expansion work to 2,300 lines is also on hand and is expected to be completed by 1963.

The present building accommodates the Telegraph Office, Head Post Office and the Telephone Exchange. The entire first floor portion is utilised for housing the telephone exchange and the trunk exchanges. This building was constructed by the Central Public Works Department at an approximate cost of Rs. 5 lakhs and all the auto-exchanges equipment installed in the new exchange have been manufactured and supplied by the Indian Telephone Industries, Bangalore. Most of the other materials required for outdoor construction like underground cable and overhead lines are also of indigenous manufacture supplied either by the Hindustan Cable or the Posts and Telegraph Workshops in the Country.

With the automatisation of the Salem Telephone Exchange operator dialling will be introduced on trunk calls to Coimbatore, Madurai and Madras, thereby speeding up the trunk traffic to these stations. Other stations like Erode, Tiruchirappalli, Tiruppur will also dial the subscribers on Salem exchange for putting through their trunk calls to this station.

Translating Machines do best in Sciences

Science in the news

Every day that passes in this Age of Science registers new advances as a result of which fresh and improved technique emerge to lighten the burden of the housewife, the common artisan, the small business man and the big industrialist. This feature takes note of such development both at home and abroad.

Electronic translating machines, or "robot translators", find scientific writing easier to translate than other kinds, according to scientists working on a United States Government-sponsored machine translating programme at Georgetown University in Washington.

Actually the translating machines are computers. Experts in linguistics feed formulations into a machine and then, at rates of 5,000 to 10,000 operations per second the machine runs through the computations required to change one language into another.

At present the translations are somewhat crude, the scientists say. But recently a machine worked its way through a 50,000 word text book of organic chemistry, and the results were found satisfactory.

The machines find scientific writing easier than literary writing to translate because a smaller vocabulary is required. Many scientific words are international, based on Latin origins, and their structure is more primitive. In addition idioms are not extensively used, and the order of words is more uniform.

Tiny computer rival room-size machines.

A fully miniaturised electronic computer the size of a loaf of bread has been developed by the Burroughs Corporation in the United States.

The tiny computer can solve single-purpose problems at the same speeds as those achieved by large, room-sized computers. It was built, company officials say, to show that existing electronic components can be used to "shrink" a present day commercial computer from room-size to the size of a desk. In addition, it is designed to show that many other types of electronic equipment can be compressed to a convenient size for use in aircraft, spacecrafts and missiles.

The baby computer contains 5,500 components in a space that measure 3 by 6 by 11 inches. It weighs 12 pounds and can perform 33,000 mathematical calculations a second.

Drug to Reduce High Blood Pressure.

A new drug called CAPLA (mebutamate), reported to reduce high blood pressure without serious side effects, has been made available in the United States and appears to represent a distinct advance in combating high blood pressure.

CAPLA stands for central acting presssure lowering agent. Tests made to date indicate that it quiets the overly active control centres in the brain and spinal cord which are involved in the development of hypertension.

Dr. Harry Shubin, medical director of the Wolffe and Broad street Hospitals in Philadelphia, reported recently that the drug had been effectively used to treat 100 patients suffering from various types of high blood pressure. Good to excellent results were observed in 70 per cent of those with essential hypertension, the most common form of blood pressure. In 84 per cent of the 93 patients with abnormally high diastolic pressure, CAPLA lowered the pressure to a normal range.

The new drug was developed by the Wallace Laboratories at Granbury, New Jersy. Dr. Frank M. Berger, President and Director of research, who discovered the drug, says

that it is apparently the first drug to reduce high blood pressure without impairing the normal "regulatory mechanism of the body".

White Cement from Indigenous Materials.

A new process for the manufacture of white cement has been developed by the Regional Research Laboratory at Hyderabad under a project sponsored by the National Research Development Corporation of India.

The new process makes use of potash felspar, limestone and gypsum, all of which are available abundantly, in India, for the manufacture of white cement. White cement is required for making mosaic tiles and decorative fixtures, and for the manufacture of coloured cements. Till recently, the entire requirement of white cement was being imported.

The white cement produced in the pilot plant at the Regional Research Laboratory at Hyderabad compare favourably with the imported white cement.

Potash felspar, limestone and gypsum are found in abundant quantities in Madras, Andhra Pradesh and Rajasthan. Two of these raw materials are also found in Kerala, Madhya Pradhesh, Gujarat, Mysore, Bihar, Uttar Pradesh and Orissa. Some white cement factories already operate in Kerala and Gujarat.

Defluoridation of drinking water.

It has been observed that too much of fluoride in drinking water causes endemic fluorisis in human beings and cattle.

The Central Public Health Engineering Research Institute, Nagpur, has developed a process for reducing excessive amounts of fluorides in water to optimum level (0.8 to 1.5 mg./litre). The process consists in passing water through a bed of activated carbon in 2 per cent alum solution. The carbon has an efficient selectivity for fluorides with an average capacity of 350 mg./kg., it can be regenerated by treating with one per cent alum solution.

Based on the process, a domestic defluoridation unit (capacity, 15 gal.) which can cater to the needs of a small family for drinking and cooking purposes has been designed and fabricated.

Installation of a pilot plant at Loharu (Punjab) where fluoride content of water is more than the permissible limit, is contemplated for treatment of water for a population of about 4,000.

Statistics Regarding Cinema Theatres in Madras State

The total number of permanent cinema theatres (district-wise)—

North Madras	11
South Madras	31
Chingleput	23
North Arcot	28
South Arcot	28
Thanjavur	40
Tiruchirappalli	43
Madurai	47
Ramanathapuram	25
Tirunelveli (including Kanyakumari district)	43
Salem	36
Coimbatore (North) (including the Nilgiris district)	44
Coimbatore (South)	28
Total	427

The total number of temporary cinema theatres (district-wise)—

North Madras	..
South Madras	..
Chingleput	71
North Arcot	16
South Arcot	28
Thanjavur	60
Tiruchirappalli	51
Madurai	59
Ramanathapuram	83
Tirunelveli (including Kanyakumari district)	44
Salem	54
Coimbatore (North) (including the Nilgiris district)	42
Coimbatore (South)	55
Total	543

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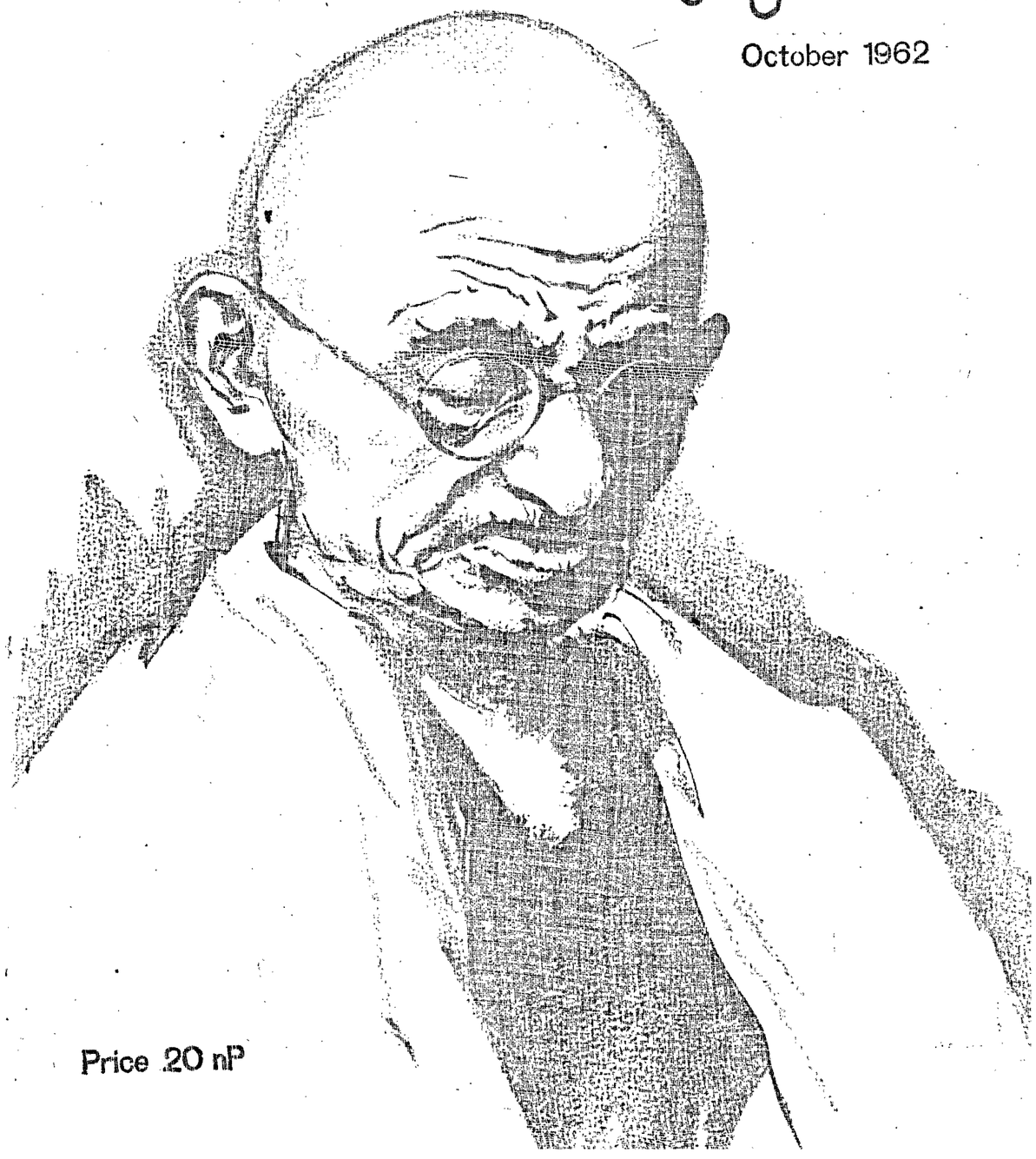


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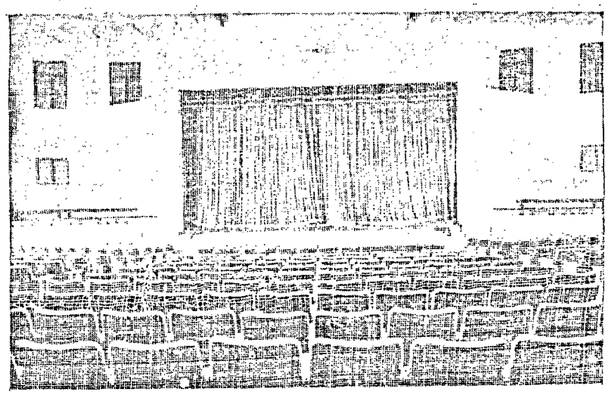
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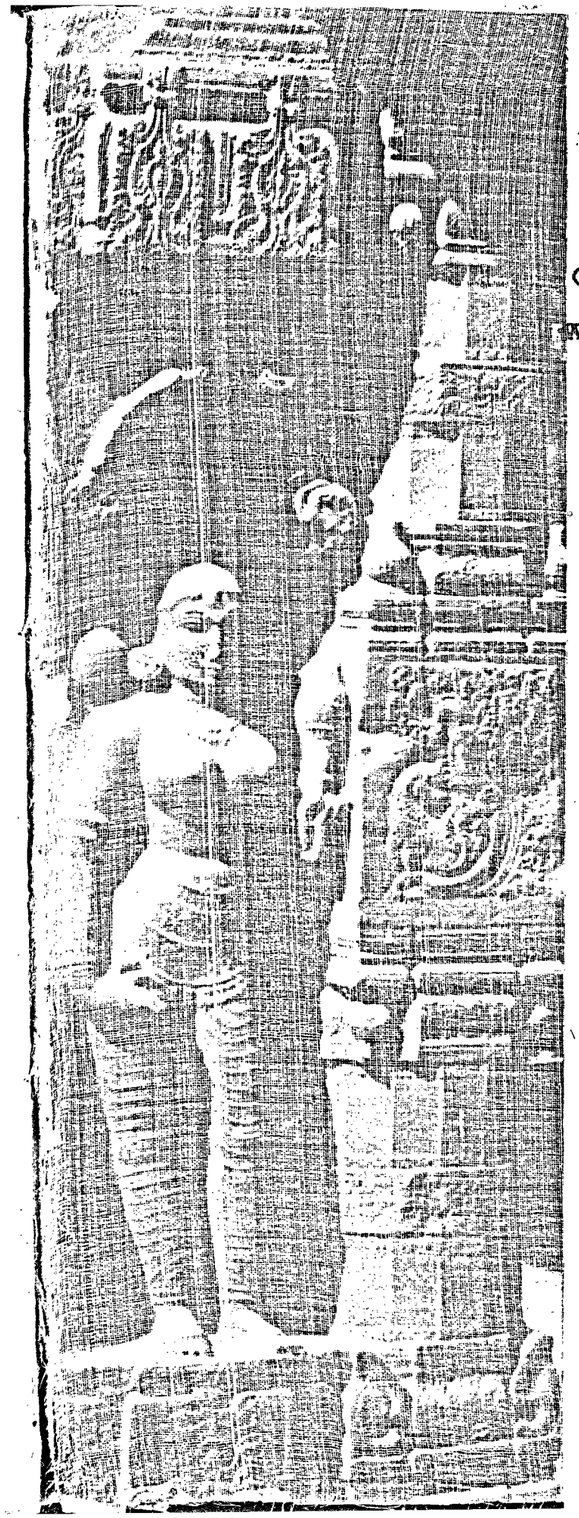
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MADRAS Information

OCTOBER 1962

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THIS MONTH'S COVER

There is no parallel to the leader-hip of Mahatma Gandhi in the history of the world. He transformed a nation of weak, dispirited, fear-ridden people into a nation of courageous, strong and self-reliant men and women. He was the great liberator who freed the country from foreign domination and from established social evils which kept the people divided, weak. The life, work and teachings of the Mahatma constitute a beacon light to guide generations of Indians yet unborn. Gandhi Jayanthi, like the jayanthi of the heroes, saints and philosophers who have enriched the life and thought of Indians, has become a national festival.

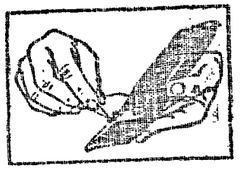


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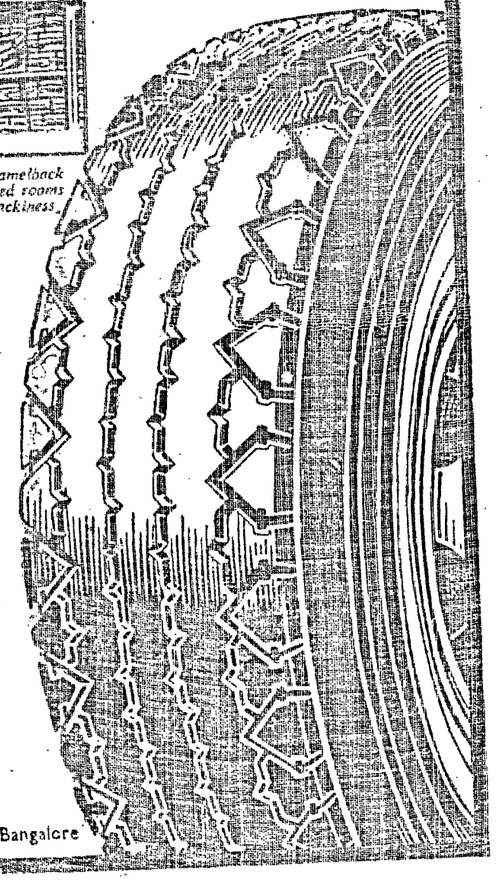
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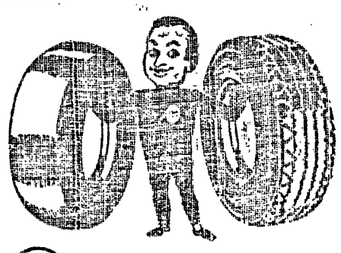
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ONE NATION



—Mahatma Gandhi

We celebrate on October 2, the 94th birthday of Mahatma Gandhi. He is no longer with us but we seek light from his teachings. He vehemently opposed all separatist movements and held the view that it would be a folly to make further divisions. Excerpts from his prayer speech made in July 1947 and from an article of his in the "Young India" are reproduced here.

In my opinion India is to-day ONE NATION even as Italy or France is and this I maintain in spite of a vivid and painful knowledge of the fact that Hindus and Musahuans are murdering one another, that Brahmins and Non-Brahmins, are preparing for a similar battle. But I have known similar quarrels in families and in other nations. It has often seemed to me that a family connection is necessary to establish a good ground for a quarrel. But it flatters me to be able heartily to endorse the proposition that the future of Asia depends upon a proper and demonstrable unification of India (*Young India*—11th August 1927).

Sheer Folly

Mahatma Gandhi in one of his prayer meeting speeches made in New Delhi in July 1947 referred to the movement for Dravidastan—Southern India, comprising the population speaking the four Dravidian languages Tamil, Telugu, Malayalam and Kanarese and said, "Why should this portion of India, speaking the four languages, be separated from the rest? Were not these languages rich, as they were drawn largely upon Sanskrit for their richness?" he asked. He had travelled through the four States and he found no difference between them and the rest of the States.

It was a myth, he said, to consider that those living in the south of the Vindhya Range were non-Aryans and in the north, Aryans. Whatever they might have been at one time, they were so inter-mixed that they were one people from Kashmir to Kanyakumari notwithstanding that India was cut into two. It would be folly to make further divisions. If they did not stop at that division, there would be no end to independent Sovereign States which would be useless for India and the World. Let it not be said of them that they were fit for one political system only under bondage, and, as freemen, savage-like, they would split up into as many groups as they liked, each group going its own way, or they would be held in bondage by one despotic State, possessing an army large enough to bring them under subjection.

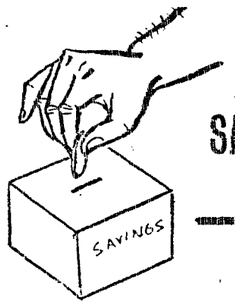
SAID THE MAHATMA.

The Swaraj of my—our—dream recognises no race or religious distinctions. Nor is it, to be the monopoly of the lettered persons nor yet of moneyed men. Swaraj is to be for all, including the maimed, the blind, the starving toiling millions.

My ambition is much higher than independence. Through the deliverance of India, I seek to deliver the so-called weaker races of the earth from the crushing heels of Western exploitation.

Our civilisation, our culture, our Swaraj depend not upon multiplying our wants—self-indulgence, but upon restricting our wants—self-denial.

I do not want the power of a Hitler. I want the power of a free peasant. I have been trying to identify myself with the peasants all these years but have not succeeded in doing so. What differentiates him from me is that he is a kisan and labourer no by choice but by force of circumstances. I want him to be a kisan and labourer by choice because then I can enable him to throw off his master's shackles that keep him bound today and that compel him to do his master's bidding.



SAVINGS HABIT among the WORKERS



SRI R. VENKATARAMAN, *Minister for Industries, Madras*

For the Development Programmes nearly Rs. 350 to Rs. 360 crores are to be spent and the money will have to be found only in two ways—either by savings from the community which is voluntary or by taxation which is compulsory.

The working classes are one of the largest beneficiaries of the development plans and they have a useful part to play in helping the State in further development with their savings as they primarily owe their prosperity to this process of development. It is the duty of the employers to see that they provide the necessary assistance, so that the Savings Scheme may get the firm support it deserves from the employees.

Excerpts from the speech delivered by Sri R. Venkataraman, Minister for Industries, at the meeting of Industrialists held on 16th August 1962 at the Board room of Messrs Kothari & Sons, Oriental Buildings, Madras.

It has become a practice to request the industrialists from time to time on behalf of labour to make some sacrifices in order to make the labour and the industry of the country prosper or at least put them on the road to progress in the implementation of the Plan. It is indeed very difficult to promote this scheme of savings. They have a lurking suspicion that if they agree to save, it might be interpreted by the industrialists as an argument that their wages are adequate as evidenced by their margin of savings.

Prizes were distributed to the institutions in the city where the maximum number of participants in Pay Roll Saving Scheme was organised. Photo shows Sri R. Venkataraman, Minister for Industries, presenting the prize to the representative of Messrs. William Jacks, Madras.



Habit of saving

All of us have to take great pains to see that this movement takes some firm root among the workers and employees in the commercial and industrial establishments: so that this habit of thrift might be developed. Once the employees get into the habit of saving and when they see their savings grow, their enthusiasm to continue it becomes infectious. Steps should be found to inculcate this spirit into the large mass of the community which is now much better off than it was ever before. The working classes are one of the largest beneficiaries of our development plans with its emphasis on rapid industrialisation and as their well-being is due to this accelerated industrial activity, they have a useful part to play in helping us in further development with their savings as they primarily owe their prosperity to this process of development. But for this phenomenal progress in economic development through industrial activity, expansion of trade and commerce, the employer's community would not be having that amount of employment which they have now, that amount of income which they have now or that amount of capital and equipment which they now have.

Responsibility of Trade Unions

The large employer community maintains that it is up to the Trade Unions to inculcate the habit of thrift and thereby induce them to invest in this National Savings Certificates and other schemes. It is one of the primary duties of the Trade Union movement to inculcate the spirit of savings. Promoting the thrift habit was one of the signal achievements I had brought about for the labour in the Simpson Group of Companies. It is not difficult to inculcate in them this spirit of savings; but one has to go about in the proper way to help to create the savings habit among the workers.

Increasing dividends

To provide necessary facilities, to give them adequate knowledge about the savings scheme from time to time as may be required and to see that the working classes do not fritter away all the incomes they get at the present moment is a duty that can give increasing dividends to the employers in the long term. A large number of private employers have responded to this request. Often they have complained about the irksome procedures they had to follow in accounting, etc., which they had to maintain. The answer they have to give, the criticisms they have to face from the workers that the management is taking away their money without knowing that the money is being saved for them and that this savings effort of the employees might be advanced as a proof of the capacity of the employees that they are paid adequately by the employers when voices were raised for pay rise etc., are all in the game. No doubt, if the employers take some keen interest in trying to foster this habit, we can expect a great measure of success.

Savings for the rainy day

There are certain fields of employment in which savings are becoming almost obligatory. That savings is necessary and useful for the rainy day and it is possible for them is one of the things which must somehow be put into their minds. Workers who are over 30/40 years of age know that they at least have gone through suffering and hardship in the past; but the other sections have not known the suffering which their elders have experienced.

I would appeal to the employers to see that they provide the facility, that they provide also necessary assistance so that the savings scheme may get the firm support it deserves from the employees.



Sri R. Venkataraman, Minister for Industries, is seen addressing the industrialists.

In employers own interest

For the question 'Who is to foot the bill' I will suggest that the employers will have to foot the bill. Even if the employers have to do it, it is worthwhile for them to do. Whatever reimbursement or collection charges for operating pay roll savings the Government may be making should not be the basis for employers to launch on this programme. The employers should deem it as part of their industrial activity to incur even that amount of expenditure for the welfare of their own employees. The bonus of 3–4 months which is given during Deepavali and Pongal seldom goes to the workers. In Coimbatore, during that one week preceding the payment of bonus, prices shoot up far beyond anything which one would normally expect and still people pay willingly, unhesitatingly because they have money with them and they spend it and ultimately they find themselves in the same indebted position in which they were before these bonuses were paid. Therefore, it is in employers own interest to educate the workers that they should not go in for this extravagant expenditure and see that they develop a sense of responsibility and try to save them against their own spending. The employers should make a contribution in this direction and in this even if it becomes necessary to incur any expenditure, even it brings a little odium from the workers when it involves some extra work, it is worthwhile for the employers.

Show them the right way

Working classes are generally amenable to good advice and they are usually led into wrong ways because many of them do not get the necessary advice at the appropriate time. Now the employers seem to think that advising the workers is the exclusive job of the trade unions. Employers have also that responsibility and privilege in the matter and they have to help them to develop good habits of thrift and therefore even it becomes a little difficult or a little irksome to try to inculcate this habit, the employers have to undertake that little duty to make the workers useful and contented members of the society,



The Governor of Madras during his tour of Kanyakumari district in july visited the Wooden Toys Training Centre of Thalakulam Block. He is seen watching a trainee working at a machine.

It is not impossible for the employers to ask some of their resourceful managers, some of their section heads to call together groups of employees and then discuss this problem of savings with them and try to convince them and enrol them. If the employers call the employees together with the assistance of some of the section heads, foremen, then the workers taking interest in the scheme will be more useful and discuss with them in detail the advantages of savings not only to themselves but also to the country. It would be possible to bring a large section of people in and I want something should be done by every one of the employers in Madras State.

Money for development works

The Government raised a loan for Rs. 12 crores recently. We have to go into the market again for another Rs. 3 crores of rupees for Electricity Board Scheme and another one crore of rupees for the Housing Board. Into all these, only a certain section of society will come into the picture. But the classes to whom this savings will make an appeal largely are the middle and upper middle classes and the industrial and other sections. We cannot insist that the working classes, commercial employees and people of that cateory should subscribe for the Government loans and if we have to tap the resources available with them, we have to lay great emphasis on this savings campaign and if we raise about at least 3 crores of rupees by savings in Madras two thirds of it will come to us and to that extent our plans can be implemented.

No cut down in programmes

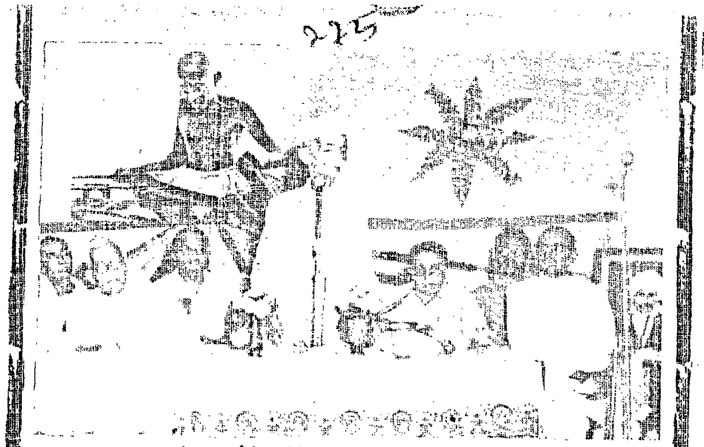
Madras State Plan has been cut down from our original expectation of Rs. 400 crores to Rs. 291 crores. We have not cut down our programmes. We still hope to perform a little more than what we have done or what we were allowed to do in the Third Plan. Last time, 151 crores of rupees were allotted to this State but we have managed to spend about 181 crores of rupees and even if we make allowance for 10 crores which we got from the Canadian Aid Programme for the Kundha, we have found resources to the extent of nearly 20 crores for the Plan.

It is hoped that we shall be able to do better than the allocation of Rs. 291 crore.. We are going to spend nearly Rs. 350 to Rs. 360 crores and all that will have to be found only in two ways—either by savings from the community which is voluntary or by taxation which is compulsory.

More savings, less taxation

To the extent to which we are able to raise funds through the voluntary efforts of savings, the pressure of taxation will be relieved. We might not have to resort to so much taxation if we could find additional resources by way of loans. After all, the future generations have to pay a small part for the benefits that this generation is creating for them and there is no other way the future generation can contribute except by paying back the loans at least which have been and are being raised. It is a well-known system in any economy to plan its national requirements between taxation and loan programme and in this, the State Government have carefully balanced their resources for their commitments under the Third Plan between taxation, loans and savings. To the extent to which we find sources through savings, taxation measures can be kept at a minimum and when savings of the community is difficult to obtain, taxation and loans have to make up the shortfall.

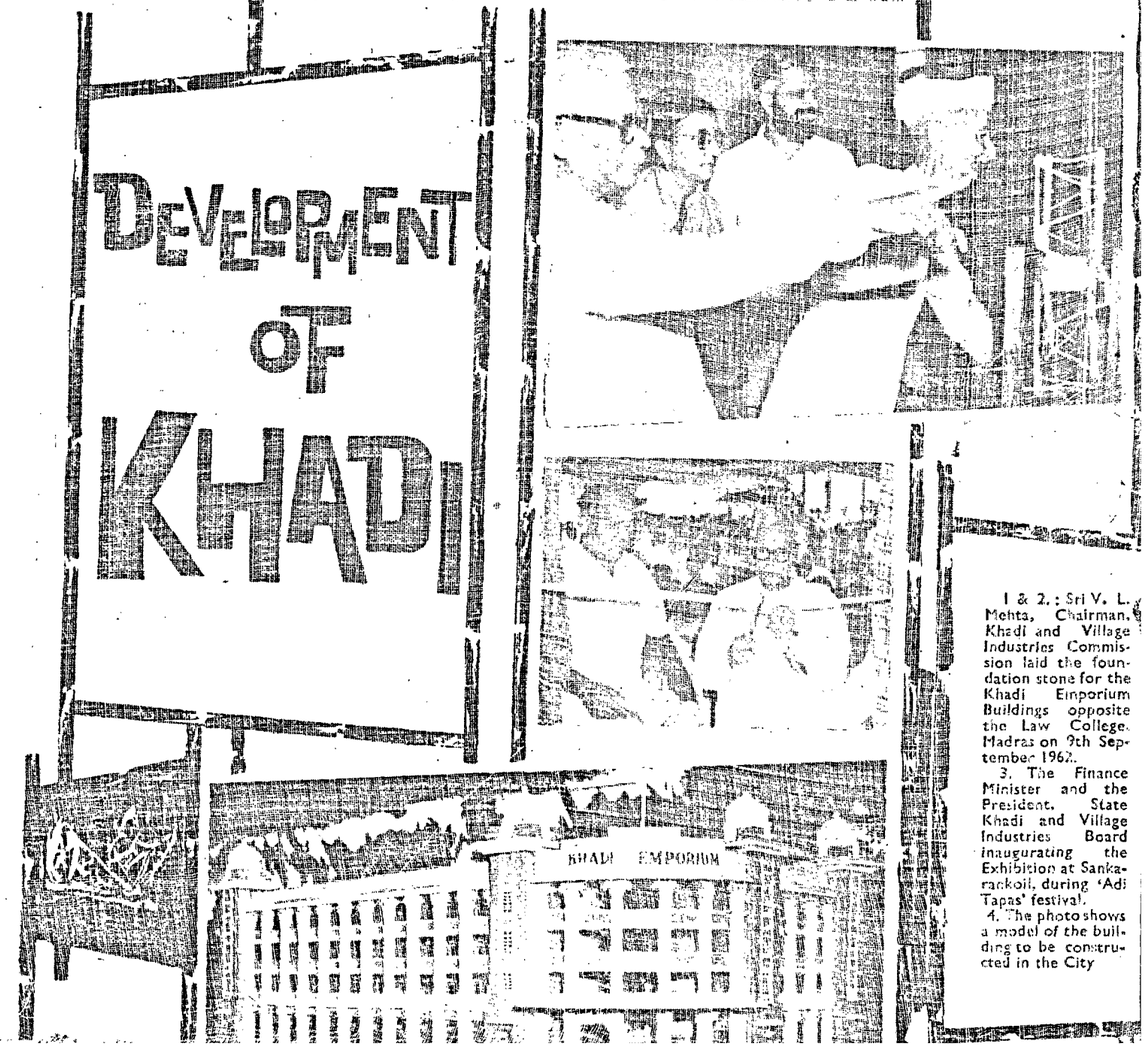
The commercial community should take keener interest in the development of savings campaign amongst their own employees, amongst their own workers of the lower income groups who come to benefit by this industrial and economic activity. If the employers make an honest and determined effort to see that their workers realise the value of savings, this scheme will be a great success.



Sri Vaikunthlal Mehta, Chairman of the Khadi and Village Industries Commission, Bombay laid the foundation stone for the Rs. 42 lakhs-five – storeyed Khadi Emporium building near the Law College recently.

Sri M. Bhaktavatsalam, Finance Minister and Chairman of the State Khadi and Village Industries Board, presided.

The building is to be constructed at the corner plot at the junction of Esplanade Road and Netaji Subhas Chandra Bose Road. The Law College police station and the Police Staff quarters, which stood on the plot had been demolished and alternate accommodation had been provided to them in the Law College compound.



1 & 2.: Sri V. L. Mehta, Chairman, Khadi and Village Industries Commission laid the foundation stone for the Khadi Emporium Buildings opposite the Law College, Madras on 9th September 1962.

3. The Finance Minister and the President, State Khadi and Village Industries Board inaugurating the Exhibition at Sankarankoil, during 'Adi Tapas' festival.

4. The photo shows a model of the building to be constructed in the City

POWER
Prescription for Prosperity

Describing electricity as a symbol of modernisation, President Dr. Radhakrishnan gave the slogan "Panchayats and Power as a prescription for the country's progress", while inaugurating the Thermal Power Station at Neyveli on August 5.

The Madras Government in its scheme of Rural Electrification illustrates the progress that can be achieved by precise planning and determined implementation. The Central Water and Power Commission which studied the Madras Scheme has conceded the right of the Madras State to be regarded as a pioneer and a leader in the field of Village Power Supply.

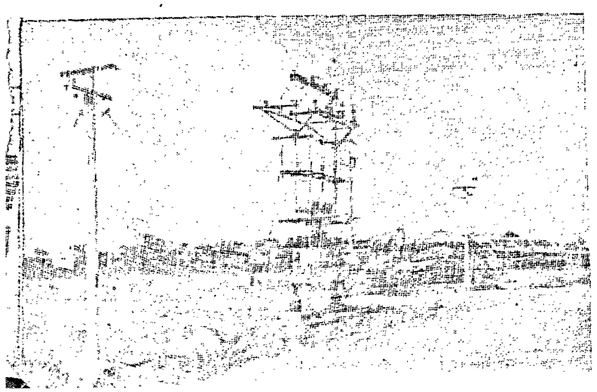
Madras has an impressive record in the power development and it ranks third in India in gene .cion and utilisation of power, Maharashtra and West Bengal leading. In respect of utilisation of power for irrigation, it is first by way of number of consumers, consumption and connected load. In fact, Madras ranks first in rural electrification. In the matter of hydrol electric output, Madras has improved its position and is now first in the country.

Electrification of rural areas is a priority requirement today for modernising agriculture and starting industries in the rural areas as a part of the overall drive toward increased production. Of 18,646 towns and villages in the State as many as 12,638 or 64 per cent had been electrified till 1st April 1962.

During the year 1961-62 an amount of Rs. 562·16 lakhs has been spent on rural electrification as against Rs. 678 lakhs during the year 1960-61.

The number of towns, villages and hamlets electrified in the State was only 1,813 at the beginning of the First Five-Year Plan. During the First Plan 1,730 additional localities were electrified. In the Second Plan the number rose to as many as 7,217 bringing the total to 10,760 in March 1961. As on 1st April 1962 the total number of villages and hamlets electrified was 12,638. During the year 1961-62, 1,876 villages were electrified.

The villages get the benefit of power to brighten their houses and to water their fields.



Power for irrigation

In respect of utilisation of power for Irrigation, Madras State ranks first by way of number of consumers and connected load. During the year 1961-62 about 22 per cent of the total production of electrical energy has been consumed by the agricultural sector and the revenue realised therefor worked out to about Rs. 300 lakhs and the revenue realised per KWH is 7·5 nP. which is the lowest tariff as compared to other classes of L. T. consumers.

PROGRESS IN MADRAS STATE PRAISED

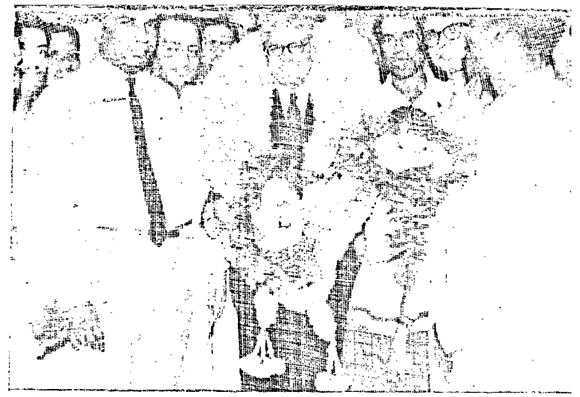
Appreciation of the steps taken by the Madras State Electricity Board to maintain a high tempo of rural electrification and do it at a lower cost than in other States is contained in the report of the Study Team on Rural Electrification in Madras, constituted by the Central Government at the instance of the Planning Commission.

The report is being circularised to the State Governments with an observation by the Union Ministry of Irrigation and Power that the study revealed that the average cost of electrifying a village in Madras State was about Rs. 40,000, as against an average cost of Rs. 80,000 in certain other States.

The study team has observed, among other things, that the tempo of rural electrification has been stepped up in Madras State by systematic allocation of adequate funds for development of electricity in general and transmission and distribution in particular. The Madras Electricity Board has been well organised to undertake programmes of electrical works. Procurement of materials is centralised and designs are standardised. Local materials are used for rural extentions and many items are fabricated in workshops set up by the Board resulting in speedy execution of the works.

Reduction in construction costs by adopting lower factors of safety, lower ground clearances, use of indigenous materials, etc., in rural extensions has enabled the Madras Electricity Board to achieve substantial results with the funds allotted.

Despite increase in tariffs, the demand for power supply for new pumpsets has been increasing progressively. Hire-purchase facilities offered by the Agricultural and Co-operative Departments for pumpsets are being availed of only to a limited extent. Co-operative credit facilities seem to be more popular, Madras has been making an all-out effort to encourage minor irrigation.



Sri R. Venkataraman, Minister for Industries left Madras for Geneva on 24th August 1962. He has since returned.

Agricultural consumers have always been treated with utmost consideration both by the Electricity Board and the Government of the State. A number of committees had been appointed in recent years to go into various aspects of the supply of electricity to rural areas. Tariffs have been so framed as to give a bias in favour of the agricultural consumer, the rates for pumping being the lowest amongst the low tension power rates. Free service connection for agricultural consumers is a regular feature subject to certain ceilings per horse-power of connected load. Reduction of the level of minimum consumption guarantee and a few other concessions have also been recently ordered. Recently, the State Government examined the question of subsidy for aiding the State Electricity Board if it happened to work at a loss on account of large scale rural electrification. The Government have declared that if, after taking into account the revenue from both rural and non-rural loads, the Electricity Board suffers a loss because of the reduction of special guarantees from agricultural consumers, a subvention would be given by the Government to the Board to the extent of the loss or reduction in revenue attributable to the lowering of the special guarantee, whichever is less.

More and more Pumps

The supply of power to villges has led to a phenomenal rise in the number of agricultural pumps, from 14,373 in 1951 to 32,440 in 1956 and 117,695 in 1961. The total number of pumpsets using power is 139,716 or about 23 per cent of the total number of pumpsets required at the rate of one pumpset for each well in the State. An all-out effort is being made to encourage minor irrigation which accounts for a large consumption of power. Out of 5·57 million acres of irrigation area in the State, 1·23 million acres are irrigated by water from about 770,000 wells. There is, therefore, still a large potential load even in the field of minor irrigation by way of conversion to electric drive

In the year 1961-62, 22,016 pumpsets were given electricity connections, and about 6,500 rural industries were supplied with L. T. currents.

Power generation

During the year 1961-62, the first year of the Third Plan Period, the installed generating plant capacity of the Madras Grid remained stationary at 560·500 m.W.



Sri M. Bhakthavatsalam, Minister for Finance and Education, is seen receiving a cash donation of Rs. 3,500 from Sri A. Venkatadri Naidu, Chairman of the Gudiyattam Panchayat Union, at the School Improvement Conference held at Gudiyattam on 21st August 1962.

The aggregate power demand of the Madras Grid which was 423·160 m.W. in April 1961 has increased by 21 per cent to 511.400 m.W. at the end of March 1962.

The power generated in Madras Grid during the year 1961-62 was 2,470·229 million Kilowatt hours, which registered an increase of 11·6 per cent over the power generated in the year 1960-61. Electrical energy generated by the hydro plant was 2,064 million units or 84 per cent of the total and by the steam plants was 406 million units or 16 per cent of the total. Maximum quantity of electrical energy was generated in the month of January 1962 (230·96 million units) and the lowest was in the month of May 1962. Periyar Power Station produced the maximum electrical energy during the year which accounted for 27 per cent of the total energy produced in the Madras Grid. Next to Periyar comes Pykara which contributed 16·4 per cent of the total energy produced in the Madras Grid. The generation of electrial energy per Kilowatt of installed capacity was highest in the case of Mettur Power Station (i.e., 6,454 kW Hrs.) whereas it was lowest in Kundah (i.e., 2,187 kW Hrs.) The full impact of all the hydro plants can be felt when all the spill over schemes from the Second Plan have been completed.

Power consumption

Power sold to different categories of consumers has increased from 1,764·603 million Kilowatt hours in 1960-61 to about 2,020·000 million Kilowatt hours in 1961-62 thus registered an increase in the consumption of electrical energy during the year under review by 14 per cent over the year 1960-61. The power consumed for agricultural purposes has increased from 21 per cent of the total consumption in 1960-61 to about 22 per cent in 1961-62. Power consumed in the State for industrial purposes is about 44 per cent. The per capita consumption of electrical energy has increased from 54 in 1960-61 to 60

Cost of Neyveli Power

Mr. K. D. Malaviya, Union Minister of Mines and Fuel, told the Rajya Sabha that the present indications were that the cost of producing electricity at Neyveli would compare favourably with the cost of production at the Basin Bridge Power Station at Madras.

in 1961-62. During the year 1961-62, the following transmission lines were completed: (i) Koruttur—Ennore—110 K.V. Line; (ii) Panruti—110 K.V. Line; (iii) Karaikudy —A. Therkur—Natham—66 K.V. Line; (iv) Kaveripak to Kanchi—110 K.V. line.

Consumers and their connected load

During the year 1961-62, 22,016 connections were extended for agriculture, 2,569 for industries, 52,165 for domestic purposes with a total number of services and their connected load of 112,671 k. Watts in all. The total number of services and their connected load for important categories of consumption as on 1st April 1962 are as follows:—

	Number.	*Load in k.W.*
(1) Agriculture	139,716	504,951
(2) Industry	22,304	629,799
(3) Domestic	475,857	286,643

The total number of consumers as on 1st April 1962 were about 845·600 with a connected load of about 1,422,000 k.W.

The capital expenditure incurred during the year 1961-62 was 1,745·53 lakhs and the total capital outlay on electrical schemes as on 1st April 1962 was Rs. 15,065·01 lakhs.

The gross revenue earned during the year was 1,780·16 lakhs as against Rs. 1,528·93 lakhs in 1960-61 which showed an increase of 16·4 per cent in the gross revenue of the Board during the year under review over the previous year.

Employment of Labour

The total number of workers employed in the Madras State Electricity Board (as on 1st March 1962) is 40,286 out of which 16,525 from Construction Subordinate Service and Operation Subrodinate Service, 2,307 from Work-charged Establishment, 7,356 Nominal Muster Roll and 14,098 Temporary Casual Labour. The total number of workers employed at the end of February 1962 has increased by 18·4 per cent when compared with the number of workers employed at the end of March 1961.

Third Five-year Plan

An ambitious programme estimated to cost over Rs. 100 crores has been drawn up for implementation during the Third Plan period. The outlay forms 35 per cent of the total outlay for the State.

The statement below gives the schemes included in the Third Plan and the plan provision.

Name of schemes.	*Provision during the Third Plan period.*	*Physical targets.*
	(In lakhs of Rupees.)	
Continuing schemes.		
1. Periyar Hydro-Electric Scheme, I stage.	12	
2. Kundah Hydro-Electric Scheme, I and II stages.	277	
3. Sandynallah Reservoir Scheme.	30	
	319	
New schemes.		
4. Mettur Tunnel Hydro-Electric Scheme, I stage.	552	100 m.W.
5. Kundah Hydro-Electric Scheme, III stage.	2,306	245 m.W.
6. Periyar Hydro-Electric Scheme, III stage.	94	35 m.W.
7. Anamalai Hydro-Electric Schemes (Parambikulam Project.)	500	180 m.W.
8. Transmission and Distribution Project.	3,028	8,000 miles of H.T. lines and extending supply to 8,000 villages.
9. Rural Electrification	3,600	
10. Investigation of New Schemes.	20	
11. Loans to Industries	250	
	9,769	
Grand total	Rs. 10,019 lakhs.	

Physical Targets

Installed Capacity: It is programmed to increase the present installed capacity to 1,131,000 kW. with the completion of the Third Plan schemes as detailed below:—

Kundah Hydro-Electric Scheme, III Stage Extension.	245,000 k.W.
Mettur Tunnel Hydro-Electric Scheme	100,000 „
Periyar II Stage Extensions ..	35,000 „
Parambikulam Hydro-Electric Scheme.	180,000 „
Total for III Plan Schemes..	560,000 k.W.
As at the end of the II Plan period..571,000	„
Total..	1,131,000 k.W.

In addition, with the completion of the Neyveli Lignite Project, power to the extent of 226,000 k.W. will be made available to the Madras Grid.

Transmission and Distribution Lines: At the end of the Second Plan period there were 37,216 miles of transmission and distribution lines. About 8,000 miles of high tension lines and 12,000 miles of low tension lines will be erected during the Third Plan period.

An important feature of the transmission scheme during the Third Plan period is the formation of the 230 kV super grid which will facilitate effective utilisation of power within the State and interchange of power with the neighbouring States.

Rural Electrification: It is programmed to cover the balance of 8000 villages during the Third Plan period at the rate of 1,600 per annum.

The ninth Quarterly Draw of Prize Bonds was inaugurated by Sri V. Bhuvarahan, Minister for Information and Publicity at Rajaji Hall on 1st September 1962.



Power Stations and their Generation of Electrical Energy in Madras Power Grid, 1961-62.

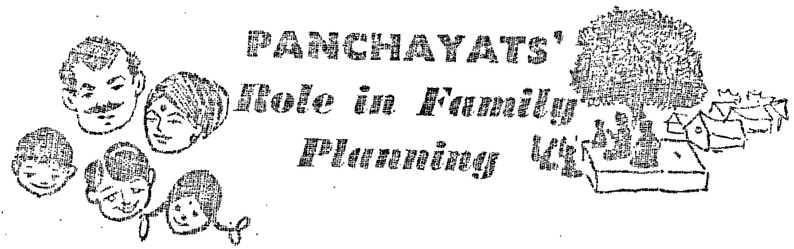
Serial number.	*Power stations.*	*Installed capacity.*	*K.W. Hrs. generated in 1961-62.*	*Percentage to total.*	*K.W. Hrs. generated in 1961-62 per K.W. of installed capacity.*	*Percentage increase in 1961-62 over 1960-62.*	*Station Peak in March 1962.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		M.W.	Million.	per cent.	K.W. Hrs.	per cent.	M.W.
1	Pykara	70.000	401.882	16.3	5,768	+0.2	60.0
2	Moyer	36.000	174.080	7.0	4,836	+0.4	39.0
3	Mettur	10.000	258.162	10.4	6,454	+12.5	26.8
4	Papanasam	28.000	165.197	6.7	5,900	+7.6	28.0
5	Periar	105.000	668.223	27.0	6,364	—4.6	77.0
6	Kundah P.Hs. I and II	180.000	393.694	16.0	2,187	+189.0	196.0
7	Samayanallur Thermal	14.000	51 389	2.1	3,671	—11.6	12.0
8	Madras Thermal	87.500	354.602	14.4	3,635	—0.9	70.7
9	Madras Power Grid	560.500	2.470.229	100.0	3,872	+11.6	..

Systemwise Progress of Electricity in Madras State, 1961-1962.

Serial number and details of Electricity Development.	*Systems.*							*Total for 1961-62.*	*Percentage increase in 1961-62, over the year 1960-62.*	*Total Progress as on 1st April 1962.*
	Pykara.	*Mettur.*	*Madurai.*	*Vellore.*	*Tiruchirappalli.*	*Tirunelveli.*	*M.E.S.*			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1 H.T. Lines energised (in miles).	109	291	235	278	273	106	49	1,300	6.4	16,512
2 L.T. Lines energised (in miles).	487	747	444	554	429	339	291	3,291	10.5	25,386
3 Number of distribution Transformers.	125	363	133	224	278	107	71	1,311	28.0	11,389
4 Capacity of the distribution Transformer in K.V.A.	8,550	22,285	7,820	23,105	21,397	6,235	5,050	94,442	33.3	8,11,202
5 Number of services connected for Agriculture.	3,161	4,981	2,119	3,979	3,432	1,205	1,089	22,016	17.8	1,39,716
6 Connected load for Agriculture in K.W.	11,982	17,035	7,546	17,745	12,482	3,086	3,759	73,615	18.0	5,01,951
7 Number of services connected to Industries.	286	430	327	298	248	203	767	2,569	..	22,204
8 Connected load for industries in K.W.	1,203	2,171	1,607	2,147	1,689	876	2,634	12,408	..	6,29,799
9 Number of services connected for Domestic.	5,394	6,022	9,210	8,021	5,653	8,547	8,313	52,165	..	4,75,857
10 Connected load for Domestic in K.W.	2,669	2,992	4,669	3,988	3,049	3,881	5,400	26,648	..	2,86,643
11 Number of villages electrified.	200	352	264	468	288	276	35	1,876	30.0	12,638
12 System Demand in M.W.	142.79	198.15	92.10	..	..	..	78.45	511.40	23.6	511.40

A total number of 20,000 villages are expected to be electrified allover India by the end of the current Plan at a cost of approximately Rs. 105 crores. In 1961-62, the Government of India sanctioned loans of Rs. 3 crores to the Madras Government, Rs. 30 lakhs to Bihar, Rs. 76 lakhs to Punjab, Rs. 11 lakhs to Rajasthan and Rs. 70 lakhs to Madhya Pradesh for financing the expenditure on approved rural electrification schemes.

2-25 228



SRIMATHI JYOTHI VENCATACHELLUM,
Minister for Public Health, Government of Madras.

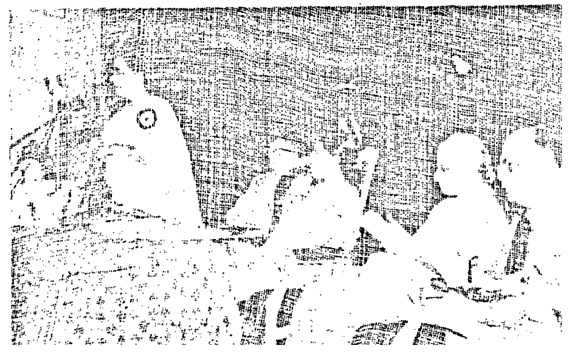
Family Planning has come to occupy an important place in rural economy and unless every individual householder in the village determines to follow the programme and limits the size of his family according to his resources, his living standards cannot be improved. It is for this purpose that the new Panchayats that have come into existence have been made responsible for the propogation of Family Planning within their jurisdiction. The following excerpts are from the address of the Minister of Public Health which she delivered while inaugurating the State Family Planning Conference at Madras on 21st August 1962.

Family Planning programme was initiated in this State as a health measure as far back as 1945. Family Planning advice and suitable means of birth control were made available at health centres for married women, if in the opinion of the medical officers such advice and facilities were required. Information of the availability of these facilities was to be given by public health visitors when necessary but it was cautioned that no other publicity should be given. This policy of offering birth control services only on medical grounds was continued for several years. The policy was however changed with the formulation of the First Five-Year Plan when the need for regulating the growth of population and stabilising it at a level consistentw ith national economy was recognised. The Government's policy in Family Planning was accordingly aimed at securing a reduction in the birth rate. But not much progress could be made in the translation of this policy into practice.

The beginning

Organised State-wide efforts for the propagation of the practice of Family Planning could be started only in 1956 when the Government set up the First State Family Planning Board with the Minister of Health as Chairman. The very first task assigned to this Board was to make correct and complete information on Family Planning available to the public. This was undertaken by the Board through the issue of a Family Planning Manual both in

Dr. Susheela Nayar, Union Minister for Health, inaugurated the State Family Planning Conference at Madras on 21st August 1962.



POST OFFICE
SAVINGS BANK

RATE OF INTEREST INCREASED

With effect from 1st August, 1962, balances up to Rs. 10,000 (Rs. 20,000 in joint accounts) in Post Office Savings Bank earn a tax-free interest of 3 per cent per annum. Balances in excess of this amount up to Rs. 15,000 (Rs. 30,000 in joint accounts) earn a tax-free interest of 2½ per cent.

Interest on public accounts has also been increased to 2½ per cent.

Open an account at your Post Office

NATIONAL SAVINGS ORGANIZATION

DAVP/319

TRIBUTE TO MADRAS

The enthusiasm and drive of Madras State, their workers and people have had a profound effect on workers throughout the country. Madras State formed the State Family Planning Board even before the Central Board was formed. Madras advocated a bold sterilization scheme when others were hesitant and cautious. It has been demonstrated in this City that the sterilization scheme can produce the desired results. In the Panchayat Act two major priorities have been rightly laid down—Food production and population control. I urge other States to follow Madras's example. I take this opportunity to congratulate the people of Madras for their notable efforts.

— DR. SUSHEELA NAYAR,
Union Minister for Health.

English and in the regional language in which the necessity for Family limitation and the several methods of Family Planning were explained in simple and straight language for the benefit of the married couples. The Manual has become a very popular publication. It has proved to be the chief instrument of public education in Family Planning in this State. We have now decided to present a copy of the Manual free of cost to every mother who delivers a child during the course of the next 12 months so that the message of Family Planning is carried to every home.

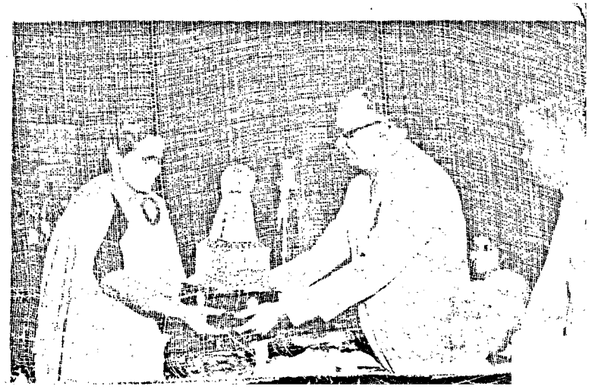
Ultimate solution

While the necessity and urgency of Family Planning is being brought home to the public, the actual method to be adopted is left to the choice of the individual couple. It is, however, our firm conviction that in the conditions of life of the vast majority of our people, natural and appliance methods have only limited value and the ultimate solution is sterilization. That is why we have been encouraging surgical methods of Family Planning. Our aim is to make sterilization services available to every parent who has at least three living children and does not desire to have any more. I may, however, stress the fact that no compulsion of any kind is used in pushing through the sterilization campaign and operations are undertaken purely on a voluntary basis. In fact, our regulations stipulate that both the husband and wife should give a signed declaration voluntarily whenever either wants to undergo this operation. The response to our call has been quite encouraging. The number of sterilization operations has increased from 695 in 1956 to 25,335 in 1961. In several districts the demand is so great that often the surgeries find it difficult to cope with the demand. We are gradually expanding and improving the facilities for sterilization in the several Government Hospitals. Our aim is to make Family Planning advice and surgical service part of the normal facilities offered in every Government Hospital and Primary Health Centre in the State.

Vital aspect of the problem

It is unnecessary for me to stress the importance of this programme in the context of our national planning and its intimate connection with the general economic and educational advance. The preliminary results of the 1961 census record an increase of population from 359 millions in 1951 to 438 millions in 1961. This has served to focus attention on the enormity of the population problem. It is now accepted on all sides that the alarming rate at which the population is growing throws undue strain on the national economy and on the resources of the Government to provide increased medical, educational and social welfare facilities. These considerations are undoubtedly important. There is an even more vital aspect of the problem, namely, the health of the nation. Millions of mothers are risking their life in unwanted child births. Infant and child mortality in the country continues to be high. The main appeal of Family Planning is, therefore, in terms of its contribution to the relief of this suffering, to the promotion of the health and happiness of the mothers. It is our basic duty to see that no unwanted child is born. The married couples should be enabled to adopt measures of control to ensure that a child birth occurs only when the mother is prepared for it. This will make the arrival

Dr. Mrs. M. J. Reddy, District Representative of the North Arcot District, receiving on behalf of the Tirupathur Panchayat Union which secured the first prize and rolling shield from the Chief Secretary, Sri R. A. Gopalasami, for having had 426 operations to its credit, being the maximum number of sterilization operations conducted during the year ending June 30, 1962.



of the child welcome, help to improve the health of the mother and thereby create happier homes and a stabler society.

Panchayats' Role

The programme of Family Planning is intimately tied up with the programme of local development and health administration. That is why we have associated the Panchayat Organisation in the State and the health and maternity staff with the Family Planning Schemes. Under the Madras Panchayats Act, 1958, it is the duty of the Panchayat Union Councils within the limits of their funds to make reasonable provision for the establishment and maintenance of Child Welfare Centres and for the offering of assistance and advice to mothers in Family Planning. The Panchayat Conference held in 1961, in which representatives of the twelve thousand and odd Panchayats in the State participated, adopted a unanimous resolution calling upon the Panchayat Unions to organise the provision of systematic instruction in methods of family limitation, to persuade every family to make its contribution to the Five-Year Plan by the adoption of the small family habit and the abolition of the high order births, and to convince the parents of the efficacy and harmlessness of sterilization as a method of Family limitation. The Conference also recommended that the Panchayat Unions should ensure that every mother to whom a child birth occurs receives instruction in Family limitation within a period of three months before or after child birth. This is a significant step and if the Panchayats were to act up to these resolutions the success of the programme of Family Planning is assured.

Full time officers

It is a matter of great satisfaction to me that the leaders in the Panchayat Unions have been taking active interest in the Family Planning Programme. In order to associate these leaders closely with the policy and the programme of the Government, we have enlarged the State Family Planning Board and also set up District Family Planning Committees in each district with representatives of Panchayat Unions and representatives of Social Welfare Organisations in the district as members and the District Collector as Chairman. We have also appointed full-time district family planning officers to provide the necessary liaison between the medical institutions and local bodies and to be in general charge of the Family Planning work in the districts.

Monetary Incentives

What we have achieved is substantial. But it is not sufficient; we have been able to touch only the fringe so far. Vigorous and sustained efforts are necessary to motivate every individual married couple to adopt family limitation. We have been offering some monetary incentives in the case of poor persons who undergo sterilization operation, mainly intended as compensation for loss of earnings during the period of rest after the operation. It has helped. But it is not adequate. It is necessary to reinforce this individual incentive by a community incentive. The Government have therefore evolved a scheme for offering lump-sum-grants to Panchayat Unions for building Maternity and Child Welfare Centres. The quantum of grant will be directly related to the size of their efforts in pushing the sterilization programme. The Government of India, it is hoped, will recognise the value of these individual and Community incentives and see their way to include these in their programme of Family Planning.

The medical personnel can play an important role in the promotion of Family Planning. Those who are directly employed in this work have their set task But the large body of medical men and women both in the Government service and outside, can help in the fulfilment of this national goal of limited families by timely advice and assistance to their patients, in this regard.

Scope for more studies

There is also vast scope for medical, biological and demographic studies in the field of family Planning. As we progress in the spread of the practice of Family limitation, the need for these studies will increase. I would appeal to the Universities to pay attention to this problem.

Chief Secretary at the party given to the delegates of the State Family Planning Conference.



The Gathering at the State Family Planning Conference.



SEX RATIO

The proportion of females to males is slowly declining over the years. This means that the risk to female lives at most ages has not improved upon the risk to male lives. The emphasises the fact that demographically India has not entered the modern Industrial age with its complementary characteristics of increased risks to male lives and reduced risks to female lives. Firstly, a larger proporation of boys than girls seems to be born in this country than in the West. Secondly, the statistics indicate that girls in the first few years of their life still seem to suffer from greater neglect than boys. Thirdly, a heavy toll of female lives is still taken in the earlier period of the reproductive age, that is, 15-34. The gap thus created is not made up in later ages.

TAGORE ON BIRTH CONTROL

"I am of opinion that Birth Control movement is a great movement not only because it will save women from enforced and undesirable maternity, but because it will help the cause of peace by lessening the number of surplus population of a country scrambling for food and space outside its own rightful limits," said Rabindranath Tagore in course of a letter written to Mrs. Margaret Sanger.

"In a hunger-stricken country like India", Poet Tagore continued, "it is a cruel crime thoughtlessly to bring more children into existence than could properly be taken care of, causing endless suffering to them and imposing a degrading condition upon the whole family, it is evident that the utter helplessness of a growing poverty very rarely acts as a check controlling the burden of over population. "It proves that in this case nature's urging gets better of the severe warning that comes from the providence of civilised social life".

"Therefore, I believe, that to wait till the moral sense of man becomes a great deal more powerful than it is now and till then to allow countless generations of children to suffer privations and untimely death for no fault of their own, is a great social injustice and will not be tolerated."

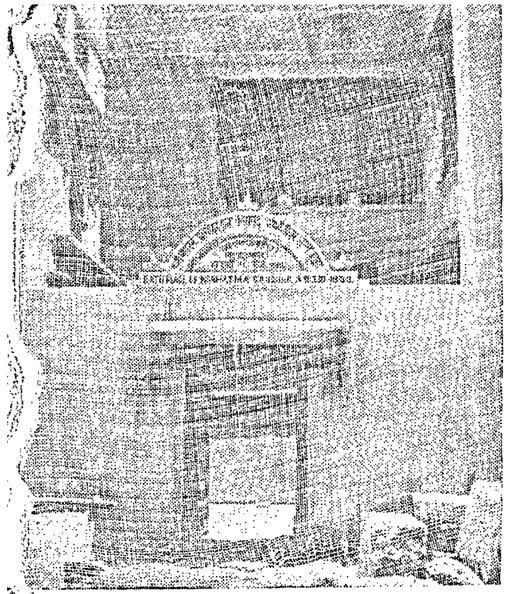
— Rabindranath Tagore.

Studies on Family Planning Attitude

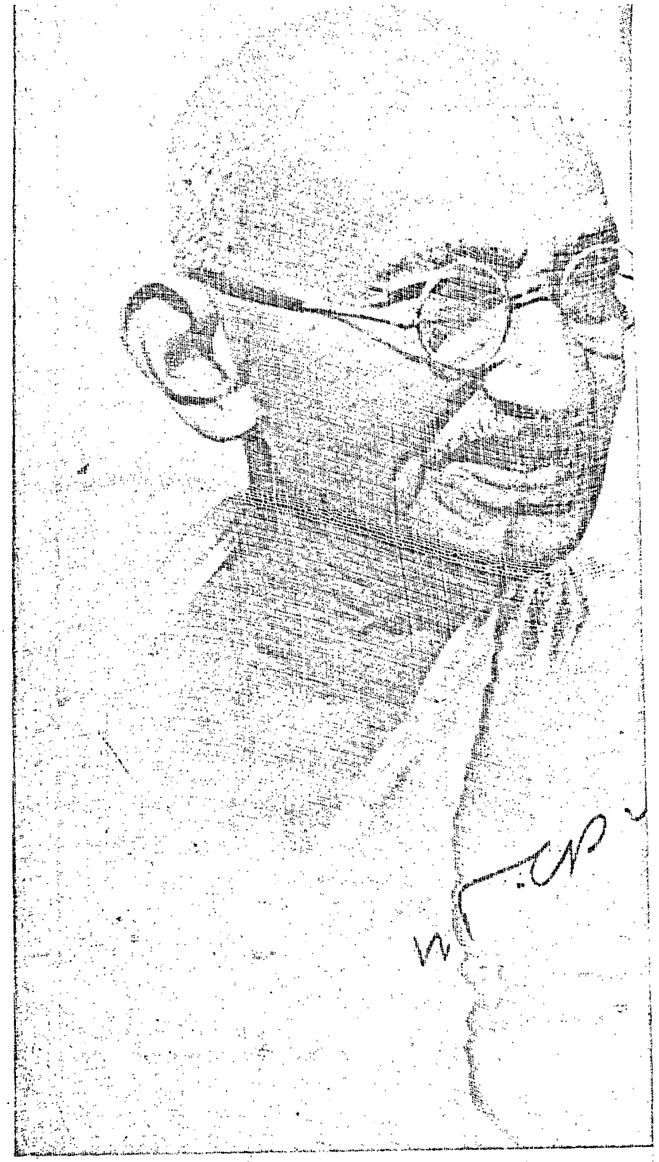
Twenty-seven studies on Family Planning Attitudes reveal that about 20 per cent of the people want a limited number of children. These studies were carried out in and around Delhi, Calcutta, Patna, Lucknow, Kanpur, Ludhiana, Hyderabad, Madras, Bangalore and Trivandrum. The studies further show that spacing of children at an interval of 3 to 4 years is generally favoured. Seventy per cent women of 35 years of age and above with 4 children are anxious to learn Family Planning methods, and from 10 to 20 per cent married women in rural India have some knowledge of contraceptives. It is further noticed that caste and religion do not appear to be co-related with the acquiring of knowledge about Family Planning.

Facilities for Sterilization Operations

Facilites for free steriliation operations are now available on a family wide scale in several hospitals, maternity centres and other medical and health centres in States and Centrally-administered areas. Government employees are given 6 days' special casual leave for undergoing the operation. This facility has been extended to industrial workers also. To provide steriliation facilities throughout the country, the Union Government have offered 100 per cent financial assistance to all State Governments to increase the staff for training doctors for the operation and for providing mobile surgical units at district level. During the period 1956-61, there was a six fold increase in the number of steriliations, from nearly 8,000 to over 46,500.



The ancestral home of the Gandhis in Porbunder where Gandhiji was born 94 years ago.

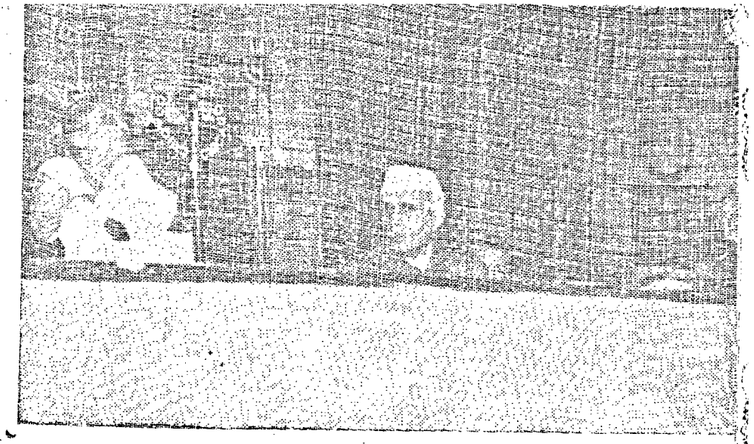


This picture recalls the famous Dandi March when Gandhiji set out from Sabarmathi Ashram for the sea coast to defy the Salt Law in 1930. This march was the signal for the countrywide civil disobedience movement. In the picture Gandhiji is seen with Sarojini Naidu.

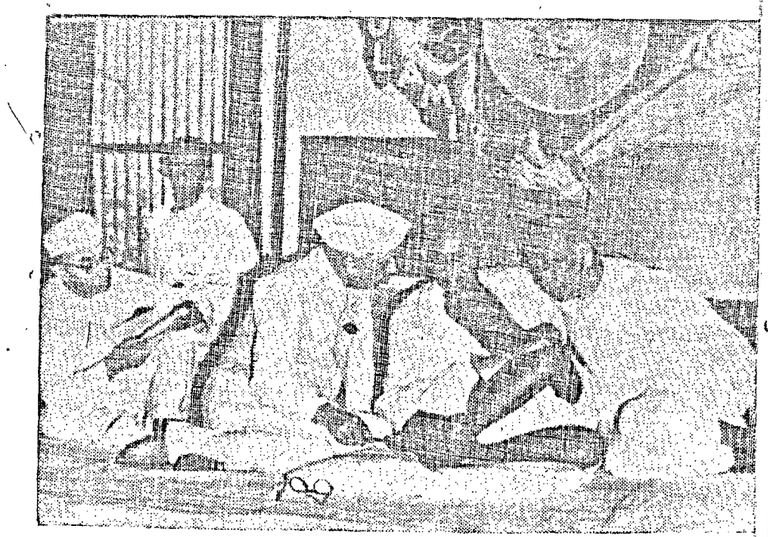


On October 2, 1962 the 94th Birth day of Mahatma Gandhi was celebrated when the people recalled with gratitude the life and teachings of the leader who moulded them into a nation.

INDIA'S HOMAGE TO MAHATMA GANDHI



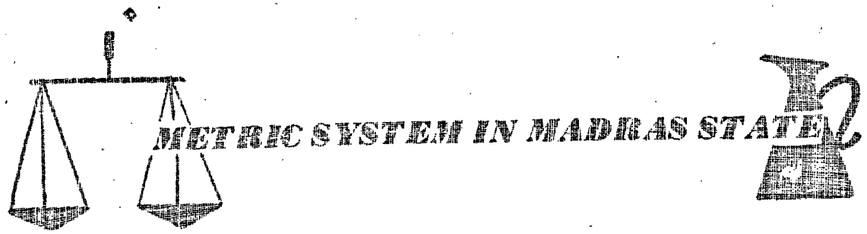
At the Asian Relations Conference held in New Delhi in March—April 1947, Gandhiji was specially invited to give his views on the economic and cultural development of Asia. In the picture he is seen on the dais with the Chairman, Sarojini Naidu, and Sri Jawaharlal Nehru.



Shri Nehru and Sardar Patel were among Gandhiji's closest associates. In the picture they are having a consultation with him at a meeting of the All-India Congress Committee.

Rajghat in New Delhi where Gandhiji's mortal remains were cremated has become a place of pilgrimage for the old and the young, for the simple peasants and for sophisticated city dwellers. In the picture (on the left) peasants from Rajasthan pay homage at the Samadhi and (on the right) little boys and girls wait for their turn.





METRIC SYSTEM IN MADRAS STATE

Weights and measures must be ranked among the necessities of life of every individual as also of human society. They enter into the economic arrangements and they are necessary to every occupation of human industry, trade and commerce. The knowledge of Weights and measures, as in established use, is among the first elements of education and is often learnt even by those who know nothing not even to read and write. This article traces the history of the introduction of this system in Madras State.

The history of metric reform all over the world shows that in every civilized community, sooner or later, decimal currency and the scale of arithmetical notation based on the decimal system has come to stay and that no scale for measures of volume or quantity can be more convenient than one adopted in the decimal system. When applied to common uses of life, it reduces the labour involved on calculations. It is most convenient and any deviation from decimal scales leads to complications and inconvenience. In India, the stage was fully set for the introduction of this reform a few years ago when the Standards of Weights and Measures Act, 1956, was introduced in Parliament. Every State has undertaken legislation to enforce the metric standards thus sought to be established and metric reform in India is well on the move. It may be worth while recapitulating on this occasion the progress of weights and measures reform in the Madras State.

The Conference of Controllers of Weights and Measures was held at Rajaji Hall, Madras, recently. The Conference in session.



Need for uniformity

Uniformity of weights and measures seems to have been attempted in our country as early as the Indus Valley Civilization, but in South India what little uniformity existed disappeared when she came under the sway of different rulers. The rule of the Pandyas, Cholas, Hoysalas, the Muslims and later the Portuguese meant different weights and measures becoming prevalent in different areas related to weights of different coins in force from time to time, so that when the British came they found it difficult to assign exact values in terms of British units to the variety of weights and measures which had gained acceptance in different parts of South India.

This diversity in weights and measures in use in different regions, as elsewhere in India, created an element of uncertainty in trade and rendered fraud on the part of retail merchants easy and profitable. It is however interesting to learn that as early as 1801 the State Government considered it necessary to issue a proclamation directing the introduction of a revised uniform system of weights and measures in Madras. The heaped measure which is now prevalent in this State came to stay as a result of this proclamation. But as a piece of legislation, the proclamation never succeeded as it could not be enforced. In 1839, the Madras Government appointed a Committee to adjust the value of the ordinary weights and measures in use in the State to the Imperial Standard and it promptly recommended the use of British Imperial Weights and Measures to ensure uniformity. But this was not accepted by the Government of India. In 1847, the State Government attempted uniformity of weights and measures in Government departments by the issue of a notification; but this too did not succeed. In 1857, Mr. Bayley of the Madras Civil Service suggested a quart as a primary unit of weight as also the British linear measurement—but this too was not accepted as by that time it was realised it was almost impossible to evolve primary units based on the English system on account of the increasing variety of local weights and measures in South India.

PROGRESS AT A GLANCE

1. *Verified and stamped:*			
1. Weights			14,41,036
2. Capacity Measures (other than dry measures).			88,702
3. Capacity measures (dry)			67,375
4. Linear Measures			12,169
5. Weighing instruments			44,817
6. Measuring instruments			912
2. *Licences granted:*			
1. Manufacturers			159
2. Dealers			717
3. Repairers			144
3. *Approximate monthly production capacity:*			
(*a*) *Weights*—			
1. Cast iron			40,000
2. Brass			10,000
(*b*) *Capacity measures*—			
1. Pouring. Dipping type and conical type.			10,000
2. Dry measures			8,000
(*c*) *Linear measures* (metre)			3,000
(*d*) *Weighing machines-beam Scales.*			1,000
	1959-60	1960-61	1961-1962
4. Revenue Collected.	12,936·34	169,918·97	3,11,100·85
5. Articles seized and detained (up-to-date)—			
Weights			34,319
Capacity Measures			8,510
Weighing Instruments			1,266

The poorer and silent classes have all along been exposed to the constant risk of being cheated by the small trader catering to his daily necessities. Every report published by Government which has touched on the marketing of agricultural produce in South India has drawn pointed attention to the hardship to the cultivator arising out of a variety of measures and weights prevalent in different regions.

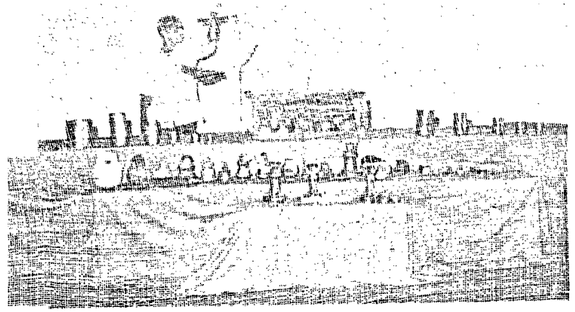
Attempts at uniformity

The regulation of weights and measures continued to be managed by the Board of Revenue issuing executive instructions, though legislation attempting at uniformity had proved abortive. In 1801, testing and stamping of weights and measures by a Government agency was introduced with a view to ensure uniformity. In 1893, the State Government recognised the following units as the standard weights: 180 grains—1 tola; 3 tolas—1 palam 8 palams—1 seer: 5 seers—1 viss; 8 viss—1 maund. In 1913 on representations from the Merchants' Association and Chambers of Commerce, the Government authorised the recognition of the sub-multiples of the old standard maund, namely, ¼ maund; ½ maund; ½ viss or 1/16 maund ¼ viss or 1/32 maund; 1/8 viss or 1/64 maund. In 1948 the Madras Government again attempted legislation to ensure uniformity. Rules were also framed under the Act but enforcement was deferred again, pending the introduction of decimal coinage.

Final decision

It was only in 1958 when the State Government passed the Madras Weights and Measures (Enforcement) Act that the final decision was taken to implement metric reform in this State. This decision followed the Standard Weights and Measures Act of 1956 passed by Parliament and is being implemented smoothly. The Madras Government introduced the metric system of weights in four out of its 13 districts, viz., Madras City, Chingleput, South Arcot and North Arcot with effect from 1st October 1958 with a transitional period of two years, during which both the old and the new weights were to continue side by side. The use of metric weights was made compulsory in the above four districts with effect from 1st October 1960. Metric weights have also been introduced in the remaining nine districts of Madras State from 1st April 1960, with a transitional period of two years and became compulsory with effect from 1st April 1962.

Metric capacity measures have also been introduced in the districts of Madras, South Arcot Chingleput and North Arcot from 1st April 1961 and in another four districts, namely, Salem, Thanjavur, Tiruchirappalli and Ramanathapuram from 1st October 1961 and in the



An exhibition of Metric Weights was held along with the Conference of the Controllers of Weights and Measures at Madras.

emaining five districts from 1st April 1962, with a transtional period of one year for making them compulsory Capacity measures in the districts of Madras, Chingleput South Arcot and North Arcot thus became compulsory from 1st April 1962. The use of capacity measures will become compulsory in the whole State of Madras by 1st April 1963 in two more stages—i.e., on 1st October 1962 and 1st April 1963.

Linear measures have also been introduced in the whole of the Madras State with effect from 1st October 1961 and will become compulsory on 1st October 1962.

Standard weights and measures

The 1958 Act provides for enforcement of standard weights and measures in the State based on the metric system. It prohibits the use of weights and measures other than the standard weights and measures not based on the metric system. It provides for marks of weights or measures on sealed containers showing the net weight or measure of the contents. It prohibits manufacture, repairs and dealing in weights and measures without obtaining a licence from the State Government.

There are at present 159 manufacturers and 717 dealers in weights and measures, etc., in this State. There was no difficulty in coping with the demand forweights in this State when selected areas were made compulsory, but when the whole State became compulsory under metric weights during April 1962, some difficulty was experienced in getting the required quantity of weights for use in the large number of districts where it had been made compulsory. To meet this demand, some of the licensed dealers were permitted to import weights from outside the Madras State. The position regarding the supply of weights in this State is now normal and fairly satisfactory. No attempt has been made at price control as costs differ with areas and availability of raw material. Supplies to Government departments are made at prices fixed by Government. At the moment there is no marked variation between prices in respect of supplies to Government departments and open market prices.

The use of metric weights became compulsory as early as 1st October 1960 in Madras, Chingleput, South Arcot and North Arcot districts of this State. Though it is nearly two years since the metric weights have become compulsory in these districts, the traders in this State could not get sufficient beam scales for use in trade. There has been all along a paucity of manufacturers of beam balances in this State. Few manufacturers are interested in the manufacture of beam scales. 'C' class scales are required in large numbers, to supplant the existing ones. The solutions, it appears, is only to import large numbers from outside the State. It has been ascertained that Gujarat and Andhra States can supply a large number of them. A liberal policy in issuing dealers' licences is now being followed and dealers have been given all facilities to purchase balances for use in trade from outside the State. It is expected that in the course of an year there will be no paucity of C class beam scales. Other varieties of beam scales are available.

Dry measure

The use of dry measures for retail scales of food grains is a peculiar feature of Madras and needs special mention. The use of metric capacity measures has been made compulsory in the four selected districts of Madras, Chingleput, South Arcot and North Arcot with effect from 1st April 1962. There is some willingness on the part of trade in certain regions and also from the public to take to the struck measure. As a result, some traders and public have started expressing their preference for retail scales of food grains by weight in some areas. The question is engaging the serious attention of the Department. The views of trade associations and the public on the struck measure in different areas are being gathered. As its use has been made compulsory from 1st April 1962 only in four districts and as this will be extended in another two stages throughout the State only by 1st April 1963, it has also been found necessary to watch the reaction of the public during the next harvesting season to find out whether the struck measure will create any fresh difficulties in settling the payments due to the landlords at the threshing floor. It has therefore been decided that enforcement of dry measures reform should proceed only slowly.

Implementation

(*a*) *Survey work* :—In the four districts, i.e., Madras, Chingleput, South Arcot and North Arcot as against 45,023 trading establishments 43,336 trading establishments have been surveyed.

In the other nine districts, viz., Thanjavur, Tiruchirapalli, Madurai, Ramanathapuram, Coimbatore Nilgiris, Tirunelveli, Salem and Kanyakumari as against 118.383 trading establishments to be surveyed, 98,140 trading establishments have been surveyed up to the end 1962. The survey of the remaining 20,243 establishments is expected to be completed before the end of August 1962.

DATE FOR COMPULSORY USE OF METRIC WEIGHTS AND MEASURES IN MADRAS STATE

Area.	*Dates of compulsory use.*
1. *Weights* :	
Districts of Madras, Chingleput, South Arcot and North Arcot.	1-10-1960
In the remaining nine districts.	1-4-1962
2. *Measures* :	
1. *Capacity Measures*—	
Districts of Madras, Chingleput, South Arcot and North Arcot.	1-4-1962
Districts of Salem, Thanjavur, Tiruchirappalli and Ramanathapuram.	1-10-1962
In the remaining five districts of Tirunelveli, Madurai, Coimbatore, the Nilgiris and Kanyakumari.	1-4-1963
2. *Linear Measures*—	
In the entire State of Madras.	1-10-1962

(*b*) *Verification and stamping of weights, etc.*:—Up to the end of June 1962, 1,441,036 pieces of weights 1,56,077 capacity measures, 12,169 measures, 40,234 beam scales, 4583 platform scales and other miscellaneous weighing instruments, 912 petrol pumps and 4 vehicle tanks have been verified and stamped throughout the State.

(*c*) *Re-verification of weights* :—The re-verification of bullion weights is almost completed in this State.

(*d*) *Seizure of old weights, measures, etc.*:—In the districts of Madras, Chingleput, South Arcot and North Arcot, though the use of metric weights was made compulsory from 1st October 1960, seizure of old weights was commenced in the last week of August 1961, allowing a little more time for the trade to get ready for the change-over. In these four districts up to July 1962, 36,242 shops were inspected and 34,319 pieces of weights and 8,510 numbers of old measures and 1,266 numbers of weighing instruments have been seized from 7,968 shops. It can be now said that in these four districts, for all intents and purposes, only metric weights are in use.

The seizure of old weights in the other nine districts has started from 1st July 1962. Though the use of metric weights was compulsorily introduced in these districts from 1st April 1962, a three months, grace period has been allowed for the trade to adjust itself and get prepared to adopt the new weights.

No prosecution has been launched so far by the department in this State, as the response from the trade and public has been encouraging and no wilful violation of the Act has been brought to notice. The police are however continuing to exercise their powers of booking offenders under Section 266 of the Indian Penal Code. According to the notification published in *Fort St. George Gazette*, dated the 16th November 1960, tahsildars and independent deputy tahsildars have also been empowered to exercise the powers of inspectors of weights and measures in their jurisdiction under Section 17 of the Madras Weights and Measures (Enforcement) Act, 1958. It is also proposed to vest the officers of the Agricultural department to exercise the same powers within regulated markets.

The initial supply of working standard balances for supply throughout India was obtained by imports from France by the Central Government at rather high prices. Subsequently working standard balances were supplied to this State by three authorised manufacturers in India. On account of demands from other States as well supplies have been rather slow. There are no manufacturers of these working standard balances in the State. The non-availability of working standard balances for the use of Inspectors of Weights and Measures presented some difficulties, but this was solved to some extent by circulation of these balances from one area to another as and when urgent necessity arose in a specified area. Supplies of sufficient sets of working standard weights, capacity measures and linear measures are being received from the Mint Master, Government of India, Mint, Bombay. No difficulty is experienced in the case of these working standards as in the case of working standard balances. As regards working standard balances the position has improved recently as the Andhra Scientific Company Private Ltd., Masulipatam has agreed to supply a large number of balances to this State.

GOLDEN JUBILEE
OF THE GOVERNMENT
ROYAPETTAH HOSPITAL

Sri K. Kamaraj, Chief Minister is seen declaring open the new out-patient block by injecting a doll.

(Below).—The new out-patient cum administrative Block.

Top: (Left).—A ward in the Hospital. Lt. Colonel Donavan, one of the Superintendents of the Hospital, who discovered the causative organism of 'Kala Azar' fever.

Bottom.—Family Planning Clinic.

(Right).—Out-patient department.

The attendance is about 1,800 a day.

(Left).—Operation Theatre. An Operation is going on.

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Research on Bridge Designs

SRI K. RAMASWAMY REDDY, B.E., M.AM. SOC. C.E., M.I.H.E.,
(Director, Highways Research Station, Madras).

The transportation of big machinery and other heavy equipments from Madras Harbour to Neyveli had focused the importance of load tests and other researches on bridge designs.

The results revealed by these load tests on some bridges by the Highways Research Station, Madras, have a substantial contribution to aid National economy, by showing the extents with the existing old bridges can still meet the demands of modern traffic.

The broadening horizon of technological and industrial developments, seems to emerge from the research work being done everywhere in the world. What aim is a research laboratory to Highways particularly in bridge construction? The primary aim is to help to bring the new ideas in general; in material of construction or in the design features; and to realise this picture in execution.

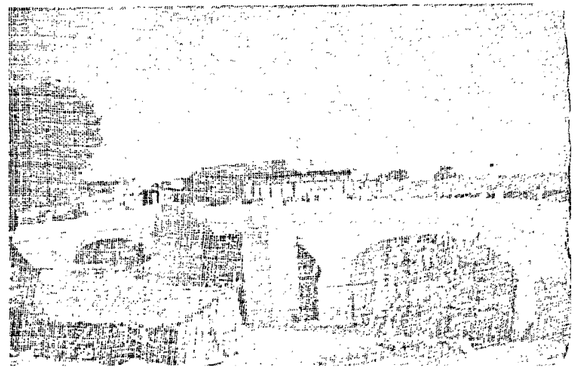
During the past ten years, the Highways Research Station has conducted investigations, with the strength of various types of bridges, by means of loading test on actual bridges, laboratory tests on models, and mathematical analysis. This research has the two fold objective of assessing the strength of existing bridges, and the development of rational methods, for designing new bridges based on the observations.

Reserve Strength

It might reasonably be thought, that a bridge designed on a particular crossing could serve only up to the loads of traffic for which the bridge was designed. If this were actually so, many bridges in use, to-day, would have to be replaced, because they were designed for loads much lighter than those currently encountered. The reason such bridges safely carry, the much higher modern loads is, that in the design of these structures, there are appreciable reserves of strength, and this reserve strength needs to be evaluated for two reasons—(i) to permit olden bridges, originally intended for loads much lighter to carry modern traffic; (ii) to permit passage of especially heavy indivisible loads over more bridges.

The present day design procedure must therefore accommodate these two conditions. For this, it is necessary to design all the members of bridge units for standard loading and then to check up the stresses induced and deflections caused, so that bridges in service or designed and reconstructed may be capable of sustaining these abnormal loads also.

Load Test on the abandoned arch bridge across Ponniar at 187/4 of Madras-Bangalore Road at Hosur conducted by Highways Research Station between 4th and 28th July 1962. This Load test was attended by many eminent engineers from all over the country.



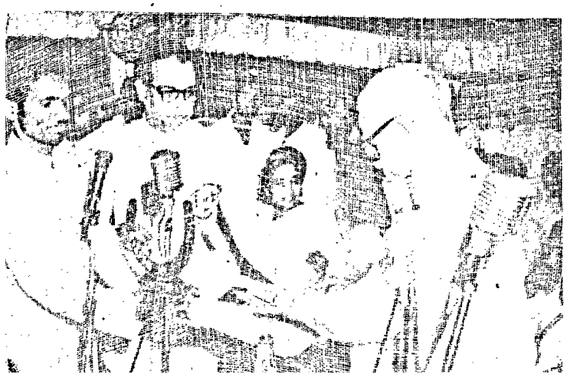
There has been in recent years general progress in the application of advanced technique of calculation and refined design theories for bridge construction and in spite of the increasing use of complex calculations involved in theoritical solutions of any important problem, there is still a wide section of practical work, where a theoritical approach cannot yet give an adequate description of what is happening within structure when it is loaded. Many factors in the complex structures contributing to the hidden reserve strength requires to be discovered. It becomes necessary here to obtain the required information by means of tests carried out on scale models. These model tests fall into two main categories.

Tests with models

First, those intended to assist the analysis of the stresses. For this purpose the bridge model is usually made of a plastic material such as perspex and the analysis of the distribution of the load and consequent stresses in deck and other elements are made by using the Begg's deformeter or other similar instruments. Second, the models used for the determination of actual behaviour of complex structure ; herein, the technique employed is to make it in the very same material to be used in the prototype. Alternatively tests can be carried out on a similar full scale structure in actual service on the road. The information gained by these two types of tests help to discover fully the distribution of loads and stresses thereon.

The latter full scale tests fall into three categories. In the first, tests are made with loads not exceeding safe working capacity. Tests of this type under normal working loads could be carried out fairly easily to predict the capacity of structures. A test of this type is scheduled to be conducted shortly over the bridge across Palar between Vellore and Katpadi. This is a fine arched bridge of the past century and continues to serve the modern needs

The State Education Minister, Sri M. Bhakthavatsalam is seen receiving a cash donation Rs. 700 from Sri Balaji Naidu, Chairman of the Peranampet Panchayat Union at the School Improvement Conference held at Gudiathum on 21st August 1962.



KHADI DEVELOPMENT—MADRAS STATE PRAISED

Sri Vaikuntalal Mehta, Chairman of the Khadi and Village Industries Commission, Bombay, paid a compliment to the Madras Government for the interest it had been evincing in khadi and said that this State formed a Khadi board long before any other State thought of it. He referred to the inclusion of khadi and village industries development as an integral part of the Five-Year Plans and although he could not say whether the expectations in this direction had been realised or not, production and employment have increased and the results achieved by these industries compared favourably with results in any other sector of national economy, taking a balanced view of the entire structure of planning. The total number of people employed, under khadi and village industries, had increased from 3 lakhs to 17 lakhs and production had gone up from Rs. 1½ crores to 17½ crores. Out of this All-India production, the share of Madras State worked out to Rs. 2½ crores. Again Madras accounted for Rs. 2,31,000 out of an All-India total of Rs. 16 crores of sales. Spinning with the Amber charka had been more successful in Madras State than elsewhere.

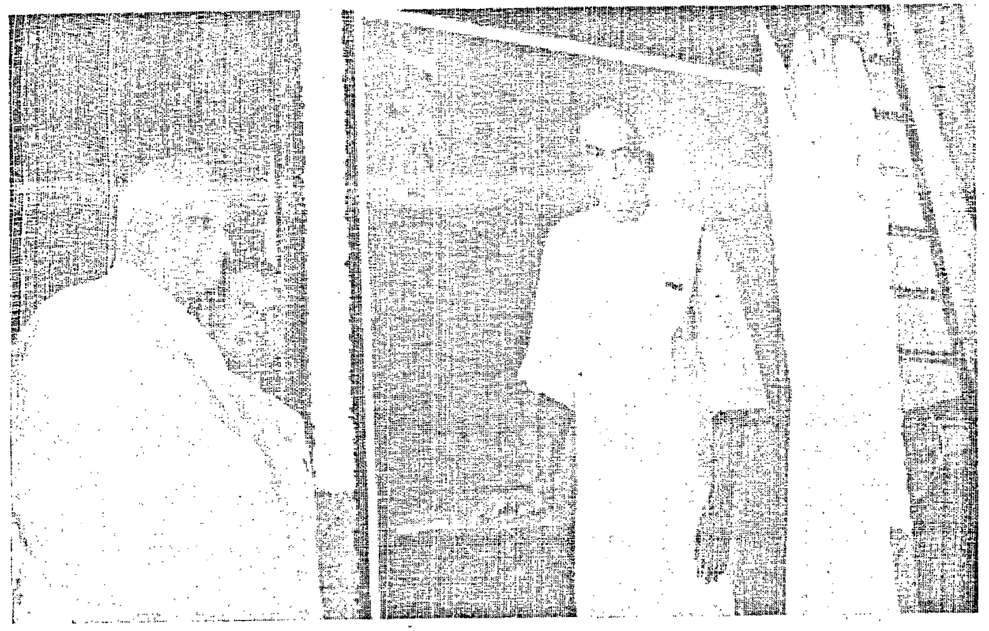
and yet declared unsafe requiring the construction of a new bridge costing about Rs. 40 lakhs. If the test proves satisfactory perhaps the cost of the new bridge can be saved.

Proof tests

In the second, tests are made with loads exceeding working capacity but not large enough to cause distress. These are done with loads exceeding usual working limits yet not causing damage to structure. These are called proof tests. If a bridge shows no undesirable behaviour under repeated applications of a proof load, it can be safely rated for regular traffic at some fraction of the proof load. Great care must be taken with proof testing to obtain optimum results, for if the trial load is too great the structure will be damaged, yet if it is too low some of its capacity will not be utilised. A test of this kind was conducted last year, when it became necessary to permit heavy indivisible packages bound for the Neyveli Lignite Project over the Napier Bridge, the load weighing upto 120 tons, being much in excess of the working limits for which the bridge was originally designed.

Structural test

In the third category, tests are conducted with loads increased upto failure of the structure. The object of carrying a structural test to failure is to broaden general



Life size portrait of Sri K. Kamaraj. Chief Minister was opend by Sri V. V. Giri, Governor of Kerala at a function held at the Children's Theatre, Madras on 27th August 1962.

understanding, for, after the test, the structure tested is valueless. Thus tests to failure are altogether different from those previously described. Although usual, elastic theories can predict more or less accurately, the load that will cause yielding in a structure, yet most structures have an actual ultimate capacity often considerably greater than the calculated load which cannot be easily estimated. If through testing typical bridges to failure, it could be shown that their actual useful capacity is greater, and if the same test could lead to methods for predicting actual ultimate strength, then working load capacities and the practical usefulness of such bridge types could be safely increased. Two tests of this type were conducted by Highways Research Station, one over the bridge across Uppodai near Sattur in 1959 and another recently near Hosur on the Madras-Bangalore Road, both being arched bridges, built over hundred years past.

The results revealed by these tests, have a substantial contribution to aid National economy, by showing the extent to which the existing old bridges can still meet thedemands of modern traffic. Besides, they also give the much needed confidence, to both the road user and authorities concerned with the maintenance and upkeep of these structures.

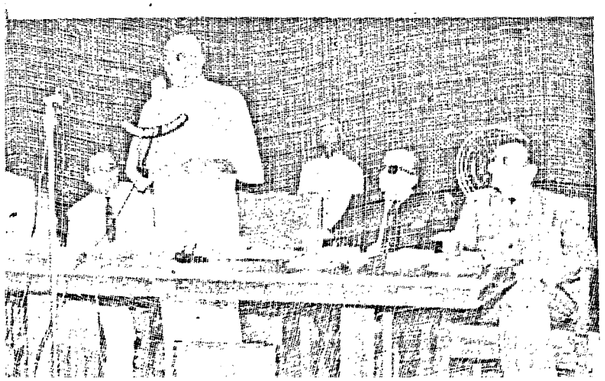
WATTLE
PLANTING IN THE NILGIRIS

JOHN JOSEPH.
(District Forest Officer, The Nilgiris.)

Australian wattles, now being planted on a large scale in Nilgiris, are the foremost among vegetable tanning materials because of the high percentage of tanning that the bark contains. This gives an astringent catechol tannin extract which lends itself for sole leather manufacture and facilitates rapid tannage. Three species of wattle, viz., Black wattle (Acacia mollissima), Silver wattle (Acacia dealbata) and Green wattle (Acacia decurrens) are now found in Nilgiris But the Forest Department is planting black wattle only because of its relatively high tannin content and the good colour it gives to finished leather. This article throws light on the problems connected with wattle planting.

Wattle planting on a large scale serves the following purposes : To convert useless unproductive high-level grasslands into tree lands that will yield at least Rs. 500 per acre once every 10 years (as against the present grazing revenue per acre per decade of less than Rs. 5 ; to make available up to 10,000 tons of tan bark per year, of which the State is badly in need, incidentally, to produce wood (cellulose) to sustain a rayon, paper and or chip-board industry ; to provide fuelwood, to provide employment opportunities not only at the planting stage, but also at the time of harvesting of the bark and the wood and the various forest-based industries ; to conserve and regulate stream flow in this important hilly region on which depend major power projects. Most of the planting is done in the catchment of numerous small and large hill streams.

The 52nd Annual General meeting of the Southern India Chamber of Commerce, Madras was held on 30th August 1962. Sri K. Kamaraj, Chief Minister inaugurated the meeting



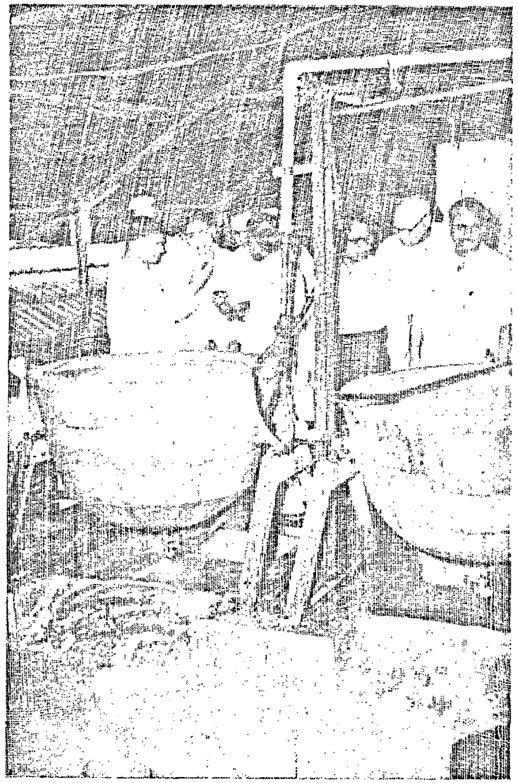
Industrial Plantation Schemes

After overcoming the silvicultural and management difficulties inevitable to establishing a tree crop on grasslands, large-scale work began from 1956. Earlier, only 300–500 acres were tackled annually ; but from 1956–57, the year of commencement of Second Five-Year Plan 3,000–4,000 acres are being planted annually under the scheme " Creation of Industrial Plantations". Up to 1961 nearly 19,000 acres of unproductive grasslands have been brought under black wattle.

Such large scale planting is often objected to by the Todas and other local residents who have practised a leisurely pastoral life and would prefer these vast stretches of grasslands to be left over in a permanent state of poor productivity in order that their few cattle and buffaloes may wander the areas without let or hindrance. Arrangements are always made, however to see that their legitimate requirements are catered for. In fact no planting is undertaken without the consent of the local people, though the planting is confined to reserved forest areas.

Bulk of the planting under this Scheme is done by three active plantation units (Ranges) each tackling 1,000 acres annually. So far the work has covered 7,900; 5,410 and 4,000 acres respectively. The results in the first rotation crops have naturally not been wholly satisfactory, as the soil that has supported a course grass all these decades, has scarcely enough nutrient value to support a tree crop. Also the inhospitable climatic conditions prevailing over these areas and adverse factors like objections from local villagers have caused but partial success in these first efforts. Such adverse factors are being overcome progressively by resorting to intensive methods and adopting improved techniques. The main causes of set-back are severe monsoonic winds uproot the plants and causes damage to plants ; fungus disease follows to kill the plant ; acute root competition from the thick mat of grass roots in the soil layers where the wattle roots have to spread; frost damage, resulting in mortality not only of young plants ; and grass fires, mostly due to incendiarism and local misbehaviour.

From 1959 onwards the grass is scraped clear around the plants to a diameter of 5' in order to eliminate root competition from grass. But due to the difficult labour position (rendered more acute by the extensive hydro-electric projects) the work could not be carried out over the entire areas.



The delegates to the National Seminar on Public Co-operation in the field of Education being held at Madras were taken round to visit the Midday Meal Kitchen at Gopalapuram on 20th August 1962.

FINAL POPULATION FIGURES

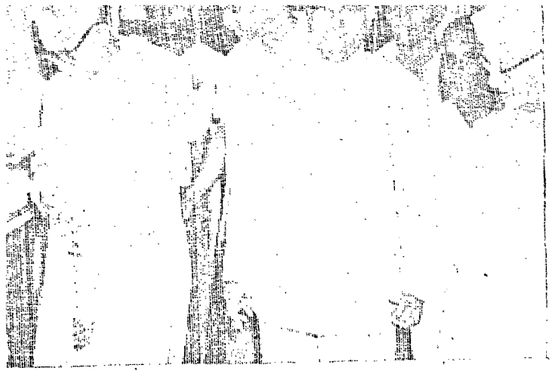
The population of India according to final figures (including the population of Dadra and Nagar Haveli, Goa, Diu and Daman, Manipur, NEFA, Nagaland, Pondicherry and Sikkim) is 439,235 millions.

On the assumption of a round figure of 3,000 millions as the population of the world in 1961, and an inhabited land area of 135·16 million square kilometres, India accounted for about 2·4 per cent of the world's land area but 14·6 per cent of the world's population. In population, India is second in the world only to China. China's population was estimated in 1953 at 582 millions.

Employment for 600 persons

During 1960–61, five labour camps were established within planting sites and mazdoors were brought from the plains (Tiruchirappalli, Salem, Tirunelveli) to these camps. All facilities were afforded to these people, in order to enable them to settle down in these camps. As a result, a regular labour force of 600 persons is now employed round the year exclusively on wattle plantation works.

In addition to scraping away the grass, the soil around the plants is worked. The scraping eliminates root competition from the thick mat of grass and the soil working



Branch Library Building at Tirukkalukkundram was opened by Sri M. Bhaktavatsalam, Minister for Finance and Education on 16th August 1962.

helps the wattle plant to develop an adequate root system resulting in turn in better anchorage for it. This deeper root system can be expected effectively to ward off the damage otherwise caused by the severe monsoonic winds. Protective wind-belts of blue gum are also being formed in current plantations, though such these wind belts will be effective only in respect of the next rotation crop.

These intensive cultural operations have helped in the initial growth of the plants (to 3—5 within three months of planting) and incidentally reduced the mortality due to frost since only tender and small plants are ordinarily susceptible to damage by frost.

The fires which are usually severe in such grass lands are also kept down by adopting intensive fire protection measures like fire tracing the boundaries, laying internal fire paths, compartment and fire lines. Rigid protection was enforced by employing an adequate number of fire-watchers who petrol these plantation night and day during the fire season.

Intensive Technique

The cost of planting new work to about Rs. 52 per acre. A good proportion of the cost goes towards cultural operations; in other words is paid out as labour wages only. The adoption of intensive technique amply justify the increased cost of the plantations.

The Viscose Rayon Factory in Sirumugai will depend a lot on these industrial plantations, for the supply of its essential raw material, viz., wood-cellulose. Farther there are proposals to establish a tannin factory near the plantations to extract the tannin from the bark.

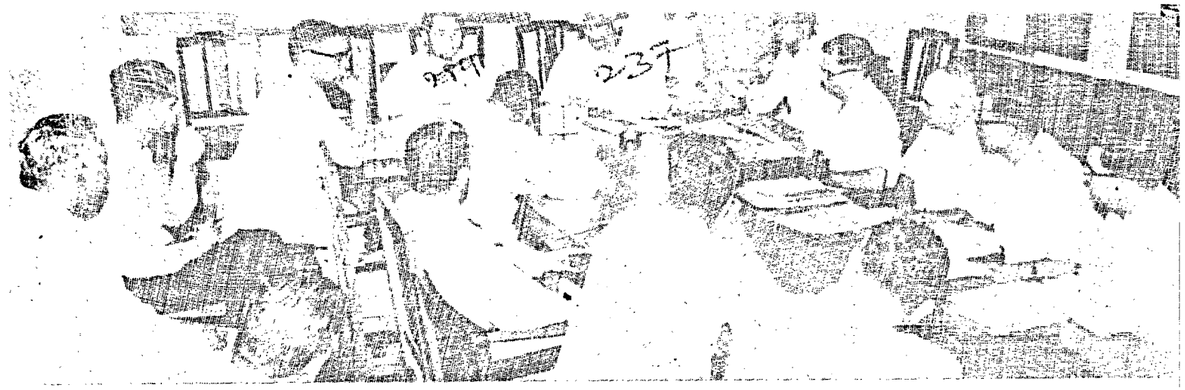
During the period of Third Five-Year Plan, another 15,000 acres of grassland and other unproductive forests will be brought under the industrial plantations.

Bengal Market for Mettur Fish

It may surprise many to be told the largest market for fish from Mettur Dam is Bengal, and not Madras State. This bulk transport of fish by rail to consumers' some 2,000 miles away is facilitated by a large ice and cold storage plant at Mettur, commissioned two years ago. The plant can produce five tons of ice and has a 15-ton cold storage capacity.

The ice plant in Mettur and another similar facility in Tuticorin, the largest marine fishery in Madras, form part of a large consignment of fishery equipment to Madras State under a technical assistance agreement between the United States and India in 1952. The equipment worth Rs. 1·1 crore including U.S.—built boats, deisel engines; gillnet boats, nylon twine for nets and purse seines, fish hooks, winches, and a host of other fishing tackle—was distributed to the marine and inland fishing centres in Madras.

Some 60 square miles in area, Mettur Lake is the State's best inland fishery, yielding a catch of two to five tons a day. It is not uncommon to come across fish weighing up to 30 pounds each in a day's catch, thanks to the careful and systematic stocking and culture of suitable varieties.



Sri Chiten Jamir, Minister for Agriculture and Education, Nagaland met Sri P. Kakkan, Minister for Agriculture in Madras on 28th August 1962.

Of those who said small-pox cannot be prevented small fraction also implied that such prevention was impossible because the Goddess action was unavoidable. On other hand among those who said small-pox could be prevented by various ceremonies, references were made to being able to satisfy the Goddess in order to avoid small-pox.

Beliefs about cure of smallpox.—It was found that religious ceremonies (relating to worship of a diety, through prayer and offerings) and magic ceremonies (other rituals) were turned to by a total of about 54 per cent of the respondents. A fairly large proportion of respondents (23 per cent) said they knew of no effective treatment, often mentioning that the disease goes away by itself. Home remedies largely included use of neem or margosa leaves, in local applications or baths.

Although 5 per cent of the respondents mentioned use of allepathic medicine, and 2 persons mentioned homeopathic medicine, no mention was made of the usual indigeneous systems of medicine found in this area.

Villagers' statements about how to cure smallpox.

Answer given	*Number of persons.*	*Percentage of persons.*
Religious cermony	474	37·8
No treatment	290	23·1
Magic ceremony	206	16·4
Home remedies	146	11·6
Doctor of medicines, allopathic	64	5·1
Don't know	41	3·3
Quack	13	1·0
Report to local official	11	0·9
Doctor of medicines, homeopathic	2	0·2
Other answers	140	11·2
No reply	1	0·1
Total number of respondents	1,254	100·0

Recommendations

The fact that about 75 per cent of the people interviewed either did not know how small-pox could be prevented, or clearly believed it could not be prevented, offers ample explanation for many practical difficulties encountered in carrying out the vaccination programme in this district.

Possitive factors which support the vaccination programme and which can be further built upon were observed. These include:

(*a*) The ample evidence that the people can *learn* about the value of vaccination. There was present a solid minority of 11 per cent who had already accepted this concept. (*b*) The widespread recognition of small-pox as a disease, and as an undesirable disease. (*c*) The large proportion of people who say they *don't* know the cause and prevention of this disease (and who can thus be expected to be more receptive to learning than if they firmly hold an erroneous idea.) (*d*) Among those who did say they know about these things, there was a strong fraction who offered naturalistic or scientific explanation. For example, 16 recognized the disease is spread through contact. A number of other environmental explanations were also given. Among these persons, other rational concepts should be relatively easy to introduce.

Among factors which might hinder the programme the most important seems to be belief in supernatural causation of small-pox (20 per cent of the respondents), with the probabilty that this idea is the basis for much of the belief that smalipox is unpreventable. It would seem unwise to oppose directly the strongly fixed faith in the Goddess Mariathal. However, it was also observed that some of those who believe that Mariathal causes small-pox also believe that small-pox is preventable, and that a means of prevention is by satisfying the Goddess. This suggests that vaccination is

potentially acceptable by this group, and that acceptance would be facilitated if it was interpreted as satisfying the Goddess.

Factors which may not hinder the programme and which might be left along, include the following :—

There appears to be low acceptance of the details of the germ theory of disease. However, there is a good start towards acceptance of the idea that this disease spreads through contact (16 per cent) and that vaccination is preventive (11 per cent). There is reason to believe acceptance of the latter two ideas can spread widely, with proper developments of educational aspects of the vaccination programme. These ideas are themselves thoroughly scientific, and are adequate for good acceptance of vaccination. It has been found to be highly difficult to bring people in these villages to accept detailed knowledge of bacteria viruses, etc. It would therefore seem unwise to try to push such detailed concepts when they are not necessary for intelligent action. They may be presented, of course, and can be expected to be more widely accepted later. But the end of a vaccination programme is intelligent acceptance, not a great depth of scientific knowledge.

For cure of small-pox, after it is contacted, there is a great turning towards religious or magical help. Education directed at this, as part of a routine vaccination programme, seems probably not needed, because of several reasons. If the programme is successful, there will be no cases. If cases do occur, the solace religion brings can be an important part of treatment. Also, as medical care facilities become more available, it can be expected that most cases which occur will receive proper medical attention. If there is a tendency for people to take a sick patient to a shrine, however, this is of course a problem which deserves special educational attention.

A point of interest to sanitation programme was that about 7 per cent of the respondents mentioned uncleanliness in relation to cause and to prevention of small-pox. This suggests the presence of a general tendency to attribute diseases to uncleanliness.

More study is needed on the effectiveness of the application of the lessons derived from this survey ; in action programmes. Also, there is need for better understanding of people's values relating to acceptance of vaccination, of channels of communication through which ideas about this subject, can best be introduced, and of "feasibility" factors such as the months of the year when people can best be reached by the field programme.

To sum up

During personal interviews in 1,254 households in Chingleput district, Madras, it was found that about half of the respondents said that they did not know how one got small-pox, and one-fifth said it was caused by supernatural agencies, mostly by the Goddess Mariathal. About one-sixth recognized that smallpox spreads from other causes, and one-sixth cited other environmental factors, 16 persons mentioned germs. When asked how to avoid small-pox, three-fourths said it was unavoidable or that they did not know how. About one-ninth mentioned vaccination and the rest had various other ideas. When asked what to do for curing the disease, religious or magic ceremonies were mentioned by more than half the respondents, no treatment by nearly one-fourth, home remedies by one-ninth and allopathic doctor by one-twentieth.

These findings confirm the impressions of health workers in this area that the level of knowledge about the usefulness of vaccination is very low. It indicates, on the other hand, that there is ample foundation for improving educational aspects of the vaccination programme. Basic concepts such as the contagiousness of the small-pox and the value of vaccination are well entrenched among the people, and are ready for further spread. Evidence from this study suggests that detailed knowledge of germ-theory is not necessary for the spread of acceptance of vaccination. The findings also suggest that, although faith in the Goddess of small-pox is strongly fixed among a portion, of the population, this faith can be compatible with acceptance of vaccination.

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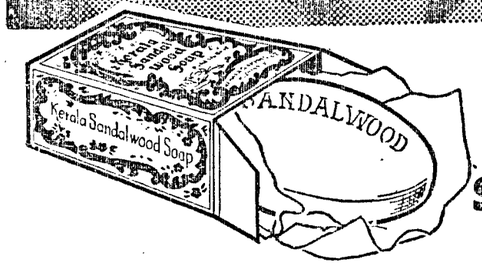
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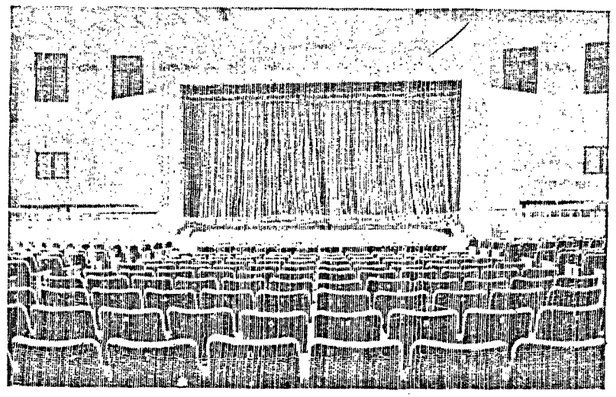


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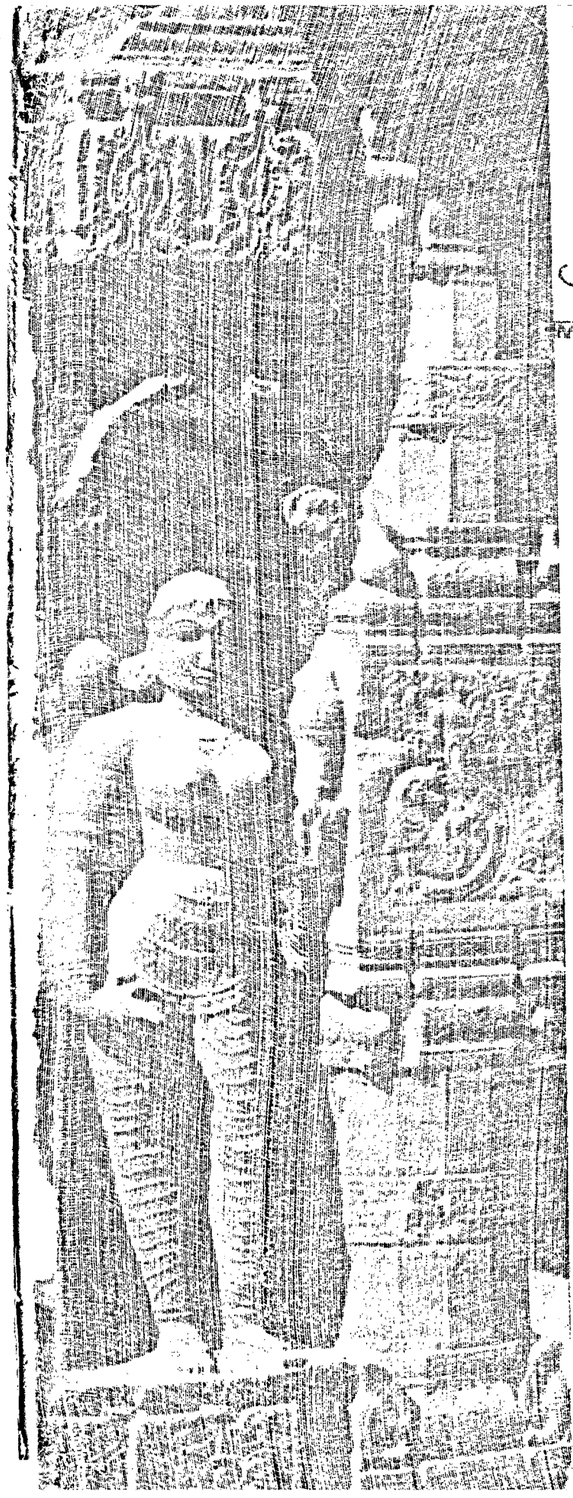
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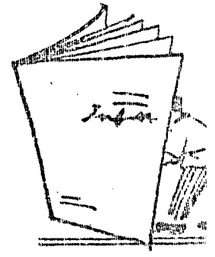
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THIS MONTH'S COVER

The children of today are the Nation builders of tomorrow. By associating the All-India Children's Day with our Prime Minister's Birthday, we not only pay a tribute to his unbounded love for children but also in a measure spotlight the importance we attach to child welfare. The Prime Minister who has visited Madras recently was greeted by a child at the air port.



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PRIME MINISTER'S
Call to the Nation

We face a real and big danger. The country has realised it. I wish to take advantage of this opportunity to tell you that it has given me extreme pleasure to see the enthusiasm, the sacrifice and the awareness of the danger with which the people have rallied to fight the invasion. All our petty disputes and differences were forgotten because it is pettiness to nurse petty grievances when a great danger faces us. We are the citizens of a great country, therefore, our head and heart should also be great. We have to defend a big country. If we relax our vigilance even to the slightest degree, we are lost. We cannot achieve anything without it. Therefore, the first task before all of us, to whatever part of the country or walk of life we are in, is to devote all our strength to defend the country. We face a powerful enemy. It pains me to say that we have been invaded by a country which we tried to befriend and whose cause we pleaded in the councils of the world. We have no other alternative, except to preserve and defend the honour and independence of our country, at any cost.

—PANDIT JAWAHARLAL NEHRU.

October 28, 1962.

THIS BEAUTIFUL WORLD OF OURS

Pandit Jawaharlal Nehru

Children's Day is observed on the 14th November which is also the birthday of Sri Jawaharlal Nehru, our Prime Minister. The reason for observing Children's day on that date is that he loves children and wants to do something for them rather than for him. Whenever he sees Children he thinks of them as potential great leaders of the country either in political or other fields. It hurts him to see that they are not well looked after, not well fed and housed or educated. He feels that it is our first business to provide opportunities to our children who when grown up are to be citizens of India of tomorrow.

I like being with children and talking to them and, even more, playing with them. For a moment I forget that I am terribly old and that it is a very long time ago since I was a child. But when I sit down to write to you, I cannot forget my age and the distance that separates you from me. Old people have a habit of delivering sermons and good advice to the young. I remember that I disliked this very much long long ago when I was a boy. So, I suppose you do not like it very much either. Grown-ups have also a habit of appearing to be very wise, even though very few of them possess much wisdom. I have not quite made up my mind yet whether I am wise or not. Sometimes, listening to others, I feel I must be very wise and brilliant and important. Then, looking at myself, I begin to doubt this. In any event, people who are wise do not talk about their wisdom and do not behave as if they were very superior persons.

So, I must not give you a string of good advice as to what you should do and what you should not do. I suppose you have enough of this from your teachers and others. Nor must I presume to be a superior person.

The Beauty around us.

What then shall I write about? If you were with me, I would love to talk to you about this beautiful world of ours, about flowers and trees and birds and animals and stars and mountains and glaciers and all the other wonderful things that surround us in this world. We have all this beauty around us and yet we, who are grown-ups, often forget about it and lose ourselves in our offices and imagine that we are doing very important work.

CHILDREN'S DAY

"What is Children's Day and why is it so observed?" To put it briefly, Children's Day is one day in a year when everybody is reminded of his duty towards the children of the nation. Throughout the year it is the adults who teach children of their duty towards everybody else. It is true that a growing generation should be told of the responsibilities that await them when they are older. But it is equally, if not more, important to tell adults as to what they should do so as to prepare the coming generation for the various tasks that they would have to perform when they grow up. Children's Day is set apart for this purpose. The idea is that parents and teachers, guardians and other adults are reminded of the rights of the children.

—Srimathi Indira Gandhi.

I hope you will be more sensible and open your eyes and ears to this beauty and life that surround you. Can you recognize the flowers by their names and the birds by their Singing? How easy it is to make friends with them and with everything in nature, if you go to them affectionately and with friendship. You must have read many fairy tales and stories of long ago. But the world itself is the greatest fairy tale and story of adventure that has ever been written. Only, we must have eyes to see and ears to hear and a mind that opens out to the life and beauty of the world.

Various barriers.

Grown-ups have a strange way of putting themselves in compartments and groups. They build up barriers and then they think that those outside their particular barrier are strangers whom they must dislike. There are barriers of religion, of caste, of colour, of party, of nation, of province, of language, of custom and of wealth and poverty. Thus, they live in prisons of their own making. Fortunately children do not know much about these barriers which separate. They play or work with one another and it is only when they grow up then they begin to learn about these barriers from their elders. I hope you will take a long time in growing up.

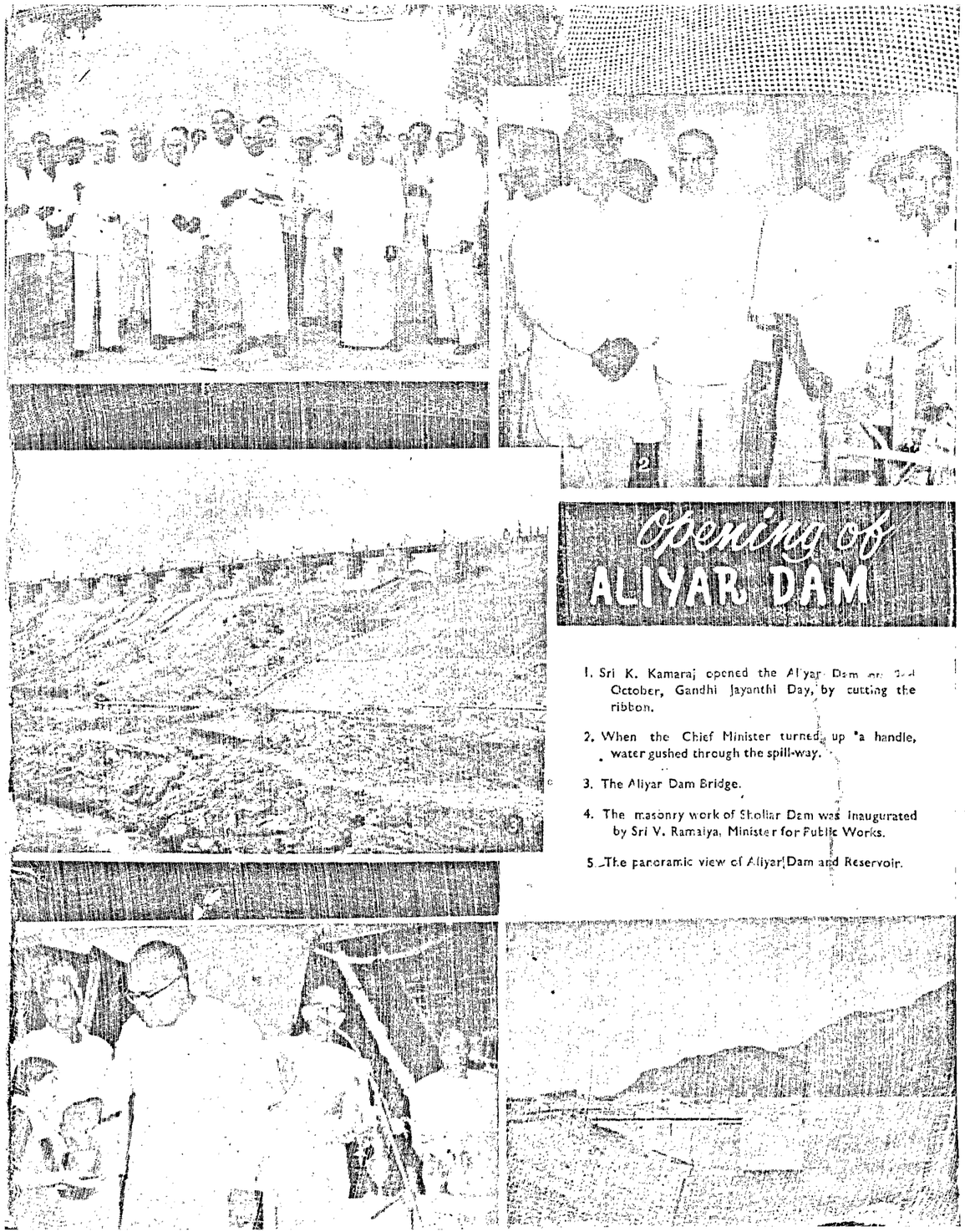
I had been to the United States of America, to Canada and to England. It was a long journey, right on the other side of the world. I found the children there very like the children here and so I easily made friends with them and, whenever I had the chance, I played with them a little. That was much more interesting than many of my talks with the grown-ups. For children everywhere are much the same; it is the grown-ups who imagine they are very different and deliberately make themselves so.

Our country is a very big country and there is a great deal to be done by all of us. If each one of us does his or her little bit, then all this mounts up and the country prospers and goes ahead fast.

—From Jawaharlal Nehru's Speeches and Writings, Volume 1.



Prime Minister Pandit Jawaharlal Nehru on his way to Ceylon halted at Madras on 12th October for a night. He was received at the airport by the Chief Minister.



1. Sri K. Kamaraj opened the Aliyar Dam on 2nd October, Gandhi Jayanthi Day, by cutting the ribbon.

2. When the Chief Minister turned up a handle, water gushed through the spill-way.

3. The Aliyar Dam Bridge.

4. The masonry work of Sholiar Dam was inaugurated by Sri V. Ramaiya, Minister for Public Works.

5. The panoramic view of Aliyar Dam and Reservoir.

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The Aliyar Dam

SRI U. ANANDA RAO, *Special Chief Engineer, Parambikulam-Aliyar Project.*

On the Gandhi Jayandi Day, the Aliyar Dam, the first to be completed in the series of eight dams under the Parambikulam-Aliyar Project was opened.

This is another land mark in the history of Irrigation of Coimbatore district, being the fourth major irrigation project undertaken by the National Government in this district after the attainment of Independence, the first three being Lower Bhavani Project, the Mettur Canal Scheme and the Amaravathi Reservoir Project.

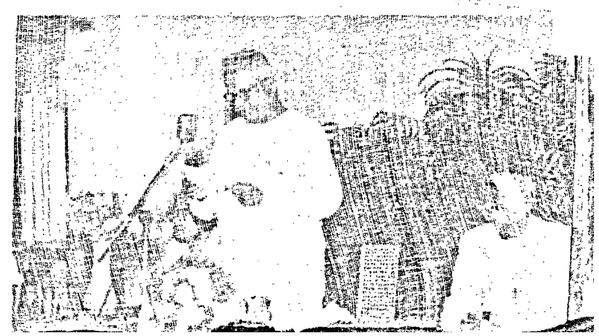
Excerpts from the welcome address by the Special Chief Engineer on the occasion of the opening of Aliyar Dam are given here·

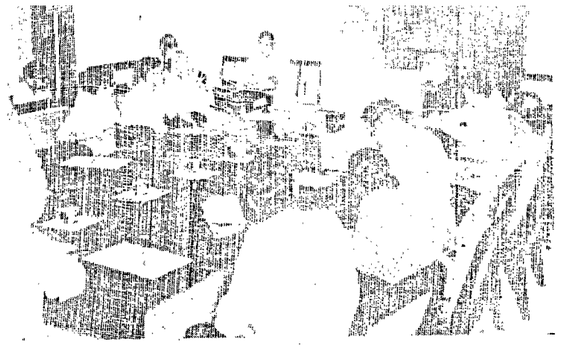
This Parambikulam-Aliyar Project envisages the utilisation of a few streams in the Anamalais which traverse through both the States of Madras and Kerala and ultimately fall into the Arabian Sea. These rivers [illegible] becomes interstatal and the Project has been so designed as to serve the interests of both the States. The Project, in brief, contemplates integration of seven rivers, five on the Anamalai Hills and two on the plains by constructing reservoirs across them and inter-connecting them through tunnels. These tunnels carry water thus impounded in the reservoirs to lower levels and ultimately to the plains of Coimbatore district. Parambikulam represents the former group of five rivers, viz., Nirar, Sholiar, Parambikulam, Tunacadavu and Tekkadi and the latter two rivers Aliyar and Palar. These rivers lie at various elevations ranging between + 3760 and + 1050 which incidentally enable us to utilise the drops between the rivers and develop power. The Project provides irrigation to an extent of 240,000 acres in Coimbatore district and an additional power to Madras grid with an installed capacity of 180,000 Kilo Watts from five power houses. The existing ayacut under Aliyar below this dam, of about 6,400 acres in Madras State and 20,000 acres including 5,000 acres under Vardhuvida in Kerala State, get stabilised irrigation by the construction of this reservoir.

Eight Dams in all

The project contemplates six major dams and two minor dams, 12 miles of inter-connecting tunnels, 30 miles of lined contour canal along the rugged hill slopes, 146 miles of lined canals and hundreds of miles of distributaries and field channels, etc. The first in the series is the one across Nirar, from where water will be diverted to Sholiar through a tunnel 14,500 feet long. Sholiar will have a reservoir with a dam, about 350 feet high, just above Kerala State limits from which a tunnel, 8,800 feet long takes off to divert water to the lower Parambikulam reservoir. The difference in levels of these two reservoirs is about 1,300 feet which will be utilised to develop power to an extent of 70,000 Kilo Watts. Sholiar Dam diverts water not only to Madras but also to Kerala, whose power requirements at 380 cusecs are being ensured even during bad years. Parambikulam reservoir will be the largest reservoir in the series whose gross capacity will be 16,800 million cubic feet and net capacity 9,000 million cubic feet. A tunnel

Sri Kakkan, Minister for Agriculture, addressed the Conference of the Officers of Statistics Department in Madras on 24th September 1962.





The first meeting of the Bharathi Birthday Celebration Committee was held at the Secretariat on 10th October 1962. Sri M. Bhaktavatsalam, Minister for Finance presided.

7,500 feet long conveys water from Parambikulam reservoir to Tunacadavu reservoir. Tunacadavu dam will be an earthen dam 70 feet high. It will be a balancing reservoir and receives regulated supplies from Parambikulam reservoir on the left flank and Tekkadi river on the right.

From Tunacadavu, reservoir water is taken through an approach channel and a tunnel 13,000 feet long to Madras Plains. A fall of about 300 feet at the end of the tunnel is being utilised for developing power to an extent of 30,000 Kilo Watts at Sirkarpathi Power House. The tail waters of this Power House is taken along two canals to feed Aliyar and Tirumurthi reservoirs and another canal Sethumadai Canal to irrigate about 3,756 acres in Pollachi taluk. One of the canals, called the Contour Canal, is taken along difficult hilly terrain on the northern slopes of Anamalai Hills, tunnelling through bridges and crossing valleys and dales over aqueducts and superpassages. Ultimately Contour Canal falls into Tirumurthi Reservoir in Udumalpet taluk. Aliyar and Tirumurthi reservoirs located in the plains of Madras are intended to receive and store waters for distribution amongst various canals taking off from them for catering to the needs of 240,000 acres in Pollachi, Udumalpet, Dharapuram and Palladam taluks of Coimbatore district. Pollachi and Vettaikaranpudur Canals take off from Aliyar Reservoir and Parambikulam Main Canal and Udumalpet Canal from Tirumurthi Dam.

Details of Aliyar Dam

The Aliyar dam across Aliyar is about 10,500 feet in length, of which about 2,990 feet is of masonry and the rest of earth. It is designed for a gross capacity of 3,866 million cubic feet at full reservoir level + 1,050.00. Three new innovations have been introduced in the design of this dam. Firstly, provision of river sluices in a tunnel bored through the rocky hill adjacent to the river; secondly the river is plugged with an earthen dam instead of a conventional masonry dam or spillway; and thirdly location of spillway over a rocky hill instead of across the river. The height of earthen dam is 142 feet above lowest foundations which is a record height for South India. From this reservoir two irrigation canals take off called Vettaikaranpudur and Pollachi Canals.

The cost of this dam is roughly Rs. 229 lakhs out of the 35·08 crores of the whole Parambikulam-Aliyar Project. The earthen dam construction was started in January, 1960 and about 101,000 units or 101 million cubic feet of earthwork was completed in a record time before the end of June 1962. This quantity of earth will be sufficient to lay a road 40 feet wide, 3 feet high and 160 miles long. This was possible by using the heavy earth-moving machinery like *Caterpillar DW* 20 Scrapers, D8 Pushers and D7 Levellers, etc. In the initial stages, old Scrapers which had served their full life practically in other completed projects were put on this work but due to their long usage and deteriorated condition they gave way frequently, and so much out-turn could not be obtained from these old Scrapers. Subsequently one fleet of eleven new DW 20 Scrapers was purchased and put on this work on 16th August 1961. Though these gigantic earth-moving machines are partly responsible for the early completion of this earthdam, work could not have been completed but for the willing [illegible] hard work turned out by specially trained operators and mechanics. But for their sustained work as a team, both during day and night, it would not have been possible for completing the earth dam in so short a period.

The masonry dam portion involving about 44,000 units of random rubble masonry in cement mortar was taken up in February 1960 and completed by about July 1962. In the execution of this dam, the broader interests of the working masses have always been kept in mind. Most of the masonry work was done on job work system, thereby eliminating the middlemen's profit.

Noteworthy aspect

Though about 36,000 acres in Pollachi taluk are to be irrigated by this reservoir through Vettaikaranpudur and Pollachi Canals finally, it is proposed to limit supplies to about 7,500 acres only under the two canals this year. Irrigation will be extended progressively in the coming years to the remaining areas also as and when new reservoirs are constructed. This is one of the noteworthy aspects of this project, where the lands are brought under beneficial use progressively without waiting for the completion of the entire project. Irrigation under the Project will be generally limited to dry crops only, but about 20 per cent of the area will be permitted to raise paddy to cover seepage areas and other areas which are, *prima facie*, unfit for dry cultivation.

One more special feature of this project is that all the canals, distributaries and field channels up to 50 acres limits will be lined with concrete to prevent seepage losses. This enables very economical use of water and it is thereby made possible to give benefit to an additional area of about 40,000 acres. Bothies between 50 and 25 acres limits will be excavated at Government cost and below 25 acres limits will have to be excavated by the ryots.

Salient features of Aliyar Dam

1. Deepest foundation level in river bed.	+ 914·50
2. Average bed level of deep course.	+ 918·00
3. Sill of river sluice	+ 930·00
4. Crest of spillway	+ 1,040·00
5. F.R.L. and M.W.L.	+ 1,050·00
6. Road bridge level over spillway ..	+ 1,059·00
7. Width of roadway over dam between kerbs.	14 feet.
8. Spillway vents—11 nos. with radial shutters.	30′ × 10′
9. Maximum flood discharge ..	40,957 cusecs.

Salient Features of Aliyar Dam—cont.

10. Capacity at F.R.L.	3,684	M.c.ft.
11. Total quantity of masonry ..	27,100 Units. of 100 c.ft.	
12. Total quantity of earth-work for earth dam.	1,01,000 Units. of 1,000 c.ft.	
13. Length of masonry dam	2,990	feet.
14. Length of earth dam	7,510	feet.
Total ..	10,500	feet.

Salient features of Parambikulam-Aliyar Project.

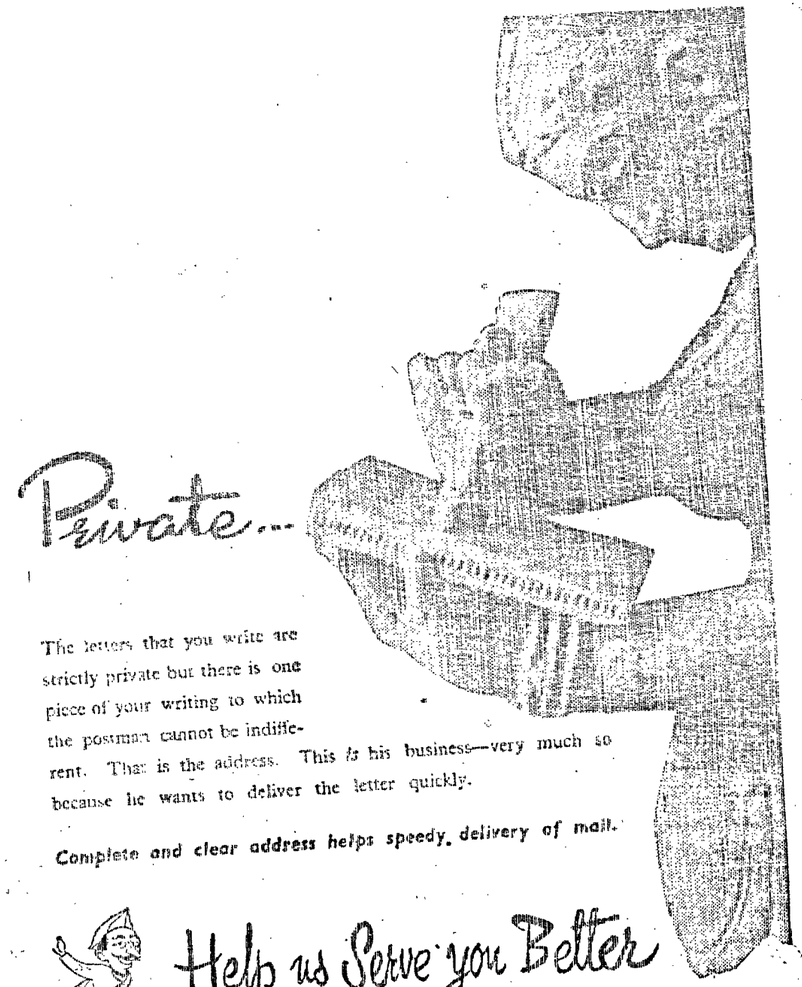
Number of dams	8	
Total length of tunnels	12	miles.
Length of Main Canal	146	miles.
Ayacut of the Project	240,000	acres.
Dry ..	192,000	acres.
Wet ..	48,000	acres.
Total annual yield	24,000 tons of rice. 38,400 tons of millets.	
Number of power houses	5	
Power installation	180,000	KW.
Firm energy	70,000	KW.
Total cost	Rs. 35·08 crores.	
Year of commencement	April 1959.	
Year of partial benefit	October 1962.	
Completion of Project	October 1966.	

Development of Tuticorin as Major Port

Investigations for determining the final layout of Tuticorin Port in Madras State, were expected to be completed by 1962-63, stated Sri B. Bhagavati, Union Deputy Minister for Transport and Communications, in a written reply about the development of Tuticorin as a major port, in the Rajya Sabha recently.

The Deputy Minister added that the work relating to land acquisition and roads would commence during the current financial year and might continue up to the end of the next financial year. The construction of staff quarters would be completed by 1965–66. The construction of breakwaters was expected to commence towards the end of 1962–63 and would be completed in 1966–67.

The Deputy Minister further added that work relating to dredging and reclamation was expected to be taken up in 1963-64. The construction of wharves and transit shed would be taken up in 1963–64 and completed in two years. The work over the construction of railway road, installation of water-supply would be taken in hand in 1965–66. The whole project was expected to be completed in the first year of the Fourth Plan, i.e., 1966–67.



Private...

The letters that you write are strictly private but there is one piece of your writing to which the postman cannot be indifferent. That is the address. This *is* his business—very much so because he wants to deliver the letter quickly.

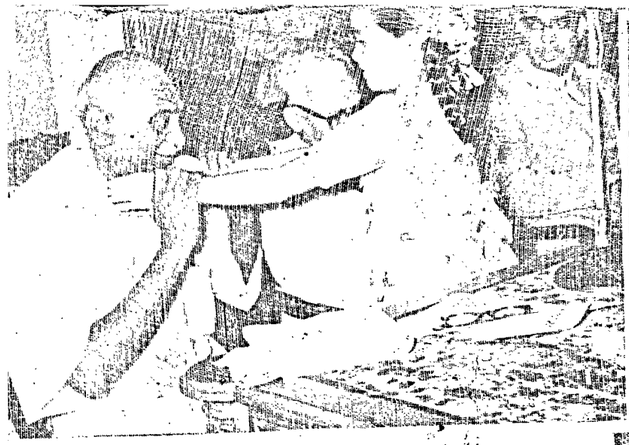
Complete and clear address helps speedy delivery of mail.

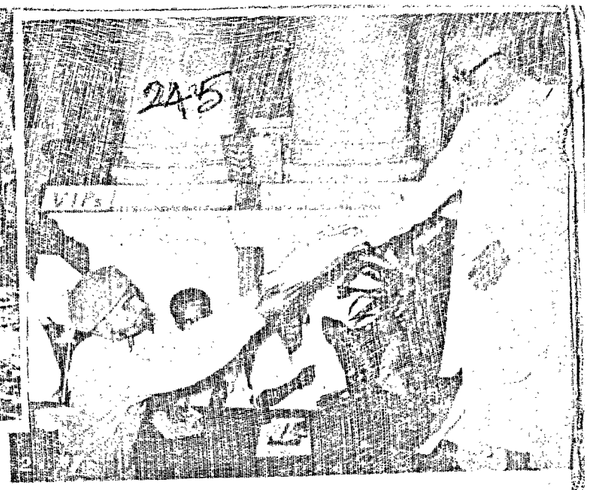


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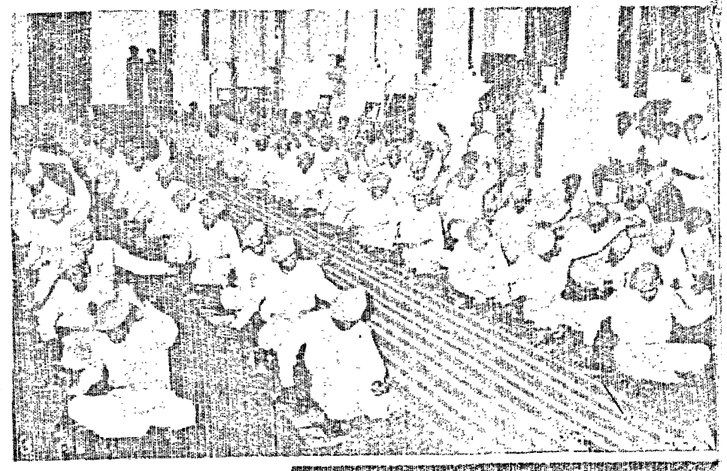


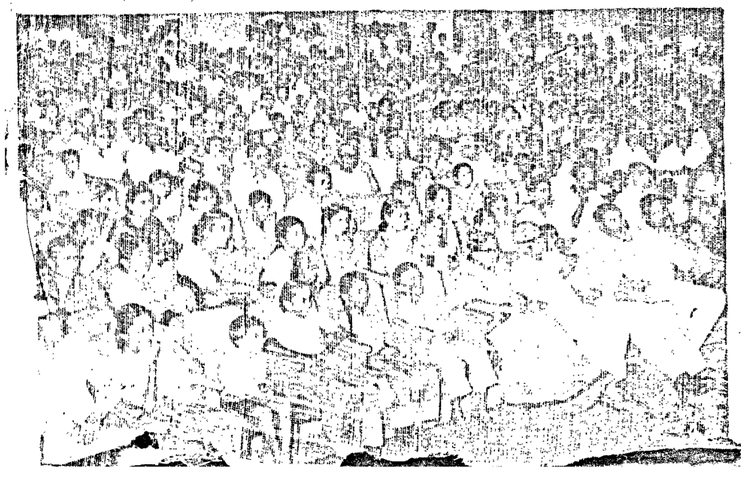


FIREMEN take to Spinning

The Firemen of Madras State are an enterprising lot. Under the guidance of their enthusiastic officers they take to spinning and employ themselves and earn a little while they await the call of duty from the Public. On 2nd October, they took part in mass spinning in the City.

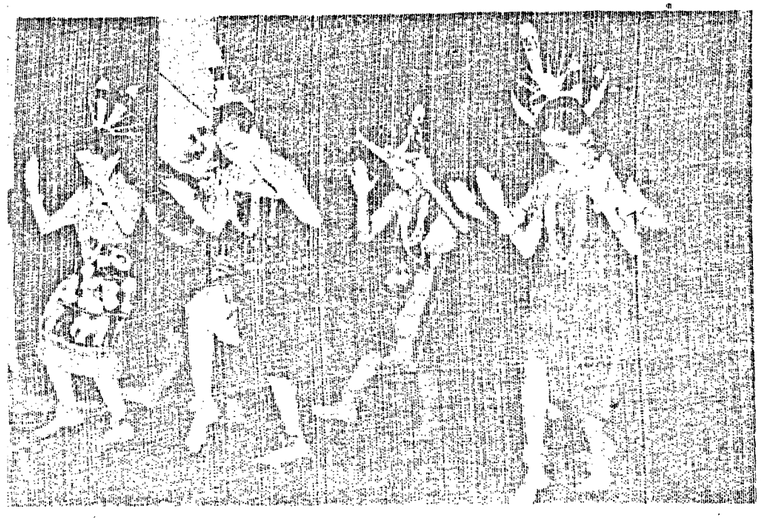
1. The pretty girl, daughter of the Chief Fire Officer, Madras, is seen garlanding the Chief Minister.
2. A member of the fire brigade is receiving a prize from the Finance Minister.
3. Mass spinning by Firemen on 3rd October, when they celebrated Gandhi Jayanthi in the City.
4 & 5. On 2nd October, Gandhi Jayanthi Day Culture Programme for Children was organised by the Department of Information and Publicity at the Children's Theatre. In the matter of providing for Children's programmes also, Madras State leads the rest of the country.













Dance Performance
by

Assamese Artistes

The citizens of Madras had an opportunity on October 15th and 16th of having a glimpse of Assamese culture when the cultural troupe from Assam gave their performances in the city. Sri Bisnuram Medhi, Governor of Madras, who hails from Assam presided on the occasion.

The 25 members troupe who are now on a tour of the State under the Government of India Scheme of Inter-State Exchange of Cultural Troupes presented a programme of traditional dances and dance dramas 'Nati Nithya', 'Ojhapali', Bihu Dance and Naga Dance were some of the important pieces staged by the troupe.

FINE ARTS

Synthesis of

Western Technique & Indian Ideals

SRI. P. V. RAJAMANNAR, M.L.C.,
Former Chief Justice of Madras.

The Indian artists of today could not merely copy either the Ajanta and the Thanjavur frescoes or the modern European art, said Sri P.V. Rajamannar in his talk on "The Fine Arts" under the general A.I.R. series "Tradition and Modernity" broadcast from all A.I.R. Stations on Wednesday, September 18. "The new influence of modern art must be absorbed by the Indian artist, but he should never forget that his art must ultimately express the genius and spirit of his people", suggested the speaker.

Tradition and modernity are not terms capable of precise definition. It would not be correct to say that tradition refers to the past and modernity to the present. There are several things which are in vogue at the present time, which are more or less revivals of things from the ancient past.

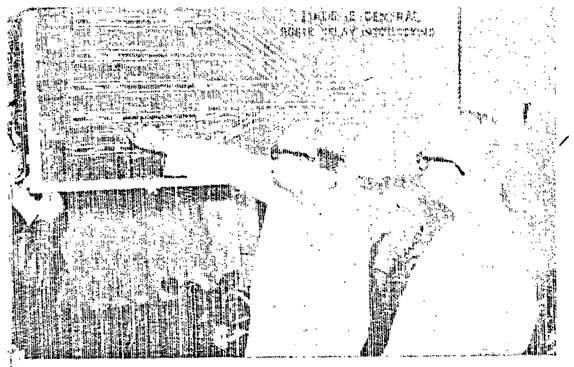
The types of hair dressing of women, now prevailing in the highly sophisticated circles of cosmopolitan cities like Bombay, are more or less imitations of types which we can see in the Ajanta frescoes. Much of modern American and European sculpture in recent times has been greatly influenced by primitive negro sculpture. Speaking of fine arts, by tradition we generally mean a bundle of artistic principles, including methods and techniques, based on accumulated experience and continuous usage handed down from the previous to the succeeding generations. "Modern" literally means "of the present". But it has acquired a secondary meaning which makes it applicable to something new, and something which is not antiquated.

Artificial Dichotomy

Modernity would therefore imply a departure from tradition. This dichotomy between traditionand modernity is, to a certain extent artificial and sometimes illusory. Every picture painted within the last few years is not necessarily modern. They may be pictures, the like of which were being painted about 300 years ago or even 2,000 years ago. Likewise, what was looked upon as radically new 50 years ago and even ridiculed and abused at the time, has now fast become a part of tradition. "In Art, as in many other aspects of life, often what appears to be radically new is indignantly repulsed as an affront to good taste or even to morals by the first generation to meet, it begins to be accepted by the second, is honoured as a classic by the third and is either ignored or rejected by the fourth".

Sri M. Bhaktavatsalam, Minister for Finance and Education, inaugurated the 15th Anniversary Celebration and Special Exhibition at the Victoria Technical Institute on 10th October 1962. Picture shows the Minister going round the exhibition held in this connection.





Route Relay Interlocking System at Madras Central Station was inaugurated on 26th September 1962 by Sri S. V. Ramaswamy, Union Deputy Minister for Railways, Sri M. Bhaktavatsalam, Minister for Finance, presided.

Many instances of this are to be found in the history of European painting. Ruskin lost his temper with Whistler's nocturnes but subsequently he became a part of the authentic tradition of European painting. In the beginning of the 20th century, the painting of great masters like Matisse were derided and were exhibited in a special room, which was called by a critic "the cage of the wild beasts" (Fauves); hence the term Fauvism. But very soon Fauvism became traditional when the next step was taken in Cubism.

Tradition of Indian Art

The river of Indian art tradition has not been a single unmixed flow as water running through a pipe. Many streams have joined it in its long course; many sources have contributed to its volume and nature. The Moghul school of painting had its origin in the Persian Art of Samarkhand and Herat. It was therefore as alien as the Moghuls themselves in India. But in the same way as the Moghuls became gradually absorbed into the people of India, so Moghul painting came to be regarded as an integral part of the art of India.

The Moghul miniature can well be described as the offspring of the union of Persian and Rajput schools of painting. Moghul painting was steeped in the Indian atmosphere, nourished on Indian soil, and reflected the Indian spirit in many of its aspects. It is also clear that Persian influence had its impress on the Rajput schools. In the history of Indian sculpture, the Greek influence dominated the Gandhara school. Sculpture in India, till recent times, was practically confined to temples and buildings attached to the temples. Images of gods and goddesses and saints were objects of worship primarily, though they were masterpieces of art.

These apart, sculpture was integrated with architecture. The supreme example of such perfect integration is the magnificent Sun Temple of Konarak. Though it cannot be denied that there are differences between Buddhist sculptures and subsequent Hindu sculptures, they all form part of the traditions of Indian sculpture. In architecture also, the effect of the Moghul invasion, which brought with it Saracenic styles of building, has led to a synthesis of the old Hindu style and the new Saracenic style. Who can deny that the Taj and Humayun's tomb and the monuments of Fatehpur Sikri belong to Indian architectural tradition?

Western Influence

It is not a matter of surprise that Western art should have attracted the Indian artists for many reasons. For one thing, it was radically new, in technique, in method, in treatment, in composition, and even in theme. In the last decades of the 19th and in the beginning of the 20th century, Indian artists took to painting in oils mostly after the manner of British academicians. Raja Ravi Varma belongs to this group. Obviously, that very capable artist was not well acquainted with the new art movements in France; nor even with the work of European masters like Rembrandt or Rubens.

Though the themes of the paintings of such artists were Indian, mainly mythological, it was felt that they were too imitative of Western art. This reaction took a concrete shape in the Bengal School of Painting under the leadership of the talented artist, Abanindranath Tagore. It was not surprising that the members of this school should attempt to go back to ancient examples of Indian painting like the frescoes of Ajanta and to the not-so-ancient miniatures of Moghul and Rajput schools. Traces of Japanese influence can also be found in the work of these artists. The Bengal school has now become part of the tradition of Indian painting.

In recent times, many young artists have greatly, even passionately, sought inspiration from the latest European schools. Impressionism, Cubism, Abstract, Art, Surrealism and Expressionism have each in turn and together fascinated many of the younger artists of to-day. Indeed there is an apprehension in many quarters that this influence may have the effect of destroying Indian artistic traditions. I remember one friend, who on going through a recent exhibition of young painters, remarked that the exhibition could well have been an exhibition of young European artists. Undoubtedly some of the paintings did strike one as second rate and second-hand imitations of the work of European masters like Braque or Picasso. I believe many of these artists would not have looked at a single painting of these European masters in the original.

Though we can take pride in the glorious artistic tradition of India, it will be idle not to realise that there have been breaks in that tradition, chiefly due to political reasons. The complete disintegration which followed the end of the Moghul Empire and the infiltration of European nations, ostensibly for commercial purposes, but gradually seeking sovereign powers, and the internecine struggle for supremacy among these European nations, viz., the Portuguese, the Dutch, the French and the British, resulted in a total deterioration of artistic endeavour. Maharajas and Nawabs had no doubt painters and other artists attached to their courts. Temples and palaces were being built. But by the time we reach the end of the 19th century, traditional values had ceased to flourish.

Opening of a new vista

The British rule not only made the Indian intelligentia familiar with the treasures of English literature, it also made the Indian artists acquainted with the wealth of European paintings and sculpture. In the beginning, the acquaintance was limited to well-established classical styles and schools. The Indian sculptors of that time were familiar, though not directly, with the masterpieces of Greek and Roman artists and with the medieval masters like Leonardo Da Vinci and Michelangelo. In painting too the acquaintance was confined to the post renaissance European masters and academicians of England. The profound influence exerted by the traditional European schools considerably affected the medium and the method and treatment by Indian artists. The Indian artist had never painted in oils. Examples of European oil painting therefore opened a new vista to the Indian painter.

Few Landscapes

The Indian artist was almost always occupied with the human figure, whether it was portraiture or the depiction of an episode from the *Puranas* or histroy or a scene concerning the social life of the people. Whatever little landscape there is to be found in the Indian paintings of the past really serves as a background for the main human subject-matter. Landscape as such was not a theme for the Indian artist. It was only due to the impact of

GOVERNMENT OF MADRAS

Under rule 4 (2) (i) of the Madras Land Reforms (Fixation of Ceiling on Land) Rules, 1962, the following notification issued in G. O. Ps. No. 3638, Revenue, dated 29-9-1962 is published for general information:—

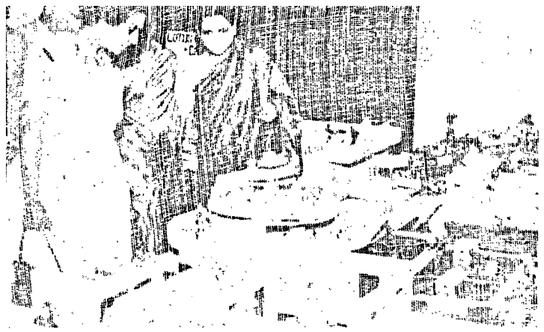
NOTIFICATION

Under sub-section (1) of section 8 of the Madras Land Reforms (Fixation of Ceiling on Land) Act, 1962 (Madras Act 58 of 1962), the Governor of Madras hereby specified the 2nd October 1962 as the date from which the period for furnishing the return under that sub-section shall commence.

(2) The said date shall be the notified date for the purpose of the said Act.

(3) Authorized officers under the said Act have been appointed and their respective jurisdiction defined in Revenue Department Notification II-1 No. 4316 of 1962, dated the 10th September 1962, published at page 1745 of Part II—Section 1 of the *Fort St. George Gazette*, dated the 12th September 1962.

J. SIVANANDAM,
Secretary to Government, Revenue Department.



The Fifteenth Conference of the Trained Nurses Association of India was inaugurated by Srimathi Jyothi Venkatachellum, Minister for Public Health, at Senate House, Madras, on 26th September 1962.

European landscape painting, that the Indian artists began to take nature as their theme. This is not the occasion to deal, elaborately and in detail, with the nature and extent of the influence of the West but it is necessary to mention one thing, viz., that in the beginning, the result of this influence was a second-hand and a second rate copying and imitation. Nevertheless, the seeds were sown for a rich harvest in the future.

As I have already mentioned, there was an attempt to stem this Western influence by the members of the Bengal School of Painting. They no doubt did a great service in emphasising the necessity for preserving the continuity of India's artistic tradition. But obviously they could not totally prevent further impacts of the later developments of European Art on the younger and rising artists of India. In Bengal itself, where the Bengal school originated and flourished, gifted youngmen began to paint in the manner of Impressionists and Cubists. You can find the features of Cubism in some of the paintings of Gaganendranath Tagore himself, one of the leaders of the Bengal school; and the world is familiar with the paintings of the great Rabindranath Tagore which did not certainly belong to the Bengal school.

I am not afraid that the influence of Western art forms and methods will destroy the Indian artistic tradition. Craze for mere novelty may for some time and with some persons overpower genuineness and sincerity but that is only a passing phase. The work of several capable artists, whose names I need not mention, fills one with confidence in the future of Indian art, because they have respect for traditional values and at the same time are fully imbued with the spirit of modernity.

The Indian artists of today cannot merely copy or imitate Ajanta or Tanjavur frescoes, and Pallava sculptures or Chola bronzes. By doing so, they cannot further enrich Indian artistic tradition. They must be fully aware of and alive to, other developments of contemporary Western art as well. They need not reject the traits of all the experiments nor be impervious to the marvellous achievements of modern European art. Only they should not merely copy and imitate them, just as I have already said that they should not copy and imitate old Indian masterpieces.

The new influence

The new influence of modern world art must be absorbed by the Indian artists, but he should never forget that his art must ultimately express the genius and spirit of his people. He should not "forget or suppress his racial and national way of seeing, feeling and shaping"; he has to be an *Indian* artist. Only then, his art, whatever school or style he may be influenced by, will differ from Western art, in the same way as Indian thought differs from Western thought in the way that the *Upanishads* and Buddhist scriptures, the philosophic systems of Sankara, Ramanuja and Madhwa differ from Western systems of philosophy and metaphysics. Without this difference, the Indian artist will have no message of his own to give to the world.

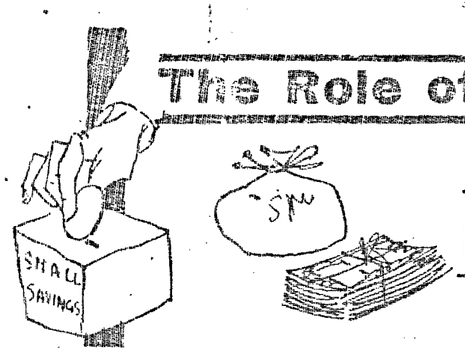
[By *Courtesy*: *A.I.R.*]

Oldest Man in Madras is 145

The oldest man in Madras State lives in a village in Madurai district and his age has been given as 145. The number of centenarians in the State is 2,253 of whom 892 are men and 1,363 are women, according to the census enumeration which took place last year.

The oldest centenarian in Madras City is 116. Out of a total of 47 of them, 13 are males and 34 females.

In the decade 1951-61, the population in Madras State has gone up by 11.85 per cent. Nilgiris district has shown the highest rate of increase—31·3 per cent. The population of the State is put down at 33,687 millions and accounts for 7.58 per cent of the total population of India.



The Role of Small Savings in a Developing Economy

Dr. S. VIJAYALAKSHMI, M.A., M. LITT., PH. D.

The Small Savings of the millions have to play a very important role in financing the Plan. This is not only necessary from the point of view of raising additional resources for developing our economy but also to make as large a number of our countrymen as possible partakers in this vast enterprise of building up of our country.

Economic development is no luxury, for it involves serious hardship on the people. Nevertheless development has become a dominating question of the day in all the under-developed countries. If development means industrialisation and better farming methods, it also means change—change in the outlook, approach and attitude of our people. In the past, India and the Asian communities were not for any change. They led a contented life. That was the reason why when an attempt was made to link the different parts of our land by means of railways, there was resistance in the country. Old and conservative people would not allow the railway lines to pass through their villages. Unlike those days, with the advent of freedom, the people have been awakened to a new consciousness of their needs and rights. They ask for more for every region and for every section; draw pointed attention to regional disparities. Their demands and claims pile up. But very little comes out of their current incomes for the purpose of investment in the developmental plans. This handicap will slowly disappear when every unit of the population participates and becomes a willing partner in the national efforts.

Most of the under-developed and developing nations to-day want all the blessings of the welfare State complete with old-age pension, unemployment insurance, family allowances, health insurance, forty-hours of work a week and all the facilities that go with the citizens in a developed country. People want the consequences of economic development without making the necessary sacrifices for such benefits. The economic conditions in India to-day are comparable to the conditions that prevailed in the Western countries during the development of capitalism.

A Welfare Economy

A welfare economy is the final product of a modern State. The process of modernising the social life and converting India from a stagnant and agrarian society into a self-generating well-developed modern economy is by no means a painless one. It involves great sacrifice and imposes hardship on her people. Every desire of an individual or a society requires sacrifice. If that desire is for the development of industry, modernising the social life or setting up of steel-mills, fertiliser factory, electro-chemical institutes, educational institutions and heavy electricals all these cost lot of capital. The communities wanting to develop on these lines must sacrifice their present amenities for the sake of tomorrow's advantage. Without such sacrifice no economic advancement is possible in an undeveloped community. The price of development is so high, it involves good deal of strain and pain. Such sacrifice cannot become acceptable to a community without that community making economic advancement the centre of its life. A society desiring progress badly enough must be prepared to put development in the very forefront of its priorities. The urgency for development in India is quickened not

Do You Know ?

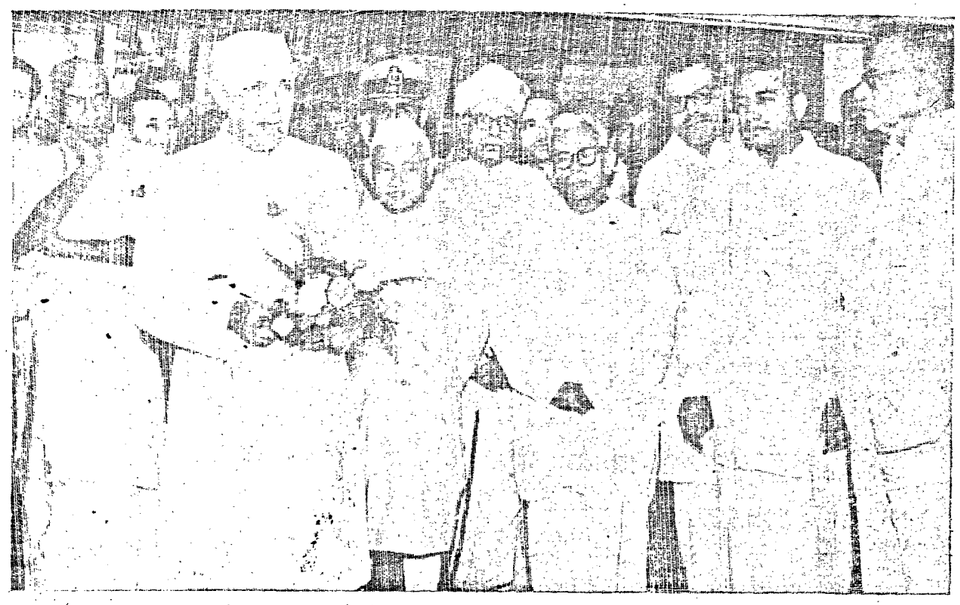
Deposits in the 10 and 15-Year Accounts of the CUMULATIVE TIME DEPOSIT SCHEME are now allowed to earn a rebate of income-tax as in the case of life insurance premia and contribution to Provident Funds.

In addition, the deposits in the 10 and 15-Year Accounts earn a tax-free compound interest of 3.8 and 4.3 per cent per annum respectively.

Further particulars from your nearest Post Office.

NATIONAL SAVINGS ORGANIZATION

DA 62/326



The Prime Minister is given a hearty send off when he left Madras for Delhi on 16th October 1962.

only by the long period of neglect and arrest, but also because of the pressure of population that threatens to grow at an unprecedented rate. This increase can create severe problems, unless economic development runs ahead of the increasing population.

The need for more investment

Economic development means investment. Investment would mean capital resources. The more the capital for investment, more rapid would be the rate of our advance. More capital resources require larger savings from the community. Clearly if there is to be rapid increase in our production and thus in the welfare of the community, then very much larger quantities of capital are required to be invested than available in the country to-day. In short if the pace and tempo of economic development are to be higher, greater must be the accumulation of capital in the country to be invested in the national Plan. In the case of India, the limited supply of resources will necessarily impose on her a slower rate of growth.

Accumulation of Capital

But the formation of capital in a less developed countries is by no means easy. There are three possible ways of capital accumulation, which had been resorted to, in all the under-developed countries wanting to develop. The first is the traditional capitalist method. Even here, broadly speaking, there are two recognised ways of accumulation of capital. One is by uprooting peasants from the land. In England, the beginning of capitalism has always, been traced to the *enclosure movement*, when land was encroached upon by the landlords and the peasants were driven out. This process of throwing out peasants that made workers available for factories. So some form of enclosure movement had always assisted in the process of capital accumulation and industrialization in which case a farm labourer is forced to become a factory hand!

The other traditional method was through the creation of a reserve army of unemployed. The number of workers must always exceed the jobs available. Unless the workmen run after jobs instead of jobs running after them, there would be rise in wages. Workmen would start dictating terms. An employer can get his way only when there are many men desperately running after a few jobs. This process enables the capitalist to maintain his primacy and accumulate enormous capital to start and invest in new factories. The primitive accumulation of capital in the west which preceded economic development necessitated the simultaneous process of uprooting of peasants

and creations of a reserve army of labour. It was crude exploitation of labour and a very grim spectacle too. The primitive method of capital formation was through "an atrociously long hours of work and low wages; poverty, long hours of work, and unemployment capitalism accumulates the wherewithals of economic development "through these methods."

Process of forced labour

The other process is the one that obtained in the Stalinist regime. It is a process of forced labour, prison-camps and secret police. It is a method which could achieve quicker results, at a greater speed. Economic development takes place under this political system through forced collectivization of agriculture and slave labour. Freemen who are reluctant to accept the severe strain, the economic development would impose on them, would be removed and sent to prison camps and used up as labour force. None could criticise the terrible strain of economic development. In the absence of opposition parties, pressure groups and public opinion which go with an open society, this is possible.

The only alternative

The third alternative is to seek the co-operation of the people. This is known as the democractic process. Ours is a democratic structure with free people. The people will have to be plainly told that the process of economic transformation of India is not a painless one. It involves great sacrifices and imposes severe strain on them. The readiness to sacrifice for the country must come through the willing consent of the people. In a democratic set-up the speed of industrialization, the rate of accumulation of capital, the strain and sacrifices to be imposed will be aspects of democratic choice. The accumulation of capital will have to be made through the efforts of our working people. It may be questioned that how can common people be made to understand such abstruse problems of capital resources, savings and investments and about the pace and tempo of economic development. But democracy is inherently a political system that proceeds with faith in the capacity of the human beings.

The need of the Day

The need of our country is enormous. In India almost everything is being built anew. We need more investment for our development. Even to rationalise the production of land without mechanization of our agriculture all over India, a huge investment is required in terms of crores of rupees. Investment for industrial development will demand larger quantities of capital investment. To augment India's national income, factories have to be built, dams have to be constructed and steel works have to be put up. They do not yield results in a day. You cannot eat, collect or consume locomotives and railway coaches as they are in the process of making. We must wait until such time when they could be used. But we must not merely wait till such time as these factories or the river valley projects start yielding results, but keep on sacrificing to build them up. Agricultural development takes time. Industrial development takes longer period to yield results. During this period we have to forego a part of our consumption, or at least maintain our consumption stationary, while production is going up.

Voluntary effort of savings

It is normal practice for the developing nations to plan its national requirements between loans—foreign and domestic, taxation and savings. The strain of development may not be felt if adequate foreign aid is obtained. But there is bound to be a limitation attendant on such an aid. Foreign aid and loans become essential for building up heavy industrial plants with heavy machines and we need technical experts from abroad. Reliance on external resources again is governed by balance of payment considerations. Deficit financing beyond a point raises prices of commodities and cost of living. The only alternative for the Government to mobilise internal resources is either through taxation which is compulsory or through the savings of the community which is voluntary. However, essential it may be, any further tax effort may not be welcome. The question that the common man might ask is could the tax target not be reduced? Hence the extent to which we are able to raise funds through the voluntary effort of savings, to that extent the pressure of taxation will be relieved by keeping them at a minimum.

From this point of view it is important to emphasis that the Third Plan envisages a step-up in domestic savings from about 8 per cent of the national income to 11 per cent. This is a large step-up and will not occur spontaneously. The national income is expected to increase at the rate of 5 per cent per year during this period.

How are the savings to come? Necessarily it may be said, that they must come from the incomes of the rich and the privileged. This is a country where the people are not in a position to make any big savings out of their low consumption levels. The necessary increase in savings can be secured if only the rate of consumption increase is less than the rate of increase in national income. In a country with low *per capita* income, the natural tendency would be for most of the increase in income to be used up for consumption. This tendency has to be curbed in the interest of development. The difference between the expanding production and stationery or declining consumption is savings.

Austere way of living

Restraints on consumption, both by the community and Government, is vital for the success of the plan. While it is harder for the poorer people to save, the poverty or the riches by themselves do not determine the rate of savings in a community. It also depends on the traditional standard of living. Japan among the Asian countries is known for her austere way of living. It is said that the rate of savings that prevailed in the Japanese community even before the War was due largely to the traditional austerity of the Japanese people. It looks that if whole India were to have a living tradition as austere as Japan's the amount available for investment would be amazingly double.

In the past, most investments were direct. The peasant cultivated the land himself or with the help of his neighbours and relatives. A boy acquired skill by learning it from his elders. If the peasant had a surplus, he spent it on enjoying it himself, on marriages and festivals. There was usually nothing to invest the savings in, in a society of Independent farmers, small peasant, petty shop keepers and artisans. Since what was required was not large capital, but labour and hereditary skill, the only incentive to savings for several families was the need to provide for ceremonies connected with births, weddings, and deaths. So people saved up for pleasure. Enjoyable though these ceremonies are, they are not productive investments. The money only goes either on a lavish feast or on items of jewellery. Only the amount spent varied according to the means and social status of the family involved. What is needed at once is public opinion in favour of the cultivation and practice of thrift which condemns such expenditure as meaningless and mad ostentation; this alone will help free the savings of India for investment for productive purposes.

Need for change in traditions

When we come to the building up of the savings of the Indian community—the Indians have to change the whole trend of their traditions and attitudes to life. To change the attitude of the population—which is not wholly literate and lives just above subsistence level—is by no means easy and requires different approaches. Investments were made by our people in the past, but they were on limited lines and for unproductive ends and mostly on conspicuous consumption. The very fact that there had been savings does not automatically mean that there will be investment. hoarding or wasteful expenditure does not constitute investment.

India's enormous need for investment could be fulfilled to some extent if there could be a change in the ways of



The Seminar on Irrigation and Power was held at Ootacamund on 22nd October. Sri Hafiz Mohamad Ibrahim, Union Minister for Irrigation is seen addressing the meeting.

producing and using capital because modern investment requirements demand such a change. The exhortations made by the National Savings Movement will gain crucial importance at this juncture.

Small Savings in Third Plan

If the Third Plan depends on the mobilization of domestic resources through savings, it is our willingness to save that is the determining factor. Small savings for the Third Plan will have to be at the rate of Rs. 110 crores a year on an average. The target set for the whole country under the Plan period will be Rs. 600 crores. The estimate of resources for the Third Plan envisaged through the collection from Small Savings by the Government of Madras is of the order of Rs. 30 crores for which a net collection of Rs. 45 crores will have to be mobilized during the Plan period. The small savings of the millions have to play a very important role in financing the Plan. This is not only necessary from the point of view of raising additional resources for developing our economy but also to make as large number of our countrymen as possible partners in this vast enterprise of building up of our country. To achieve this target concerted measures would be necessary to contact and visit every self-supporting family and stimulate its savings. The Planning Forums in the colleges must engage themselves actively in cultivating and promoting savings consciousness among the families in their respective areas. The educational institutions can play a significant role in spreading the message of savings among the teachers and the taught. The support for the savings movement in a sustained and practical manner has to become an important item in the work and activities of every educational institution. In fact the educative aspect of savings with its emphasis on personal happiness as a result of well-planned spending and the need for the individuals and families who are generally thriftless and thoughtless to cultivate this good habit of savings in their own interest has to be driven home by the heads and teachers and of educational institutions.

Pay not Savings

Industrial and commercial establishments and Plantations can make an effective and enduring contribution to the

success of the savings movement through the introduction and organization of the Pay Roll Savings groups among all categories of staff and workers. The industrial sector of the economy has to be organised fully for a system of savings effort. This is rendered easier if the heads of all the industrial units, commercial undertakings, factories and plantations extend their active and continuous co-operation in the formation of Pay Roll Savings Scheme groups in their respective units. The Payment of Wages Act and Minimum Wages Act have been so amended permitting the deduction of savings agreed upon by the workers and employees, from the pay roll and check roll. This method of savings promotion if accelerated and maintained in every industrial unit would help a steady flow of savings into the coffers of the State, apart from enabling the savers themselves to build a reserve fund for their needs and liabilities in the future. The Pay Roll Savings Scheme not only facilitates easy savings by employees, but also develops the habit of thrift among them. Pay Roll Savings groups in large establishments should form an important part of the National Savings Movement. They will have a larger membership than any other category or groups and can produce a large volume of savings.

Cumulative Time Deposit

Small savings is yet another method of channelising the little savings of the community under Government securities. The Cumulative Time Deposit Scheme with its benefits is designed to suit all income groups and to those in the higher income groups with the added advantage of rebate of income tax similar to Provident Fund and Insurance premia. In view of the fact that the State has to augment its resources from the Small Savings to a considerable extent from now on, every officer of the Government should take a personal interest in the savings promotion work by their personal participation in the Cumulative Time Deposit Scheme for becoming an example. They must help form in their respective offices savings group under Cumulative Time Deposit Scheme through the Pay Roll Savings. At the moment the Pay Roll Savings groups do not function effectively in the Government Offices because of the lack of sustained interest among the heads of offices. Every office staff should be pursuaded to contribute towards Small Savings. This is possible by means of an effective pursuasion and creation of a climate for a stepped-up savings effort among the Government servants.

There will be of course reluctance on the part of the low paid employees in the first instance, but once they get into the scheme, they will subscribe regularly each month to this scheme.

Savings Arrest Inflation

This Development of organised savings emulates in the wage-earners of big industrial and Governmental undertakings and units a thrift habit. Otherwise they drain away the surplus they get in useless amusements and pleasures. This is the case with the industrial workers. The savings movement helps us to place thrift very high in our individual life. This organised, systematised and regular saving has another important contribution to make, i.e. to ensure a measure of stability in commodity prices. The extent to which savings habits are promoted and cultivated assiduously, the spiral of inflation and high prices and rising cost of living could be checked. Inflation can be arrested only at the savings end. The inflationary tendency should normally restrict the rate of consumption, so that a pool of savings would be made available for the investment Plan. Herein should the wage earners be told the nation need for stepping up our savings effort to mobilise as much of the internal resources as possible through personal savings is a matter which affects every individual as a member of the society, more particularly the wage-earner because his well-being depends directly on the rehabilitation and expansion of industry.

Government's efforts, to encourage savings in the community through Governmental agency could succeed only in a limited way. In popularising the aims and objectives of the savings movement and expanding it, the non-official bodies and voluntary agencies have a significant role to play. Trade union leaders, Chairmen and Members of the Panchayat Union Councils, Legislators and the Members of the Parliament together with the teachers and the students should consider the promotion of savings an important public service. Determined efforts by non-officials will definitely have heartening response.

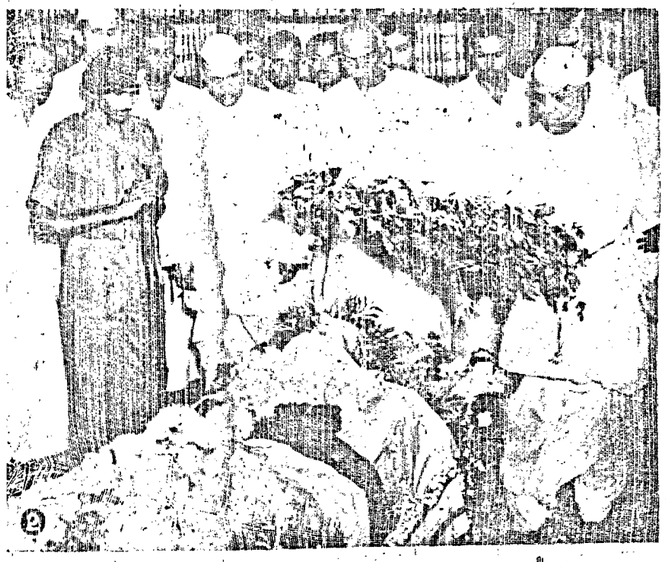
Economic growth is no longer a mystery nor saving an impossibility. It is an intellectual discipline which is not beyond our capacity or understanding. The community desiring to develop economically must at least be willing to severely curtail expenditure on festivals and ceremonies and to save money. A people working to build for the future must be prepared to exchange the comfort of the well-spent leisure for back-breaking work; such a community must buy Savings Bond and National Plan Certificates than go in for costly jewellery. Each must reconcile himself or herself to a life of hardship and austerity—*a self-denying ordinance*. For the Savings movement is strictly voluntary. That spirit of sacrifice and renunciation can come only when we are dedicated to and inspired by an ideal. When such a feeling overwhelms us we become the PILGRIMS OF PROGRESS.

PASSING AWAY OF A GREAT LEADER



Dr. P. Subbaroyan, Governor of Maharashtra, passed away at Madras on 6th October 1962.

1. Sri K. Kamaraj, Chief Minister, Madras, is placing a wreath of flowers on the body of Dr. Subbaroyan.
2. Sri Y. B. Chavan, Chief Minister of Maharashtra, is paying his State's homage by placing a wreath.
3. The Funeral procession.



NOBLE PATRIOT

Dr. Subbaroyan was a noble patriot. His erudition and rich political experience made him useful to the country in many ways. We had lost him at a time when his services were needed most. He had rendered invaluable services in the political and social spheres for more than five decades.

—KAMARAJ.

GREAT LOSS TO COUNTRY

The country had lost an elderly statesman in general and Maharashtra in particular had lost a friend, philosopher and guide. When Dr. Subbaroyan left Bombay a few weeks before "we never thought he would never come back". On the other hand we had looked forward to his long and close association as the Head of the State. I know Dr. Subbaroyan for the last 15 years as an elderly statesman and I was looking towards him to guide my Cabinet in the affairs of the State administration.

The whole country has lost a great administrator, an experienced leader of the masses and a great lover of sports. I am sure when the sporting world knows about his passing away they will certainly feel an irreparable loss. I pray to God that his soul may rest in peace.

—Y. B. CHAVAN.



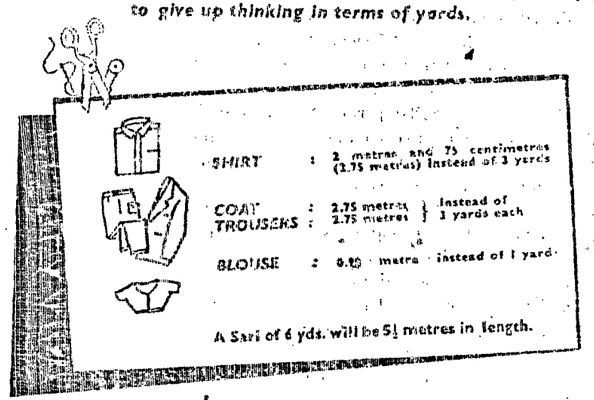


DEAL *Only* IN

METRIC LENGTHS

With the compulsory use of metric linear measure throughout the country from 1st October, 1962, transactions are now in terms of the metre.

Here are some equivalents of standard garment lengths. Familiarity with the new unit will help you to give up thinking in terms of yards.



1 Metre = 1 yd. and 3⅜ inches
If a yard of cloth cost Re. 1.00 nP., a metre of the same cloth will cost Re. 1.09 nP.

METRIC SYSTEM Means SIMPLICITY & UNIFORMITY

ISSUED BY GOVERNMENT OF INDIA

DA 62/433

Services' Role under Panchayat Raj

SRI V. T. KRISHNAMACHARI'S REPORT.

Measures for raising the efficiency of administration and reorienting its outlook and organisation to meet the demands of a welfare State are outlined by Sri V. T. Krishnamachari, Member, Rajya Sabha and former Deputy Chairman of the Planning Commission, in his report on administrative reforms.

A copy of the 100-page Report entitled "Indian and State Administrative Services and Problems of District Administration" was placed on the Table of the Lok Sabha by Shri Jaisukhlal Hathi, Minister of State in the Ministry of Labour and Employment.

The Report is the outcome of intensive studies and enquiries undertaken by Sri Krishnamachari, at the instance of the Planning Commission, during 1961 and early part of this year. The conclusions formed by him had been made available, in an interim report, to the Planning Commission during the final stages of the preparation of the report on the Third Plan.

A significant part of the Report is the chapter on problems of District administration and development at the Village, Block and District levels and the role of administrative and technical services under Panchayat Raj. Discussing the issues arising from the introduction of democratic institutions at various levels, Sri Krishnamachari says that there are two points which are of cardinal importance in democratic planning. The first is that no plan can have any chance of success unless the millions of small farmers in the country accept its objectives, share in its making, regard it as their own and are prepared to make the sacrifices necessary for implementing it.

The second important factor is that the extension agency will cease to command confidence unless it can assist every family for production programmes.

According to Sri Krishnamachari there are complaints, not unjustified, that at present the facilities offered are used only by a limited number of persons who, in many cases, can look after themselves. Unless the movement makes special efforts to benefit the less favoured sections of the community within the shortest possible time it cannot justify its existence.

At the present stage of development it is specially necessary that village panchayats, panchayat samitis and zila parishads should be built up as institutions carrying out the policies embodied in the Plan and laid down by State Governments with the approval of State Legislatures and implementing the community development and other programmes in the respective areas with the maximum co-operation of the people. The democratic structure in the district should be built on the foundation of village panchayat and the village co-operative, and democratic institutions at the district, block and village levels should form a connected structure of administration.

Starting point

While overall responsibilities for administration, finance and planning would continue to vest in the State the responsibility for local planning and implementation should

devolve on democratic bodies within the district. The State Five-Year Plans as well as the Annual Plan should be broken into district and block plans and in relation to these each village should have its own development plan. The starting point is the village plan. This should be prepared after detailed discussions with the people and the panchayats and co-operatives.

The Report emphasises that it is essential to the success of Panchayati Raj that the taxation powers conferred on panchayat samitis and on zila parishads should be utilised for mobilising local resources to a greater extent than has been possible so far.

Implementation of legislation for betterment levy has been very slow and laws defining other obligations have been enacted only in a few States. The result is that the facilities provided remain unused over fairly long periods. Legal provision should be made so that where beneficiaries fail to carry out the works in time, the panchayats should carry them out and realise the cost; where village panchayats do not act speedily, the Government or on its behalf the panchayat samiti should arrange for execution, the cost being recovered eventually from the beneficiaries.

An important test of the success of Panchayati Raj institutions should be the measure in which, consciously and systematically, they promote the welfare of the weaker sections of the rural community by sustained efforts at all levels to encourage labour co-operatives, provide housesites for the smaller holders and landless workers, and expand subsidiary and other employment in the village.

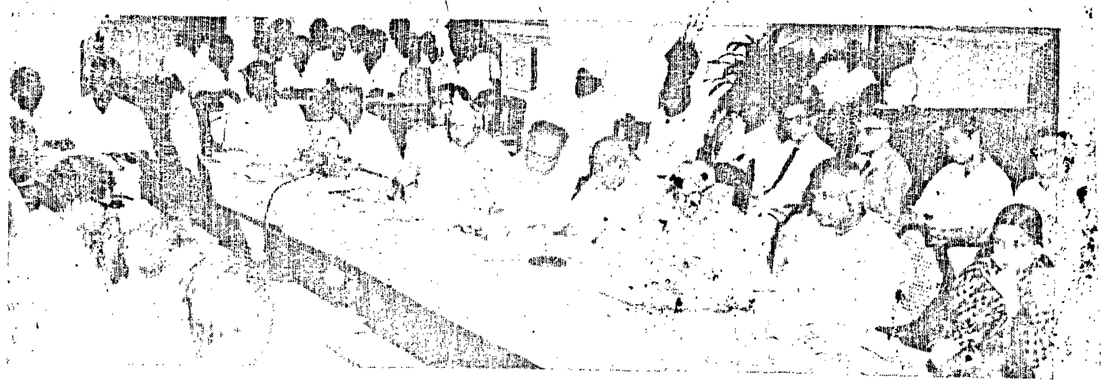
Role of Officer

The block development officers and the technical specialists at the block level should function together as a well knit team to assist and advise the panchayat samiti and its standing committee in working out technically sound block and village plans and to execute these efficiently and impartially in accordance with the laws and rules. The responsibilities of officials have to be clearly defined and enforced.

Regarding duties of district level officials, the Report says that their primary responsibility should be to assist zila parishad, the panchayat samitis, the block development officers, supervise their execution from administrative and technical points of view and to co-ordinate action in different blocks within the district. The zila parishads should see that the works are distributed equitably and the special needs of backward areas are recognised.

There should be canons laid down for objective assessment of the work of officers and promotion should depend on efficiency and integrity. There should be an uninterrupted chain of responsibility in administrative and technical matters reaching down to the village units. In particular, there should be no ambiguity about the obligation that rests on higher technical officers to guide and supervise the work of officials at lower levels.

Sri Krishnamachari feels that State Governments should reorganise agricultural, animal husbandry and co-operative services. Top posts in agriculture should be held by technical officers and promising young I.A.S. and State officers should be selected for co-operative services.



The First meeting of the Panchayat Development Consultative Committee on Welfare Services Programme was presided over by Sri K. Kamaraj, Chief Minister, when it met on 4th October 1962 at the Rajaji Hall, Madras.

Sri Krishnamachari wants urgent action to be taken in the following matters :—

(1) Reducing the frequency of transfers to the absolute minimum to enable administrative and technical officers to stay in their positions for long periods,

(2) Ensuring sustained touring by these officers in the rural areas so that they can get to know the villagers and their problems intimately, and

(3) Scrutinising the elaborate registers, reports and returns prescribed for villages, blocks and districts with a view to reduce correspondence and paper work.

On urban and rural administration it is recommended that plans of social and economic development of rural areas should be linked up closely with those of adjoining urban areas. There should be continuous co-ordination in respect of programmes of agricultural production, planning of markets and communications, education, water-supply, medical relief, etc.

It is expected that in all States co-operative movements would be developed sufficiently to undertake responsibility for disbursing all loans at the end of the Third Plan period. For recovery of the loans, State and Panchayats should review the working of the rules and make such changes as might be called for from time to time.

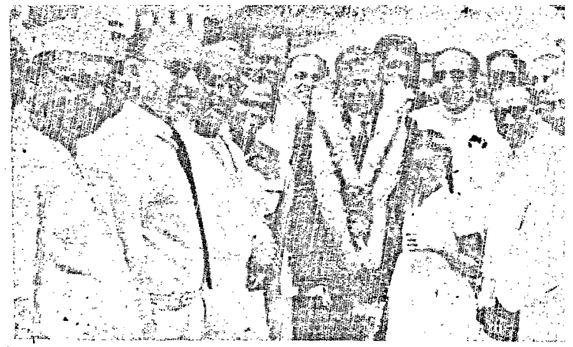
Central services

With regard to the Indian Administrative Services the Report brings out the rapidity with which the requirements for higher personnel have been increasing. The I.A.S. cadre, which had a strength of 803 in 1948, has gone up to 2,252 in July 1962. It is expected to go up to 2,400 by the end of the Third Plan.

For making up shortages in the cadres Sri Krishnamachari has recommended the appointment of 115 candidates to I.A.S./I.F.S. every year during the next four years. This could be done without impairing the efficiency of the Services, he feels.

The recommendations of the Second Pay Commission for raising the age of superannuation in view of the difficult position regarding availability of I.A.S. Officers finds support in the report. Pending such re-examination I.A.S. Officers who are capable of efficient service might be continued in service or re-employed on the same basis as scientific and technical officers.

Sri Krishnamachari has also made recommendations about the training of I.A.S. Officers in the National Academy of Administration. Visits to one or two rural development



Sri R. Venkataraman, Minister for Industries, returned to Madras on 28th S 1962, after his visit to Geneva, France and West Germany.

centres and study in the Planning Commission for two or three days should be included in the programme of "Bahrat Darshan".

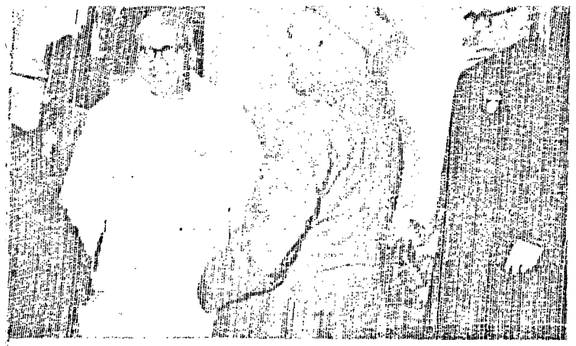
With regard to probationary training in the States, he recommends that the period of training should be fixed at 18 months and a probationer should be enabled to learn important branches of work like revenue, survey, and settlement, treasury work and community development by holding the concerned posts. They should work as additional Block Development Officers for three months and besides doing case work should be instructed in methods of dealing with law and order situation. The scheme of departmental examinations should be revised and probationers posted for training under selected Collectors who should send periodical confidential reports on their work and capacity.

To enable I.A.S. Officers to gain varied experience, their postings during the first 5 to 6 years should conform to the following pattern :—Practical training—18 months, Charge of subdivision—18–24 months, Under Secretary to the State Government and Deputy to a head of department—18–24 months, Charge of a district—Towards the end of the sixth or in the seventh year of service. All subdivisional officers should be actively associated with the community development programme.

In the context of the growing complexity of administrative problems, his recommendation is that reorientation courses of three months should be given to directly recruited I.A.S. Officers with 6 to 10 years' service and those promoted from the State Services. For senior officers short courses, seminars and conferences should be arranged.

State Service

The Report stresses the importance of the functions assigned to the State Administrative Services. Members of these services are almost exclusively in charge, under the Collector, of the general district administration, land



The Governor who inaugurated the Irrigation Seminar was received on his arrival by Sri V. Ramaiah, Minister for Public Works, Sri O. V. Alagesan, Union Deputy Minister for Irrigation and Power, is seen at the extreme right.

revenue, community development, law and order, etc., and their duties bring them into close relations with the people and the non-official members of panchayat bodies, municipal councils and co-operative organisations.

Sri Krishnamachari has come to the conclusion that there would have to be annual recruitment on a fairly large-scale. Each State Government should make as accurate an estimate as possible of the requirements of Class I and Class II Civil Service for the next 5 years and review the method of recruitment and training.

Direct recruitment had been irregular in the past and in some States these had been kept in abeyance for 15 to 20 years. Sri V. T. Krishnamachari recommends that all State Governments should amend their rules to enable a minimum of 50 per cent of Class I posts and 50 percent of the Class II posts in the State Civil Service to be filled through direct recruitment on the basis of competitive examination held by State Public Service Commissions. For this regular annual examination should be held according to a carefully devised programme.

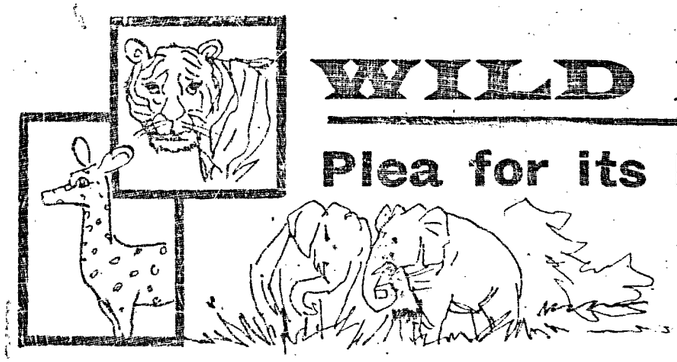
Block Development Officers belonging to State Civil Service, Class II, are eligible for promotion to Class I. Block Extension Officers who are promoted as Block Development Officers might also be promoted to Class I or in their parent department according to their fitness.

Sri Krishnamachari suggests that a Group might be set up in the Planning Commission with representatives of the Ministries of Home Affairs and Community Development, Panchayati Raj and Co-operation to keep in continuous touch with the progress of recruitment to Class I and Class II Services in the States.

For training of State Officers the recommendation in the report is that Class I & Class II Officers, they should learn important aspects of work by holding the concerned posts and should receive work and receives special instructions in law and order problems. Training institutes should be set up where there are none either individually or jointly for two or more States with the help of the National Academy. The need for co-ordination between the State training institutes and the orientation and study centres run by the Ministry of Community Development, Panchayat Raj and Co-operation, has been stressed.

A decade of unprecedented increase

The Census Commission has published its first paper on last year's census operations. It shows that the country's population in 1961 was little over 439 million. In the last decade, the population went up by 21·5 per cent. The rural population was up by 18·84 per cent and the urban by 36·25 forty-four per cent of the urban population live in 107 cities each with more than one lakh of people. India's population accounts for 14·6 per cent of the world's while her area represents 2·4 per cent of the total area. The Census Commissioner attributes the population increase mainly to the general improvement in living standards and the elimination of epidemics and wasting diseases. Expectation of life at birth has increased and infant and matetnal mortality has declined. Literacy has increased sluggishly at an average of only zero point eight per cent per year. Delhi ranks first with 527 literates in every thousand and Kerala, second with 468 per thousand. The lowest is NEFA with 72. The progress of female literacy has been very low. Uttar Pradesh is the most populated State with more than 73 million people and Bihar is next with over 46 million, Maharashtra has over 39 million and Andhra Pradesh nearly 36 million. Orissa has the smallest population a little over 17 million.



WILD LIFE

Plea for its Preservation

SRI S. SIVASAILAM, *Assistant Conservator of Forests, Madras.*

The "Wild Life Week" has become an annual feature and wide publicity is given to it through Press and Radio and meetings held in various places both in the city of Madras and the districts.

If the attempts to save wild life are to succeed it is obligatory that everyone connected with wild life preservation whether official or non-official is fully conscious of his responsibilities and is in a position to discharge his functions without any fear or favour.

The public, in general and the agriculturists, in particular are apathetic to measures taken for conservation of Wild Life, since they are more conscious of the damage caused by wild animals to their crops than the direct or indirect benefits of wild life.

Paradoxical as it may seem, wild animals and birds are great benefactors of mankind. From the aesthetic and recreational points of view, wild life affords happiness to mankind. When even a visit to the Zoo, where birds and animals are displayed under artificial conditions, is enjoyable, how nice will it be to see them in their natural habitat. India can well be proud of her fauna, which is rich, in number and variety. The majestic lion, the fascinating tiger, the nimble deer, the multicoloured peafowl, the picturesque parakut and a variety of other animals and birds are an asset to the country. India will be very much poorer without all these.

The need for preservation of wild life is more important. The tiger serves to maintain the balance of nature by destroying deer and wild pigs, which are crop destroyers. If predacious animals like the tiger and panther are shot in large numbers, there will be no control over the population of crop destroyers resulting in more damage to crops. Similarly, unrestricted shooting of pigs and deer will deprive the predacious animals of their natural food and the latter will resort to villages for their food and become cattle lifters. It is, therefore, obvious that if the balance is upset, serious consequences will follow. The birds of prey like the woodpecker feed on insects and rodents that damage standing trees and crops. The snakes control population of rats The role played by birds in effecting pollination in flowers, and dispersal of seeds is too well known.

Next is the economic aspect, by which is implied the benefits or profits derived from the use of wild animals either by their sale or the sale of their products. The revenue realised by the sale of live and dead specimens to the Zoos and Museums in various parts of the world, the fees obtained by sale of shooting and fishing licences, the income derived by the sale of furs, hides, horns, ivory and similar products—all these go to the State coffers. As a result of the steps taken by the Government of India to

develop tourism, foreign tourists visit our country in large numbers to see places of historic importance. They would also like to see the fauna of our land, like the elephant and the rhinoceros, the spotted deer and the peafowl. Hence, the preservation of wild life and provision of facilities to tourists to see the animals at close quarters and photograph them is bound to bring in substantial revenue to the State. Again, India has in recent years, set up High Commissions and Embassies in foreign countries with a view to promote goodwill and better understanding with those countries. Cultural delegations are also sent periodically. The Indian Elephant is popular in foreign countries and our Government have presented some elephant calves to Japan and some other countries. Russia presented a Polar bear to Madras Zoo, a few years ago. Such exchange of rare varieties help creation of goodwill among the various nations.

The need for preservation

While the benefits of wild life justify the need for preservation, it is scientific management that is called for. Rare species facing extermination will have to be conserved, while pests like the wild dogs which are a menace to Ibex and deer population controlled. The right balance must be struck between the demands of wild life and human interests, as the latter must prevail, whenever they are in conflict with wild life. Occasionally an elephant straying into cultivated lands and causing heavy damage may have to be scared.

In ancient India, wild life enjoyed a prominent place in the life of the people, as can be understood from ancient literature and mythology. Kautilya's *Arthasastra* refers to creation of Abhayaranya or Wild Life Sanctuaries and appointment of forest superintendents to prevent poaching King Asoka's Fifth Pillar edict refers to protection afforded to fish, game and forests. Sages and hermits had also demonstrated their love for animals and birds, by providing them complete protection around hermitages, which proved an inspiring example to the people. The concept of management and conservation of Wild Life during the Moghul Period and Early British period was, mainly that of the 'chase'. In other words, wild life was preserved for sport. However wild life did not find itself in a perilous state, since fire arms were few and the jungles large teeming with plenty of game, big and small.

Gunpowder played havoc

But, during the last 50 years or so, a vast change has taken place. With the advent of modern weapons of destruction wild life everywhere in the world entered upon an evil day. It is said the invention of the gunpowder sealed the fate of wild life. The modern man lost the reverence ancient India had for wild life and began looking upon it as having been created solely for his enjoyment. The British introduced Game Laws. The Indian Arms Act etc. Only the privileged few could possess fire arms or hunt in the forests. But, now, under the changed politics set up, there is a natural desire to break away from the Acts imposed by the foreign rulers. The pendulam has swung to the other side. Fire arms are given freely now for crop protection. Quite a number of "bogus"/crop protectors have cropped up, as a result, and they started poaching heavily on forest borders. Also, the forests were extensively cleared under "Grow More Food" campaign for fighting the famine in 1943. Thus, the extensive clearing of the forests for cultivation and other purposes, the gunpowder and high velocity rifles, increase in the number of firearms, the opening up of the country and the availability of jeeps to civilian population have all contributed to the destruction of wild life. The Asiatic lion once so common in Central and North India is now confined to Gir Forests in Gujarat State. The hunting cheetah and the pink headed duck are virtually extinct. Rhinoceros population which are reduced to a mere dozen through indiscriminate destruction, has been saved with great effort.

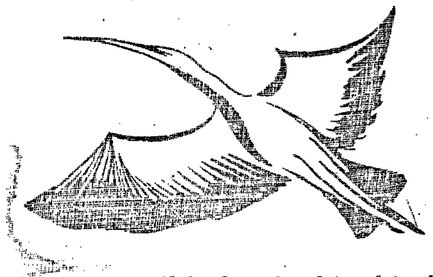
The Remedy

What is the remedy ? Special laws relating to shooting and fishing are in operation for over quite a long time in various States. These laws provide for booking the poachers and prescribe penalties. The greatest single measure of wild life preservation is through creation of sanctuaries for wild animals and birds, wherein complete protection is afforded to animals and birds. Periyar Lake Sanctuary in Kerala, Bandipur Wild Life Sanctuary in Mysore and Mudumalai Wild Life Sanctuary and Vedantangal waterbirds Sanctuary in Madras are a few instances. Quiet and extensive areas with easy accessibility and facilities for water are selected for locating the Sanctuaries. Game laws and Wild Life Sanctuaries alone could not afford the requisite protection to the Wild life. The National Government realised, at the dawn of independence, that wild life was vanishing fast, both in number and variety, and concluded nothing tangible could be achieved, unless the public became wild life conscious and their unstinted co-operation was forthcoming. With this end in view, the Government of India constituted the Indian Board for Wild Life in 1952 with some official and non-official members. The States constituted Wild Life Boards at the State level. It is the duty of the Boards to co-ordinate the effort of the centre for preservation of wild life. It is in accordance with the recommendations of the Wild Life Boards that Wild Life Week is celebrated.

Tourist Corner

VEDANTHANGAL

Birds' Sanctuary



The birds that visit Vedanthangal and breed in the locality are known to have been in the habit of doing so, season after season, for many decades if not centuries' The manurial value to their cultivation of the birds. droppings in tank has been so well recognized and appreciated by the local people, that they zealously guard the birds and their nesting from predators and intruders of all kinds. The place bustles with activity from November to March and it is indeed a pleasure to watch the variety of birds living on the tree tops in such perfect amity.

The Vedanthangal Bird Sanctuary is located within easy reach, 52 miles south of Madras City. It consists of a large irrigation tank, part of which is covered over by a mass of low branching Barringtonia trees ; and the birds have their nests huddled together all over the crowns of these trees. The place hums with activity in the early hours of the morning or the late hours of the afternoon and evening ; and at these hours it is a rewarding sight for anyone, not merely a bird-lover or bird-watcher, who may saunter along the high bund of the tank.

Oldest Sanctuary

Vedanthangal represents one of the oldest bird sanctuaries in South India. The history of the sanctuary prior to 1790 is not clear—the area was disputed territory in those days, and there does not seem to have been any stable Government to which the villagers could turn. But there is documentary evidence to show that in the closing years of the 18th century the villagers of Vedanthangal obtained a 'cowle' from the first Collector of Chingleput appointed by the East India Company, recognizing their right to safeguard the nesting colony in their tank from those seeking to snare or shoot the birds, This 'cowle' was lost by the villagers but in 1858 it was renewed—this document of 1858 refers to the first "cowle" and also to Barringtonia trees in the middle of the tank, where the birds nest.

Since these early documents recognising the villagers right to protect the nesting birds were based on a claim of immemorial custom, it is safe to presume that Vedanthangal has been, in effect, a sanctuary, and sanctioned the first Governmental expense towards its maintenance. In recent years the Government have taken over the entire responsibility for the sanctuary. The shooting of water-birds in and around Vedanthangal, within a radius of 20 miles has been prohibited for the breeding birds wander far at times in their search for nesting material and food, and used to be shot down in large numbers till this prohi-

Sri R. Venkataraman, Minister of Industries, is seen inspecting the pig iron made out of Salem Iron Ore and Neyveli Lignite at a pilot plant in Norway. (Right) Pig iron made out of Salem Iron Ore and Neyveli Lignite.





bitory order. An excellent road has now been built right up to the bund of the sanctuary, to enable visitors to reach it in comfort, and other amenities are being provided, or will shortly be provided.

The birds arrive at the tank soon after to begins to fill up, about August-September when the North-East Monsoon is neither belated nor meagre. Some of them arrive in breeding livery, some in non-breeding condition. All the birds of a species do not arrive together; each species comes in inflights which may be quite large or consists only of half-a-dozen birds, and immediately proceeds to colonise the available trees. This colonisation is progressive and promiscuous, and seems to be continued right up to November; birds of different species settle on the same tree as they arrive, and promptly proceed to build nests if they are already in breeding condition; more and more trees are made available for nesting as the water fills up the tank, and as the birds keep coming in these trees are utilised; the trees facing the bund are the first to be submerged (the tank bed having a slope towards the bund) and these are the first to be colonised, the trees behind them being occupied later. The peripheral trees on the eastern and northern sides of the grove are not so much used for nesting, but they serve as roosting trees for the non-breeding birds. Usually, by April the season is over and the birds have departed, but this naturally varies from year to year depending on how soon the tank dries up.

Normally November, December and January are the best months for a visit to the sanctuary.

If the visit cannot be planned for a whole day, it is better to plan it so that one can be at Vedanthangal by about 3 o' clock in the afternoon, and stay on there till sunset. Though the skies are often overcast clearly or during the earlier part of the breeding season, one looks at the colony from the bund, and inspite of cloud-filtered light, the view is distinctly cleared with the sun behind one—in the mornings the sun is almost right opposite the watcher on the bund. Moreover, the big return flights are to be witnessed only in the evenings shortly before sunset.

Rest House for Vedanthangal

The Government have sanctioned Rs. 90,000 *for the construction of a canteen-cum-rest house at the Vedanthangal bird sanctuary. The canteen-cum-rest house which will be on the eastern side of the lake bund, will have two rooms for the use of the tourists.*

The Government have also sanctioned Rs. 17,000 *for the construction of a platform which will project into the lake so that visitors can have a closer look at the birds from the platform with the aid of telescopes fixed on it.*



Sri S. K. CHETTUR,
New Chief Secretary to Madras Government.

Sri S. K. Chettur, First Member, Board of Revenue, will assume charge as Chief Secretary to the Madras Government on November 22, when the present Chief Secretary Sri R. A. Gopalaswami retires from service.

Sri Chettur will also be Secretary to Government, Rural Development and Local Administration Department, as well as Secretary, Public Department.

Sri Chettur will be the fifth Chief Secretary of Madras since Independence. Sri K. Ramunni Menon was the Chief Secretary at the time of Independence and retired in 1955. He was followed by Sri W. R. S. Satthianadhan (1955 to 1959) Sri T. N. S. Ragavan (1959-60) and Sri R. A. Gopalaswami, (1960-62). Sri. M. V. Subramaniam and Sri S. Venkateswaran had acted as Chief Secretaries during the leave period of the permanant Chief Secretaries.

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MADRAS Information

DECEMBER 1962



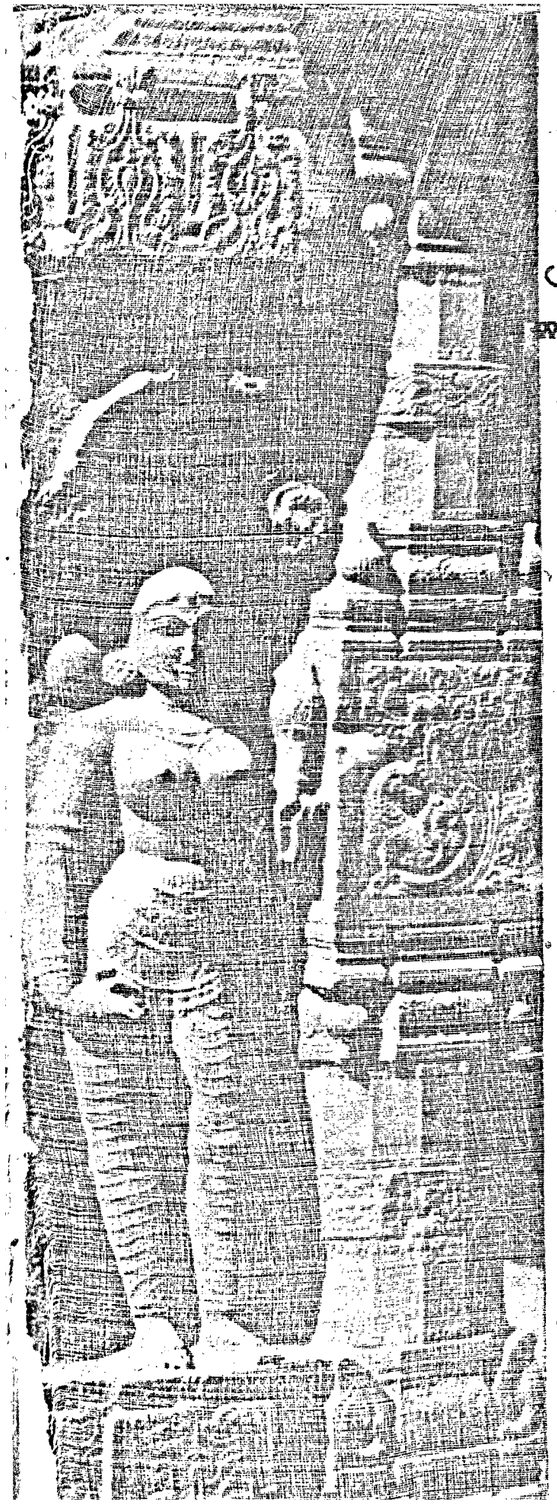
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In Defence of our Motherland

The battle for the defence of India is not fought on the snow-topped Himalayan borders alone. It is fought in every town and village, in every field and factory.

To grow two sheafs of corn where only one grew before, to produce two pieces in a factory where only one was produced till now, to work more hours and days all to increase the tempo and turnover of work in offices, to charge the same price for articles in order to minimise the hardship of the Community....these constitute the line of our duty and proof of our patriotism.

India expects an ordered and mighty co-ordination of men, machines and material to ensure maximum results. Who will fail to respond to this call of duty ?



MADRAS *Information*

DECEMBER 1962

Volume XVI — No. 12

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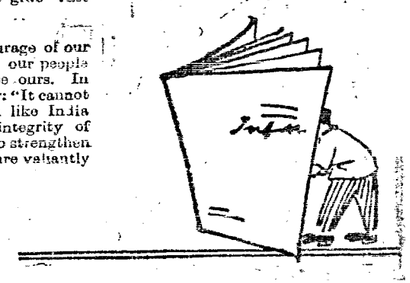
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THIS MONTH'S COVER

China has invaded our sacred land. This is the crowning act of a series of perfidious, pre-planned deeds intended to grab vast stretches of Indian territory.

The justice of our cause, the courage of our troops and the united will of our people all ensure that victory will be ours. In the words of our Prime Minister: "It cannot be otherwise when a nation like India fights for her freedom and the integrity of the country". It is for us to strengthen the hands of the Jawans who are valiantly defending our country.



This man helped start a revolution
in automotive transport in 1912



He was the first TVS passenger

50 years ago, it needed as much courage to travel in a bus as was needed to run it! The confidence of our first passenger, who boarded the bus ignoring the warnings of the timid, is the bedrock on which TVS builds its institution.

Today, TVS, with its several units, meets the increasing demands of the automotive industry in all its aspects in South India. As in 1912, it is the confidence of the customer that sustains its progress.

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India will recover Lost Ground

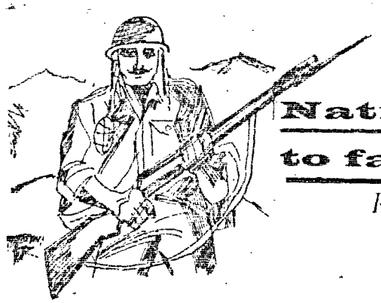


Says the President...

President Dr. Radhakrishnan, while inaugurating a two-day Conference of Governors in New Delhi, on October 23, declared that the large-scale attacks of Chinese troops in Ladakh and NEFA showed that their real intention was to decide the issue by force of arms.

He was pained to see the borders, which for 2,000 years had witnessed a two-way traffic of scholars, pilgrims and traders, should have been converted into a battle ground and declared that in view of the Chinese rejection of the course of negotiations there was no alternative left to us but to strengthen our defences, defend our territory and recover lost ground.

"The present attitude of China is a threat to world peace; what happened to India today may happen to any one else tomorrow. Even as we were proposing talks with China for the discussion of our differences, they preferred to have a military decision in the matter. Proud of their military might, they wished to achieve their ends by force. But history is full of illustrations of people who rely on military might and have no moral scruples or respect for decent behaviour, come to a dismal end."



Nation must unite to face the grave peril

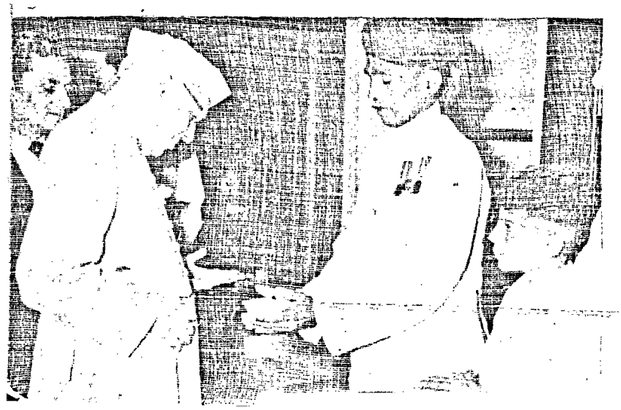
Prime Minister's Clarion Call

The Prime Minister has called upon the nation to "gird up its loins" to face the grave menace of Chinese aggression on India. In his talk broadcast to the nation by the AIR on October 22nd, he said that the price of freedom had to be paid in full measure and "no price is too great for freedom of our people and our motherland".

He said: "India has to face a powerful and unscrupulous opponent. We have therefore to build up our strength and prepare to face this situation adequately and with confidence".

I am speaking to you on the radio after a long interval. I feel, however, that I must speak to you about the grave situation that has arisen on our frontiers because of continuing and unabashed aggression by the Chinese forces. A situation has arisen which calls upon all of us to meet it effectively. We are men and women of peace in this country, conditioned to the ways of peace. We are unused to the necessities of war. Because of this, we endeavoured to follow a policy of peace even when aggression took place on our territory in Ladakh five years ago. We explored avenues for an honourable settlement by peaceful methods. That was our policy all over the world, and we tried to apply it even in our own country. We know the horrors of war in this age today, and we have done our utmost to prevent war from engulfing the world.

In the picture Shri Daulat Ram, a peon working in the Planning Commission, is seen handing over his savings, to the Prime Minister in New Delhi on 1st November 1962.



Greatest menace

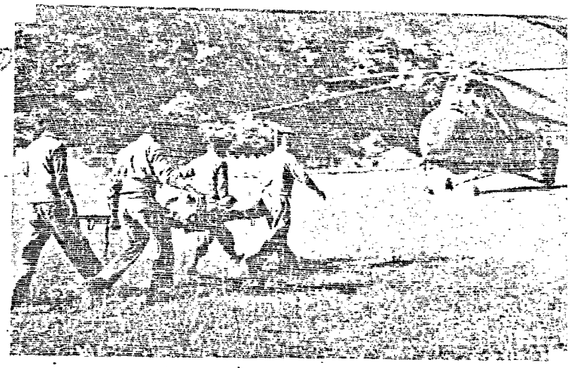
But all our efforts have been in vain in so far as our own frontier is concerned, where a powerful and unscrupulous opponent, not caring for peace, or peaceful methods, has continuously threatened us and even carried these threats into action. The time has, therefore, come for us to realise fully this menace that threatens the freedom of our people and the independence of our country. I say so even though I realise that no power can ultimately imperil the freedom we have won at so much sacrifice and cost to our people after long ages of foreign domination. But, to conserve that freedom and integrity of our territory we must gird up our loins and face this greatest menace that has come to us since we became independent. I have no doubt in my mind that we shall succeed. Everything else is secondary to the freedom of our people and of our Motherland and if necessary everything else has to be sacrificed in this great crisis.

I do not propose to give you the long history of continuous aggression by the Chinese during the last five years and how they have tried to justify it by speeches, arguments and the repeated assertion of untruths and a campaign of calumny and vituperation against our country. Perhaps, there are not many instances in history where one country, that is India, has gone out of her way to be friendly and co-operative with the Chinese Government and people and to plead their cause in the Councils of the world, only then for the Chinese Government to return evil for good and even go to the extent of committing aggression and invade our sacred land. No self-respecting country, and certainly not India with her love of freedom, can submit to this, whatever the consequences may be.

Fresh aggression

There have been five years of continuous aggression on the Ladakh frontier. Our other frontier at NEFA remained largely free from this aggression. Just when we were discussing ways and means of reducing tension, and there was even some chance of the representatives of the two countries meeting to consider this matter, a new and fresh aggression took place on the NEFA border. This began on the 8th of September last. This was a curious way of lessening tension. It is typical of the way the Chinese Government have treated us.

Our border with China in the NEFA region is well known and well established from ages past. It is sometimes called the MacMahon Line. But this line which separates India from Tibet was the high ridges which divide the watersheds. This has been acknowledged as the border by history, tradition and treaties long before it was called the MacMahon Line. The Chinese have in many ways acknowledged it as the border, even though they have called the MacMahon line illegal. The Chinese laid claim, in their maps, to a large part of the NEFA which has been under our administration for a long time. The present Chinese regime was established about 12 years ago. Before that, the Tibetians did not challenge it. Even the maps that the Chinese produced were acknowledged by them repeatedly to be old and out-of-date maps which had little relevance today.



Indian casualties brought from the forward-most picquets in NEFA are given first aid in a medical post and later evacuated by air to the base hospital. Picture shows a casualty carried in a stretcher to be airlifted by the helicopter seen in the background.

Yet, on this peaceful border where no trouble or fighting had occurred for a long time, they committed aggression and this also in very large numbers and after vast preparations for a major attack.

Our Pledge

"We, the people, pledge our total loyalty to the nation, when the sacred soil is sought to be seized by the enemy, when the eternal sentinels of India, the Himalayan heights, are imperilled.

"We shall not rest till the independence and integrity of the Motherland are free from danger.

"We shall not hesitate to make any sacrifice, we shall permit no claim against the supreme demand of national defence.

"We are proud of our armed forces. We assure them that till the laurels of victory crown their efforts on the home front, among peasants, workers, traders, artisans, housewives and all other sections of the country, the same discipline and dedication that inspire our Jawans will be forged.

"Victory to the sanctity and integrity of the Motherland. Jai Hind".

Steel your wills

I am grieved at the setbacks to our troops that have occurred on this frontier and the reverses we have had. They were overwhelmed by vast numbers and by big artillery mountain guns and heavy mortars which the Chinese forces have brought with them. I should like to pay a tribute to our officers and men who faced these overwhelming numbers with courage. There may be some more reverses in that area. But one thing is certain—that the final result of this conflict will be in our favour. It cannot be otherwise when a nation like India fights for her freedom and the integrity of the country. We have to meet a powerful and unscrupulous opponent. We have, therefore, to build up our strength and power to face this situation adequately and with confidence. The conflict may continue for long. We must prepare ourselves for it mentally and otherwise. We must have faith in ourselves, and I am certain that faith and our preparations will triumph. No other result is conceivable. Let there be this faith and fixed determination to free our country from the aggressor.

What then, are we to do about it? We must steel our wills and direct the nation's energy and resources to this.



Sri Yeshvantrao Balwantrao Chavan

The President, on the advice of the Prime Minister has appointed Sri Chavan to be the Minister of Defence

one end. We must change our procedures from slow-moving methods of peace time to those that produce results quickly. We must build up our military strength by all means at our disposal.

Increase production

But, military strength is not by itself enough. It has to be supported fully by the industry of the nation, and by increasing our production in every way that is necessary for us. I would appeal to all our workers not to indulge in strikes or in any other way which comes in the way of increasing production. That production has to be not only in the factory, but in the field. No anti-national or anti-social activities can be tolerated when the nation is in peril.

We shall have to carry a heavy burden, all of us, whatever our vocations may be. This price of freedom will have to be paid in full measure, and no price is too great for the freedom of our people and of our Motherland.

I earnestly trust and I believe that all parties and groups in the country will unite in this great enterprise and put aside their controversies and arguments which have no place to-day, and present a solid united front before all those who seek to endanger our freedom and integrity.

The burden on us is going to be great. We must add greatly to our savings by the purchase of bonds to help to finance production and meet the increasing cost of national defence. We must prevent any rise in prices, and we must realise that those who seek to profit at a time of national difficulty are anti-national and injure the nation.

Can't give up Plans

We are in the middle of our Third Five-Year Plan. There can be no question of our giving up this Plan or reducing any important element of it. We may adopt it to the new requirements here and there. But, essentially, the major projects of the Plan must be pursued and implemented, because it is in that way that we shall strengthen our country not only in the present crisis, but in the years to come.

There are many other things that our people can do, and I hope to indicate some of them at a later stage. But the principal thing is for us to devote ourselves to forge the national will to freedom and to work hard to that end. There is no time-limit to this. We shall carry the struggle as long as we do not win, because we cannot submit to the aggression or to the domination of others.

Avoid panic

We must avoid any panic because that is bad at any time, and there is no reason for it. We have behind us the strength of a united nation. Let us rejoice because of this and apply it to the major task of today, that is, preserving our complete freedom and integrity and the removal of all those who commit aggression on India's sacred territory. Let us face this crisis not light-heartedly, but with seriousness and with a stout heart and with firm faith in the rightness of our struggle and confidence in its outcome. Do not believe in rumours. Do not listen to those who have faint hearts. This is a time of trial and testing for all of us, and we have to steel ourselves to the task. Perhaps, we were growing too soft and taking things for granted. But freedom can never be taken for granted. It requires always awareness, strength and austerity.

Full U.K. Support

Queen Elizabeth told the British Parliament "My Government have been shocked by the invasion of Indian territory by Chinese armies. We fully support India's decision to defend her rightful frontiers".

I invite all of you, to whatever religion or party or group you may belong, to be comrades in this great struggle that has been forced upon us. I have full faith in our people and in the cause and in the future of our country. Perhaps that future requires some such testing and stiffening for us.

We have followed a policy of non-alignment and sought friendship of all nations. I believe in that policy fully and we shall continue to follow it. We are not going to give up our basic principles because of the present difficulty. Even this difficulty will be more effectively met by our continuing that policy.

I wish you well, and whatever may befall us in the future, I want you to hold your heads high and have faith and full confidence in the great future that we envisage for our country.

Jai Hind."

PANCHAYAT'S ROLE IN NATIONAL EMERGENCY

The suggestion that every Panchayat and higher bodies like the Panchayat Samiti and Zila Parishad, should convene an emergency meeting to consider the role to be played by the Panchayati Raj institutions and the people and the various steps to be taken immediately in the present emergency, has been made by the Ministry of Community Development, Panchayati Raj and Co-operation in a communication addressed to all State Governments.

The Ministry of Community Development, Panchayati Raj and Co-operation has suggested that at these meetings consideration should be given to the national priorities like intensification of agricultural production to meet the needs of the armed forces as well as the civilian population, measures for economy in expenditure and increased savings and for mobilising the total effort of the adult population for various tasks.

A special recommendation is the creation of Defence Labour Bank based on the donation of free labour by every adult member of the population at the rate of at least one day in a month, or monetary contribution in lieu, for the development of local community assets.

It has also been pointed out that youth and women's organisations have a crucial role to play in these tasks.

Defence Fund

new bonds, certificates

The Government's 'immediate' measures to mobilise national resources to the utmost in order to meet defence needs were outlined by Finance Minister Morarji Desai in a nation-wide broadcast. He said the following decisions have been taken :

◆ *A National Defence Fund is to be started forthwith. All those wishing to contribute moneys to the defence efforts can do so through the NDF.*

◆ *A new issue of National Defence Bonds for public subscriptions is to be announced.*

◆ *A new series of small savings certificates, to be designated Defence Deposit Certificates and National Defence Certificates, will be put on the market.*

◆ *Arrangements for the issue of a new series of prize bonds have already been completed and details will be announced soon.*

Here's what YOU can do

Shree Desai said : "All of us, whether rich or poor, young or old, whether on farms or factories, can and must help in the mobilisation of these resources by producing more and consuming less and by increasing our savings for sustaining the defence efforts." He said that the people should make a special effort to.—

◆ *Contribute gold and gold ornaments to the Government Fund. 'This would help most where help is most vitally needed, that is, in providing the foreign exchange for supplying our men with equipment and material that must be imported. Contributions in gold will be the highest expression of your desire to protect the honour of the country."*

◆ *Help keep prices stable and avoid hoarding and profiteering. Every housewife has a roll to play here and citizens' committees in every locality may be formed to keep an eye on prices and anti-social elements.*

◆ *Cut out luxuries. Austerity living is essential if we are to spare every rupee for urgent defence needs.*

GOVERNMENT OF INDIA

4½ Per cent
National Defence Bonds, 1972

Subscriptions to the Bonds will be received at the following places with effect from 10th November 1962:

(a) Offices of the Reserve Bank of India at Bangalore, Bombay, Calcutta, Madras, Nagpur and New Delhi;

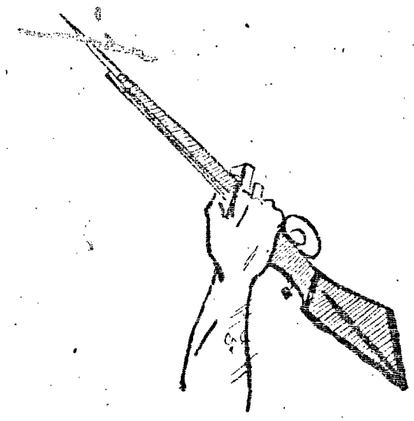
(b) Branches of the Subsidiary Banks of the State Bank of India conducting Government Treasury work; and

(c) Branches of the State Bank of India at other places in India.

The subscription will be received for a period of 6 months but the sale of the Bonds may be stopped earlier, if so decided by the Government.

Subscriptions will be in multiples of Rs. 100 and will be in the form of cash or cheque. All the Bonds, irrespective of the date of sale, will be repaid at par on 10th November 1972.

Interest on the Bonds will be paid at the rate of 4½ per cent per annum on 10th May and 10th November, every year. On the Bonds sold after 10th November 1962, the first payment of interest will be for the broken period from the date of sale to the 9th May 1963 inclusive. The interest paid will be liable to tax but tax will not be deducted at source in the case of Bonds held by individuals.



Let us face the Danger with courage.

Sri K. Kamaraj,
Chief Minister, Madras

Shri K. Kamaraj, Chief Minister of Madras, in a broadcast message to the people of the State appealed to them to lend all their energies to the task of beating back the Chinese invader on the northern frontier. The Chief Minister who was speaking from the studios of All India Radio, Madras, addressed his appeal to all sections of the people, the worker, the farmer, the youth, the woman and the various political parties.

The following is an English rendering of the Chief Minister's broadcast :—

"I wish to say a few words about the Chinese invasion on our northern frontier. The Chinese who have been troubling us on the border have now committed aggression by crossing the border and occupying our territory. This is the most treacherous invasion in history. China has mounted its attack on India, violating all principles of international law and justice.

India is today fighting a strong and ruthless foe. India is a country which has stood for peace among nations; it is a country which has worked for good relations, and has expressed its condemnation in no uncertain terms wherever injustice was done. Further, there had been no end to the efforts India had made to seat China in the United Nations, even at the risk of disagreement of many countries. For all these, China has today committed cruel aggression against us.

Ultimate victory for us

There can be no doubt about the ultimate victory in this fight between right and wrong. We have to build up our strength and confidence and other resources to fight the enemy and drive him out.

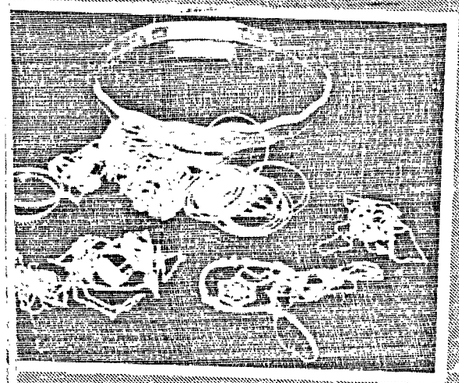
Our Prime Minister has warned that this may be a prolonged fight. We are not alone in this struggle. The life-blood of world order, justice, is on our side. Justice triumphed in the battle of Kurukshetra. Within our memory we saw injustice and dictatorship collapse ultimately, though to begin with the invasions launched by Hitler, Mussolini and Tojo were attended with successes in the Second World War.

We have to pay the price

Our country and our freedom are more precious than our lives. We have to pay the price demanded to preserve these valuable possessions. No sacrifice is great in the cause of the country and its freedom. Today the nation is called upon to do its duty; the nation's earnestness, effort, strength and other resources should all be harnessed to the task.

We need gold to save our frontiers from the ravages of the enemy; we need money to buy military equipment. Production must go up. Way has to be prepared for a continuous flow of defence equipment and other materials to our soldiers. All our energies should be directed in the farms and factories to the objective of defending our country.

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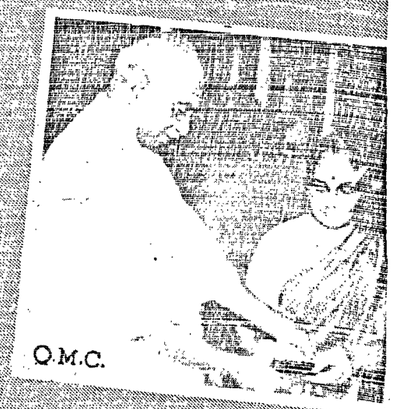
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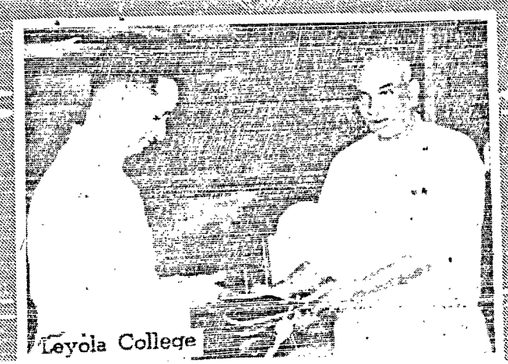
Secretariat Association



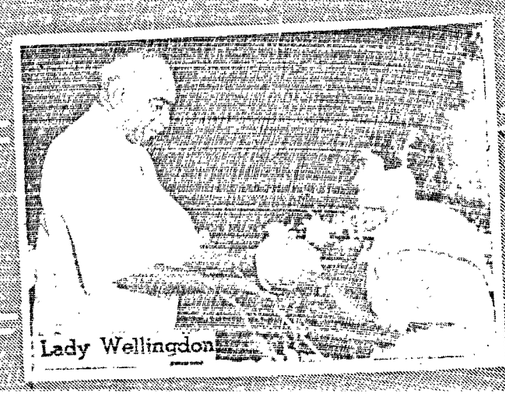
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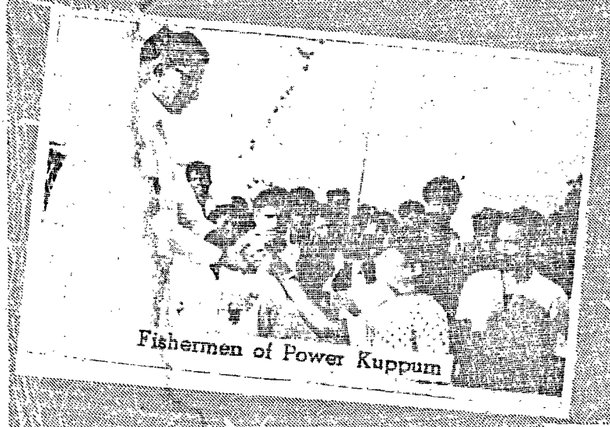


Loyola College

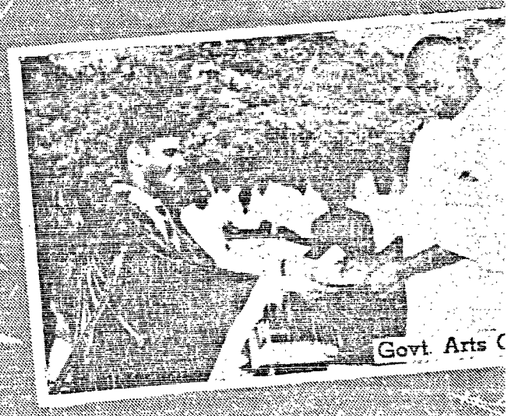


Lady Wellingdon

The National Defence Func



Fishermen of Power Kuppum



Govt. Arts C

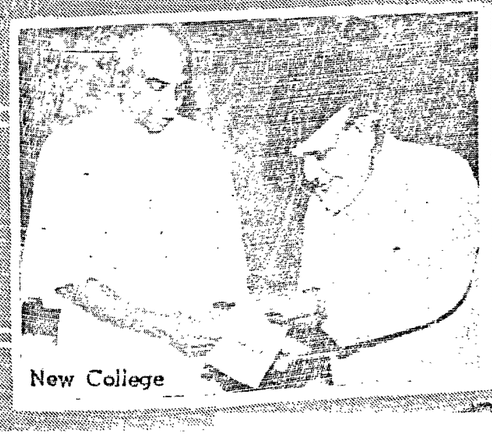


Students rally at Children's Theatre

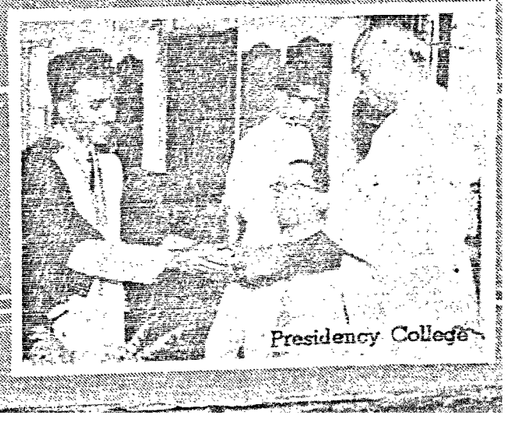
Contributions in gold, ornaments and other valuables to the National Defence Fund are mounting up day by day. People from all walks of life have come forward with their contribution to help the Nation fight the unabashed Chinese Aggression'. On 21st November 1962 the amount of the contributions had exceeded a Crore of Rupees from Madras State.



Students Ral



New College



Presidency College

In this hour of crisis, I witness a spontaneous outburst of patriotism and heroic effort on the part of the people. Gold and money have started coming in to save and strengthen our Jawans on the fighting lines. I appeal that this magnanimity should grow, because we can thrive only if the nation thrives.

Produce more

Our workers are men of understanding and perception. They are keenly interested in national and political affairs. The one great duty that beckons to them today is to produce more. I appeal to them to lend all their energies, without resorting to strikes or slackening in effort, to produce more.

The youth and the students have shown their enthusiasm to help in fighting aggression. I believe we shall be able to enlist their services in constructive ways. May those who undergo training succeed in acquiring more experience. I also hope that in their leisure hours they would engage themselves in tasks connected with the defence of the country.

Appeal to all parties

There are several parties in our country, but against the danger to our country's safety, their differences should mean little. This is not the time for discussions, disputes or picking holes. All parties should come forward with one mind to drive out the aggressor. The opportunity should not be taken advantage of to put up the prices. Profiteering should be rooted out. It should be realised that it is open treachery to utilise the crisis for selfish ends.

In our Five-Year Plans, our agriculturists have helped increase production by their co-operation. Production will go further up if each one performed his tasks efficiently. Every acre should be made to yield more by greater effort. It is only 15 years since we attained freedom and the world was amazed at the way we won our freedom. The people of such a country have no reason to get panicky and scared by the present aggression.

Ours is a well trained army. Our army chiefs are seasoned men. The superiority in number and the treacherous nature of their premeditated attack might have given certain initial advantages to the Chinese. But, to beat them back our army is fully competent.

A threat to the rights of every citizen

Ours is a Republic; it has a people's government. The danger that has come today is a threat to the rights of every citizen. There is no doubt, therefore, that with people's support and the army's determination that the enemy will be beaten back. It is certain that ultimate victory will be ours.

With many of us there is the attitude "Let affairs look after themselves." Today such an attitude is out of place. Steps should be taken quickly to end the threat which faces us.

To strengthen our defences we should practise utmost economy. Particularly I would appeal to the women to take note of this.

Nation united

Today Sri Nehru stands as a living symbol of world peace. It is the country under his leadership that has been subjected to aggression today. I hope the world will be better able to appreciate our stand at times like this. One fact has become obvious as a result of the Chinese invasion. The entire nation has united and has risen as one man to offer every help in the defence of the country. Their deep sense of patriotism is a guarantee for the country's future.

A golden age is ahead of us. Let us overcome our present trials with courage. An occasion has arisen when the world would be able to appreciate our soldier's mettle. Let us act with restraint and with a sense of sacrifice so that our soldiers at the front will be assured that the entire Indian Nation is behind them.

Equality Before Law: Fundamental Right Suspended

Article 14 of the Constitution relating to equality before law has been suspended for the period during which the Proclamation of Emergency is in force.

Through an order here, the right of any person to move any court for the enforcement of rights conferred under Article 14, has been taken away for the time being.

According to Article 14, "The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India."

Already, Articles 21 and 22 of the Constitution which ensure protection of life and personal liberty and protection against arrest and detention in certain cases have been suspended under the Proclamation of Emergency promulgated on October 26, 1962.

Nation in State of Emergency

A state of emergency in the country has been declared by President Radhakrishnan in a Proclamation issued on October 26, 1962. He has also promulgated the Defence of India Ordinance, 1962.

All the provisions of the Defence of India Ordinance, 1962, promulgated on October 26, this year, have come into force.

The Ordinance provides "for special measures to ensure the public safety and interest, the defence of India and civil defence and for the trial of certain offences".

Earliar, Section I of the Ordinance had been put into operation.

The notification issued by the Union Home Ministry, says:

"In exercise of the powers conferred by sub-section (3) of section 1 of the Defence of India Ordinance, 1962 (4 of 1962), the Central Government hereby appoints the 31st October 1962, as the date on which the provisions of the said Ordinance (other than section 1 which has already come into force) shall come into force throughout the whole of India."

Under the State of Emergency, the Central Government can issue directives to State Governments on matters which lie within the executive field of the State Governments. Parliament can make laws on subjects which lie within the State field. Therefore, the President can also issue an Ordinance on subjects which lie within the jurisdiction of the States.

Parliament and State Legislatures can also pass laws which may abridge Fundamental Rights under Article 19. However, Parliament and State Legislatures will not naturally abridge Fundamental Rights unnecessarily except in so far as they may be essential to meet the present emergency.

The Defence of India Ordinance gives powers to Central Government to make rules which may in some respects impinge on Fundamental Rights. Some matters can also be taken out of the purview of the law courts. The Ordinance will be presented in the form of a Defence of India Bill soon after Parliament meets. Further, the Central Government Departmer[illegible] can frame rules within the powers given to them under the Defence of India Ordinance or later under the Defence of India Act when it is passed by Parliament to meet this emergency.

The Ordinance which was signed on October 26 by the President comes into effect immediately.

Foreigners Law Ordinance

Another Ordinance, the Foreigners Law (Application and Amendment) Ordinance, 1962, has been promulgated on October 31.

The Governor of Madras inaugurated the Seminar on Co-operation (Southern Region) at Rajaji Hall, Madras, on 18th October 1962.



The Ordinance will be deemed to have come into force on October 26, 1962.

Under this Ordinance, the Government has powers to arrest, detain, confine on intern any foreigner "who is assisting the country at war with or committing external aggression against India".

All the persons of Chinese origin who had become Indian citizens will be considered foreigners and treated as such.

The Ordinance also says that no person will knowingly assist an internee or a person on parole to escape from custody or the place set apart for his residence. Nor will he knowingly harbour any such person.

Similarly, no person will give an escaped internee or person on parole any assistance with intent to prevent, hinder or interfere with the apprehension of the internee or the person on parole.

Under the Ordinance, the Government may, by order, provide for regulating access to, and the conduct of persons in, places in India where internees or persons on parole are detained or restricted as the case may be.

This can also be done "for prohibiting or regulating the despatch or conveyance from outside such places to or for internees or persons on parole therein of such articles" as may be prescribed.

The Ordinance is meant, among other things, to apply the Registration of Foreigners Act, 1939 and the Foreigners Act, 1946, to certain persons to whom they do not at present apply and further to amend the Foreigners Act, 1946.

NATIONAL DEFENCE COUNCIL FORMED

To deal with the national emergency, a National Defence Council has been set up. This Council will be an advisory body to the Central Government on such matters as directly or indirectly affect the defence of the country.

The composition of the National Defence Council will be as follows :—

Prime Minister—*Chairman.*
Shri Morarji Desai.
Shri Y. B. Chavan.
Shri Gulzarilal Nanda.
Shri T. T. Krishnamachari.
Shri Lal Bahadur Shastri.
Shri V. K. Krishna Menon.
Shri Bakshi Ghulam Mohammed, Prime Minister of Jammu and Kashmir.
Shri Kamraj Nadar, Chief Minister, Madras.
Shri Pratap Singh Kairon, Chief Minister, Punjab.
Shri C. B. Gupta, Chief Minister, Uttar Pradesh.
Shri P. C. Sen, Chief Minister, West Bengal.
Lt. Col. J. N. Choudari, Chief of the Army Staff.
Vice-Admiral B. S. Soman, Chief of the Naval Staff.
Air-Marshal A. M. Engineer, D.F.C., Chief of the Air Staff.
Gen. Rajendrasinhji, DSO.
Gen. K. S. Thimmayya, DSO.
Vice-Admiral R. D. Katari.
Lt.-Gen. S. P. P. Thorat, A.C., DSO.
Shri D. Sanjivayya
Shri Ashok Mehta.
Shrimathi Indira Gandhi.
Shri Khandubhai Desai.
Shri Naval H. Tata.
The Maharaja of Patiala.
Shri N. R. Pillai.
Shri R. K. Nehru, Secretary-General, External Affairs.
Shri S. S. Khera, Cabinet Secretary.
Shri O. Pulla Reddi, Defence Secretary.
Dr. D. S. Kothari.
Dr. S. Bhagwantam.

The functions of the Council will be as follows :—

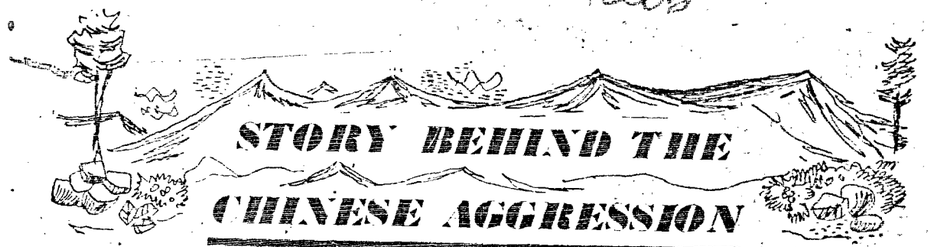
1. To take stock of the situation and arrangements for national defence, from time to time, and to advise Government on matters relating to national defence.

2. To assist in building up and suitably guiding the national will to fight the aggressor.

3. To suggest to the Central Citizens' Committee, such measures as may be considered necessary, for the utilization of public participation in national defence.

4. To advise Government generally on such other matters as may be helpful in prosecuting the fight against the aggressor.

Rs 265/-



India's traditional frontier with China is well-known being based on treaty agreement and custom. Till recently no Chinese Government has ever challenged it.

The present controversy over the frontier arose because the Chinese Government for the first time laid claims to extensive areas of Indian territory.

The tension on the Indian border has increased in the last three years because Chinese have been pushing forward to assert their claims.

The boundary between India and China extends over 2,200 miles. The boundary of Sikkim with the Tibet region of China extends over 140 miles while that of Bhutan extends over 300 miles. The entire length of this border has been either defined by treaty or recognized by custom or by both and until the present controversy no Chinese Government had ever protested against the exercise of jurisdiction by the Government of India up to the customary border. The Government of People's Republic of China contend in their recent letters that this boundary is entirely undelimited. This is wholly incorrect. The traditional border has been well-known for centuries. It follows the geographical principle of the watershed which is in most places the crest of the Himalayan mountains. Moreover, in most parts, the boundary has the sanction of specific international agreements.

North-Eastern Frontier

In the north-east, the traditional boundary was formalized at a Tripartite Conference held in Simla from October 1913 to July 1914 and attended by the Plenipotentiaries of the Governments of India, Tibet and China. The Indian, Tibetan and Chinese Plenipotentiaries had equal status. The boundary between India and Tibet in the sector east of Bhutan was confirmed by an exchange of notes between the Tibetan and Indian representatives on 24th and 25th March 1914. The boundary was delineated on two sheets of a large-scale map of the north-east frontier. Two copies of the map were signed and sealed by the Indian and Tibetan representatives. The line was drawn after full discussion and later re-affirmed by a formal exchange of notes. The Indo-Tibetan boundary line as agreed upon by the Indian and Tibetan Plenipotentiaries was incorporated on the map attached to the draft convention and was never challenged by the Chinese representative at that time or afterwards. There is nothing to indicate that the Tibetan authorities were, in any way, dissatisfied with the delineation. On the other hand, Lonchen Shatra, the Tibetan Plenipotentiary, stated explicitly in the letters exchanged that he had received orders from Lhasa to agree to the boundary as marked on the map.

McMahon Line

There is no doubt that the McMahon Line (so called after McMahon, the British representative at the Conference) merely confirmed the natural, traditional, ethnic and administrative boundary in the area. It runs mostly along the crest of the High Himalayan Range which forms the natural frontier between the Tibetan plateau in the north and the sub-montane region in the south. The Monba, Aka, Dafla, Miri, Abor and Mishmi tribes, who inhabit the area, are of the same ethnic stock as the other hill-tribes of Assam and have no kinship with the Tibetans. The Tibetans refer to these tribes as Lopas—southern barbarians beyond the pale. It has to be appreciated however that boundaries between any two countries are not determined by ethnic affiliations of people living in frontier regions. It is also possible that people of the same racial stock live on either side of a border. India is a multi-national State in which many racial minorities enjoy equal rights of citizenship.



The President, Dr. S. Radhakrishnan gave away the National Award for Teachers of outstanding merit at a ceremony held at Vigyan Bhavan, New Delhi, on 25th October 1962. Photo shows Sri A. Balasubramania Achary, Headmaster, Government Arianallor L. P. School, Shencottah (Madras), receiving the award from the President.

In this context, it is relevant to mention that there are thousands of Indian citizen of Tibetan origin in our frontier areas. The fact is that the ethnic composition of frontier peoples is not a determining factor; the important consideration to bear in mind is that Tibetan authorities had not exercised jurisdiction at any time in this area. On the other hand, the exercise of jurisdiction by the of India has been long and continuous.

Both the Simla Convention and the map attached to it were signed by Ivan Chen, the Chinese Representative. Although the Chinese Government later repudiated his signature, the objections to the Simla Convention listed in their memorandum of 25th April, 1st May and 13th June 1914 and 30th May 1919 were solely in regard to the boundary between Inner Tibet and China and between Inner Tibet and Outer Tibet. China neither protested against the boundary between India and Tibet nor did she seek modification of it after the Simla Convention. It is significant too that the Chinese Government agreed in 1956–57 to consider the eastern sector of the McMahon Line, which for about 120 miles forms the boundary between Burma and China, as the traditional boundary between the two countries.

Central Sector

The Central sector of the boundary between Tibet and India is the frontier of Uttar Pradesh, Himachal Pradesh and the Punjab States in North India. The boundary between Uttar Pradesh and Tibet follows the watershed between the Sutlej on the one hand and the Ganges (the Kali, the Alaknanda and the Jadhganga) on the other. In this sector, the High Himalayan Range, with passes at a height of about 17,000 feet, runs 30 miles south of the water-parting, which is a lower range easily crossed from the Tibetan plateau. However, this watershed has been the traditional and well-known boundary. Revenue records of the Garhwal district as far back as 1850 establish this. Even Chinese maps up to 1958 showed the watershed as the frontier. The Nilang-Jadhang area, Bara Hoti, Lapthal and Sangcha Malla, which according to the contention of the Chinese Government lie in Tibet, are in fact well on the Indian side of the watershed. Nilang-Jadhang is an area of about 700 square miles north of the main Himalayan range but south of the watershed. Bara Hoti, a small area of about 1½ square miles, also lies between the highest range of the Himalayas and the main watershed. Lapthal and Sangcha Malla are south-east of Bara Hoti, in Almora district in Uttar Pradesh. The boundary between Himachal Pradesh and Tibet is the water-parting between the eastern and the western tributaries of the Sutlej; and the boundary between the Punjab and Tibet is the major watershed between the Pare Chu and the Spiti river systems.

Boundary of Ladakh

The boundary of Jammu and Kashmir with Sinkiang and Tibet is about 1,100 miles in length. Of this the frontier of Ladakh (which is part of Jammu and Kashmir) forms nearly two-thirds. In the north the boundary follows the Mustag, Aghil and Kuen Lun ranges to a point well beyond 80 degree east. Turning south it follows the western watershed of the numerous rivers which flow into the lakes in Sinkiang. Passing through Lanak La, the boundary follows the eastern and southern watersheds of the Chang Chenmo and the southern watershed of the Chumesang. Thereafter, skirting the southern bank of the Chumesang, the eastern bank of the Changlung Lungpa and the western extremity of the eastern half of the Pangong Lake, it follows the Ang watershed and, after cutting across the Spanggur Lake, follows the north-eastern and northern watersheds of the Indus. From Chang La, the boundary follows the Kailash range and the northern watershed of the Sutlej and the Pare Chu till it meets the north-eastern, extremity of Spiti.

This boundary between Ladakh and Tibet, long sanctified by custom, was reaffirmed by the Treaty of 1842 signed by the representatives of Kashmir on the one hand and the Dalai Lama and the Emperor of China on the other. The Tibetan text of the treaty confirms that China was a party to it. It is true that the treaty did not define the boundary but referred merely to the "old established frontiers". This was because, these frontiers were well-known and did not require any formal delimitation. In 1847, the Chinese Government informed the British Government that as the boundary was sufficiently and distinctly fixed, there was no need for additional measures

for fixing them. The area was surveyed by Indian official and, once a detailed first-hand knowledge was obtained of the region, official Indian maps began to show the boundary with precision. Even official Chinese maps of 1893, 1917 and 1919 showed the boundary in this area as depicted in official Indian maps today.

Discrepancies in maps

For many years after 1949, when the People's Republic was established, there was no reason to believe that the Chinese authorities either were unaware of the traditional boundary or disputed its alignment. In 1950, the Chinese Government expressed their gratification over the desire of the Government of India "to stabilize the Chinese-Indian border" and the Government of India replied that "the recognized boundary between India and Tibet should remain inviolate". The Chinese Government questioned neither the location nor the recognition of this boundary, and the Government of India saw no reason to assume that there was any doubt regarding the border. On various occasions in 1951 and 1952, Indian interests in Tibet were discussed but the Chinese Government never suggested that there was any frontier issue to be negotiated. The only cause for doubting whether the Chinese authorities accepted the traditional boundary was the fact that different alignments were being shown on Chinese maps. The alignments included about 36,000 square miles of territory on the north-eastern frontier and an area of about 15,000 square miles in north-eastern Ladakh within China. On 20th November 1950, Prime Minister Nehru declared in the Lok Sabha that "the McMahon Line is our boundary, map or no map. We will not allow anybody to come across that boundary". This definite and public declaration of policy was not questioned by the Chinese authorities. When the discrepancies between Indian and Chinese maps were brought to the notice of the Chinese Government, they replied that their maps were based on old maps of the Kuomintang period and they did not assert any claims on the basis of these maps. Nor did they challenge the official Indian maps which were showing the traditional alignment.

In December 1953, negotiations were begun for an agreement between the two countries on trade and intercourse between Tibet and India. This would have been the obvious occasion for the Chinese Government to raise any questions regarding the frontier. But they did not say anything to suggest that the traditional alignment shown in the Indian maps was unacceptable to them. In October 1954, when our Prime Minister visited China, in the course of his talks with the Chinese leaders, he briefly mentioned to them that he had seen some maps published in China which showed a wrong boundary between the two countries. He added that he presumed that this was an error and that so far as the Government of India were concerned, they were not greatly worried about it, because the boundaries of India were quite clear and not a matter of argument. The Chinese Prime Minister replied once more that these maps were really reproductions of old maps drawn before 1949 and the Chinese Government had had as yet no time to revise them.

China accepted the traditional boundary

From 1954, however, Chinese personnel persistently visited the Bara Hoti area in Uttar Pradesh; and in the summer of 1956, a Chinese Survey Party came into the Spiti area, and armed Chinese personnel intruded into Nilang-Jadhang and crossed the Shipki pass. Protests from the Government of India remained unanswered. However, when Mr. Chou-En-lai visited India towards the end of 1956, in his talks with the Prime Minister he referred to the Sino-Indian boundary and more especially the so-called McMahon Line. He said that he had accepted the McMahon Line as the border between China and Burma and whatever might have happened long ago, in view of new developments and friendly relations which existed between China and India, he would accept this border with India also. At that time, Prime Minister Nehru recorded the substance of his talk with the Chinese Prime Minister in the following words: "Premier Chou referred to the McMahon Line and again said that he had never heard of this before though of course the then Chinese Government had dealt with this matter and not accepted that line. He had gone into this matter in connection with the border dispute with Burma. Although he thought that this line, established by British Imperialism, was not fair, nevertheless, because it was an accomplished fact and because of the friendly relations which existed between China and the countries concerned, namely, India and Burma, the Chinese Government were of the opinion that they should give recognition to this McMahon Line. They had, however, not consulted the Tibetan authorities about it yet. They proposed to do so".

The two Prime Ministers discussed this matter at some length. After Mr. Chou-En-lai had made it clear that the Chinese Government intended to accept the traditional boundary between India and China, Mr. Nehru mentioned that there were no frontier disputes between the two countries but only some very minor border problems. It was decided that these petty issues should be settled amicably by the representatives of the two Governments meeting together on the basis of established practice and custom as well as watersheds.

Despite this, Chinese incursions into Indian territory continued. In 1957, a patrol party was noticed in the Spiti area, and a road running for about a hundred miles across Aksai Chin, which is a part of India was completed. The next year they came to Khurnak Fort in Ladakh, arrested an Indian patrol party in Aksai Chin, and intruded into Sangcha Malla and Lapthal, both on the Indian side of the traditional boundary of Uttar Pradesh. When the Government of India protested at these Chinese activities on the Indian side of the border, the arrested Indian patrol party was released, but no reply was sent with regard to the other incidents.

In July 1958, there was published in an official Chinese magazine a map of China, which included within Chinese territory four of the five Divisions of the North-East Frontier Agency, some areas in north Uttar Pradesh and large areas in eastern Ladakh. The Government of India drew the attention of the Chinese authorities to this, and suggested that as the People's Government had been in office for nearly nine years, necessary corrections in Chinese maps should not be delayed any longer. The Chinese Government replied that the boundary line in Chinese maps was being drawn on the basis of old maps published before 1949. They added, however, that they had not yet undertaken a survey of their boundary nor consulted with the countries concerned and they would not make changes in the boundary on their own. This remark implied that they regarded the boundary between India and China as an open issue which should be the subject of discussions. Thereupon, Mr. Nehru, in a letter of 14th December 1958 to the Chinese Prime Minister, pointed out that this suggestion could never be accepted by India. "There can be no question of these large parts of India being anything but India and there is no dispute about them. I do not know what kind of surveys can effect these well-known and fixed boundaries".

China changes its mind

Mr. Chou-En-lai replied to this letter on 23rd January 1959. He suggested that the boundary should be determined after surveys and mutual consultations, and till then the two sides should maintain the *status quo*. Mr. Nehru in his reply of 22nd March again pointed out that the boundary as shown by India on her official maps was not only based on natural and geographical features but coincided with tradition and over a large part was confirmed by international agreements.

In July, an armed Chinese detachment entered the region of Western Pangong Lake in Ladakh and established a camp at Spanggur; and in August, armed Chinese forces intruded into Khinzemane and overpowered the Indian outpost at Longju, both in the North-East Frontier Agency. On 8th September Mr. Chou-En-lai wrote to Mr. Nehru asserting that there was no agreement between the two Governments on the alignment of the boundaries and, for the first time, he laid claims to extensive areas of Indian territory. He proposed that an overall settlement shoud be sought through negotiations. Pending this, as provisional measure, the two sides should maintain the long-existing *status quo* on the border.

The Indian position

Mr. Nehru in his reply of 26th September made it clear that there could be no question of discussing the whole Northern boundary of India, which had been settled for centuries by History, Geography, custom and tradition. As the terrain of the Sino-Indian border made physical demarcation on the ground in many places impossible, minor border rectifications in some places were perhaps required, and the Government of India were willing to have discussions for such a purpose. But any such discussions would have to be on the basis that the frontier was, on the whole, well-known and beyond dispute. The Government of India could not discuss the Chinese claim to over 50,000 square miles of what had been for many decades, and in some places for centuries, an integral part of Indian territory. Mr. Nehru pointed out in this connection that the suggestion that an independent Government of India were seeking to reap the benefit from past British aggression against China was not only false but had caused deep resentment in India.

Mr. Nehru once more stated the position of the Government of India that, pending discussions on the frontier alignment in particular sectors, the *status quo* should be maintained and both sides should respect the traditional frontier. At no place were Indian personnel to be found on the Tibetan side of the traditional frontier; but Chinese personnel were at various places in eastern Ladakh and in occupation of Longju. Mr. Nehru refuted in detail the assertions made by Mr. Chou-En-lai regarding various sectors of the boundary. He showed that the boundary between Ladakh and Tibet as delineated on Indian maps was the traditional boundary and that China had been a party to the 1842 treaty. In the middle sector there could be little doubt about the boundary, for the 1954 agreement between India and China had specified six passes in this area and these had been recognized by implication as border passes. In fact, the Government of India had always been in control of the Indian ends of these passes. As for the so-called McMahon Line, the Chinese representative at the Simla Conference had been fully aware of the boundary that had been settled between India and Tibet and the Chinese Government had not then or later raised any objection to it. In the circumstances, the boundary settled between

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India and Tibet in 1914 should, in accordance with accepted international practice, be regarded as binding on both Tibet and China. Moreover, this alignment had represented correctly the customary boundary in the area.

Allegations repudiated

Mr. Nehru emphatically repudiated the allegation that the Government of India had recently "invaded and occupied" a number of places in Tibet and showed that it was in fact Chinese personnel that had crossed the Indian border in a number of places.

This letter of the Prime Minister gave sufficient evidence to show that the present frontiers of India are her historic frontiers. The administration, too, has been extended right up to the frontier. Even the uninhabited areas of Ladakh have been visited regularly by reconnaissance parties, and it was only recently that they found the Chinese gradually coming into the area. The Chinese Government, however, have so far given no adequate reply to Mr. Nehru's letter but continue to remain in occupation of Longju in the North-East Frontier Agency and of a considerable stretch of territory in Ladakh. On 20th and 21st October, an Indian Police patrol in the legitimate discharge of its duties was attacked and nine persons were killed by the Chinese near the Kongka pass, about 50 miles within Indian territory. When the Government of India lodged a protest, the Chinese Government rejected it stating that the place where the incident occurred was indisputably Chinese territory. On 4th November the Government of India rebutted this assertion in detail. They sai[d] "at there was no doubt about India's northern front[ier] which had been shown with precision on official m[aps] nd the area where the clash took place was we[ll] Indian territory. The Chinese Government, ho[wever] d never made any precise statement as to whe[re] laimed their frontier to lie.

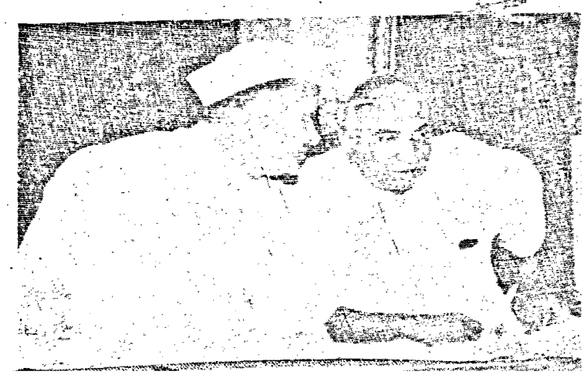
Indian proposals

On 7th November M[r. Ch]ou-En-lai proposed that to maintain the *status q[uo]* on the border and to create a favourable atmosphere [for] a settlement of the boundary question, the armed [force]s of China and India should each at once withdr[aw] 20 kilometers from the so-called McMahon Line and in Ladakh, from the line up to which each side exercised actual control. He added that to discuss further the boundary and other questions the two Prime Ministers should meet in the immediate future. Mr. Nehru replied on 16th November that he agreed that the two Governments should reach an agreement without delay which would eliminate risks of border clashes. He pointed out that the Government of India had not posted any armed personnel anywhere at or near the international boundary and had only recently, after the incidents involving Chinese troops, asked the army to take over responsibility for the protection of the border. The border outposts had been instructed not to send out any forward patrols, and if this suggestion were accepted by the Chinese Government as well the risk of border clashes would be completely eliminated. The Government of India could not agree to any arrangement even as an interim measure which would maintain the forcible Chinese occupation of Longju, which was in Indian territory; but if the Chinese withdrew from it, Indian personnel would not re-occupy it. As for Ladakh, Mr. Nehru suggested that the Government of India would withdraw all personnel to the west of the line which the Chinese Government had shown as the international boundary in their 1956 maps, which, so far as the Government of India were aware, were their latest maps, on condition that the Chinese Government withdrew their personnel to the east of the traditional boundary shown on official Indian maps. In this sector, since the facts of possession and the extent of jurisdiction exercised by either party were disputed, there were no means of ascertaining the prevalent *status quo*. So Mr. Nehru's counter proposals were the only practicable means of achieving a separation of the forces and thus avoiding border clashes. Regarding a meeting of the two Prime Ministers, Mr. Nehru felt that to ensure its success some preliminary steps should be taken and the foundation for discussions laid. Immediate efforts should, therefore, be concentrated on reaching an interim understanding which would help to ease the tension, and thereafter necessary preliminary steps should be taken.

Chinese rejection

In his le[tter] 17th December, Mr. Chou-En-lai rejected Mr. Nehru's [lat]ter-proposals for interim measures to be taken to avoid clashes. No reply was given to Mr. Nehru's letter of 26th September and the Note of 4th

Sri Ram Subhag Singh, Union Minister for Agriculture, inaugurated the Regional Control Laboratory at Rajaji Hall on 20th October 1962. Sri K. Kamaraj, Chief Minister presided.



November, in which sufficient evidence had been adduced to substantiate the traditional alignment of the boundary as shown on Indian maps. Instead, Mr. Chou-En-lai suggested that the two Prime Ministers should meet on 26th December, 1959 either in China or in Rangoon. Mr. Nehru replied on 21st December, 1959 deeply regretting that Mr. Chou-En-lai had not accepted the very reasonable proposals put forward by the Government of India to secure an immediate lessening of tension along the border. He was always ready to meet and discuss with the Chinese Prime Minister the outstanding differences between the two countries; but there could be no agreement of principle when there was such complete disagreement about the facts. He would, therefore, prefer to wait for the Chinese Government's promised reply to his letter of 26th September, and the Note of 4th November, before discussing what should be the next step.

The Government of China sent what purported to be replies to the Indian letter and note, on 26th December 1959. Instead of meeting the carefully substantiated arguments put forward by the Indian Government, these letters only reiterated the Chinese stand. It was asserted that the boundary had not been delimited in the Western and Middle Sectors, that the 'McMahon Line' was illegal and that the alignment shown on Chinese maps was the traditional one. The Government of India, in their Note of 12th February, 1960, produced additional evidence in reputation of the Chinese contentions.

On 5th February 1960, the Prime Minister, Mr. Nehru wrote to Premier Chou-En-lai stating that while the Chinese contention that the boundary was undelimited was unacceptable, he would be glad to meet Premier Chou-En-lai in Delhi. The two Prime Ministers met in Delhi in April. They failed to resolve the differences, but agreed that the officials of the two Governments should meet to examine all relevant documents in support of the stands of the two Governments and report. Meantime, every effort should be made to avoid friction and clashes in border areas.

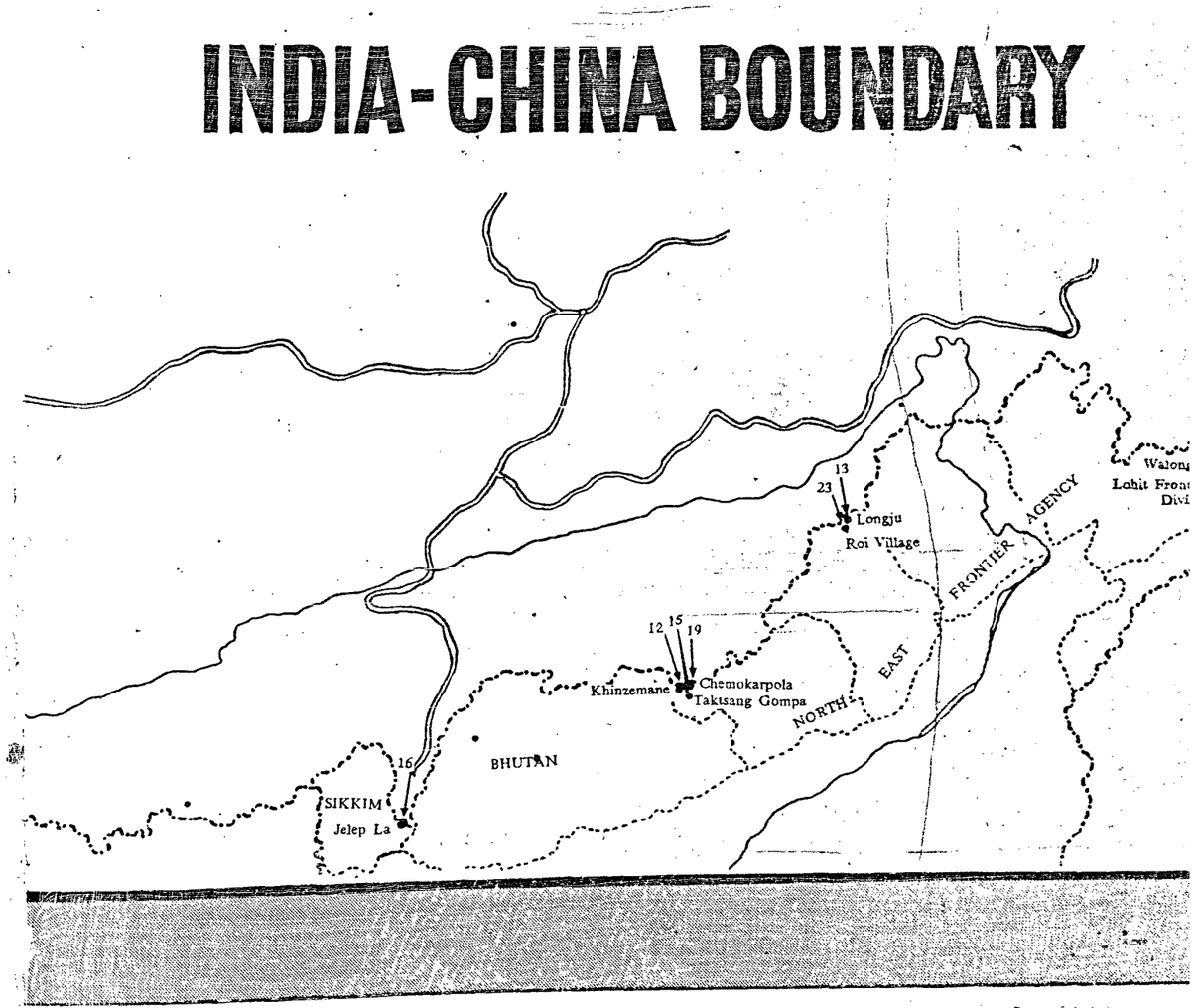
Report of the officials

The officials of the two Governments met at Peking, Delhi and Rangoon and submitted their Report to the two Governments. The Government of India published the Report in full on 14th February 1961. While the Government of China published it only a year later, in April, 1962. The Report showed that the evidence in support of the Indian case was overwhelmingly superior to that brought forward by the Chinese side. Evidence of tradition, custom and usage left no doubt that the boundary alignment shown by India was the long-established one. The Chinese could produce hardly any evidence of tradition and custom. Treaties, agreements and diplomatic exchanges of different periods confirm the traditionally accepted boundary. The Indian side also produced a large mass of evidence of explorations, surveys, maintenance of trade routes, and collection of revenue, establishing continuous administration of the areas now claimed by China. On the other hand the Chinese side produced only a few vague and imprecise documents of very recent date which were inconsistent with their claims and arguments and contradictory in fact. Indeed, many items of evidence cited by them were found to prove the Indian case.

The fact that the alignment claimed by the Chinese was wholly arbitrary was also clear from the fact that in addition to the inconsistencies already prevailing in Chinese maps. The alignment shown in the Chinese map officially given at the talks in 1960 was altogether different in the Ladakh area from the alignment shown in the 1956 map which was endorsed by Premier Chou En-lai in December 1959. The former alignment covered some 2,000 square miles more of Indian territory.

Continued Chinese Aggression

During and after the talks of the officials, the Chinese authorities, instead of taking steps to reduce the tension on the border, continued to intrude into Indian territory to consolidate the areas occupied by them. Thus in June and September 1960 the Chinese intruded into Taktsang Gompa, in the Eastern Sector, and into Sikkim. In October, they came up to Hot Spring in Ladakh. In August 1961 they established three new checkposts near Nyagzu in Ladakh and constructed roads linking these posts with rear bases. Early in 1962, they conducted aggressive forward patrolling in the Western Sector. They even protested against the presence of Indian troops on Indian soil, and on 30th April, threatened that they would not only patrol the entire Western Sector but would consider patrolling along the entire boundary. The Government of India, however, while performing their duty of taking measures to defend their territory, continued to strive to settle the problem by peaceful means. On 14th May, 1962 they repeated their offer, first made in November, 1959, that both India and China should withdraw their troops behind the alignment claimed by China and India respectively, in Ladakh and thus reduce the prevailing tension. The Chinese Government not only rejected this reasonable offer but proceeded to set up new military posts. In July they created a serious incident by encircling an Indian post in the Galwan Valley. In September a Chinese force stepped across the established boundary in the Eastern Sector.



Chinese on	Date of India's protest
t 1959	11 August 1959
r 1959	28 August 1959
er 1959	23 October 1959
1960	29 July 1960
ober	27 September 1960
60	31 October 1961
	31 October 1961
	31 October 1961
961	31 October 1961
961	31 October 1961
1961	31 October 1961

No.	Place	Date of Chinese intrusion	Date of India's protest
23.	Roi Village	January 1962	18 April 1962
24.	Chip Ghap	January 1962	14 May 1962
25.	Sumdo	April 1962	15 April 1962
26.	Spanggur	May 1962	21 May 1962
27.	Road from Point 78 35 E. 35 33" N. to 79 8 E., 34 33 N.	June 1962	16 June 1962
28.	Point 78 15 E., 35 15 30" N.	June 1962	28 June 1962
29.	Galwan Valley	10 July 1962	10 July 1962
30.	Chip Chap, chang chenmo and Pangong regions	June-July 1962	12 July 1962



On 14-11-1962, the birthday of Prime Minister Sri Jawaharlal Nehru, which is the fifth anniversary day of Highways Research Station, a plaque of 4' x 2', size containing a bass relief of Mahatma Gandhi in Dandi march pose, was opened at the Highways Research Station, Madras.

The plaque was prepared by Sri S. Dhanapal, instructor, Government School of Arts, Egmore, Madras, who was recently honoured with a National Award by Lalith Kala Academy.

and protect your national territory and heritage. The Canadian Government stands ready to do what it can do be of help at this time.

Last Monday I informed the House that if the Indian Government should approach Canada for assistance such a request would receive the fullest consideration. I now wish to report to the House that a request has been received from the Indian Government.

Speaking for the Canadian Government and I hope for all Members of the House, we are deeply disturbed at the attacks which are being made at this time against India—a fellow member of the Commonwealth. India can rest assured that the Canadian Government will co-operate to the fullest in helping that nation acquire those items which it needs to defend itself in this critical hour.

—MR. DIEFENBAKER,
Prime Minister of Canada.

Acts of Hostility

I have carefully noted your account of the present crisis and of Communist China's repeated acts of hostility against your country, despite India's having gone out of her way to support the latter's case in international councils. This aggressive conduct is part of Communist China's pattern of behaviour which has constantly menaced the security not only of India but of other Asian countries as well.

In the light of the foregoing considerations, I wish to assure You that, within the context of our mutual adherence to the principles of the Character of the United Nations. India has not only the fullest measure of sympathy but also the support of my Government and people in her courageous and determined resistance to Communist aggression.

—*President of Philippines.*

India is a country which has attempted to follow the policy of peace and to maintain friendly relations with all countries and that India is averse to war and violence.

I feel convinced that India will be supported by the opinion of the entire peace loving world for her attempt to find a solution to the conflict safeguarding at the same time her national interest.

—*Prime Minister of Norway.*

Disturbing developments

We in Thailand have taken note with deep appreciation of your efforts to resolve the differences peacefully. Your desire and determination to achieve a peaceful and

Alongside these aggressive activities, the Chinese Government sought, in December 1961, to secure the conclusion of a new trade agreement in place of the 1954 Agreement which had lapsed. India pointed out that until the Chinese had reversed their aggressive and expansionist policies and restored the proper atmosphere for the observance of the Five Principles underlying the 1954 Agreement, there could be no negotiations for another agreement. In August 1962, the Government of India invited the Government of China to send a representative to examine means of restoring the *status quo* and producing the proper climate for considering the boundary question. In September India reiterated this position and agreed to the Chinese suggestion that representatives should first meet in Peking from 15th October.

The Government of China, however, seem to be in no mood to create such an atmosphere. Their aggressive activities continued. Moreover, in May 1962, they entered into an agreement with Pakistan for delimiting the boundary with that part of Kashmir which has been under the illegal occupation of Pakistan. The Government of India have made it clear that Kashmir is legally a part of India and that they would not recognize any agreement reached with Pakistan regarding this sector of the Indian boundary.

Sikkim and Bhutan

Closely linked to the question of the boundary between India and China is the question of the boundaries of Sikkim and Bhutan with China. In his letter of 8th September, Mr. Chou-En-lai stated that the boundaries of Bhutan and Sikkim did not fall within the scope of discussion between India and China. To this Mr. Nehru replied in his letter of 26th September, that China was well aware of India's obligation to maintain the territorial integrity of Sikkim and Bhutan. The Chinese Government had recognised as far back as 1890 that the Government of India had "direct and exclusive control over the internal administration and foreign relations" of Sikkim. This Convention of 1890 also defined the boundary between Sikkim and Tibet as the crest of the mountain range separating the waters flowing into the Sikkim Teesta and its affluents from the waters flowing into the Tibetan Mochu and northward into other rivers of Tibet. Five years later, in 1895, this boundary was demarcated on the ground. There can, therefore, be no dispute regarding the boundary between Sikkim and Tibet. The boundary of Bhutan has not been so defined and it is a traditional one following the crest of the Himalayan range. Chinese maps show sizeable areas of Bhutan as parts of Tibet. The rectification of these errors is a matter for the Government of India, for under treaty relationships with Bhutan, the Government of India are the only competent authority to take up with other Governments, matters concerning Bhutan's external relations. They have in fact already taken up with the Chinese Government a number of matters on behalf of the Bhutan Government.

Untenable claims

In their note of 26th December 1959, the Chinese accepted that the boundary with Sikkim had been demarcated and that there was no dispute. With Bhutan, they said there was "only a certain discrepancy between the delineation on the maps of the two sides in the sector south of the so-called McMahon line". In other words, they accepted the traditional northern boundary of Bhutan. Their claim to the south-eastern part of Bhutan is untenable as the "McMahon line" forms the valid boundary between Tibet and India in this section.

To sum up : (*a*) India's traditional frontier with China is well known, being based on treaty, agreement and custom. Till recently, no Chinese Government has ever challenged it.

(*b*) The present controversy over the frontier arose because the Chinese Government for the first time laid claims to extensive areas of Indian territory in Premier Chou-En-lai's letter of 8th September 1959.

(*c*) The tension on the India-China border has increased in the last three years because Chinese forces have been pushing forward to assert their claims.

(*d*) The Government of India have stated that in spite of Chinese provocations they will always explore the possibilities of a peaceful settlement. But they cannot accept the Chinese contention that the entire India-China frontier is undelimited. Negotiations on this basis are unacceptable to the Government of India. But they are prepared to discuss with the Chinese Government existing disputes and such minor rectifications of the frontier as may be considered necessary by agreement.

GOVERNMENT OF INDIA

4½% TEN-YEAR DEFENCE DEPOSIT CERTIFICATES

FREE OF INCOME-TAX

Interest at the rate of 4½ per cent will be payable free of income-tax annually from the date of deposit and will not be taken into account in calculating the total income of the Depositor for the purpose of income-tax.

The maximum amount that may be held in these deposits including the amount invested in 3½ and 4 per cent Ten-Year Treasury Savings Deposits will be—

	Rs.
(a) For an individual ...	25,000
(b) For an individual jointly with another ...	50,000
(c) For an association or institution donations to which are exempt from payment of income-tax under Section 88 of the Income-tax Act, 1961 (43 of 1961), and a local authority ...	1,00,000
(d) For institutions and associations other than Provident Funds and those covered by item (c) above ...	50,000
(e) For Provident Funds ...	No limit

Deposits (in multiples of Rs. 50) in cash/cheque or in matured 3½ per cent Treasury Savings Deposit Certificates will be received from 10th November, 1962 until further notice. Such deposits will be refundable at any time after the expiry of one year from the date of deposit at a certain discount.

Applications will be received at the offices of the Reserve Bank of India, Bangalore, Bombay, Calcutta, Madras, Nagpur and New Delhi, branches of the State Bank of India and its Subsidiary Banks conducting Government treasury business and treasuries and sub-treasuries in India at places where there is no such office or branch of the aforesaid banks.

Deposit Certificates will be accepted for safe custody by Public Debt Offices and interest remitted to holders, if so desired. The Certificates will be transferable by deed and will also be eligible for nomination.

For full particulars please apply to any of these offices, branches or treasuries.

THEY CONDEMN THE AGGRESSION

Fifty-nine countries have so far condemned the Chinese aggression and expressed sympathy and support to the Government of India.

Albania has so far been the only country which has supported the Chinese aggression. Replies from other countries are being received.

Prime Minister Nehru had on October 26, addressed the heads of various countries seeking their sympathy and support for India's cause.

The countries which have offered their sympathy and support to India and condemned the Chinese aggression are : Afghanistan, Argentina, Australia, Austria, Belgium, Brazil, Bolivia, Canada, Ceylon, Chile, Columbia, Costa Rica, Cyprus, Denmark, Dominioon Republic, Ecuador, Ethiopia, El Salvador, Congo (Leopoldville) France, Ghana, Greece, Gautamala, Haiti, Iceland, Iran, Italy, Jamaica, Japan, Jordan, Lebanon, Luxemburg, Malaya, Mexico, Morocco, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Niger, Panama, Philippines, Sweden, South Korea, South Vietnam, Thailand, Tunisia, Trinidad, Uganda, U A.R., U.K., U.S.A., Venezulea, West Germany, Yemen, Malagasy, Saudi Arabia and Yugoslavia.

The British Government has deplored the attacks by China against India, and has expressed its sympathy with the Government and people of India.

A statement issued by the Commonwealth Relations Office in London, October 22, said: "As the Foreign Secretary (Lord Home) indicated on September 27 at the General Assembly of the United Nations, the British Government profoundly deplore the attacks by China against a fellow-member of the Commonwealth. They have the utmost sympathy with the Government and people of India, and they admire their patience and restraint in the face of repeated provocations."

"The British Government have always recognized the McMahon Line as the frontier of India and, of course, continue to do so."

"The British Government supports the decision of India to defend her frontiers. If she has suffered temporary setbacks, we know how these initial reverses may be only a prologue to final success. What they ask us to do to help them—we will do.

"We, therefore, feel the tragedy which has come to the Prime Minister, the tragedy which he himself expressed in some poignant phrases when after all his efforts to build with the new Chinese Government and Chinese people a friendship based on high moral and ethical principles, he found the sudden, brutal and ruthless application of policies based upon the most naked and realist concepts of power.

—MR. MACMILLAN,
Prime Minister of Britain



Sri Ram Subhag Singh, Union Minister for Agriculture is seen introduced to the officers of Madras Government.

The Chinese attack upon India was a straightforward example of aggression—of attack upon a peaceful neighbour.

"In this case, there is no question of nuclear weapons pointing at China. Nobody could have conceivably supposed that India had aggressive intentions of any kind whatsoever. Furthermore, the Chinese themselves, a few years ago, had accepted the McMahon Line.

"There could be no doubt this was a plain act of aggression. Let us not imagine it is something which is solely the affair of India. What happens on this North-East and North-West Frontier, and what could happen, may be of very great significance for us.

—MR. HUGH GAITSKELL,
Leader of the Opposition in House of Commons.

Bloodshed on the Border

The Federal Republic of Germany hopes that the bloodshed on India's border and on Indian territory itself may end when the rulers in Peking, in final realisation, bow down to the voice of the world's conscience and withdraw their troops from the territory they have illegally occupied.

I share your conviction that it is incumbent upon all free and peace-loving nations to raise their voice against any attempt to replace the rule of law by the use of force. The Government and the people of the Federal Republic of Germany condemn the Chinese aggression on India's northern border.

—DR. ADENAUER,
Chancellor, West Germany.

I do appreciate very much that India would not want to do anything to prejudice her territorial integrity or self respect by submitting to negotiations under pressure of armed forces.

I lament the aggressive attitude of China which contrasts with the traditional peaceful policies which your country has been observing. My Government's policy agrees with the position taken by you on this lamentable situation and I desire to express all my sympathy and support on behalf of myself and on behalf of my Government in every circumstance to you.

—MRS. BANDARANAIKE,
Prime Minister of Ceylon.

France could not approve of the frontier claims of China being supported by military action, "which is moreover in such disproportion to proclaimed objectives". "You may be assured of the sympathy of the French people and Government for a friendly people who would prefer to turn to works of peace and social and economic progress. France has always shown its regard and given its support to those fighting to defend their territory. In spite of everything, France still hopes that when the time comes, you will achieve a just and peaceful outcome.

—DE GAULLE,
President of France.

Threat to World Peace

The Netherlands Government deplores and condemns aggressions such as perpetrated by China against your country. Moreover, it considers the aggression a threat to world peace. My Government wants to assure the Government of India of its sympathy and support. We totally condemn the use of force under the guise of the solution of international differences.

—*The Prime Minister of Netherlands.*

The whole of the civilised world supported India against the Chinese aggression. In due course India would get her rights over her frontiers. The Chinese aggression is not a matter that concerned India alone but the whole world.

—MR. WOODROW WYATT,
British Labour M.P.

It was a premeditated act of the Chinese commitments and naked aggression for which they had been steadily building up for three years.

The United States administration deplores the fact that People's China has launched a large scale armed attack against Indian forces on the Sino-Indian border.

—ADALAI STEVANSON,
In United Nations General Assembly.

Inner Motive

The Federation of Malaya has the warmest and strongest sympathy and support for India.

honourable settlement has unfortunately not elicited encouraging and positive response from the other side. We, therefore, have been following the disturbing developments of the past few weeks with increasing concern but with the hope that a peaceful settlement may still be arrived at.

—*Prime Minister of Thailand.*

The Imperial Government of Iran is and has always been severely opposed to aggression and now that the territory of India has been subjected to aggression the Imperial Government and the people of Iran express their sympathies and support to the Government and the people of India.

—MR. ASSADULLAH ALAM,
Prime Minister of Iran.

The Senate of the Republic of Venezuela over which I have the honour to preside, has instructed me to express its moral support to the Government and the people of India against the aggression committed by the forces of the Peoples Republic of China on India. The Senate has also expressed the view that the attitude of China is in contradiction to all the principles of international law and the sacred postulates of the U.N. Charter.

—MR. PRIETO,
President of Venezuela.

Unjust aggression

After expressing my sincere lament at the unjust and absurd aggression committed by China against India by which peace in that part of the world has been endangered, and which has disturbed the atmosphere of tranquility born of the efforts of your people and particularly born of the efforts of Your Excellency yourself, I proceed to express my sincere support and sympathy for your people on beghalf of the Chilean people and on behalf of myself personally.

—MR. JORGE ALESANDRI RODRIGUEZ,
President of Chile.

The policy of peace which India has followed since he independence makes this aggression even more reproachable and the citizens of the free world confidently hope that justice and not brute force will impose itself in favour of India. India can rest assured that we are aware that this armed aggression is directed not only against the people who are subjected to it but also against all the free peoples of the world.

—*Prime Minister of Panama.*

As has been repeatedly announced in the past, it is the firm conviction of the Japanese Government that any international dispute, including territorial disputes, should be settled by peaceful means and it has always been guided by this conviction in dealing with international controversies.

It is therefore, a matter of deep regret that Communist China has resorted to large scale military action as means of solving the border dispute with your country. I share your Excellency's great concern and anxiety on this military move which constitutes a threat to the peace of Asia and indeed of the whole world. On behalf of my Government and of the Japanese people, I wish to express our deep sympathy over the difficulties thus thrust upon your country.

It is the fervent hope of the Japanese nation that this border dispute will be settled on the basis of international justice through peaceful means at the earliest possible date.

—*Prime Minister of Japan.*

New buildings for A.I.R., Tiruchi Station

On November 2, 1962, the Tiruchi station of All-India Radio shifted to a new building on Promenade Road in the Contonment Area from the present premises on Williams Road, where it was housed since 1939. The need for a new building to cope with the present day programme activities had been felt for some time as in the old premises there was limited accommodation for studios and technical facilities in the context of modern engineering practices.

In the new building, there are 6 studios for programmes and 3 for ancillaries such as Control Room, Recording Room, Control Booth, Air-conditioning plant and transmission. The studios had been acoustically treated and the studio block is air-conditioned.

Some of the equipment installed for the production and control of programmes was designed by A.I.R. engineers and manufactured indigenously. The building was constructed by the Central Public Works Department and the studio installations executed by A.I.R. engineers. Shri Talpade, Senior Architect, C.P.W.D., designed the building and A.I.R. engineers, the studio.

GOVERNMENT OF INDIA

PREMIUM PRIZE BONDS, 1963

PREMIUM ASSURED ON EACH BOND
AMOUNT OF PRIZES INCREASED

Bonds Available for sale in Denomination of Rs. 100 and Rs. 5 from 1st January 1963.

ISSUE.—The Premium Prize Bonds, 1963, will be on sale with effect from 1st January, 1963, at :—

(i) Offices of the Reserve Bank of India at Bombay, Calcutta, New Delhi, Madras, Bangaloro and Nagpur;

(ii) Branches of the State Bank of India and its Subsidiary Banks conducting Government Treasury business;

(iii) Treasuries and Sub-treasuries in India at places not covered by items (i) and (ii); and

(iv) Head Post Offices and Departmental Sub-Post Offices.

FORM AND DENOMINATION.—The Bonds will be issued in two denominations of Rs. 100 and Rs. 5 and will be in the form of bearer bonds. No application will be required for their purchase.

REDEMPTION VALUE AND PRICES :—The Bonds will be repaid with premium of 50 nP. and Rs. 10 for every bond of Rs. 5 and Rs. 100 respectively five years after the date of their sale. In addition to the premium, every bond sold will be eligible for participation in two draws for prizes to be held in the year 1964 on such dates as may be announced by the Government of India.

For every one crore of rupees of Bonds sold of each denomination, prizes as under, will be awarded in each of the two draws :

Rs. 100 Denomination.			Rs. 5 Denomination.		
1 Prizes of Rs. 50,000	Rs. 50,000		1 Prize of Rs. 15,000	Rs. 15,000	
2 Prizes of Rs. 25,000 each	Rs. 50,000		2 Prizes of Rs. 10,000 each	Rs. 20,000	
5 Prizes of Rs. 10,000 each	Rs. 50,000		10 Prizes of Rs. 5,000 each	Rs. 50,000	
10 Prizes of Rs. 5,000 each	Rs. 50,000		25 Prizes of Rs. 2,000 each	Rs. 50,000	
75 Prizes of Rs. 2,000 each	Rs. 1,50,000		270 Prizes of Rs. 1,000 each	Rs. 2,70,000	
150 Prizes of Rs. 1,000 each	Rs. 1,50,000		330 Prizes of Rs. 500 each	Rs. 1,65,000	
Total 243	Rs. 5,00,000		568	Rs. 5,00,000	

In respect of the sale proceeds in excess of round crore of rupees, the prize-money will be increased proportionately and distributed in suitable number of additional prizes. Thus the amount and number of prizes are not limited but will increase with every increase in the sale of the Bonds.

The draws for prizes will be held under the supervision of the Government of India and only sold bonds will be eligible for prizes. No bond will, however, be eligible for more than one prize in each draw. If an unsold Bond draws a prize, that prize will be awarded to the bond bearing the nearest lower number among the sold Bonds which has not, at that time, drawn or been awarded a prize.

PAYMENT OF PRIZE.—The holder of a prize-winning Bond may present his claim together with the Bond at any of the selling offices (except the Departmental Sub-Post Offices) mentioned above. The prize money will be paid at the office at which the claim is lodged after the claim is admitted by the Reserve Bank of India. The Bond will be returned with the prize-money.

PUBLICATIONS ON WINNING NUMBERS.—The particulars of the prize-winning Bonds will be published in the Gazette of India and the Press as soon as possible after the date of the relative draw.

TAX FREE CONCESSION.—The prize-money and the premium on the Bonds will not be liable to tax under the Income-tax Act, 1961.

SUPPLEMENTARY PROVISIONS.—The Bonds will be on sale up to 31st December 1963 but the sale may, at the option of Government, be discontinued earlier.

COMPLETE DETAILS.—For complete details a reference may be made to the Government's Notification F. No. 25(41)-NS/62, dated the 1st November 1962, copies of which are being exhibited at the Selling Offices.

The war India is fighting in defence of her honour, her soil, is not against the Chinese but against the communists — I would call it in Malaya the communist terrorists. We in Malaya know very well what you are facing because we had to fight armed communist terrorism in 12 long years of emergency in our own country and during that emergency the communists killed as many Chinese as others.

Obviously the Chinese want to bring themselves nearer to India. India being a big country with a big population, China does not want a rival in this part of the world.

At the moment, the trouble is confined to the border of India and is regarded as such by India and perhaps by all the rest of the world. Nevertheless, the free nations of the world must be prepared for the worst. We pray to God that the crisis may not develop any further than now and that India would soon redeem her honour and prestige.

—TUNKU ABDUR RAHMAN,
Prime Minister of Malaya.

Force is not now and has never been the answer to international disputes. While we fully support the idea of negotiations between India and China for the full settlement of this dispute such conversations must be prefaced by a withdrawal by the aggressors from the territory which they unlawfully held.

—MR. TSAHAFE TAEZAZ AKLILU HABLE,
Prime Minister of Ethiopia.

Serious situation

Your Excellency will understand the serious repulsion which has been evolved in me and in the minds of the Mexican people by the unjustified attack of the Chinese troops on you and their violation of the territory of a country like India which has been characterised by its devotion to peace.

I concede to Your Excellency that this is not a crisis which affects India only but it affects the most sacred principles governing the right of peoples by which countries live as good neighbours; it also affects world peace.

—MR. ADOLFO LOPEZ MATEOS,
The President of Mexico.

Principles involved

India has shown no aggressive intentions toward any of her neighbours since she became independent in 1947. Indeed your magnanimity in supporting China's claim to admission at the United Nations has won for you deep respect in the world community. Although she is not represented at the United Nations every pressure will be brought to bear upon China to withdraw her forces along the border and at least to return to the status quo prior to the 8th of September 1962.

I agree that the issue involved is not merely that of territorial adjustments but of principles and standards of behaviour to be followed in international intercourse, if world peace and civilization is to endure. The Chinese theory of "might is right" cannot be tenable and any country that embraces it should stand condemned.

In your determination to defend your country and to put an end to aggression I would like to assure you of Nigeria's full support and sympathy.

—*Prime Minister of Nigeria.*

At this critical moment in your history we are wholeheartedly with you against the aggression that has been committed on your territory. I am absolutely sure that the unprovoked aggressor will not succeed. You will be able to push him back.

All freedom loving people supported India. He was sure that India's struggle for freedom and integrity would be crowned with success.

—ARCHBISHOP MAKARIOS,
President of Cyprus.

Iceland Government sympathises with your Government in this dispute and is instructing Iceland Delegation at United Nations to render India all possible support within scope of the United Nations in this unfortunate dispute.

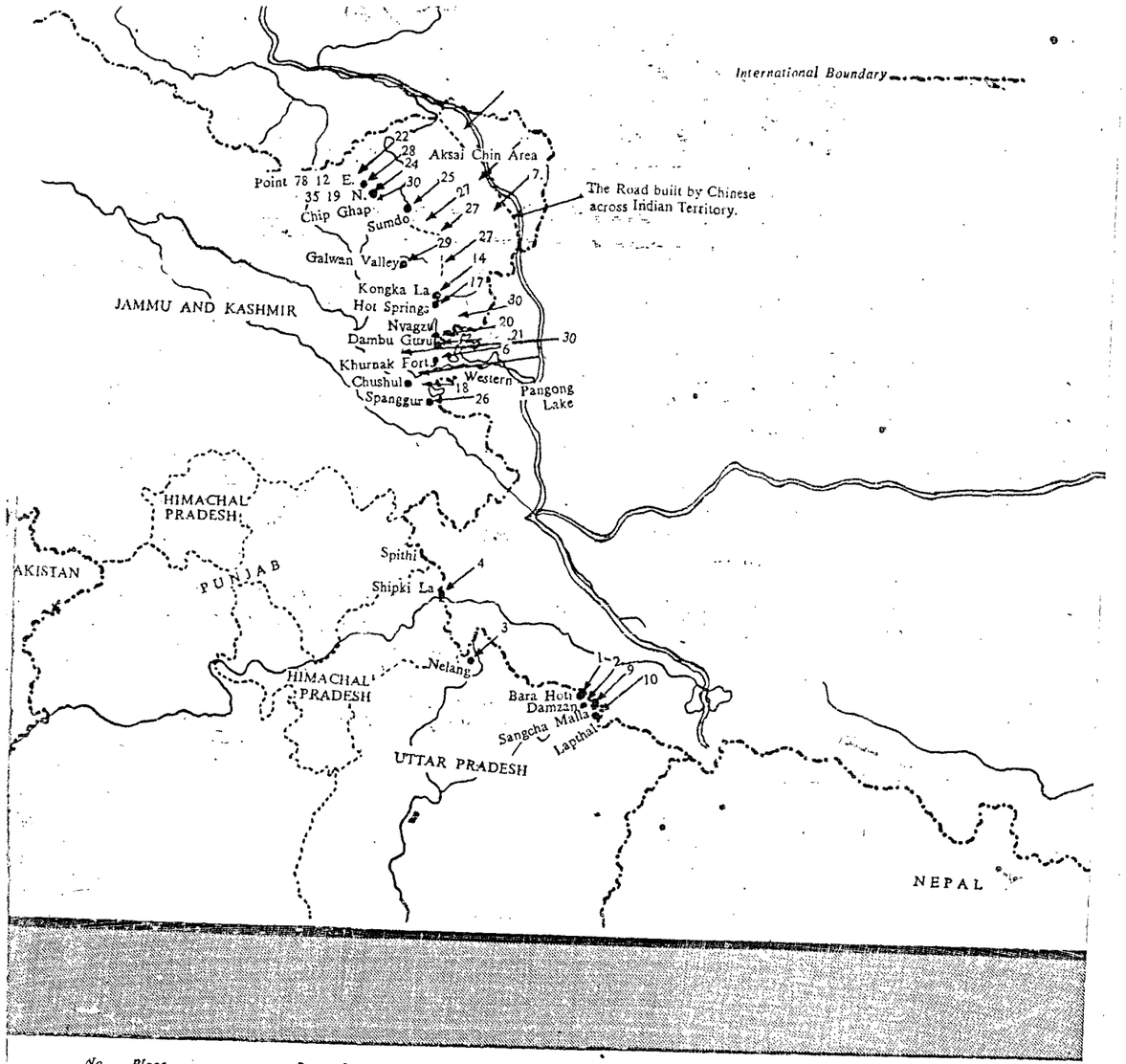
—MR. OLAFUR THORS,
Prime Minister of Iceland.

Unprovoked attack

Canada deplores the unprovoked attack by China on India and I can assure you of the sympathy and support of the Canadian people for your determination to defend

The regional seminar on Agricultural Marketing was inaugurated by Sri G. Bhuvarahan in the city on 21st October 1962.





No.	*Place*	*Date of Chinese intrusion*	*Date of India's protest*
1.	Bara Hoti	June 1955	28 June 1955
2.	Damzan	15 September 1955	5 November 1955
3.	Nelang	28 April 1956	2 May 1956
4.	Shipki La	1 & 20 September 1956	8 & 24 September 1956
5.	Walong	October 1957	17 January 1959
6.	Khurnak Fort	June 1958	2 July 1958
7.	Aksai Chin Area	Sept.-Oct. 1958	18 October 1958
8.	Lohit Frontier Division	27-28 September 1958	8 November 1958
9.	Sangcha Malla	October 1958	17 January 1959
10.	Lapthal	October 1958	10 December 1958
11.	Western Pangong Lake	28 July 1959	10 December 1958

No.	*Place*
12.	Khinzemane
13.	Longju
14.	Kongka La
15.	Taktsang Gompa
16.	Jelep La
17.	Hot Springs
18.	Chushul
19.	Chemokarpola
20.	Nyagzu
21.	Dambu Guru
22.	Point 78 12 E. 35 19 N.

As others see it

Extracts from editorials condemning the Chinese aggression appearing in the newspapers of other countries are reproduced here.

Argentine's *Buenos Aires Herald* (October 31) has editorially supported India and said : " Democratic nations recognised the self-evident fact that India, a victim of flagrant aggression and lacking adequate defensive equipment, merits immediate support."

Ungrateful Chinese

Another paper, *La Prensa*, said : "Another aggressive imperialism, that of the Chinese Communists, continues to filter through the last ten days into the Indian territory with well-trained and extraordinarily armed troops . . . Request for military help by India shows the situation in which India finds herself placed to defend herself from her dangerous adversary, which has not shown any consideration, to what Prime Minister Nehru has done in her favour."

In Kenya, the *Daily Nation* (November 1) writes "No free country, whether aligned with the West or non-aligned can have any doubts where its sympathy and its duty lie in regard to the border conflict." Referring to the Kashmir issue, the paper said : " But whatever the right and wrongs of the issue we would suggest that this is no time for conditions. As a member of the Commonwealth and of the anti-Communist Western alliance, President Ayub must surely see that the situation created by China's naked aggression transcends the territorial quarrels of neighbours. If ever there was a time for Commonwealth solidarity to be displayed this is that time. President Ayub, we are sure, is a big enough statesman to rise to the occasion."

The world order will collapse

In Turkey, the Istanbul newspaper *Tercuman* (November 1) criticised China for using force to solve the border dispute. The paper's columnist, Rasit Ascioglu, said : " The Indian Government renowned for its support of peace will not play the role of one who instigates war " and added that even if it was true that the McMahon Line



Mr. E. P. S. Schumacher, noted Economist of the United Kingdom during his stay in Madras met the officials of the Government of Madras on 7th November 1962.

was delineated while India was under British rule "China is not justified in her actions because she told Mr. Nehru through Premier Chou-En-Lai that she accepted the territory in question as belonging to India."

The McMahon line, the commentator has pointed out was drawn up taking into consideration the "natural boundary between India and China".

Mr. Ahmed Emin Yalman, in a signed editorial in *Hurvatan*, said: "One can expect everything from Red China, which appeared on the scene before history, as an aggressive power and which is a slave of extremes. India is a very attractive morsel for the aggressive power. The aggressor dominating over that area can hold the whole of Asia under its threat and oppression; it can shatter the order of the whole world."

Dawasa (November 2), an influential daily of Ceylon, has once again said that India would receive sympathy of the entire democratic world in the present struggle with China.

Withdrawal demanded

Al-Mowatin (November 2), widely circulating Iraqi daily, editorially condemned the "unprecedented and unreasonable Chinese aggression over a large territory of India" and demanded that "China must withdraw to the positions occupied by her prior to her recent invation of India."

"Such a withdrawal," it added, "would be in the interests of all, including China."

The paper wrote, "China's embarking upon regular widescale military operations, her continued invasion and advance into Indian territory, her occupation of Indian posts and some important towns, all have surprised world opinion which still does not see any reason for such armed attacks. Without any fear we would say that there is no reason for such an attack on India and for operations against her on such a big scale especially, when India never constituted a threat to China."

Another widely circulated Iraqi daily *Al Akhbar*, said: "All the endeavours to settle this not too very serious geographical dispute have failed because the Chinese wished them to fail."

Moral support for India

In Tanganyika, the *Tanganyika Standard* (November 2) in an editorial under caption "India's need," has again drawn the attention to the urgency implicit in the recognition of the seriousness for the world of the India-China conflict.

The Chinese have attempted to justify the action by the assertion that McMahon Line has no validity. Yet for 45 years the Line has been accepted as—in Mr. Nehru's phrase—"Firm by treaty, firm by usage and firm by geography"...." In these circumstances it is difficult to see how any free country—let alone a fellow member of the Commonwealth—can remain aloof. In this hour of need India needs all the moral support she can get."

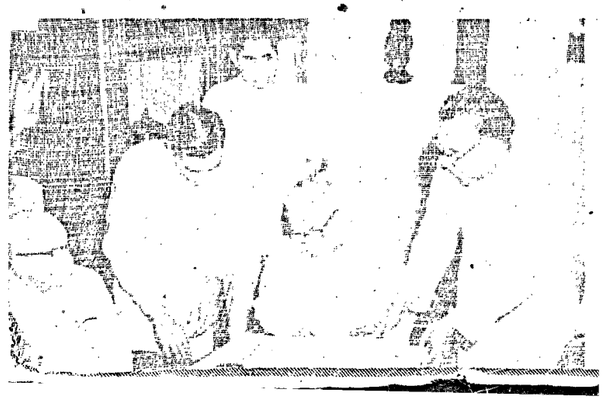
Solidarity with India

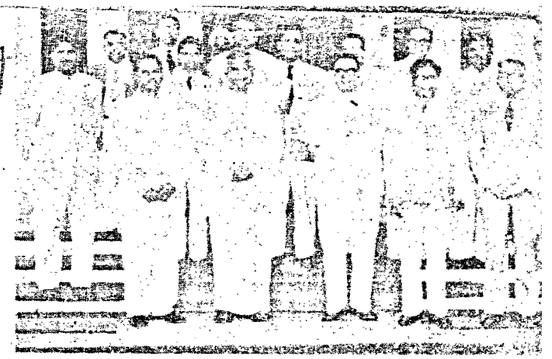
El Mercurio (November 2), the influential daily in Chile, in an editorial on the Communist Aggression, said: "The spontaneous movement in support and solidarity of India's stand has come up all over the world as a result of aggression committed by the Communist Chinese. This behaviour of Red China has been universally condemned. India is a peace loving country par excellence. Non-violence was born there. Moreover, the Indian Government has been all the time championing the cause of China's admission into the United Nations. All these facts make even more disgusting the Red China's attitude. However, the aggressive attitude of China is not new as shown in Korea, Laos, Vitenam and Formosa. Communist China, a country which employs aggression as a policy, as it is clearly demonstrated by its attitude towards India. It is most unlikely that China will achieve its aggressive goals with the world opinion condemning her attitude and giving support to India to push back the invasion of her territory. In international law China's conduct is highly condemnable and this sentiment of disgust is now expressed in the soliditary that is shown in favour of India from all over the world."

Danger To whole Southeast Asia

In Australia, the *Sydney Morning Herald* (November 2), writing under caption "We should offer India our Practical Help" said: "In the very real sence India's battle is Australia's battle. If the Chinese broke into India and established themselves there the resultant shift in the balance of power in Southern Asia would be very quickly felt in this country. India presents not only or even principally a physical barrier to the Chinese expansion, more importantly, as the Prime Minister of Malaya pointed out last week, her great experiment in parliamentary democracy presents an ideological barrier. If India went under to armed communism, the rest of South-East Asia would not long survive....Surely the proper step for the Australian Government to take now is to ask the Indian Government what aid Australia can usefully supply."

Some Moghul paintings were presented by Sri V. T. Krishnamachari to the Government. Sri M. Bhaktavatsalam, Minister for Finance received them at a function at National Art Gallery, Madras on 22nd October 1962.





The Conference of the Officers of the Statistical Department was held in Madras on 29th September 1962. Sri Kakkan, Minister for Agriculture presided.

Daily Mirror of Sydney (November 5), under the caption "Friend in Need" demanded immediate help for India. It said the Australian Government "should give the most urgent consideration to what it can do to help a sister Commonwealth country in distress. A quick offer of generous help will not only do us enormous good in the eyes of the non-Communist Asia but encourage our Indian friends. The time to act is now."

In the United Kingdom, the *Tribune* said that the Indian Government was facing a direct and decisive challenge from the Chinese who clearly have no intention of trying to achieve a peaceful settlement through negotiation.

"Yellow invasion of India"

Dimashk Damascus (November 3), characterised Chinese action as "yellow invasion of India" and compared it with the invasions of Halaku, Tamhurlein and Chengiz Khan. The paper said: "No excuse can be found for one Asian nation invading another for mere border dispute" in an "era of democracy, peaceful co-existence and the Bandung treaty."

The Nation (November 3), a Burmese paper, in an editorial captioned "Wide Support for India", referred to the Afro-Asian countries support to India on the question of Chinese aggression on Indian territory and pointed out that this gives lie to the Chinese propaganda claim that she enjoys support of non-aligned countries. The paper says, "In view of the claim officially made by the Chinese Communists that Afro-Asian nations are more and more in support of their stand against Indian 'aggression' it is curious that to note the tide of world opinion in support of India. The Prime Ministers of Malaya and Nigeria have condemned the Chinese action in waging war against a peaceful neighbour and Tunku Abdul Rahman has offered more than sympathy to India. Archbishop Makarios of Cyprus and the Prime Minister of Ethiopia have called the Chinese as aggressors. Firm support of India has been extended by such far away nations as Ecuador. In these circumstances it is strange that the Chinese should claim they have any kind of neutralist support at all."

The paper adds also "Peking radio may jeer at the milking of the Indian population dry to sustain its war efforts" but the offering of gold and wages by the common people of India in order to buy much needed arms constitute proof of India's soliditary and we believe that China will have to change her tone and sue for mediation if she does not wish to alienate not only India but all the countries of Asia and Africa who are jealous of their freedom and independence."

The Christian Science Monitor of Boston, U.S.A. (November 2), has called for a "warm and heartfelt sympathy as well as help" to India. The paper said: "This is good time to give India warm and heartfelt sympathy as well as help."

Calculated Aggression.

"The capture of Indian outposts in both the Ladakh and the McMahon Line sectors, 1,400 miles apart, proves that the Chinese have adopted the aggressor's familiar tactic: they have shouted for peace while massing troops along the frontier. What seemed improbable rumours in the Indian press is revealed as a hard core of truth. The nature and the weight of China's attack in the past few days could not have been undertaken without extensive planning for aggression. The line of attack stretches from only 20 miles from the Burmese border to Karakorum. The Chinese have several advantages; the advantage of the aggressor; the fact that they are on a high plateau from which to swoop down on Indian outposts; the secrecy of



Sri G. L. Nanda, Union Minister for Planning met the representatives of employees and employers at the residence of Sri M. Bhaktavatsalam, Minister for Finance, on 27th October.

a communist state excluded from the rest of the world; and, ironically enough, their exclusion from the United Nations so that that forums of discussion is barred.

—*Dorothy Woodman in "Crisis in the Himalaya" in New Statesman, dated 26th October 1962.*

No Case at All

The new conflict is in the latter area, and it is probably the gravest series of "incidents" seen since the summer of 1959. In both sectors the Chinese have brazenly and without warrant invaded territory that, under every valid international agreement, is unquestionably India's. Though on a small scale, this is aggression in the clearest sense. The Chinese have no case at all, their maps are impudent lies, their claims are palpably fraudulent. Let there be no doubt on this issue.

However, on the area, invaded in the North-East Frontier Agency, east of Bhutan and adjoining one of the ancient trade routes out of India on to the central plateau of Tibet, where the border is the McMahon Line, agreed in 1914 between the Government of India and the Government of China and Tibet, Mr. Nehru has—quite properly—always held that there is nothing to discuss.

While it doesn't make much difference physically to India or China whether a mile or two in the high mountains belongs to them or to us, it does matter very much if a treaty is broken or an aggressive attitude taken. When, therefore, such matters occur, we have to follow a double policy—defend our country and settle the matters by conference.

—*John Connell in "Clash of philosophies in Asia" in The Sphere, dated 27th October 1962.*

Nation Pledged to end Chinese Aggression: National Development Council's Declaration

The nation was pledged by the National Development Council "to every effort and sacrifice to effect the vacation of the Chinese aggression".

The country's highest policy making body, on the second day of its meeting in New Delhi, declared, "We are fighting for our freedom and our honour, to save the democratic way of life adopted in our Constitution. With faith in the justness of our cause, we dedicate ourselves to protect our motherland".

The Chief Ministers also pledged the entire "resources, in men, money and materials of their respective States, to the making of a supreme effort to maintain inviolate the integrity of the country".

Taking note of the present situation regarding supplies of food and essential commodities for civilian consumption, the Council affirmed "its determination to prevent hoarding and essential commodities".

The Council considered the country's Plans of development as an integral part of the national defence.

Leading events in India-China Relations 1947-62

This is a chronological review of the relations between the Government of India and the Government of China since India attained independence in 1947. *The Government of India have, from the very outset, been eager to maintain and promote friendship with China. The People's Government of China have, on the other hand, followed a policy of dissimulation. In the early years, they led India to believe that they would abide by the traditional boundary between the two countries which is well-known and recognised, is clearly delimited and requires no further definition. But from* 1955, *they began a series of sporadic intrusions into Indian territory. Later a road was cleared across the Akshi Chin area of Ladakh. Finally, in September* 1959, *when it suited them to raise the question, the Government of China put forward claims to over* 50,000 *square miles of Indian territory.*

Since then the Government of China have occupied nearly 12,000 *square miles of this territory, established check-posts in this area and constructed roads to link these posts with bases in the rear. There has also been, in violation of the understandings reached between the two Governments, incessant advance patrolling and further incursions into Indian territory, resulting on occasions in loss of Indian lives. Offers by the Government of India that, in the Ladakh region where major differences have arisen, both sides should withdraw in order to avoid clashes and in the interests of a settlement, have been rejected.*

1947

15th August.—India attained freedom and the first independent Government took over from the British Government in India.

The new Government had inherited certain extra-territorial rights in Tibet. The Indian Trade Agents settled in personal conference with the Tibetan authorities disputes between the British subjects and the local inhabitants and, where there was a difference of view, the law of the country to which the defendant belonged prevailed, with the officers of the defendant's nationality presiding at the trial. All questions regarding rights arising between British nationals were subject to the jurisdiction of the British authorities. British subjects committing any crime were tried by the Trade Agents and punished according to the laws in India.

1947

The trade Agents were also entitled to have military escorts for the protection of themselves and all other British subjects. They operated the telegraph and telephone lines from Gangtok to Yatung and Gyantse and the post and telegraph offices at Yatung, Phari and Gyantse. The Government of India also owned eleven rest-houses in Tibet.

1949

India recognized People's China

1st October.—The People's Republic of China was proclaimed.

30th December.—The Government of India extended official recognition to the People's Republic of China. India was among the first countries to do so. It was stated

1949

that this would further strengthen the immemorial friendship between India and China and conduce to the stability of Asia and the peace of the world.

1950

Sino-Tibetan relations

13*th August*.—The Government of India represented to the Government of China that they were concerned at the possibility of unsettled conditions across their border. They, therefore, strongly urged that Sino-Tibetan relations should be adjusted through peaceful negotiations.

21*st August*.—The Government of China declared their willingness to solve the problem of Tibet by peaceful and friendly measures and their desire to "stabilize the China-India border".

24*th August*.—The Government of India expressed their ociation of the intentions of the Government of China rding Tibet. They added that "the recognized boun- y between India and Tibet should remain inviolate".

th September.—The Indian delegation to the General mbly of the United Nations urged that the People's ernment should represent China in the United Nations

October.—Chinese troops entered Tibet.

2*st October*.—The Government of India drew the attention of the Government of China to the harmful effects of restoring to military action as it meant postponement of the admission of the People's Government of China to the United Nations and unrest and disturbances on India's borders.

Chinese allegations

30*th October*.—The Government of China criticised the Government of India as "having been affected by foreign influences hostile to China in Tibet".

1*st November*.—The Government of India expressed surprise at the Chinese allegations and stated that they only wished for a peaceful settlement of the problem.

1951

1*st February*.—In the General Assembly of the United Nations, India voted against a resolution branding the People's Republic of China as an aggressor in Korea.

8*th September*.—A peace treaty with Japan was signed at San Francisco by 49 nations. India declined to attend the Conference because, among other reasons, China was not a party to it.

14*th November*.—India again urged the representation of China by the People's Government in the United Nations.

1952

India's plea for a seat to China in U.N.

25*th October*.—India reiterated that the People's Government were alone competent to represent China in the United Nations.

1953

15*th May*.—The Prime Minister, Mr. Nehru, declared that the resolution introduced by India in the United Nations on Korea was intended to represent the viewpoint of China on the question of the prisoners of the Korean War. This resolution was passed by an overwhelming majority.

8*th June*.—A Neutral Nations Repatriation Commission was set up to ensure the proper implementation of the resolution of the United Nations. India accepted the Chairmanship of this body.

28*th September*.—India advocated the admission of People's China to the United Nations.

31*st December*.—On the initiative of the Government of India, negotiations began at Peking on the relations between India and Tibet. The Government of India took step in the hope that by settling all outstanding issues which had been inherited from the past relations of friendship and co-operation would be greatly strengthened.

1954

Tibet—a region of China

29*th April*.—An agreement on Trade and Intercourse between Tibet and India was signed. India gave up all extra-territorial rights and privileges enjoyed in Tibet by the British Government of India and recognised that Tibet

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Distinguished Visitors

Her Royal Highness Princess Beatrix of the Netherlands visited Madras on 8th November 1962.



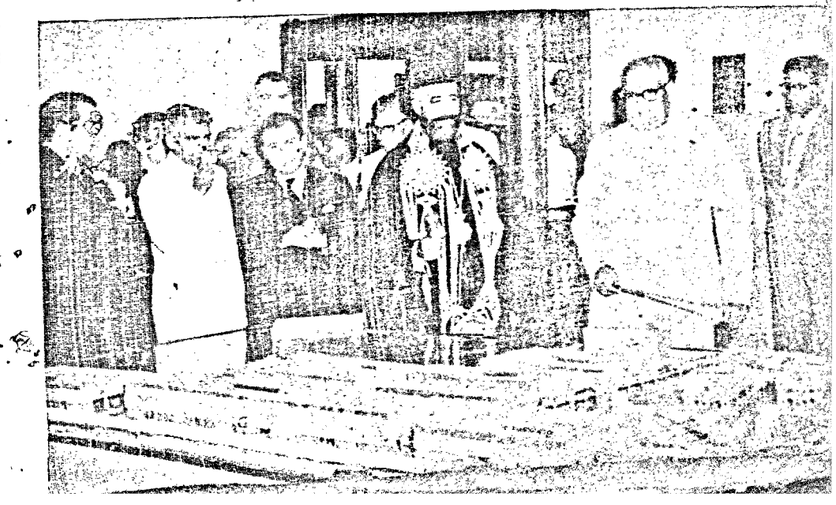
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Sri Tunku Abdur Rahman, Prime Minister of Malaya is seen received by Sri K. Kamaraj, Chief Minister, when he visited the City on 21st October 1962.



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Archibishop Makarios, the President of the Republic of Cyprus, visited Madras on 3rd November 1962. He visited the Integral Coach Factory, Perambur.



1954

was a region of China. The agreement specified trade agencies, markets and pilgrim routes and laid down regulations for trade and intercourse across the common border. The agreement was to be in force for eight years. In the Preamble of the Agreement, the two countries affirmed that they would abide by the Five Principles—mutual respect for each other's territorial integrity and sovereignty mutual non-aggression, mutual non-interference in each other's internal affairs, equality and mutual benefit and peaceful co-existence. This presumed that there were no problems pending between the two countries and such questions as might arise thereafter would be settled on the basis of mutual goodwill.

An exchange of notes dealt with matters relating to the withdrawal of Indian military escorts stationed at Yatung and Gyantse and the transfer of the post, telegraph and telephone services and the rest-houses belonging to the Government of India in Tibet to the Government of China.

India-China Joint Statement

25th June.—Mr. Chou-En-lai arrived in New Delhi on a State Visit.

28th June.—A joint statement was issued by the Prime Ministers of India and China. After reaffirming the Five Principles, they declared : "If these principles are applied not only between various countries but also in international relations generally, they would form a solid foundation for peace and security and the fears and apprehensions that exist today would give place to a feeling of confidence.... The Prime Ministers expressed their confidence in the friendship between India and China which would help the cause of world peace and the peaceful development of their respective countries as well as the other countries of Asia."

Chinese claim

17th July.—The Government of China protested against the presence of India troops in Barahoti (which they called Wuje) in the Uttar Pradesh State of India. This was the first time that the Government of China had laid claim to any part of Indian territory. There had never been any doubt as to what constituted the traditional boundaries of India ; and the Government of China were well aware of them. These boundaries were shown on official Indian maps ; Indian authorities had exercised for centuries administrative control over all areas up to the alignment ; the Constitution of India made specific mention of many of these areas ; and in 1950 the Prime Minister of India had made an authoritative declaration on the subject of the frontiers of India. In 1954 the Government of China far from laying claim to any part of Indian territory, had given a solemn undertaking to respect the territorial integrity and sovereignty of India. The Government of India, therefore, concluded that the claim to Barahoti was made by the Chinese in ignorance, particularly as they did not seem to be aware of its location.

27th August.—The Government of India sent a note to the Government of China refuting the allegation that Indian troops had intruded into Tibet and protesting against an attempt by Chinese officials to cross into Barahoti, which was south of the Niti Pass and traditional Indian territory.

21st September.—The Indian delegation once again proposed that the People's Government should represent China in the United Nations.

14th October.—A Trade Agreement was signed.

Nehru's visit to China

18th October.—Mr. Nehru visited China as part of his policy to preserve and promote the friendship between the two countries. While in China, he raised with the Chinese leaders the question of some maps recently published in China which had shown an incorrect boundary alignment between the two countries and incorporated about 50,000 square miles of Indian territory within China. Mr. Nehru said that this was presumably by some error : so far as India was concerned, she was not much worried about the matter because her boundaries were clear and well-known and not a matter of argument. Mr. Chou-En-lai in reply, sought to treat these Chinese maps as of little significance. He said that they were mearly a reproduction of old Kuomintang maps and the People's Government had no time to revise them.

1955

18th April.—China was one of the participants at the Asian-African Conference sponsored by Burma, Ceylon, India, Indonesia and Pakistan. Mr. Nehru upheld the right of the People's Government to represent China and helped Mr. Chou-En-lai to develop contacts with other Asian and African leaders.

11th May.—Mr. Krishna Menon visited Peking at the request of the Government of China to continue his efforts to find a solution of Formosa question.

28th June.—The Government of India protested to the Government of China against the unauthorised camping of a Chinese Party at Barahoti.

1955

15th September.—A party of Chinese soldiers intruded ten miles across the border into Damzan in Uttar Pradesh.

20th September.—India repeated her proposal that People's China should be admitted into the United Nations.

5th November.—The Government of India protested to the Government of China about the intrusion of Chinese troops into Damzan.

1956

Chinese claim for Barahoti

28th April.—An armed Chinese Party camped half a mile east of Nilang in Uttar Pradesh.

2nd May.—The Government of India protested to the Government of China against this Chinese intrusion into the Nilang area.

26th July.—The Government of China claimed that Barahoti was Chinese territory and denied that Tunjun La was a border pass.

1st September.—A party of Chinese soldiers crossed the Shipki Pass into India.

8th September.—The Government of India protested to the Government of China against the crossing of the Shipki Pass by a Chinese Party.

10th September.—A Chinese Party again trespassed into India across the Shipki Pass.

20th September.—A Chinese Patrol crossed the Shipki Pass and came up to Hupsang Khud. On encountering an Indian Patrol, the Chinese Party threatened to use arms.

24th September.—The Government of India protested to the Government of China against the crossing of the Shipki Pass and camping at Hupsang Khud by Chinese soldiers.

10th November.—India proposed that the question of the representation of China be taken up in the General Assembly of the United Nations.

Chou-En-lai's second visit

28th November.—Mr. Chou-En-lai visited India. Besides discussing many international issues with Mr. Nehru, he referred to the border between India and China ; and it was decided that while there were no disputes regarding the border, there were certain petty problems which should be settled amicably by the representatives of the two Governments. Mr. Chou-En-lai added that in the case of Burma, the Government of China had accepted the formalisation of the boundary in 1914 (the "McMahon Line") and proposed to recognise it with India also—that is the Eastern Sector of the Indian alignment. Mr. Chou-En-lai said he would consult the Tibetan authorities in this regard.

1957

5th June.—The Government of India returned to the Government of China all lands in their use or occupation at Yatung other than those within the walls of their Trade Agency.

13th September.—India proposed that the question of the representation of China should be taken up by the General Assembly of the United Nations.

October.—A Chinese Party came to Walong in the Lohit Frontier Division of the North-East Frontier Agency of India.

1958

April-May.—On the initiative of the Government of India, talks were held between the representatives of the two Governments on the question of Barahoti. The Government of India has suggested that pending a settlement neither side should send armed or civilian personnel into the area. The Government of China agreed not to send armed personnel, but refused to agree not to send civilian personnel. The talks also made clear that the Government of China had no precise knowledge as to the area they were claiming.

2nd July.—The Government of India protested to the Government of China against the occupation of Chinese soldiers of Khurnak Fort in Ladakh.

14th July.—India proposed that the question of the representation of China be taken up by the General Assembly of the United Nations.

7th September.—Mr. Nehru stated that India supported Chinese claims to the off-shore islands.

September.—Chinese soldiers arrested an Indian Patrol Party on normal routine duty in the northern part of Aksai Chin and detained and ill-treated the Indians for nearly five weeks.

1958

27th September.—A detachment of Chinese troops crossed into the Lohit Frontier Division and later moved into Burma.

September.—A large Chinese party entered Barahoti with building materials, clearly in order to construct permanent or semi-permanent structures.

Motor road objected

18th October.—The Government of India protested against the construction of a motor road by the Government of China across the Aksai Chin area of Ladakh.

October.—Chinese personnel constructed outposts at Lapthal and Sangchamalla in Uttar Pradesh.

27th October.—Aircraft approaching from Tibet flew over the Spiti Valley (Punjab) and Himachal Pradesh.

29th October to 1st November.—Aircraft approaching from Tibet flew over Chini (Himachal Pradesh).

8th November.—The Government of India protested to the Government of China against the Chinese claim to the Aksai Chin territory of Ladakh and ill-treatment of the members of the Indian patrol party.

10th December. The Government of India called upon the Government of China to withdraw their personnel from Barahoti, Lapthal and Sangchamalla.

Publication of incorrect maps

14th December.—Mr. Nehru wrote to Mr. Chou-En-lai drawing attention to the wrong delineation of the Sino-Indian boundary in an official Chinese journal. He said the continued issue of incorrect maps was embarrasing and any possibility of grave misunderstanding between the two countries should be removed as soon as possible.

17th December.—The Government of India drew the attention of the Government of China to the intrusion of aircraft, and requested them to take early steps to ensure that violations did not occur.

1959

17th January.—The Government of India protested against Chinese intrusions into Walong in October 1957 and into the Lohit Frontier Division in September 1958.

23rd January.—Mr. Chou-En-lai, in his reply to Mr. Nehru, contended that the Sino-Indian boundary had never been formally delimited and there were certain differences between the two sides over the issue. The Government of China had not raised the issue in 1954 because conditions were not then ripe for its settlement. He added that the "McMahon Line" had never been recognised by the Government of China. As for Chinese maps, Mr. Chou-En-lai claimed that the boundaries drawn on them were consistent with those on earlier maps.

In other words, the Government of China officially repudiated the traditional delimited boundary between the two countries which had been well recognised by both sides for centuries. Going back all their assurances and violating the Agreement of 1954, they laid claim to about 50,000 square miles of Indian territory.

Political asylum for Dalai Lama

31st March.—The Dalai Lama crossed the frontier into India and was given political asylum. But it was made clear to him that he should not indulge in political activity in Indian territory.

26th April.—The Government of India protested to the Government of China against unbecoming and unjustified attacks made by responsible persons in China on the Government of India for granting political asylum to the Dalai Lama.

16th May.—The Government of China cautioned India against having two fronts and said that the Five Principles would be respected according to convenience.

23rd May.—The Government of India expressed regret at the attitude of the Government of China and declared that India's adherence to the Five Principles was a matter of basic policy and not of opportunism.

11th July.—The Government of India drew the attention of the Government of China to the difficulties placed in the way of functioning of the Indian posts and of the activities of Indian traders, pilgrims and nationals in Tibet.

14th July.—India proposed that the question of the representation of China should be considered by the General Assembly of the United Nations.

28th July.—A Chinese armed detachment intruded into the region of the Western Pangong Lake in Ladakh, arrested six Indian policemen and established a camp at Spanggur.

Government of India's protest

30th July.—The Government of India protested against these Chinese intrusions.

1959

7th August.—An armed Chinese patrol crossed into Khinzemane on the Eastern Sector and pushed back an Indian patrol.

11th August.—The Government of India protested to the Government of China against their violation of the Indian boundary at Khinzemane.

25th August.—A large Chinese detachment crossed the frontier in the Subansiri Division of the North-East Frontier Agency and occupied the Indian frontier post at Longju after opening fire on the small Indian garrison and outflanking it.

28th August.—The Government of India protested against the Chinese attack on the Indian post at Longju.

Chinese enter Indian territory

20th October.—Chinese military forces advanced forty miles into Indian territory in the Chang Chenmo valley of southern Ladakh. Encountering an Indian patrol near the Kongka Pass, they opened fire, killing nine Indians. Ten other members of the Indian party were taken into captivity and subjected to harsh and inhuman treatment before release.

23rd October.—The Government of India protested against the Chinese attack on an Indian patrol and demanded the release of the arrested personnel.

16th November.—The Government of India, still anxious to find a peaceful settlement, proposed, as an interim measure, that in the Ladakh area the Government of India should withdraw troops to the line which China claimed as her boundary and Chinese troops should withdraw behind the traditional boundary alignment shown in the Indian maps. This would eliminate the risk of border clashes.

5th December.—The Government of India drew the attention of the Government of China to the fact that during the previous two months a number of unidentified aircraft, approaching from Tibet, had flown over Indian territory.

17th December.—The Government of China rejected the proposal of the Government of India that each side should withdraw its troops in the Western Sector. Instead, they advanced further west and south of the Aksai Chin area and constructed roads in this territory.

1960

Chou-en lai's third visit

5th February.—Mr. Nehru invited Mr. Chou-En-lai to visit New Delhi so that they could make every effort to explore avenues which might lead to a peaceful settlement.

4th April.—The Government of India again drew the attention of the Government of China to the fact that during the previous three months a large number of aircraft approaching from Tibet had flown over Indian territory.

April.—Chinese military personnel patrolled the Suriah area in Indian territory.

19th April.—Mr. Chou-En-lai came to Delhi and had talks with Mr. Nehru for six days. At the conclusion of their talks, the two Prime Ministers announced that they had not succeeded in resolving the differences between the two countries. It was, therefore, agreed that the officials of the two Governments should meet to examine all relevant documents in support of the stands of the two Governments and report. Meantime, every effort should be made to avoid friction and clashes in the border areas.

3rd June.—A large Chinese party moved into Taktsang Gompa which is about five miles within Indian territory in the Kameng Frontier Division of the North-East Frontier Agency.

25th June.—A Chinese Survey party visited Suriah.

29th July.—The Government of India protested against the Chinese intrusion into Taktsang Gompa.

52 instances of violations

22nd August.—The Government of India brought to the notice of the Government of China fifty-two instances of violations of Indian air space since March 1960 by aircraft flying from Tibet.

22nd September.—A Chinese armed patrol crossed into Sikkim near the Jelepla Pass.

27th September.—The Government of India protested against the Chinese intrusion into Sikkim.

13th October.—An armed Chinese party visited the vicinity of Hot Springs in the Western Sector.

1961

14th February.—The Government of India published the report of the officials of the two sides on the boundary question. The report made clear, on the

1961

basis of a vast amount of evidence, that the traditional, delimited boundary between the two countries was that shown by India and that China had made unwarranted claims to about 50,000 square miles of Indian territory and was in unlawful occupation of about 12,000 square miles of this. The Government of China for long did not even acknowledge the existence of the report. Finally, in May 1962, they published a garbled and truncated version of the Chinese section of the report.

20th April.—Chinese personnel crossed into Sikkim near the Jelepla Pass.

May.—Chinese personnel intruded into Indian territory near Chushul in the Western Sector.

India's efforts to avoid friction

13th July.—Mr. R. K. Nehru, Secretary General in the Ministry of External Affairs, passed through Peking on his way back to Delhi from Mongolia and met leaders of the Chinese Government to ascertain whether any progress could be made on the basis of the report of the officials.

July.—A Chinese patrol crossed the Eastern Sector of the Indian alignment about one mile west of Chemokarpola in the Kameng Frontier Division.

August.—Chinese forces established three new check-posts in Ladakh, at point 78° 12′ E., 35° 19′ N at Nyagzu and near Dambuguru. Roads linking these posts with rear bases were constructed.

12th September.—Armed Chinese personnel came into Sikkim across the Jelepla Pass.

India's protest

31st October.—The Government of India drew the attention of the Government of China to their numerous incursions across the boundary, continued unlawful occupation of a large part of Indian territory and the construction of new roads and check-posts. They urged the Government of China to withdraw from Indian territory and desist from aggressive activities.

1962

14th January.—A Chinese patrol advanced twelve miles further forward from the Check-post at 78° ... E., 35°19′N.

January.—Some Chinese civil and military officials crossed the border in the Eastern Sector near Longju and proceeded to Roi village half a mile within India.

1962

22nd February.—The Government of India protested to the Government of China against their advance patrolling in Ladakh.

15th April.—The Government of India protested to the Government of China at the establishment of a military post six miles west of Sumdo in Ladakh.

18th April.—The Government of India protested to the Government of China against their incursion into Roi village in the Eastern Sector.

April-May.—There was consistent advance patrolling by the Chinese in the Chip Chap area of Ladakh.

30th April.—The Government of China announced that they had ordered patrolling in the whole sector from the Karakoram Pass to the Kongka Pass and demanded that India withdraw two of her posts which were situated well within her own territory. If the Government of India did not comply, the Government of China would resume patrolling along the entire boundary.

3rd May.—The Governments of Pakistan and China announced agreement to enter into negotiations to locate and align the portion of the India-China boundary west of the Karakoram Pass, presently under Pakistan's unlawful occupation.

Sovereignty over Kashmir

10th May.—The Government of India drew the attention of the Government of China to the fact that the soverignty over the entire State of Jammu and Kashmir vested solely in the Indian Union. Any agreements reached with Pakistan regarding any sector of the boundary of Kashmir would, therefore, have no legal validity.

May.—A new Chinese post was established in Indian territory about ten miles south-east of Spanggur.

14th May.—The Government of India protested against the aggressive patrolling by Chinese troops in the Chip Chap area of Ladakh and renewed their suggestion that Indian and Chinese Forces in the Western Sector should withdraw behind the alignment claimed by China and the traditional Indian alignment respectively. The Government of India also declared their willingness, in the interest of a peaceful settlement, to permit use of the Aksai Chin road by Chinese civilian traffic.

21st May.—The Government of India protested to the Government of China against the establishment of a new post near Spanggur.

1962

2nd June.—The Agreement of 1954, which had been violated both in letter and in spirit by the Government of China by their harassing of Indian Pilgrims, traders and nationals in Tibet and by their aggression into Indian territory, lapsed.

India Government's Protest

16th June.—The Government of India protested to the Government of China against the clearing of a new road through Indian territory running south-east from 78°35′E., 35° 0′ 33″ N. to the West of 79° 10′ E., 34° 43′ N. and thence southward to 79° 8′ E., 34° 33′ N. and the setting up of a new post at 79° 8′E., 34° 33′ N.

28th June.—The Government of India protested to the Government of China against the setting up of a new post at 78° 15′ E., 35° 15′ 30″ N. six miles south south-east of the Chinese post illegally set up at 78° 12′ E., 35° 19′ N. near the Chip Chap river.

10th July.—The Government of India protested to the Government of China against the encirclement of an Indian post at 78° 38′ E., 34° 39′ 45″ N. on the Galwan river.

12th July.—The Government of India protested to the Government of China against the establishment of new Chinese posts in Chip Chap, Chang Chenmo and Pangong regions.

13th July.—Peking sets up new posts in Indian territory.

14th July.—Chinese withdrew from Galwan Valley.

15th July.—Ladakh post incident. China rejects India note.

19th July.—Prime Minister says that doors for solution must not be closed.

22nd July.—Attack in Chip Chap Valley. Chinese open fire on Indian Troops in Ladakh.

23rd July.—Situation "serious" in Ladakh. Prime Minister's appraisal.

24th July.—India rejects China's protests on Ladakh border firing.

Prime Minister's warning

27th July.—Prime Minister's warning. India ready to give good fight to China.

28th July.—Chen Yi told that China is misbehaving.

3rd August.—Prime Minister said in Parliament that he would not hesitate to visit Peking if at any time he thought that it would help towards a peaceful settlement of the border dispute.

1962

4th August.—No surrender on Border issue : Sri V.K.K Menon reiterates Government's policy.

5th August.—Ladakh situation still difficult.

6th August.—Proposal for no man's land in Ladak rejected.

7th August.—Fresh incidents of firing. Peking in n mood to fall back in Ladakh.

13th August.—No Parleys, unless Chinese withdrew

22nd August.—2,500 square miles in Ladakh reoccupie by Army.

5th September.—Terms for Talks with China 1957 pos tion in Ladakh must be restored. India's firms stanc

8th September.—A Chinese force steps across th established boundary in the eastern sector.

13th September.—Chinese encircle Nefa outpost infi tration in large number.

14th September.—Outpost in NEFA reinforced. Vigorou protest lodged with Peking Government.

21st September.—Chinese open fire in NEFA borde strong protest lodged with Peking.

22nd September.—Chinese attack on patrols in Pangong Lake area.

25th September.—Indian troops defence on Che Ja Bridge.

26th September.—Firing by Chinese near Dhola Post.

30th September.—Unprovoked firing; Delhi lodge protest.

7th October.—No talks on border question under threa of force. India's reply to China's invitation.

11th October.—Severe fighting in NEFA border; India casualties 17; Chinese still inside McMahan line.

12th October.—Army instructed to push Chinese out.

India will fight to the last

14th October.—India will fight to the last—Sri Menon decl... tion.

15th October.—Prime Minister ... plains India stand o border issue.

20th October.—Chinese mount massive attack. Galla resistance by Indian troops.

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Get by heart every song of

BHARATHI

S. Sathyamurthi

Almost forty years ago Sri Sathyamurthy on the floor of the Madras Legislative Council was dinning into the ears of an intractable "transferred half" consisting of people of our own country the greatness of Bharathi.

He was speaking on the no-confidence motion against the then Ministry headed by the Rajah of Panagal. It was Sathyamurthy's maiden speech in the Council and it was appropriate that he should champion the cause of the school children who were being denied the inspiration of Bharathi's songs.

Five years later in the same House, Sathyamurthy returned to the theme when the Police seized copies of Bharathi's songs. Speaking on an adjournment motion on this subject Sathyamurthy sought to tell the legislators more about the literary genius of the fiery patriot.

We reproduce here excerpts from the proceedings of the Legislative Council (1928) when Sri Sathyamurthy moved an adjournment motion regarding the seizure of copies of Bharathi's songs by the Police. The motion was carried.

SRI S. SATHYAMURTHI : "Mr. President, Sir, I beg leave to move that the business of this House do stand adjourned to consider a matter of urgent public importance, namely, the recent action of the City Police in entering upon and searching the premises of the Hindi Prachar Sabha on the High Road, Triplicane, for copies of Bharathi's songs, and seizing nearly two thousand copies of the same.

"Sir, in support of this motion, I do not think I need advance, elaborate or detailed arguments. For, I know, Sir, I am not exaggerating the feeling of any Member of this House who is a Tamilian, or who knows Tamil, or who is a patriot, or who is not afraid of patriotism, when I say that one wants no arguments to support this vote of censure on the action of the Madras Government in having acquiesced in or directed the City Police to seize what will remain, in spite of the Madras Government's activities, so long as the Tamil language lasts or a single Tamilian exists, as the most priceless and partiotic songs in that great language.

Priceless heritage

"Sir, late Subrahmanya Bharathi was a man on whose tongue the Goddess Saraswathi can honestly be believed

When this motion was moved by Sri Sathyamurthy in 1928 in the Legislative Council, Dr. Subbaroyan was occupying the post of Chief Minister and was also in charge of Education, other than European and Anglo-Indian Education. Dr. M. Krishnan Nair was the Law Member and Sir Mohamad Usman was the Home Member. The motion was put to vote, seventy-six persons voting for it, 12 persons voting against it and 15 persons including Dr. Subbaroyan remaining neutral.

to have danced the dance of patriotism. If he had been born in any free country, why in any country of the world except India, that man would have been made the Poet Laureate of that country, would have been given honours and titles by a Government which knows how to respond to the feelings of the people, and would have lived and died among the most honoured of the nation. But, Sir, being the slave country that we are, he had to live as an exile in Pondicherry, enjoying the hospitality of the French Government, and die a broken wreck, because he found no use for himself under the auspices of this Government. But, Sir, martyrs and patriots before him have gone to the same fate. Subrahmanya Bharathi lived and died a patriot. I want to repeat, Mr. President, that so long as the Tamil language lasts, you may confiscate all the copies which exist—even as our sacred vedas were handed down from generations to generation, for a aeons, without a single piece of writing, by the memory of our ancient Hindu ancestors, even as Macaulay was able to repeat every line of Milton's 'Paradise Lost'. I have no doubt, that so long as single Tamilian lives, these songs will remain the priceless heritage of the Tamil race. I can inform this House, Mr. President, after this ill-advised action of the Government, we are starting a propaganda for getting by heart every song of Subrahmanya Bharathi, and although the Hon. the Law Member and the Hon. the Home Member may between them confiscate every printed word of those patriotic songs, human ingenuity has not yet invested any machinery which is able to confiscate thoughts and memories. Thoughts and memories will flourish, and wherever the Hon. the Law Member or the Home Member goes, they will hear only these songs, sung, and they will have to apply cotton wool to their ears if they want to save themselves from being polluted by hearing these brave and patriotic songs.

Soul-stirring songs

"Sir, the origin of this action is not even complimentary to this Government. This Government is here governing the bulk of the Tamilians in whose language these poems are written. These poems are a quarter of a century old. For nearly twenty-five years, these songs have been sung throughout the Province, and I appeal to my hon. friend the Chief Minister, who I know is a very good student of Tamil whether he has not heard and enjoyed these songs, whether he has not heard and felt his pulse beat quicker, and his blood run warmer in his veins, when these magnificent, soul-stirring songs were sung. I am sorry my two other friends who crossed the floor are not here. If they were here, they dare not contradict me when I say that some of the election methods by

HE PREACHED NATIONAL INTEGRATION

SUBRAMANIA BHARATHI occupies an unique place in Tamil literature. Very rarely does a poet command the loyalty of both the classes and the masses, as Bharathi has done.

Bharathi was a nationalist first and a nationalist last. Knowing first-hand, the socio-economic degradation into which the country had been plunged by the alien rule, he realized that nothing short of total freedom would save the country. He was impatient and driven with a sense of urgency, he sang of revolution and revolt.

Barriers of traditions and conventions did not deter him. He clearly saw that economic salvation was the only answer the country needed.

He went all out against communalists and prophets of dissension. To him India was one and indivisible and he sang of her greatness and glory. He was an incorrigible optimist and his conviction in the ultimate victory of the fighters for freedom was supreme. He visualised the "Free India" and spoke of the wonderful times ahead. He had a deep reverence for our culture and heritage of which he was himself become a part. Never once did he speak of any particular part of the country. To him India was everywhere and everything.

which they came to this very Council, which gave them the opportunity to cross the floor and become Ministers, were these patriotic songs sung by boys and girls in public meetings. Sir, do you know that in this Tamil country, if you want to get up a magnificent meeting, if you want to sustain the interest of the audience, the most usual method is to get these songs sung? I wish I had the voice to sing a few of those songs here, which will melt even the stony hearts of the hon. the Law Member and the Home Member. I will read some of them, and even a prosaic reading of these songs will melt the hearts of these people.

Why copy Burma Government?

"Sir, it seems to me that for this Government to obey the dictates of the Burma Government, as if they have no opinion of their own in the matter, is inconsistent with a Government which has any sense of self-respect about

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it Sir, the origin of this is the notification published by the Burma Government at Rangoon on the 7th August 1928 in the Police Department.

Seditious Matter

They say: "In exercise of the powers conferred by section 99-A of the Code of Criminal Procedure, 1898, the Governor-in-Council hereby declares to be forfeited to His Majesty all copies wherever found of the booklet in Tamil entitled 'The National Songs, Parts I and II,' composed and published by C. Subrahmanya Bharathi, the Bharathi's Ashram at Triplicane, Madras, on the ground that it contains seditious matter, the publication of which is punishable under section 124-A of the Indian Penal Code as tending to excite disaffection towards the Government established by law in British India." Sir, section 99-A of the Criminal Procedure Code, which is one of the effects of the recommendations of Press Act Repeal Committee over which some of our countrymen went enthusiastic, says when a local Government passes the order the Police may seize the same wherever found in British India and any Magistrate may authorize any Police Officer to enter upon and search for the same in any premises. Now I want to know from the Hon. the Law Member or whoever is in charge of this department and is going to reply to me, why this notification was published in the *Fort St. George Gazette*, dated 11th September 1928. Is there any rule by which notifications of local Government are automatically republished in the *Fort St. George Gazette*? I know of no such rule. The only rule or practice I know of, is that the resolutions and notifications of the Government of India, published in the *Gazette of India* are republished by the Madras Government in the *Fort St. George Gazette* for the information and guidance of the people of this Province. There is no rule which requires, so far as I know, the republication in the *Fort St. George Gazette* of this order of the Burma Government. I should like to know why the local Government published this order.

Next Stage

"The next stage, Sir, comes when the Police applied for a warrant before the Chief Presidency Magistrate to search those premises and to seize those copies. The application was made by Mr. Saptur Hussain, Inspector, Intelligence Department. The application says: 'I beg to submit that under notification, in G.O. Ms. No. 739, Public, dated the 7th August 1928 of the local Government, Burma, republished by the local Government of Madras in the *Fort St. George Gazette*, dated 11th September 1928, the booklet styled 'the National Songs, Parts I and II' by C. Subrahmanya Bharathi have been forfeited to His Majesty under section 99-A of Criminal Procedure Code. I request this Honourable Court to issue a warrant authorizing me to enter upon and search for the same in (1) Hindi Prachar Press, Triplicane, (2) Bharathi's Ashrama, Talayari street, (3) O. N. Dandapani and Company, where such booklets are reasonably suspected to be stored. With regard to this application for warrant, Mr. President, I want to know whether this action was taken by the Commissioner of Police at his own instance and on his own responsibility, or whether the Member of Government in charge of the Police had any knowledge or notice of it. If he had no knowledge or notice of it, I want to know whether it is the Police of the Madras Government that in first class political matter like this, seizure of proscribed literature under orders of another local Government, the Police are going to be allowed to act on their own responsibility, without so much as by your leave of the Government. Then, Sir, I want to know whether the order was applied for by the Police after taking the permission of Government or at least letting them know that they propose to do it. On that, Sir, the Chief Presidency Magistrate passed this order:

'Whereas complaint has been made before me of the possession of undermentioned prescribed booklets and it has been made to appear to me that the production of the copies of the said booklets is essential to the inquiry now being made into the said offence.....'

'It is not clear, Sir, what the offence referred to is. Whatever it is the facts are the Police did apply for and the Magistrate issued a warrant, and as many as two thousand copies of this book have been seized and forfeited to His Majesty and kept in the Record Office of the Chief Presidency Magistrate.'

Human aspect overlooked

"Apart from the political or literary aspect of this matter, Mr. President, there is the human aspect about it. This man Subrahmanya Bharathi, as I have said, died a broken man, a poor man, leaving behind him a widow and two daughters whose only means of subsistence is the proceeds of the sales of these books, and some friends have offered themselves to publish these books and to remit the profits out of those sales for the maintenance of this family of this great but poor man. As a consequence, the Bharathi Ashram and the Hindi Prachar Sabha in Triplicane are spending and have spent money on this publication, and after selling these publications they are going to send the profits for the maintenance of the widow and the daughters of this great and patriotic man. It is consistent with charity or good sense or even nitimately the sense of honour of this Government that they

should seek to deprive a widow and two fatherless children of their only means of subsistence in order that they may pursue the Burma Government's vendetta against 'high and patriotic literature of this kind? Apart from anything else, that must appeal to every Hon. Member of this House. Are you going to punish the widow and the daughters of Subrahmanya Bharathi, because he wrote patriotic songs and punish them in this mean and despicable manner by depriving them of their livelihood? It is contemptible it is unworthy of any Government which wants to call itself civilised or self-respecting or honourable.

Absurdities of Dyarchy

"Then, I want to point out, Mr. President, that in this matter, the anomalies and absurdities of dyarchy have been shown in excelsis. My hon. friend the Chief Minister a few months ago, in answer to question on the floor of this House, said that his Government had no objection to the teaching or singing of Bharathi's songs in Government and aided schools in our presidency. Look at the action of the Hon. the Education Minister. He knows Tamil, he knows the songs, and the Council thanks him for his act of patriotism by which he allowed these songs to be sung in the schools provided by the Government. He sits there, he is still the Chief Minister and the most powerful minister, he makes and unmakes ministeries at his will; and yet with all his great powers of formation, destruction and reorganization, this great minister is unable to influence his two colleagues who are now sitting to the right and left of him, the Hon. the Home Member and the Hon. the Law Member, who do not say a word to the Chief Minister but listen to the Burma Police directing the Madras Police to seize by warrant and forfeit to His Majesty those very books which the hon. the Chief Minister thinks furnish the intellectual pabulum to our young children and on which they could be reared as honourable citizens but when it comes to the reserved half it is to be forfeited (Laughter). I do not know whether it is a matter for laughter or tears. That is for him to decide. But if I were the Hon. the Chief Minister, I would rather be a dog and bay at the moon than be such a Minister as to be compelled to look on when his own colleagues snap their figures at him saying "You may sing Bharathi's songs in schools and colleges but we will forfeit them". I will not say anything more about him; for he is the only good man in the whole piece. Let us go to the villain of the piece, the Hon. the Home Member and the Hon. the Law Member, and both of them are Indians. I believe they have not given up their claim to be called Indians. The Hon. the Law Member was till the other day sitting on this side or that side of the House, and I know he is a very good speaker in Malayalam, one who is listened to with respect. Supposing there are patriotic songs in Malayalam of the nature, I am going to read presently, does he think that he will forfeit those songs because a neighbouring Government called them seditious? And what about the Home Member? He represents Islamic culture there; he is there to protect Islamic interests; he is there, not for any other reason, but to see that the great Islamic culture is preserved intact from the invasion of the secular Government. Is it consistent with Islamic culture which is based on democracy, charity and free thinking, that he should be a party to this deliberate and wicked attempt at poisoning the intellect of the nation at its very fountain source and telling the people, 'You shall not become patriotic, you shall not become proud of your country, you shall not love your country, but you always shout with me that we will be slaves, that Britain shall rule over the slaves? If that is their attitude I can understand their action. If on the other hand these gentlemen claim to be the patriots, I put it to my friend the Law Member—he is not a lawyer listening to the arguments of another lawyer on the other side vigorously taking notes and answering arguments by counter-argument, that he should keep his heart open, his brains open, if he can, to listen to us and convert himself and have the courage to get up and say 'Mr. President, I am ashamed of the action of the Madras Government; I shall recall the order.' I do not think he will rise to that occasion but still I hope he will offer to do so. (A voice; 'Hoping against hope.')

Precious treasures

"Then, Sir, what are these songs? I am not going to dwell on their seditious nature, under your ruling. I merely want to tell the House these are songs with the like of which one is familiar in English literature, such as praising the country, praising her natural beauties praising her great heroes and heroines, praising her great achievements, expressing unmitigated love for the mother-land, expressing joy in her present and hope in her future Are these unworthy of any nation? These have been prescribed, I have got copies here and I can make a present of them to the Hon. the Home Member or the Law Member. I will make a present of them to the Council Library, and if the police want them they can go and search there and take them. I shall read from the first books of songs in order to convice the House that there was no need for the Government to confiscate this literature—

வந்தே மாதரம் என்போம்
மாநிலத் தாயை வணங்குது மென் போம் (வந்தே

ஜாதிமதங்களைப் பாரோம்—உயிர்
ஜனமமித் தேசத்தி லெய் தினராயின்
வேதியராயினு மொன்றே—அன்றி
வேறு குலத்தினராயினு மொன்றே (வந்தே)
ஈனப் பறையர்களேனும்—அவர்
எம்முடன் வாழ்ந்திங்கிருப்பவ ரன்றே ?
சீனத்தராய் விடுவாரோ ? பிற
தேசத்தார் போற்பல திங்கள் முப்பாரோ (வந்தே)

"We will worship our Mother, we will not mind to which caste or which religion, our fellow citizens belong; if they are born in this country, all of them are our brothers even if they are called Pariahs; are they foreigners?

ஒன்றுபட்டால் உண்டு வாழ்வே
நம்மில் ஒற்றுமை நீங்கில் அனைவர்க்கும்
தாழ்வே

நனிறிது தேர்ந்திடல் வேண்டும்
இந்த ஞாலம் வந்தார்பின் நமக்கெது வேண்டும்
(வந்தே)

"I commend these lines to the particular attention of the hon. the Law Member and the Chief Minister and the Home Member. If we are united we can live; if we are not united we are all equally humiliated. Treasury Bench and the opposition alike (Laughter). Then I appeal to the Tamilians. Have you heared any more inspiring lines than these? I have not.

செந்தமிழ் நாடெனும் போதினிலே—இன்பத்
தேன்வந்து பாயுது காதினிலே—எங்கள்
தந்தையர் நாடென்ற பேச்சினிலே—ஒரு
சக்தி பிறக்குது மூச்சினிலே—எங்கள்
(செந்தமிழ்)

'I do not know, Sir, if there is any Tamilian in this House or outside whose heart will not melt at these songs. I ask them to remember this, that these songs are now declared forfeited to His Majesty by the action of a Government which are to a certain extent kept in those treasury benches by us, the music of it is so great that even a halting reader of those songs like myself can make an appeal to the members here.

I have listened to the hon. the Law Member shouting here yesterday; he was not even read these songs, but still he has forfeited the book. I can understand if the Government has chosen one of these songs or two and said that those songs should be forfeited. They have not done anything of the kind. These two volumes consist of some of the most moving songs on our religion and letters, apart from pure patriotism.

What they sang

I shall finish by referring to similar songs in English literature which Englishman sing in their country, which they sing even in our own country in private dinner parties and other places. They sing of the glories of England 'Britain shall rule the waves, Britain shall never be slaves—but Indians shall always be slaves. That is the burden of their songs, if they are to be judged by the results of the actions. Lord Tennyson sang:

"At her girdle clash
The golden Keys of the East and West;
Her mailed hand keeps the keys
Of such teeming destinies."

William Blake wrote—

"Their mighty wings stretch from East to West.
Their nest is in the sea, but they shall roam
Like eagles for the prey."

Then England's message in Parker's words:

"Then Courage, all brave mariners
And never be dismayed
Then be bold—work for gold
When the stormy winds do blow."

Lord Tennyson says:

"The fleet of England is her all in all
Her fleet is in your hands,
And in her fleet her fate."

Look at the difference

"I want to point out three capital differences between the English nationalistic literature and ours. English nationalistic literature boasts of its own strength and speaks of the confusion and destruction of their enemies. 'God save the King, send victorious, happy and glorious and confound his enemies.' That is the Englishman's song. The Englishmen's psychology is that God has to deal with only two categories, England and her subjects on the one hand and her enemies on the other. That is God must give up all His other work and constantly save England and confound her enemies. Humanity has come under these two categories, England and her subjects on the one hand or England and her enemies on the other Whereas the message of Subrahmanya Bharathi is the message of all races, of poets, philosophers and seers of all nations.

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OOZHI KOOTHU

Subramanya Bharathi

This poem may be considered the culminating point of Bharati's devotional poetry. It fuses in a compact form a metaphysical interpretation of the Universe as a perpetual process of Being and Becoming with the sombre magnificence of a vision poetically apprehended.

The worlds unleash'd collide in space
And crash 'mid peals of thunder;
The spirits blood-soaked run a race
With th' atoms split as under.—
Dread Mother, Kali,
Chamundi, Gangali!—
The tinklings of thy glancing feet
In tantalising patterns fleet
Unwind the cosmic loom,—
Usher in the final doom!
Bliss is it to see thee capture
Dissolution's heady rapture.

The five-fold *bhuts* dissolve and merge
In that terrific blast;
The mind is driven to the verge
Of extinction at last,
As with eyes ablaze
Thou thread'st the maze
And scatter'st fire
In which worlds expire.
Mother, Mother, I've fall'n in love
With thy dancing in th'inane above!

The emptied spaces shrink in dread,
The dæmon-hosts retire:
Disintegration stalks wide-spread
With mounting flood and fire.
O'er that deluge
And arson huge,
Thou rangest yelling frantic
In movements corybantic:
How blest am I to have been
A witness of that awful scene!

Shakti's minions clap their hands
In suicidal glee,
As they butt and rear in roving bands
And sink in a boiling see:
The havoc wrought
Is past all thought,—
For Time at last expires
In thy consuming fires,
I thank thee mother for the chance
Of witnessing thy mystic dance!

O'er Space and Time annihilated
A silent splendour breaks;
But with that holocaust elated
Thy Mother-heart awakes;
From the void arises divine Grace
In Shiva's winsome form and face;
With locks down-cast and tender
You meekly then surrender
To your eternal spouse
In a divine carouse:
For I see you hand in hand advance
T' resume Creation's' joyous dance.

[From Bharati Jayanthi Souvenir of Bharati Tamil Sangham, Calcutta.]

The Officers, Staff and Workers of the Office of the Controller of Stationery and Printing, Madras, have Contributed a sum of Rs. 5,001-31 nP. towards the National Defence Fund.

(*continued from page* 49)

Let India be free and happy and the other nations of the world be free and happy. Is it for preaching this message of peace on earth and goodwill to all men that the Madras government which does not understand the A B C of patriotism or nationalism have ventured to lay its profane hand on this sacred literature? We are constantly told that we are a nation of many races and creeds. Bharathi was a Brahman by birth, and I appeal to non-Brahmans in the South—several of them were his friends and I do not want to name them — to say whether throughout his literature, there is a single trace of caste or communal bias or superiority or inferiority. He talks only of Indians as a whole, he knows no distinction of class or creed, race or religion. He is the most cosmopolitan that I know of among modern authors. Is it for preaching this harmony among men that his books are sought to be forfeited by this Government? It seems to me that this action of the Government cannot be justified on any basis whatever, either of duty or of reason.

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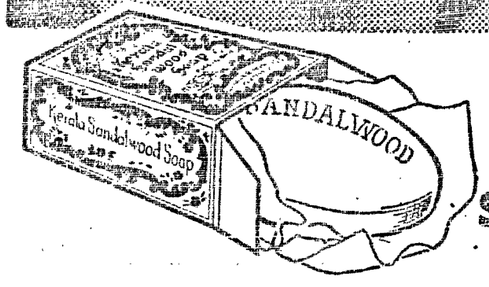
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