

Tamil Arasu

NOV 1973

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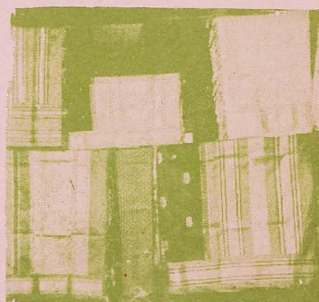
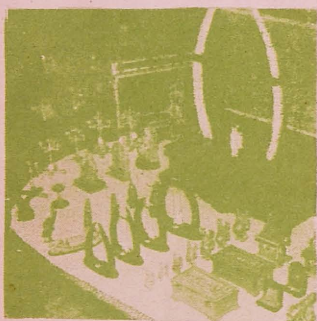
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Tamil Arasu

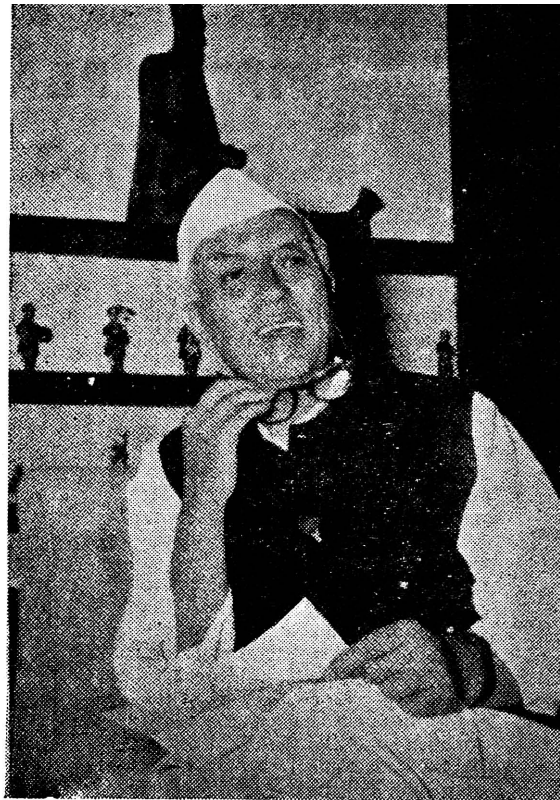
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Nehru will be remembered with Children's rally and Child Art Competitions throughout Tamil Nadu on 14-11-73.

Gandhi Jayanthi Celebration at Raj Bhavan this year created massive response. Thiru Y. B. Chavan, India's Finance Minister, Chief Minister Karunanidhi and Governor K. K. Shah and many other national leaders made the occasion memorable.



FIFTH PLAN CALLS FOR DRASTIC REVISION IN ADMINISTRATIVE MODES

The inaugural address of Dr. M. Karunanidhi, Chief Minister, at the Seminar on Plan implementation held at Rajaji Hall on 26th and 27th October, 1973.

As you are all aware, the primary concern of my Government is the welfare of the common-man who has remained poor, despite all the Plans made and implemented so far. I consider the distributive mechanism which will raise the common-man above the poverty line more important than planning. The "poverty line", as defined in India, is perhaps the lowest in the world. In the United States of America and Western Europe, people with annual income lower than 7,000 dollars and 3,000 dollars are classified as poor. But in India, those who do not even get an annual income of Rs. 240, is classified as poor. More than 55 per cent of the population of this State is well below the poverty line.

Planning is a means to a goal—securing greater welfare of the people. The implementation is equally important. It is because of our awareness of the importance of implementation that we set up the Administrative Reforms Commission, at the same time as the Planning Commission. Massive Plans do very little, unless we can make them real through implementation.

It would be useful if we think for a moment under what conditions we want to formulate Plans and implement them. We suffer from a serious limitation of natural resources. Even in respect of water, we have reached the limits of exploitation. Our high density of population neutralises all our attempts to raise the per-capita income. At the same time, our administration is a prisoner of its own history. Many vested interests have grown up around the present complex of

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rules and procedures. A small change in some procedure is sometimes resisted, simply because some people may lose their jobs and their position. One main difficulty is that the system of administration which is to be changed, *has itself to implement the change.* Revenue sharing between the Centre and the State has so far been unhappy and has been indirectly the instrument for curbing the initiative of the State administration. These limitations make any change difficult and slow. I am, however, confident that our Administrative Reforms Commission is fully aware of this problem and it will take into account this "built-in" resistance. As you are all aware, our procedures and rules are designed for slow and careful decisions, that are carried over from a law and order State where decisions can be slow; to a developmental State where the activities have to be very brisk and the progress should be much speedy. To-day the people press for a change—change to have a better education, health and housing, industrial facilities, better transportation and communication systems, better standard of life, etc. A static Government with the outmoded outlook cannot bring these changes. A dynamic approach to development presupposes correspondingly a dynamic attitude to administrative structure.

Plan implementation involves a series of decisions—decisions to start projects, decisions to buy materials, to award contracts, etc. We have to see how far our present approach to policies and administration helps such quick decisions. One aspect of our attitude as a nation is, that we are *hypercritical*. We expect perfection in all decisions. At any given point, an administrative leader has only certain facts before him. He has to take decisions based on this. If we start criticising him in the light of facts which we know or he knows later, we encourage the

habit of postponing decisions with the hope that better information will come later. Thus *the better becomes the enemy of the good*. This delay of decision-making affects the nation at all levels. Let me cite an instance. For years the Salem Steel Project was delayed as a result of the arguments about the *product-mix* and processes. If a decision had been taken in 1960-1963, by now, the plant would have been producing.

Our present system suffers yet from another defect —excessive emphasis on *fault-finding*. An Administrator, who takes many decisions, cannot be expected to take all of them right. *I would rather have my officers to take the majority of the decisions right and quickly than all of their decisions right but slow*. A General may concentrate on winning all his battles and yet lose the war. *I would prefer the officers to give emphasis to the time element in the decision-making process*. This in turn demands that our procedures of audit and evaluation should emphasise this aspect. Audit should shift its emphasis from pursuit of minute "trivia" and move over to overall performances. Here we should emphasise the need for encouraging bold decisions.

Our administration suffers from too many *checks and balances*. This is a relic of the old colonial era. Even little things have to come up to State Government's notice because they have to go up to the Centre. Multiple clearances are needed for even simple decisions. In a country as large as India, and an economy as complex as ours, this is bound to delay decisions. *It is in this context that our request for State autonomy should be viewed. The demand for State autonomy is for enabling the State to perform the legitimate task of eradicating poverty, the platform on which we have been voted to power by the people of the State. I have made a clear stand on this issue elsewhere. I do not propose to dwell further on this, except to say that the greater powers for the State are the pre-conditions for effective and efficient implementation of the Plan.*

The autonomous bodies in the Government companies, set up by this Government have to shed their Governmental method of working and adopt styles of management, appropriate to their lines of activity to achieve the objects set up for them.

Hence, I would like to touch on the present controversy about the technocrats and general administrators. To my mind, it appears that both these wings are complementary

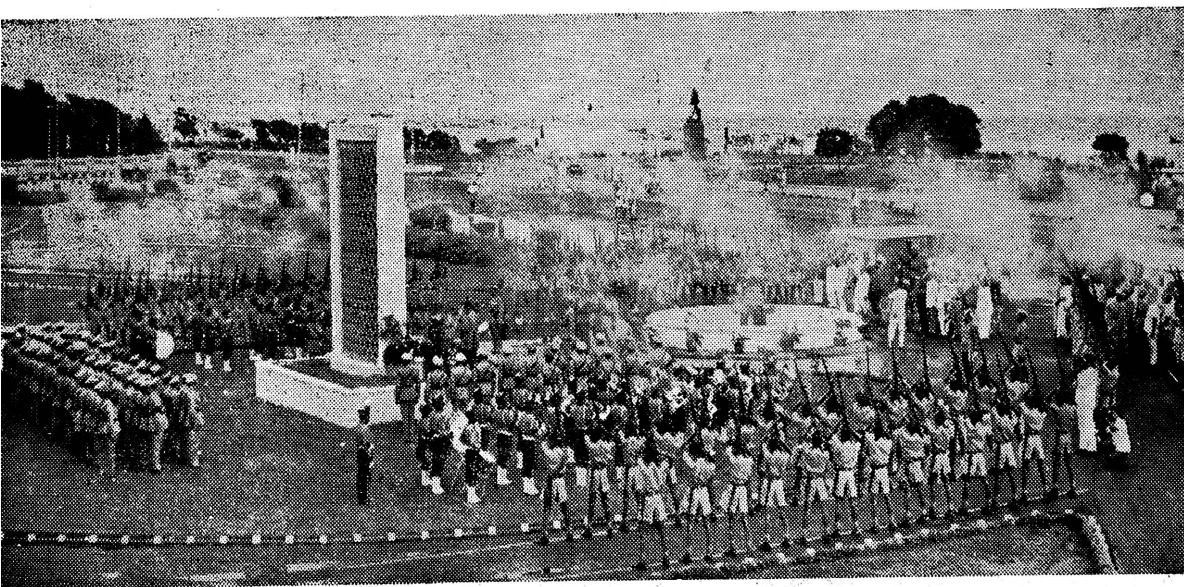
like the *convex and concave* of one and the same circle. You must train the general administrator also in technical competence and the technocrat should also be conversant with general administration. Thus training is a vital input to gear up administration at all levels.

I have been impressed by the varieties of suggestions put forward by the participants in their papers in this Seminar. I am sure that this Seminar would consider these in depth and make its recommendations to Government. *One suggestion, I would like to put forward is that a flexible approach be adopted in the implementation of rural development at district level. We are considering a suggestion for the setting up of District Rural Development Corporations or Authorities in each district. This may be strictly official in composition and be under the Collector. They may also enable the raising of resources in the form of rural deposits and local contributions. If need be, we can also assign specific taxes to these bodies. The Seminar may usefully discuss these suggestions also.*

I welcome a Seminar of this kind and a free and meaningful exchange of ideas among the Civil servants, Planning experts and Social Scientists as it is bound to clarify our thinking and generate new ideas on this subject.

Homage to Policemen killed in action.

An impressive commemoration parade to pay homage to the memory of the Police personnel who fell in action during the previous year was held at the Office of the Inspector-General of Police on 21st October 1973.



RE-ORIENTATION IN EDUCATION

In the field of education, first we attempted to increase its quantity by making it more than before, then we attempted to improve its quality by making it better than before; now we are engaged in giving it a new orientation by making it newer than before.

During the past several years. Political leaders, Educational Experts and the Special Commissions have declared that our system of education needs a revolutionary change. Their charge is, that in the basic policies and aims no fundamental changes have been effected in the system as formulated by Lord Macaulay in 1835 and modified by the Wood Commission in 1854 and Canter Commission in 1882. Even Swami Vivekananda had severely condemned our system of education. He says, "Getting by heart the thoughts of others, in a foreign language and stuffing your brain with them and taking some University degree are not real education." He further observes that "we have only to do so much for the boys that they may learn to apply their own intellect to proper use of their hands, legs, ears, and eyes."

The aim of education

Once it was thought that the aim of education was only to acquire the knowledge of the three R-s, namely, reading, writing and arithmetic. Now it has been realised that the correct aim is the development of our capacity to put to proper use the three H-s, namely, the hand, head and

heart. The process of education should be such as to arouse and develop the thinking capacity that lies dormant in every one of use. It should improve our talents. It should discipline our mind. Education kindles and develops the inherent ability of man to think. This, in turn, increases his ability to act. As a result, man is able to convert the natural resources to his benefit and acquire the needs of a comfortable life.

Extracts from the Convocation address at Madurai University by

Dr. V. R. Nedunchezian
Education Minister.

Defects in the present-day education

The Present education to-day produces persons with factual knowledge but not with capacity to think. It teaches the details of the past but does not give directions about the future. It makes the student a mere store-house of information but with no capacity to digest them and to get benefit out of them. It trains his power of memory but not his power of understanding. In course of time, the quantity of factual information committed to memory is reduced to one tenth of what was learnt. On the contrary, education should enable a man to increase his capacity ten-fold by using what he has learnt as a student.

Education of practical value

In recent times, there have been great changes in the politics, evaluations and methods of the social economic and political fields. These changes throw out several challenges; but the present-day education does not help us to meet these challenges. Education should provide us with the necessary means to satisfy our individual and general needs in the social, economic and political fields. What is important is not how much one has learnt, but how he utilises what he has learnt. What is the benefit derived by him and his country from his education? This is the burning question of today in the modern world.

Raising the standard of Education

Raising the standard of education is a subject commonly discussed and debated. The teacher plays the key-role in any system of education. To raise the standard of education, we should have teachers of high standard. At present there are no definite guide lines in the appointments of fully equipped and trained teachers. There are rules that so far as schools are concerned the graduate teachers should undergo one year training. Perhaps it would be better if similar provision is made for the teachers in the Colleges also. The Universities may examine this and make their recommendation to the Government. The admission to the Teachers' Training Course should be based on the attitude and the suitability of the candidates.

The Chief Minister handing over to the Vice Chancellor of Madras University a cheque for Rs. Ten thousand presented by the students' wing of D.M.K. to institute Anna Memorial Lectures in Madras University.

Thiru K. K. Shah, Governor, Presenting a shield to the Chief Minister for having written Drama Dialogue for 'Manohara' at a function held at Centenary Hall on 12-10-73.



After constructing 50,000 tenements and allotting them to 50,000 families comprising 1.5 lakhs erstwhile slum dwellers, at a total cost of Rs. 9 crores the Tamil Nadu Slum Clearance Board is now educating these hapless families on how to live in these flats. This imaginative venture has attracted the attention of World Bank experts who want to give this as a model for slum re-housing in other parts of the World.

What is being done in Tamil Nadu under the Slum Clearance Programme does not end with merely the eradication of slums and multi-storeyed flats coming up in their places. The residents are taught to avail the sophisticated modes of living which are built into these flats. In addition, the housewife who moves into the flats is encouraged to go in for labour saving kitchen appliances and utensils.

On top of all these, arises the question whether by sheer negligence the multi-storeyed flats will once again revert to mere slums in concrete.

The Tamil Nadu Slum Clearance Board has demonstrated by word and deed that it is very well aware of these dangers and is also aware of the sociological problems of slum clearance. After rehabilitation of slum dwellers in the modern tenements, the Tamil Nadu Slum Clearance Board was posed with these problems; how to prevent insecurities, frustration and anxieties; how to improve standards of living and contended life. Anticipating the possible problems, the Tamil Nadu Slum Clearance Board decided to set up a Trust to deal with the problems.

Sponsored jointly by the Madras Christian Council of Social Service, the Tamil Nadu Slum Clearance Board and the '77' Society, the New Residents Welfare Trust, Madras was formed on December 30th, 1971. The object of the Trust is to provide expert social service and advice to families newly housed in the Tamil Nadu Slum Clearance Board Housing Projects.

THE MANAGING TRUSTEES OF THE TRUST.

Chairman	..	Rt. Rev. L. Newbiggin, Bishop in Madras.
Vice-Chairman.		Thiru Rama Aranganal, M.L.A., Chairman, Slum Clearance Board.
Secretary	..	Mr. N.I. Khan.
Treasurer		Mrs. D.L. Gopal Ratnam.
Trustees	..	Dr. M. Aantaramman.
		Mr. K.G. Veeraghavan.
		Rev. M. Azariah.
		Mr. K.R. Ramaswamy, Chief Engineer, Slum Clearance Board.
		Mr. N. Sivanesan, Secretary, Slum Clearance Board.
		Mr. D. Soundara Pandian.

WORLD BANK LOOKS INTO TAMIL NADU SLUM REHABILITATION PROJECT

VISIT OF WORLD BANK TEAM TO SLUM PROJECT

Mr. Kenneth A. Bohr and Mr. Reedfort from International Bank for Reconstruction and Development at a Day Care Centre.



NOW THEY'RE TAUGHT WAYS OF BETTER LIFE

In order to finance the trust during the year 1972, a grant of Rs. 60,430 was given to the Trust by Christian Aid, London.

For the years 1973 and 1974, a similar grant of Rs. 2,16,000 was given by the Evangelical Central Agency, Germany.

Beginning with three projects on February 15th, 1972, the work of the Trust has now been extended to 13 Tamil Nadu Slum Clearance Board Housing Projects. One Resident Welfare Officer is appointed to each newly built estate. The Trust now employs one Executive Officer and 14 Residents' Welfare Officers. (R.W. Os.) All the R.W.Os. are M.A. in Social Science.

Immunisation.

The Residents Welfare Officers arrange small pox vaccination, cholera and typhoid inoculations with the help of the Corporation of Madras and motivate the people of the area and educate people to avail this facility. In women's groups, advice is given regarding family planning and they are referred to suitable centres. With the help of German Leprosy Relief Association, leprosy diagnosis and treatment is done at Nochinagar and Thandavaraya Pillai Chatram.

Nutrition.

A survey is done of under-nourished babies and the Residents Welfare Officers advice the mothers about nutrition. It is also attempted to ensure that the Government's Bread and Milk distribution scheme is properly used by the mothers to feed only children below 6.



Women living in Slum Terenents assemble at community centre to carry out pisee-work handieraft and earn during leisure time.

Young people of the areas are helped by the Residents Welfare Officers to conduct cleanliness campaigns on Sundays.

Happier Homes.

Kalyani Hospital and Rainy Hospital are running mini-health centres at Nochinagar and Cemetery Road (West) respectively and the Residents Welfare Officers help the people to use these facilities.

An Exhibition on Happier Homes was held to educate the mothers in all aspects of health and it is

proposed to hold such Exhibitions in every area. Every day 10 of the residents, who visit these exhibitions, will be given free gifts by drawing lots, to induce all of them to become aware of the requisites of Happier Homes.

(i). Pre-Schools (Day Care Centres) are run by the Department of Social Welfare for children of working mothers or children deprived in some other way. This is run in 23 centres with 60 children in each. The Department of Social Welfare is employing one Balsevika and 2 Ayahs in each Centre and providing a nutritious mid-day meal

at the cost of 20 paise per meal per day. The Residents Welfare Officers maintain cards per child regarding social development, medical aspects, etc. He extends all his assistance to the Department. Toys have been collected from many donors.

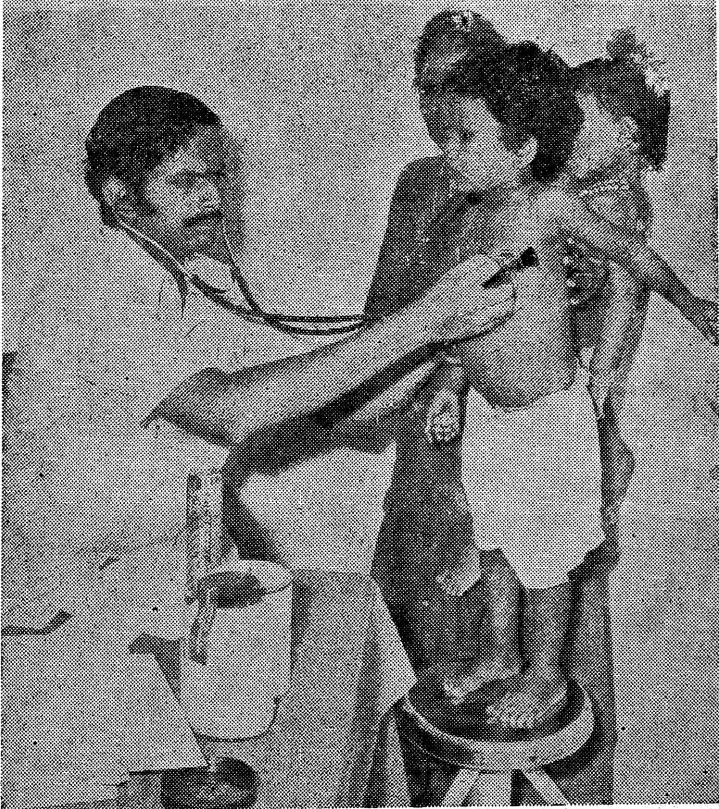
(ii) Night Schools are held for children to watch their progress in schools and help them to do their home work.

(iii) Adult education, literacy classes are being held for adult women.

The women are taught skills to utilise their spare time profitably. Tailoring machines are provided from contributions received from Voluntary Agencies. In certain areas tailoring machines are provided with the assistance of SIDCO. Training is given free. After training, they are helped to find employment. For instance, Radha Silk Emporium have recently taken 11 women. In the community halls women, who have acquired skills, are encouraged to assemble and produce handicraft items which are collected and sold at home and abroad. Thus many residents are able to supplement their earnings.

12 women have been trained in leather batik. We have orders from Sweden, Denmark and United Kingdom. There is a move to register this as an industrial co-operative through the Department of Industries and Commerce. 50 women are being trained in Patch work and there are orders for this from Radha Silk Emporium and New Delhi.

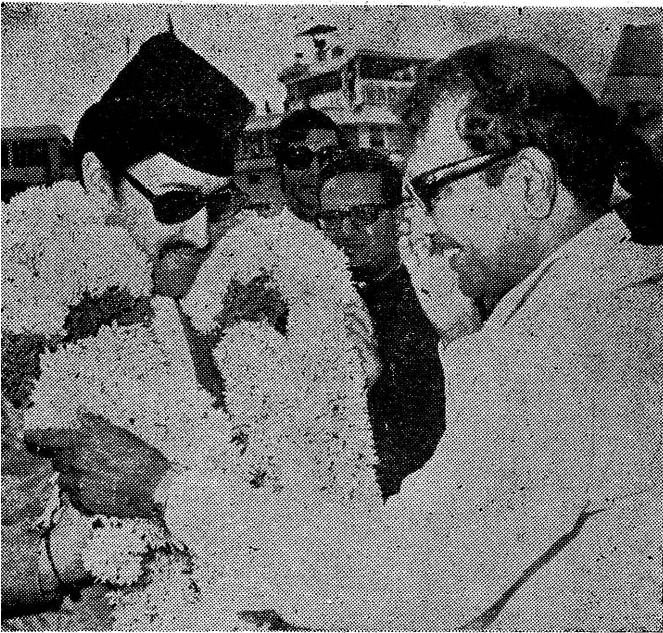
The Resident Welfare Officers being post graduates in the Social Service have developed a cadre of local leadership in the young to initiate much needed social changes in each area. The change commences with individuals in the use of sanitary fittings and kitchen-ware and extends to influencing them towards happier home theories. In the ultimate, social cohesion and community life is built around these happier houses in all Slum Rehousing Projects. So why will not World Bank be interested in what Tamil Nadu Slum Clearance Board is doing in Madras City ?



Medical Check up in slum areas and (Top) a view of Happier Home Exhibition which evinced the attention of Chief Minister.

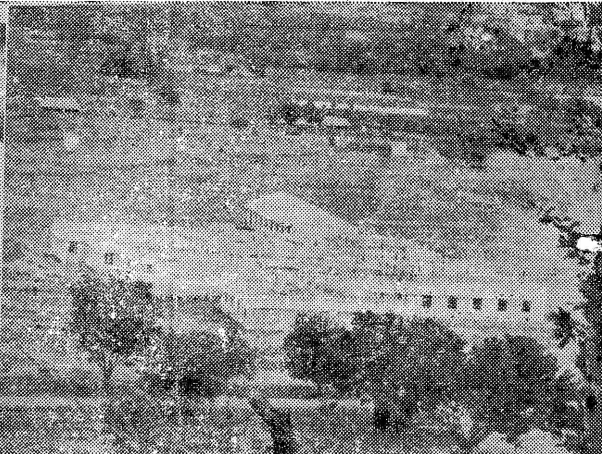
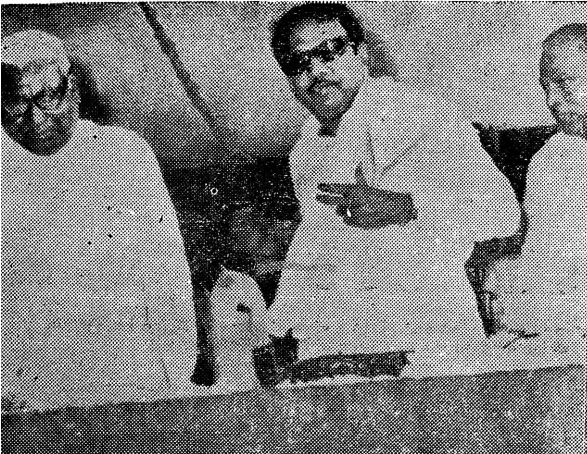


Top : The Wellington Staff College for Army Officers is the only one of its kind in Asia Training Cadets of all nations in military strategy. Photo taken when Defence Minister and Chief Minister visited the college last month.



Left : King Birendra of Nepal being garlanded by C. M. in Madras.

Bottom : The Ninth Beggar Rehabilitation Home was inaugurated in Deviakurichi in Salem district on 23rd October 1973 by Defence Minister Thiru Jagjivan Ram, who commended the scheme for other States in India.



THE GASTROENTEROLOGY CONFERENCE

The three-day 14th Annual Conference of the Indian Society of Gastroenterologists was inaugurated at Tamizhagam, Ootacamund, on 14th September 1973 by Hon'ble Minister for Public Health and Family Planning, Thiru K. Anbazhagan. The Minister commended the efforts of the members who had worked hard to present the results of their various pieces of research work, epidemiological and other surveys. He was particularly happy to note that arrangements had been made for a Post-Graduate teaching session following the Conference. The Minister made a strong plea to the scientists to concentrate on developing indigenous drugs, using especially the various herbs and plants of medicinal value found ubiquitously throughout India.

Dr. H. K. Chuttani, in his presidential address, gave a masterly account of the epidemiological, clinical, actio-pathological and therapeutic approach to the problem of intestinal tuberculosis in India. Referring to his own surveys, he drew attention to the fact that though tuberculosis is a very common disease in India accounting for nearly five million cases a year, little work has been done in regard to epidemiological and other surveys of the incidence of intestinal tuberculosis. Observing that even less work has been done in regard to publication of observed facts, he asked clinicians to be aware of the variety of problems presented by intestinal tuberculosis, both as regards diagnosis as well as treatment.

The scientific sessions commenced at 9 a.m. on 15th September with a high powered oration by Prof. S. J. Baker who was presented with this year's Warner Award for excellence associated with the most meaningful contribution to Gastroenterology. An Australian by birth but Indian by choice, Dr. Baker, who is more Indian than an Indian both in dress and manners, elaborately presented details of work based on personal observation made on experimental work carried out in his laboratories at the Christian Medical College, Vellore. His work included epidemiological, clinical, histopathological, biochemical and ultrastructural features which captivated the audience.

This was followed by presentation of 84 papers in the preparation of which nearly 200 men and women medical workers had been involved. The papers were spread out over five different sessions each day, held in two different halls simultaneously. Each 10 minute presentation was followed by a discussion during which many scintiling questions and answers were exchanged. In addition, a number of interesting titbits were also available. The papers related to varied disease conditions of the intestines-small and large bowel, stomach, oesophagus and liver. The honoured Guest lecturer this year

DR. R. SARASA BHARATI,
*Neuropathologist,
General Hospital.*

was Dr. Michael Gracy from Australia who drew attention to the effects of bacterial population on the intestinal mucosa in the aborigines in Australia. An exceedingly interesting symposium especially of current interest and value to a country with a large majority of under-nourished population, was the one on "Nutritional deficiency and the Gastrointestinal tract" which was held on the 16th. This was greatly appreciated by the members.

The Small Intestine

Nearly all aspects of the various diseases of the small intestine were largely discussed as evidenced by the presentation of 38 papers devoted to these subjects. While actio-pathology was discussed by some, the various diagnostic aids in the forms of fiberoptic-endoscopy, fiberoptic-oesophago-gastro-duodenoscopy, etc., were also discussed. Nearly 30 papers were presented on various aspects of diseases of the liver and here again newer observation, especially histopathological and biochemical were brought forward to the attention of the members.

The day concluded with a review of surgery for peptic ulcer by J. S. Shah.

Witty Answers

More scientific papers were gone through on the 17th and each

presentation was followed by many thought provoking questions and witty answers and the Chairman of the various sessions such as H. K. Chuttani, P. N. Chuttani, J. S. Shah, B. D. Pomparkar, F. P. Antia, D. V. Dutta, N. Rangabashyam, B. N. Tandon, A. K. Segha, B. J. Vakil, S. G. P. Moses, N. Vaidyanathan and E. Arthur De Sa had little difficulty in directing the sessions.

Another feature of this year's conference was the separate meeting of various special groups such as the Liver group, Intestinal groups, etc. These were meant for rather detailed discussions, exchange of views and ideas in a more elaborate and informal manner among a smaller number of participants, highly interested in a narrowed field of their speciality. This was arranged to make the discussions more meaningful than would be possible in a larger conference hall. Nearly 15 papers each were discussed in these groups and the success of these groups was largely the result of the spirit of comradere which was present throughout.

The side-lights

The scientific sessions were relieved in the evenings with programmes of variety entertainment arranged by the staff and students of the Coimbatore Medical College. Sumptuous lunches and dinners were provided on all days by various philanthropists acting as hosts to the conferring delegates from all over India. Not to be outdone, the Ootacamund Municipal Council staged a reception for the delegates on the 16th.

The ladies had arranged interesting excursions and useful visits to places such as the Sim's Park, The Needle Industries, boating in the lake, etc., in which some of the 'men' were also found to have come over to join the fun.

An interesting as well as highly informative souvenir released on the occasion was treasured by the delegates especially from upcountry and the Conference ended on notes of high optimism and enthusiasm with a decision to meet again next year, with, if possible, answers to questions and problems raised this year.

KURUVAI—THE HEARTACHE

HARVEST

Agriculture in India is generally a gamble—a gamble with the forces of nature. This gamble is seen in all its most gruesome form in the Kuruvai rice crop of Thanjavur district of Tamil Nadu.

Down the ages, Kings and Chieftains, engineers and architects, all had done their best to ensure a fair chance to the Thanjavur farmer in his gamble against nature. Lately, it is the plant breeder who did his best for the Kuruvai crop farmer.

What is the problem so peculiar to Kuruvai crop in Thanjavur? Before knowing what the problem is, it must most firmly be told and underlined with the conviction born of experience of centuries that the Kuruvai crop of Thanjavur district makes all the difference between surplus and famine in Tamil Nadu. If this crop is successful, there is a year of plenty and if it fails, it spells famine. And how many chances are there for this crop to fail? —the dice is loaded against the farmer all the way, from the sowing to the reaping stage.

The Kuruvai is a term applied to the rice crop of Cauvery basin in Thanjavur district, sown in July and harvested in October. Sowing depends on good rains in the catchment areas of Cauvery and good storage of water in Mettur dam. Incidentally, the Mettur dam itself, though designed primarily to save Thanjavur from floods, the returns from the Kuruvai crop was a powerful argument in favour of the project. The Thanjavur Kuruvai farmer waits till water is let down from the Mettur dam and even if there is a fortnight's delay, most farmers will not sow because the rains of North-East Monsoon will interfere with harvest, threshing, etc. Thus, though the Kings and chieftains, the engineers and architects had done their best, the farmer is given barely 120 days to sow and reap the Kuruvai rice crop. And the rice crop needs 110 days!

And what is so fearsome about the October rains of North-East Monsoon that strikes terror in the minds of Kuruvai farmer? Flow irrigation is practised with a

vengeance in Thanjavur district. The river Cauvery is made to flow over the entire delta with the result that every bit of land in Thanjavur delta tract is wet—soaking wet—wet with 140 days of flow through a maze of canals, miles and miles of it running through the delta. The October rains induced by North-East Monsoon drips in a constant downpour accompanied by high winds and a pall of cloud. The wet land starts flooding after the least bit of rain, the rain never stops and the sky is overcast for days together. The Kuruvai farmer could not dry his paddy or thresh it; nor could he transport it for de-husking.

At this stage, the plant breeder gave a helping hand to the Kuruvai farmer by means of adaptive research. First, he gave the high-yielding ADT-27. When it was found that the wet conditions tended to "lodging" near harvest time, he gave a mutant plant which was both non-lodging and high-yielding in "Karuna", a mutant of ADT-27 and IR strain coming to harvest in 108 days, leaving him a margin of a fortnight between letting out of water from Mettur Reservoir and the onset of North-East Monsoon.

The Thanjavur Kuruvai crop now runs into 9 lakhs tonnes grown on 6 lakh acres leaving a marketable surplus of 3 lakh tonnes. A large number of mechanical driers have been installed in the district. If the State has turned the corner in its food resource, it is not a little due to the fact that much of the gamble in Kuruvai harvest has been removed by painstaking skill. Much remains yet to be done. For one thing, there is the Rs. 50 crore scheme for modernising the delta channels of Cauvery river. This scheme has attracted World Bank assistance as it has been commended by many visiting Teams of Experts. The State Government is however proceeding with the work pending flow of World Bank assistance.

Procurement of paddy is effected by Food Corporation of India and

the State Civil Supplies Corporation. The F.C.I. has 100 purchase centres in various parts of the district, apart from 15 mobile purchase units while the State Civil Supplies Corporation has 175 centres and 20 mobile purchasing units in the district. The two organisations will mop up most of the marketable surplus each spending Rs. 12 crores roughly. Due to the abolition of levy system, private agencies are also eager to make purchases though the magnitude of the purchase by Governmental agencies coupled with the announcement of a higher procurement price of Rs. 70 per quintal left the private agencies very little strangle hold on the Kuruvai Farmer. In fact, the situation this year is one which ensured a fair deal to the farmer by forcing traders to offer fair remuneration for a produce which has come to the market after so much of anxiety. With three agencies, i.e., the F.C.I., the State Civil Supplies Corporation and private trade making purchases, there is little evidence this year of distress sales so common with Kuruvai paddy because of monsoon conditions, hampering with drying operations.

By systematic policy of rice procurement, the Government of Tamil Nadu has built up a stock of foodgrains, i.e., rice as well as coarse grains and millets which enables the State to flood the market at any time when food prices are seen to be on the increase. This year the State was also in a position to supply foodgrains at pool prices to several States all over India. The chief receipts are:

1. Kerala .. 121,000 tonnes rice.
2. Gujarat .. 6,000 tonnes rice and 16,000 tonnes millets.
3. Mysore .. 5,000 tonnes rice and large quantities of millets.
4. West Bengal .. 3,000 tonnes rice.
5. Maharashtra .. 11,500 tonnes rice and 5,000 tonnes millets.

Between the years 1967 and 1973, total food grain production in Tamil

Nadu has risen from 54.58 lakh tonnes to 72.02 lakh tonnes; the increase in production has been more striking in rice which during the same period increased from 38 lakh tonnes to 59 lakh tonnes.

The following are some of the letters of thanks received by Tamil Nadu acknowledging foodgrains supply :

**Mysore Chief Minister thanks
Tamil Nadu Chief Minister
for supply of paddy**

The Chief Minister of Mysore Thiru D. Devaraj Urs has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Chief Minister of Mysore says, "You had been kind enough to release 5,000 tonnes of paddy in Tamil Nadu for conversion and consumption in Mysore State. I am grateful to you for coming to our assistance at a moment of great difficulty. Your help is most timely and will do much to meet the needs of our people in Mysore State".

**Maharashtra Food Minister
thanks Tamil Nadu Chief
Minister for supply of paddy**

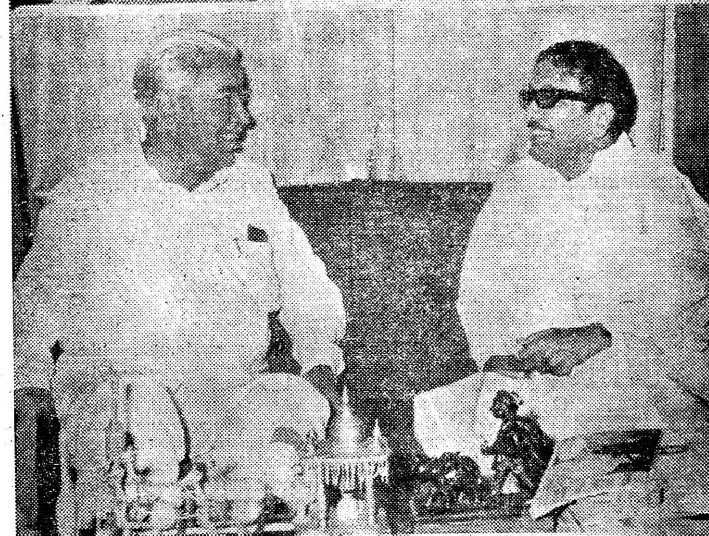
The Food Minister of Maharashtra, Thiru Sharat Pawar has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Food Minister of Maharashtra says, "I am extremely grateful to you and the Government of Tamil Nadu for having kindly agreed to supply 10,000 tonnes of paddy to Maharashtra. I am also thankful for having consented to the purchase of 5,000 tonnes of bajra and maize in the open market by Maharashtra"

Top : Thiru Sharat Pawar, Maharashtra Food Minister called on Chief Minister on 8-10-73.

Middle : Thiru Narendra Singh Zaili Gujarat Minister for Civil Supplies with Chief Minister on 17-10-73.

Bottom : Dr. Gopal Nagh, West Bengal Minister for Labour with his Tamil Nadu counterpart on 9-10-73.



The Madurantakam Co-operative Sugar Mills Ltd.

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We surmounted all in a decade
With a solemn purpose of serving the Nation.
- (2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.
- (3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.
- (4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

the living past

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

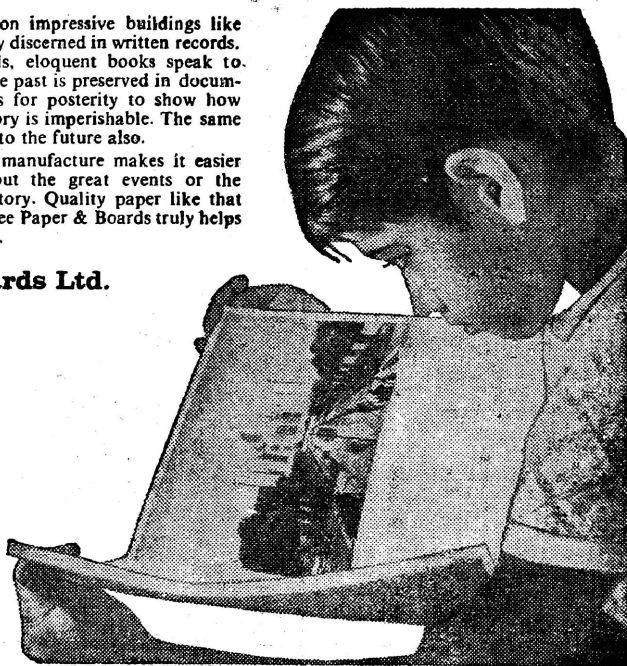
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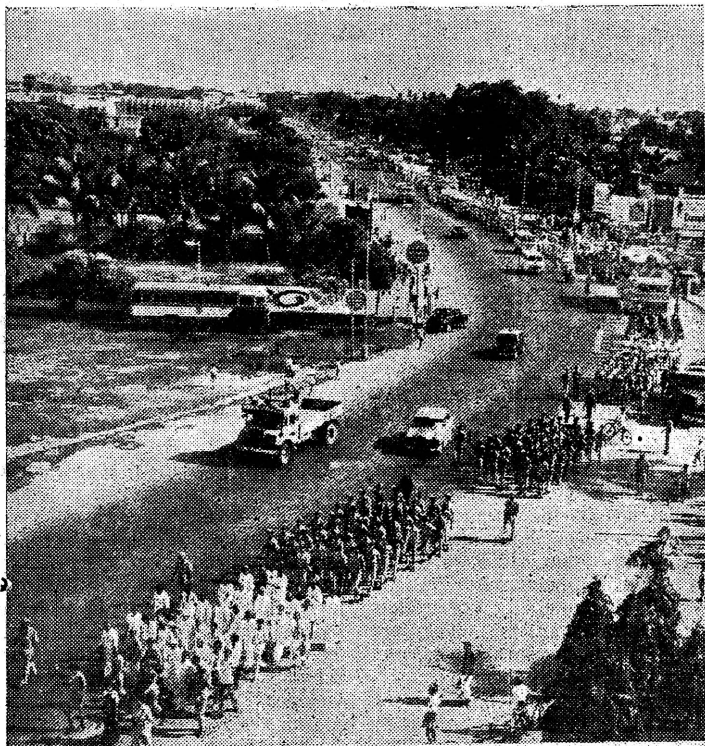
The Watermark
of Quality



TAMIL NADU IS

IN TUNE WITH GANDHI

GOVERNOR'S TRIBUTES ON GANDHI JAYANTHI CELEBRATIONS



Top:—The panoramic view of the procession of JOTHI conducted in connection with the Gandhi Jayanthi Celebration in Madras.

Bottom:—The scene at the start of JOTHI from Gandhi statue at Marina Beach

Every year we are reminded of the charismatic personality of Mahatma Gandhi, his mission and his message, as we celebrate Gandhi Jayanthi through the length and breadth of India. From whatever I have seen and felt in Tamil Nadu, I can say with confidence that Tamil Nadu is entirely in tune with Gandhian philosophy and approach to social, economic and political issues. What strikes me most is that the Government, the public and the leaders of all parties vie with one another in celebrating the occasion in a magnificent manner. This is indicative of their firm faith in the ideals that Gandhiji preached. This massive demonstration of faith in Gandhiji's philosophy will, I am sure, herald a new era in public life, where leadership will depend upon capacity to serve the masses, ability to take work from equals and anxiety to judge issues on merits.

The Gandhi Mandapam is humming with activity because it is in tune with the desire of the people to understand, appreciate and apply Gandhian philosophy and adopt Gandhian approach in the solution of our national problems. The seminar that is proposed to be held in connection with the Gandhi Jayanthi Celebrations at Gandhi Mandapam covers a wide range of subjects pertaining to Gandhiji's views on several matters of public importance and eminent persons will focus attention on the fundamental teaching of Mahatma Gandhi.

What's Missing ?

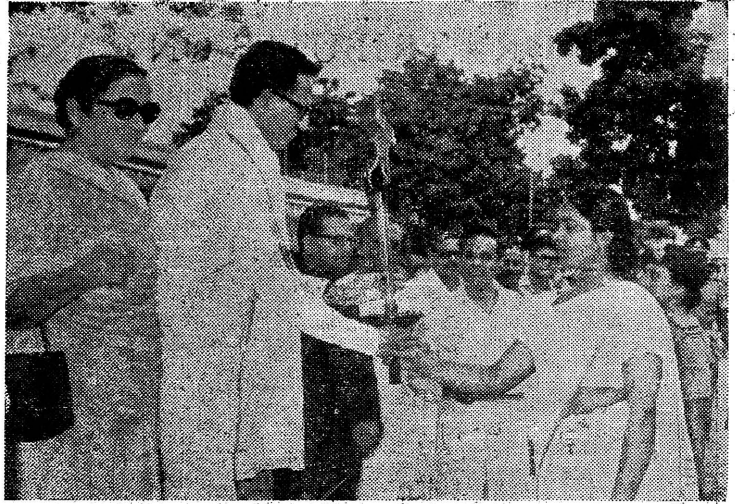
What we are missing today is a concerted effort to interpret Gandhiji to younger generation and to put up a fight for norms in public life. Mahatmaji insisted upon not only "ends being pure" but the "means also being pure" because he was aware that unless purity of means was insisted upon, weaknesses inherent in the diversity of India like communal, linguistic, religious and regional differences

would be exploited. Instead of making efforts to seek unity in diversity, they would play upon these inherent differences for their personal ends. He insisted upon being a giant amongst giants because he knew that bossism was likely to prevent growth of personalities of individuals and thereby stunt the growth of India. Under him Jawahar could grow and Rajaji could work, Sardar and Subhash with all their differences in approach could take pride in accepting his leadership.

We have yet to learn the art of seeking solutions within the inherent limitation of diversity, geographical, linguistic, etc., and benefit by the vast opportunities that the size and the climate of the country provide. There is no other country in the world which can be self-sufficient. India can not only be self-sufficient but her diversity can provide enough material to search for solutions for the benefit of the mankind. What is needed is a composite out-look and cosmopolitan approach. The movement we form the habit of judging issues by the same yardstick that we want others to adopt, our problems will be over.

What Price Democracy ?

Democracy thrives only when people believe that they cannot grow unless people around them grow that they cannot benefit at the cost of others, that people cannot be fed on slogans, that discussion and compromise are the essence of a co-operative way of living, that the collective will of the people should always prevail over factional calims, that public life is an instrument of service to the common man and not an opportunity for promoting self-interest, that real statesmanship consists in clearing confusion and establishing rule of reason and not in creating confusion and exploiting narrow selfish ends. Gandhiji strived to inculcate these basic virtues of democracy and unless Gandhism again catches the public mind and pervades the length and breadth of India, democracy will flounder. Gandhiji stood for, lived for and died for the welfare of the masses. That which ensured good for a few at the cost of the good of the vast masses created vested interests and eroded the sound basis of a welfare State.



Thiru K. Anbazhagan, Minister for Public Health, receiving the Gandhi Jothi at Gandhi Mandapam on 2nd October 1973.

Let us be clear about the Ram Rajya which Gandhiji expounded throughout his life time. Ram Rajya combines both democracy and welfare State. In Ram Rajya, the people are the masters, because they are the voters. Vote getters can never be masters. They are servants of the people and remain in power till they serve them. Democracy prescribe norms both for the electors and the elected. It is by their mutual understanding and co-operation that democracy is sustained. A serious obligation is cast on the welfare State to look after the lowest in the rung on the priority basis. Unless the common man in the lowest rung is raised and is provided with opportunities for self-expression and self-development, the base of democracy will be eroded by frustration. We have to make it convenient for the vast masses of people to make democracy a way of living. Their social and economic backwardness should not be allowed to be exploited. A perpetual dual between the virtues and weaknesses of democracy provides opportunities for demagogues to make people captives of slogans. The moment people surrender their reasoning the momentary impulses of frustration, weaknesses creep in. We have to guard ourselves against exploitation of any sort, consistent with the spirit of Ram Rajya.

Gandhiji's principle of non-violence needs to be interpreted properly. Why did Gandhiji stick to non-violence to the last? It was intended to prevent dictatorship. Democracy and violence internally cannot go together. Gandhiji's non-violence did not mean cowardice but it instilled courage and wiped out traces of slavery. Gandhiji defined "non-violence" as a "dynamic condition meaning conscious suffering". "It does not mean meek submission to the will of the evil-doer." He went further to say "Non-violence is not a cover for cowardice, but it is the supreme virtue of the brave. Exercise of non-violence requires far greater bravery than that of swordsmanship".

Proper Interpretation

The significance of the path of Truth advocated by Gandhiji has to be clearly understood. He insisted upon the right means to be adopted to secure right ends and attached greater importance to the means than to the ends. Truth ensures purity of means. In this age of mass media of communications, extreme care has to be taken to see that they are not converted into instruments to mislead the people. They must be utilised to keep the people well informed so that the people may not be deceived by wily politicians. Newspapers, films,

posters, books, column writers, leaders, politicians and platform speakers have to see that the creditability gap does not widen.

Socialism which ensures equality of opportunity is recognition of the dictum that "collective strength is always superior to individual strength". However powerful the leadership may be and however rich a few men might be, no country can successfully compete in the world unless it has the widest base and its collective resources expand continually. This calls for hard work on the part of all sections of society. The days of a few rich living a life of luxury with their unearned wealth are gone. Concentration of economic power will be a danger to democracy. It is to avoid this contingency that planning should be from the bottom and the people in the lowest rung of the ladder have to be given top priority. Gandhiji wanted to wipe every tear from every eye.

Healthy Leadership

For building up healthy leadership and for sustaining it at all times, we have to remember that Gandhiji pleaded for tolerance at all levels,—religious, social and political. He clearly felt that evolution of democracy is not possible if we are not prepared to hear the other side because if intolerance becomes a habit, we run the risk of missing the truth. We have therefore to cultivate tolerance and also an ability to benefit by criticism. These two cardinal principles, which contribute to healthy leadership, strengthen the base of democracy. Equality of opportunity and recognition of talent, irrespective of pulls of patronage or power should be ensured. No society can survive unless it accepts and adheres to a moral base. It is socialism which provides a moral base. What is duty in religion becomes moral in socialism. To Tamil Nadu goes the credit for having created conditions in which Gandhian ideals of Ram Rajya, Truth and Non-violence, Democracy and Socialism can flourish and prosper.

If anybody asks us, "what is Indian Economy?" we give the reply 'It is mixed economy', meaning that it does not belong to any ideology and that it envisages the co-existence of public sector, joint sector, private sector, and so on.

My answer is that "Sarvodaya" is the real name of our economy and this concept was given by Mahatma Gandhi. This is an all comprehensive term, embracing many sectors and suited to our national genius. This is our distinctive contribution to economic thought.

Welfare of all

Sarvodaya means welfare of all. In essence, this consists of making the village the central focus of all planning and developing an industrial pattern which would revolve round the rural economy, rather than the other way round where the villages function as mere satellites of the adjacent urban areas. Sarvodaya ensures social justice, equality of opportunities and all-round development. The core of Sarvodaya is self-reliance and self-confidence.

Mahatma Gandhi's approach to rural economy and rural development, starting from the village as the basic unit, not only shows the path of self-reliance, but also strengthens the democratic fibre of the people. Soon after attaining freedom, we took up democratic decentralisation to strengthen the grass roots of democracy. Panchayat Raj and the Gandhian Sarvodaya present a purposeful and meaningful combination which makes our democracy unique in that the stress is on evolution and not on revolution. It is this combination which gives content to our democratic socialism. This system is backed by the sanction of the people and eliminates violent class struggles.

The people in the highly advanced and civilised countries are tired of their affluence, based on their cut-throat competitive economy and sophisticated ways dictated by a permissive society. India shows a way of life based on sobriety and simplicity, detachment and altruistic values without discarding, at the same time, the benefits of science and technology. Our democratic socialism is an eye-opener for the world, rooted as it is in Sarvodaya.

Gandhiji was a pragmatist. It was to give work and wages to the starving millions that Gandhiji started the Swadeshi movement and adopted khadi, hand-spinning and charka which are the symbols of self-reliance and self-help. It paves the way for economic freedom and equality. This approach of Gandhiji

caused misgivings in the minds of some that Gandhiji was totally opposed to science, but how could he have announced a prize of a lakh of rupees for the invention of a charka based on an improved technology suited to the village conditions in India if he were opposed to total mechanisation.

Gandhiji was unique in devising means and methods calculated to achieve simultaneously a number of objectives. His concept of education was so perfect that at every stage it nurtured the concept of casteless society, emotional integration and self-employment. His constructive programme was a unique instrument of Sarvodaya and public relationship. It enabled him to establish closest links with the people, helped the country to build up the economy of the poorest man and without creating tensions, brought about equality. On the one hand, he preached the ideal of trusteeship and on the other, insisted upon rural reconstruction. He converted weaknesses of wealth into virtues of democracy by simple living, service of the lowest and by exalting dignity of labour.

Let us return to Gandhiji and carry him to the younger generation. That is the only way to peace and prosperity.

WELFARE FUND FOR BEEDI WORKERS

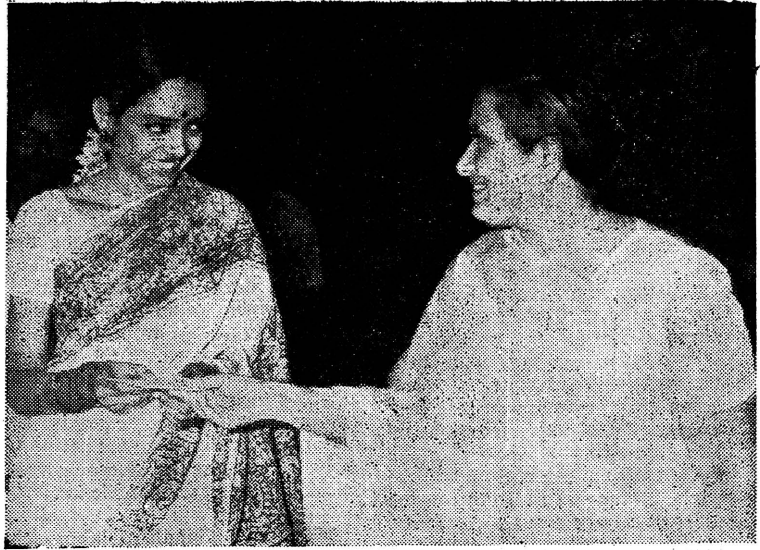
The State Labour Ministers met to review the progress made in implementing the decision taken in January that the existing wages be raised to Rs. 3-25/3-50 for rolling 1,000 beedies without prejudice to the higher wages already prevailing in some States or areas.

It was explained at the meeting which was presided over by the Hon. Union Minister Thiru K. V. Raghunatha Reddy, that the decision had been implemented in most of the States including Tamil Nadu. Thiru Reddy told the meeting that he would pursue the matter with the remaining States.

The meeting also discussed the question of setting up a welfare fund for beedi workers to be financed by the levy of a cess on tobacco, and also of providing more stringent penalties under the Minimum Wages Act. The question of fixation of fall back wages was also discussed.

GANDHI | A WORLD LEADER

In a speech delivered at Gandhi Mandapam, Guindy during a symposium organised there on 5th October 1973, as part of this year's Gandhi Jayanthi Celebrations, Tamil Nadu Governor Thiru K.K. Shah said :



Thirumathi Madhuben K. Shah, presenting the awards to the winners in the oratorical contest held at Gandhi Mandapam on 7th October 1973 conducted in connection with the Gandhi Jayanthi Celebration.

To describe Gandhiji as a world leader is neither an exaggeration nor an epithet chosen by blind followers. It is universally acknowledged and lovingly recognised. The Charter of the United Nations Organisation calls upon people all over the world to promote social justice, ensure better standards of living and secure freedom of action. This World Charter also reaffirms faith in fundamental human rights, in the dignity and human worth of a person, in the equal rights of men and women and of nations, large and small. A world where no country is subject to the tutelage of another is the goal of the Charter. Threat or use of force is to be avoided. Long before the United Nations Organisation came into being and gave its Charter, Mahatmaji asserted the dignity and worth of the human person and started the first passive resistance movement "Satyagraha" in South Africa at the beginning of this century. **Gandhi believed that the weapon of truth, if firmly grasped and purposefully used, could lead to peaceful change without resort to violence. This was indeed one of the great ideas of our century which makes Gandhiji a world leader.** The eminent British Historian Arnold Toynbee gives his impartial judgment in these words : "Gandhi was as great a benefactor of my country as he was of his own. Gandhi made it impossible for the British to go on ruling India, but at the same time, he made it possible for them to abdicate without rancour and without dishonour,

Gandhi's objective was to raise the spiritual level of life in a spiritual slum—the slough of politics. Gandhi waded into the slough showed how the slough could be purified and remained personally uncontaminated by his immersion in it. This gives the measure both of Gandhi's own spiritual statue and of the magnitude of his service to mankind at a turning-point in human history.

Our plans have not fulfilled our expectations because we have started from the wrong end. Industrialisation on the basis of democratic socialism was exposed to weaknesses inherent in both the systems. Mixed economy made us victims of either concentration of wealth or of poor productivity as neither the employer nor the employees could be persuaded to co-operate for higher productivity resulting in rapid multiplication of resources. Gandhiji's concept of self-sufficiency of village economy based on planning at village level was intended to bridge the gap between the urban area and the rural area and to put local resources to maximum advantage. It would have ensured decentralisation and developed a co-operative base.

The subjects that are being discussed at the seminar are of particular value to a nascent democracy and a developing economy like ours,

I have every hope that this Seminar will succeed in suggesting ways and means which can correct imbalances and lead us to Gandhian path.

Bold Leadership

Crippled by mounting costs of defence weakened by jealousies and pressures of balance of power and worried by rising frustration, India, even with the dynamic and bold leadership, finds it very difficult to overcome internal pressures, sectional interests and to concentrate available resources for fighting poverty. With his usual wisdom, Gandhiji foresaw the inter-play of these national and international forces and the weaknesses and provided for collective strength being built up by first looking after the weaker sections spread all over the rural area and securing the welfare of the urban area by preventing the exodus and pressures on the urban area.

Gandhiji's concept of Gram Raj and villages being made self-sustained economic units, either singly or in a group, had a sound basis and great political wisdom. He was touched to the quick when Lionel Curtis described our villages as "dung-heaps" and was bent upon turning them into model villages, "India lives in her seven

lakhs of villages..... I would like to go and settle down in some such village. That is real India, my India", he said. Planning must necessarily take care of generating maximum advantage of available resources, both in men and material. Khadi, cottage industries and Ram Raj can be the means of utilising the available local resources to our maximum advantage. This is the clarion call of Mahatmaji—

"The cities have to adopt a pattern of village life and subsist for the villages..... In the case of the Indian villager, an age old culture is hidden under an encrustment of crudeness. Take away the encrustation, remove his chronic poverty and his illiteracy and you will find the finest specimen of what a cultured, cultivated free citizen should be. If Indian civilisation is to make its full contribution to the building up of a stable world order, it is this vast humanity that has to be made to live again..... When our villages are fully developed, there will be no dearth in them of men with a high degree of skill and artistic talent..... In short, there will be nothing in life worth-having which will not be had in the village".

Gandhiji was not against mechanisation. He did not like mechanisation where available man-power could serve the purpose of mechanisation. He did not want mechanisation to make thousands of people jobless. Nor was Gandhiji opposed to science and technology.

Whole of India in his view

Gandhiji was not content with merely stressing the need of rural development and strengthening rural economy as the base for national economy. He was so practical in his thinking and ideals that he kept the whole of India in his view and expressed his views on all matters of vital interest for the well-being of the people of India. His concept of reconstruction of villages with special reference to environmental hygiene, education, health, etc., was unique.

Doctors who have been educated at the expense of the people and who come from villages are reluctant to go to villages for service. Modern medical health services require enormous resources to

take medical aid to places where there is none. We have to go a long way in providing health services to the rural areas. Gandhiji insisted on nature-cure, not because he was against allopathy but because nature-cure was the only way to inculcate values of personal hygiene. To him personal hygiene and healthy living are of primary importance. He said "If everyone could achieve perfection in this art, there could be no disease. All that can possibly be had from the five agencies of nature must to be taken and used. They are earth, water, ether, fire and wind. This to my mind, is the limit of nature cure. Therefore, my experiment in Uruli Kanchan consists in teaching the villagers, how to live clean and healthy lives and in trying to cure the sick through the proper use of the five agencies. If necessary, curative herbs that grow locally, may be used. Wholesome and balanced diet, of course is an indispensable part of nature cure".

About Students

The most important topic that causes serious concern to us is students. Gandhiji summed it up by saying that "all education in a country has got to be demonstrably in promotion of the progress of the country in which it is given". He laid down the role of the students when he said that they must become pioneers in conservative reform, conserving all that is good in the nation and fearlessly ridding society of the innumerable abuses that have crept into it. His appeal to the students is still valid and I would like to repeat it—"Put your talents in the service of the country. I claim that the equipment for this service is a large heart and a character above suspicion. Given these two conditions every other needed qualification is bound to follow. The student who has faith, who has cast off all fear, who is absorbed in his work, who finds his right in the performance of his duties, will know that the gloom is transitory and that the light is clear". It was the desire of Mahatmaji that students should devote the whole of their vacation to village service. Tamil Nadu has already set an example in this by sending the student community for doing famine prevention work in the rural areas.

As many speakers are to deal exhaustively with important issues according to Gandhian ideals, I

need not be exhaustive. The enthusiasm and receptive nature of the audience here in Tamil Nadu is demonstrative proof of our capacity to improve our lot by our own hard work and resources and fearlessly tread the path of self-reliance. If we turn to Gandhiji for solving all our national problems, I have no doubt that we will find Gandhiji's solutions to a majority of them. May I express the hope that this will be the forerunner for spreading the gospel of Gandhiji not only throughout India, but the entire world.

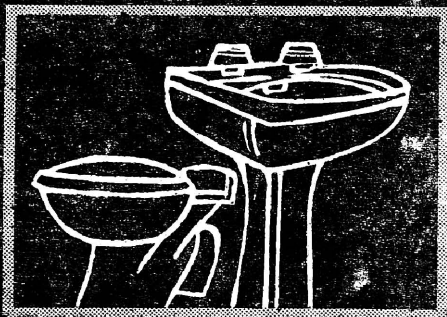
Industrial Physicians and Safety Engineers for each factory urged

The need for the appointment of a fully qualified industrial physician and safety engineers in each factory as part of a programme for the establishment of comprehensive occupational health and safety services at places of employment was stressed by Thiru. T. Duraiswami, Chief Inspector of Factories.

He was delivering the Dr. Sadagopan's Endowment lecture on "The marriage of Medicine and Engineering in Industry" under the auspices of the Tamil Nadu Branch of the Indian Association for Occupational Health.

Thiru Duraiswami referred to the colossal waste of human resources due to occupational hazards and said the need for the establishment of an occupational health service had been generally accepted and the Indian Medical Associations had urged the State and Central Government to bring in legislation for the establishment of comprehensive occupational health services at places of employment for the promotion of the health of workers in the interests of increased productivity in industry. There was simultaneously a need also for the provision of a complementary safety service at places of employment in conjunction with the health service under the aegis of the factory inspectorate to prevent accidents and occupational illness in industry.

For these services to be established he said they should have specially qualified and trained industrial physicians and safety engineers with supporting staff.

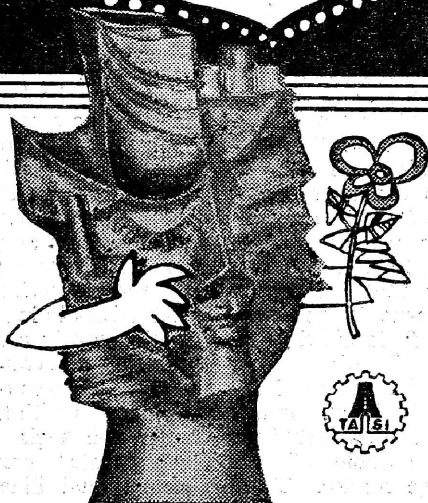


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POWER CUT IN TAMIL NADU

MARGINAL POWER CUT IN TAMIL NADU FROM 1st OCTOBER 1973.

The Government have carefully reviewed the availability and requirement of power in the State taking into account the stores position in various hydel reservoirs and the present capability of Thermal stations including relief from Neyveli. It will not be in the interests of the overall economic growth of the State to impose a total ban on new power connections, but putting up with a marginal power cut, it would be desirable to encourage the growth of new industries and agricultural production. It has therefore been decided to connect up new services and impose a marginal power cut with effect from 1st October 1973.

The main features of the proposed power cut will be as follows :—

1. Fifteen per cent cut on all H.T. industrial and commercial services and cinemas.

2. Fifteen per cent in the case of L.T. industrial services except those whose monthly consumption is 200, units and below.

3. In the case of services specified in paragraph 13 below and newspapers, weeklies, fortnightly and monthlies, the cut will be restricted to 10 per cent.

4. No new connections will be given for the display of lights, neon and other luminous discharges and tube signs for commercial purposes.

5. Agricultural supply will be exempt from the power cut but the loads will be grouped in two batches and supplies will be made to each batch. But there will be no supply between 6 p.m. to 10 p.m. Supply will however be made to both the batches from 10 p.m. to 6 p.m.

6. No cut on domestic consumption up to 150 units per month. Consumption above 150 units per month will be charged at twice the normal tariff.

7. Special permission should be obtained for availing supply to Government functions, functions of educational institutions, political conferences and association meetings.

8. Supply will be made to rice and flour mills in rural areas for 6 hours during day time either in the forenoon or in the afternoon. In addition supply will be made available between 10.00 p.m. and 6.00 a.m.

9. Supply to other L.T. power loads will be subjected to both morning and evening peak hour restrictions. Supply will be made available for a continuous period of 8 hours during day time between the hours 9.00 a.m. to 6.00 p.m. and for a continuous period of 8 hours during night time between 9 p.m.

10. For new industries and additional demands permitted to the existing H.T. industries not engaged in continuous process, supply will be made only between 9.00 p.m. and 5 a.m.

11. The demand for all H.T. supplies shall be frozen at the highest recorded demand since 1st September 1971. In the case of new industries and existing industries for whom additional loads have been sanctioned the maximum demand will be frozen at the total permitted level.

12. There shall be no cut or restriction on public lighting.

13. The following services will be subject to 10 per cent cut :—

- (i) Railways ;
- (ii) Hospitals ;
- (iii) Water-supply ;
- (iv) Sanitary arrangements ;

(v) All India Broadcasting stations ;

(vi) Telephone exchanges ;

(vii) Defence service establishments including factories ;

(viii) Harbour and Port installations ;

(ix) Aerodromes ;

(x) Observatories ;

(xi) Irrigation, power and other projects in the State ;

(xii) Rural Broadcasting Service ;

(xiii) Post and Telegraphs Department ;

(xiv) Government Press ;

(xv) Dairies and chilling centre of State Government or of any co-operative societies.

All categories of consumers are requested to co-operate with the Government in reducing the consumption and demand of electrical energy.

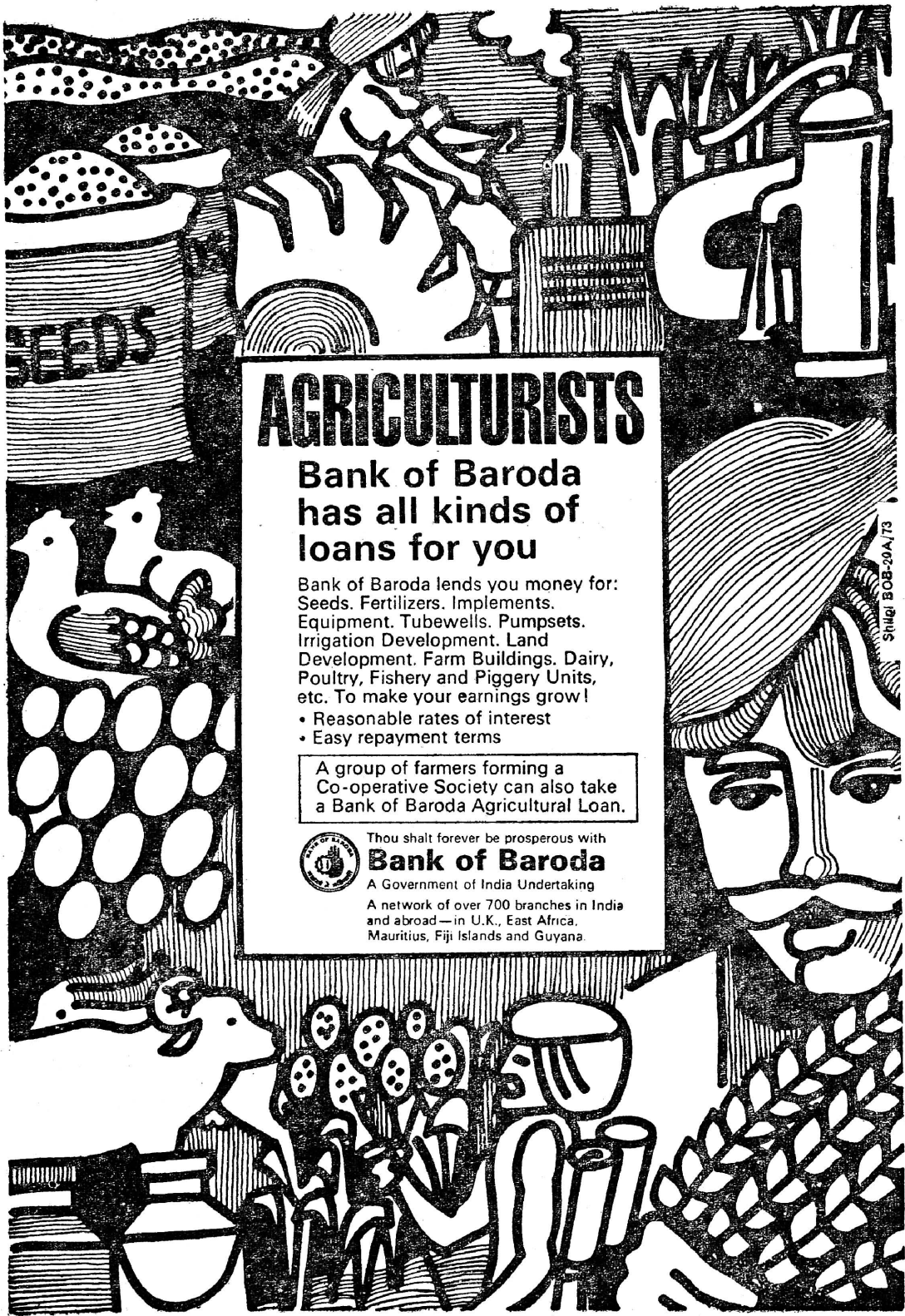
PROSPERITY BRIGADE IN SALEM DISTRICT.

The Prosperity Brigade Volunteers in Salem district have turned out remarkable work, amounting to Rs. 4,03,620 in terms of value numbering hundred and fifty one works in pieces which includes school buildings, link roads, Radio Listening Room, Reading Rooms, Community Halls, Open Air Theatre, Reclamation of fallow lands, etc.

During the year 1971-72, the Prosperity Brigade Volunteers in Salem district have completed the construction of 28 schools ; the construction work valuing to Rs. 92,328. Similarly they have constructed 79 Radio Listening Rooms, valued Rs. 1,30,056, which is a major work done by them, besides they have also constructed 18 open air theatre, value about Rs. 1,01,797.

The Government of Tamil Nadu has allotted Rs. 1 lakh for the cost of construction materials, the labour part being borne by Prosperity Brigade through their, Voluntary service to which they are not receiving any remuneration which is the Central idea of Prosperity Brigade.

F.P.O., Salem.



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POULTRY



DEVELOPMENT

IN TAMIL NADU

The development of poultry is one of the easiest and quickest ways of increasing food production in the country and of adding nutritional value to our food at the same time. So the development of poultry is of special significance to our country especially in the context of food shortage and highly unbalanced protein deficiency in the diet of the people.

Poultry-farming is recognised increasingly as an important aspect of agriculture and it has been accorded an important place in making the diet of the people a more balanced one. There are people directly and wholly dependant on poultry for their livelihood while a great many more subsidise their income from poultry.

Poultry industry in Tamil Nadu is developing rapidly. Today from the backyard unit, poultry-farming has become a commercial operation with flock sizes ranging from 500 and even up to 10,000.

DR. G. VENKATACHALAM,
B.Sc., G.M.V.C., M.S., Ph., D.
(Michigan), *Director of Animal
Husbandry, Madras.*

There are about 3,000 private poultry units maintaining nearly 4.0 lakhs of birds. Thus poultry-keeping is made both a big commercial enterprise and many have taken it as a big way. In order to improve the quality and quantity of existing poultry and with the aim of fighting the protein hunger, the department has taken several measures by giving all technical help, the required seed material in the form of eggs, chicks and birds for breeding as well as financial assistance to individuals and co-operative societies.

Position before and after reorganisation of the department.

Before the reorganisation of the Animal Husbandry Department (i.e. 1-1-70) there were 75 Poultry

Extension Centres functioning throughout the State to supply the hatching eggs, chicks and adult birds for breeding to individual breeders and to disseminate knowledge of poultry-keeping. The eggs produced and birds raised were of limited quantity. However after reorganisation things have radically changed by development and growth in the poultry industry of the State. After reorganisation the number of Poultry Extension Centres were reduced to 39 from 75 centres including the poultry sections in the District Livestock Farms. These centres have produced about 61.24 lakhs of eggs and raised 5.37 lakhs of birds in the last year as against 37.13 lakhs of eggs and 5.20 lakhs of birds produced by the 75 centres before reorganisation. This shows that there is an increase in the poultry production. Thus the ryots are encouraged to have poultry farming to increase their economic status and increase the food production.

POULTRY WORK DONE IN THE POULTRY EXTENSION CENTRES AND FARMS.

Particulars.	1967-68.	1968-69.	1969-70.	1970-71.	1971-72.	1972-73.
1 Number of eggs produced ..	3,097,249	3,713,786	2,997,026	4,179,826	5,631,295	6,124,118
2 Number of eggs set for hatch ..	684,142	761,096	369,166	590,993	898,244	790,885
3 Number of birds received by hatch.	410,465	520,275	206,290	399,978	537,032	537,462
4 Number of birds Sold for breeding.	138,600	108,412	118,549	72,953	190,533	179,578

Hatcheries in Tamil Nadu.

There are three Hatcheries functioning in Tamil Nadu, viz., Kattupakkam, Hosur and Kappalur.

The hatcheries are responsible for supplying the majority of sexed day old chicks, purchased by the breeders. Due to the rapid development in Poultry Industry, more and more farmers are purchasing Day old chicks from the hatcheries instead of incubating themselves through their birds.

In the hatcheries eggs are set for hatch and distributed to different Poultry Extension Centres, Panchayat Union Schemes as well as to public. The production capacity of each hatchery unit per month is 20,000. The each hatchery will be able to produce nearly 2.5 lakhs of chicks per year to cater the immediate needs of the public.

Hatcheries.	Number of eggs set.	Chicks produced.
Hosur—		
1970-71 ..	2,14,349	1,22,936
1971-72 ..	3,01,463	2,06,363
Kattupakkam—		
1970-71 ..	1,19,002	64,578
1971-72 ..	1,63,511	81,357
Kappalur—		
1970-71 ..	1,57,369	98,811
1971-72 ..	2,11,341	1,47,003

Poultry Breeders' Co-operative Society.

Before reorganisation of the Department (1-1-70) there were only 23 Poultry Breeders Co-operative Societies in the State. In the last two years 139 Societies have been formed by the Animal Husbandry Department.

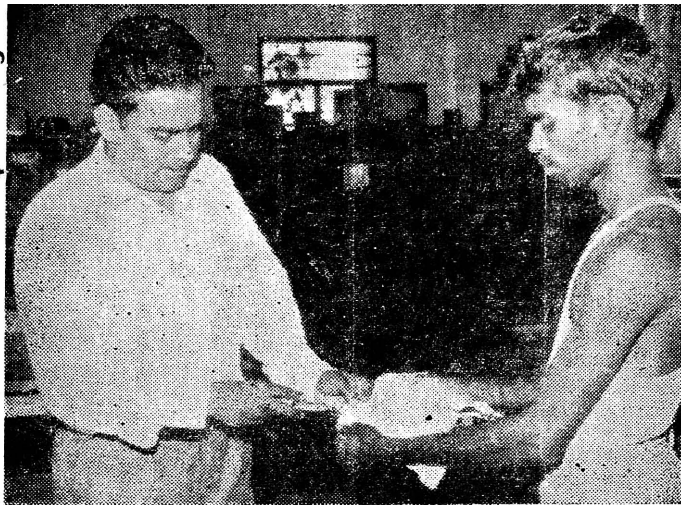
These societies help to secure necessary financial assistance and other facilities to the farmers through the service Co-operative Societies. Each society consisting of 100 farmers each having at least 100 birds and totally all the Societies would be producing nearly 10 lakhs of eggs per day. The Nationalised Commercial Banks have come forward in a big way to advance loans to the Breeders of Poultry Breeding Co-operative Society. A massive Poultry package scheme at District level has been initiated at Tiruchirappalli and Thanjavur districts with credit facilities from one of the Nationalised Banks, viz., State Bank of India which has proposed a total amount of Rs. 1.28 crores for Tiruchirappalli, Thanjavur and South Arcot districts for the development of poultry. High yielding hybrid birds are reared under the scheme. Follow-up work of these poultry units is being done by Animal Husbandry Department. The Animal Husbandry Department was supplying balanced Poultry Feed both to the Government Poultry Units as well as to breeders from the Feed Mixing Units of the Department at no loss no profit basis.

Marketing.

The success of the Poultry Package Schemes depends mainly on marketing programme. This is fully realised and necessary action is being initiated. The marketing scheme is initiated to give steady market and fair price which is already in existence and to arrange for marketing eggs produced by the above scheme. Since the production has reached to 10 lakhs per day and more by the new units started, marketing has to be tackled with. Hence Government has planned to organise marketing of eggs through Poultry Development Corporation Private Limited. Poultry Development Corporation Private Limited will take over the Commercial and Development activities. The Corporation will assist in production, processing, collections and marketing of Poultry and Poultry Products.

Until the formation of Poultry Development Corporation Private Limited, the following Centres were under the control of Animal Husbandry Department:—

Poultry Extension Centres ..	39
Hatcheries	3
Poultry Production Centre ..	2
Feed Mixing Units	2
Intensive Poultry Development Block.	9



Dr. M. S. Mani, Superintendent, Poultry Farm, Kattupakkam, is seen giving a preventive injection to a chick.

For successful commercial poultry farming, control of communicable diseases is a necessary prerequisite. Even with the best housing under hygienic surroundings and adequate Nutrition with Vitamin and mineral additives, contagious poultry diseases are a threat to successful poultry farming. Backyard poultry farming is of limited utility. Though it has helped many families by supplementing their income it cannot as a rule be adopted for commercial production of Poultry and cannot acquire the proportions of an industry.

Poultry are susceptible to many diseases from the day they are hatched to the day they are either disposed off after laying period or for meat. As is well known the maximum producing capacity of birds depends on the early growth period of the chick. Therefore farmers have necessarily to go in for day old chicks and rear them in their own farm to adulthood for the best results. This means that the responsibility of protecting the birds vests with the farmer who has to rear them from the Chick stage. The following is a list of various diseases the birds are susceptible from the day they are hatched to the day they begin to produce eggs and the control measures that could be adopted to prevent such diseases.

Coccidiosis : Young chicks from a day old to about 8 weeks with the peak at 5 weeks are highly susceptible to coccidiosis. The mortality percentage is very high 80-90 per cent in the chick stage and few that may

survive become carriers of the disease. The disease is manifest by the appearance of blood in the motion and examination of the stools, reveal, oocysts of coccidia. It can be avoided by the administration of coccidiostat drugs in the feed mixtures, like Sulphamezathine, Neftin and Bifuran.

DR. D. A. VICTOR,
G.M.V.C., B.V.SC., M.SC.

*Department of Preventive
Medicine.*

Pox is the next disease which affect birds from the early stage to when they become adults. It has been seen that the mortality rate in chicks is very high up to 100 per cent where as adult birds usually survive the disease. Besides the disease increases the susceptibility of the birds to a great extent to the normal bacterial residents of the respiratory tract and other intestinal flora leading to Coryza and enteritis.

Prevention : Chicks from a day old to 1 week are protected by vaccination with pigeon pox vaccination by feather follicular method. This brings about a resistance to fowl pox and birds are immune to pox from 4th day after vaccination to 6 weeks old when they have to be revaccinated with Fowl pox vaccine.

Ranikhet disease : This is the most dangerous of all the diseases. Many farmers have been very badly dis-

DISEASE CONTROL PROGRAMMES IN POULTRY FARMING

couraged by this disease. Folks after flocks have been wiped out by this diseases. It affects birds of all ages which have not been previously protected. It produces severe diarrhoea and death in a short period. In acute diseases the bird may die without showing any specific symptoms. It is not amenable to treatment and possible recourse is to protect the bird.

Birds are protected in two stages (a) young chick about a day to a week are protected by vaccinating them with F1 strain of the Virus by nasal instillation. (b) The protection so afforded is reinforced by Ranikhet disease vaccine at the age of 8 weeks when the birds are immune for their productive period. It has been observed that about 20 per cent of the birds are likely to lose their immunity after a period of one year when they have to be revaccinated.

Besides these specific diseases the farmer should be vigilant in preventing parasitic diseases as well like round worms and tape worm, which should be eliminated by periodical deworming of birds.

The ecto parasitic affections like feather mange and scaly legs though by themselves are not fatal they affect the production, and the food in-take is reduced, which in turn adversely affects the egg production. Periodical dipping and disinfection of sheds should be able to control these affection.

Deficiency diseases also take their toll in a poultry farm. An ill balanced diet may lead to many deficiency

diseases like Torticollis, Paralysis ruffled feather and reduced resistance. A known complete food mixture to combat all the deficiency diseases should be adopted. (Many companies are now coming forward with such mixed food stuffs for poultry feeding.)

Coryza and Avian Leucosis complex are the diseases which can be effectively controlled by culling. As any attempt to maintain the diseased birds on the farm and treating them may lead to serious repercussions with insidious spread of the infection and, the ultimate elimination of these diseases from the farm will become a great problem.

In short a poultry farmer is advised to adopt the following suggested programme :—

(1) Purchase day old chicks in January, February or March.

(2) Prepare your farm, for receiving them by thorough disinfection of the brooder, feed troughs, water trough, etc., and also keep ready adequate feed and clean water supply throughout the period of their growth.

(3) In the first week after their receipt protect them with F1 strain by nasal instillation.

(4) Second week protect them with P.P.V. by ether follicular method.

(5) Seventh week protect them with R.D.V.K.

(6) Eighth week protect them with F.P.V.

(7) Every month from the day they are brought they should be put on 3—2—3 day treatment with coccidiostats like Sulphamezathine Sol. at 2 per cent level in drinking water.

(8) June, July, August they would start laying and should be maintained on adequate, well balanced nutritive diet with ample supply of water all through.

(9) Deworm at the end of March then in September, November and January.

(10) Birds should be periodically checked for ectoparasites—fleas, louse and ticks. If necessary dusting the birds with equal parts of D.D.T. and Ash will suffice.

(11) Regular and prompt consultation with the nearest Veterinary Surgeons, for vaccination and advice should be undertaken.

Deficiencies and how to avoid them.

The important nutritional deficiencies that occur in poultry are :

Protein deficiency.—There is no definite system of protein deficiency except poor growth, egg production and egg size. The lack of aminoacid lysine, cause depigmentation of feathers of young stock. A mixture of animal and vegetable proteins may be used.

Calcium, Phosphorus and Vitamin D. Deficiency.—These nutrients are necessary for bone formation. Young stock are unable to walk, Lameness and retarded growth are common symptoms of these deficiencies. Layers assume a frequent squatting position, egg production and shell thickness decreases. The Leg bones and wings become fragile and hatchability becomes lowered.

To overcome these deficiencies, the stocks should be provided with adequate amounts of Limestone (shell grit), Oyster shell, vitamin D₃ and bonemeal. The ratio of Calcium : Phosphorous should be about 2 : 1.

Manganese.—The deficiency of manganese causes perosis characterised by swollen and twisted Leg bones, flattered back joints, slipped tendons and shortened and bent or twisted bones. In adult birds egg shell, egg production and hatchability are lowered and embryos are deformed.

When excessive amounts of calcium and phosphorous are present in feed, usually the manganese deficiency is exaggerated. Wheat bran is rich in manganese and it may be added in the feed. Usually it is added as manganese sulphate.

Salt : Deficiency of salt results in retarded growth, and poor feed efficiency in young chicks, and lowered egg production and hatchability in adults. Salt is added either by itself or along iodine and manganese in salt mixtures. Fishmeal and meatmeal usually supply the salt needs for poultry.

Vitamin A : The deficiency causes droopiness, emaciation, staggering, nervousness ruffled feathers and sub-normal growth. The eyes become swollen and inflamed and eye lids become sticky. The mortality rate is high, egg production and hatchability also decreased.

Vitamin A deficiency is best prevented by addition of synthetic, stabilised Vit. A.

Riboflavin : The deficiency causes retarded growth Diarrhoea, nerve degeneration and curled toe paralysis. In breeding birds the egg production and hatchability is reduced. The deficiency can be overcome by providing fish and meat products, brewers dried grains, lucerne meal, fermentation products, milk products or synthetic riboflavin.

Vitamin K : This deficiency increases the clotting time of blood and young chicks may bleed to death, spontaneously or from injury.

Lucerne meal at a level of 2 per cent protects birds from this disease. Menadione helps to correct Vitamin K deficiency.

Vitamin E : This deficiency causes nutritional encephalomalacia crazy chick disease, the head is retreated and twisted. The bird is unable to walk. Tremours of head and legs and oedema of subcutaneous fatty tissues and enlargement of hock may be observed.

Wheat grain, green forage, vegetable oils, whole grain, lucerne meal and synthetic vitamin E products are added to feed to prevent this deficiency.

Vit. B₁₂ (Cyanocobalamin) : In this deficiency there is a depression in growth rate, hatchability and feed efficiency.

Animal proteins such as meat meal, liver meal, fish meal and cow dung are used besides pure vitamin B₁₂ to supply this Vitamin.

Choline : The deficiency causes perosis, depression in growth, egg production and hatchability. The liver becomes fatty and mortality rate increased.

The sources for choline are Soya bean meal, fish-meal, liver meal, fermentation products and yeast.

Niacin : This deficiency causes inflammation of mouth and tongue, retarded growth, perosis and scaly leg in chicks. The egg production and hatchability is reduced.

Yeast, fishmeal, bran, wheat barely and lucerne meal are good sources but synthetic Vitamin is quiet economical for supplementation.

Pantothenic Acid : This deficiency is manifested by retarded growth, rugged plumage, crusty scales around beak and eyes, eye lids sticking together and thickened and hardened skin.

For supplementation of rations, synthetic Vitamin, yeast, lucerne meal, milk products and Molasses are used.



Australorp breed is being developed for wide distribution as its eggs are brown in colour.

EVOLVING SUPERIOR STRAINS FOR HIGH EGG PRODUCTION

Hy-line, Rani Shaver, Arbor Acre are the talk of the day among the Poultry farmers of India. In the farmers' language they are high yielding strains with a productivity of 250 to 280 eggs during the first year of lay. Besides they mature early by 20 weeks and have a layer house livability 90 to 95 per cent.

These high yielding strains are in fact 'hybrids', i.e., cross between two pure strains or lines which by themselves are high yielding. The hybrid progeny have a superior performance than their best parent stocks. But they do not breed true. When the males and females of those hybrids are mated they produce offspring which are worse than their parent and even the grand parent stock.

Strains.—The pre-requisite for producing hybrids is high yielding strains and lines which breed true. When the females and males of a strain are mated the progeny very closely resemble their parents in their performance traits such as livability, egg yield, efficiency of feed conversion, egg size, etc. According to the definition of the American Poultry Breeders Association a

'strain' is a closed flock of birds with inbreeding and selection for particular trait or traits for a period of five generations and given a name. A strain is always qualified by the degree of performance in respect of the economic traits. Why do strains breed true? The answer to this question is not very simple.

V. RATHNASABAPATHY,
B.V.Sc., Ph. D. (Missouri).
*Professor of Animal Genetics,
Madras Veterinary College.*

Gene the determinant of character.

—A new individual develops from a single cell, 'zygote', formed by the union of the 'sperm' the male sex cell and the 'egg' the female sex cell at the time conjugation. This single microscopic cell has in it concealed the latent potentialities of the future grown up adult, whether it is going to be large or small, black or white, high or low yielding. Microscopic examination of the cell reveals thread like structures in it known as 'chromosomes'. The number of chromosomes is constant for a

given species 23 pairs for men and 39 pairs for poultry. Chromosomes are in pairs. The members of the pair are identical in shape and size. In poultry, therefore, there are 39 pairs or 2 sets of 39 each. One set is the contribution of the father through the sperm and the other set that of the mother through the egg. The father and mother contribute equally to the heredity of the off spring.

Further studies reveal that each chromosome has in it a number of factors. "genes", arranged in a linear order. The corresponding member pair has the same number of genes arranged in the similar order. A pair of genes, of which one the contribution of the father and other contribution of the mother, determine a particular character.

Causes of variation in a character.—The pair of genes which determine a character may be identical or one of them might be slightly different in its chemical structure, when it is called a mutant gene. When they are identical in an individual we call it homozygous (AA) for the character when dissimilar we call it heterozygous (Aa).

One of the special and natural phenomenon that laid the foundation for the science of heredity is that these two factors (genes) functioning together throughout the life of the individual, segregate in a pure form at the time of gamete (sex cell) formation and one each is assorted to any of the gametes. The gametes contain one half the number of chromosomes found in the body cell.

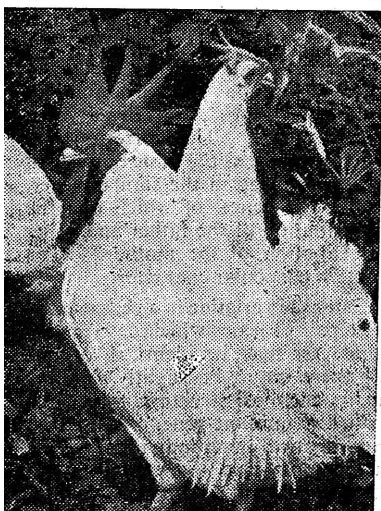
A homozygous individual will produce only one sort of gametes, but a heterozygous individual two sorts of gametes. Let us take a male and a female both homozygous for the same character, the gametes from them will be all alike and the offspring born of their matings will be similar to those of parents,

Suppose the parents are heterozygous for the character, there will be 2 kinds of gametes in the male and 2 kinds of gametes in the female. During fertilisation there is the possibility of 4 kinds of zygotic combinations and three kinds of individual AA ; Aa : aa ;

Thus heterozygosity leads to variation in character in the offspring and homozygosity leads to uniformity and predictability of character in the offspring. Homozygous individuals breed true. Heterozygous individuals do not breed true.

A high degree of homozygosity in these loci in the parents leads to a greater uniformity and high degree of heterozygosity in parents leads to variability in the offspring. Strains are highly homozygous for the traits under selection and this is the cause for their breeding true.

Victoria breed cock and hen.



Heat is essential for growing chicks and it is provided by means of electric lamp.

Breeding for high homozygosity—

High homozygosity means a large number of loci have similar genes at each locus. This is attained by mating individuals which have similar genes, i.e., mating related individuals. Full sibs (brother and sister) have similar genes since they had their inheritance from the same parents. It can be mathematically stated that 50 per cent of the total number of genes in their body are similar. If we mate these full sibs there is the probability that half of the fifty per cent of the genes at least will become identical, i.e., 25 per cent of loci will become homozygous. Continued full sib matings will lead to further increase in homozygosity in each successive generation and the 10th generation 88.6 per cent of the loci become homozygous. This we call as highly inbred line.

Mating of less closed related individuals e.g., half sibs, second cousins or distant relatives, leads to slower rate of inbreeding. It takes a longer time to attain a high degree of homozygosity.

Close inbreeding leads to homozygosity of both good and bad genes that exist in the foundation flock. The precaution to be observed in such mating system to develop high yielding strains to have the foundation flock with merit about average of the population and make rigorous selection for the traits.

The situation can be compared to a bag containing a mixture of silver and gold coins. When it contain 70, gold and 30 per cent silver coins, suppose you start blindly picking up two at a time. The chances of picking 2 gold coins are greater now than when the bag contain 30 per cent gold and 70 per cent silver coin.

Hybridisation.—When we cross two lines which are highly homozygous each for different sets of genes

say BB and bb, the resultant offspring will be heterozygous Bb and this is called a hybrid. Sometimes this has a better performance than either of the parents. This phenomenon is called 'hybrid vigour'. The more the lines are inbred, the greater will be the heterozygosity of the hybrid and larger the hybrid vigour. Before we could understand the reasons for this 'hybrid vigour' we have to have a knowledge of the kinds of gene action.

Kinds of gene action—There is a strain of mice called the 'pygmy'. The trait is due to a pair of genes pp. The pure strain of normal mice is PP. The pygmy weights 19 grams at birth and the normal variety 20 grams. A cross between the two, which is heterozygous (Pp) weights 15 grams. This may be graphically represented as follows :

Normal Cross Pygmy			Scale of merit
PP	Pp	pp	
20	15	10	Actual weight (in g)
+5	0	-5	Gene value.

Here the gene. 'P' adds a value of 5 g. 'P' takes away a value of 5 g., a combination Pp results in the addition of this kind of gene action is called 'dominance' 'P' is dominant over 'P'.

Imagine a situation where the heterozygous individual weights 25 grams, the positions of the three individuals will be :

Pp	Pp	Pp
25	20	10
10	5	-6

Here the heterozygote is much superior to the best homozygote. This kind of gene action is called 'over dominance'.

Just as genes at one locus interact to produce an additive action, dominance or over dominance, genes at one locus can interact with genes at another locus to produce similar results. There can be two loci interaction, three loci interaction and much complicated inter action of genes at many loci.

The economic traits like egg yield, egg size, etc., are controlled by genes at many loci. The kind of gene action is mostly additive and to a small extent dominance and overdominance also play a part.

Hybrid vigour is mainly due to the phenomenon of 'over dominance' a kind of gene action where heterozygote is superior to either of the homozygotes. It may also be due to a lucky combination of genes at one or more loci which occurs in specific crosses.

Producing hybrids.—The prerequisite for producing hybrids, as has already been stated is highly inbred lines with high degree of homozygosity. Lines are developed from high yielding strains. Strains are less inbred than the lines, but more inbred than the individuals in the population of the breed.

A high yielding strain is developed from a foundation flock of a large number of birds say in hundreds, which have a higher average merit than the average of the breed. Usually it has a reasonable degree of variability. To illustrate let us say the average of the White Leghorn breed in Madras City is 140 eggs per annum. The foundation flock for developing the strain should have an average of, say, 180 eggs with a range from 140 to 230.

Closing of the flock for breeding purposes, standardisation of management and rigorous selection of breeding stock for high production in each generation, will result in a strain in a period of five generations or 7 to 8 years.

When a strain is well established further selection yields less and less response. Further improvement can be achieved only by a genetic analysis of the population, measurement of the kind of gene action, additive and dominance available and adoption of suitable breeding procedures.

The next step in this direction is development of highly inbred lines.

The strain birds may be divided into small families say of one cock and 10 hens and each is closely inbred by continued full or half sib mating until a high degree of inbreeding is attained. The greater the inbreeding the more advantageous would it be for investigation and progress.

There is no mixing of families; We need to have 50 to 100 lines. Many of the lines may die out during this process due to the phenomenon of 'inbreeding depression' which is the opposite of 'hybrid vigour'. When several lines are established, we resort to crossing between the lines and record of performance of the line crosses or hybrids.

For easy illustration let us begin with five lines and name them numerically as 1, 2, 3, 4 and 5. All possible crosses should be made among these lines, such as 1×2; 1×3; 1×4; 1×5; 2×3; 2×4; 2×5; 3×4; 3×5; and 4×5. The performance of each cross, the egg yield etc., is measured and tabulated as follows:—

Performance of the cross (Annual egg yield)

	1	2	3	4	5
1		×	×	×	×
2			×	×	×
3				×	×
4					×
Total					965
Average of a single cross					193

The amount of additive gene action is measured by the general combining ability of the lines. The general combining ability of line 1 is indicated by the average performance of line 1 in its crosses with the rest of the lines. Similarly the general combining ability of line 2 is measured from the average of line 2 in its crosses with the rest and so on. This is illustrated in Table-1.

TABLE-1
General combining ability of the lines.

Line	Average no. of eggs per annum in all crosses.	Rank
1	200	3
2	205	2
3	210	1
4	180	4
5	170	5

Grand average 193

We find from the table that line 3 has the best combining ability with the rest; Next in order lie lines 2, 1, 4 and 5. If it is desired to improve the strain further lines 3, 2 and 1 can be pooled and bred together to form the improved strain. 4 and 5 may be discarded for this purpose.

Choosing lines for hybridisation.—In this experiment, suppose lines 3 and 5 have given an average of 250 eggs per annum and it is the highest in all the crosses; Then there is something in this cross which results in a specific combination of genes leading to high yields. This is the specific combining ability of the two lines 3 and 5. This is capable of repeatability of performance as long as lines 3 and 5 are kept pure.

Line 3 × Line 5
(230)/(235)

Hybrid
(250)

Similarly we can have a 4 way cross based on the experimental results as follows.

A × B C × D Grand parent lines (230) / (235) (240) / (245)

H1 × H2 Parent lines:
(250) | (255)

Hybrid Hybrid:
(280)

Conclusion.—From the foregoing account one can understand how tedious and costly will it be before we can strike at the valuable hybrid chicken. It is a team work of scientists and it involves costly computer analysis of data. Arbor Acre, Hy-line, Rani Shayer are the results of hard work of entrepreneurs with lot of capital sunk in the business. Can our farmers afford to do the Job? What the farmers are not able to do the Government should come for the assistance as in case of many other costly public undertakings. It may be questioned whether we cannot take advantage of the work already done by such big business concerns as the Unichick, Hy-line, etc? Yes, we can, provided we can afford to pay heavy prices for the chicken, permit the flow of capital to foreign companies and be perpetually dependent on foreign firms for our poultry business. If we can make it cheaper and competitive why not we make a try right now and immediately. I am fully confident that we can produce the hybrids for India by employing our capital and scientists.

Layers need airy, well ventilated and cool houses for efficient production. Each fowl should be provided a minimum of 3-4 square feet of floor space. The comfort zone for maximum production is from 60° F to 70° F. (15.5° C to 21° C).

Location.—The house should be located in an elevated ground with well drained soil, which will prevent stagnation of water and dampness.

(ii) Shady trees and green turf around the house will keep the house cool, and avoid the radiation heat.

(iii) The house should be at a reasonable distance from operators residence for all day efficient management.

Design of construction.—Poultry houses should be simple in design and cheap in construction, using the locally available materials. The long axis of the building should be oriented towards north-south, to remove much of the adversities of sun's rays in the morning and afternoon. It must be rat proof.

Foundation.—The foundation trench should be 1.5' in depth and 1.5' in width. Over 6" depth of brick and mortar or brick and cement foundation, a 9" foundation wall should be constructed to a height of 1.5', i.e. 6" above the ground level. Over this 4½" wall to a height of 1½" should be constructed all round. The height of the eave from the ground level is 6' and at the ridge it is 8'.

Wall.—The space between the wall and the eaves should be covered with ½" to 1" chicken wire mesh.

Roof.—The roof should be made out of light roofing material, asbestos or aluminium sheet. The height of the roof at the eaves and at the ridge can respectively be 6' and 8'.

Flooring.—A good concrete flooring is essential for the poultry house. Deep litter should be 6" thickness and it should be dry by periodical racking. Saw dust, wood shavings, paddy hulls, groundnut husk and chopped sugar cane tops can be used as littering materials. In general 3 to 4 square feet floor space can be provided for each layer.

POULTRY HOUSING

Dr. R. D. MICHAEL,
G.M.V.C., B.V.Sc., M.Sc.,
Professor of Hygiene,
Madras Veterinary College.

Accommodation facilities are more important than anything else to get the best of results from Poultry Farming. Simple in design and cheap in construction, the long axis of poultry houses should be oriented towards north-south so as to remove much of the adversities of the sun's rays in the morning and afternoon. Above all, it must be rat-proof.

Lighting.—A 40 watts electric bulb for every 200 square feet floor space fixed at a height of 6' will provide the needed light for the night feeding.

Equipments :

(a) **Feeder.**—The feeder may be of the linear or circular type. It can be made out of wood or metal. The space requirement are as follows :—

Adult birds.	
Linear feeder.	Circular feeder.
3"—4"/bird.	1' to 1½' dia.
	1' for every 20 birds.

(b) **Waterer.**—Automatic water trough either a linear or circular type can be used. It can be made out of metal, polythene or cement-concrete. Each bird must be given 1" watering space (linear type) or one 18" diameter waterer for every 50 birds. The waterers, feeders should be protected by grills.

(c) **Nest boxes.**—These have to be used for collecting clean eggs without damage. Every five birds must be given one individual nest box or one community nest box for every fifty birds. It can be made out of wood or metal. Individual box is of 15" × 12" × 15" and community nest box is of 1 × W × H — 5' × 2' × 15".

(d) **Perches.**—These are fitted for giving comfort and roosting facility for the birds. Each perch should be made of hard strong wood of 2" × 1½", with edges rounded off and fixed at a height of 10" from the floor. Each bird must be given 6" — 9" of perching space.

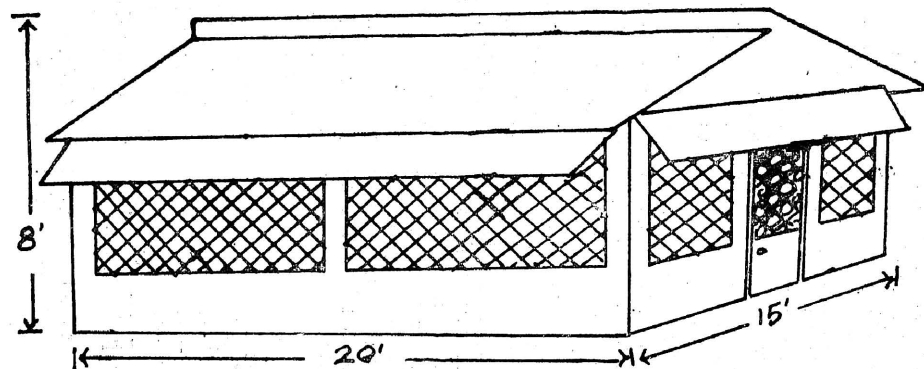
(e) **Grit box.**—A small wooden or metal box containing shell grit should be provided at the rate of 1 for every fifty layers.

(f) **Dust bath.**—It is preferable to avoid ectoparasites by providing dust bath made out of wood or metal, filled with ash or sawdust suitably medicated with D.D.T. or Gamexane.

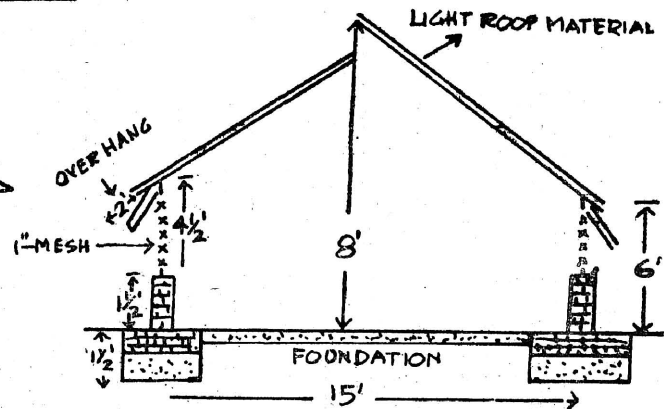
Suitable layer house plans for 10 back-yard layers, 50 and 100 layers unit in deep litter houses are given separately.

POULTRY HOUSE - 100 LAYERS UNIT

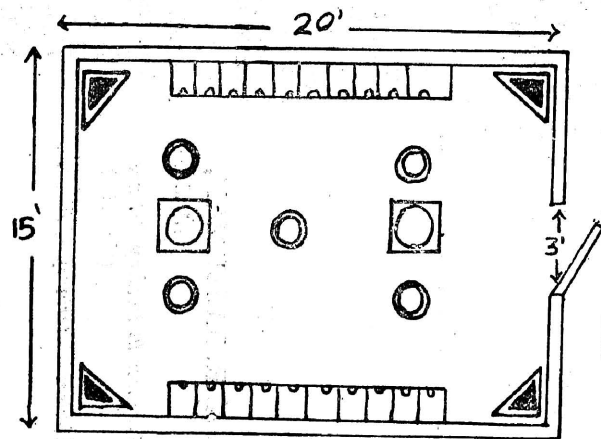
$L \times B \times H = 20' \times 15' \times 8'6"$



ELEVATION



SECTIONAL END ELEVATION.



FLOOR PLAN

DETAILS:

- TOTAL AREA - 300 SQ. Ft. (3 SQ. Ft. / BIRD)²
- FEEDERS 5 NOS. 15" CIRCULAR - HANGING
- WATERERS 2 NOS. 18" CIRCULAR POLYTHENE
- NEST BOX 2 NOS. 1120" X W 12" X H 15" - 10 HD/ES
- GRIT BOX 2 NOS. DUST BOX - 2 NOS
- GATE 1 NO. 6' x 3'
- LITTER 1' DEEP (PADDY HUSK, SAWDUST OR WOOD SHAVING)



WATERER



FEEDER



GRIT BOX, DUST BOX



NEST BOX

BACKYARD POULTRY KEEPING

Of late, thanks to the scientific method followed in poultry-keeping, it has become a paying hobby to those who are interested in it. But backyard poultry keeping demands from those engaged in the line extra amount of delicate and diligent care in the matter of collection of eggs from poultry homes in time and storing them in proper place, etc.

By

DR. A. R. KRISHNAN,

M.V.Sc.

*Lecturer in Poultry Science
(Genetics).*

Madras Veterinary College.

Poultry-keeping in backyard is an useful and interesting hobby. It pays to keep a few fowls in the house, whether one is in the town or in the village. It involves a little cash investment and the home can make use of the products. The hens may be sheltered in a house of 6' x 3'. This small house can be located in any place in the open near the house or in the garden. One can even rear small sized flocks on the terrace of the house. Eggs in excess of the household requirements can be sold and this could provide the petty cash needed for the day-to-day expenses. It is at the same time educational and very much absorbing to care and manage your own birds and reap the harvest of the labour at home. Children will find it a pleasure to tend to the fowls.

Materials needed for the construction of house

The house can be of 6' x 3' dimensions. About 3' to 4' height from the flooring the house must be covered by wooden planks. Deep litter system of rearing can be followed. The planks needed for the house can be got from old unserviceable dealwood boxes. Flooring can be covered either by wooden planks or with 16 gauge wire mesh. If the flooring is covered by wire gauge the house can be kept in the garden. The droppings can form good manure. Just below the house a pit of 6' x 3' should be dug so that the droppings fall in it. The droppings should be covered with ash or saw dust periodically to prevent fly nuisance. Round the poultry house keeping of ornamental floor pots gives an added attraction. If one keeps the poultry house in the verandah the flooring material should be of wooden plank. Saw dust or paddy husk to about 6" can be laid to form the deep litter.

Materials —

Wooden reapers —

6' x 3" x 3" — 4.

6' x 3" x 2" — 4.

3' x 3" x 2" — 4.

Light roofing — 6.

3/4" gauge wire netting — 20.

Nails, hinges, padlock, etc.

It is advisable to get 8-12 week old birds to start the farm of this

nature. These birds obtained from a Government farm or from recognized and reliable private farms are protected against all contagious poultry diseases and as such there may not be any difficulty in rearing them.

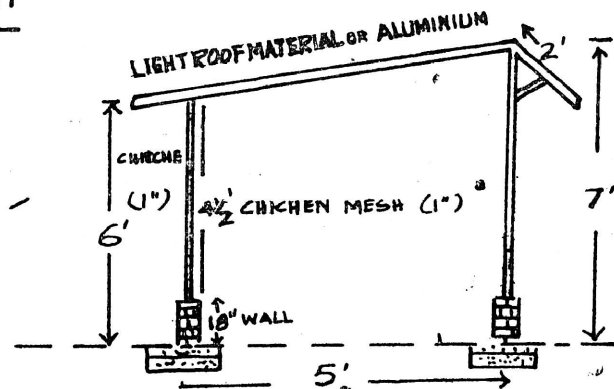
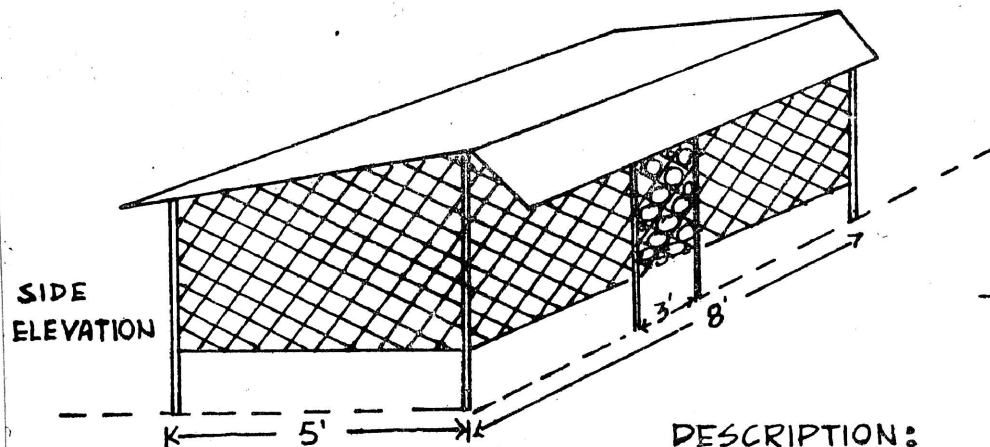
The pullets come to lay from about 20-22 weeks of age. It is profitable to maintain them for one year of laying. Usually the performance in the second year falls by 15-20 per cent compared to the initial year of lay. Normally, white leghorns lay about 15-18 eggs in a month. The receipts from the eggs thus, at 30 P. egg works to Rs. 4-50. The birds ordinarily consume about 3-3.3 kg. feed in a month. The cost of feeding a hen at Re. 0.75/kg. of feed will come to Rs. 2.47. The feed requirements can be obtained from the Government feed mixing units if near by. Shell grit in a box of 6' x 6' x 6" must be made available to the birds to avoid thin shelled eggs. To improve the quality of the yolk and egg greens at the rate of 50 gm. per bird need to be given. Ordinary kitchen garden greens can be made use of. Raddish leaves and leaves from the drum-strick trees form excellent substitutes.

The eggs laid during the day must be frequently collected from the poultry house, to avoid breakage and soiling of the eggs. Eggs are to be stored in a cool airy dark place. Eggs stored properly keep well for more than 5-6 days. Excess eggs above the household requirements may be disposed of then and there.

If those who are maintaining small poultry flocks will handle them more carefully and efficiently and thus increase their contribution to the food supply and those who do not now have poultry will obtain and properly care for small flocks, the total effect will be substantial.

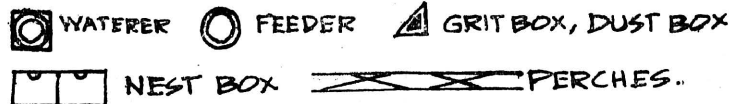
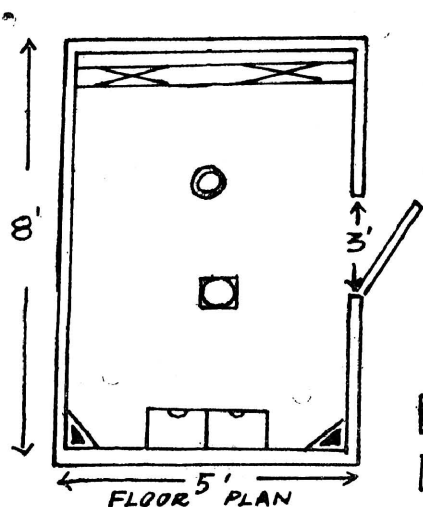
PLAN FOR BACKYARD POULTRY HOUSE - 10 LAYERS UNIT

LXBXH : 8'x5'-6'



DESCRIPTION:

TOTAL AREA	40 SQ FT.
FEEDERS	NO 18" CIRCULAR HANGING
WATERERS	NO 18" CIRCULAR POLEYTHANE
NEST BOX	2 NO INDIVIDUAL 12"x15"x15"
GRIT BOX	1 NO DUST BOX 1 NO
GATE	1 6'x3'
PERCHES	2 NOS 5'
LITTER	1" DEEP.



MEYER STRAIN HYBRIDS

Poultry breeding has of recent times become a specialised industry. Years of research and labour has made it possible to produce fowls of superior productive capacity in regard to the number and size of eggs, as well as a better return from the investment. Under reasonably favourable conditions and with proper management, care and attention, it is possible to attain excellent return in proportion to the outlay. Commercial hybrids are being extensively used for their superior performance than the pure breeds. The results have been achieved after years of toil by adopting the correct genetic approach and proper breeding methods. Such attempts in the past have yielded valuable strain crosses like the Rani shavers, Babcocks, Dekalb, Hyline, Arbor acre, etc. These highly developed hybrids are capable of laying on an average of 200—250 eggs annually.

These hybrids are the results of extensive research in foreign countries and are available only from these sources. To get these birds into our country, we have to spend a lot of foreign exchange. Added to this, each of these hybrids sexed chicks cost more than Rs. 3-50. Further, these birds can be profitably reared for the first year of laying only. Another draw back in rearing these chicks is that they won't breed true. The performance of progeny is most unpredictable. This fact is well understood by the research workers. One is obliged to get his replacement stock every year

from the source from which he obtained it. The strain itself is kept as a trade secret for obvious reasons, by the commercial agencies. It is also noticed that many of these hybrids are more prone to Avian Locusis Complex, a disease in the laye's which throws a challenging preposition to the poultryman.

Considering these facts and with a view to be in a position to help the farmers who need pultry which can be obtained at reasonable rates and also be propagated, the Departments of Genetics and Poultry Science at the Madras Veterinary College, started research in evolving our own strain of white leghorn breeds. White leghorn bread of fowls are known for their egg production. By proper selection and in breeding different strains and ines can be developed. Two such strains when crossed give the progeny which are the hybrids. The singular achievement of Madras Veterinary College in evolving a pure strain of white leghorn birds gives a great opportunity to propagate this strain at a comparatively low cost to the poultry breeders. A sexed day-old chick in the Government farms cost only Rs 1-50. Added, this strain being a pure strain unlike he commercial hybrids, can be

bred and progated by the breeder. Thus, the breeder is in a position to meet his replacement stock at his farm itself. The performance of this strain of Mayer compared to many commercial hybrids have shown very feavourable results and throws up vast scope for utilisation. The average performance of the 'Meyer' strain birds under various private breeders and Government farms is given in the Table below.

Certain important characteristics of the 'Meyer' strain are—

- | | |
|---------------------------------|--------------|
| (1) Age at first egg .. | 155 days |
| (2) 50 per cent egg production. | 183 days |
| (3) Annual egg production. | 200 |
| (4) Mortality rate 0-20 weeks. | 12 percent |
| (5) Mortality rate 20-72 weeks. | 11-9 percent |

The achievement in developing a strain of our own, which can compare well with any other strain in this breed needs to be widely made us of to reap the benefits of the efforts over the years. The Government of Tamil Nadu is taking the necessary steps in this direction. Further, development and improvement of various strains of birds in the poultry farms are also going on simultaneously. Attempts are being made to evolve a strain cross hybrid of our own for the State.

DR. V. RATHNASABAPATHY,
G.M.V.C., B.V.SC.Ph. D.
*Director of Veterinary Education
and Research and Dean,
Madras Veterinary College.*

COMPARISON BETWEEN MEYER STRAIN AND OTHER HYBRIDS.

Strain.	Flock number.	Number of birds.	0-20 weeks liability. (per cent)		Age at first egg. (per cent)	
			Range.	Mean.	Range.	Mean.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Meyer	5	514	91-99	96.2	145-169	155
Hybrids A	6	2,054	77-99	94.4	140-152	147
Hybrids B	2	260	75-81	78.8	134-142	138
Hybrids C	2	1,060	90-92	91.6	132-149	141
Hybrids D	1	638	..	83.5	..	134
Age at 30 per cent lay. (per cent)			20-36 weeks production of eggs.			
Range.		Mean.	Hen day basis. (per cent)		Hen housed basis. (per cent)	
			Range.	Mean.	Range.	Mean.
	(8)	(9)	(10)	(11)	(12)	(13)
Meyer	170-176	174	..	75	..	69
Hybrids A	158-190	175	56-100	75	54-89	67
Hybrids B	152-168	160	50-77	64	49-77	63
Hybrids C	174-185	180	62-65	63	57-63	60
Hybrids D .. .. .	..	162	..	71	..	70

POULTRY KEEPING

From time immemorial Poultry keeping has been a practice among farmers in our State. Many people keep a small flock of chickens for the pleasure or as a source of steady income. Many others, though having an interest to venture on this subsidiary industry, hesitate to do so for lack of proper knowledge on the know-how of rearing poultry. The cost of initial investment, tackling the managerial problems, etc., tend to puzzle a beginner.

It is advisable to start on a small scale. A start can be made by maintaining 100 layers.

Dr. K. Kumaraswamy, Ph. D.,
Reader in Poultry Science,
Madras Veterinary College,
Madras.

These 100 birds can be accommodated and reared in an area of 300 square feet. The land selected must be preferable on an elevated place where there can be no stagnation of water. A house for 100 birds can be easily be constructed using mostly the locally available material. The details of the materials that may be needed has been furnished below.

'Meyer' strain chicks from the Madras Veterinary College, or any of the commercial hybrids can be selected for the flock. It is economical to go in for the sexed female chicks, so that unnecessary rearing of the male stock can be avoided. Birds can be reared on the 'Deep litter' system of management, which is one of the best systems. Deep litter system reduces the labour cost. Chicks come to lay after 5 months of age. Hens lay best in the first year of lay. The economics of rearing 100 layers is given in detail. A profit of nearly Rs. 12 per bird per year is expected under average farming conditions.

The materials used in erecting a house for 100 layers in Madras.

Bricks	2,500.	Rafters	.. 12' x 4" x 3"—6.
Cement	.. 10 bags.		12' x 3" x 2"—8.
Sand	.. 3 cart loads.	Reapers	.. 2" x 1/2"—250.
Earth	.. 3 cart loads.	Light roofing	—68.
3/4" wire net	180 feet.	Light roofing for ridges	—10.

ECONOMICS OF A 10 LAYER UNIT.

Strain of birds : White Laghorn Meyer.
System of Management : Deep litter system.
Stock : 1 to 2 day old sexed female chicks.

I. Cost upto point of lay—				Cost.
1. House (5' x 6')	at Rs. 6 per sq. ft.	..	..	180-00
2. Equipment—				
Hover, 1 number	..	..	..	10-00
Feeder, small 1	..	..	..	12-00
Feeder, big 1	..	..	..	25-00
Water Troughs, small 1	..	..	..	10-00
Water Trough big 1	..	..	..	15-00
				<u>72-00</u>
				72-00
3 Chicks 12 numbers	at Rs. 2 each	..	..	24-00
4 Feed	at 9 kg. per chick up to 20 weeks at Re. 0-90/kg.			97-20
5 Medicines	..	..	..	2-50
6 Litter materials—	1 bag of paddy husk	..	..	2-00
7 Miscellaneous expenditure	..	..	..	5-00
				<u>382-70</u>

Maintenance

II. Cost for Layers—			
1 Equipment—Nil.			
2 Feed 40 kg/bird per year	at Re. 0-90/kg.	360-00	
Greens	at Re. 0-02 per day	..	7-20
Shell Grit 2 kg./bird/year	at Re. 0-30 per kg.	6-00	
		<u>373-20</u>	373-20
3 Miscellaneous	..	..	5-00
			<u>378-20</u>

Receipt—

By sale of	640·00
1 Eggs at 200 average hen housed prodn. ($10 \times 200 = 2000$; at 32 Ps. each.	
2 Birds at Rs. 5 each for 9 birds	45·00
3 Manure	2·50
4 Gunnies at 0·75 each	9·30
	<hr/>
	696·80

Net Cash income**Expenditure—**

1 Cost of chicks	24·00
2 Cost of feed for chicks	97·20
3 Medicines	2·50
4 Cost of Litter	2·00
5 Miscellaneous	5·00
6 Cost of layer feed	373·20
7 Miscellaneous exp.	5·00
8 Depreciation at 20 per cent in buildings..	36·00
9 Depreciation at 20 per cent in equipments.	14·40
10 Interest on investment at 7 per cent rate.	26·80
	<hr/>
Total expenditure	586·10

Labour Income.

For 10 layers	110·70
Income per layer per year	11·07

ECONOMICS OF A 100 LAYER UNIT

Strain of birds :—Commercial Hybrids
System of Management :—Deep litter system.
Stock :—1 to 2 days old sexed female chicks.

Cost.**Cost upto point of lay—**

1 House 300 sq. ft. ($30' \times 10'$) (light roofing) at 6 Rs./sq. ft.	1,800·00
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2 Equipments :**0-4 weeks—**

Hover 1	30·00
Feeders 4	48·00
Water Trough 2	20·00

5-10 weeks—

Feeders 4	72·00
Water Troughs 2	30·00

11-72 weeks—

Feeders 4	100·00
Shall grit boxes 2	10·00

<hr/>	310·00	310·00
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3 Chicks at Rs. 3.50 each 112 numbers	392.00
4 Feed at 9 kg. per chick upto 20 weeks at 90 per kg. (112×9×90).	907.20
5 Medicines	25.00
6 Litter materials 10 bags paddy husk	20.00
7 Miscellaneous Expenses	50.00
	<u>3,504.20</u>

21-72 Weeks expenses—

Feed 40 kg./bird/year at 0.90 kg.	3,600.00
Sheell grit at 2 kg./bird/year at Rs. 0.30 P./kilo ..	60.00
Miscellaneous expenses	50.00
	<u>3,710.00</u>

5 Receipts—

By sale of

Eggs (at 200 eggs per bird and at) 0.32 per egg ..	6,400.00
Birds after laying year at Rs. 5 each for 85 pullets ..	425.00
Manure	30.00
Cost of gunnies 60×1.50	90.00
	<u>6,945.00</u>

Net Cash Income

Expenditure—

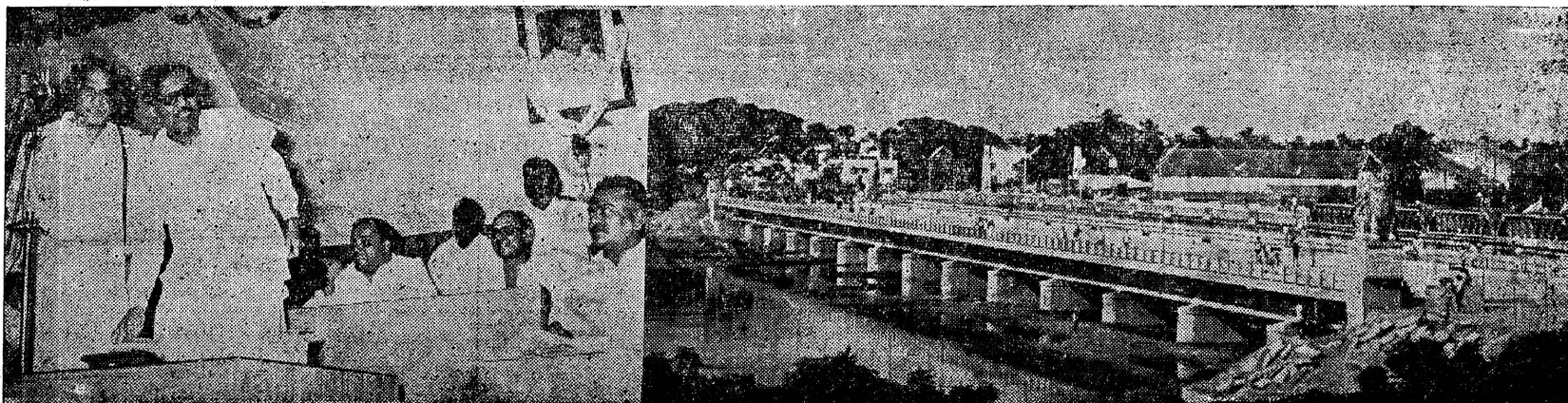
1 Cost of chicks and cost in rearing up to 20 weeks ..	1,394.20
2 Maintenance of layers	3,710.00
3 Depreciation on Building at 20 per cent (1800×2=360).	360.00
4 Depreciation in equipments at 20 per cent Rs. 310. ..	62.00
5 Interest on investment at 7 per cent	205.28

Rs. 3,504.

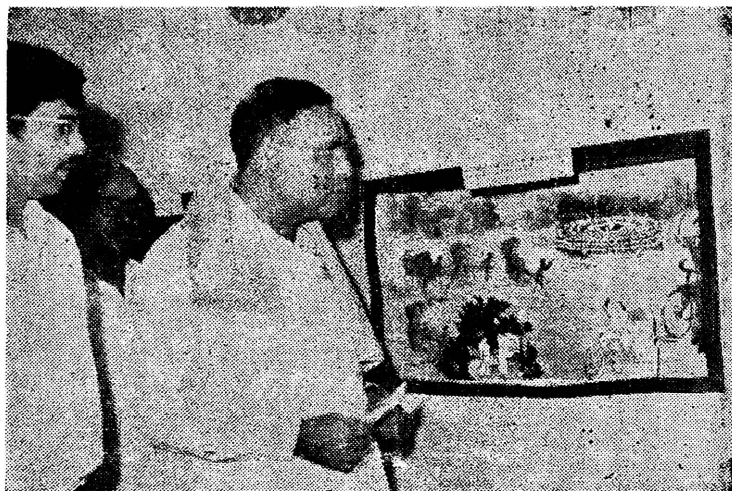
5,731.48

Net income=Rs. 1,213.52.

The New Bridge across Adyar named Thiru V. Ka. Bridge was declared open 20-10-73. This forms a fast link to Mahabalipuram Tourist Traffic.



CO-OPERATIVE MARKETING AND PROCESSING IN TAMIL NADU



The Minister for Food and Co-operation, Thiru Mannai Narayanaswamy, is seen going round the Exhibition conducted by the Kancheepuram Taluk Co-operative Society. Thiru Shanmugam, District Public Relation Officer, standing behind the Minister, is seen explaining the exhibits to the Minister.

The Co-operative marketing in this State is a two tier one, with the Tamil Nadu Co-operative Marketing Federation at the State level and 132 Primary Co-operative Marketing Societies at the taluk level. The Thanjavur Co-operative Marketing Federation at Tiruvarur is the only district level Co-operative Marketing Society.

In order to augment the working capital of the Co-operative Marketing Societies, the State Government have participated in the share capital of Co-operative Marketing Societies up to a maximum of Rs. 1 lakh each in the case of Primary Co-operative Marketing Societies and without limit in the case of higher level societies. So far, they have participated in the share capital of 121 societies to the extent of Rs. 96.80 lakhs. A sum of Rs. 13.00 lakhs is expected to be contributed during the year 1972-73.

The Co-operative Marketing Societies are also provided with managerial subsidy towards employment of the staff for a period of 3 years on a sliding scale. To encourage quality grading activities, financial assistance is given by way of subsidy to the extent of Rs. 7,500 (i.e. Rs. 2,500 towards the cost of trading equipment and Rs. 5,000

towards the cost of grading staff) spread over a period of three years.

With a view to encourage the Co-operative Marketing Societies to undertake outright purchase of produce on a large scale, Government contribute to the Special Price Fluctuation Fund of the societies at 2 per cent or 5 per cent. So far, a total sum of Rs. 1.75 lakhs has been contributed by Government to the Special Price Fluctuation Fund of the marketing societies. A sum of Rs. 1.67 lakhs is expected to be given in 1972-73.

Under the scheme of assistance for technical and promotional cell, Government are subsidising the cost of a Chief Accounts Officer, Civil Engineer, Marketing Officer, Chief Fertiliser Officer and a Processing Engineer employed by the Tamil Nadu Co-operative Marketing Federation on a tapering scale. The Tamil Nadu Co-operative Marketing Federation has also created a common cadre of personnel for being lent to the affiliated Co-operative Marketing Societies to work as secretaries or managers.

A value of agricultural produce handled by co-operatives which stood at Rs. 5 crores during 1965-66 rose to Rs. 20.70 crores in 1971-72.

Assistance has also given by way of share capital contribution and loan for the setting up of processing units such as decorticators, rice hullers, oil mills, tapioca and pineapple processing units as adjuncts to Co-operative Marketing Societies. The following table indicates the processing units owned by Marketing Societies and under installation :—

Serial number and type of units.	Number of units.
1 Cotton ginning units	18
2 Goundnut decorticators.	25
3 Oil expeller	7
4 Rice hullers	31
5 Coffee curing plant.	1
6 Solvent extraction plant.	1
7 Fruit processing unit.	1
8 Tapioca processing unit.	1
9 Cardamom oil extraction unit.	1
10 Pineapple processing unit.	1

under installation.

Civil Supplies Corporation

The Civil Supplies Corporation is taking over all the Modern Rice mills run by Co-operative Marketing Societies and Thanjavur Co-operative Marketing Federation. The Tamil Nadu Co-operative Marketing Federation has prepared project reports for the establishment of a cotton seed oil mill and a groundnut oil refinery complex. It has also obtained the feasibility report for the setting up of sun flower seed oil extraction plants. The Government have also entrusted to Messrs. Development Consultants, the preparation of a feasibility report in connection with the establishment of a Farmers Co-operative Paper Mills. The Tamil Nadu Co-operative Marketing Federation has installed a granular fertilizer plant at Man-nargudi at a cost of about Rs. 25 lakhs. During 1972-73, it produced 18,476 tonnes of granulated fertilizers up to 31 st December 1972 valued at Rs. 147.97 lakhs. The Tamil Nadu Co-operative Marketing Federation is also making arrangements for the early completion of a cold storage plant at an estimated cost of Rs. 9.00 lakhs with assistance from the National Co-operative Development Corporation.

Rice Bran Oil mill.

In order to make profitable use of the bran obtained from the Rice Mills in Thanjavur district in the

manufacture of rice bran oil which is a by-product capable of fetching foreign exchange, the Thanjavur Co-operative Marketing Federation has established a Rice Bran Oil Mill at a cost of Rs. 19.75 lakhs with the Government assistance of Rs. 14.81 lakhs.

Construction of Godowns

The National Co-operative Development Corporation has formulated a scheme for the construction of godowns under the Central Sector Scheme. Under this scheme, the National Co-operative Development Corporation provides financial assistance to the extent of 62½ per cent of the cost of loan to the State Government outside the "State Plan". The State Government have to meet the balance of 37½ per cent of the cost as subsidy under the State Plan Scheme. During the year 1972-73, financial assistance is proposed to be given under this scheme for construction of 360 village level godowns of 150 tonnes capacity each and three marketing godowns by the Tamil Nadu Co-operative Marketing Federation Limited, the capacity of the godowns ranging from 500 to 1,500 tonnes each. The scheme will be continued in 1973-74 also and when completed will add to 1.17 lakhs tonnes of storage capacity.

The Tamil Nadu Co-operative Marketing Federation in all the districts except Thanjavur and the Thanjavur Co-operative Marketing Federation in Thanjavur district purchase and distribute non-pool fertilizers through the co-operative marketing societies and the village credit societies. The co-operatives distributed pool and non-pool fertilizers to the value of Rs. 14.28 crores in 1970-71, Rs. 17.17 crores in 1971-72 and Rs. 11.12 crores (up to 30th September 1972) in 1972-73. Now they have been entrusted with the distribution of fertilizers to farmers in toto.

In order to provide the Tamil Nadu Co-operative Marketing Federation and the Thanjavur Co-operative Marketing Federation with necessary margin money for undertaking procurement and distribution of fertilizers, Government have given financial assistance by way of share capital contribution to the two institutions to the extent of Rs. 79 lakhs up to 1971-72. A further sum of Rs. 15 lakhs is likely to be given during 1972-73.

Promotion of Industrial Peace— Government Policy

Inaugurating the 11th Annual Conference of the Officers of the Tamil Nadu Labour Department, the Hon'ble Labour Minister Thiru K. Rajaram said that the Tamil Nadu Government had taken steps for the welfare of the working class outside their places of work and providing amenities to them apart from those they were entitled to under statutory regulations.

The Minister said that the Government's policy was to preserve and promote industrial peace and create a congenial climate in which industry can flourish and labour prosper. Government also wanted to secure the effective implementation of labour laws without distinctions between the private sector and the public sector.

He hoped that the new Labour Welfare scheme would improve the health and living conditions of the working class. The Tamil Nadu Labour Welfare Fund Act, which came into force from January 1, 1973 was enacted with a view to achieving the objective.

Regarding the difficulty experienced by conciliation officers in contacting the concerned officials in public sector undertakings for the settlement of industrial disputes in those undertakings, Thiru Rajaram said that to tackle this problem it was agreed at a recent meeting of heads of public sector undertakings that an officer of sufficiently high status, who could either take decisions or could obtain and convey immediately the decisions of the heads of these undertakings, should be deputed to attend the conciliation talks before the Officers of the Labour Department.

Government had sanctioned the creation of three Labour Legal Advisory cells in Madras, Coimbatore and Madurai to advise workers and small trade unions on the procedure to be followed for redress of their grievances and for securing relief. Each cell was to be manned by a retired judicial officer with experience of adjudication of industrial disputes and a retired Labour Officer.

The role of Co-operative Banks in the operation of kindling economic progress has now a days increased in Tamil Nadu. One among the chief example to be illustrated in this context is Ramanathapuram Co-operative Central Bank which took an active participation in financing for the prosperity of agriculture and hand-looms in its area. The bank has paid its attention in the fields of expanding production, control of prices and equal distribution of money among the public.

To cite an example of its efficiency, during 1920s, the bank was started in the name of Sri Villiputhur Co-operative Bank and extended financial help to Sri Villiputhur and Sathur Taluk Co-operatives alone. Gradually it has surrounded all the taluks within the jurisdiction of Ramanathapuram. Its golden jubilee in 1971 and the inauguration of its new office building were held on a grand scale.

Apart from other activities of the bank, the banks regular functions like operation of Fixed Deposits, Recurring Deposits and Savings Deposits, the bank attracts the customers by offering higher interest rates. The deposits position has been trebled during the past one decade; the assets of the bank itself is a proof to show the growing confidence of the public with the

Thiru N. V. Natarajan, Minister for Backward Community, is seen inaugurating the City cleaning campaign near Anna Statue on 2nd October 1973.

THE SERVICE OF CO-OPERATIVE BANKS

bank. The deposits now have mounted to Rs. 315.12 lakhs which itself is authentic proof of the efficiency of the bank.

The villager receive the loans through Co-operative Societies as short-term and medium term loans for conducting agricultural activities. The amount of loan to be given is decided according to the size of the land and the method of cultivation. Not only that, these banks go in for a detailed estimate regarding the quality and variety of crops. To illustrate with an example if suppose a farmer owning four acres of land and if he wants to cultivate paddy he will be given Rs. 1,200 i.e. Rs. 300 per acre.

The bank, in this current financial year has decided to lend out Rs. 380 lakhs as short-term loan and Rs. 5 lakhs as medium term loans and in this respect the bank has so far lend out Rs. 33.93 lakhs and steps were taken seriously to distribute the loans as quickly as possible.

Through this process the bank facilitates small scale and large scale

farmers with finance. Not only that, it also extends its warm helping hands to the already indebted farmers and they receive their loans at a lower rate of interest compared to some other financial institution.

The bank's activity never ceases with agriculture alone but also premeated through handlooms sector also. The bank uses Co-operative Societies as an instrument through which the loans are distributed to the weavers. This operation leads not only to the expansion of production but also giving employment opportunity to the weavers.

There are about 68 weaver's Co-operative Societies functioning throughout the district. The bank took a special interest in weavers welfare and so it keeps a vigil on the master weavers to see that they pay normal wages to the weavers. In some cases it encourages the weavers by giving wages direct.

The bank lends money to the Co-operative Milk Societies and facilitates the individual man to join the Co-operative Societies and helps to buy milch cows. Every Co-operative Milk Society helps at least 100 individuals to buy cows for themselves and provide a permanent income of Rs. 50 every month. Through this operation the bank indirectly provides part-time job for the rural folks.

A simple illustration can explain how the bank's operation is successful and efficient in triggering the economic activity. Virudunagar Co-operative Milk Society earned a huge profit and through that receipts it has started one Boarding house which provides sumptuous food and tiffin to the public and it is also running in profit.

This bank, like any other bank provides its customers a quick transaction of bills, cheques and drafts and at a lesser commission compared with other banks. Now it has nearly 28 branches working all over the district.



Agricultural Growth In Area Development

In the course of development, it is observed that countries inevitably face regional inequality. A study by the United Nations Economic Commission for Europe observed: "The regional inequalities have been diminishing in the richer countries of Western Europe and the tendency has been the opposite in the poorer ones". Our own experience here in India is in no way different. We find developed areas to co-exist with pockets of poverty. Fruits of planned progress have not been equally shared by all the regions of the country.

Even within a State and a district, we find areas of progressive and less progressive development. Continuously growing disparity in the levels of living and size of income between different areas of the same country is a cause for concern. Deliberate economic policy and concrete expression of the same in the governmental activities can help removal of these inequalities. A progressively greater geographical dispersal of economic activity must be pushed as hard as possible.

It is in this context that the approach of 'Area Development' and the concept of growth centres have assumed significance. In this approach of Area Development, regional disparities can be easily identified and suitable localised development planning can be encouraged to remove the same. In this paper an attempt is made to list out the factors that generally contribute to regional inequalities and to develop a working tool to measure the same. Identifying and measuring the regional inequalities, is the first requisite for any concrete planning in this direction and this paper is just the first step in this direction.

The disparity in the living standards of the population in various areas of the nation stems from different economic and climatic factors:

Economic Factors

(a) Proportion between growth rates of industrial and agricultural production.

P. Selvaraj, M. Soundappan and
S. Varadarajan.

*Department of Agricultural
Economics, Tamil Nadu Agri-
cultural University, Coimbatore.*

(b) Proportions between productive and non-productive spheres of the population.

(c) Development of a network of infrastructure facilities and social amenities within an area.

Natural Factors

(a) Differences in the natural resources between areas.

(b) Differences in the human resources between areas.

Identification of a backward area is a prerequisite for planning area development. There are many indices that can be used to measure regional prosperity. An obvious one is per capita income which is a favoured measure in developing countries. The other indicators are standard of living and economic and social overheads. The level of economic development of an area can be measured by certain specific indicators.

Socio-Economic Ranking Of Areas.

There are also some multiple criteria methods of socio-economic ranking for identifying socio-economic disparities among rural areas. The application of criteria in aggregate is more advantageous over single criterion method.

Three sets of data are to be collected from the areas by surveys. The indicators of (a) average household income (b) literacy percentage of the population and (c) percentage of population employed in various walks of life constitute the raw socio-economic scores for a particular area.

The overall socio-economic rank score can be calculated for the

areas from the standardised socio-economic scores. It is nothing but the arithmetic mean of the standardised income, education and occupation scores.

Lorenz Curve.

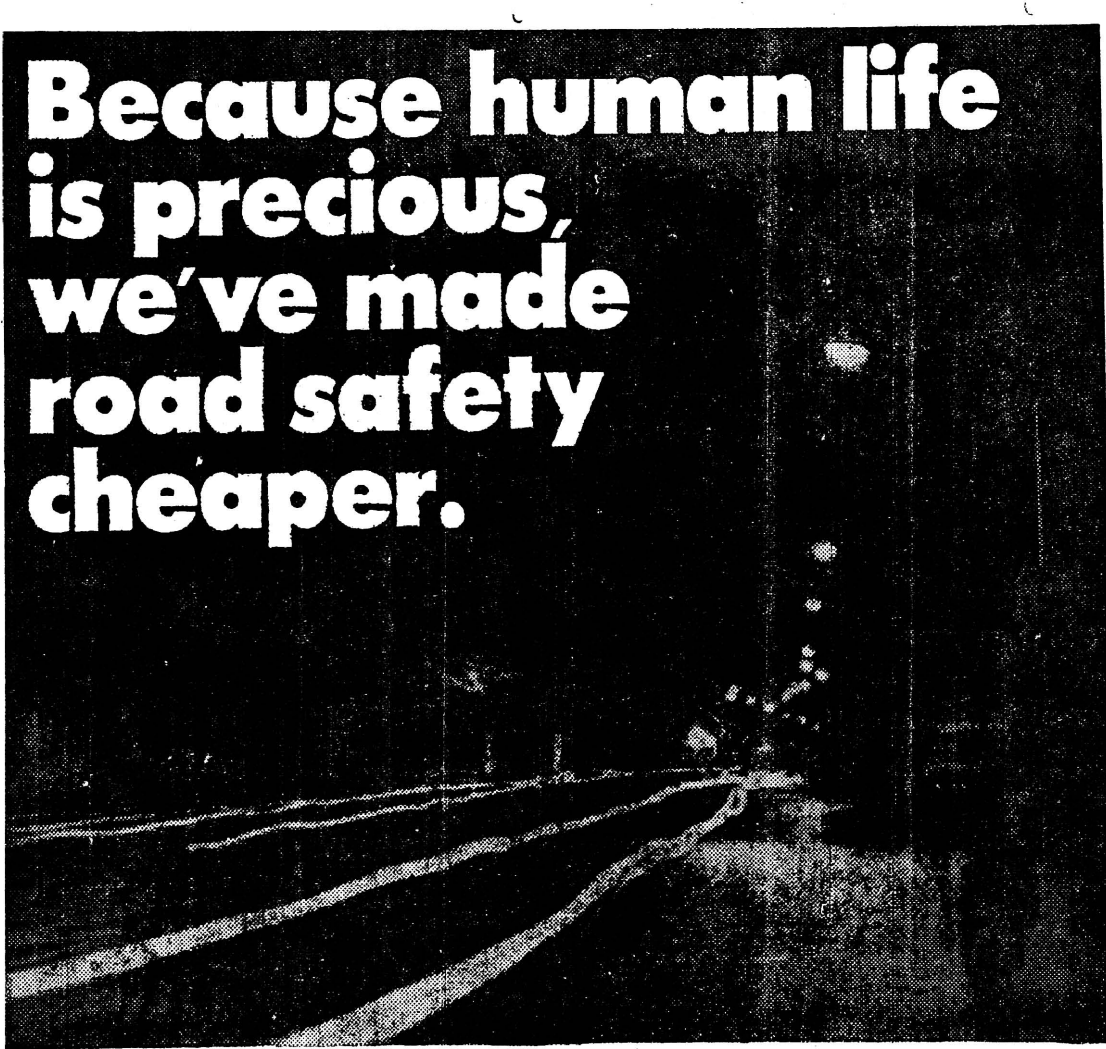
The areas can be arranged in ascending order of average per capita household expenditure. The number of households and the average per capita household expenditure can be cumulated and plotted in a graph.

The strategy of growth in most of the backward areas is essentially linked with the development of agriculture. Agriculture in the backward areas is handicapped by natural and location disadvantages. The prosperity in the agricultural sector will undoubtedly generate capital which is so essential for the overall development of an area in question. Agriculture provides raw materials to industries which find a market among cultivators who form the core of the population in a peasant economy. It is evident that priority for agriculture in development projects will be justifiable for many years to come.

Before projects are formulated it is necessary to undertake detailed surveys of each area in regard to its development potential. These surveys should be followed up by preparation of more detailed technically and economically viable projects. The question of the choice of approach to the development of backward areas arises mainly because of constraints of financial and administrative resources.

The selection of a project to the rejection of alternate plans for development can be based on benefit-cost ratio. Development projects in backward areas will start a chain reaction of development with far-reaching multiplier effects. ☉

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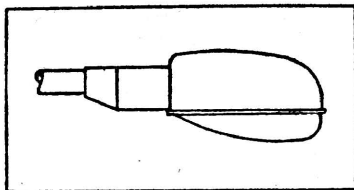
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Polio Can Be Prevented

Oral polio vaccine is most valuable as a prophylactic agent, though it has no curative value. Breast - feeding and taking hot drinks should be avoided for certain hours after the administration of oral polio vaccine.

By
DR. (MRS.) V. V. GUJRAL,
New Delhi.

POLIOMYELITIS is an acute infectious disease primarily of children, which affects the central nervous system and occurs both sporadically and epidemically. The virus causing the disease has been identified as an enterovirus, commonly known as the poliovirus, with three distinct types. This virus is rendered inactive by heat, drying up, formaline, chlorine and ultra-violet rays.

It is primarily an infection of alimentary tract with the virus multiplying in the regional lymph nodes. The incubation period is about 17 days. The infection does not manifest itself until the virus passes into the blood system and gets localised in the central nervous system. The laboratory investigations suggest that comparatively a small percentage of the infected persons suffer from a clinical disease and a smaller number of these have paralysis of meningo-encephalitis.

The laboratory diagnosis of poliomyelitis can be established by isolation of virus from stool and presence of an increasing antibody level in acute and convalescent phase sera. There is no specific treatment for the paralysis produced by poliovirus. Besides the general supportive measures that are recommended in any acute infectious disease, physiotherapy must be initiated in the affected limbs immediately. During the infection surgical measures like ear, nose, throat operations should be postponed. Personal hygiene, avoiding overcrowded places, sudden chillness of the body etc. will reduce the chances of developing clinical disease. It goes without saying that physiotherapy is of vital importance in acute and convalescent phases and must not be ignored under any circumstances.

The oral polio vaccine is most valuable as a prophylactic agent. It has no curative value. The vaccine may be administered to anyone including infants of 3—6 months of age. The administration of the vaccine has to be avoided during acute infectious disease, high fever, vomiting and dysentery. Also, patients suffering from acute leukaemia and lymphoma, generalised malignancy and receiving corticosteroids and antimetabolites may not be given the oral polio vaccines. One should avoid breast-

feeding at least 3-4 hours before and after the administration of the vaccine. It is also advisable to avoid administration of other immunizing agents the day oral vaccine is given. Hot drinks should not be taken within half-an-hour after the administration of the vaccine.

Oral polio vaccine comprises the three serotypes of polioviruses. This is a living vaccine and its efficacy depends entirely on the administration of live viruses to the individual. If, somehow or the other, any proportion of the live viruses of any of the serotypes is inactivated, the vaccine ceases to be an effective immunizing agent. With the use of such vaccine, the proportion of children, who have been successfully immunized against poliomyelitis, will be very small.

Stored at Sub-Zero Temperature

To prevent the inactivation of the vaccine before administration to the children, it is recommended that the vaccine should be stored at sub-zero temperature. It is imperative that the suppliers, distributors and the polio vaccine clinics store this vaccine at 20° C in a deep-freeze. In case a deep-freeze is not available, it might be stored in the freezing chamber of the refrigerator. During transport the vaccine must be kept either on dry ice (solid carbon dioxide) or a freezing mixture.

At the polio-vaccination clinic, the bottle containing the vaccine should not be frozen and thawed repeatedly since repeated freezing and thawing has deleterious effect on the potency of oral polio vaccines. Better still keep the vials of the vaccine in ice during its administration to children. Every child must be vaccinated with the appropriate volume of the vaccine. The person responsible for the distribution of vaccine in a clinic must ensure that the nurse is familiar with the quantity that has to be given to every child. In case the vaccine is being administered by spoons, disinfectants like dettol or lysol may not be used for the cleaning of spoons. The ideal way is to boil the spoons in water and then cool in ice water before it is used for administering polio vaccine.

A sizeable proportion of our population suffers from varying degrees of anaemia which is caused by poverty and the consequent inability to afford nutritious food plus the malaria and hookworm infestation. In this article the symptoms of anaemia and the simple method of treatment are put forth.

Anaemia Need Special Attention

All body cells are undergoing degeneration and building up uninterrupted. So also the cells in blood. The life span of red blood cells is about 120 days which means that every four months new red cells are built up and the earlier ones degenerate. Building up of red cells and their subsequent maintenance require some nutrients, deficiency of which causes anaemia. A sizeable proportion of our population suffers from varying degrees of anaemia. Apart from nutritional deficiency, malaria and hookworm infestation also can lead to anaemia. Poverty and consequent inability to afford nutritious food are the main causes for anaemia in our country. Some people are ignorant in their choice of good foods and anaemia might result from this as well. Excessive bleeding during accidents may cause anaemia. Closely spaced pregnancies and prolonged breastfeeding may also result in anaemia.

Every 100 millilitres of blood normally contain 14—15 grams of haemoglobin. Haemoglobin present in the red blood cells supplies oxygen to the body. Adult women with less than 12 g. of haemoglobin are considered anaemic. Women especially when pregnant, are often likely to become anaemic.

Symptoms of Anaemia

Feeling of exhaustion, headache, sleeplessness, loss of appetite, changes in nails and general weakness are the symptoms of anaemia. While they may not pose danger to life, the working efficiency does suffer.

Nutritional requirements of pregnant women are rather high. If there is not enough blood, oxygen supply for the body cells will not be

sufficient, which may cause a premature delivery. If the delivery is earlier than expected, the infant's life is in danger. Moreover, the mother's life may also be at risk as a result of the excessive strain on her.

If the mother is anaemic, she cannot provide enough blood to the body in her womb. Infants live on breast-milk alone for the first six months. But iron content of milk is rather low. With no iron stores in the body and only little of it in milk, infants are more exposed to getting anaemia.

Prevention of Anaemia

What are the nutrients which can prevent anaemia? Proteins, iron, vitamin-B and vitamin-C are essential for the formation of blood. Deficiency of any of these can lead to anaemia.

Milk, pulses, liver and eggs are rich in proteins and the body can have good quality proteins through a mixture of cereals and pulses. Next to proteins, iron is important. This mineral nutrient is available in leafy vegetables and liver.

Vitamins B and C Needed

Body needs some vitamins to absorb iron from food. To cite an example; unless vitamin C is present, iron cannot be absorbed properly. Generally, all fruits contain vitamin-C. It is also found in leafy vegetables.

B-vitamins are needed to maintain good blood. Whole grains, pulses, liver and milk give us these vitamins.

About half the number of pregnant women in our country are anaemic. One out of every four maternal deaths is due to anaemia. To avoid anaemia, the daily diet should contain milk, whole grains, leafy vegetables and liver. Vegetarians must eat a lot of leafy vegetables. ①

"MALARIA" DECLARED AS INFECTIOUS DISEASE.

Section 52 in Part I of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) deals with the infectious diseases and section 62 in Part II of the said chapter deals with the notified diseases. During the last decade or more, the incidence of Malaria has considerably decreased in the city of Madras, though it cannot be said that it has been eradicated once for all. But recently there has been a noticeable increase in the incidence of Malaria in the City, which is due to various factors. With a view to have an effective control over the spread of the disease, the Government considered it necessary to include "Malaria" in the list of infectious diseases as well as notified diseases, so that effective control measures could be undertaken. Accordingly, it was declared in the notifications issued with G.O. (Ms.) No. 2797, Health, dated 1st December 1972 that "Malaria" shall be an infectious disease and notified disease throughout the State for the purposes of Parts I and II respectively of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) the notifications having been published in Part II—Section I of the *Tamil Nadu Government Gazette*, dated 23th February 1973. ②

CHERAN TRANSPORT CORPORATION LIMITED

Regd. Office: 37, Mettupalayam Road,
Coimbatore-641011.

Statement made by Thiru M. S. Ram, I.A.S., Chairman, Cheran Transport Corporation Limited at the Second Annual General Meeting of the shareholders of the Corporation held on the 29th September 1973.

Gentlemen,

I have much pleasure in welcoming you to the Second Annual General Meeting. The Report of the Directors and the Audited Accounts for the year ended 31st March 1973 have been circulated to you and with your permission I shall take them as read.

Working Results for the Year

In 1972-73, the turnover was Rs. 2.03 crores and after charging all expenses including a depreciation of Rs. 25.66 lakhs, your Company made a net profit of slightly over Rs. 7.50 lakhs. After wiping out the previous year's loss of Rs. 7.50 lakhs completely, the company will carry forward a small surplus of Rs. 1,695.

Your company commenced its commercial operations on 1st March 1972 and therefore the First Annual Report for the period ending 31st March 1972 was only for one month's operation. The Audited Accounts now before you are for the first year of 12 months' operations of your company.

The Government of Tamil Nadu when it authorised the setting up of your company in January 1972 required that the company should take necessary steps to ensure that it is able to meet its requirements on fleet replacement from time to time from internally generated cash resources and should earn a minimum return of 6 per cent on capital invested after meeting the interest charges and earmarking

necessary funds for depreciation. I am pleased to inform you that your company has earned over three times the minimum return of 6 per cent on capital prescribed by the Government. During the year 1972-73, the paid up capital of the company was Rs. 2,100; But we received an amount of Rs. 15 lakhs from the Government of Tamil Nadu as advance towards the issue of shares. If we notionally treat this amount as equity, out of the pre-tax profit of Rs. 7.5 lakhs we would have been able to declare a dividend of 20 per cent after payment of taxes.

In a Government-owned company like ours, as the company could borrow funds to meet most of its requirements, the proper measure of financial performance may perhaps be return on capital employed. As the Audited Accounts before you would show the capital employed by your company during the financial year 1972-73 is just over Rs. 54 lakhs. The return on this has been Rs. 10.80 lakhs (net profit of Rs. 7.50 lakhs provided for in the accounts). This works out to a return of 20 per cent on the capital employed.

You would agree with me that this financial performance is outstanding for a public utility company like Transport measured by any standards. More so, as this was possible in a period of inflation when our costs escalated and our charges for use of our facilities remained constant. Instead of leaving it to the last, let me at the outset, on behalf of the Board of Directors, congratulate the

employees of the Corporation and its Managing Director Thiru N. Thirugnanasambandam, under whose dynamic leadership this excellent financial performance has been made possible.

Satisfaction to the community

While it is easy to measure financial performance, it is difficult to measure the amount of satisfaction we have given to the community at large in the area in which we operate. While laying down the financial performance expected of the Corporation in January 1972, the Government of Tamil Nadu also charged the Corporation "with the responsibility for maintaining an efficient, adequate, economical and viable system of road transport services in its area of operation". The services expected from the Corporation include elements such as capacity, frequency, reliability, speed, safety and financial viability. The broad aim of the Corporation would be to provide a comprehensive net work of services including certain routes that may individually not be economic propositions. The Government expect the company to function in accordance with the sound commercial principles as far as practicable consistent with its responsibility as a public utility concern dealing with a vital sector of great importance to the community as a whole.

As your Corporation is responsible only for about 25 per cent of the total number of buses operating in the districts of Coimbatore and the Nilgiris, there have been difficulties

in its discharging some of the responsibilities entrusted to it. But even within the parameters the Corporation operates, there is plenty of scope for improving the Corporation's service to the community from the point of view of increasing capacity, frequency, reliability and speed. I want to assure you and through you the people of Tamil Nadu who are the real owners of the Corporation that the Management are fully conscious of the need for improvement of its services and would rededicate itself during the current financial year to the challenging task of providing better service to the community.

Bringing Rural Areas within Transportation Net Work

Apart from providing a letter service, we are at present preparing plans for connecting every village with motorable roads in our area of operation to our transportation net work. We know in the early years these routes would not be viable. We are prepared to treat part of the cost in running buses in the newly constructed rural roads as social costs or developmental costs.

All these measures are bound to affect our financial performance for the current year and for the coming years. It is for this reason that while reviewing the Company's financial performance for the year 1972-73, I did not indulge in the usual platitude and give you the hope that there is scope for improvement in the financial performance of the company. I want to take you into confidence and tell you that as we improve our services and connect hitherto unconnected villages within the net work of our transportation system and subsidise such operations the percentage of return on the capital employed is likely to come down. But we hope to continue to maintain reasonable and satisfactory financial performance even after incurring the social costs proposed. I believe that creation of surplus, whatever be its form 'for future investment' is a basic obligation of a company like ours. While a public sector company may plead incurring of social costs as a reason for creating less surplus from out of its investments, it would be a sad day for our overall economic development, if any of our public sector companies

plead incurring of social costs as an alibi for creating no surplus at all.

Corporation's Growth

The Directors have reported to you about a growth of nearly 200 per cent, both in the fleet strength and monthly average collections during the financial year ending 1972-73. During the year 203 vehicles were added to the fleet strength. This was made up of 124 acquired in the Nilgiris district as a result of nationalisation, 32 acquired from the Co-operative Societies which were taken over by your company, 24 bought from private operators who volunteered to sell their buses to the company and 23 directly purchased by the company for augmentation. You would appreciate that while this growth rate was possible for the first year on a lower base, it cannot be sustained during the current financial year or in future years. During the current year, the company has so far added 43 more vehicles. Before the end of March 1974, we hope to add 100 more vehicles thereby achieving a growth rate of approximately 50 per cent. A similar growth rate of 50 per cent is also expected in the monthly average collections.

With an increase in fleet of 50 per cent, the Corporation hopes to increase the total kilometrage run by about 75 to 80 per cent.

Your company has taken a number of steps to prepare themselves for the eventual take over of the passenger bus services in its area of operation. It has a massive programme of construction of depots in a number of places involving an outlay of Rs. 20 lakhs during 1973-74. Proposals are also under consideration for installation of modern machinery for ensuring proper maintenance of vehicles.

The company has also undertaken a scheme for training employees at various levels including training of III qualified technicians as drivers.

EMPLOYEES' PARTICIPATION IN THE EQUITY CAPITAL OF PUBLIC SECTOR UNDERTAKINGS.

As you are aware, employees' participation in equity capital and management of companies, both in public and private sectors, has

been discussed in our country for a number of years. The public sector have experimented with association of workers in management. The private sector in some cases have also experimented with reservation of certain number of shares to be exclusively sold to their employees. But, once such shares are purchased by an employees, he has no obligation to hold on to the shares.

The scheme of the "Employees Participation in the Equity Capital and Management in the State Owned Transport Corporations" announced by the Tamil Nadu Government is a unique one in many respects. Under the scheme the employees are issued with convertible debentures bearing 8 per cent interest. Convertible debentures do not give the ownership to the employee immediately. He is a lender to the Corporation; but a lender with an option to acquire ownership. The debentures are convertible into ordinary shares of the Corporation during a period of ten years. The employee would continue to get interest at 8 per cent on his investment as long as he keeps his debentures, even if the company works on loss. If there is profit and a dividend of more than 8 per cent is declared, the employees has the option to convert his debentures into shares and get better returns on his investment.

The scheme permits employees who get a salary up to Rs. 500 p.m., to purchase debentures worth Rs. 500 and those who get a salary of Rs. 500 and more, to purchase debentures up to Rs. 1,000. The purchase money can be paid in small monthly instalments. The scheme is optional in the case of existing employees, but in the case of new recruits, it is compulsory. The employee will not be permitted to transfer the convertible debentures during the period of service with the Corporation.

The scheme has been hailed as a bold socialistic experiment. The hope is that conditions would be created under which an industrial worker will look upon ownership of a piece of industry and develop attachment to that industry in the same manner in which he or his forefathers have been attached to the piece of land which they cultivated.

In introducing this scheme, the Tamil Nadu Government hoped that "the least it would do, would be to unleash latent forces that would be responsible ultimately for a new kind of revolution in our public sector industry, a revolution in terms of increased productivity, profitability and harmonious labour relation". They also hoped that "this would set a chain reaction and would inspire others to launch similar or modified schemes of worker participation in ownership of industry".

Your Company had the good fortune of being selected as the first public sector undertaking in Tamil Nadu to introduce this scheme. The scheme is in operation in your Company from May 1973. It is a tribute to the social responsibility and farsightedness of the employees of your Company that out of 1,500 regular employees, 1,300 have voluntarily joined the scheme. The Board of Directors have nominated two employee debenture holders as Directors of the Company. These Directors are serving bus drivers who are the king pins of any transport organisations. There are very few parallels either in the public or private sector in our country where employees at the so-called working level have been nominated and asked to take their seats along with the management in the Board of the Corporation.

PROFIT SHARING

Your Board also recently introduced a "Profit Sharing Scheme" to cover all employees of the Corporation except the Managing Director. The drivers and conductors in most of the transport organisations in the private sector and in some of the transport organisations in the public sector were getting what is known as 'collection batta'. This batta usually is a percentage of the daily collections and provided an incentive for the driver and conductor to increase the collections by picking up passengers at the appropriate places and maintaining regularity of services. The drivers and conductors in your company were also getting this collection batta. We found from experience that practically every one in a transport organisation will have to pull his weight to enable the organisation to earn profits. Therefore, we have

devised a 'Profit Sharing Scheme' to cover all employees of your Corporation excepting the drivers and conductors who are governed by the existing incentive scheme. The basic element in the new scheme is there will be no sharing without profits being made. The standard profit the Corporation expects to make after meeting all its expenses including interest charges, depreciation, etc., is 10 paise per kilometer. If during any month, the profit goes down below 10 paise per kilometer, there would be no profit sharing. During the months the profits are 10 paise or more per kilometer, 0.5 per cent of the collections for the month will be shared equally by all the employees.

We are conscious that this is not a very refined profit sharing scheme. But, we are making a beginning and we hope this measure along with the employees participation in equity capital and management, which we have introduced, would give a stake to the employees in the profitable operations of the Corporation.

With your permission, I would like to refer also to some of the particular problems of passenger transportation industry. The industry now comprises of 47 Nationalised Undertakings which include 16 State Road Transport Corporations, 12 Departmental enterprises, 14 Municipal Services and 5 companies under the Companies Act of 1956.

The pace of nationalisation of the Bus transportation industry in our country has been slow. After 25 years of efforts at Nationalisation we have succeeded in nationalising only 37 per cent of the industry. Though the total number of passenger buses in the country have increased from 34,000 in 1950-51 to 95,000 in 1969-70, the number of houses under Public Sector in 1969-70, is only 35,193. An important reason for the slow progress of Nationalisation has been lack of an appropriation instrument for speedy and progressive nationalisation.

The Motor Vehicles Act of 1939, inspite of important subsequent modifications, remains basically a 'Magna Carta' of free enterprise. Some sections of the Act, no doubt, vest discretion in the State Trans-

port Undertakings to nationalise routes and areas. Interpretations of these sections, the manner in which route nationalisation and area nationalisation can be resorted to under these sections continue to be the subject of vexatious litigation between the Bus Operators and the various State Transport Undertakings. Private Operators have invariably succeeded in getting stay orders on the operation of particular sections of the Act and got temporary permits to ply on the routes nationalised under the provisions of the Act. The legal battle is on still. While it would be for the historian of the future to record the frustrations of the nationalised transportation industry in detail in the history of nationalisation in our country. I know of no parallel where nationalisation has been as slow and cumbersome process as nationalisation under the provisions of the Motor Vehicles Act of 1939.

The permits i.e., licences to ply buses on roads constructed at public cost is still treated as sacrosanct private property even after the expiry of the period of the permit. The operator has a right to renew the permit. The State Transport Undertaking has no preference as against the private operator either in getting permit for a new route or in getting an expired permit allocated to itself. It would look paradoxical, but nevertheless it is true that a newly formed State Transport Undertaking is at disadvantage in getting a new permit as against a private operator under the provisions of the Act, because the State Transport Undertaking has no experience in running a transport industry!

It is in recognition of these problems the Government of Tamil Nadu promulgated The Stage Carriages and Contract Carriages (Acquisition) Ordinance 1973. The Ordinance later became an act. The Ordinance/Act authorised Government to notify and take over all buses with employees and routes and to pay compensation in accordance with the Schedule prescribed in the Ordinance/Act. The High Court of Madras held the Ordinance and the Act as void. An appeal on this has been filed with the Supreme Court by the Government of Tamil Nadu and is still pending with that Court. I am glad to inform you that some of the bus

operators in the Nilgiris District have voluntarily given up their right to challenge the Tamil Nadu Act except in respect of the compensation prescribed in that Act and have settled their claims with the Government.

ELIMINATION OF WASTEFUL COMPETITION AND SAVING OF FOREIGN EXCHANGE

Apart from ideology, there are some important practical reasons for a total nationalisation of bus transportation industry at this stage. An empty passenger seat is one of the most perishable commodities in economic terms. Unlike in any other industry, a passenger seat not occupied in a trip is a wasted asset. In theory, the regulations under the Motor Vehicles Act are expected to ensure the operation of an efficient and economic system by eliminating wasteful competition. But in practice, wasteful competition arising out of running a larger number of buses in routes where a smaller number would adequately cater to the needs for passenger transportation is common. It is also common wherever a route is nationalised for the private operator as well as for the nationalised undertaking to run parallel operations in that route, till the need and the legality of the nationalisation is established invariably in the highest Courts of the land.

I want to pose this question with all earnestness at my command. Can a country with the availability of limited investment capital which imports most of its petroleum products by paying scarce foreign exchange afford the luxury of this competition in passenger transportation? Organisation of the entire transportation system under the auspices of the State may not completely eliminate this wastage but there are reasonable prospects of most of the wastage being eliminated.

I hope the Government of India who are now concerned with increase in crude oil prices in an effort to save the import bill on petroleum products would soon take the initiative to set in motion a study on the prospects of saving diesel oil by eliminating wasteful competition in passenger transport.

CONCLUSION

Gentlemen, let me now hasten to perform the happy task of expressing my deep gratitude to the Hon'ble Minister for Transport, Government of Tamil Nadu and his colleagues for this wholehearted and continued support and the freedom with which they permitted the Management of your Company to operate within the parameters of Government's policies and directions. If the Corporation has been able to live up to the expectations of the Government, this has been mainly due to the auto-

nomy it enjoyed in its day-to-day operations.

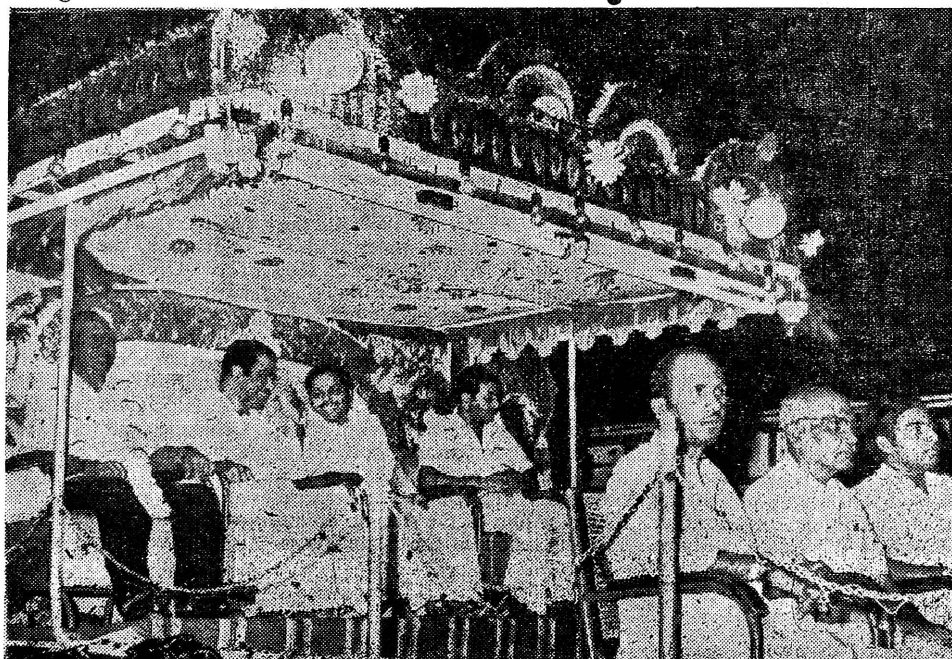
I would also like to record my thanks for the co-operation of the Officers and Staff of the Comptroller and Auditor-General of India and the Statutory Auditors, Thiruvallur C. S. Seethapathy and Krishnamurthy for the completion of their audit and for their valuable comments.

I would like to end this statement with a personal note. Your Company, by standards of Transport Companies in this country, is a small one with a fleet of over 300 buses. Nevertheless, I consider it to have been my privilege to be associated with your Company as its Chairman during the last 18 months. It has given me great personal satisfaction to have participated in evolving implementing some of the new schemes such as Employees' Participation in Equity Capital and Management and the Employees Profit Sharing in your Company. I am grateful for the co-operation I have received from all the employees of the Company and my colleagues in the Board.

Gentlemen, I now move that the Directors' Report, Audited Balance Sheet and the Profit and Loss Account be approved and adopted.

Note.—This does not purport to be a record of the proceedings of the Annual General Meeting.

When two drivers of Chera Transport Corporation were nominated Directors of the Corporation, they were taken in procession along with Transport Minister.



DEPARTMENT OF TECHNICAL EDUCATION, TAMILNADU.

GOVERNMENT TECHNICAL EXAMINATIONS

MAY 1973

Following is the provisional list of register numbers of successful candidates in the Government Technical Examinations in Accountancy, Commercial Practice, Banking, Commercial Geography, Shorthand, English and Tamil Typewriting—English and Tamil Lower and Higher Grades, including Intermediate Grade in Shorthand—English, Shorthand—English and Tamil— High Speed Tests, Typewriting—English and Tamil High Speed Tests held in May 1973.

The certificates of the successful candidates in the above examinations will be despatched to them shortly. Discrepancies, if any, in the publication of results in the different Dailies may be got clarified by addressing this office.

Necessary notification inviting application from eligible candidates for admission to the Government Technical Examinations in Commerce subjects to be held in November 1973 will be published shortly.

TYPEWRITING—ENGLISH (LOWER)

FIRST CLASS

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94, 95, 25628, 43, 52, 62, 64, 65, 75, 76, 84, 90, 92, 95, 25702, 5, 13, 38, 59, 64, 70, 71, 74, 77, 84, 88, 96, 25813,
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84, 97, 98, 26219, 22, 24, 29, 40, 49, 55, 69, 78, 86, 96, 97, 26327, 28, 66, 26403, 8, 34, 42, 50, 64, 66, 68, 70,
84, 88, 91, 26500, 10, 17, 32, 33, 41, 42, 73, 80, 83, 92, 26604, 11, 26, 28, 29, 32, 35, 51, 53, 57, 64, 76, 77, 89,
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89, 90, 91, 97, 26903, 12, 22, 43, 54, 59, 61, 73, 75, 83, 85, 92, 95, 99, 27001, 3, 7, 11, 15, 16, 20, 24, 26, 27,
33, 35, 36, 39 to 41, 44, 47, 49, 51, 54, 58, 61, 62, 71, 72, 73, 81, 83, 84, 86, 93, 98, 27100, 2, 7, 11, 16, 21, 22,

TYPEWRITING—ENGLISH (LOWER)—cont.

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24, 31, 35, 38, 43, 49, 51, 53, 56, 67, 71, 76, 82, 83, 84, 87, 89, 90, 91, 96, 27209, 14, 19, 21, 28, 36, 38, 42, 43, 56, 58, 75, 27332, 33, 54, 55, 58, 59, 60, 62, 63, 65, 66, 68, 73, 74, 76, 78, 83, 27400, 13, 29, 30, 32, 35, 38, 46, 50, 52, 55, 56, 73, 91, 27506, 23, 43, 63, 65, 73, 85, 27602, 4, 11, 16, 27, 40, 43, 48, 51, 52, 69, 81, 86, 88, 27708, 18, 20, 21, 23, 29, 31, 33, 41, 44, 47, 52, 55, 62, 64, 66, 67, 72, 73, 77, 84, 27856, 60, 66, 72, 82, 84, 27905, 22, 27, 29, 31, 33, 41, 48, 50, 52, 55, 64, 70, 74, 80, 91, 94, 99, 28011, 12, 21, 22, 23, 24, 31, 32, 50, 56, 62, 93, 95, 96, 28108, 9, 41, 69, 97, 99, 28200, 11, 36, 43, 52, 54, 55, 95, 28310, 21, 30, 44, 50, 54, 59, 64, 66, 69, 75, 76, 88, 90, 88, 28413, 17, 18, 20, 24, 26, 31, 37, 38, 42, 44, 55, 61, 68, 70, 72, 75, 78, 84, 98, 28500, 6, 10, 14, 23, 35, 39, 41, 61, 64, 65, 68, 75, 78, 79, 80, 88, 95, 98, 28601, 10, 37, 44, 49, 57, 58, 60, 62, 63, 66, 70, 72, 75, 86, 87, 93, 28700, 6, 18, 34, 35, 38, 46, 49, 28839, 42, 44, 53, 54, 56, 57, 65, 79, 84, 92, 28906, 8, 11, 12, 17, 26, 31, 57, 61, 64, 65, 66, 68, 84, 87, 29013, 33, 39, 41, 46, 48, 53, 56, 67, 68, 82, 84, 90, 93, 98, 29100, 2, 3, 8, 9, 11, 12, 14, 31, 41, 44, 54, 65, 91, 29204, 9, 10, 28, 29, 30, 71, 73, 77, 92, 93, 29312, 24, 27, 39, 41, 42, 45, 62, 63, 72, 29401, 7, 14, 19, 23, 24, 31, 34, 41, 44, 45, 48, 49, 52, 53, 55, 69, 73, 77, 86, 88, 90, 94, 29518, 21, 34, 37, 42, 52, 55, 57, 60, 72, 29627, 29, 33, 48, 53, 76, 79, 80, 85, 87, 92, 93, 97, 99, 29700, 5, 6, 15, 18, 20, 22, 23, 24, 61, 62, 75, 92, 93, 29809, 14, 28, 33, 43, 44, 51, 56, 57, 59, 68, 70, 81, 83, 90, 29900, 12, 19, 26, 31, 42, 45, 48, 49, 56, 58, 64, 66, 78, 85, 97, 98, 30008, 9, 11, 17, 25, 30, 42, 46, 50, 68, 72, 73, 77, 79, 87, 89, 94, 96, 99, 30100, 2, 12, 17, 21, 26, 27, 32, 39, 44, 48, 51, 91, 92, 30219, 35, 55, 56, 57, 59, 60, 63, 65, 67, 71, 91, 92, 94, 30302, 6, to 8, 10, 15, 17, 28, 61, 66, 72, 76, 83, 30404, 9, 10, 17, 27, 48, 62, 30523, 39, 42, 53, 71, 72, 75, 81, 30602, 6, 25, 26, 35, 42, 50, 53, 76, 77, 81, 82, 83, 85, 88, 89, 91, 93, 98, 30707, 8, 52, 54, 57, 61, 68, 70, 77, 80, 82, 99, 30804, 6, 9, 10, 11, 17, 24, 30, 31, 41, 43, 45, 64, 71, 72, 75, 80, 81, 82, 30972, 73, 79, 81, 85, 94, 31011, 32, 78, 83, 84, 31103, 16, 21, 33, 37, 58, 74, 82, 86, 94, 31200, 4, 12, 25, 28, 55, 56, 65, 31306, 11, 14, 27, 28, 30, 32, 33, 44, 58, 65, 66, 69, 77, 80, 92, 97, 31401, 5, 10, 11, 13, 16, 31, 33, 38, 41, 42, 44, 45, 49, 50, 52, 56, 58, 62, 64, 67, 68, 72, 75, 83, 95, 31515, 68, 74, 78, 89, 91, 96, 31606, 11, 14, 15, 17, 26, 28, 30, 32, 36, 51, 53, 57, 60, 61, 68, 73, 75, 80, 83, 97, 31703, 4, 10, 12, 13, 24, 34, 37, 38, 42, 51, 53, 65, 66, 69, 75, 76, 79, 83, 89, 31800, 6, 12, 21, 33, 39, 55, 68, 78, 83, 85, 99, 31921, 29, 32, 33, 70, 76, 77, 78, 92, 32001, 4, 7, 25, 26, 28, 31, 36, 48, 55, 66, to 68, 71, 72, 74, 89, 32100, 11, 16, 22, 36, 37, 42, 43, 46, 61, 75, 76, 77, 88, 96, 98, 32203, 5, 8 to 11, 16, 18, 20, 21, 23, 36, 37, 38, 39, 48, 50, 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The results of the candidates with register numbers 21351 and 24480 are withheld.

TYPEWRITING—ENGLISH (HIGHER.)

First Class.

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The result of the candidate with Register Number 24332 is withheld.

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741, 745, 746, 754, 758, 764, 784, 799, 2801, 806, 812, 830, 833, 839, 841, 866, 869, 884 to 86, 2906, 907, 967, 968, 974, 3023, 57, 64, 67, 88, 3136, 3260, 3309, 323, 334, 338, 370, 387, 3401, 402, 424, 432, 448, 463, 464, 474, 3537, 3602, 605, 607, 609, 617, 648, 3753, 768, 3853, 4010, 77, 4137, 4249, 4331, 380, 4408, 499, 4509, 523, 538, 566, 578, 4810, 819, 828, 4944, 946, 972, 981, 5003, 16, 20, 5120, 129, 135, 167, 5267, 297, 5307, 310, 317, 354, 363, 5435, 458, 469, 474, 475, 483, 494, 5503, 521, 522, 530, 537, 551, 582, 5602, 603, 654, 660, 662, 667, 672, 677, 691, 5719, 736, 754, 768, 778, 784, 798, 5810, 830, 848, 850, 854, 891, 6073, 89, 6222, 229, 234, 237, 254, 257, 268, 6314, 319, 325, 330, 6415, 421, 425, 467, 475, 478, 6506, 515, 522, 528, 576, 6609, 674, 699, 6768, 779, 6838, 849, 879, 883, 888, 6925, 7025, 33, 35, 36, 47, 72, 76, 83, 7164, 7205, 240, 277, 296, 7320, 340, 384, 7406, 409, 443, 456, 461, 7528, 556, 557, 567, 7621, 625, 662, 674, 7709, 728, 7939, 945, 8051, 93, 8108, 145, 8298, 8327, 338, 387, 392, 8415, 8511, 521, 537, 8701, 707, 777, 8878, 9026, 35, 44, 53, 55, 62, 84, 9115, 156, 9294, 9314, 327, 368, 378, 9480, 491, 9513, 529, 560, 595, 9692, 9720, 723, 9949, 959, 10070, 79, 80, 99, 10116, 10247, 285, 291, 10360, 366, 385, 10416, 430, 10527, 10655, 10738, 772, 774, 10834, 840, 856, 10989, 11038, 93, 11133, 40, 182, 187, 188, 11248, 54, 89, 11307, 08, 45, 80, 91, 11423, 61, 66, 11530, 87, 11603, 610, 611, 15, 21, 23, 26, 38, 43, 90, 97, 11711, 95, 11800, 42, 68, 11921, 72, 12092, 12136, 12210, 13, 19, 12319, 20, 74, 81, 12427, 31, 42, 47, 56, 57, 72, 74, 91, 12600, 656, 88, 99, 12708, 34, 66, 72, 93, 12841, 863, 66, 91, 97, 12966, 79, 13004, 55, 83, 13219, 21, 25, 66, 79, 86, 13312, 14, 35, 40, 13474, 79, 13567, 569, 13608, 11, 21, 29, 37, 52, 13744, 13850, 83, 87, 98, 13951, 53, 58, 68, 72, 73, 98, 99, 14006, 37, 44, 70, 73, 88, 98, 14115, 17, 22, 30, 33, 39, 89, 14208, 17, 40, 41, 46, 69, 79, 91, 97, 14300, 04, 39, 73, 87, 14417, 23, 35, 43, 59, 67, 80, 86, 93, 14508, 10, 16, 25, 27, 30, 32, 36, 41, 43, 45, 47, 48, 76, 79, 88, 90, 98, 14616, 17, 22, 48, 60, 90, 14712, 41, 43, 45, 59, 71, 75, 14826, 62, 65, 76, 83, 84, 15008, 36, 38, 51, 58, 15106, 12, 58, 60, 80, 83, 84, 99, 15211, 40, 55, 60, 70, 15317, 40, 41, 75, 89, 15407, 10, 13, 17, 19, 26, 50, 96, 15509, 22, 63, 71, 15610, 58, 73, 15712, 70, 15824, 25, 58, 15923, 31, 91, 16023, 16101, 43, 50, 69, 87, 16221, 22, 16302, 17, 54, 77, 16422, 39, 43, 62, 16516, 39, 40, 61, 82, 16605, 28, 65, 98, 16716, 21, 33, 37, 43, 60, 63, 16858, 72, 79, 16926, 47, 52, 17068, 92, 96, 17120, 39, 43, 53, 54, 59, 65, 88, 98, 17206, 17435, 39, 98, 17526, 48, 60, 17612, 36, 50, 17715, 19, 20, 53, 65, 17845, 17962, 18127, 37, 82, 18259, 18430, 18587, 18609, 69, 96, 18734, 36, 18814, 34, 39, 55, 58, 61, 65, 76, 83, 18909, 21, 60, 19053, 87, 19104, 12, 18, 19259, 78, 19325, 29, 59, 68, 76, 19411, 13, 52, 19606, 14, 27, 42, 45, 86, 19724, 19832, 39, 50, 19967, 77, 20024, 96, 20101, 37, 44, 45, 20205, 18, 76, 84, 20309, 11, 50, 69, 20427, 466, 20527, 31, 59, 85, 20666, 81, 20730, 37, 20819, 60, 65, 70, 93, 20955, 21059, 86, 21148, 21260, 75, 21301, 12, 47, 52, 75, 81, 82, 91, 21418, 40, 21506, 7, 20, 31, 84, 21609, 17, 25, 21893, 21924, 22056, 59, 66, 71, 91, 22124, 46, 52, 62, 65, 89, 22202, 38, 61, 82, 97, 22311, 12, 95, 98, 22400, 29, 39, 22588, 22607, 16, 30, 31, 37, 40, 57, 22842, 22911, 28, 36, 43, 94, 97, 23020, 37, 39, 62, 23112, 52, 59, 63, 23233, 81, 23328, 37, 53, 81, 89, 23426, 23455, 76, 23524, 27, 69, 72, 76, 23646, 58, 23726, 42, 23816, 80, 23901, 4, 12, 14, 21, 77, 88, 24041, 67, 81, 24166, 70, 73, 93, 24217, 25, 36, 74, 24315, 21, 47, 96, 24404, 51, 75, 24541, 47, 71, 89, 24615, 82, 98, 24841, 73, 24906, 13, 27, 25037, 79, 25117, 26, 63, 25225, 36, 25324, 77, 25446, 58, 62, 75, 76, 25503, 42, 80, 81, 25672, 25709, 25, 52, 60, 94, 25843, 77, 79, 80, 90, 97, 26034, 43, 45, 51, 73, 80, 26144, 26215, 25, 30, 32, 36, 87, 26344, 46, 83, 26439, 93, 98, 26546, 87, 88, 26602, 44, 59, 60, 80, 81, 82, 97, 26714, 29, 34, 26800, 42, 58, 70, 79, 26925, 28, 33, 51, 27060, 66, 27117, 41, 27259, 78, 98, 27304, 52, 27437, 48, 67, 72, 27510, 35, 40, 48, 81, 27614, 15, 73, 27700, 7, 27801, 3, 51, 87, 90, 99, 27925, 26, 44, 97, 28059, 83, 91, 28111, 20, 23, 59, 68, 71, 91, 28246, 85, 28347, 28402, 10, 28529, 72, 73, 78, 80, 28616, 24, 35, 28714, 28810, 52, 77, 85, 89, 28915, 22, 27, 29030, 73, 29170, 71, 29245, 86, 99, 29371, 89, 29485, 93, 29556, 29650, 57, 78, 29745, 60, 91, 29853, 29921, 28, 37, 53, 72, 30122, 80, 98, 30221, 37, 87, 30305, 47, 68, 69, 81, 30419, 38, 46, 50, 73, 94, 95, 30508, 12, 26, 34, 43, 95, 96, 30631, 34, 61, 79, 96, 30706, 30821, 35, 51, 53, 59, 68, 69, 70, 91, 94, 30904, 14, 74, 77, 86, 88, 90, 91, 92, 31024, 67, 77, 99, 31123, 39, 70, 73, 79, 31208, 52, 61, 63, 68, 70, 83, 84, 86, 96, 31301, 4, 5, 61, 63, 78, 31518, 48, 62, 81, 98, 31638, 66, 79, 31719, 21, 90, 96, 31831, 48, 31945, 49, 54, 32011, 13, 45, 56, 80, 32129, 49, 91, 95, 32217, 45, 32333, 69, 32430, 54, 81, 86, 32512, 17, 19, 50, 32636, 32786, 32829, 33, 32933, 36, 39, 48, 54, 59, 33085, 91, 34040, 79, 34182, 91, 34286, 34326, 77, 34400, 8, 21, 50, 58, 34500, 7, 13, 30, 34662, 34712, 15, 18, 20, 76, 34825, 34937, 44, 35002, 35177, 35211, 19, 22, 28, 35371, 75, 79, 81, 35407, 35545, 35658, 66, 35798, 35818, 25, 28, 56, 36292, 36321, 36518, 44, 45, 47, 36720, 21, 83, 36931, 42, 51, 70, 77, 78, 37308, 23, 39, 63, 71, 37719, 47, 51, 37809, 15, 97, 37901, 64, 88, 38020, 50, 38161, 38251, 38303, 56, 75, 38426, 38660, 64, 38707, 33, 50, 75, 92, 94, 39112, 54, 39213, 39378, 39405, 29, 39542, 57, 92, 39743, 40259, 64, 40359, 40494, 40517, 51, 82, 40612, 40750, 59, 40914, 41019, 22, 90, 41108, 50, 55, 41224, 83, 89, 41361, 84, 93, 41453, 41522, 41605, 32, 41, 64, 41718, 92, 41842, 42081, 42150, 59, 42424, 42770, 42878, 43026, 43228, 43377, 80, 93, 43556, 43876, 93, 43984, 44047, 44113, 44241, 60, 44401, 18, 44728, 35, 44, 44834, 76, 44906, 8, 45003, 5, 6, 9, 52, 67, 45100, 41, 44, 45291, 45335, 53, 45410, 47, 45623, 25, 45953, 46108, 27, 84, 46235, 46379, 82, 46416, 47, 63, 79, 96, 46510, 31, 63, 75, 82, 46613, 15, 46729, 47, 50, 73, 99, 46984, 47235, 59, 71.

SHORTHAND—ENGLISH (LOWER).

First Class.

548, 3076, 13789, 18057, 21923, 22662, 23259, 24227, 28423, 35244, 88, 36878, 37405, 37705, 38127, 38917, 40185, 42043, 42372, 44215, 44979, 45938, 46233, 46426, 46893,

SHORTHAND—ENGLISH (LOWER)—*cont.*

Second Class.

1606, 1913, 25, 41, 2135, 39, 48, 59, 2629, 3743, 4500, 9, 49, 62, 70, 75, 5282, 5483, 5885, 99, 6802, 7087, 8297, 8461, 8515, 8769, 9064, 9130, 44, 81, 9650, 9721, 27, 10157, 10237, 80, 10484, 10611, 11827, 67, 12456, 12929, 13402, 13535, 49, 58, 62, 13718, 23, 13849, 14312, 14545, 14670, 14753, 58, 65, 84, 14998, 15146, 15504, 87, 16879, 92, 16919, 26, 37, 17376, 17470, 17702, 17899, 18341, 18411, 18603, 30, 48, 18713, 19511, 93, 19688, 19788, 20111, 21785, 21986, 22016, 60, 22154, 67, 97, 22208, 22, 23212, 23725, 24372, 24725, 37, 93, 25047, 25282, 25520, 26150, 94, 26218, 26357, 26809, 26993, 27008, 19, 91, 27115, 27486, 28066, 28123, 28768, 29813, 30709, 31263, 99, 31302, 31905, 32679, 32700, 2, 31, 71, 34145, 60, 34244, 66, 34464, 34561, 83, 34633, 77, 34704, 14, 34844, 52, 34932, 35208, 54, 87, 35377, 35520, 35706, 35910, 36112, 92, 99, 36215, 36366, 91, 36477, 36527, 37, 96, 36656, 68, 36706, 29, 36819, 89, 90, 36944, 37434, 38, 37598, 37600, 3, 37821, 37907, 38213, 74, 91, 38542, 51, 61, 63, 78, 38695, 38747, 51, 83, 39123, 39250, 39378, 83, 39412, 37, 39762, 39891, 39901, 74, 40173, 75, 40439, 40536, 41205, 41332, 41460, 97, 41677, 41850, 76, 41901, 28, 86, 42013, 21, 63, 42115, 31, 42703, 7, 43072, 79, 81, 43316, 85, 43476, 43644, 57, 90, 92, 43703, 7, 43823, 40, 44056, 44124, 44225, 44, 44335, 83, 88, 97, 44560, 44622, 44757, 62, 89, 98, 44820, 28, 44927, 44, 66, 45125, 40, 45217, 45368, 45567, 71, 91, 92, 45855, 56, 45903, 10, 46036, 46120, 57, 46269, 46324, 46852, 47083, 47222, 47321.

SHORTHAND—ENGLISH (INTERMEDIATE GRADE).

First Class.

5625, 26376, 30720, 33093, 35517, 69, 37072, 38736, 40459, 43277, 43302, 36, 43.

Second Class.

1808, 1911, 38, 44, 4521, 4989, 5025, 5875, 92, 94, 97, 6320, 28, 6792, 8772, 8941, 9159, 9706, 90, 9803, 10136, 10558, 10678, 82, 85, 11420, 12616, 13138, 13640, 13833, 14635, 14747, 15135, 16088, 16641, 53, 17252, 17322, 18203, 17, 23, 18323, 91, 18413, 27, 43, 18509, 28, 19664, 20432, 20644, 47, 22087, 22152, 85, 22227, 22457, 59, 74, 22707, 20, 92, 22826, 23351, 55, 25491, 98, 25512, 26338, 48, 27280, 95, 27302, 27548, 27780, 92, 28160, 29237, 29591, 29733, 30500, 31253, 67, 95, 31849, 72, 32149, 32383, 32627, 32722, 76, 33073, 86, 34052, 34135, 34425, 34954, 35215, 40, 41, 35519, 21, 27, 36514, 36766, 36970, 37448, 37579, 37913, 14, 38541, 79, 38675, 38749, 57, 39082, 39450, 39759, 76, 39910, 16, 40070, 40615, 53, 40905, 41540, 41808, 42306, 8, 42434, 42501, 7, 42789, 91, 42941, 46, 43296, 43313, 17, 21, 50, 43460, 44106, 44332, 44796, 44972, 46161, 46216, 46912, 47201.

SHORTHAND—ENGLISH (HIGHER.)

First Class.

42571 only

Second Class.

2283, 5017, 5659, 5881, 89, 5902, 7997, 8762, 9160, 9785, 10577, 13628, 55, 14647, 17269, 19666, 22801, 25484, 25516, 30, 27822, 28195, 28215, 25, 29742, 30726, 31206, 32421, 32703, 50, 84, 34058, 34124, 36, 34863, 35193, 35270, 37432, 38685, 40079, 40132, 40512, 40771, 41708, 41810, 42384, 42549, 91, 42894, 42925, 43247, 43344, 44070, 44341, 59, 44402, 44572, 44813, 45011, 20, 45339, 45412, 45631, 36, 45940, 46305, 47292.

SHORTHAND—TAMIL (LOWER).

First Class.

1387, 1885, 88, 1967, 7920, 9762, 88, 13253, 88, 13329, 14549, 18440, 20390, 22676, 22761, 22827, 23984, 24355, 25483, 25537, 35209, 35308, 36065, 37308, 20, 37458, 40088, 41881, 42433, 43214, 26, 44583, 89, 44604, 41, 48, 44835.

Second Class.

1100, 1873, 1965, 66, 2135, 50, 55, 2280, 3211, 4078, 4416, 5366, 9710, 16, 9801, 11781, 13256, 86, 13300, 13419, 13636, 63, 68, 14626, 18373, 19254, 19813, 20420, 22690, 95, 22702, 95, 99, 22803, 23159, 23225, 23983, 26337, 26734, 26809, 27737, 93, 27824, 27951, 30452, 31872, 32424, 32548, 32707, 13, 45, 46, 33082, 94, 35190, 35226, 35, 36068, 81, 36557, 81, 37316, 37470, 38046, 47, 38413, 38727, 68, 39163, 39388, 39403, 46, 40061, 40103, 09, 40434, 40786, 40992, 41201, 16, 41837, 41, 45, 41907, 30, 32, 42274, 43282, 43305, 15, 44564, 77, 80, 93, 44605, 24, 43, 45412, 45625, 46122, 46467, 47315.

SHORTHAND—TAMIL—(HIGHER).

First Class—NIL.

Second Class.

647, 1193, 1665, 1912, 46, 55, 69, 78, 2148, 51, 53, 79, 3207, 13, 4071, 4111, 16, 9791, 99, 9980, 10749, 13303, 35, 13427, 13561, 13656, 57, 61, 67, 14673, 18454, 19616, 22662, 22704, 13, 42, 67, 80, 92, 94, 22841, 42, 25513, 28154, 29554, 30429, 30722, 23, 32408, 31, 32725, 33091, 35255, 35307, 36539, 98, 37485, 98, 38948, 40087, 41224, 41848, 55, 84, 90, 43309, 44278, 44404, 44633, 45277, 46129, 47336.

ACCOUNTANCY—(LOWER).

First Class.

7236, 9739, 56, 31538, 34726, 41, 36185, 37012, 37209, 40897, 44705, 45824, 41.

Second Class.

7, 132, 52, 493, 548, 51, 52, 77, 86, 603, 4, 6, 14, 18, 48, 815, 16, 23, 26, 27, 42, 49, 54, 63, 1027, 29, 31, 33, 1116, 37, 61, 90, 2258, 72, 4021, 36, 4141, 47, 67, 70, 4274, 4482, 4502, 10, 28, 33, 54, 69, 4605, 34, 76, 4750, 55, 79, 80, 90, 4828, 4913, 28, 35, 87, 88, 95, 5001, 8, 11, 18, 5623, 6021, 6401, 17, 6775, 7118, 20, 21, 28, 37, 43, 45, 49, 7610, 16, 25, 32, 36, 37, 43, 8131, 38, 39, 8308, 8471, 8507, 31, 8930, 47, 9105, 68, 9603, 11, 70, 9709, 24, 26, 37, 38, 44, 9905, 15, 22, 52, 62, 84, 88, 10029, 83, 89, 96, 10314, 10752, 10801, 70, 11036, 38, 43, 57, 11163, 11275, 93, 11564, 72, 11783, 11877, 12283, 84, 315, 815, 13152, 13836, 45, 14244, 14618, 27, 41, 69, 79, 14731, 82, 15038, 41, 42, 54, 60, 97, 15140, 73, 301, 20, 15887, 16760, 17400, 20, 18073, 18101, 18365, 81, 18425, 47, 18511, 630, 852, 95, 19141, 77, 19303, 19351, 19515, 16, 17, 19, 84, 85, 95, 19610, 13, 26, 33, 20705, 7, 10, 71, 20815, 95, 20989, 98, 21066, 21101, 21268, 21447, 48, 94, 21631, 21973, 85, 22007, 25, 69, 22104, 30, 22204, 22453, 62, 69, 82, 87, 22691, 99, 22747, 63, 81, 22802, 23594, 23671, 23724, 27, 24195, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, 24223, 95, 24309, 23, 57, 61, 64, 75, 24452, 64, 82, 24928, 51, 25119, 24, 59, 60, 69, 25271, 78, 25333, 83, 25495, 25616, 87, 26007, 20, 26303, 21, 51, 59, 26545, 26722, 27391, 27726, 28, 28190, 28302, 6, 28, 28645, 28790, 28904, 29183, 29234, 44, XXXX XXXX XXXX 29352, 29449, 77, 29576, 92, 29657, 29734, 30247, 76, 77, 30341, 91, 30444, 30714, 19, 24, 85, 30907, 31501, 3, 11, 14, 31, 32, 31706, 78, 81, 87, 88, 31804, 27, 40, 60, 92, 32147, 32392, 32719, 75, 77, 33074, 84, 92, 34110, 66, 34384, 34405, 69, 34529, 34636, 38, 48, 73, 34707, 1, 5, 23, 28, 34827, 97, 34902, 9, 16, 19, 28, 34, 55, 59, 96, 35004, 27, 35206, 53, 67, 94, 35739, 36101, 44, 63, 84, 92, 36255, 36334, 36509, 42, 67, 36633, 51, 53, 60, 63, 65, 72, 74, 82, 88, 89, 99, 36837, 36908, 37031, 43, 52, 75, 77, 79, 85, 87, 37116, 31, 58, 77, 87, 37210, 11, 37434, 38, 40, 47, 50, 52, 55, 71, 81, 37689, 37741, 45, 67, 85, 37807, 46, 49, 37963, 79, 90, 38003, 8, 21, 53, 38196, 38228, 45, 75, 38316, 38543, 81, 38626, 58, 94, 38722, 30, 41, 38857, 76, 83, 92, 94, 38929, 84, 39307, 10, 14, 35, 39667, 69, 75, 80, 83, 93, 94, 39820, 73, 91, 39905, 11, 40007, 8, 15, 22, 31, 42, 49, XXXXX, 63, 40102, 29, 31, 67, 40225, 32, 38, 50, 51, 77, 283, 86, 89, 91, 93, 95, 96, 40310, 12, 27, 30, 49, 57, 60, 65, 66, 67, 74, 77, 84, 85, 93, 98, 40402, 4, 11, 17, 40630, 78, 40735, 67, 81, 40876, 40912, 18, 33, 41002, 93, 41100, 3, 15, 38, 41257, 98, 41309, 26, 41704, 68, 77, 83, 86, 41834, 40, 78, 96, 41912, 20, 22, 63, 42036, 62, 83, 97, 42105, 38, 42301, 82, 42439, 42544, 42611, 17, 56, 57, 66, 42701, 3, 42805, 8, 42906, 10, 13, 49, 65, 74, 80, 43018, 43104, 13, 53, 54, 59, 43229, 32, 45, 68, 88, 97, 43312, 23, 24, 43529, 43682, 87, 92, 95, 97, 99, 43701, 2, 4, 43941, 45, 48, 49, 67, 75, 85, 44023, 34, 35, 37, 38, 44, 51, 44348, 65, 70, 84, 85, 44409, 14, 21, 59, 65, 75, 44528, 36, 51, 55, 44625, 92, 44700, 3, 4, 6, 8, 9, 48, 44838, 46, 47, 44983, 45034, 43, 53, 96, 45135, 82, 45287, 92, 96, 45301, 13, 45607, 10, 45743, 57, 45818, 50, 61, 64, 67, 86, 46028, 70, 72, 73, 46134, 59, 61, 71, 78, 46205, 7, 16, 30, 91, 46460, 46503, 25, 44, 60, 46651, 71, 81, 91, 46707, 47119, 47233, 38, 56, 65, 96.

ACCOUNTANCY—(HIGHER).

First Class.

656, 9694, 29262.

Second Class.

539, 628, 1125, 41, 69, 2240, 77, 4413, 93, 5026, 5367, 6771, 8144, 8226, 27, 32, 39, 53, 9573, 9696, 9713, 14, 53, 74, 10527, 11167, 11772, 13846, 14110, 42, 52, 14738, 18361, 82, 18465, 67, 68, 69, 18519, 19558, 74, 76, 90, 96, 19605, 64, 21422, 22040, 22314, 22671, 75, 22839, 23809, 25528, 28217, 48, 29752, 30428, 30504, 30896, 30900, 10, 17, 19, 25, 28, 35, 31484, 89, 31516, 39, 46, 47, 31808, 59, 32381, 32401, 27, 34692, 35174, 79, 35214, 35300, 35907, 36137, 64, 66, 74, 37061, 66, 37179, 38686, 38856, 40016, 97, 40161, 97, 40320, 23, 44, 90, 40755, 58, 64, 40881, 41274, 96, 41770, 41891, 41929, 42763, 42884, 43183, 43231, 44043, 44130, 44351, 44403, 44571, 44743, 44811, 39, 45302, 45566, 45815, 46426, 46863, 47189, 47243, 47329.

COMMERCIAL PRACTICE—(LOWER).

First Class—*Nil*.

Second Class.

633, 8230, 11160, 18525, 25528, 38, 29261, 31485, 36225, 39886, 87, 90, 91, 96, 98, 99, 39900, 05, 16, 40000, 15, 54, 43047, 43223, 44619, 47200.

BANKING—(LOWER).

First Class—*Nil*.

Second Class.

6791, 8230, 13136, 18505, 20022, 20713, 53, 20807, 21416, 25379, 25528, 38, 27727, 29253, 30457, 32399, 36192, 36225, 36500, 37438, 40, 37502, 38876, 39869, 90, 96, 39911, 14, 40054, 43223, 51, 43534, 43949, 67, 44594, 45855, 45994.

COMMERCIAL GEOGRAPHY—(LOWER).

First Class—*Nil*.

Second Class.

6788, 10870, 13136, 20744, 64, 73, 82, 25375, 79, 25495, 25538, 29253, 31485, 36192, 40110, 47200.

COMMERCIAL PRACTICE—(HIGHER).

First Class—*Nil*.

Second Class.

6781, 9745, 54, 13156, 19664, 20430, 20808, 22487, 25463, 95, 36523, 37904, 38665, 38787, 40070, 72, 43972, 44419, 44613, 40, 45040, 47325.

BANKING—(HIGHER).

First Class—*Nil*.

Second Class.

539, 633, 1116, 60, 4996, 99, 5002, 13, 5631, 6767, 85, 9754, 55, 80, 13156, 14108, 18375, 18498, 19139, 20705, 21, 23, 20801, 08, 22481, 82, 87, 22703, 08, 76, 24389, 25470, 86, 27791, 29580, 92, 29742, 44, 30425, 79, 99, 30551, 31501, 31826, 33072, 90, 34641, 36219, 36523, 37904, 38164, 38669, 76, 40070, 93, 41923, 38, 42789, 43956, 78, 44125, 31, 44419, 44508, 91, 44640, 98, 44708, 45040, 45264, 46118, 47196, 47278, 47325.

COMMERCIAL GEOGRAPHY—(HIGHER).

First Class—*Nil*.

Second Class.

2277, 5013, 7372, 8230, 9754, 15320, 20808, 22481, 22708, 59, 22805, 25463, 86, 29742, 30785, 36523, 37904, 38669, 76, 46175.

TYPEWRITING—ENGLISH—(HIGH SPEED TEST).

First Class.

1179, 4147, 5888, 13152, 21458, 31890, 35205, 43337.

TYPEWRITING ENGLISH (HIGH SPEED TEST)—*cont.*

Second Class.

4420, 7423, 9693, 10600, 994, 11142, 808, 33, 12508, 13650, 57, 14686, 772, 17765, 18784, 19988, 22665, 762, 23357, 24178, 459, 27618, 28242, 29105, 32412, 36526, 40751, 42789, 43298, 728, 44056, 46524.

TYPEWRITING—TAMIL (HIGH SPEED TEST).

First Class.

4147 only.

Second Class.

7423, 11142, 906, 13166, 650, 57, 14638, 772, 18956, 19612, 988, 22762, 24459, 25466, 551, 29105, 460, 47220.

SHORTHAND ENGLISH (HIGH SPEED TEST).

150 words per minute.

First Class—*Nil.*

Second Class.

47191, 98, 47219, 52, 47330.

180 words per minute.

None Passed.

SHORTHAND—TAMIL (HIGH SPEED TEST).

100 words per minute.

First Class—*Nil.*

Second Class.

47215, 41, 51, 58, 77, 47313, 22, 46, 48, 49, 50.

120 words per minute.

First Class—*Nil.*

Second Class.

47194, 95, 47308, 10.

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