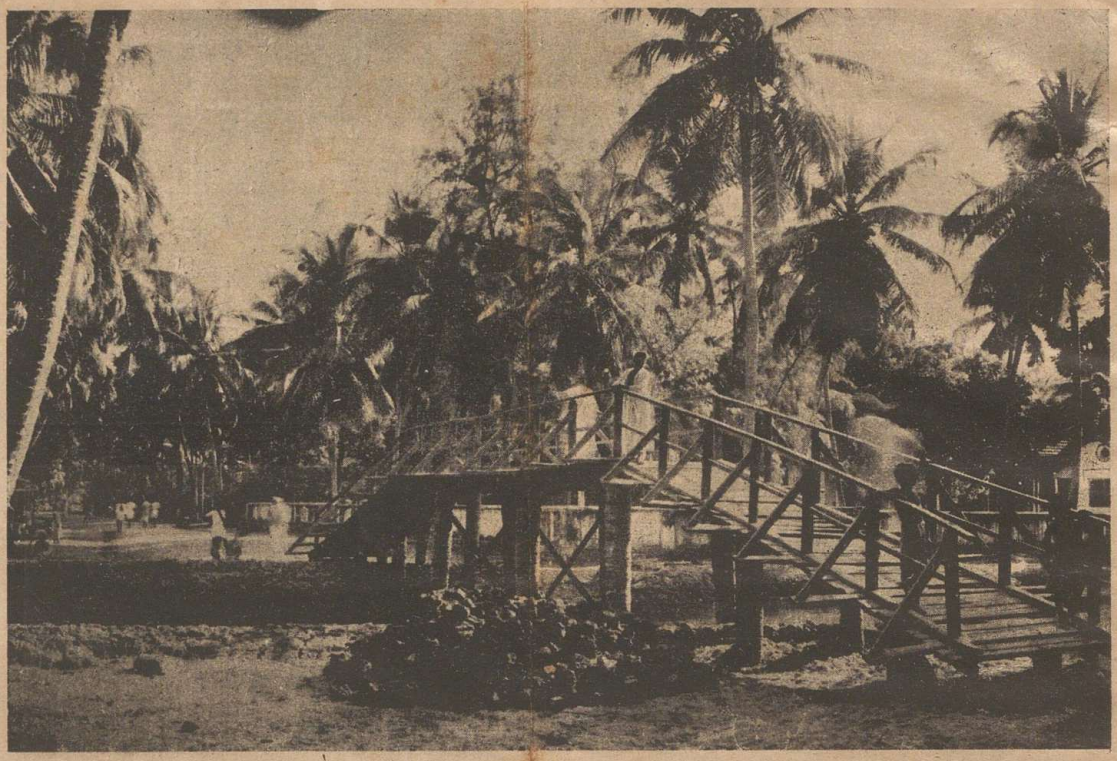
GOVERNMENT OF COCHIN

COCHIN INFORMATION

ERNAKULAM MARKET CANAL

VOL. V 1946 FEBRUARY No. 2



RURAL CHERAI

"COCHIN"

"COCHIN" is a profusely illustrated and superbly got up publication graphically describing Cochin's varied and various war efforts, her distinctive culture and civilisation, her arts and crafts, her customs and manners, her notable advance in industries and agriculture, her striking progress in education and other fascinating features and interesting developments.

"COCHIN" describes in about 400 and odd pictures the full story of Cochin's magnificent war achievements, the manner in which she placed her resources in men and material at the disposal of the Allied Nations to fight the forces of evil.

"COCHIN" is a publication which everybody should possess.

"COCHIN" can be had from The Director of Publicity, Ernakulam and from the Information Officer. Price Rs. 2.

"COCHIN"—Further details can be had from

The Information Officer,
Government of Cochin,
ERNAKULAM.

HIS HIGHNESS SRI KERALA VARMA

His Highness Sri Kerala Varma, Maharaja of Cochin

HIS Highness Sri Kerala Varma who ascended the musnad on the 18th Makaram 1121 was born on the 31st Mithunam 1045 M.E. at Trippunittura, the seat of the Ruling Family of Cochin. He is the son of Her Highness Kunjamma Thampuran who demised in 1096. She was a highly cultured Princess, and a great

Her Highness Kunjamma Thampuran
His Highness' mother

composer. His Highness had his early education under the able guidance and guardianship of his father the late Brhammasri Chennassu Manakkal Narayanan Nambudiri, an erudite scholar in Sanskrit. In Karkadagam 1060 His Highness joined the Sri Seshacharia Patasala founded by the abdicated Ruler of Cochin and his brother the Elaya Raja who demised at Irinjalakkuda in 1075, (who were at that time the first and second Princes respectively) for the education of the young Princes of the Ruling Family and for the promotion of Sanskrit studies. In this Patasala, under the care and direction of experienced teachers like Chandra Warrier of Desamangalam and Kunjan Warriar who afterwads became Malayalam Pandit in the Maharaja's College, His Highness attained high proficiency in Sanskrit. For three years under K. Karunakara Pisharodi, the English Tutor in the Patasala and for two years under the late Manikath Sankara Menon, sometime Secretary to the Diwan of Cochin, His Highness studied English with a view to improve and widen his knowledge and to appear for the Matriculation Examination of the Madras University. For a few months before the examination he went and stayed at Trichur for undisturbed study and concentrated work as instructed by his "friend, guide and philosopher", the Elaya Raja who demised at Irinjalakkuda, an incandescent and dominating personality who exercised a profound and powerful influence on the thoughts and activities of the younger generation of educated men of those days.

After passing the Matriculation Examination His Highness joined the Junior F.A. class in the Maharaja's College in 1066 where he was taught Physiology by that popular Principal Sealy and English by veteran Professors like Cruickshank and Koshi. In the second year His Highness wanted to continue his studies at Madras. Though sanction to proceed to Madras was refused at first, it was subsequently granted through the intervention, it was believed, of the then Director of Public Instruction of Madras Mr. Grieg who became the acting Resident here. He joined the Presidency College in 1067 which had at that time in its professorial staff able scholars and educationists like Bilderbeck, Stuart, Duncan, Stone, Renganatha Mudaliar, Seshagiri Sastri and Dr. Oppert, the last two being Sanskrit Professors of His Highness. He sought knowledge not only from his professors but also from books.

His Highness passed the F.A. Examination in 1068 and continued his studies in the Presidency College for the B.A. Degree Examination, taking as his optional subject Mental and Moral Science and as his second language Sanskrit. He appeared only for two parts in 1070 in both of which he came out successful, securing second class in English. He passed the remaining part in the

His Highness the Maharaja arriving at the Darbar Hall to receive the respects and thirumulkazhicha from His Highness' subjects, Near His Highness is Mr. B. V. K. Menon. Secretary to Government

following year and took his degree in 1071. He is the first member of the Ruling Family to take the B. A. degree.

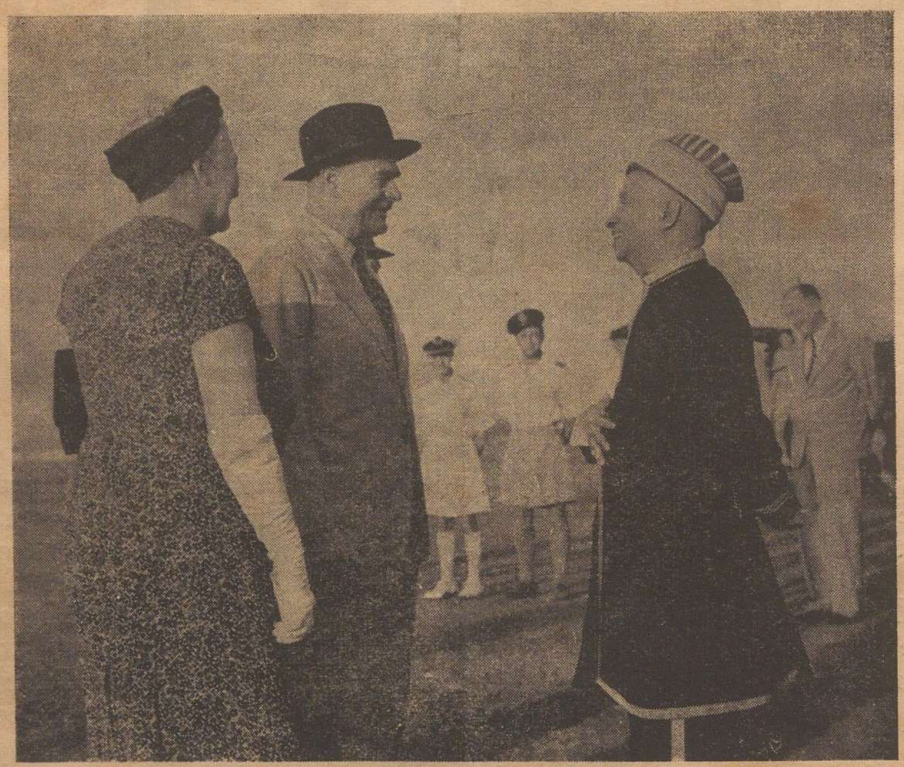
After graduation His Highness returned to Trippunittura in 1072. He did not sit idle but widened his knowledge by extensive reading, and kept abreast with the times by reading daily news-papers and periodicals regularly and systematically. For three years he was an examiner for the Middle School Examination in History and Sanskrit. From 1082 to 1085 he was Examiner in Malayalam for the Madras University and from 1085 to 1087 in Sanskrit and Malayalam for the Cochin State School Leaving Certificate Examination. Being of studious and regular habits His Highness found time and leisure to coach up young Princes in English, Algebra and other subjects. He exercised strict discipline not only on others who came under his tutelage but also enforced it on himself. The most distinguished of His Highness' disciples

was the late Rama Varma Thampuran, more popularly known as "M. A. Thampuran", on account of his being the first Prince to take the M.A. degree of the Madras University.

During this period the abdicated Ruler found it desirable to have an able and experienced individual to act as Warden of the Residential Palace and to control and direct the young Princes staying there for prosecuting their studies in the Maharaja's College. The choice fell on His Highness. The onerous responsibilities of the Warden were discharged by His Highness with considerable tact and ability, maintaining proper discipline and efficient control and helping and guiding the wards to persue their studies with diligence and delight. He remained as Warden for little more than four years till the 13th of Thulam 1089.

In Meenam 1089 His Highness was appointed as Malayalam Translator to the Government of Madras. His high attainments in oriental languages and English received adequate recognition at the hands of the Government of Madras. He carried out the work satisfactorily and with conspicuous and commendable success. He remained as Translator only for three and a halt years in active service. He left Madras in 1093, and settled down at Trippunittura. In 1114 His Highness left Trippunittura and settled down at Ernakulam.

His Highness has visited many important places of pilgrimage in South India. In 1081 he visited Rameswaram with his mother and in 1086 he visited that place again with a few other members of the Ruling Family.



H. H. The Maharaja in conversation with Their Excellencies Lord and Lady Wavell when the latter visited the State last year

His Highness married Sreemathi Pottayil Narayani Amma on the 29th Medam 1066. After her death in 1091 he married Sreemathi Kunjikavukutty Amma of Paliyam, an ancient family of the quandom Prime Ministers of Cochin before the British Supremacy. His second wife died in Chingam 1103. By the first wife His Highness has two sons and three daughters. Mr. Madhava Menon, his first son, is the E. N. T. Specialist in the Ernakulam General Hospital and the second son Mr. Gopala Menon is practising in the Madras High Court. His Highness' eldest daughter Sreemathi Ammukutty Nethyaramma is the consort of the fourth Prince Rama Varma Kuttan Thampuran, the second Sreemathi Janu Amma was the wife of the late Pattathil Govinda Menon, Advocate and the youngest Sreemathi Subhadra Amma is the wife of Mr. K. Kunhirama Menon. By his second wife His Highness has one son and daughter. His son Gopi Achen is studying Glass Technology in the Benares Hindu University and his daughter Sreemathi Padmini Nethyaramma is the consort of Prince Ravi Varma who is an Advocate at Madras. His Highness has one brother, Ravi Varma Thampuran M.B.E. and a sister, Manku Thampuran.

In his youth His Highness was an active tennis and badminton player. He was a very regular member of the Princes' Club at Trippunittura and also of the Cosmopolitan Club while he was at Madras. His Highness has read widely. Every day he spends nearly two hours in reading the Madras dailies—the Mail, the Hindu and the Indian Express—and the local Malayalam papers.

His Highness has come to the throne at a critical period in the history of the world—a world trying to emerge out of six years of turmoil, tragedy and disaster. Unlike his predecessors His Highness has the priceless advantage of a university education and a great gathered harvest of administrative experience. His Highness has now reached the heights of ultimate power and responsibility; and for the discharge of the solemn responsibilities of the Ruler of a progressive and enlightened State His Highness is fully equipped and properly trained. His outlook is progressive and democratic and he possesses in abundance all the noble qualities of the Cochin Ruling Family, such as, piety, devotion to duty and genuine and anxious concern for the welfare and happiness of the people.

——

HIS HIGHNESS THE MAHARAJA'S MESSAGE TO THE COCHIN LEGISLATIVE COUNCIL

WHEN the Cochin Legislative Council met on the 4th February 1946. Sir George Boag, President, made the following statement—I have a message from His Highness the Maharaja.

"Members of the Legislative Council,

I welcome the first meeting of the Legislature since my accession with genuine pleasure. The Council representing the people of my State plays an important role in the constitution of the State. I shall always follow its proceedings with the deepest interest and give to its recommendations the most deserving consideration befitting its status."

(Read all members standing)

COCHIN LEGISLATIVE COUNCIL

Condolence motion on the demise of H. H. Sri Ravi Varma

"WE meet this morning, Hon'ble Members, with a deep sense of grief at the death of His late Highness. I thought I should be interpreting the wishes of all Hon'ble Members in arranging that the only business to be taken up today will be a motion of condolence. As soon as that discussion is finished, the House will be adjourned until tomorrow morning. I now call upon the Hon'ble Minister to move," said Sir George Boag, Diwan President on the first day of the meeting of the Cochin Legislative Council.

Mr. Parambi Lonappan (Minister for Rural Development) said,

Mr. President, Sir,

It is with feelings of deep sorrow that I rise to perform the melancholy duty of moving the following motion on the sad demise of His Highness Sri Ravi Varma, the late Maharaja of Cochin.

"This Council desires to express, with due respect, its deep sense of sorrow at the irreparable loss sustained by the State by the lamented demise of His Highness Sri Ravi Varma, the late Maharaja of Cochin, and its sincere sympathy with His Highness the Maharaja and other members of the Ruling Family and His late Highness' Consort and children, in their sad bereavement."

It is unnecessary for me to make a long speech to commend this motion for the unanimous acceptance of this House. Only two months have elapsed since we stood united to express in one voice our loyal felicitations on His Highness' attaining his 80th birthday. And the spontaneous expressions of joy from every section of this House, on that unique occasion, bear testimony to His Highness' high character and benevolent rule. The admiration and loyalty of the public of Cochin to the person of His Highness then exhibited itself in the spectacular manner in which they celebrated the occasion and in the presentation of a public address as a humble token of their sincere feelings of attachment to His Highness. Little did we then dream that God in His omnicience had decided to crown His good devotee with a repose so unexpected and so sudden, leaving us with our limited vision, in deep lamentation.

His Highness ascended the Gadi, as you are all aware of, at a time when the whole world was in the final grim grip of a devastating world war. Cochin along with other countries had to face serious situations arising therefrom. His Highness with his deep abiding faith in God carried on his arduous duties of administration with extreme calmness and with anxious care for the welfare of all His Highness' subjects, whether rich or poor. Though His Highness remained on the Gadi only for a short period, His Highness' rule was marked by goodness and sincerity of purpose. He was, pre-eminently, a just Ruler, giving free access even to the lowest of his subjects and dealing with every one in an amiable and affable manner and with the concern of a loving father. His Highness loved peace above everything; and it is significant that not long after he ascended the Gadi, by God's grace, the war was terminated and peace sighted.

In the sad demise of His Highness Sri Ravi Varma, his consort lost a loving husband, his children lost an affectionate and exemplary father, his people lost a good and sympathetic Ruler and Bharath Matha lost an ideal Maharaja. His Highness' court was pure and His life serene. May God in his abundant mercy grant His Highness peace eternal which he long yearned for and richly deserved. May his soul rest in peace".

Messrs. A. Eachara Menon, P. Kumaran Ezhuthassan, P. Govinda Menon, L. M. Pylee, K. Kochukuttan, T. S. Narayana Ayyar, K. A. Raghavan, K. K. Kannan, K. S. Panicker, S. P. Luiz, S. S. Koder, P. A. Muhamed Ashroff and Dr. S. S. Rao and Mrs. T. Francis associated themselves with all that was expressed by the Minister.

Before requesting the members to stand in support of the motion the Diwan President made the following brief speech.—

"Hon'ble Members, before I put this motion to the House, I should like to associate myself and the official Members of the House with the tributes that have been paid to His late Highness from all parts of this House. I shall only add this: that I shall always regard it as a great privilege to have been associated with a Ruler whose single minded devotion to duty and whose constant care for the welfare of all his subjects was an inspiration and an example to everyone called to take any part in public affairs.

I will now ask Hon'ble Members to stand in support of this motion."

The House rose as a mark of respect to the memory of the late Maharaja.

"THE ONLY ONE OF ITS KIND IN INDIA"

THE Forest Tramway in Cochin State is "the only one of its kind in India." It was constructed forty years back during the Diwanship of the late Pattabhirama Rao.

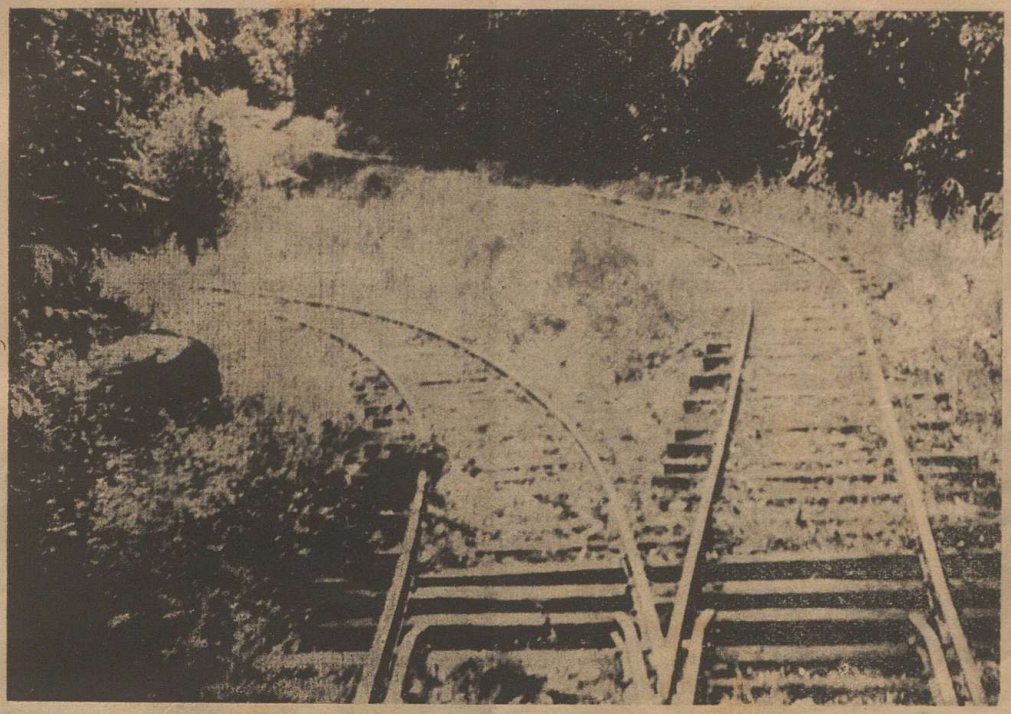
There were over 200 square miles of virgin forests in the State containing valuable trees of magnificent growth which had never been exploited for want of suitable outlets for their prospective output. Before giving the long-needed rest to the accessible forests it was considered necessary to make an attempt to exploit the virgin forests with a view to ensure a steady income from the forests of the State. The then Conservator Mr. Alwar Chetty recommended the appointment of a special Forest Engineer to survey the Chalakkudi river with a view to ascertain the practicability of utilising it to float down timber from the interior. Mr. Haffield, the Engineer appointed for the purpose, found on inspection that the higher reaches of the river were so full of obstructions that the cost of tramming it for this purpose would be prohibitive, but that, on the other hand, a land route, if provided with a suitable means of transportation, would tap a larger and richer forest area and that it could be utilised, unlike river transport, all the year round.

A reconnoitering survey of the whole area and a valuation survey of selected portions of the same were carried out and as a result of these surveys it was found that the area that would be served by the Tramway would be 128 square miles—35 square miles being deciduous and 93 ever-green forests—and that there would

The Cochin Forest Tramway

be an unlimited supply of valuable timber. The work of constructing the tramway was, therefore, taken up and completed in 1907.

The total length of the tramline is 50 miles. There are 254 bridges and culverts along the line. Starting from Chalakkudi there is a continuous run of 21 miles through low country intercepted with some sharp curves. At mile 21 there is an abrupt rise of 1,000 feet. The ascent is made by a series of double track, self-acting wire rope inclines, of which there are three at this place. The rope inclines are marvellous pieces of engineering work and are worked by gravity. The ascending van is hauled up at the end of a wire rope which passes over a horizontal wheel fitted with two independent rim-brakes at the break house at the top of each incline, the descending load attached to the other end of the cable serving as a counter-poise. The first incline has a gradient of one in fifteen, the second one in seven and the third one in three.

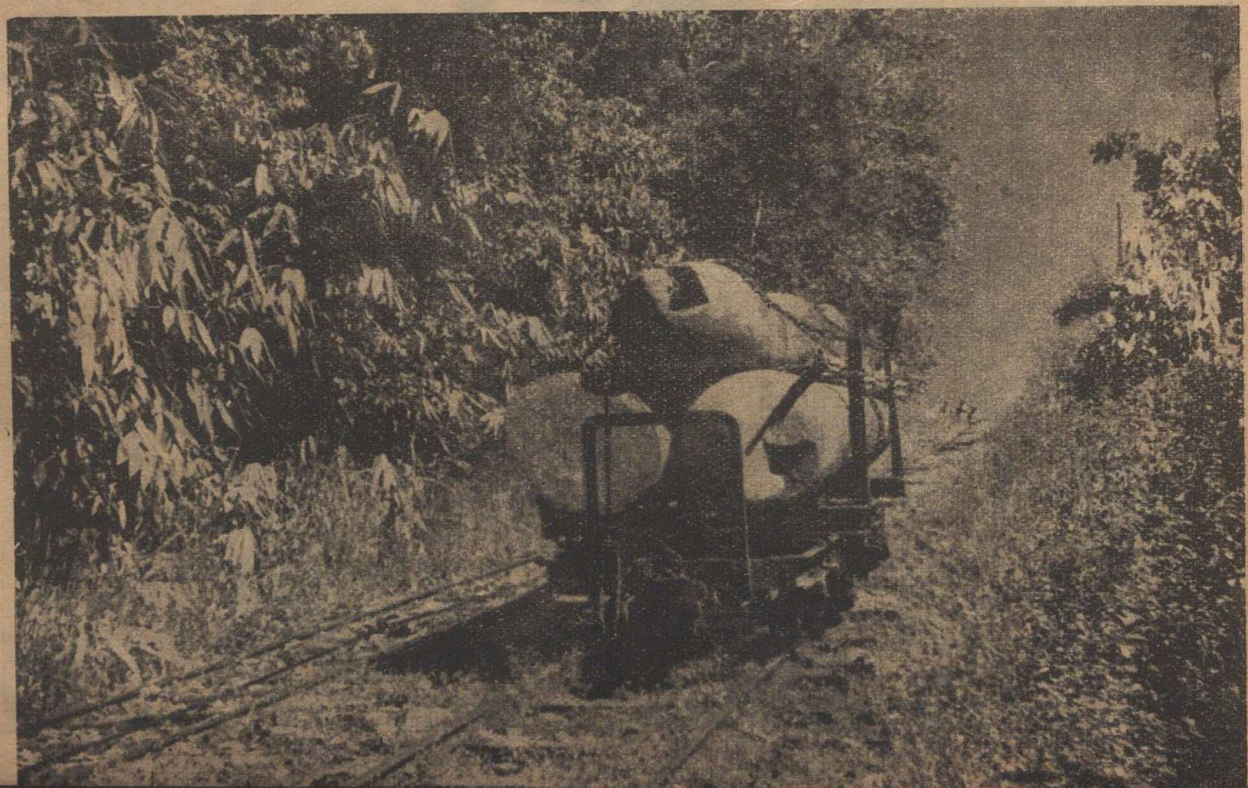


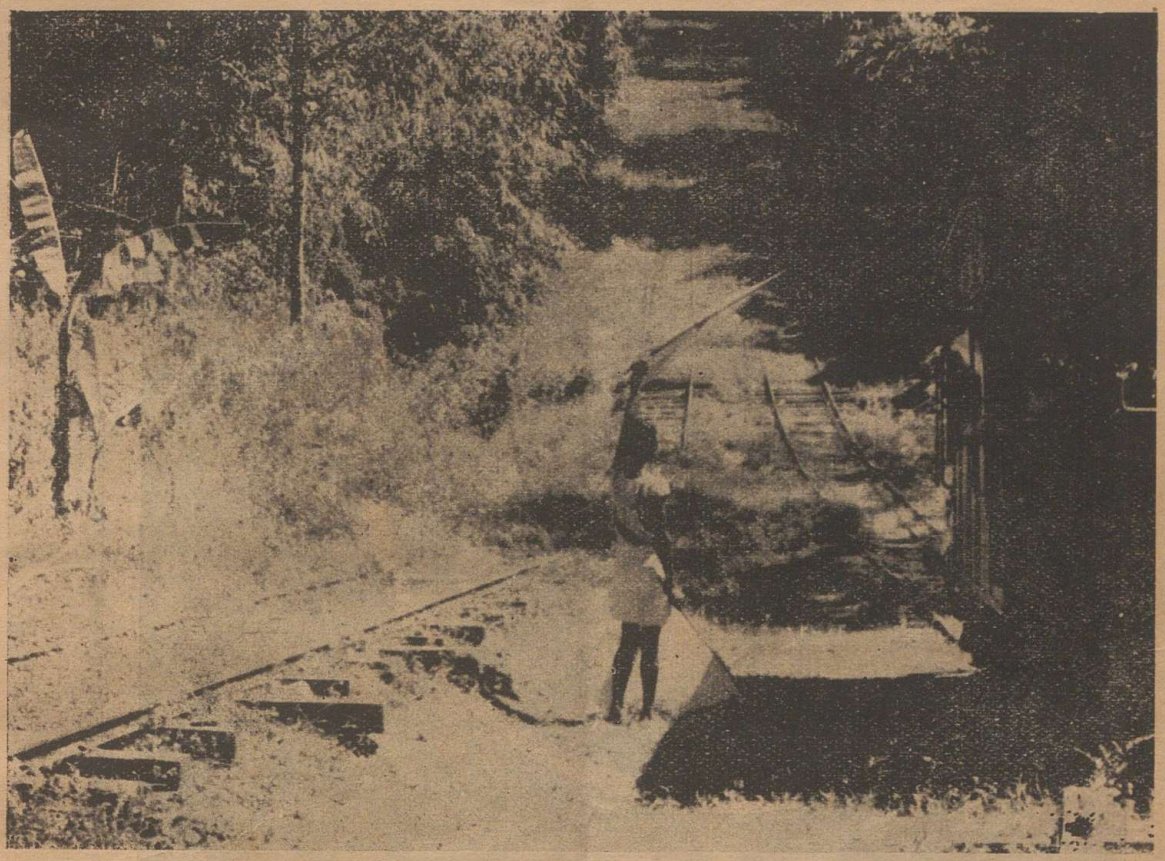
The zig-zags

Elephant at work—Carrying timber logs to the Tramline

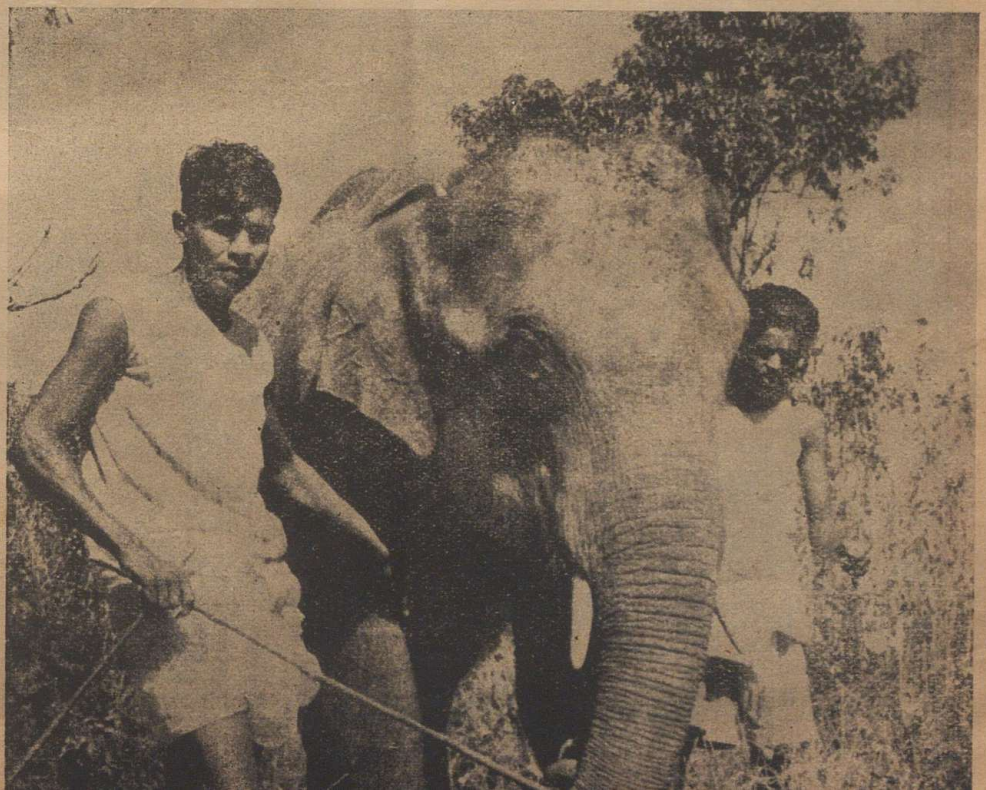
Elephant loading timber log in trucks

A load coming down one of the Inclines

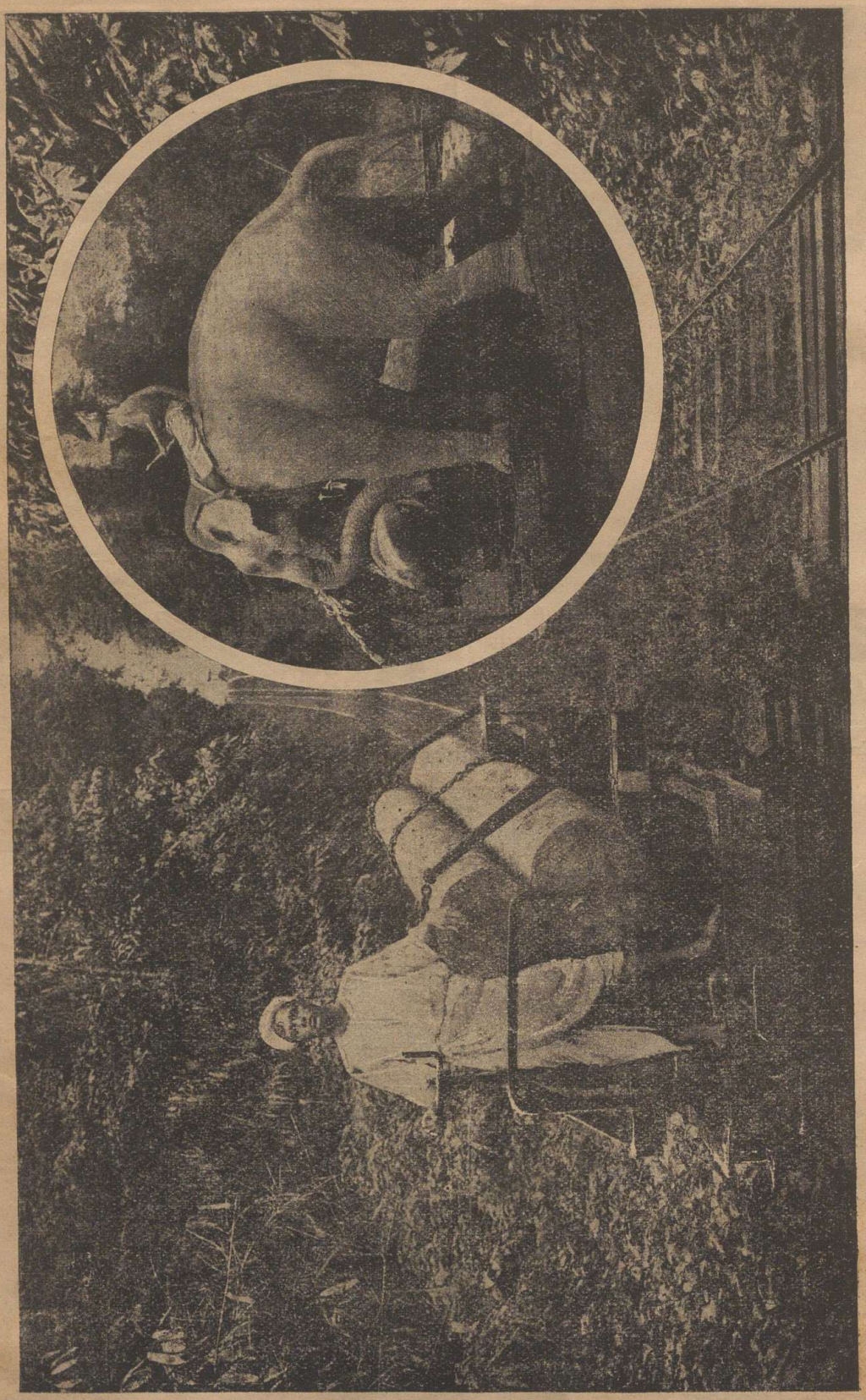




Empty carriage going up the Incline—Signaller giving instructions to the Brakeman at the top



A new "captive" under training



Another view of a load coming down the Incline—and an elephant loading a truck

From the third incline the tramline descends the ridge by means of ten reversing stations, aligned in zig-zags over the face of the steep hill. The next series of inclines come at mile 26½. Here there are two inclines with gradients varying from one to five and one to seven. From the top of the fifth incline the distance to Parambikulam—the terminus of the tramline—is nearly 22 miles. From the the top of the ridge where the fifth incline is located the line descends to mile 30 by means of five reversing stations and thence by an almost level line to mile 50, the Parambikulam terminus.

The traveller can see hilly areas covered with magnificent forests of teak and other valuable trees and exhibiting a splendid luxuriance of foliage and flowers and broken by long spurs, extensive ravines and dense forests rising terrace by terrace to an elevation of 5,000 feet above the sea level. Elephants and bisons in herds can be seen roaming about in these areas; tigers and bears can be found in most places, and also cheetahs and lepards lurking in the confines of the forests. Birds of brilliant plumage are abundant.

There are good rest houses on route and at the terminus for the convenience of tourists and visiting officials.

The Tramway transported in the last financial year (1944—45) 4,283 tons of round timber in log form 1,97,574 teak ballies and posts and 2,775 tons of fuel. The working of the forests served by the Tramway from its inception till the middle of August 1945 has resulted in a net revenue of Rs. 22,45,301 after allowing for interest at 2 per cent on a capital expenditure of 22 lakhs of rupees.

(We are indebted to Mr. Ellis R. Dungan for the photographs illustrating this article. He has taken a film of the Tramway).

PADDY CULTIVATION

(POST WAR SCHEME)

Agriculture is the main occupation and the chief source of income of the people of the State. The furtherance of the material prosperity and well-being of the people is intimately associated with the development of agriculture. Agriculture, therefore, takes a high place—perhaps the highest—in the plans for development after the war.

Tentative plans have been drawn up for the economic, industrial and agricultural improvement of the State. These will now be scrutinised by Committees appointed by the Government. A committee consisting of the following gentlemen has been appointed to consider the schemes relating to Agriculture, Livestock, Fisheries, etc. The Minister, Diwan Peishkar, Secretary to Government (Development Department), Conservator of Forests, Director of Agriculture, Director of Veterinary Services, Superintendent of

Government Central Farm

Fisheries, Deputy Secretary for Post-War Development, Mr. K. A. Raghavan, M. L. C., Mr. V. Ittiravi Nambudiri, M. L. C., Mr. M. K. Vergese, M. L. C., Mr. V. R. Krishnan Ezhuthassan, M. L. C., and Mr. P. Aravindaksha Menon. A detailed scheme for the development of paddy cultivation on the lines indicated below has been prepared.

Government have always been alive to the importance of agricultural development. A Department of Agriculture was organised in 1908, an experimental and demonstration farm was opened, exhibitions were held, a system of agricultural loan at a low rate of interest was introduced, various kinds of propaganda among the ryots were conducted, a marketing survey was undertaken, experiments with seeds were conducted and steps were taken to popularise them. There were also demonstrations in the holdings of the ryots and manurial experiments to find out the suitability of the different kinds of chemical and organic fertilisers to the main varieties of soil in the State. The Central Farm, besides being an experimental station, has all along been a general purpose farm serving the people in a number of ways. Multiplication and distribution of improved seeds and plants, implements and tools, breeding and distribution of improved breeds of cattle, horticultural and agricultural education, dairy work, goat breeding, cultivation of vegetables, plantains, mangoes, fruits, etc., have been the main activities of the Farm. These activities will be enlarged and improved in the post-war period.

The total area of the State excluding reserve forests is 6,44,234 acres of which the net area under cultivation is now 4,67,759 acres. An increase of 5,469 acres was effected as a result of the Grow More Food Campaign. The acreage, yield and total production of cereals in the State are as given below:

Crop	*Acreage*	*Average yield per acre*	*Total production*
Rice	2,86,568	838 lbs.	96,237 tons
Maize	566	700 do.	177 do.
Ragi	2,947	1,000 do.	1,315 do.
Chama	5,000	400 do.	893 do.

According to prescribed standards the minimum quantity of food needed for each individual is two and a half pounds

per day of which at least one to one and eighth pound should be cereals, the rest being made up of vegetables and other protective food. A State which has a normal population of one and a half millions cannot sustain itself with the present produce of the land unless the balance is imported or other measures employed to increase production either by more intensive cultivation or by extending the area of cultivation. Further extension of cultivation being impossible the only alternative is its intensification. The objective of agricultural planning has, therefore, to be to make the State self-sufficient, not only in the case of paddy but also in the case of other food stuffs so that there may be an adequate quantity of food of all kinds for a balanced diet for the growing population of the State.

When considering this question the first thing that requires investigation is whether the existing laws in the State are conducive to the successful working of the schemes envisaged. The tenant has now security of tenure. As a result of the working of the Debt Conciliation Board and the Agricultural Relief Act passed in 1114 M. E. the problem of rural indebtedness has become less acute and the phenomenal rise in the price of all agricultural products has helped materially to improve the economic condition of the cultivators. Fragmentation of holdings is often a bar to productive cultivation but legislative action to prevent alienation of lands will naturally create complications. Fragmentation is bound to occur in Marumakkathayam families where in every second generation there is bound to be a partition. Intensive cultivation naturally involves capital expenditure for which cheap credit is a prime necessity. Co-operative Societies, the Central Co-operative Bank and the Land Mortgage Bank extend such facilities. Loans are also advanced by the Government at a low rate of interest. The problem of finance is, therefore, easy of solution.

Extension of irrigation is a prime necessity for the improvement and intensification of cultivation. The total extent of land now irrigated is 46,784 acres fed by 42 major irrigation systems. Under the Food Production Scheme 430 tanks, 267 wells, 171 chiras and 39 canals were constructed. These irrigate an area of 6,035 acres. These schemes have only touched the fringe; but the requirements of the State can be satisfied only by the completion of the following schemes: Chalakkudi River Diversion Scheme (area expected to be benefitted 22,900 acres), Naduthode Scheme (4,000 acres), Poomalai Scheme (500 acres), Peechi Reservoir (4.000 acres) Pillathodu Scheme (4,000 acres) and Vazhani, Pothundi and Karingachira drainage schemes. Besides these 43 tanks, 13 bunds and 11 canals are scheduled for construction by the Panchayat Department. Steps are also considered to conserve rain water by putting up bunds in extensive areas like the Kambalathara Eri in Chittur.

By using approved varieties of seeds alone it is estimated that production could be increased up to 15 per cent. "Cochin 1" developed by the State Agricultural Department has become sufficiently popular and has shown a maximum increased yield of 15 per cent which would mean an increased turn over of 30 lakhs of paras of paddy per annum. By selection and by hybridisation experiments new strains are proposed to be introduced; but as this would take time and as there is necessity to effect immediate improvements importation of known and well tried varieties will be tried, at the same time making local selection and conducting hybridisation. It is estimated that within seven years sufficient quantities of the approved varieties would be available for distribution over the entire area of the

The proposed site of the Chalakkudi River Diversion Scheme

Peechi Dam site

State both by subsidisation and departmental exertions in the Central Farm. Recalcitrancy on the part of growers to follow the directions of the Department will have to be met by legislation.

Hesitancy on the part of the cultivator to spend money on manurial operations has to be met by propaganda and publicity. Where controlled irrigation is available, as in Chittur and where the return is assured, the cultivator generally earmarks an amount for manure. Otherwise he is content with the poor return. Advice regarding proper manuring, if accepted by the cultivator, would certainly increase the yield by 20 to 40 per cent.

Manures locally used consist of oilcakes, bone meals, fish and prawn dust, farm manures, green manure and chemical fertilisers. Due to absence of facilities for decortication, a major portion of the 5,976 tons of groundnuts produced in the Chittur Taluk is exported. The Pan Asiatic Commercial Syndicate of Trichur and the Fertilisers and Chemicals of Travancore now ensure a steady supply of bone meal and chemical fertilisers respectively. Green manure, though essential, is difficult to obtain in sufficient quantity. To have N2 fixed in the soil, rotation of crops is suggested with leguminous plants as cow pea, peohrosia, etc. All the Municipalities would be taking up the preparation of compost. This will be extended to Panchayats. Sweepings, cow dung, etc., are proposed to be collected and put in compost pits.

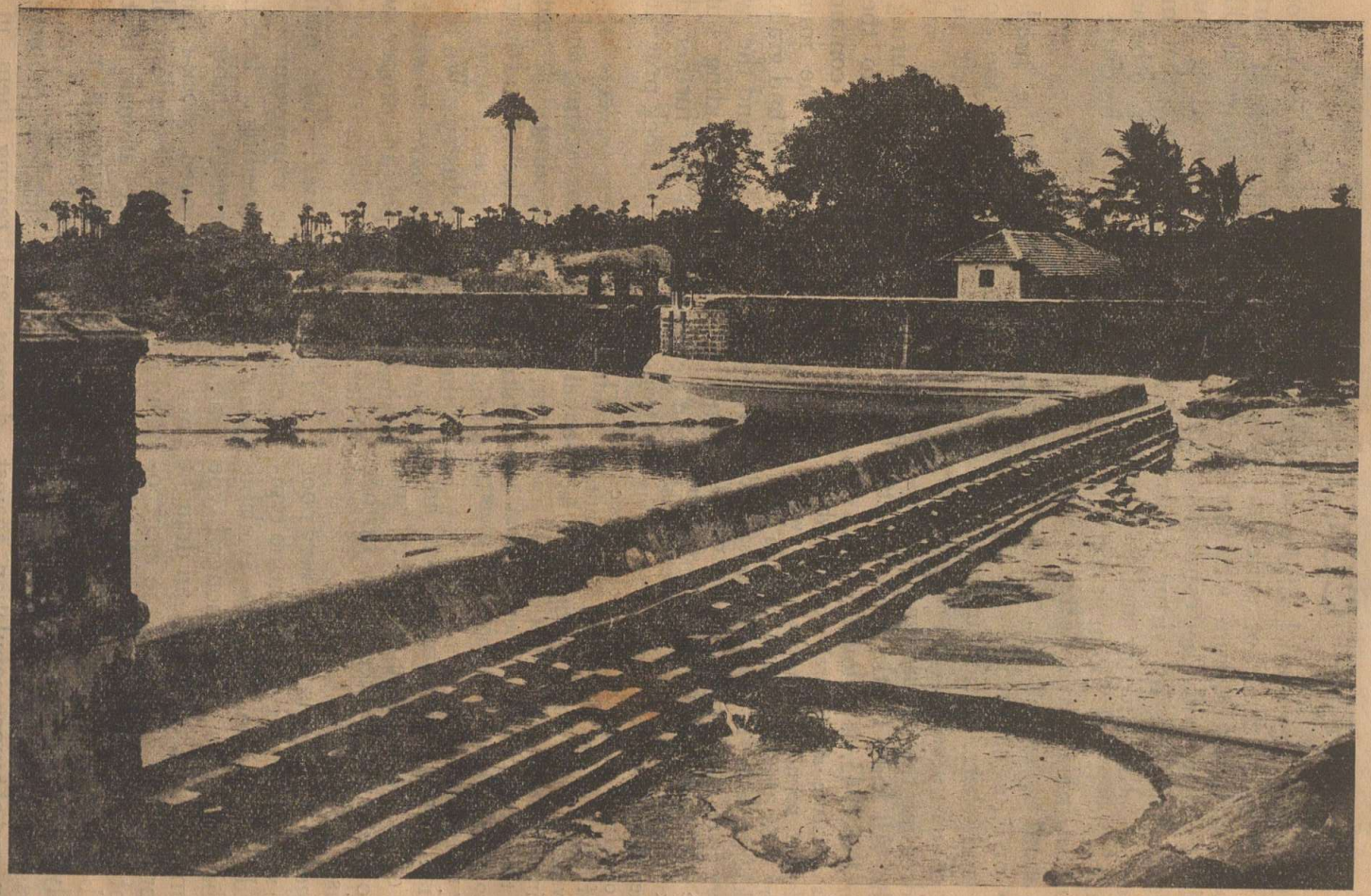
Every Panchayat has now a manure depot from where cultivators can get manure on loan, free of interest, the cost to be paid after the harvest. One and a half lakhs of rupees worth of manure is now sold; and this is likely to step up to five lakhs in due course. To feed all the Panchayats, Central Depots in each Taluk are envisaged. Soil analysis is being conducted to fix the nature of manure suitable for different kinds of soil.

It is proposed to have an agricultural engineering section whose function it will be to prescribe improved implements, to maintain chiras and canals and to construct new ones wherever necessary.

Research work on soil, manures, food, etc., would be systematically conducted and provision would be made for the recording and forecast of weather. The Entomological section will look into the prevention and control of pests and preparation of insectides.

Facilties are proposed to be extended to teach agriculture as an optional subject in the High Schools. At present it is taught in only a few high schools. An Agricultural School is proposed to be opened. The course will be one year. Diplomas will be awarded to successful candidates. To encourage students to take to agriculture, stipends will also be awarded. More demonstration centres will be opened to impart to the ryots instruction about modern technique in agricultural operations. Publicity will be conducted in the villages by films. Mobile units provided with projectors are even now being made use of for such work by the Publicity Department.

——



Mulathra Dam—A part of the Chittur Irrigation Scheme

A LIVESTOCK IMPROVEMENT SCHEME FOR COCHIN STATE

ITS importance.—Lord Linlithgow, who took up the cause of cattle improvement in India, and who had been well-conversant with the conditions and needs of this land by virtue of his high offices as the Viceory and as the Chairman of the Royal Commission on Agriculture in India, has repeatedly emphasised about the importance of the role of cattle on the national economy of India—a land where Agriculture is the mainstay of her millions. He remarked, while addressing the annual general meeting of the All India Cattle show Society on September 1943, as follows.—

"In this immense agricultural country which feeds the largest population in the whole world almost every seed that germinates owes its debt to the work of the cattle in ploughing the soil and almost every grain that is carried to the markets to feed the great ubran population is carried there by bullock transport. The health of every child, not only health but to a very large extent the intelligence of every child, and so the whole physical standard of India's millons depends on the quantity of milk available for children to drink. In fact cattle are in a real sense the basis of India's economy and the deep traditional reverence paid to them by so many millions throughout the country has a very real and solid basis"

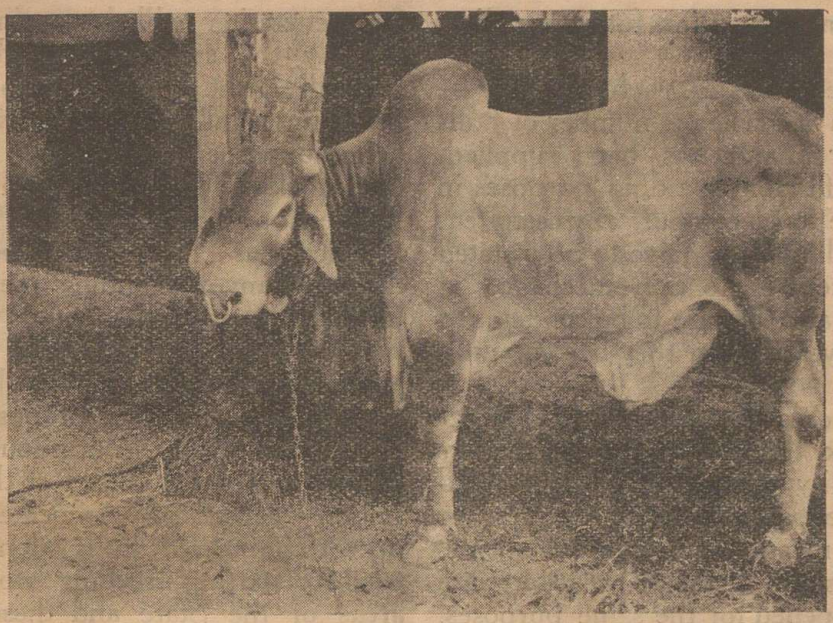
Cochin is a purely agricultural tract and the role of cattle on the economy and health of her people needs no further emphasis.

The need:—Cochin is a land very poor in cattle wealth, having at present no typical breeds of her own, and the available ones which are of a mixed mongrel type being small in size, inefficient in draught and poor in milk. To avoid the incorporation of too much of arithmetical figures, it may be sufficient to say that we have now only a pair of working cattle for every 10 acres of cultivated area and 1·4 ozs of milk per head of human population, against the Indian averages of 1 pair for 3 to 5 acres of land and 6 to 7 ozs of milk per head. To worsen the situation the ban on the export of cattle from British parts has put our State to a loss of over 20,000 animals we have been importing annually. It is self-evident, therefore, that immediate and active measures are to be adopted for the improvement of the cattle of the State.

We have to aim at "the production, care and development of the domestic animals and the use of their products and by-products during life and after death, with the aim of procuring from them the maximum benefit to the community." The proposals contained in this scheme include only the immediate steps by which a general and gradual improvement of the dairy and the working cattle of the State, including buffaloes, can be effected and any further degeneration of the existing stock prevented.

There are other subjects of almost equal importance for tackling and developing, such as breeding of goats and poultry and the production and distribution of hides, skins, eggs and other products of the Livestock industry. We think that these matters may have to wait till this main scheme is put in proper working order.

Measures proposed:—The main lines of effecting cattle improvements are by their proper 'breeding', 'feeding' and 'management'. Breeding embraces several methods of improved stock-raising, including weeding out of undesirables with a view to produce animals best suited to the purpose or purposes in view. Management includes care of animals in health and in sickness, protection from diseases, and rearing them in such a way that they will be able to develop the best in them.



He is a Sindhi—"Krishnan" of the Pioneer Dairy

Breeding:—Though the local animals are small in stature, poor in milk yield and in draught, it is not possible, nor advisable to supplant them with any breed foreign to Cochin. Improvement of our stock by selection to any particular and desired standard of our own may require years and years of continuous work on purely scientific lines. The next best method is to grade up our animals to the standard of other recognised Indian breeds that are suitable to our requirements and environments. Colonel Sir Olver recommends for Cochin grading up of selected local types with the 'Sindhi' bulls for 'Dairy' purposes and the 'Kangayam' types for 'draught' purposes. Grading up with improved bulls is the line followed in Assam, Coorg, Sind, North West Frontier Province, etc. also, where Livestock improvement work had already been taken up.

But as many as 800 good bulls of Sindhi and Kangayam types are required to provide for the service of the cows, if the whole State is to be brought under the scheme immediately. These bulls are to be replaced by fresh bulls every 6 or 8 years, rotating them every 3 or 4 years to prevent in-breeding. But there are two great difficulties in the way. One is that we may not be able to obtain such large number of pedigree bulls all at once. The second is the very high capital expenditure which may be necessary for their purchase and maintenance. It is also not possible to produce in any Government cattle farm the very large numbers of pedigree bulls required for improvement of cattle on mass scale.

We would therefore suggest that two small isolated areas be selected for intensive work of grading up with the Sindhi and the Kangayam breeds, separately, as suggested by Col: Olver and selected local bulls and the bulls which will be raised in the grading work be allowed to breed in the other areas to start with. Though the breeding with the local selected bulls and the first grades are not scientifically ideal for the purposes, this has to be accepted at least as an improvement over indiscriminate breeding with scrub bulls, and it will no doubt raise the standard of the existing poor breeds and

prepare them better for future grading up.

The cattle census of each area may be taken and as and when a number of bulls sufficient for an area has been supplied, all bulls unfit for breeding purposes in that area are to be compulsorily castrated.

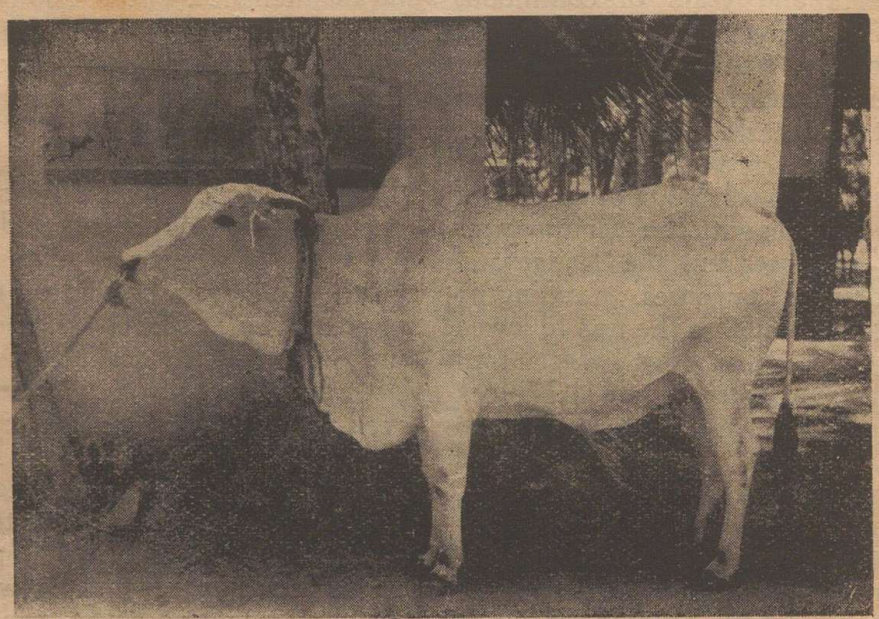
The breeding bulls have to be rotated among the centres, to prevent chances of in-breeding and they are to be condemned after 6 or 8 years when they become unfit for service.

For purposes of raising bulls for extension work the best cows and heifers of the locality selected may be marked and registered, as also their progenies, for purposes of measuring the improvements. Milk records and pedigree registers are also to be opened for the same purposes. The areas taken may be increased gradually according to the availability of bulls each year.

"After selecting the group of villages all the female stock coming up to standard are earmarked and registered. Then proceed to castrate all undesirable males and place in those villages a sufficient number of the best bulls available. The first generation will be an improvement and by the second or third generation we will have a large number of pure breed bulls, all pedigree, ready for any extension either in producing more pedigree stock or for introduction into other villages for grading up."

Since our local stock possesses no degree of any outstanding merit required for average cattle the 2nd or 3rd generation even cannot be styled as pedigree animals, we have to provide 100 per cent pure bulls to the areas proposed for concentration work continuously. The improved stock produced at the concentration centres by repeated grading up with pure-bred bulls alone may be used for starting breeding work in other areas of the State and these areas may be increased year after year, till these embrace the whole of the State.

To achieve a higher degree of merit in the Dairy animals, lactation records of the graded up animals may be kept and studied for further selection. The merit of the sires in transmitting high yielding qualities may also be watched by the performance of the calves. Thus, after a



She is "Santa" (Ongole) of the Pioneer

a few generations of careful selection and grading up, it is possible to raise the standard of our cattle to a much higher and uniform level than at present, but the work of grading up and selective breeding has to be continued to aviod degeneration in course of time.

The centres taken first for concentration work have to be treated as Rural Farms for raising bulls of outstanding merit, for issue to other centres for grading up work. These concentration centres haveto be continuously supplied with the pure pedigree bulls of the Sindhi and Kangayam types. For this purpose and for the purpose of raising pure stock for issue to new centres, pure-line breeding of these two breeds has to be carried on under direct Government supervision and control. Both these breeds, *viz.*, Sindhi and Kangayam, have to be raised on scientific lines, preferably in two separate stations, to prevent chances of mixing. There are a few bulls of both the breeds and some cows of the Sindhi breed in the Government Central Farm at present. We may require about 25 cows and 2 bulls of each type as nucleus for each breeding station. Since the area in the Central Farm is too small to provide enough of separate pastures, moving ground, housing, etc., for maintaining two separate breeding units, we would recommend that the Dairy type of "Sindhi" alone be raised at the Farm and a separate second station of at least 100 acres, with sufficient water facilities, be acquired not far away from the Head quarters for starting a breeding station for the " Kangayam" type.

The work of these stations will be to produce pure-bred pedigree bulls of each type for issuing for grading up work.

To supply these breeding stations with new bulls every three years, and to accelerate the grading work, which will go only at a slow speed if the Farm alone is depended upon for the supply of pedigree bulls, it will be necessary to import at least 6 bulls of each type every year for the first 4 or 5 years and there after 2 of each type every 3 or 4 years, for the breeding stations, to avoid in—breeding.

An important question arises here: while we have been breeding the Ongole type all these years and why is the Kangayam type suggested now? Mr. Ware, Animal Husbandry Commissioner with the Government of India, answers this point thus. "The Ongole breed of Madras is a heavy breed, consuming a large amount of food, and such is not economical for the poor cultivator." The present Ongole herd of the Farm may be transferred to the Kangayam cattle station and graded up to the Kangayam type.

Then comes the question of the 'Buffalo'. The buffalo holds an important place among the cattle of India, contributing as it does, 50 per cent of India's milk production. In Cochin, the strength of buffaloes is 1/3 that of the other cattle. All authorities agree in declaring the importance of the buffalo as a dairy animal. The Royal Commission on Agriculture observes that "the she buffalo rather than the cow is the milk-producing animal of India... It is evident that both in the economy of the ordinary village and in the holdings of those engaged in dairying, room should be found for both species (cow and buffalo). There should, in our view, be no relaxation in the effort to improve the buffalo". The Imperial Dairy Expert, Bangalore, and the Imperial Council of Agricultural Research and other experts have all endorsed this view. In actual experience also it is evident that in running small dairies on cottage industry scale all over the rural Cochin, the buffaloes are preferred. For draught purposes also, where heavy loads are concerned, such as carting timber, fuel, etc., from the forests no bullock can compete with a buffalo. So also when put to the plough, the bullocks may fare well in dry lands, and on average wet lands, but in deep wet lands the buffalo is supreme.

Therefore, it goes without saying that no cattle improvement is complete without improving the buffalo also.

It is proposed, therefore, to start the improvement of the buffaloes also on the same lines of grading up as of the other cattle, to provide the different centres with good stud bulls and to breed a selected type of buffalo also at one of the breeding stations preferably at the Government Central Farm. "Surti" breed seems to be the best type for our State.

The improvement of the goat and other domestic animals can be taken up, one after another, later on, as it is impossible and inadvisable to take up several items together to the benefit of none.

Giving grants to stud goats of good breed may be started now to give an impetus in goat rearing at present.

A castration campaign has to be conducted vigilently side by side with the issue of good bulls. Legislation for compulsory castration of all undesirable stock has already been passed by the Government.

Another phase of the subject is preservation of good stock. No bull good for breeding purposes can be allowed to be castrated. No selected cow or bull calf or cow calf selected for grading work can be sold away from the State or otherwise made not available for the purpose, without the sanction of the authority concerned, till we have improved the whole of the State cattle and have surplus stock to spare freely. Government cannot at the same time compel a man to maintain the animals he cannot afford to maintain. In the case of bull calves that are fit for breeding purposes, Government may have to give subsidies for maintenance of such calves or to purchase them outright and rear them till they become fit for issue to other areas. A third station *i.e.*, "Calf rearing station" thus becomes necessary.

Much has to be said about the several difficulties which confront the situation at each stage and of many details regarding the rotation of bulls, issue of new bulls, improving grades by judicious plans, prevention of conditions which revert or check the progress, but incorporation of minor details of each of these, may, we fear, make this scheme too much voluminous. These problems can be tackled by the Specialist who will be entrusted with the control of the work, as and when they present themselves, during the course of actual working.

The work of grading, as also all works on cattle improvement, will produce the desired effect only if faithfully continued for a number of years without change of policy. Col. Sir Arthur Olver remarks thus about this point: " In fact to carry livestock improvement work successfully the Director responsible for Animal Husbandry must be in a position *to lay down a long-ranged co-ordinated policy* of desease control, nutrition research, and systematic elimination of degenerate animals as sires, combined with organised encouragement of better breeding and feeding and *to continue it through a considerable number of years without break*", while to preserve an improved breed in a pure state it is essential to maintain authentic records of pedigree and performance. He again remarks, "Moreover, fatal changes of policy, or change of control for financial or other reasons have intervened to dash any hope of achieving the extensive results which might have been obtained by skilful handling of a definite programme, of such limited number of sires as were generally available."

The grading work in Cochin State can be considered to have gone one round satisfactorily only in the course of at least ten years, by which time enough graded bulls of the third generation will be available to serve the stud purposes of the State, while to obtain further purity the work has to be continued, though with less and less of direct control as years roll on, till the time when the people become themselves interested and begin to appreciate

the results achieved. All direct Government control, except a general watch, can be then taken away. But what is evolved by scientific work has always got a strong tendency to revert to its original nature and hence the nucleus at the two pure breeding stations has to be continued for ever to supply pure blood periodically and to check any tendency for reversion. The calf-rearing station however may be discontinued afterwards.

The agency for breeding work.—Like any work on original reforms binding on the entire State or Province this cattle grading up work has also to be done, in the first instance, through direct Government agency, if it should produce any result at all, as our people have yet to develop the amount of civic sense required for the Government to leave such work to their entire care. Therefore, bulls and cows of the two breeds required for the pure breeding stations and the bull required for the concentration areas have all to be purchased, stationed and maintained at Government cost. So also, the necessary supervising staff has to be maintained by the Government. To begin with the bulls issued may be sanctioned in the Panchayats, Co-operative Societies, Rural Reconstruction Centres, Pinjrapoles, Veterinary Hospitals, Manure Depots and similar institutions and the maintenance of bulls and pay of the required staff met by the Government. When the time is ripe for leaving this management into the hands of private bodies or individuals the Government control can be slowly withdrawn.

Of the two types of cattle suggested in this scheme the Sindhi may be concentrated upon in towns and thickly populated areas where milch animals are in greater demand. They are chiefly.—

1. Cranganur Taluk.
2. Cochin-Kanayannur Taluk—except Vellarapilly & Amballur firkas.
3. Irinjalakkuda firka of Mukundapuram Taluk.
4. Trichur Taluk, except Pattikad-Panancheri firkhas.
5. Vadakkancheri and Kunnamkulam towns in Talappalli Taluk. In all other places the Kangayam breed may be used for the grading up work.

Feeding.—Authorities are unanimous in proclaiming that one of the most important factors in cattle improvement is judicious feeding. The prime cause of deterioration of cattle in the State is *under feeding* and often *starvation.* Scarcity of pastoral lands and the want of resources with the owners of small holdings and the poor tenants, with whom are found most of the cattle in the State, for stall-feeding, have considerably undermined the health and size of the already poor types of cattle here. But in this respect much cannot be done by the Government directly. The grazing now available for our cattle is only about 2 cents of pasture per head, whereas an acre per head is the extent required for maintaining them in condition. The fall in the import of concentrates and consequent increase in the prices of the commodities, the heavy export of even the course fodder, straw, to the manufacturing centres, combined with the heavy fall in the purchasing capacity of the people, are vital factors affecting cattle industry now. Not only are they under-fed but the cattle are now also overworked due to the increased and incessant transport necessitated now-a-days due to the repercussions of war, the launching of the grow more food campaign, etc. Grazing areas have been encroached by human food crops. At this rate, it is feared, that a time may soon come when scarcity for milch and draught cattle may confront the progress of the agricultural, industrial and physical well being of our people.

The steps to be taken immediately to solve this problem are.—

1. To allot as much pasture lands as possible in all the urban areas.

2. To allow remission of land revenue and water cess for lands put under fodder.

3. To take action to import and distribute cattle feeds also from outside as is now done for human food materials, and to ban the export of straw and oil cakes, etc.

4. To distribute seeds or setts of fodders suited to our State free.

5. To demonstrate preparation of silages in all centres and to encourage silage preparation by giving aid and prizes.

6. To allow free removal of grasses and fodders from the forests.

7. To educate the people on the production of fodder crops and feeding of cattle.

Experiments may be conducted in the Government breeding stations to find out the ration most suited for the Dairy and the working cattle respectively, taking into account the cheapest and largely available food stuffs of the State.

Further work on feeding can be taken up later on when conditions become favourable.

Management and Propaganda.—Prevention and treatment of contagious and non-contagious disease:—There are now 10 Veterinary Hospitals and 10 dispensaries in the State, but there are still areas where Veterinary aid is necessary, *e. g.*, Pattikkad, Panancheri sides of Trichur, the Meenakhshipuram Nanniode sides of Chittur, Poyya, Mala side of Mukundapuram Taluk etc. The treatment of non-contagious diseases are fairly satisfactory, but that of contagious diseases like Rinderpest, Haemorrhagic Septicaemea, etc., is not satisfactory. The reason is the difficulty to obtain the required serums and vaccines in time. There is no scope for starting a serum institute for Cochin and the only way is to obtain our requirements from outside. The products were hitherto obtainable from Bangalore but now they could not supply Rinderpest serums this year. The Madras Government also could not supply these. The Imperial Veterinary Research Institute, Mukteswar, has agreed to supply this now, but due to the Railway transport difficulties the consignments take too long to reach this. The solution for this state of affairs is to purchase good stocks of these in advance at the approach of the epidemic seasons and conduct preventive mass inoculations in all succeptible centres.

As an encouragement for our proposed grading work the selected cattle may be protected at Government cost against Rinderpest and other epidemics. Training of stockmen-compounders for extensive Veterinary aid and posting them in all the breeding centres will facilitate the cattle improvement work very much, and also the propaganda on the prevention of centagious diseases during epidemic seasons.

Housing of cattle.—Model cattle stalls may be constructed in as many of the centres as possible where the bulls are stationed, under the scheme so that ryots may get an idea about the construction and the benefits of such housing. People may be made alive to the importance of hygiene in the management of cattle.

Preservation of Farm Yard Manure.—Model manure and compost pits may also be constructed in the several centres and the advantages of preserving the dung, litter, urine, etc., under ideal conditions impressed on them.

Cultivation of fodders and making them and the wild grasses into silages are also important items to be brought home to the ryots to fall back upon in seasons of fodder scarcity.

The necessity and importance of allowing suckling calves a fair share of milk for helping them to grow healthy and strong that they may resist diseases and infantile mortality scientific rearing of calves can be demonstrated and advocated with

much benefit, for building up a good foundation stock for the future.

Cattle shows and fairs may be encouraged in as many centres as possible on the lines of the "one day shows" and "regional shows" advocated by the Imperial Council of Agricultural Research. Attractive cash and other prizes may be given for deserving animals under each type. Lectures and informal talks on matters related to cattle improvements during these days will help to educate the masses in the line. Prizes or bonuses may be also given for stock raising, ideal manure and silo pits and cattle stalls constructed during each year.

Organisation of the industry on a Co-operative basis.—Formation of cattle breeding and milk societies, Gosalas, etc., and aiding them with finance and advice may all be attempted side by side.

In his note on Animal Husbandry work in Cochin State Col. Sir Arthur Olver remarks that "the first step towards the general and permanent improvement of livestock and livestock industries in Cochin should be the formation of a separate Veterinary Department under the independent control of a suitably trained Veterinarian and with funds and facilities for carrying on systematic Animal Husbandry work in villages, commensurate with the value of livestock and livestock products, compared with that of cash crops." The valuable suggestions of the Animal Husbandry expert, offered after a survey of the condition of cattle in the State, must be based on his vast experience and with due consideration to the conditions and needs of the State.

Summary.—1. Cattle improvement be mainly effected by the grading up of indigenous cows with pure bred pedigree bulls of approved Indian breeds and by their proper feeding and management.

2. Separate breeds of approved bulls be selected for the grading up of the Dairy and the working types, *i. e.*, the Sindhi breed be selected for the Dairy and the Kangayam breed for the draught types. The "Surti" breed of buffalo be selected for improving the buffaloes.

3. The improvement of the milch types be concentrated upon in the urban and other areas where milking animals are more in demand and of the draught type in agricultural tracts where working animals are most needed.

4. Compulsory castration of males unfit for breeding purposes be taken up as soon as a sufficient number of good bulls are made available in an area. A cattle census of each area be taken for the purpose.

5. Export or castration of bulls or bull calves selected for grading work or fit for breeding purposes to be prohibited so also export of selected cows, heifers and cow calves. These hold good with the buff type also.

6. Slaughter of all bulls, cows, bull calves and cow calves of the buffalo type fit for grading or breeding purposes to be prohibted, slaughter of cows being already prohibited.

7. Pedigree sires of the above types for grading work be raised by pure-line breeding of the types at the Government breeding stations to be started for the purposes.

8. Pure-bred pedigree bulls of the improved types to be imported according to necessity to prevent in-breeding at the Government breeding stations, to infuse fresh blood occasionally, to prevent degeneration of the stock and to accelerate the grading up work.

9. Intensive work to be done in grading, in separate concentration centres for each of the breeds and these centres to be treated as rural farms for raising ideal graded stock for expanding grading up work in other centres.

10. Only pure bred pedigree bulls to be issued to these concentration centres. In gradual course these centres are to be expanded.

11. The scheme to be kept running for

a number of years at Government expense and initiative and slowly left to institutions, corporate bodies and the people when they seem to have developed sufficient civic sense in the line, the Government having only a general control of the activities thereafter.

12. Feeding to be improved by allotment of pasture lands, raising of fodders, allowing land-tax and water-cess remission for cultivation of fodders, free distribution of seeds and sets of fodders allowing free removal of wild grasses and fodders from the forests, preparation of silage to fall back upon during periods of scarcity, aiding and encouraging preparation of silage, helping in the import of concentrates, banning the export of straw, oil cakes, etc.

13. Animals selected to be protected against contagious diseases at Government cost.

14. Cattle shows and exhibitions to be encouraged, aided and conducted at several centres, and attractive prizes to be given for good animals of all types. Bonuses and prizes to be given for good cattle stalls, manure pits, compost pits, silage pits, etc., constructed by people.

15. Pinjrapoles and Gosalas to be encouraged and aided.

16. Loans repayable in instalments to be granted to ryots and cattle breeders on easy terms, for any activity calculated to promote the cattle welfare.

17. Carry on intense propaganda regarding breeding, feeding and rearing and management of cattle.

18. Give the Veterinary Department entire control of the livestock of the State as is now done in many parts of India and abroad.

19. Appoint separate full time staff devoted to the improvement of cattle in the State.

20. Start maintaining Herd books, pedigree registers, lactation records, etc., of the improved or the selected animals according to their stage of improvement, to watch the progress.

Conclusion—"The prosperity of a country depends on the plough share" remarked the eminent statesman Sir Abraham Lincoln, but the plough share in India depends upon the cattle for its draught. The Agriculture, which is the mainstay of the people of the State, depends upon Livestock from the preparation of land to the carting of the produce to the market. The annual income out of the livestock products has been estimated to be about 85 lakhs of rupees in 1937. This is exclusive of the value of the service rendered by the cattle through draught and other work.

Such being the roll of cattle on the economy of the health and wealth of the people of the State, we think it justifiable to remark that any amount of money spent on the improvement of cattle is only a wise investment rather than an expenditure. The apparently large sum involved in translating this scheme into action is not in the interests of the cattle alone, but again in our interests, as we will be getting more and more return from them. It will be relevant in this connection to quote again from what Col. Olver, the eminent authority in Animal Husbandry remarks about this.

"In view, however of the steady reduction which is taking place in grazing areas, and the circumstances in which breeding is generally carried on in India, it seems clear that the degeneration of stock is likely to continue unless more adequate steps are taken and a larger proportion of funds are allotted for their care and development.

"The constitution and control of such organisations (Animal Husbandry organisations) and the powers and funds to be placed at their disposal are thus matters of vital importance which need to be very carefully considered by Provinces and States".

As partial custodians, as we are at present, of the welfare of cattle in State, we think we have not transgressed our limits in preaching on behalf of the dumb millions, whose welfare of we are in duty bound to guard.

TOBACCO CULTIVATION

The per capita consumption of tobacco is about 91 lbs., which would mean that in the State annually we are importing now 560 to 600 tons for chewing purposes alone. Calculating that an yield of ½ ton per acre can be expected, the area to be utilised for this purpose will have to be about 12,000 acres, if we aim our target at self-sufficiency alone. The annual consumption of cigarettes and beedies is on the average 2 and 28 crores respectively. Tobacco for this also has to be grown.

In the years 1115 and 1116 M.E. tobacco cultivation was tried in the Taluks of Chittur, Mukundapuram and Cranganur. The varieties cultivated were the same as grown in the Coimbatore District. Even in spite of various concessions, such as, exemption from land tax, waiving of curing charges and freedom to sell the produce either within or outside the State, the project was not pursued further. Indications are not wanting to show that the scheme, if planned and worked properly, would be remunerative.

The chief type of tobacco consumed in the State is the chewing one produced in the Coimbatore District, as the Meenapalayam, Mottaempetti, Vadamugham, and Thenmugham. The crop is grown between October and February. It is definite that the eastern portion of the State, *i.e.*, the Chittur Taluk, will be an ideal spot to cultivate tobacco of the above varieties.

The tobacco grown in the Kassergode Taluk is used both for snuff and chewing. This type flourishes in the laterite soil. Naturally the coastal regions of the Cochin-Kanayannur and Crangnur Taluks and the myal regions of the Talappalli, Mukundapuram and Trichur Taluks are sure to prove suitable for the cultivation of the Kassergode type.

Guntur District is the main centre in India producing the Virginia type of tobacco used for making cigarettes. There, the soil is clayey loam and rainfall is about 40". The tobacco here is grown as a dry crop. Trial is to be made in the laterite soils or/and sandy loams in Cochin to find out whether this valuable crop will flourish especially if potash is given as manure.

The localities and extent in the State where conditions favouring the cultivation of these types of tobacco have to be investigated first. Experimental stations are to be opened and tried for about 3 years. In successful centres expansion is to be effected. Until ryots take up this voluntarily, the Government will have to cultivate. As the cultivators become confident and as private cultivation extends, corresponding reduction under Government management can be effected.

POST WAR COTTON CULTIVATION IN COCHIN STATE

CHITTUR Taluk is the only place in the State where cotton is extensively grown. The crop occupies at present, an area of 10,000 acres in the Taluk. There is yet scope for further expansion of the area. The climate, soil and other agrarian conditions of the taluk are favourable for the cultivation of cotton. The steady expansion noticed in the extent of the crop from 4,550 acres in 1935 to 10,000 acres at the present time indicates the profitable nature of the concern.

The crop is started in August-September in rotation with the early variety of groundnut (Red variety). Picking starts by the end of January and extends up to the end of March. It is mainly grown as a dry crop but it is also grown as an irrigated crop in limited areas. With the extension of well irrigation, there is prospect for increasing the area under cotton considerably. The dry cotton yields on an average 400 lbs. kapas (Seed cotton) and the irrigated crop yields on an average 1,000 lbs. The total production of kapas is to the tune of 2,000 tons which, when valued at the current prices, will fetch Rs. 10 lakhs. The cultivator gets on an average Rs. 40 per acre of dry crop and Rs. 100 per acre of irrigated crop.

Cultivation of the crop is handicapped in two ways. Firstly, on account of the lack of ginning facilities the cultivators have to obtain the seed for cultivation from outside the State, usually either from Pollachi or Coimbatore. The cultivators have either to proceed individually to these places for the purchase of the seed or to buy the seed sometimes from a petty stockist, at a high rate. Restrictions now imposed on the export and import of the seed have added to these difficulties.

The second handicap is in the matter of obtaining pure seeds. There will be admixtures and infected seeds and it is not generally possible to insolate them and assure purity for seed in ginning factories that are run for purely commercial purposes. The first handicap may be overcome by some one starting a ginning factory in the Taluk (already one has been started in Nallepilli), but the second handicap can be removed only by the Agricultural Department undertaking multiplication of enough seed for distribution over the entire area and preparing the seed for distribution in a departmental ginning factory.

The cotton grown at present in the taluk is cambodia. The improved strain of C02 in cambodia is also grown to a small extent. The strain has impressed the cotton growers well and has given them on an average 25 per cent increase in the yield. A 25 per cent increase in the present production will result in a total increase of 500 tons kapas more which on valuation at the present rate will increase the cultivator's income by Rs. 2½ lakhs.

The Madras Agricultural Department has been distributing C02 strain of Cambodia in Thiruppur and other important centres.

The scheme of cultivation consists of multiplication of enough quantity of the improved strain to cover the entire cotton-growing area, ginning the kapas produced in the select area for multiplication and the actual distribution of the seed over the entire cotton growing area. The multiplication will be done in an inner and outer circle. Distribution will be undertaken by the Department with the co-operation of the Panchayats and Coperative Societies.

Starting with 100 cwts. of pure stock of C02 seed sufficient for cultivation of 50 acres in three years this seed can be

increased to 110 tons which will cover an area of 10,000 acres. The crop specialist with sufficient staff under him will be able to supervise the cultivation as well as weeding out of impure seeds.

A ginning factory capable of ginning 1½ tons kapas a day could be started by the Agricultural Department in Kolinjampara. It can deal with the 202½ tons produced from the multiplication area in 5 to 6 months' time. The ginning factory can also undertake ginning of another 200 tons of kapas from the areas outside the multiplication zone.

The stock of seed intended for distribution can be distributed through the Panchayat Depots.

The plant pests and the Plant Diseases Act of the State will be in operation and all imports of seed will be banned.

The whole multiplication work of seed will work under the Indenture System as done by the Madras Agricultural Department. By this system the Department enters into an agreement with the cultivators to whom seeds are distributed for multiplication. By the agreement the cultivators should cultivate the crop according to the instructions given by the Agricultural Department and should return all kapas obtained to the departmental ginning factory. The whole produce will be purchased by the Department at rates current and in addition a premium of Rs. 25 per ton of kapas will be paid by way of inducement and to cover any recurring charges. A loan of Rs. 30 per acre will be advanced to the cultivators, if found necessary, to meet the cultivation charges and it will be recovered from them at the time of purchase of the produce.

This scheme will bring a profit of Rs. 2½ lakhs to the cultivator as also an appreciable profit to the Government which will more than cover the recurring expenditure to be incurred on the entertainment of the staff necessary for the working of the scheme.

FEED YOUR CATTLE

WE are experiencing a shortage of dairy cows, as also bullocks for the cart and the plough. The available cows are poor in milk while the bullocks are inefficient for work. The role of cattle in agriculture, industries and the national economy and health being very important, we have to take early steps to improve the position and to guard against further shortage and deterioration of the stock. To meet this end we have to produce more cattle of better stock and also to render the existing ones more efficient and productive by proper feeding and care.

Experiments in stock feeding conducted by experts, have disclosed that the productive failure of the Indian Milch cow is apparently not due to genetical reasons, since the milk yields of purchased cows showed an average increase of 60 per cent as a result of better feeding and management. The same principle will hold good in the case of working bullocks too. It follows that we can obtain a better outturn of milk and work by the proper feeding of our cattle. But here, at present, either for want of proper information regarding scientific feeding of the stock to the best advantage or due to the low economic condition of the cattle-owners, the cattle are ill-fed, under-fed or even starved. Consequently the cattle lose in condition, efficiency, and productiveness, steadily and gradually. Added to this

the non-availability of enough of pastures, due to extension of area under human food-crops, scarcity of concentrated cattle-feeds, etc., have all helped to aggravate the situation.

The proper utilisation of the available cattle-food materials to the maximum benefit of the cattle, with the minimum of wastage, and their judicious supplementation with those articles which supply the difficiency in the minerals and other igredients which are essential to maintain the animals in health and promote their productiveness, are the immediate improvements to be effected in cattle feeding.

With few exceptions, in the case of individual cows kept in well-to-do households, in commercial dairies and in the Government Farm and some well-cared for cart bullocks and stud bulls, the ryots' cattle in general have to exist upon the scanty pasture available during the wet months only, supplemented sparingly with coarse rice-straw and in some cases with a serving of a little rice bran also in the drinking water. The pasture lands available for cattle grazing is very little, that is to say only about 2 cents per head of cattle against the average requirements of one acre, while the grasses of Malabar are very much deficient in the two most essential minerals—calcium and phosphorus—the elements which have to be chiefly obtained through these roughages. The rice-straw, which is the main roughage available here, is also alike deficient in these minerals and in protein too. Vitamin A, which is the most essential of the vitamins, is to be obtained through green fodders, but the pasture being very scanty and feeding with green fodder quite uncommon, the animals suffer from the effect of vitamin deficiency as well. The majority of cattle do not get any concentrates to supplement the nutritional deficiency of the roughages they get and no wonder then that the cattle of this country are such impoverished, undersized and unproductive specimens.

We shall now see what the nutritional requirements of cattle are and then consider how to supply them in their ration. A complete ration of the cattle should contain the following ingredients in sufficient quantities, some of them in proper proportions too.

1. *Carbo-hydrates.*
2. Fats.
3. Protein.
4. Minerals (Chiefly calcium and phosphorus.)
5. Vitamins (Vitamin A.)
6. Water.

If any of the above ingredients be absent or fall much short of actual need in the cattle-ration, the animals suffer in health and productive capacity. These substances are to be given to the cattle mostly in the form of roughages such as grass, straw, hay, silage, etc., and partly through concentrated food such as cotton seed, oilcakes, grains, bran of grains, grams, pulses, common salt, etc. Quick-lime and bone meal are added to concentrates to supply calcium and phosphorus. Vitamin A is obtained through green fodders grazed upon or stall-fed, and Vitamin D, even by exposure to sunlight.

An ideal cattle ration should be well balanced and complete. The animals receiving such ration will, no doubt, improve much in condition, produce more milk, do more work, keep healthy and resist diseases to a great extent and produce healthy calves. With a little more of care and attention in the matter of scientific cattle feeding, our cattle are sure to improve very much within the course of a few years. Then why not we do it, at least to the extent possible and within the means of the average ryot?. The comparatively small amount that will have to be spent on this account should never be considered as an expenditure, but only as a good investment, since it will bring in a good return in the form of better milk yield, better and more efficient work and heal their stock.

The computation of a balanced and complete ration comprising the cattle food materials available in the State and meeting the exact demand of individual animals, is a matter requiring expert knowledge in animal nutrition. The requirements of dairy cows and working bullocks are different, of animals at rest and those at work, of cows in milk, and those dry and in pregnancy, are all different. The food value of the feeding stuffs vary with tracts and it requires some experimental work on our cattle under our own conditions and with the food stuffs available here, to arrive at ideal standard of ration for our cattle. This work is being taken up by the authorities.

It is not any how wise to neglect our cattle till such information becomes available. Suggestions regarding improved complete rations for the different types of our cattle, on the basis of the results of experiments conducted elsewhere and the composition of the food stuffs commonly available here, are given below. The main points to be borne in mind are that the cattle should have sufficient quantities of roughages to provide bulk and energy and to help digestive processes, the efficiency in the nutriments being made up by supplementing the feed with suitable concentrates, and that good drinking water should be made available in plenty. The practice of mixing concentrates in large volumes of water is disadvantageous, as it either induces the animal to overload the stomach with water, or deprives it of its due share of the concentrates. The heavy dilution interferes with digestion and assimilation also. It is, therefore, a good practice to soak or crust the hard concentrates and feed in the form of concentrated mixtures, individually in buckets or troughs. Plain water may be given after-wards.

Rice-straw is the main roughage or fodder of the cattle in all rice areas. This stuff has been found to be slightly injurious to animals on account of the presence of large quantities of Potassium oxlate in it. This substance produces persistent "duiresis" in animals and leads to disturbance of mineral metabolism. That is one of the reasons why the cattle in rice areas are poor. The most practical of all methods to remove this bad effect is to chop the straw, to soak it in water for about 20 hours and then to wash it in change of water. This process renders the straw free from the bad effects and makes it soft and palatable.

Green fodder is indispensable for the well-being of animals. It has been already pointed out that pasture lands are scarce in the State and that no grazing is available at all during the dry months. An animal should get at least 3 to 5 lbs. of green fodder a day to maintain it in good health. It may not be within the reach of all to grow fodder under irrigation during the dry months The best method is to preserve some green fodder in the form of "silage" during the wet months when wild grasses and forage will be available in plenty in forest areas and country parts. Silaging keeps the fodder in fresh, sweet and palatable condition for a long time, and will thus help to provide a small quota of green fodder during the hot months as well. The process can be studied from the local Agricultural Inspector or Veterinary Surgeon.

The following tables give an idea of an average complete ration for different types of cattle. The rates are fixed to suit the average sized animals found here—cows with an average yield of 6 lbs. milk and bullocks at medium work. For heavier animals, high yielding cows and heavily worked bullocks, the quantities should be increased judiciously.

I. For milch cows (average 6 Lbs. of milk with 4 per cent fat)

1.	Rice bran	2 Lbs.
2.	Groundnut cake	2 ,,
	or	
	Groundnut cake	1½ ,,
	plus cocoanut cake	1 ,,
3.	Cotton seed	2 ,,
4.	Mineral mixture	2 Ozs.
5.	Rice straw or hay	10 Lbs.
	plus green fodder or silage	10 ,,
	or	
	Rice straw or hay	15 ,,

II. For dry cows

1.	Rice bran	2 Lbs.
2.	Groundnut cake	2 ,,
	or	
	Groundnut cake	1 Lb.
	plus cocoanut cake	1 Lb.
3.	Mineral mixture	2 Ozs.
4.	Rice straw or hay	12 Lbs.
	Plus green fodder	4 ,,
	or	
	Rice straw or hay	15 ,,

III. For bullocks at medium work

1.	Rice bran	6 Lbs.
2.	Cotton seed	3 ,,
3.	Groundnut cake	1 ,,
4.	Mineral mixture	2 Ozs.
5.	Straw or hay	20 Lbs.

Note.—Mineral mixture is composed of as shown below.

1.	Common salt	50 parts.
2.	Burnt shell lime	25 ,,
3.	Steamedbone meal	25 ,,

SMALL SAVINGS WEEK

The Small Savings Week was celebrated in Cochin State between the 3rd and 9th of January 1946. Meetings, processions, and film shows in all the important centres of the State were conducted. These served as a reminder to the people that the National Savings Campaign was not a war-time measure but one which would be continued in future also. Essay competitions were held on the beneficial results of this campaign, one for college students and another for High School students.

K. Gopalakrishnan of Class IV, Maharaja's College, secured the first prize for the following essay on.—

"The National Savings Campaign"

ITS BENEFITS

It is obvious that the end of war cannot mean immediate return to the pre-war conditions. The factories which had been producing war materials cannot be suddenly switched over to peace-time production. The position of consumers' goods cannot improve within any appreciable time. How long the period of transition from pre-war conditions to peace-time production may be, it is not easy to say. If, therefore, the money which the people have from the current incomes or the savings of the war-time years, is to be thrown back to the market now, it will be very bad not only for themselves but also for the country in the days to come, when an economic crisis is sure to threaten the whole world.

"This matter of post-war savings is one of the least understood and least palatable of the 'reconstruction' topics. Yet there is in fact no room for argument and indeed, as between political Right and Left, there is no real difference of opinion on the matter. Either the Nation continues to save heavily after the war—continues to keep its belt tightened—or the standard of living will remain permanently lower instead of higher than before the War." "No doubt the time will come again when the major difficulty of the economic policy will be to find employment for all the savings potentially

available. But that time is not likely to come soon and until it does, the great anxiety will be to find capital to supply all the claimant demands for it." The views expressed above clearly indicate the necessity for saving and the way how to utilise these savings in the post-war era.

"National Savings Certificates" are Government securities which give 4 1/6 per cent interest realisable at the end of a minimum perid of 3 years and a maximum period of 12 years. *It is also income-tax free.* One single individual can buy certificates only up to the value of Rs. 5,000. This limitation is to prevent highly rich people investing huge sums in National Savings and escape paying income-tax, and at the same time earning a very high rate of interest. Not only individuals, but "properly constituted associations" can invest up to the value of Rs. 20,000, if only they are for the betterment of their members. Other Government recognised institutions as Co-operative societies, Municipalities, etc., can invest up to Rs. 1,00,000. There are also special facilities offered to the poor man or the labourer to save. That is by the aid of "Saving Stamps". Those who cannot buy the Rs. 5 worth of certificates, are yet enabled to save by the aid of "Savings Stamps", which can be had for annas 4 and 8 and Re. 1. These stamps are affixed to the cards for safety and when they are Rs. 5 worth, they are exchanged for a 'National Savings Certificate'. The poor man can thus be prompted to save something which he would otherwise have spent on unnecessary things.

These certificates are issued through "the Post Office". To facilitate matters Authorised Agents have been appointed who help the investors in remitting the amount and for this work the agents receive a remuneration of 2½ per cent of the amount canvassed and collected by them.

Now the prices of goods are at such a high level that people have to spend much on articles. But many people can avoid many luxury articles without any trouble. This will enable them to save much money for investment in the "National Savings" which they can realise when it will be most needed. Then, many of those who are employed now will be without jobs. If they can be persuaded to save now, surely it will serve them well when it is most needed. This scheme will secure for them a very high rate of interest, which will also be income-tax-free.

A country's wealth does not lie in the few number of very rich men, but it lies in the millions and millions who have a saving of their own. Thus National Savings Certificates will enrich the country, will make it stronger and, therefore, make our people happy. The scheme is also a successful measure to combat inflation. This will save the country from soaring prices now and will make the country healthy and strong in the future. Also by continuous investing, however small the amount may be, the spirit of thrift is inculcated.

To conclude, the "National Savings Campaign" is important in that it is the only way to save the people in the period of economic crisis. The scheme is becoming successful and the different provinces of British India and the Indian States have done well. We, Cochinites, can be proud that we are not lagging behind. But we have yet to go ahead with our maximum possibilities and we shall be prepared to meet the future with confidence. The "National Savings Campaign" which we have launched is thus an important step and one in the right direction.

———

NOTES

Vacancies and War Service.—A percentage of the permanent vacancies in the State Public Service is reserved for candidates with war service. The principle of communal representation as laid down in the Staff Selection Board Rules will be applied in the case of the discharged personnel when the reserved vacancies are filled up. If it happens that there is no candidate from a particular community with war service to his credit, that war-reserved vacancy will be given to the next community which has got persons with war service.

Post-War Reconstruction Committees.—Government have had under consideration for some time several problems relating to post war reconstruction in the State and tentative schemes have been prepared under all important subjects of development. Before passing final orders on the schemes Government propose to get the schemes examined by committees consisting of officials representing important departments of administration and non-officials representing different parties and interests. A Central Committee and six subject committees have been constituted for this purpose. The Central Committee of which the Diwan is the President consists of 36 members. Matters relating to re-settlement of demobilised soldiers calling for urgent attention will be dealt by the Government direct.

Technological Institute.—The question of providing adequate facilities in the State for technical courses of studies has been under the consideration of the Government in connection with the scheme of Post-war Educational Development. A scheme has been prepared by the Superintendent of the Civil Training Centre at Trichur for converting that Centre into a Technological Institute after the training conducted there by the Government of India comes to an end. According to this scheme the Institute will provide training courses in three categories *viz.*, (1) Diploma Course in Mechanical, Electrical and Civil Engineering (2) Technical High School Classes leading up to Foreman Mechanics Training and (3) Craftsman's Course intended to provide for skilled Craftsman in various branches of industry such as, Fitting and Lathe Work Course including Machine shop, Electrical Wiremen's Course, Carpentry and Wood Workers' Course, Blacksmithy and Metal Work, Foundry and Casting including Bell-metal, Engine Driver's Course and Auto Mechanics' Course. Government have decided to start the Craftman's Course in the first five subjects immediately after the State buildings at the Civmil Centre lent to the Government of India are returned to the State. The Diploma Course and the Technical High School Classes will be started after the necessary machinery and equipments are acquired and the necessary additional buildings are put up. An Advisory Committee consisting of men with technical knowledge and experience will be constituted to help the Director of Public Instruction in the management of the Institute.

Tournaments.—In the finals of the Cochin Inter-School Football Tournament conducted under the auspices of the Cochin Athletic Association Ollur High School beat the St. Albert's High School and annexed the Paliyath Valia Achen's Cup for the second time in succession. The runner-up cup was won by the St. Albert's High School. The latter was the runner-up last year also.

In the finals of the Kerala Cricket Tournament conducted by the above mentioned Association the Trippunittura Cricket Club defeated the Lovedale Cricket Club by 92 runs. The match was played to a finish. The top scorer in the whole tournament was Prince K. T. R. Varma who scored 53.

Col. R. M. Bruce

State Forces.—Lieutenant Colonel R. M. Bruce, Commandant of the Cochin State Forces, retired early this month and Brigadier C. S. Subia has been appointed in his place. Col. Bruce became the S. S. O. in Command when the Cochin Nayar Brigade was converted into the Cochin State Forces in 1942. He organised the State Forces on an efficient basis, giving the men training in modern warfare. A man of great military experience, affable manners and sympathetic understanding, he maintained proper discipline in the ranks and carried out various reforms for the improvement and efficiency of the Forces. A Garrison Company of the State Forces has gone out for service under the Crown. It has done and is doing meritorius service. The great services rendered by Colonel Bruce will always be remembered.

Tolls.—The present tolls in the State will be abolished and licensing of vehicles will be introduced from the beginning of the next financial year, 16th August 1946. After this, municipalities will not be allowed to collect tolls and vehicles tax. As compensation, a contribution will be paid to them by the Government from the amount collected by way of license fees on vehicles.

On the abolition of tolls The Mail of Madras writes thus.—

"The public of Cochin will, we have no doubt, welcome their Government's decision to abolish tolls from the next Malayalam year, beginning with the middle of August 1946. The disappearance of tolls and the vexatious delays at toll gates is in keeping with the spirit of our times, which are intolerant of unnecessary delays and hindrances to the movement of all wheeled traffic, whether of motor transport, rapidly gaining in popularity in the State, or of the humble bullock cart, for which toll gate keepers as a class showed little consideration. The need for the removal of tolls has become more urgent as the Government of Cochin have adopted a large scheme for the extension and improvement of roads.

"In replacing tolls by a system of taxation the Government of Cochin will, we hope, avoid the mistake committed in the Madras Presidency when the Motor Vehicles Taxation Act was introduced. This Act has been an inequitable and revenue-sacrificing measure because it imposed on the users of motor vehicles the entire burden of road taxation, exempting from taxation other forms of road transport, notably the bullock cart, which use the roads more extensively and should, legitimately, contribute to the cost of maintaining them. A large part of Cochin's annual toll revenue of approximately Rs. 1,50,000 is derived from cart traffic and the exclusion of the latter from taxation would be a needless and unsought sacrifice. While it would confer no appreciable benefit on owners, or users of carts, it would greatly reduce the funds available for road maintenance."

PRINTED BY
THE SUPERINTENDENT, COCHIN GOVERNMENT
PRESS, ERNAKULAM
EDITOR
M. BALAKRISHNA MENON, B.A., B.L.,
INFORMATION OFFICER

THE COCHIN STATE MILITARY BENEVOLENT FUND

The Government of India have instituted a fund called the "Indian Army Benevolent Fund" with a view

(1) to help the families of combatants and non-combatants killed or disabled on active service,

(2) to relieve distress not attributable to field or foreign service, and

(3) to help ex-soldiers who have lost a limb on active service or on duty in peace.

2. The grants made from the Indian Army Benevolent Fund are generally small. The Government of Cochin therefore considered it highly necessary to supplement these grants. With this object, Government instituted a fund in this State called the "Cochin State Military Benevolent Fund". TheCochin State Forces also will get the benefits of this fund.

3. The fund is being built up by public subscription and is being administered by Trustees.

4. Cochin can be proud of her magnificent contribution in men to the victories of the Allies and to the triumph of the glorious causes for which the United Nations waged war. It is only proper that the subjects of this State who have undergone hardships, difficulties and perils are assured of a secure future. This fund has been started to give them the necessary assurance and it deserves the largest public support. Government expect that every individual and organisation will render all possible help to augment this fund for the relief of those who have fought for us. His Highness the late Maharaja donated a sum of Rs. 1 lakh when the fund was started.

5. All donations may be sent to.—

M. R. Ry. P. V. Raphael Avl., M. A., Comptroller of Finance and Accounts, Chairman and Treasurer, The Cochin State Military Benevolent Fund, Trichur.

6. The donations will be acknowledged in the Cochin Government Gazette from time to time.