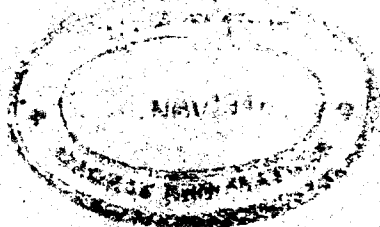


Food Famine and Nutritional Diseases in Travancore (1943-44)

to T. N. Archives
Vide E. No. 4278



SURVEYS BY

SRI K. G. SIVASWAMY, Mr. K. K. CHANDY &

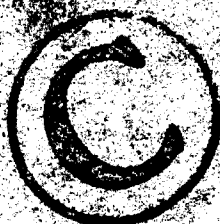
Lt.-Col. T. S. SHASTRY

Dr. M. E. NAIDU

Dr. T. V. S. SHASTRY

AND 7 OTHER DOCTORS.

(265 pages with 33 illustrations)



General Relief Centre, R. S. Furam Road,
Coimbatore, S. India.

Rs. 5/-

SERVINDIA KERALA RELIEF CENTRE
 (R. S. Purnam Post, Coimbatore)

Statement of Receipts and Charges, November 1943 to June 1944

RECEIPTS:

Donations	
Miscellaneous receipts	
Relief Advances	
Suspenses	
Banks	
Total	1,17,401 9-13

CHARGES:

Stationery	
Travelling	
Postage	
Stationery	
Printing	
Telephone	
Conveyance	
House charges	
Contingencies	
Rem.	
Total	1,17,401 9-13

RELIEF:

1. School children feeding	
2. Subsidies for purchase of clothes	
3. Boarding House Grants	
4. Clothing	
5. Medical Relief	
6. Shortellai Children's Home	
7. Miscellaneous Relief	
Relief Advances	
Suspenses	
Banks	
Closing Balance	
Total	1,17,401 9-13

Checked and Found Correct
P. S. SUBRAMANI IYER,
 Registered Accountants.
 Madras 30-7-45.

K. G. SIVASWAMY
 Secretary
 18-7-45.

The servants of India Society is conducting a children's home at Shortellai for 25 orphans and destitutes, and three medical relief centres at Cherla Azikkal, Panur, and Pudukkallu and also helps the Travancore settlers in Malabar with medicines, and with grants for orphanages, costing in all Rs. 700 a month. Contributions will be thankfully accepted.

K. G. SIVASWAMY
 Secretary
 Servindia Kerala Relief Centre,
 Coimbatore, India.

1-7-45.

FOREWORD

Travancore has passed through a food famine due to unemployment and high prices in the coastal areas in 1941 and 42, and to food shortage and high prices in the whole state in 1943 and the first quarter of 1944. During these years there have been emigrations within and outside the State from the affected areas. The greatest of these emigrations was the exodus to Malabar, mostly in 1943, when a large number of Travancoreans, about 15,000 in number, travelled about 200 miles by train and 100 miles by road, negotiated inhospitable jungles and cleared them for cultivating food-crops, putting up a hard fight against malaria, wild animals and the cold climate in the uplands of Malabar. In one colony settled by 3,000 the number of deaths in 1944 mainly by malaria and other diseases amounted to 350. Calculated on this basis, the total number of deaths in all the colonies settled by these Travancoreans in Malabar would be about 3,000 for the 2 years 1943 and 1944. Unable to bear the privations and the ordeals of a settlement unaided by the State, a certain number of the emigrants having staked and lost their all returned back to their native country, completely broken in health and fortune. Some others turned from owner cultivators to labourers. A large number of women and children suffered from anaemia due to malaria, and scabies. About half of the men settlers have lost their vigour and strength to work on the land.

While this was the condition of the emigrants to Malabar, the condition of those who kept on struggling in their native land was no better. Even according to the reports of the State Department of Public Health and on the basis of the 1941 Vital Statistics Enquiry, the total number of excess deaths over the average was 89,204 for all the four years. We have been able to get at the parish figures for 8 affected taluks. These show that the number of deaths was double that of the official figures for these taluks. Estimated on this basis the total number of excess deaths over the average

tragedy that the little stock of foodgrains that was available in the latter half of 1943 were not properly distributed, while much was lost in transport and storage, estimated at a value of Rs. 10,000,000 by the Government. When rationing was in full swing throughout the State from March 1944, a large number of the poorer people either could not purchase or avoided purchase of their rations owing to high prices and unwholesome quality of the stuff. Even after the quality improved, the State surrendered about 20,000 tons of rice to Cochin State as the offtake of ration card-holders was far less. Free kitchens, relief works, subsidy for the purchase of rations, feeding of school children, popularisation of wheat, distribution of protective foods and medical relief would have greatly relieved the situation and reduced the number of deaths. Policies which were followed by Provincial Governments as Madras, and Bengal in later stages, for distributing relief were hardly followed here. Relief agencies were not only not encouraged by the State but were viewed with suspicion owing to a mistaken idea that non-official relief was a challenge to and an aspersion cast on the State. The procurement policy too was extremely haphazard.

Even after improvement in the State machinery for this purpose, Government was not able to procure in 1943 more than 25 per cent of their estimated quota. The Government of India awakened to the dangers of food shortage only in the early part of 1944. They were unable to cope with the situation in Bengal and Kerala at the same time. The fact also remains that the subjects of the two states of Travancore and Cochin have to pay even to-day 50 and 20 per cent respectively more than the price for paddy and rice in the adjoining British district of Malabar. The higher price by 30 per cent in Travancore as compared to Cochin is another puzzle. Inasmuch as the present situation of high prices and cessation of rice imports from Burma is solely due to war conditions, the Government of India ought to come forward with a special grant to the States of Cochin and Travancore so as to make it possible for them to sell food grains at the same price as in British Malabar.

It should be noted that the food of the people of Travancore in normal times is not rice alone. It was supplemented by tapioca, grams, fish and cocoanuts. A policy of state-wide rationing which would not make these major articles of food easily available at prices within the reach of the poor consumers, was bound to fail. The Servants of India Society came in November 1943, but not sufficiently early. Its funds too could hardly cope with the magnitude of relief. Local relief agencies struggled with little funds to do what they could. The Friends Ambulance Unit came (U.S.A.) too late into the field, during the aftermath of famine. The distribution of milk and vitamin tablets by this agency and the Red Cross have helped to minimise the evils of malnutrition among children and expectant mothers. The Vanchi Poor Fund too, a quasi-official agency for relief, tried to expand its activities in rural areas for feeding school children, but only after the period of famine was over.

Throughout the medical reports are interspersed a number of suggestions on the possibilities of raising nutritious foods in the State. It is not the aim of the present publication to lay down precisely the quantities of a balanced diet required for the whole population of Travancore and formulate economic methods of producing these foods. This should be the work of nutrition and agricultural experts. The enquiries embodied in this book indicate however in broad outlines the lines on which nutritional and agricultural planning should be adopted in the State. However, the deficiencies in the diet by way of protein and fats, and calcium and iron have been sufficiently shown by the enquiries. The agricultural development of Travancore lies in increasing the area under grams and pulses and in developing mixed farming. The breeding and rearing of cattle poultry, sheep, pig, and fish-rearing will have to be combined with agriculture. The recent enterprise of the State for the manufacture of fertilisers with a view to increase the yield of paddy is one for which the people of Travancore cannot be sufficiently grateful to their Government. More than all, the purchasing power of the consumer should be so increased as to make it possible for

him to purchase nutritious foods. Supply and distribution will require State control so as to compel the producer and trade interests to subserve the needs of consumers. Agricultural production too should be organised from the point of view of maximum production at minimum cost and a decent living for the cultivator.

In conclusion, let me thank the several friends who have made it possible to issue this publication within a short time. The local doctors of Travancore and those from outside have done the public a great service by recording their results of examination of patients. Mr. K. K. Chandy and the student volunteers of the Alwaye College, the Chenganasseri College the Trivandrum Law College have taken no small pains in collecting the data from individual families on the articles of consumption and their ailments. I cannot fail to record our deep sense of gratefulness to the C.M.S. Mission Hospital at Karapuram and the relief activities of the workers of this Mission and the Kristavashram, Manganam, Kottayam. The local honorary workers everywhere helped me in the collection of statistics of deaths and diseases. My thanks are equally due to the Y.W.C.A. Children's Homes and the Rev. Fathers in charge of parish records for supplying reliable information on the causes of deaths during the period of food shortage. I cannot forget to record the whole-hearted co-operation of many village workers who brought together the patients in their villages at central places on specified dates and thus made it easy for the doctors to complete their work in as short a time as possible. I thank too the many honorary and the few paid workers in my central office who pieced together the different data collected from various sources. Let me not fail finally to thank the G. S. Press, Madras, the Deccan Publishing House, the Mathrubhumi, and the Empire Press, Calicut for their whole-hearted co-operation in bringing out this publication in the shortest possible time.

K. G. SIVASWAMY
Secretary, Servindia
Kerala Relief Centre

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ERRATA

- Page 43. line 12, For 'malnutritoin' read 'malnutrition'.
Page 85. line 16, For '1,13,136' read '1,33,136'.
Page 86. 4th line from the bottom, For 'cholera' read 'cyclone'.
Page 90. line 6, insert 'per' before '1,000'.
Page 106. 8th line from the bottom, For 'many' read 'any'.
Page 132. line 15, For 'one yield' read 'on a yield'.
Page 149. line 14, For '1,13,000' read '95,394'.
Page 149, line 17, For '1,35,000' read '1,33,000'.
Page 150. For first three lines read 'leprosy and pyrexia of uncertain origin, respiratory infections, round worms, ulcers (it was more than three times the number of ulcer cases in 1942), thereby indicating conditions as in famine times'.
Page 150. 6th line from the bottom Read 160 lbs. for 60 lbs.
Page 151. 2nd line from the bottom, For 'commandeer' read 'commandeered' For 'pre' read 'press'.
Page 160. para 2, line 1, for 'there' read 'these'.
Page 164. 4th line from the bottom, For 'licenses' read 'licensees'.

I

SHERTELLAY SURVEY. SEPTEMBER 1944.

By

K. K. CHANDY,

(Christavashram, Manganam, Kottayam.)

GEOGRAPHY

With Cape Comorin the lands' end of India in the south and Cochin State and Coimbatore District in the north, and surrounded on the east and west by the Western Ghats and Arabian Sea respectively, Travancore with an area of 7625 sq. miles and a population of six millions, is about two thirds the size of Belgium. The physical features of Travancore are such that it can be divided into 3 distinct belts, namely, the flat coast strip or the low lands, the mountainous region on the coast or the highlands, and the intervening belts of undulating hills and valleys or the midlands. The coast strips consist of flat stretches of lowlands lying along the coast at sea level and composed mainly of deposits of sand and alluvium. It is broken up into two narrow strips by a continuous chain of back waters and canals running parallel to the sea from Trivandrum right up to Cochin in the north. Shertellay Taluk with an area of 124.05 sq. miles lies in the extreme north of this narrow strip bounded on either side by the waters of the Arabian sea and the Vembanad lake, Alleppey forming its southern boundary. It is connected with the ports of Cochin and Alleppey by both land and water ways. Its latitude north is 9°, 41.4' and longitude east is 76°, 24.5'.

The coastal region is the most thickly populated portion of Travancore and Shertellay with a population of 2,29,429 has a density of 1849 persons per sq. mile according to the 1941 Census Report, while the density of the whole State is only 792. It may also be worthwhile mentioning here that the density of Japan is only 433 per sq. mile. Shertellay has a rain fall of 106" per year and out of the 87.38% of the total area of cultivable land, on the coastal region 79.72 % is cultivated. It has 34,979 acres under cocoanut cultivation and 22,179 acres under paddy.

The whole area would have looked an arid tract but for the evergreen cocoanut trees which grow as a result of the hard toil of the inhabitants. They water the trees for half the year. Each little plot of land contains a pool or two, from which the occupants of the little hut in it draw water both for drinking and gardening purposes. "In the sandy tract it is not possible to build strong houses or to maintain protected wells without incurring considerable expenditure." The whole area is interspersed with small sheds, walled and thatched with cocoanut leaves, in which most of the families live. They are not always sufficient protection from sun, rain or wind. These sheds with an average floor area of 235 sq. ft. consist only of a single living and small kitchen room, in which an average family of 5.6 members is huddled together (according to the Report of the Board of Conciliation of Trade Disputes in the Mats and Matting Industry.)

Those who own land are few, the vast majority being just keepers who in return for watering the cocoanut trees are allowed to live in the place and in some cases take the yield of one tree. The percentage of literacy in Shertellay is 35.8 while that of the state is 29. (1931 Census Report.)

Karappuram.—The land in and round Shertellay has been famous for the quality of the vegetables it produced, and there is reason to believe that before the coir industry

flourished, agriculture was the main occupation of the people. Cotton weaving, scrupine mat-weaving, and fishing industry were among the other side-industries of the place. But when coir factories were established, and the coir industry thrived, it was found to be more paying and naturally the people took to it. There is hardly a household in the area where the cocoanut husk is not beaten and fibre produced. According to the Report of the Board of Conciliation, during pre-war times, of the average income of about Rs. 11 13ch. 15c. per family per mensem, about Rs. 10 came from coir yarn-spinning or weaving. The other industries were thus slowly neglected. The total value of exports of coir and its products from Travancore in the year 1938-1939 was Rs. 1,78,46,019 according to the Trade Statistics of Travancore. Coir holds the second place among the principal articles of export, the first being tea. The value of export of tea is 21.8% of the total value of export trade of Travancore while that of coir and products is 18.6%. The United Kingdom was the principal consumer of coir goods, others being Netherlands, Australia, Germany, U.S.A., etc. Shertellay was one of the chief centres of coir industry.

The inhospitable climatic conditions of Shertellay has won for it the name "The Andamans of Travancore." Government servants often regard a transfer to Shertellay as a sign of disfavour from higher quarters. Parents loathe to send their children to Shertellay for social work or for that matter, any other work. From about 10 a.m. to 5 p.m. when the sand gets heated it is not a rare occurrence to see people running to the next tree for shade and shelter, the wearing of shoes being indeed a luxury.

The low lying, swampy area full of stagnant pools and narrow waterways form a fertile breeding place for the filarial mosquito. Millions of cocoanut husks are being soaked in these water-logged areas. They dirty the water and stink the air. The pistia plant which the inhabitants try to grow because it keeps their pools cool and affords

a good green manure for vegetables, has turned out to be the greatest public enemy of Shertellay. The pistia, it has been discovered by the Health Department of the Travancore Government is a great breeder of the filarial mosquito. Realising this, Government have already started a Mosquito Control Centre which, it is hoped, will soon extend its field of work and develop itself into a Health Unit. It is mentioned in the Census Report of 1931 with regard to elephantiasis, "that Shertellay Taluk heads the list." Continues the Report, "Shertellay is an unfortunate Taluk. It has the highest proportion of persons afflicted with deaf-mutism, leprosy and elephantiasis." It may, without any exaggeration be said that there is not a family in Shertellay that has not among its members a victim of tuberculosis, leprosy or filariasis.

THE SURVEY TEAM

With the stoppage of the work of the Coastal Relief Reconstruction Committee, the impression has gained ground that the famine-stricken Shertellay has "turned the corner," that the factories have heavy work through the Government of India orders and that the output and the price of coir yarn which is the chief product of the place, have gone high. This impression that the economic conditions of the people have very vitally changed for the better, inevitably helped to cool down the enthusiasm of friends who have been warmly supporting the work of the relief agencies in the Shertellay area. The officers of the Shertellay Infant Relief Committee and the Servindia Relief Centre felt intensely the need of studying the actual situation in Shertellay and for educating the public by presenting a report to them based on facts and figures. Accordingly a questionnaire was drafted and steps taken to make a survey of three villages in Shertellay during the Onam holidays. The survey team consisted of seventeen persons including Miss Philip L.M.P., of C.M.S., hospital Calavamcodam, some members of the Shertellay Infant Relief Committee, and students from different colleges in Travancore.

METHOD OF SURVEY AND THE QUESTIONNAIRE

The team was divided into batches of two, each going out to different directions in the village under survey. Each batch had copies of the questionnaire with them, which consisted of questions under 34 main heads and 41 sub-heads—the latter chiefly under income, expenditure, food and diseases. 271 families were surveyed—71 at Varaikad, 100 at Uzhuva and 100 at Vailar. At Vailar only working class families were surveyed while in the other two places no such distinction was made. A special questionnaire was filled up for families where there were deaths during the last five months.

FALL IN POPULATION

In 271 families surveyed, there were only 1,315 persons including children. This makes an average of 4.85 persons per family. The average number of persons per family in the 100 working class families surveyed at Vailar is 4.76. The average as per report of the Board of Conciliation of Trade. Disputes in the Mats and Matting Industry (appointed by the Government of Travancore) 1939 (hereinafter referred to as the George Committee) which surveyed only labour class families was 5.82 in the Shertellay area. According to the Census Report of 1931 the rate of increase of the Shertellay Taluk within ten years was 27%. The fall instead of an increase—of one person per family within the last five years is significant. Deaths, migrations, and the fall in birth rate would chiefly account for this fall.

DEATHS DUE CHIEFLY TO DISEASES CAUSED BY STARVATION

The number of persons who died during the last five months due to the following causes is 13.

Serial No. of the family.	Serial No. of death.	Name of dead person.	Age.	Date of death.	Name of disease causing death.
Variakad.					
13	1	Koma.	63	15-12-19	Diarrhoea
18	2	Varkey.	1 $\frac{3}{4}$	5-1-20	Jaundice, etc.
27	3	Philomina.	2	20-1-19	Scabies.
			months		
			70	24-10-19	Rheumatism.
29	4	Akka.	3 yrs.	20-12-19	Oedima.
30	5	Mary.	45	7-11-19	
61	6	Narayanan.			
Vayalar.					
8	7	Narayanan.	68	18-12-19	Diarrhoea.
8	8	Sarangadharan.	4	21-12-19	"
8	9	Lakshmi.	11	23-12-19	"
8	10	Kochunny.	3	5-1-20	"
50	11	Velayudhan.	33	17-9-19	Ulcers and scabies..
Uzava.					
61	12	Janardhan.	—	21-1-20	Oedima.
85	13	Sankaran.	30	1-12-19	"

MIGRATIONS

The number of people that have migrated in 271 families is 24.

INCIDENCE OF DISEASES

The number of people suffering from diseases easily noticed by the members of the team was 158, of whom 54 were suffering from anæmia, 9 from œdema, 24 from scabies, 18 from rickets, and 16 from other mal-nutrition diseases connected with the lungs and stomach, and jaundice. Some of these might lead their victims one by one to the jaws of death. The victims of œdema ordinarily do not last long. Nutritional anæmia becomes impossible of cure after a certain

lapse of time. The other 37 diseases from which the people suffered were mainly rheumatism, filariasis and fever.

FALL IN THE NUMBER OF MALES OVER FEMALES

The proportion of males to females in Shertellay as per the George Committee Report was equal viz: 2·91: 2·91. In the 100 families at Uzhuva, the proportion of males to females is 2·17: 2·59—a predominance of 0·42 female per family. In a number of families a large proportion of the adult population was found to be women. Some among the men have deserted their women folk owing to lack of food.

FALL IN THE PERCENTAGE OF SCHOOL-GOING CHILDREN

The percentage of literacy in Travancore is 55·04 excluding children under 5. Shertellay according to the 1931 Census Report recorded a higher percentage of literacy than many other parts of the State. The percentage of literacy as per present survey is 31·3. The percentage of children of school-going age that attend school in Travancore will be more than 75%. But the number of children of school-going age in the families surveyed is 401 of which only 119 are attending school—a percentage of 29·6! This fall is mainly due to partial starvation, and lack of clothes. The closure of the school—feeding work of the School Children's Relief Committee, of the Coastal Relief Reconstruction Committee, and other relief agencies also is a matter to be reckoned with in this connection.

The average amount per family per month spent on education during pre-war days as per George Committee Report was 2 Chs. 9 C., while the present average works out at 1 ch. 8·56 C.

CLOTHING

The survey was taken during the gala Onam festival when every Malabar family tries to be at their best, dressed in new clothes. The total number of untorn clothes in all the

families comprising a population of 1315 persons was 1007. The 100 families at Vailar had 232 such clothes among 467 persons. In a few cases a member of the family had to wait till the other person returned who had the one piece of untorn clothing they all had between them! Some parents had to wait till their children attending school had returned with their piece of cloth, to stir out of the house. It was a miserable sight to see the number of old women in dirty threadbare clothing, shrinking into the darkest corners of their huts.

The average amount spent on clothing per family at Shertellay as per the George Committee Report per month was 22 Chs. 5 C. while the present figures for Vailar are 8 Chs 7 C. and this at a time when price of cloth has gone high to thrice the previous rate.

FOOD AND DURATION BETWEEN MEALS

The number of families that had to go without any food for one or more complete days in the month was 75 in the hundred families at Varaikad. 6 families had no food cooked in their huts for 10 days in the month, 2 had to starve for 8 days, 1 for 7 days, 6 for 6 days, 7 for 5 days, 20 for 4 days, 21 for 3 days, 10 for 2 days and 2 for 1 day.

32 families had barely a meal a day, 20 families had 1 to 2 meals a day, 47 had 2 meals and 1 family had 3 meals a day.

FOOD EXPENSES

Food expenses per head per day is 2 Chs. 4·2 C. This excludes the expense on the inferior quality of tea which most of the labour class families drink without milk or sugar to appease their hungry stomachs. The expenditure on this item comes to Rs. 2 Chs. 10 C. 10·8 per family per month. The total amount spent on food per family per month is, Rs. 13 Chs. 13 C. 13·4. The corresponding pre-war figures as per George Committee report were Rs. 8 Chs. 16 C. 13. In order to secure about the same quantity of food as before,

each family will have to spend at least Rs. 30 per month, which is about double their present total income.

Rice.—While the expenditure on rice per month for labour families during pre-war days was Rs. 4 Ch. 9 12 C., the present expenditure for rice is Rs. 2 Ch. 9·2 C.

Tapioca.—The amount spent on tapioca previously was 10 Chs. 4 C. while at present the average family spends Rs. 4—0—3 per month.

Wheat.—An amount of Rs. 1—2—8·9 C. is spent by the average family per month on this item which is preferred to *bajra* and *maize* on which the average family spends 8 Chs. 2 C. per month. The amount spent on *fish* during pre-war days was 15½ Chs. per family per month while the present amount is 20 Chs. 14 C. (the price of fish has gone up about fourfold).

Cocoanut Oil Cake.—(Poonac) was found to be the chief item of food among poorer families. The amount spent on poonac and cocoanut per family per month is 15 Chs. 7 C.

HOW RATIONING WORKS

Only 3% of the ration cards issued were found to be fully used. Most of the families had given away their cards to dealers. The ration consists of rice, wheat, *bajra* or *maize* according to the following proportion—6:3:1. No one is allowed to buy part of the weekly ration or one item of the same separately. As the average house-holder does not have the means to buy the weekly rations which cost Rs. 3 Ch. 19 8 C. for a family of 2 adults and three children, he goes in for cheaper food-stuffs, such as tapioca and poonac and buys some rice and wheat from the black market. The black market rate of wheat is less than the ration rate. Very often ration grains are found to be of most inferior quality—a mixture of grains, dust and worms or other creatures.

HOUSING, SANITATION AND WATER SUPPLY

The houses of the labour class families are all small sheds, walled and thatched with cocoanut leaves. They are not sufficient protection from sun, rain, or wind. Most of the houses are unfit for human habitation, while many in the 100 houses at Vailar need immediate thatching and repairs.

The average expenditure on housing for a family during pre-war days was 26 Chs. 1 C. per month, while at present the amount spent is only 9 Chs. 10.52 Cash. The people sleep mostly on tattered bits of spoiled screw-pine mats or on the dirty floor.

The houses that have sanitary latrines are practically nil—the people mostly squatting somewhere on the tiny plot of land on which their huts stand.

The condition of the open ponds from which drinking water is drawn is also often most insanitary. The low swampy area full of stagnant pools and narrow water ways form a fertile breeding place for the filarial mosquito. Millions of cocoanut husks are soaked in the water-logged areas. They dirty the water and stink the air.

INDEBTEDNESS

The average indebtedness among indebted families at Vailar is Rs. 17—11—9 C. while the figures during pre-war days was Rs. 12—10. Most of the householders remarked that the shopkeepers would not lend them any further—they have reached the elastic limits.

INCOME

The average per capita income per day in the 100 labour families surveyed at Vailar was 3 Chs. 2.7 C. or Rs. 41 per annum while the average per capita income in Travancore per annum as estimated by the 1931 census report was Rs. 85.

The average income of a labour family in Shertellay during pre-war days as per George Committee Report was Rs. 11—3—15 C. per month, while the present figures are Rs. 16—0—3.8 C. In as much as the cost of living has increased three or four-fold, the hardships to which these people are put to make both ends meet could be better imagined than described.

The two chief sources through which the people earn their living are: (1) factory labour, and (2) coir-yarn spinning. The average income through factory labour per family per month is Rs. 3—1—11.6 C., while the pre-war figures for Shertellay as per George Committee were Rs. 7—27—11 C. The average number of people employed in factories in 100 families during pre-war times was 134. The number so employed in the 100 families at Vailar now is 28.

The income through coir-yarn-spinning per family per month at Vailar is Rs. 4—3—7.2 C. while the pre-war figures as per the Shertellay Famine Survey Report of 1941 was Rs. 2—24—10.8 C. Shertellay should be thankful for this increase in the price of coir-yarn. But if this hopeful factor is to be properly exploited, relief agencies and Government should be busy making cocoanut husks available to the householders at cheaper rates. The number of households that borrow husks is 104 in 200 families while 74 households buy husks and only 7 own husks themselves. A good deal of middleman's profits could be eliminated if distribution of husks is done through depots. (It might however be noted that the price of yarn is often most fluctuating). A poor family at Variakad of 2 women and 2 children gets 25 husks from an owner to be beaten and spun into yarn. They take four days for this work and receive 6 Chs.—their only income for four days which works out at 6 C. (a little over 6 pies per head). True, it is a work that a normal family might take only one day to do; but famine had so incapacitated these women and children that it is a heart-rending sight seeing them struggling with the fibre. There are many a family like this in the Shertellay area.

CONSTRUCTIVE SUGGESTIONS

1. *Subsidies for buying ration grains.*—The labour class families in Shertellay and neighbourhood have to be subsidised for purchasing rations to the extent of half the price.
2. *Free kitchens* have to be established for destitute women and men, and cloth distribution should also be made.
3. *Feeding work for school children* has to be resumed in all schools.
4. *The infant feeding centres* have to be multiplied and extended and milk and calcium supply to destitute children augmented.
5. *Coir-yarn and husks depots* have to be started and run in every hamlet.
6. *Medical centres* have to be opened to treat and nurse the destitute sick, both young and old.
7. A more substantial quota of the orders of Government of India has to be distributed to the Shertellay factories.

II

SURVEY REPORT OF DECEMBER 1941

By

MR. K. K. CHANDY,

Extracts from the famine survey report of December 1941 published in Arunodaya November-December 1941, Special number are given below :—

THE SURVEY TEAM

The calamity that has fallen upon the inhabitants of Shertellay and its neighbourhood owing to the failure of the coir industry due to lack of shipping facilities following the war, is too well known now to need a detailed introduction.

As has already been published through the columns of the Travancore dailies, the Youth Christian Council of Action, Kerala, became concerned over the question quite early, and two committees were organised—the Shertellay School Children's Relief Committee and the Shertellay Infant Relief Committee consisting of responsible members of the various communities in Travancore including Government officials. These two Committees together collected over Rs. 12,000 with which on an average about 4,000 starving school children in 84 schools and 700 infants in 12 centres were given noon meals daily for a period of about 10 months. The money thus collected and spent touched only a fringe of the problem. In spite of the fact that efforts at constructive work are being made by Government, semi-official and voluntary bodies, the need for immediate relief is rapidly increasing. The number of people who are mere skin and bone that haunt houses in towns such as Kottayam, Changanacherry etc., on the eastern side of the back-waters bear ample testimony to this fact. The School Children's Relief Committee owing to lack of funds has been obliged to suspend its work. If the problem of offering relief is satisfactorily to be faced, much greater efforts on the part of the public and Government and vast sums of money are required. The coming into being of the various relief and reconstruction committees, and also the news that there were enough Government of India orders to give sufficient work to the factories in the area, has created in the mind of the public an impression that the problem of Shertellay has been well nigh solved. It was felt, therefore, that it was necessary to make a survey of a few typical villages in the affected areas and make a report thereon in order that the public might understand the extent and intensity of the calamity that has overtaken the area.

The Survey Team consisted of 27 people including Mr. Narayana Kamath, B.A., L.T., Headmaster of the Thuvavoor Devasom High School, Mr. C. K. Muhammed Ali, and 7 other Scouts including a teacher Scout Master, 2 from the Karappuram Mission School and 10 membe

Youth Christian Council of Action. Of the whole number, 9 were graduates including an M.A., a B.Sc (Hons), an L.T., a B.L., and 2 B.D.'s. Of the 6 ladies 4 were graduates and one a lecturer in the Maharaja's College for Women. There were 2 students from the Union Christian College, Alwaye. Thuravoor, Calavamcodam, Kadakkarapalli, and Variakadu were the four villages surveyed.

Fall in Population.—In the 500 families surveyed there were 2351 people including children. This makes an average of 4.7 persons per family. The average as per report of the Board of Conciliation of Trade Disputes in the Mats and Matting Industry, 1938 (herein after referred to as the George Committee Report) which surveyed only labour class families is 5.82 (page 207). This difference can chiefly be accounted for by the number of deaths, by the fall in birth rate, and by the migrations during the the year mainly due to famine conditions. The number of deaths caused, chiefly by the effects of famine, are 27, of which 2 are reported to be cases of suicide. The number of families that have emigrated since the outbreak of war is 5 and the number of individuals who have emigrated leaving their families behind is 23. It is significant that in hardly any of the labour families could the members of the survey team see the smile or hear the cry of a baby, parents, owing to starvation, being incapable of child-bearing. According to the census report of 1931 the rate of increase of the Shertellay Taluk within 10 years was 27%. It is only 2 years now since the war broke out, and if within that period each family has a decrease of one person on an average, the effect of famine on the people of Shertellay can more or less be imagined.

FALL IN PERCENTAGE OF SCHOOL—GOING CHILDREN

The number of children of school—going age is 720 of which 456 are not attending school—a percentage of 63 and $\frac{1}{2}$ and this in a place which in the matter of literacy holds a high place in Travancore. With the suspension of the work of the

school children's relief committee, it is not surprising that the number of children attending school is daily falling off.

Clothing-statistics.—The number of people in 500 families (labour and other classes included) who were found in rags was 993. The number of pieces of untorn clothing that the 100 families at Kadakarapally wore was only 74, not even one piece per family, and no wonder children cannot go to school. It is a common occurrence in almost every family for the same piece of cloth to be used in turn by the various members of the family when they stir out of the house. It was a shocking sight for members of the survey team to see women in thread-bare clothes shrinking into the darkest corners of their huts.

The pre-war, income per labour family of persons 5.82 in Shertellay according to the George Committee Report works out at 10 Ch. 9.3 cash; and the income as per the findings of the present committee is 1 Ch. 6.1 cash per family per day. The per capita income thus works out at 4.55 cash (1 pie is equivalent to 2.5 cash) as per the findings of the Thuravoor and Kalavancodam groups. The average income per head in the Variakadu and Kadakarapally villages (where both labour class and other families were surveyed), is only 5.09 cash—not a great difference after all. According to the present survey, the average income per head per year in the Shertellay district for the labouring classes is Rs. 3 Chs. 19.

Fall in Factory Work.—The average number of people employed in factory work in 100 families at Shertellay during pre-war time was 134 according to the George Committee Report. The numbers so employed in the 100 families surveyed at Kadakarapally is 18. This shows that the factories afford work only to about $\frac{1}{7}$ of the previous number in that area, in spite of the Government of India orders. And work in factories was found to be most unsteady.

Fall in the output and rice of yarn. Other sources of income are from coir yarn spinning, cooly work, and from agricultural pursuits. The total output of yarn

in 100 families during pre-war days was 532 'mudies' which fetched them an income of Rs. 9 Ch. 9 Cash 8. The present output of yarn in 100 families is only 290 'mudies' which fetches them an income of Rs. 2 Ch. 15 Cash 8. Thus while the average income per family from yarn was 2 Ch. 10.56 Cash during pre-war days it is only 11.6 Cash at present. As there is no other work, nor source of income, normally the output of yarn should have gone up considerably. But on the other hand it has gone down for the following reasons:—

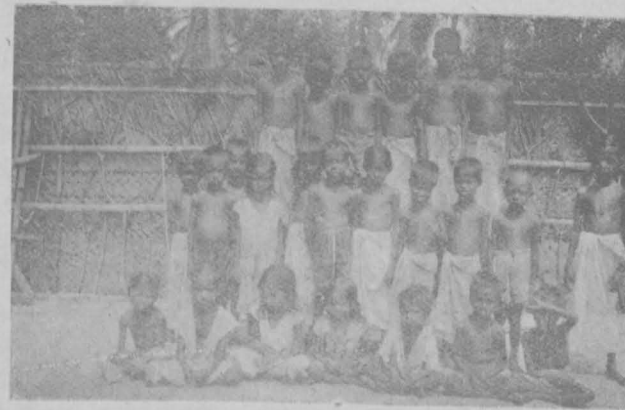
i. The price of beach yarn (the particular variety of yarn produced locally) has gone down by 58.34% and demand is very little. The yarn used for the Government of India orders is not the particular variety produced in the area. Many were the cases of women mere skin and bones, clad in tattered rags, returning empty-handed to their wistful looking children not having found a market for the yarn they had struggled to spin.

ii. There were a number of cases of families completely un-employed because they could not get cocoanut husks for fibre as the people who have been giving husks to be beaten and spun in the home steads, are reluctant to do so except on terms of sale, and the poor are unable to buy for ready cash.

iii. Capacity for work has considerably been diminished owing to continuous starvation.

IMPROVEMENT IN AGRICULTURE AND MENACE FROM THIEVES

It is gratifying to note that in spite of the fact that they could not get the necessary land, implements, seeds, manure, etc., people are slowly falling back on agriculture. The income from this source though not worth mentioning, yet, must be greater in proportion than in pre-war times. It must be mentioned in this connection, that the menace of thieves on the one hand (which of course is not surprising in a famine-stricken area), and of rats on the other, is so great





that the householder would rather remain quiet and starve, than bear seeing the fruits of his labour in the midst of starvation, disappearing over-night.

Expenditure per family.—The average expenditure of a family of 6 living "in comfort" as per the Banking Enquiry Committee Report of Travancore per day was Re. 1 Ch. 24 7 Cash. (28 Ch. 8 Cash make Re. 1.16 Cash make 1 chuckram). The average expenditure of a labour class family in Shertellay during pre-war days as per the George Committee Report per family per day was 11 Ch. 7 Cash. As against this, the present average is 1 Ch. 6 Cash.

Food.—The average quantity of dry foodstuffs namely rice, tapioca, fish, etc., consumed by one person in Travancore, according to the 1931 Census Report, was 480 lbs. per year, which would work at 6.25 lbs. a day for a family of 4.7 members. The quantity consumed as per present survey at Shertellay is about 1 lb. which is made up of half a pound of rice, quarter pound tapioca, quarter pound of cocoanut cake etc. The quantity of rice consumed per family per day before war (vide Census Report) was 4 Ch. 2 Cash worth i.e., 1 Eda, .71 nazhi (2.75 lbs.) at the pre-war rate of 3 Ch. 8 Cash per Edangazhi, while at present the same sum of money can buy only 3/4 Edangazhi or 27 oz.

Other kinds of food taken are Punnac, flour of palm tree, horsegram and also leaves such as of aurum, tapioca, peas, etc.

Indebtedness.—According to the Census Report among indebted families the average indebtedness was Rs. 12.10 Ch. per family. The present figures are Rs. 18.10 Ch. 1 Cash per family. Most of the borrowing has been from grocer shops and the fact that every labour class family has been saying that they could no longer get things on credit from the shops shows how desperate the situation is.

Duration between meals.—Out of 500 families surveyed (of labour and other classes) there were only 12 families where 3 meals were served a day. Those taking 2 meals were 116, one meal a day 217, 1 meal in two days 60, one in three

days 85, one in four days 2, and one in five days 1 family. In the vast majority of cases an average meal consisted of half a pound of powdered tapioca boiled in water or half a pound of the worst quality of broken rice prepared as Kanji. At Kadakarapally, in 100 families, those starving for one full day in a month were 15, for 2 full days 26, 3 full days 5, and 4 full days 1 family. It is indeed difficult to imagine that a family of men and women and children can go without a single meal for 3 and 4 days consecutively. And how much more the pangs of hunger when this become a desperately normal experience month in and month out.

Begging.—It must be said to the credit of the Shertellay people that it is not in their grain to stoop easily to begging, for in the intensively—surveyed 100 families the number of those who beg was found to be only 6 people, excluding those who had migrated, most of whom may be begging on the other side of the back waters. If at all people have to beg, they have either to go into the Shertellay town, which is already inundated with beggars or leave the place altogether; for the inhabitants are practically all on the same boat except the very few big landlords.

Malnutrition.—As for disease and ill-health Shertellay is too well known to need any special mention. In addition to the great number of people suffering from elephantiasis, leprosy and tuberculosis, starvation has reduced hundreds of others as well to destitution. The number of people with malnutrition symptoms in 500 houses were 884. In the intensively—surveyed 100 families, there were 24 cases of oedima (swelling of the face, feet and other parts owing to starvation) 43 of anaemia, 116 cases of children and adults who were practically skeletons and 49 other cases, making a total of 232 cases of malnutrition symptoms. It is only a matter of days or weeks for a good number of these cases, to breathe their last. Reports from workers in the field show that there have been a few cases of death from starvation since, from among those cases surveyed.

III

MALNUTRITION DISEASES IN SHERTELLAY

By

DR. MISS M. PHILIP, L.M.P.

K. M. Hospital, Shertellay

Before considering the diseases, it is a good plan to compare the ordinary diet of the different classes of the locality with a well-balanced diet to find out the deficiencies in the respective diet and the way of improving it to prevent these diseases.

A well balanced diet consists of protein 120 gms., fat 100 gms., carbohydrate 323 grams, which gives the necessary caloric value for an adult of 2,500 calories. Water, mineral matter and vitamins should also be included in the diet.

The following are the dietary of the majority of people in the area.

Families with incomes of Rs. 60/- and above are few in number and the following is their diet: In the morning they use $\frac{1}{4}$ nazhi of rice gruel of the previous day, $\frac{1}{4}$ nazhi of cooked rice during mid-day and $\frac{3}{8}$ nazhi of rice gruel at night, thus making a total of $10\frac{1}{4}$ oz. They take fish during all the three meals amounting to $1\frac{1}{2}$ oz. They use $\frac{1}{8}$ nazhi of green gram (1 oz.) and $\frac{1}{8}$ of a cocoanut ($\frac{1}{4}$ oz.) during the day and 9 oz. tapioca for the night. Vegetables are used three days in a week and also $\frac{1}{5}$ th oz., of cocoanut oil everyday.

The majority of families whose incomes are below Rs. 60/- a month, take the following menu: Rice gruel and cooked rice amount to $6\frac{3}{4}$ oz., fish 1 oz., cocoanut $\frac{1}{4}$ oz., green gram 1 oz. and tapioca 20 oz. for both noon and night. These families also use vegetables for 4 days in a month and $\frac{1}{5}$ oz. of cocoanut oil per day per head,

The poorer families have unsteady incomes. They cannot have a regular diet. On days when they have money, the following is their menu: They take two meals and no rice gruel in the morning. They take the chief meal at night comprising 2½ oz. of rice, ½ oz. of fish, ½ oz. of cocoanut and 8 oz. of tapioca. They take during the day 8 oz. of tapioca and ½ oz. of fish.

The following are the food values of these diets:

	Rice.	Tapioca.	Fish.	Green gram.	Cocoanut.	Total.
BETTER CLASS.						
Protein (grams)	18.32	—	8.25	6.50	.8	33.87
Fats (grams)	1.34	—	1.71	.99	7.15	11.9
Carbohydrates	267.41	72	—	16.20	3.90	359.51
Calories	1175	295	48	100	83	1701
ORDINARY CLASS						
Protein (grams)	12	—	5.5	6.50	.8	24.8
Fats (grams)	.87	—	1.14	.99	7.15	10.15
Carbohydrates	176.10	180	—	16.20	3.90	356.2
Calories	816	646	32	100	83	1677
POOR CLASS						
Protein (grams)	4	—	5.5	—	.80	10.30
Fats (grams)	.29	—	1.14	—	7.15	18.58
Carbohydrates	58.7	128	—	—	3.9	190.6
Calories	271.7	524	32	—	83	910.7

These diets show serious deficiencies in protein, fats, carbohydrates, vitamins and minerals. Dr. B. G. Krishnan of Nutrition Research Laboratories, I.R.F.A., Coonoor, made a survey of an upland village called Oollanur in Travancore. The results of the survey are published in I.J.M.R. April 1939. It is a survey of a better type of village where vegetables can be grown in large quantities and of a better class of people who take buttermilk, curds and foods. According to Dr. B. G. Krishnan the ordinary diet of the people in this village consisted of 9 oz. rice, 18 oz. tapioca, 1 oz. pulses,

8 oz. yams etc., 2 oz. buttermilk and curds, 5 oz. fruits, 8 oz. cocoanuts and 3 oz. cocoanut oil. The mean intake per adult was 32 grammes of protein, 21 of fat, 507 of carbohydrates and 2380 of calories. The range of intake was 26-50 grams protein, 3-41 grams fats, 323-717 carbohydrates, and 1590-3190 calories. Even this diet is highly deficient, particularly in animal protein.

Many diseases are caused in this locality through these deficiencies in diet.

I had occasion to visit 10 houses along with college students during a recent survey in September 1944. I came across during this visit 13 anaemic cases, 1 dropsy, 1 ricket and 1 jaundice. The survey of 271 families in this area under the direction of Mr. K. K. Chandy showed 54 as suffering from anaemia, 9 from edema, 18 from rickets, 24 from scabies, and 16 from other malnutrition diseases as jaundice, and also connected with lungs and stomach. This survey also showed the causes of deaths during the last four months as dysentery, diarrhoea, and oedema. My experience in this hospital also confirms the existence of diseases due to diet-deficiency.

During this last one year there were many cases in this hospital of filariasis, hookworm, anaemia, dysentery, diarrhoea, stomatitis, dropsy, worms, typhoid, jaundice, leprosy, tuberculosis of lungs and glands, and two cases of scurvy. Some of the diseases are caused by sheer nutritional deficiencies and most of the diseases enumerated are aggravated by deficiency of nutrition.

The most common disease of this locality is anaemia (secondary). Anaemia is caused by (1) hook worm, (2) deficiency of food, (3) filariasis and other debilitating conditions.

The severe degree of anaemia could be avoided if a person is fed on proper nutritious diet. The chief complaints of these patients are aching of limbs, extreme weakness, loss of appetite, giddiness, headache, throbbing in the head, noises in the ears, palpitation on exertion and even on walk-

ing. Disinclination to do any work, usually constipation and at times diarrhoea, on examination pallor of the face, conjunctiva and marked venous pulsation. In moderate cases puffiness of face and body and in severe cases swelling all over the body. Tongue rather red and inflamed. Skin dry and very rough.

Most of these very anaemic patients have come from poor houses who cannot afford to have proper nourishing diet. 75% of them live mainly on tapioca.

Dr. Alexander Porter in his report of famine diseases in 1889 says "anaemia was another characteristic of the famine stricken, the emaciation, liability to local oedema, and weakness of the circulation with palpitation of the heart were all bound up with this state of the blood. There was also a tendency to local effusions of blood.... May not the ulcers which were so prevalent in some districts and more or less so everywhere have often had their origin in such effusions".

Dr. Cornish describes "as a symptom of the cachectic state, a purplish blue discolouration and spongy thickening of the gums most marked in the upper jaw." Dr. Cornish writing from his own experience and from that of most of the nine medical officers who acted as Sanitary Inspectors during the famine "lays considerable stress on this state of the gums and looks upon it as pathognomic of defective nutrition probably from some defect in the quality of the diet for it may exist without emaciation. He calculated that 60 to 70% of the famine-stricken had their gums so affected during the dry hot months of the year 1877". (P. 206) My experience of the cases examined by me confirms these observations.

Most of the anaemic cases that are found here improve considerably on plenty of iron, liver, vitamin B and high protein diet after hook worms are expelled. Marked improvements were noticed on this line of treatment. Stomatitis and other digestive disorders accompanying anaemia are chiefly due to vitamin B deficiency. Anaemia from other debilitating diseases could be reduced to a lower degree by nutritious diet rich chiefly in protein, vitamin B and mineral matters,

Dropsy or Nutritional Oedema.—This also is found in this locality especially among the classes who live mostly on carbohydrates with very little protein in their diet. A high percentage is found among children who are fed on rice from eighth month with no milk.

During recent years a considerable amount of data has been collected by a number of workers that the condition known as nutritional oedema is due to the deficiency of protein in the diet. It is generally observed that the incidence of nutritional oedema and spongy gums have a definite relation to the economic and nutritional status of the communities. The following extract from "Nutritional Deficiencies by John B. Youmans, U.S.A." describes oedema symptoms as I have been seeing them in this area and I gladly quote it below: "Nutritional oedema which may be taken as the clinical expression of protein deficiency still occurs in epidemics in countries subject to famine such as India and China. In cases where there has been a reduction in total food supply and especially in epidemics, the first symptom of nutritional oedema may be an increase in weight interrupting a previously steady decline. With protein deficiency alone the patient may be well nourished, even obese. Weakness and a distaste for exertion are common. Work is accomplished with increasing difficulty and there is a loss of efficiency. A mild mental depression is frequent".

The diet of the poor people here consists mainly of starch with very little protein, fat, and vitamins. A diet rich in proteins and vitamin B is reported to have a beneficial influence in oedema and spongy gums. Vitamin B deficiency has been considered a contributing factor in stomatitis, spongy gums, ulceration of lips and cloudiness of cornea.

Diarrhoea is another common disease in this locality. There were many cases of diarrhoea during this last year.

These patients complain of indigestion, increased number of stools without any pain or griping. The chief

accompanying feature of diarrhoea is glossitis, stomatitis, ulceration of the corners of the mouth, burning sensation along the digestive tract and also flatulence.

It is found that these patients improve remarkably well if they are fed on high protein diet and vitamin B.

During this year there were two cases of scurvy (vitamin C deficiency), one was a mild type and the other was an advanced type. Mild type had receding and spongy gums, with occasional bleeding from the gums. The advanced type had very spongy gums nearly leading to ulceration of gums; good amount of bleeding leading to profound anaemia and extreme weakness. Both of these cases improved on a diet rich in vitamin C.

Dental Caries is another chief trouble that is found here. Even a child of three years suffers from this. Daily an average of six cases of dental caries are treated here.

Dental caries is due to deficient calcium and vitamin D in diet. Due to the same deficiency a disease called rickets is found here characterised by square forehead, delayed closing of fontanellae, delayed teething, characteristic bending of ribs, bowed legs and enlargement of epiphysis.

These cases improve on less carbohydrate, good supply of vitamin D, calcium, sunlight and out-door life.

Another chief trouble that is found in this locality is the frequent colds and coughs. Some cases of night blindness (Nyctalopia) too are found here. These people improve well on a diet rich in vitamin D.

Conclusion.—From the diets of the three classes of people investigated, it is found that proteins, fats, vitamins and minerals are deficient. More fish which is easily procured in the locality and prawns might well be added to the diet in addition to dhal or green gram.

Milk or butter or ghee are not taken by most people. The only 'fat' they get is the coconut oil and the oil-bath that the well-to-do get once a week or once a month. Cows which once were plentiful on the eastern fringe of the



A fisherman group in S. Travancore



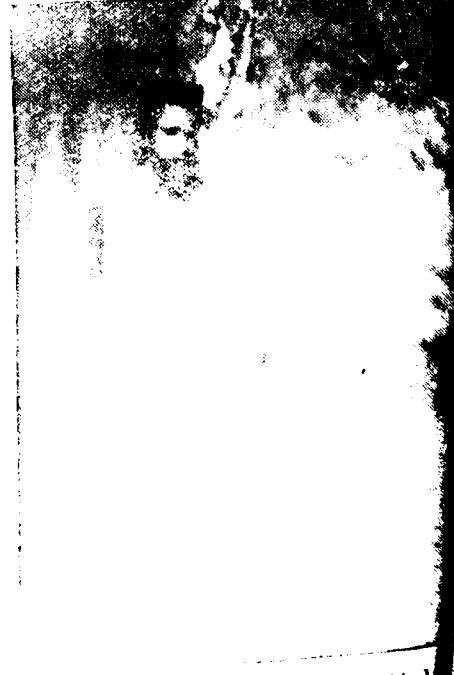
A case of anaemic dropsy examined in December 1944 at Pannu, Kottikappilly taluk.



Cases of iron starved children with meagre skin and bones, stunted growth. The boy in the middle unable to stand without a stick.



Case of a child with prolonged detention in health, weak and anaemic (Podupatti Kayamkulam, December 28, 1944).



A Diarrhoea case in Chermichikal (December 28, 1944)

Vembanad lake and called "vechoor" cows are almost extinct now. These breeds are quite good in this locality as they consume little fodder and give comparatively large amount of milk and the Agricultural Department should take steps to cultivate the breed. Also every house should possess a goat. A goat is not so difficult to keep as a cow as it consumes less fodder. Many kinds of vegetables can be grown in this locality. Brinjals, gourd, pumpkins, lady's fingers, drumsticks and leafy vegetables can be cultivated here. Bananas, plums, tomatoes, papaya and other fruits grow here if properly cultivated and taken care of.

Latrines (bore-holes) should be constructed for every house to prevent the infection of hook worm. Drains, pits, and tanks should be periodically cleared and useless water-logged areas should be filled. Cross-channels may be cut at convenient distances to enable stagnant ponds to discharge their water into it, thus preventing the breed of mosquitoes. D.T. a new antiseptic which is larvicidal to mosquito may be extensively used in areas which cannot be filled up.

IV.

GENERAL REPORT OF THE POOR HOSPITAL, SHERTELLAY

By

DR. MISS E. SABASTIAN,
Retired Sub-Asst. Surgeon.

Locality.—The place is a village in the Shertellay Taluq and it lies between the sea on the west and the lake in the east. It is a sandy strip, and unproductive. If anything is grown there, it is the result of sheer human labour. The place is comparatively well-populated with low class labourers—and hardly any middle or upper class—and even these people are absent jemmies (land-holders), water is scarce and it is drawn from tanks dug in the sandy place and most of them dry up during the hot weather.

People.—They are mostly poor and of hand-to-mouth living. They find work in the adjoining coir factories and in towns which are situated 4 miles away and they go everyday walking up and down. They earn their living with the wages they get in the factories and other institutions.

They live in huts made of bamboos and cadjans (cocoanut leaves), ill-ventilated and with only a common room to house all the members. The floor is hardly beaten, very often sandy and if beaten hard it will be spread over with cow-dung. Thus it affords scope for dust and dirt.

The grown-up males and females seek work. The males find work in factories and other places away from their homes and the females too have to find work in such institutions; and sometimes they find work in the neighbouring places such as spinning yarn, burying husks in the tank, or beating the husk to fibre. The children in their teens also seek work and very often they succeed in getting. But little ones are very often left in the homes to take care of themselves or perhaps under the care of some inmates.

Food.—They hardly get a meal a day and it is meagre and hardly hunger-quenching. During scarcity of rice they lived on cheap food like tapioca and other things. Sea fish sometimes they get but not the right type. Some people grow vegetables in their premises to be sold to the near markets for some pittance which they use for their prime necessities. Milk, eggs or meat are out of the question in their food arrangements.

Diseases.—The wages the workers get are hardly sufficient to keep their body and soul together and comforts and conveniences of life are unknown to them. They are subject to all sorts of bodily ailments and all sorts of diseases are prevalent. An enumeration of this is worth noting. Infectious diseases like enteric, small-pox, measles, influenza, pneumonia, tuberculosis, leprosy, syphilis, gonorrhoea and dysentery are common. Erythema and Tetanus are occasionally met with, and constitutional diseases like rheumatism and rickets are incidental to the people, while Valvular diseases

of the heart and Hypertrophy and Dilatation of the heart are also common.

People are subject to anaemia mostly secondary and this leads to numerous complaints which would puzzle any experienced doctor. Most of the people are subject to filarial attacks and enlargements of the glands. Elephantiasis of the legs and hands is a common feature and an outsider unknown to this form of disease will be struck with amazement. Hookworm trouble has taken a special hold on the people.

An analysis of the 150 patients examined by Miss E. Sebastian on 18th February, 1945 is given below:—

The following is a short note on the symptoms of the main nutritional diseases.

1. *Anaemia.*—Those suffering from it are thin wasted patients with puffy cheeks, very pale mucus membrane, dry skin, and having no inclination for any exertion, mental or physical. The food they get being of indifferent quality often produces a feeling of discomfort in the epigastrium and not infrequently cardialgia.

2. *Scabies.* This affects the hands and feet and often extends to the whole body. The unbalanced diet, unclean habits and dirty surroundings make them an easy prey to these and other skin diseases.

3. *Chronic digestive troubles.*—Poor food induces poor vitality. Deficiency of the digestive juices and an unwholesome and bad food and that obtained irregularly often produces indigestive colic, diarrhoea and colitis, having a tendency often to chronicity. Continuance of the same food aggravates these conditions and various chronic digestive troubles ensue. The patients are mere skin and bones with wasted flabby muscles and often stunted and poorly developed. They appear prematurely old also.

4. *Repeated Respiratory Infection.*—Being ill-nourished and under-fed any slight exposure brings on cold and catarrh of the respiratory tract. Nasal catarrh, bronchitis, adenoids, tonsillitis are often seen amongst the poor. Cold and bronchitis

often develop into pneumonia. Broncho and lobar pulmonary tuberculosis is not infrequently seen amongst them. They are all easy victims to these.

5. *Oedema*.—With cases of anaemia noted above, oedema of the extremities are quite a common occurrence. Pulsation in the veins of the neck and hoemic brunt are invariably present. These with cardiac dilatation and murmur indicate loss of compensation to the heart. Frequent deaths occur from cardiac dropsy. Thus these cases are brought on by poor health from poor food and likely starvation.

All the above ailments are preventable to a great extent by providing these poor people with a proper well-balanced diet, thus ensuring them long healthy and useful lives.

Number of patients analysed according to the major diseases they are suffering from.

<i>A. Nutritional diseases.</i>	No.
Peripheral nueritis.	1
Chronic diarrhoea.	3
Soreness of angles of mouth.	1
Glossitis.	1
Muscular emaciation.	1
Bilateral Dermatitis.	1
Scabies.	18
Anaemia.	52
Roughness of skin.	1
State of Nutrition poor.	9
Chronic digestive trouble	16
Repeated respiratory infection	12
Lachrymation.	1
Discolouration of the conjunctiva.	2
Night blindness.	1
Dental abnormalities.	1
Oedema.	13
<i>B. Other diseases.</i>	
Chronic ulcers.	3
Eczema.	1
Filarial eczema.	2

General debility.	3
Chorrea.	1
Filarial.	1
Paralysis of right lower limb.	1
Dysentery.	1
Chronic endometritis.	2
Nephritis	1

Number of diseases of 150 cases examined at Shertallay on 18—2—1945.

<i>A. Nutritional diseases.</i>	No.
Peripheral nueritis.	1
Chronic diarrhoea.	3
Soreness of angles of mouth.	4
Glossitis.	5
Spongy bleeding gums.	4
Muscular emaciation.	3
Bilateral Dermatitis.	3
Scabies.	35
Anaemia.	60
Roughness of skin.	2
Phrynoderma	1
State of nutrition poor.	24
Chronic digestive trouble.	18
Repeated respiratory infection.	15
Photophobia.	2
Lachrymation.	2
Discolouration of the conjunctiva	5
Night blindness.	6
Lack of subskin fat.	1
Dental abnormalities.	4
Oedema.	17
<i>B. Other diseases.</i>	
Chronic ulcers.	3
Chorrea.	1
Filarial.	10
General debility.	7
Worms.	1

Filarial eczema.	2
Eczema	3
Bright's disease.	1
Paralysis of right lower limbs	1
Dysentery	3
Yaws.	2
Anklostomysis.	1
Chronic endometritis.	3
Lumbago.	1
Dysmenorrhoea.	1
Anaemic dropsy.	1
Nephritis	1
Perturix.	1

Anaemia in combination with other diseases.

21.	Night blindness.
24.	Repeated respiratory infection and Bright's disease.
28, 29 & 41.	Nutrition poor.
33.	Worms.
44.	Night blindness.
57.	Oedema, filarial and general debility.
64.	Poor nutrition.
65.	Poor nutrition.
82.	Scabies.
87.	Spongy gums, scabies and chronic digestive trouble.
88.	Muscular emaciation, scabies, and chronic digestive trouble.
91.	Soreness of mouth, scabies, poor nutrition and repeated respiratory infection.
93.	Soreness of mouth, spongy gums and repeated respiratory infection.
94.	Scabies, chronic digestive trouble.
95.	Scabies, photophobia.
96.	Scabies.
98.	Scabies.
100.	Scabies and Chronic digestive trouble.

101.	Spongy gums, scabies.
102.	Chronic diarrhoea and scabies.
103.	Night blindness.
105.	Filarial.
110.	Chronic digestive trouble.
112.	Spongy bleeding gums and scabies.
114.	Glossitis.
115.	Anklostomysis.
116.	Scabies.
119.	Anklostomysis.
122.	Dysentery.
126.	Repeated respiratory infection.
127.	Oedema.
129.	Dropsy and scabies.
132.	Soreness of mouth, night blindness and perturix.
133.	Scabies and oedema.
138.	Glossitis and scabies.
140.	Scabies, oedema and filariasis.
141.	Scabies, chronic digestive trouble and chronic eczema.
142.	Chronic eczema.
143.	Chronic endometritis.
145.	Lumbago.
147.	Dysmenorrhoea.

Cases other than anaemia with more than one disease.

10 & 12.	Oedema and filariasis.
13.	Dental abnormality and calcium deficiency.
22.	Eczema and poor nutrition.
46.	Chronic digestive trouble and discolouration of the conjunctiva.
52.	Soreness of the mouth and glossitis.
56.	Discolouration of conjunctiva, oedema, and filarial.
70.	Scabies and discolouration of the conjunctiva.
74.	Lachrymation and oedema.
78.	Scabies and poor nutrition.

- 83. Photophobia and lachrymation.
- 85. Bilateral dermatitis, oedema, and filarial.
- 86. Bilateral dermatitis.
- 88a. Repeated respiratory infection and lack of subskin fat.
- 89. Glossitis, roughness of skin, and dental abnormalities.
- 92. Repeated respiratory infection, dental abnormalities and oedema.
- 97. Scabies and night blindness.
- 111. Muscular emaciation and repeated respiratory infection.
- 113. Scabies and yaws.
- 121. Poor nutrition and dysentery.
- 135. Phrynoderma, poor nutrition, and yaws.
- 137. Chronic digestive trouble and glossitis.
- 146. Poor nutrition, chronic digestive trouble, and dental abnormalities.
- 149. Poor nutrition and chronic digestive trouble.

General remarks about the cases.

- 4. Want of good nutrition.
- 6. General weakness.
- 8. Want of nutrition.
- 14. Chronic ulcer and suffers from poor nutrition.
- 15. Calcium deficiency.
- 20. General deficiency.
- 23. General debility and poor nutrition.
- 54. Poor nutrition and general debility.
- 59. Discolouration of the conjunctiva and general debility.

- 85. General emaciation and poor nutrition.

Relief measures.—Better housing, clean habits, sufficient remunerative work with food sufficient enough, may bring about a big change in the very life of the people. No statistical enquiries have been conducted on scientific lines and it is worth the consideration of the authorities to enquire into the life and condition of the people living in this area.

A SURVEY OF NUTRITIONAL DISEASES

Calavamcodam, Shertellay.

By

LT.-COL. T. S. SHASTRY, I. M. S. (RETD.)

The following is a report of health conditions in Calavamcodam (Shertellay) which I visited on 12th March.

Dr. M. P. Chacko of K. M. Hospital, Shertellay, and Dr. J. A. Bhat of Cochin heartily and ably assisted me in making an analysis of 178 cases. The number of patients classified according to their major disease, the number of diseases in all of all the patients, and a list of the cases with more than one disease are herewith enclosed.

Elephantiasis, leprosy and hook-worm exist together in this part of the country. They are associated with water-logging and a high degree of moisture. These reduce the vitality and capacity for work.

The large number of cases of anaemia are due to hook-worm and ill-balanced diet. There were also 4 cases of nutritional oedema, swellings in different parts of the body due to protein deficiency.

Chronic digestive troubles are primarily due to ill-balanced food. As D.M.O. Trinevelly I had opportunities of visiting the Neyyur hospital and discussing with Dr. Somerville the many cases that were operated for peptic ulcer. The digestive troubles are due to chronic gastritis and ulcer of the stomach. The patients describe the disease as pain in the stomach, diarrhoea, dysentery, gas, burning sensation, etc. Use of excessive carbohydrates, want of adequate protein and vitamin in the food, and uncertainty and inconstancy of diet are the causes of this condition.

One of the diseases in the area was peripheral nueritis. Pins and needles sensation and burning and numbness are its main symptoms. They appear more often in the lower limbs. They are caused by protein and vitamin B1 and B2 deficiency in food, disordered metabolism due to unsuitable food, and diabetes. Leprosy, syphilis, and metallic poisoning incidental to indiscriminate use of certain Ayurvedic medicines also cause this disease.

Scabies is another disease widely prevalent in the area caused by lowered vitality due to protein and vitamin deficiency of the people particularly when they are exposed for want of proper clothing. They spread by intimate contact through schools and otherwise. In this connection I have noted that the people had very little clothing which was equally dirty. This is in contrast to the normal conditions of cleanliness and clothing generally prevalent in Kerala.

Other diseases of the area were eczema and dermatitis. These are found in extensive patches and in a chronic state in a few cases. These are really due to protein and vitamin deficiency. Respiratory diseases are mainly due to want of shelter, underclothing and undernourishment. When persons labouring under these disadvantages expose themselves, they are affected by changes of weather.

Even in normal times a larger use of tapioca in the diet affected the health of the people and has caused any number of diseases. Use of tapioca has no doubt prevented deaths by starvation but has also led to severe malnutrition and consequent diseases. The high price for rice and wheat has compelled the people to use a greater quantity of tapioca. Fish which could supply the protein has become very costly for the poor man. The people are hardly accustomed to the use of milk products, leafy vegetables and grams of various kinds. I was pleased to see the distribution of milk and vitamin tablets to children and nursing mothers by the Friend Ambulance unit and the Red cross. This service should be extended with the aid of Government. Construction of latrines, removal of pistia plant which breeds filarial

mosquitos, the rearing of fish and goats, the raising of leafy vegetables as spinach, and other vegetables as tomatoes, cultivation of grams, rural housing schemes, road works, etc., will create employment for the people, more hygienic surroundings, and food in the area. Immediate relief lies in supplying shark liver oil, oral liver extract tonic, calcium tablets and powders and vitamin tablets in large quantities at short intervals as a course of treatment.

Since writing these observations, I have looked into the figures for 1942, 43 and 44 of Karapuram mission hospital of the various diseases treated there. Diseases of round worms have increased from 585 to 1089, and ankylostomiasis from 133 to 227, cases of diarrhoea from 102 to 222, dermatitis and scabies from 455 to 751, anaemia 68 to 134, respiratory infection rose from 580 to 1132 and declined to 833, jaundice rose from 14 to 59, ulcers from 134 to 487, yaws from 84 to 298, syphilis from 122 to 200, pyrexia of uncertain origins 102 to 266, and leprosy 33 to 56. Nutritional oedema and dropsy rose from 179 to 252 and declined to 176. Dr. Aykroyd says in one of his lectures in 1942 at the department of agriculture U.S.A. that during the Hissar famine dysentery and diarrhoea, respiratory diseases, enteric fever, and pyrexia of uncertain origin increased greatly in 1939 in all hospitals as compared to the diseases in 1937. This according to him, occurred 'during the period when food supply was deficient in quantity and also in quality'. Food scarcity has no doubt led to a reduction in the quantity of food consumed and an excessive consumption of carbohydrates leading to diarrhoea and nutritional oedema in Shertellay area.

Analysis of the number of patients according to their diseases.

Anaemia (bad) 37; Anaemia (worse) 26; Anaemia (worst) 4; Chronic digestive trouble 17; Repeated respiratory infection, T.B. 18; Scabies 9; Peripheral nueritis 8; Eczema, ulcers 9; Swelling (Oedema) 5; Poor nutrition 4; Leprosy 3; Soreness of mouth 2; Chronic diarrhoea 1; Glossitis 1.

Other diseases.

Elephantiasis 26; Gonorrhoea 1; Hemiplegia 1; Yaws 2; Pyrexia 1; Glandsneck 1; Colles's fracture old 1; Healthy 1; Total 178.

Total number of nutritional diseases classified.

Anaemia (bad) 44; Anaemia (worse) 26; Anaemia (worst) 4; Peripheral nueritis 15; Bilateral dermatitis 2; Roughness of skin 1; Ulcers 3; Deudonal ulcers 1; Scabies 16; Eczema 11; Leprosy 10; Poor nutrition 17; Gas in stomach, burning sensation, constipation, chronic digestive trouble, stomachache, chronic diarrhoea, dysentery 26; Repeated respiratory infection and T.B., whooping cough, asthma 31; Soreness of angles of mouth 7; Glossitis 2; Night blindness 1.

Other diseases.

Elephantiasis 62; Filariasis, filarial fever, filarial swelling, filarial breast abscess 15; Worms 5; Pyrexia 1; Anklostomiasis 1; Amenorrhoea 1; Paralysis 2; Malaria 1; Liver enlargement 1; Dyspepsia acid eructation 1; Rheumatism 1; Haemoptysis 1; Leucoderma 2; Deafness 1; Glands neck 1; Sepsis 1; Nephritis 1; Syphilis 5; Yaws 2; Colles's fracture old 1; Hemiplegia 1; Gonorrhoea 6. Total 330.

Cases with more than one disease

Case No.

1. Anaemia, chronic digestive trouble and amenorrhea.
2. Repeated respiratory infection, fever and pleurisy.
3. Anaemia, poor nutrition, oedema, malaria, and liver enlargement.
4. Anaemia and poor nutrition.
5. Repeated respiratory infection, filariasis, and ulcerated foot.
6. Anaemia and poor nutrition.
7. Peripheral nueritis, anaemia, filarial swelling.
8. Peripheral nueritis, gonorrhoea.
9. Anaemia, poor nutrition, and ankylostomiasis.

10. Anaemia and gonorrhoea.
11. Peripheral nueritis and elephantiasis.
12. Anaemia, poor nutrition, and dyspepsia acid emaciation.
14. Peripheral nueritis, and rheumatism.
15. Anaemia, chronic digestive trouble, and gonorrhoea.
16. Repeated respiratory infection, haemoptysis and T.B.
17. Scabies and poor nutrition.
18. Chronic digestive trouble, repeated respiratory infection, and stomachache.
19. Anaemia, filarial fever, elephantied legs.
20. Scabies, anaemia and round worm.
21. Poor nutrition, chronic digestive trouble, leucoderma, constipation and burning sensation.
22. Soreness of angles of mouth, Glossitis, Chronic digestive trouble.
23. Anaemia, filarial fever.
24. Anaemia, repeated respiratory infection, whooping cough.
25. Peripheral nueritis, chronic digestive trouble, repeated respiratory infection, deafness, fever, T.B.
26. Peripheral nueritis, gonorrhoea, filarial fever.
27. Soreness of angles of mouth, glossitis, and filarial fever.
28. Bilateral dermatitis, poor nutrition.
29. Chronic diarrhoea, infantile paralysis.
30. Peripheral nueritis, anaemia.
31. Peripheral nueritis, old age.
32. Peripheral nueritis, anaemia, poor nutrition, chronic digestive trouble, elephantiasis leg.
33. Anaemia, repeated respiratory infection.
34. Anaemia, chronic digestive trouble, elephantiasis leg.
35. Scabies, congenital syphilis.
36. Chronic digestive trouble, repeated respiratory infection, burning sensation in the eyes.
37. Scabies, anaemia, elephantiasis, swelling of both legs and hands.

38. Peripheral nueritis, elephantiasis, leucoderma.
39. Peripheral nueritis, leprosy.
40. Scabies, poor nutrition, chronic digestive trouble.
41. Repeated respiratory infection, filarial fever.
43. Chronic digestive trouble, constipation.
44. Scabies, anaemia, filarial swelling of legs and hands.
45. Soreness of angles of mouth, chronic digestive trouble.
46. Chronic diarrhoea, anaemia, nightblindness.
47. Poor nutrition, repeated respiratory infection, fever, T.B.
48. Filarial breast abscess, gonorrhoea.
51. Soreness of angles of mouth, anaemia, pregnant 9 months, gonorrhoea.
52. Anaemia, poor nutrition, repeated respiratory infection, roundworm.
53. Poor nutrition, chronic digestive trouble, stomach-ache.
54. Peripheral nueritis, poor nutrition, filarial swelling right leg, leprosy patches.
55. Poor nutrition, leprosy, malarpatches.
56. Chronic diarrhoea, anaemia, dysentery.
58. Peripheral nueritis, poor nutrition, filarial swelling.
60. Peripheral nueritis, anaemia, poor nutrition.
61. Anaemia, filarial fever and swelling legs.
62. Anaemia, roundworm.
73. Anaemia, elephantiasis, sepsis.
76. Anaemia, elephantiasis.
77. Anaemia, elephantiasis.
80. Anaemia, elephantiasis.
81. Anaemia, elephantiasis.
83. Anaemia, elephantiasis.
90. Scabies, elephantiasis.
91. Anaemia, oedema, elephantiasis.
93. Anaemia, elephantiasis.
95. Anaemia, oedema.
97. Anaemia, elephantiasis.
98. Anaemia, elephantiasis.
99. Anaemia, elephantiasis.

100. Scabies, elephantiasis.
102. Anaemia, asthma.
108. Bilateral dermatitis, anaemia, elephantiasis.
112. Anaemia, worms.
116. Aneamia, elephantiasis.
118. Scabies, asthma.
119. Anaemia, Eczema.
120. Anaemia, elephantiasis.
136. Anaemia, elephantiasis.
- 143. Anaemia, elephantiasis.
145. Repeated respiratory infection, elephantiasis, ulcers.
152. Anaemia, worms.
155. Anaemia, poor nutrition.
156. Anaemia, elephantiasis, leprosy.
158. Anaemia, elephantiasis, eczema.
163. Anaemia, elephantiasis.
168. Anaemia, asthma.
169. Anaemia, elephantiasis.
- 174. Anaemia, elephantiasis.
175. Anaemia, elephantiasis.

A NUTRITIONAL SURVEY OF KOTILPAD AND PUTHUR, SOUTH TRAVANCORE.

(February 1945)

By Dr. M. E. Naidu, L.R.C.P. & S., (Edin.) L.F.P. & S. (Glasgow), etc., KOTTAR, NAGERCOIL; Dr. S. Balasubramonia Pillai, M.B. & B.S., Mylady, S. Travancore; and Dr. S. Muthukaruppa Pillai, M.B. & B.S., M.L.A., Therur, SUCHINDRUM, S. Travancore.

General: This is a short account of the conditions of the homes and food of the inhabitants of the coastal villages of Puthoor and Kotilpad.

The village of Kotilpad is situated 1½ miles to the east of Colachel, the harbour town of South Travancore. Puthoor

is just a mile further east of Kotilpad. The inhabitants of these villages are fishermen belonging to the Bharatha community. They are Christians of the Roman Catholic denomination and each village has a church. Both these villages constitute one parish under a single priest.

Population: Kottilpad has a population of 851 and Puthoor 948.

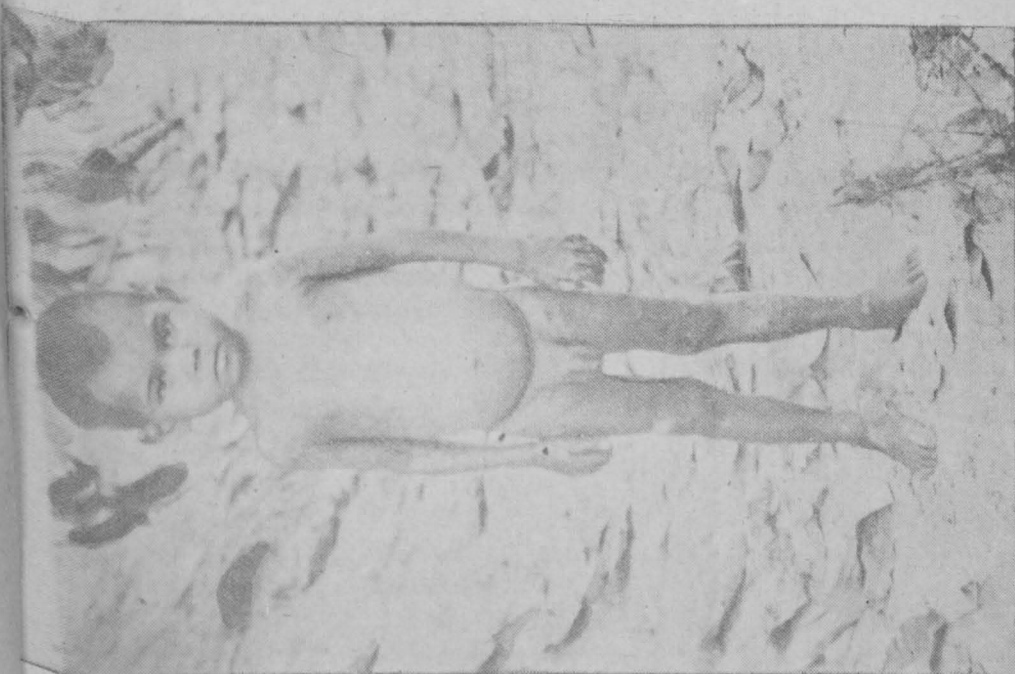
Education: Kotilpad has no school at all and generally the children of this village are never sent to school. Even in the village of Puthoor where there is a primary School having up to the fourth class, the people do not seem to take interest in sending their children to school, so much so literacy is very low in both the villages.

Occupation: Naturally fishing at sea is the sole occupation of the male population. There are however one or two barber families in each of the villages and there are five tailors for the two villages together. Each village has also a petty shop-keeper dealing in the absolute necessities such as salt, condiments, matches, etc.

Females are usually engaged in knitting fish nets (used for fishing small size fish) with cotton thread. From this occupation an adult female may be able to earn on an average a net income of $1\frac{1}{2}$ annas per day.

An adult may, after deducting the church dues and the share due to the owner of the fishing net as hire gets an average income of $5\frac{1}{2}$ to 8 annas per day. It should not be supposed that this income is a steady one. It may be that on one day he gets 12 annas and on another day only 2 annas and on some days none at all. Out of this income the common habit of toddy drinking indulged in by these people drains away about a third, leaving only the rest for their necessities.

Since the income from fishing is most unsteady on days when the fisherman brings home an empty net, the family is forced to seek the help of the money-lender. The owners of the fishing nets who generally hire the nets to the fisher-



Rickets, Anaemia, Scabies and Oedema—a village near Kayamkulam (January 1945).



Severe anaemia—a village near Kayamkulam (January 1945).

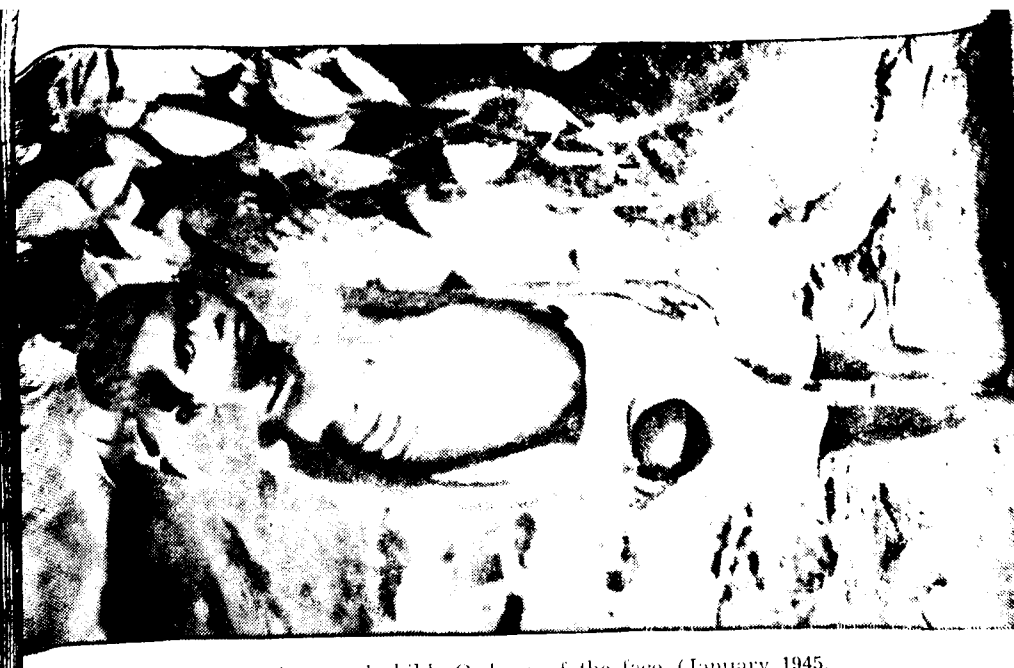
man are usually the money-lenders also. The money borrowed has to be returned along with half an anna to the rupee on the subsequent day when the borrower gets a good catch, the creditor having a first charge on the catch.

Diet: Except a few rare exceptions all the inhabitants live on a starving diet. Their diet consists of rice and tapioca with some fish. Meat and vegetables as a general rule are not taken at all. Coconut oil or any variety of oil for that matter is seldom used. A nominal quantity of coconut is used; it never exceeding 1 to 1½ oz. per day per family. Details of the food consumed by a number of families were collected and on an analysis of them the diet charts of two typical families one of the better class and another of the ordinary poor class are given below.

BETTER CLASS FAMILY

Diet chart per day for a family of 2 adults, 3 children above 12 years and 2 children below 12. Children above 12 are considered as adults and below 12 as half adults for purposes of calculation. Thus this family may be considered as one of six adults.

Food.	Quantity.	Wt. in oz.	Protein grms.	Fat grms.	Carbo- hydrates grms.	Calories.
Rice	.. 1¾ Ed.	67.9	122	14	1765	7674
Tapioca	. 8 lbs.	128	—	—	1024	4096
Fish	.. 6 oz.	6	30	—	—	120
Coconut	.. 3 „	3	5	42	24	494
Coconut oil	.. ½ „	.5	—	14	—	126
Total for adults 6		..	157	70	2813	12510
Per head		..	26.2	11.7	468.9	2085



A semi-starved child - Oedema of the face (January 1945, a village near Kayamkulam).



An Oedema case—a village near Kayamkulam (January 1945).

Families of the above type may number only about half a dozen in both the villages. Even this diet is the maximum that the family is able to get on any day in the month; on other days say about 10 to 15 days in the month, they get only lesser quantities.

II. POOR ORDINARY FAMILY OF 3½ ADULTS

Food.	Quantity.	Wt. in oz.	Protein grms.	Fat grms.	Carbo- hydrates grms.	Calories
Rice	.. ¼ Ed.	9.7	17	2	252	1094
Tapioca	.. 4 lbs.	64	—	—	512	2048
Fish	.. 1½ oz.	1.5	7.5	—	—	30
Cocoanut	.. ½ "	.5	.8	7	4	82
Cocoanut oil	.. —	—	—	—	—	—
Total for adults 3½		..	25.3	9	768	3254
Per head		..	7.2	2.6	219.4	930

A large number of families belong to the latter category. It is really a wonder how these people manage to get on, with such a diet of low calorific value. Perhaps the common habit of toddy drinking found among these people supplements their diet and helps to keep their body and soul together.

The daily routine diet consists of cold rice-water of the previous night if any, or raw or cooked tapioca if available, in the morning; tapioca and fish in the noon and rice and fish at dusk. The principal meal is the one taken at sun-set. Even that is not generally a full meal but the available quantity is proportionately shared by the members of the family.

It was surprising to be told that no one in the two villages under survey ever bought rationed articles of diet from the ration dealers. There is not even a single exception to the

above. They give exorbitant prices and buy rice in the black market. The reason is that they are unable to husk or mill paddy, wheat or other raw grains supplied, for want of the ordinary domestic rice-pounders and other necessary implements. Further they are ignorant of the methods of cooking anything else than rice and rice alone cannot be had from the ration shops.

HEALTH CONDITIONS

• From the above description of the dietary of the inhabitants of the two villages under consideration it is legitimate to expect that they must be suffering from effects of malnutrition and the same has been more than confirmed by the actual conditions of health observed.

On the whole 206 individuals were examined in January and February 1945 from both the villages. Care was taken not to confine the medical examination to obvious cases of malnutrition only. But all those who were prepared to be examined were taken up for examination. For example in the Puthoor village all the 124 cases were those who were able and prepared to walk up to the primary school where the Doctors took their post. Similarly in Kotilpad the doctors examined all those who came to them at the retired Naval Petty Officer's house.

Out of the 206 cases examined 80 were adult males, 20 adult females and 106 children. They showed the following defects, many of them displaying more than one of the affections.

Disease.	Number affected.
Anaemia	127
Caries dental	56
Scabies	34
Wasting	25
Rickets	17
Bleeding gums	17

Disease.	Number affected.
Xerophthalmia	15
Dysentery and Diarrhoea	12
Bronchitis	11
Oedema of legs and body	5
Stomatitis	5
Eczema	5
Peripheral Neuritis	4
Photophobia	4
Cataract	4
Syphilis	3
Asthma	3
Angular Conjunctivitis	2
Joints inflammation	2
Gonorrhoea	2
Chronic ulcer	2
Chronic Rhinitis	2
Hernia	2
Yaws	2
Glossitis	1
Glands neck	1
Peptic ulcer	1
Malaria	1
Mitral-Stenosis	1
Epilepsy	1
Leprosy	1

Apart from these a large number of cases had Pyorrhoea. Loss of subskin fat and rough skin were generally observed.

It will be seen from the above that the majority of the cases were anaemic. The cases betray a marked deficiency of all the food factors particularly iron, calcium and vitamins A, B, C, and D. The general resistance to diseases has been found to be too low as can be seen from the prevalence of diseases such as scabies, bronchitis, dysentery and diarrhoea, eczema, etc. Apart from the noted cases, on enquiry it was

found that many others were also victims of chronic diarrhoea, though they do not consider even four motions a day as pathological. Majority of these may safely be said to be cases of amoebic dysentery or hookworm. It was found that small-pox was widely prevalent in an epidemic form in both the villages. Being illiterate they are not conscious of the infective nature of the disease and cases in the convalescent stages were seen loitering about and freely mingling with other people. They were refused to be examined and were asked to go to their houses as a first lesson to avoid spread of the disease, the nature of the disease being explained to them. It was a pitiful sight to see huts housing more than one small-pox patient being unlit for want of kerosine oil.

In the village of Kotilpad which lies within the jurisdiction of the Colachel Municipality a few people were found to have been newly vaccinated; but no severe preventive or precautionary measures seem to have been attempted in either of the villages. The death register kept in the parish showed that 15 out of 25 deaths registered in the months of January and February 1945 were due to small-pox. Of the above 25 deaths 20, were children below 6 years of age and 5 were adults. This may be taken to be an index of the low resisting power of the people of the locality especially the children. The extract of births and deaths taken from the parish register is given below.

Year.	Births.	Deaths.
1943	81	47
1944	55	39
1945 Jan. & Feb.	9	25

All the 206 cases examined were sorted under 3 groups A, B, and C according to their state of nutrition.

A, 11

B, 109

C, 86

Those who were normal in health and appearance without marked symptoms of any disease were grouped under A. The fact that the number falling under this group is so low as 11 speaks for itself regarding the state of nutrition of the people of these villages. Cases whose state of nutrition appeared be very bad have been classified under group C which numbered 86 coming to 42% of the total number of cases examined. Others who, though they could not be said to be in a normal state of nutrition but appeared to be comparatively in a fair condition of nutrition have been put under group B, which comes to 109 in number.

Conclusion: On a consideration of the above observations and discussions it is submitted that if the following suggestions are adopted it would help to better the conditions of the people of these villages and similar others.

(a) Since the purchasing power of these people has not increased commensurate with the enormous rise in the price of essential articles of food, it is suggested that financial help be given to them in the shape of subsidies for the purchase of rationed articles.

(b) Since they have neither the necessary implements for husking or milling raw grains nor the necessary knowledge to cook anything but rice it is suggested that the ration supplied to them be given in the form of whole rice only without putting them to the compulsion of buying unfamiliar grains till they are properly educated in their use. Further it is necessary that these rations are supplied to them daily and in their own villages.

(c) In order that they may be made to use nutritious articles of food with sufficient iron, calcium, protein, fat and vitamin contents they may be educated on the value of milk products, vegetables and wheat and practical training in the ways of cooking these stuffs be given to them freely. To popularise wheat it may be supplied to them in a form easy for cooking at a lower price than rice bulk for bulk.

(d) In order to tone up their condition immediately, milk canteens may be opened and iron in some form and multi-vitamin tablets may also be supplied to them free.

(e) They may be taught how to husk paddy or wheat and the necessary implements may be supplied to them free and thus open a new subsidiary occupation for the women folk which will help to some extent to better their economic condition.

(f) Last but not least efficient methods be adopted to increase their general literacy and to impart knowledge in public health and sanitation and to improve their general sanitary conditions, and to administer free and efficient medical help to the needy.

MALNUTRITION SURVEY

By

DR. T. V. S. SHASTRI, L.M. & S.,
Trichinopoly,

AND

DR. P. N. BHAT, L.I.M.,
Kasergod.

SHERTELLAY TALUQ

I visited Poochakal in Sheretellay Taluq on 24th December, and Charamangalam along with Dr. P. N. Bhat, L.I.M., of Kasergod on 25th December. The former place is in Pallipuram island in Shertellay Taluq and is reached by boats going to Alleppy from Ernakulam. The other centre Charamangalam is within eight miles of Poochakal on the same route. I could not reach Charamangalam in time as I took a country boat and lost the way which took me to the

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children's home of Servindia Relief Centre at Calavamcodam. However I had time enough to examine two dozen cases. The rest of the cases were examined by Dr. P. N. Bhat who reached the place earlier. These villages had passed through the famine of 1941 when many were thrown out of employment owing to cessation of exports of coir products. Their sufferings were intensified by the food shortage of 1943 when there was no rural rationing. Our examination of patients in connection with the free distribution of protective foods and medicines by the Servants of India Society Relief Centre gave us an opportunity to study also the diseases and their relation to nutrition. In all we examined at Poochakal 48 adults and 69 children and 165 adults and 25 children at Charamangalam.

At the time of examination one could not say there was famine. Coir-spinning has revived though the benefit of a higher price for yarn could not fully reach the women at home. Those who could manage to leave the area for employment elsewhere or as Assam coolies or for the army or who deserted their families and ran away have already left. There have been greater deaths among old persons and children between 1941 and 1944. Those that were left behind consisted more of weak men, women, infants and children. Their occupation was generally coir-spinning. They could hardly buy all the necessities of life as rice tapioca, fish, cocoanuts and grams as their prices have increased fourfold. Their diet was mostly carbo-hydrate, consisting of rice when they could buy rations, and comprising tapioca and root vegetables. They could give only a flavour of fish to their food, and cocoanut cakes were used by the poorer people in the place of cocoanuts. They could get with great difficulty two-thirds of the number of calories required (2,500-2,600), but even this not on all days. Their diet was highly deficient in protein, fats, and mineral salts. We refrain from giving an analysis of food values of their diet as it has been already done by other doctors in the area.

A few relief agencies maintain poor and orphaned children. The Friends' Ambulance Unit distribute milk and



Oedema and Elephantiasis (January 1945).



A group of children waiting for milk at the Ramakrishna Mission Relief Centre in Sherdilla (October 1944).



Case of a weak child - Rickets and stunted growth (January 1945).



Anaemia (January 1945).

vitamins to nursing and expectant mothers and children below the age of 5 but none the less, the problem of reducing the price of necessities as rice, wheat, fish, cocoanut, grams, and cocoanut oil to the level at which the majority can buy and making them available in sufficient quantities and in good quality remains unsolved. The following is an analysis of the diseases of patients. In as much as more than one disease are noted for each patient, the total number of diseases will naturally be greater than the total number of patients.

	Poochakal.	Charamangalam.
Anaemia (moderate)	.. 12	29
„ (severe)	.. 25	36
„ (very severe)	.. 14	16
Oedema	.. 2	6
General emaciation	.. 34	29
Beading of ribs	.. —	26
Poor nutrition	.. 49	24
Bilateral dermatitis & scabies	.. 27	38
Diarrhoea, dysentry and digestive troubles	.. 12	7
Neuritis	.. 1	10
Xerophthalmia	.. 5	—
Night blindness	.. 7	1
Soreness of angles of mouth, glossitis, spongy and bleeding gums	.. 24	16
Roughness of skin	.. 2	7
Respiratory troubles	.. 6	12
Heart diseases	.. 5	5
Filariasis and elephantiasis	.. 3	36
Enlarged liver	.. 5	—
Malaria	.. 1	3
Leprosy	.. —	5
Worms	.. —	4
Rheumatism	.. 1	3

We shall now describe the various diseases as found in combination in single patients. In Poochakal poor nutrition,

maemia of various degrees, scabies, and emaciation were generally found together. Cases of soreness of angles of mouth and glossitis were also found in anaemic cases. Cases of digestive troubles were also found along with poor nutrition. At Charamangalam 24 cases of scabies, and roughness of skin were found in combination with anaemia and sometimes with emaciation and poor nutrition. The number of cases of emaciation generally with anaemia and sometimes with roughness of skin were 39. The number of cases of digestive trouble along with poor nutrition were 5.

We would like to conclude this part of survey with a few observations on the general conditions of health in the area. Firstly there were a few patients with prolonged malnutrition who have lived on their reserve powers and it will be a matter for surprise if they recovered at all even with ideal treatment and nourishing food. Secondly, a few cases might stave off death, but even then would never be able to attain their normal capacity for work due to permanent damage to their vital organs. Thirdly some of the patients examined by us were in such an advanced state of malnutrition that they would require proper feeding and care for months before they can recover enough strength to move about. To illustrate, a boy of 16 years who was in one of the children's homes maintained by the Y.W.C.A. was not able to walk even after six weeks of feeding. The progress in the case of older persons should naturally be slower.

I visited the children's home of the Servindia Relief centre. I found that even children who were provided with a routine diet were not healthy in many cases. Some of them had weak hands and legs and a protruding belly. Some were anaemic. Some suffered from scabies. Since our visit we are glad to know that fish and cocoanut have been provided in larger quantities for these children. Generally there was stunted growth among them. Children of 13 and 14 looked 7 and 8 not only in Shertellay area but in every taluq we visited. Until we verified by seeing the teeth of children, we could not believe their age as stated by their parents. The weight of children was far less than that of those in the Tamil

country. There were a greater number of cases of oedema among children as the demands of growth were greater on the system in their case.

To conclude it was rare to find any considerable number of healthy people in these areas. A larger proportion among men looked healthy than among women and children. Emaciation among the latter was noticeable. Possibly poverty has told on them and created a state of mind which resigns itself to fate as effort on their part has not succeeded in preserving life.

AMBALAPUZHA TALUQ

From Shertellay Taluq where we stayed for 2½ days, we reached Karumady about 10 miles towards Quilon on the backwaters on the evening of 26th December. The people who were examined here were better in economic status than the poor Thiyas whom we examined in Shertellay Taluq. We gained in experience as we went along. We examined seventy-five adults and ten children. Two diseases seemed to be common in all the areas. The one was neuritis, due to vitamin B1 deficiency. The second was gastro-intestinal disorders. We began to pay more attention to these cases. The number of cases of neuritis were twelve. Cases of diarrhoea, chronic digestive trouble, dilatation of the stomach, dysentery, and gastric ulcer were 1, 3, 6, 1 and 8 respectively; in all cases relating to gastro-intestinal disorders were 19. The number of anaemic cases moderate was 3, severe 10, and very severe 2. Other cases were: scabies 12; soreness of mouth and glossitis 9; respiratory 3; eye troubles 3; emaciation, heart disease and tuberculosis 6; tropical ulcer 3; elephantiasis 2; and liver enlargement 1.

KARTHIKAPALLY TALUQ

We visited Panur in Karthikapally Taluq on the morning of 27th December. The place is about ten miles from Karumady, the previous station, on the backwaters between Alleppy and Quilon. This was predominantly a Muslim village. The families were poor and could not afford in some

cases even two meals a day. They had little clothing. Famine was at its worst in 1941, and gradually declined. The coastal area relief committee stopped school children relief in the year 1118 i.e. from 1942 July. But food shortage was the cause of another famine in 1943.

The food of the common people was deficient in every respect. Rice-water of the previous night was the food of dependants and the earning members took in the mornings rice-cakes, tapioca and milkless tea costing 2 as in the tea shops. On enquiry we found that 28 oz. of rice or wheat, 7 to 10 lbs. of tapioca, 4 oz. fish, 2 oz. cocoanut, and cocoanut oil for half a chakram, and spices formed the major articles of food for a day. Cocoanut oil-cakes were used for two days in a week, when they had no money to buy cocoanuts.

Elsewhere is given dietaries of four families at Perumballi, the next station visited by us in the afternoon, at a distance of about ten miles from the previous station. It is all the same story everywhere, irregular and uncertain diet according to the resources of the people, small quantity of rice, excess tapioca, little cocoanut, and little fish being consumed by the families.

We examined 110 cases at Panur (65 adults and 45 children) and 63 cases at Perumbally (27 adults and 36 children). The following is an analysis of their diseases.

	Panur.	Perumbally.
Anaemia (moderate)	.. 12	0
" (severe)	.. 21	10
" (very severe)	.. 14	1
Oedema	.. 2	3
Ulcer leg	.. 2	3
Emaciation	.. 8	3
Beading of ribs	.. 4	6
Poor state of nutrition, Bilateral dermatitis and Scabies	.. 23	14
Roughness of skin	.. 3	—

Diarrhoea, dyentry and digestive troubles	.. 7	3
Dilated stomach	.. 6	—
Neuritis	.. 8	9
Liver enlargement and hepatitis	.. 3	1
Soreness of angles of mouth, glossitis and spongy bleeding gums	.. 17	8
Dilated heart	.. 8	—
Respiratory troubles	.. 9	6
Filariasis and elephantiasis	.. 9	—

Health conditions in Perumbally were not so bad as in Panur. This is possibly because of the greater use of fish by the fishermen class in the former village. Inflammation of nerves, tenderness and pain in some parts, loss of feeling in certain other parts, and paralysis were the symptoms of neuritis in the patients whom we saw. The disease is found among patients in a poor state of nutrition, along with anaemia and emaciation in certain cases. Anaemia, poor state of nutrition, emaciation, and scabies were found to exist together in some patients. It is noteworthy that digestive troubles were greater in number in Panur, again indicating their close connection with a smaller consumption of rice and a greater consumption of tapioca. Scabies and ulcer in legs were again greater in Panur.

KARUNAGAPALLY TALUK

After halting for the night at Kayamkulam and making a survey of diets of two families during the next morning, we reached Pudupally by mid-day on 28th December. We learnt that the Kayamkulam post office distributed money orders every month to the value of Rs. 90,000 for 3,000 people. This was a hopeful feature at a time when the poor people found it difficult to purchase food articles at high prices. We reached Cheriazhikal in the evening. Kayamkulam is within six miles of Perumballi, the previous station. Pudupalli, the station first visited was about 2 miles from Kayamkulam, and Cheriazhikkal, about ten miles from Pudupalli. When we

reached Cheriazhikkal, we have travelled on the backwaters 75 miles, and we were within fifteen miles of Quilon. We returned travelling the whole night from Cheriazhikkal, and reached Ernakulam by ten in the morning on 29th December. We examined 63 adults and 29 children at Pudupally and 119 adults and 77 children at Cheriazhikkal. The following is an analysis of the diseases of patients.

	Pudupally.	Cheriazhikkal.
Anaemia (moderate)	.. 12	23
„ (severe)	.. 23	48
„ (very severe)	.. 12	29
Oedema	.. 2	4
Ulcer leg	.. 2	2
Emaciation of lower limbs	.. 6	12
Beading of ribs	.. 6	21
Bilateral dermatitis and Scabies	.. 17	50
Roughness of skin	.. 2	5
Diarrhoea, dysentery, and digestive troubles	.. 12	24
Dilated stomach	.. 2	1
Neuritis	.. 12	12
Liver enlargement and hepatitis	.. 2	6
Soreness of angles of mouth, glossitis, spongy bleeding gum	.. 29	18
Respiratory troubles and T.B.	.. 12	18
Discolouration of the conjunctiva, Xerophthalmia and night blindness	.. —	14
Heart diseases	.. 3	9
Leprosy	.. 0	3

We learnt that there were many deaths in 1942 August—1944 July by gastritis, dysentery, and diarrhoea in Pudupalli. The number of cholera deaths was about 400 in Keronagapally village of which Cheriazhikkal forms a part. We give below our observations on the main diseases in the area.

GASTRITIS

The inflammation of the stomach and intestines is a common complaint in many places we visited, being more marked in places where little fish, vegetables and vegetable oils are consumed, and the food consists mainly of rice, tapioca and yams. Dilatation of the stomach is common due to drinking rice and wheat gruel. Diarrhoea is the first symptom. A few cases complained also of dysentery. Possibly tapioca leaves an indigestible residue in the intestines. We recommended emetec injections half to one grain to be dissolved in distilled water and injected through a needle for acute dysentery cases. We are glad to know that some of the patients were cured by these injections at Cheriazhikkal.¹

The patient in many of these cases is also anaemic, and has in acute cases also swellings. There is also loss of appetite accompanied by nausea, and vomiting. The kidney is soft in some cases and painful urination is also complained of. In a few cases there is also the enlargement of the liver. Some of these cases may be classified as gastritis and

1.—1. African labourers who lived on a daily ration of 24 oz. maize meal, 6 oz., beans 4 oz., groundnut, and fish or meat 4 oz. twice a week suffered from diarrhoea (not caused by any micro-organism) and improved by a diet high in protein and vitamin content. (Nutrition Abstract V. 10. No. 2. October 1940. P. 389).

2. The high incidence of gastro-intestinal disorders particularly diarrhoea and dysentery, in India, and the increased death rate due to these causes in times of famine are well-known. In a report on the recent famine in Hissar in the Punjab. Dr. Nicol points out that there was a striking increase in the incidence of 'dysentery and diarrhoea' during the period of famine. This is additional evidence to show that the digestive tract is affected by malnutrition. It is to be observed that the death rate from 'dysentery and diarrhoea' in the Punjab, as recorded in the Annual Reports of the Public Health Commissioner with the Government of India, is usually from one-fourth to one-sixth of that of Orissa, the Central Provinces and Madras. The Punjab is a wheat eating province, while in the latter provinces rice is the principal or an important staple. (Intestinal changes in monkeys fed on poor rice diets by M. V. Radhakrishna Rao, I.J.M.R. V. 30. 1942. p. 273-283).

some others nephritis. Some complain of neuritis due to vitamin B1 deficiency. These patients suffer also from respiratory troubles. Gastro-intestinal disorders and diarrhoea are the first symptoms followed by severe anaemia, swellings, and complaints in the liver and lungs. The disease also leads to peptic ulcer on the mucous membrane of the stomach or duodenum. Cases of peptic ulcer are greater in Travancore than in other parts of South India. (I.J.M.R. V. 28. October 1940. P. 481-507).

ANAEMIA

Anaemia cases which formed 352 out of the total of 853 cases complained of fatigue, palpitation of the heart, and weakness. Some complained of burning pain in the stomach. Some of them passed stools immediately after food on some days. Blood and mucus were also passed in some cases. They said that they felt a sensation of something round going up from the stomach to the chest or breast. There was also giddiness. Some of them complained of weakness of hands and legs.

According to local Ayurvedic doctors anaemia and oedema cases are called Pithaneeru cases. According to them, the complexion changes gradually to pale white. Some of them also suffer from Grahaniśulai or diarrhoea, though this is not a necessary symptom of all anaemic cases. Swellings appear. There is bloodlessness in the eye-lids. The first stage is 'Neeru', the second is called 'Pandu', and the third is called 'Kamalai'. The yellow colour appears in the eye, in the urine and even in the clothes worn. Medical science today is correlating jaundice with nutritional disorders. Patients who reach an advanced stage, i.e., from diarrhoea to swellings all over the body hardly survive.²

2. Anaemia and Oedema are called in Ayurvedic science as Pandu and Shopha respectively. It is interesting to note that Ayurvedic doctors have been traditionally associating these diseases with mal-nutrition. "Pandu" literally means paleness (or whiteness) which is the leading symptom of anaemia. The disease has the following

Another complaint of anaemic cases is what they call 'Chuma', i.e., cough, difficulty in breathing.

There was also the irregular action of the heart in very anaemic cases. Local people call it 'Changattam' (Changu meaning heart and attam, dance). Some of the anaemic cases were anaemias of pregnancy.

Many of the anaemic cases had skin diseases of different kinds. Scabies were common. Roughness of skin was noted in nine cases.

One of the diseases mainly noticed by us was peripheral neuritis. The characteristic symptoms are, wasting in the ends of certain nerves, pain in the limbs—not confined to joints, exhaustion and inability to work. The disease is due to vitamin B1 deficiency.

Nutritional anaemia is a common disease in these parts. We learnt that in December 1944 the Medical Officer of British Cochin Hospital spoke at the Cochin Medical Association on cases of nutritional anaemia in his hospital, which reached a stage when no medicine could cure them. Possibly these are cases in an advanced stage in which the tissues of the alimentary canal have been completely disordered. In the early stages they responded to protective foods. Though hook worm may be the cause of anaemia in some cases, it

symptoms: palpitation of the heart, roughness of the skin, loss of appetite, discolouration of urine, diminished secretion of sweat and loss of digestive power. The conception in Ayurveda of a stomach factor as being responsible for the formation of blood is noteworthy. Ranjaka Pitha has its seat in the stomach that is responsible for the conversion of Rasa (chyme) into Raktha.

Deficiency of Rasa and Raktha cause the following symptoms according to Sushrutha; pain and palpitation in the region of the heart, sense of void in the heart, thirst, roughness of the skin, desire to take sour and cold things, and laxity or loss of elasticity of tissues.

According to Ayurvedic science patients who reach an advanced stage i.e., who develop complications of diarrhoea and swelling all over the body have hardly any chance of surviving the disease.—Dr. P. N. Bhat.

cannot explain all the cases of anaemia. Neither the anemia in this area can be due to malaria as there is little malaria here. General emaciation, a state of poor nutrition and scabies were combined in many anaemic cases, which are indications of nutritional anaemia. Neuritis was also found in combination in a few cases.

Anaemias are due to loss of blood from some source. They may be either due to poor food or difficulty in absorbing the food owing to the condition of intestines and the liver. It is a point worth investigating how far excessive consumption of tapioca and polished rice affect the intestines and the liver. There is also iron deficiency in the food consumed in these areas as the people take little pulses, meat, or leafy vegetables. It is also said that the soils of the west coast have little calcium or minerals as they are being washed away by heavy rains. We recommended for anaemia cases, liver extract injections, Arsiferron and Syrup Haemoglobin, which we learn have been used with advantage in the relief centres of Servants of India Society at Manapuram, Cheriashikkal, and Panur.³

OEDEMA

We found in some of the patients swellings which were premonitory to death in many cases in the famine period. We saw plenty of oedema cases, greater in number in the first two places visited by us. They were cases of continued malnutrition who just managed to retain life.

3. In recent years, it has become more and more evident that various forms of anaemia may be due to an unbalanced or insufficient diet.... These forms of anaemia are found particularly among women, and more especially pregnant women.... If the question of the influence of diet on the composition of the blood has already proved of great importance for European and American countries, how much greater must its importance be in Asia, where diseases such as malaria, ankylostomiasis, kalaazar and others constitute a far-reaching menace to that most important element of life, the blood? These diseases have a powerful ally in under-nourishment, which undermines the power of resistance of whole groups of the population. (Final Report of the mixed committee of League of Nations on Nutrition 1937. P. 318).

A factor which accounts for the non-inclusion of starvation as the cause of death in death reports in this country is the innate charitableness of the people who cannot look at a fellow being starved death, but who can dole out to him only such meagre food out of their slender resources as to enable him to sustain life just long enough for diarrhoea, anaemia or oedema, to claim his body as its prey.

Researches in the blood chemistry of oedema patients show a reduction in the total plasma protein. The serum albumin is markedly reduced, while there is a relative increase in the serum globulin. The cholesterol and calcium content are also reduced. The common man describes the disease as the filling of water in the body in the place of blood and as hunger swellings. Swellings appear in the legs, feet, hands, face and eye-lids of the patient. We have satisfied ourselves that these were not filarial swellings. The swellings made a pit on pressure. In some cases we found shrunk eyes, dry cold skin, and subnormal temperature. The hair was coarse and little. Some had ulcers in the legs from which there were blood effusions. Swellings and diarrhoea, we learnt, were the last stages of the inpatients who died in Polliruthi and British Cochin hospitals. Oedema cases in initial stages may recover with a good supply of proper food, particularly animal protein.

A note on famine oedema is appended.

RESPIRATORY TROUBLES

These formed 83 out of 853 cases.

The relation of lung diseases to the present food consumed should be investigated.⁴

Tuberculosis has a close relation to undernourishment. "In central Europe during the later years of the war and the

4. There is clear evidence to show that, when food is scarce or unobtainable, the number of fatal cases of lung disease greatly increases". (Final report of the mixed committee of the League of Nations on Nutrition—1937).

hungry days which followed, there was a great rise in the tuberculosis death rate. In Saxony it was almost doubled. During this period, while there was no general breakdown of social services, a larger proportion of the population of Central Europe was in a state of semi-starvation. The inference is justified that the increased mortality was due to food shortage. Orr suggests that the most effective line of attack on tuberculosis is by an improvement in diet".⁵

SCABIES

Those suffering from skin diseases were 195 out of a total of 853 cases.

We have already touched on the skin diseases as scabies and roughness of skin in many of the patients. Scabies are found everywhere to-day. Possibly these have a relation to the poor quality of the rice and other grains consumed by the people. This again requires investigation.

NEURITIS AND LEG ULCERS

We saw 57 cases of neuritis. Neuritis (pain and benumbedness in the nerves) is due to want of vitamin B1. We recommended as food for these patients fresh bran mixed once in five days with a little jaggery. We learnt that vitamin B complex injections once in alternate days have improved the health of the cases treated in Cheriaghikkal and Panur. The relation of neuritis to a food mainly comprising rice and tapioca is worth examination. The relation of leg ulcers which we noticed at Charamangalam and Panur to food is equally worth investigation.⁶

5. The author also says that the nature of the occupation has an effect on the disease. Human nutrition and diet. W. R. Aykroyd.

6. As for the large leg ulcers, the general view at present is that diet plays a predominant part. Their occurrence is said to be attributable not so much to the absence of a particular vitamin, as to general undernourishment. (Final report of mixed committee of League of Nations Nutrition 1937. P. 318 & 319).

LIVER DISEASES

The relation of enlargement and inflammation of liver in these gastro-intestinal cases, to food equally requires investigation.

HEART DISEASES

Irregular action of the heart was also noticed in a few of the anaemic cases. General weakness and low vitality caused by undernourishment reduces in general the power of resistance to all diseases.

RICKETS

Emaciation of lower limbs and beading of ribs particularly among children were noteworthy. There was the stunted growth among many children. They showed a certain affection of the bones particularly in the ribs. The formation of rachitic beads were common at the points where the ribs joined the cartilages. 26 such cases were seen at Poochakal. The relation of the food consumed to these diseases requires examination. We are glad to note that shark liver oil, calcium tablets, and calcium powders have improved some of these children. The government of Travancore should investigate the possibilities of enriching the soil with calcium so that the calcium contents of vegetables may be increased. The importance of betels and sea-shells as chunam as part of balanced food should be taught. The value of pepper leaf as a source of food should be investigated.

STOMATITIS

Some of the patients suffering from gastritis and anaemia also suffered from soreness of mouth, glossitis, and spongy bleeding gums. We examined 120 cases of these diseases and found them more among children. The relation of a low intake of carbohydrates, protein and fats to these diseases should be investigated.

EYE DISEASES

We saw 8 cases of discolouration of the conjunctiva, 11 cases of xerophthalmia and 14 cases of night blindness. Vitamin A deficiency which causes this disease might be supplied by leafy vegetables and ripe fruits as mangoes, papayya and tomatoes. The west coast can grow these fruits in abundance and they can be consumed in plenty in different seasons.⁷

LEPROSY

We came across nine cases of leprosy, the largest number being at Thannirmukkam (Charamangalam). The experience of other doctors in this respect is significant, namely that Shertellay Taluq has the highest incidence of leprosy in Travancore. The Syrian Church at Shertellay is running a leprosy home with a large number of in-patients. The disease seems to be prevalent in rice-eating areas of Madras, Orissa, and Bengal and less in Upper India where wheat is consumed more. It is found among the poor in areas where the highest amount of calories is obtained from rice and dried tapioca

7. An opportunity arose of visiting a group of families in the Hissar district of North India, in a famine area. These families, after two years' failure of rains, had for the past three months been maintained by Government on relief works. For these three months their diet had consisted entirely of whole-wheat flour coarsely ground and about half an ounce of fresh, green chillies, daily. The wheat had been kneaded into cakes with water and baked. No oil or fat entered into the dietary. Five hundred children, aged 5 to 15, were chosen at random, their clinical condition assessed and the signs of deficiency disease noted (see table XXXIV). Five per cent of them were found to be suffering from Bitot's spots. Some were members of agricultural families who had previously owned cattle and drunk milk and others belonged to the lower or 'depressed' classes who had always lived on a poorer dietary containing only little milk. Among these children both acute and chronic types of Bitot's spots were seen, but the compact white patches associated with pigmentation of the conjunctiva usually occurred among the poorer children. A comparative nutritional survey of various Indian communities by D. C. Wilson and E. M. Widdowson. Memoir No. 34. March 1942. P. 68.

chips and vegetables and milk products are not consumed in sufficient quantities.⁸

FILARIASIS

By filariasis are meant the diseases of elephantiasis of legs, hand or scrotum, hydrocele, and lymphangitis. A person might have filarial infection, i.e. *micromalaria* in the peripheral blood when examined but not any manifestations of the diseases. The two types of malarial infection are F. Malayi, and W. Bancrofti. The former infection is transmitted by the mosquito *mansonioides* which breeds in ponds in which cocoanut husks are retted. The ponds are a necessity for irrigating the cocoanut trees in summer. Where there are less ponds, there is little scope for retting the husks or for the pistia plant to grow, which are the two conditions necessary for the breeding of this type of mosquito. The pistia plant cannot grow in those ponds where the water is saline. Secondly the floods also scatter the pistia plant in small canals and ponds. The best season for the breeding of this class of mosquitos is summer when the cocoanut husk is rapidly decomposed and when there is no possibility of rains washing away the plant. Another type of malarial infection called W. Bancrofti is transmitted by *culex fatigans*, a mosquito that breeds in sullage water which is not controlled by proper drainage in towns. In as much as Shertellay taluq abounds in ponds with pistia plant and decomposed cocoanut husks,

8. The families containing cases of leprosy included in the present survey consumed a deficient diet and were somewhat worse off in this respect than the other groups. It is noteworthy that in the leprosy group the percentage of total calories obtained from rice was the highest. Diet and Nutrition in Orissa, Major R. Dogra. V. 27. 1939-40. P. 453-463).

Dr. Aykroyd and Krishnan found in a dietary survey of 14 families containing members suffering from leprosy that the food intake was markedly deficient, the calories intake being lower than had been discovered in any previous survey in South India. Singh working in Orissa noted that the diets of families with leprosy were particularly deficient on protective foods. D. C. Wilson and G. M. Widdowson. Memoir 34. March 1942. Indian Medical Research Memoirs.

it tops the list in respect of filarial diseases. Next come Ambalapuzha, Karthikapally and Karunagapally taluqs. The reader may refer for fuller details to *Indian Medical Research memoirs V. 7 29-32 Filariasis in Travancore by Mr. M. O. T. Ayengar.*

Even though the disease is not a nutritional one, it generally weakens the patient and lowers his vitality. It reduces his capacity for work. It invalidates the patient. The disease also brings loss of memory. As filariasis affects a large number of people, Government should devote early attention to its eradication. The wholesale removal of pistia plant by hands is recommended. Here is a campaign which can be undertaken by Government for the benefit of its people. The construction of proper drains in big villages will prevent the growth of the other type of mosquito.

HOOK-WORM

Hook-worm again causes anaemia in the coastal areas of Shertellay. Provision of latrines should go a great way towards the prevention of this disease.

SOME FAMILY DIETS

Elsewhere are given as appendices notes of family diets and table of food values. They indicate the following:

In five families the adult gets between 23-35 grams of protein, in 6 others 40 to 48, and in 3 others 57-68 grams of protein. Six families live on 4 grams of fat per adult, and seven families on 20-29 grams of fat. The consumption of carbohydrates in grams per adult ranges between 214 and 364 grams in the case of 7 families and 400 and 670 grams in the case of 6 other families. The calories consumed range between 1,000 and 1,600 in the case of 7 families, between 2,000 and 2,200 in the case of 4 families, and between 2,600 and 3,000 in the case of 3 other families. Intake of calcium per adult amounts between .28 and .55 grams in the case of 6 families, and .13 and .25 grams in the case of 7 families. Intake of iron in milligrams per adult amounts between 10 and 20 milligrams.

These diets are highly deficient in vitamins A, B, and C.

Even in normal times the standard of life was so low that the common people of Travancore lived on rice gruel as their morning meal. Dilated stomach is a long-standing institution bred by this rice gruel! The price of Indian rice imported from the other side of the Ghats was so high that the people preferred boiled rice and broken rice of a cheaper at present quality from Burma. The ration unit supplied at present was $4\frac{1}{2}$ nazi of rice, $1\frac{1}{2}$ nazi of wheat, and $\frac{1}{2}$ nazi gram or dhall per week and for an adult it costs 40 chuckrams per week or about 3 annas a day (1 Nazi = 9.3 ozs. and $28\frac{1}{2}$ Chuckrams = 1 rupee). Imported rice for various reasons has lost some of its protein content. The dhall supplied was old stock which consisted of round solid balls moth-eaten and made up of also dust and stones. If 2 ounces of grams, 2 ounces of cocoanut and 3 ounces of fish are added to this ration to make it balanced as advised by experts, it will cost for a family of 5 per day grams 2 annas, cocoanut 2 annas, and fish 3 annas. Including the price of ration articles a family should find Rs. 1-6-0 per day for this minimum food and for all days in the year. This dietary has not taken into account the cost of vegetables or cocoanut oil or spices. It presumes that the poor folk will not be in a position to use milk or buttermilk. It takes no account of what is paid to teashops by earning members in the mornings for intoxicants as toddy, for tobacco, for plantains, and for food expenses on ceremonial occasions. No wonder that the poor are using more of tapioca and can hardly find the money for buying fish, grams, and cocoanuts. No wonder that the offtake of rations is far less than what is estimated. Our experience about nutritional diseases, and about people who are saved from starvation dying by other diseases caused by the use of substitute foods, is amply borne out by the report of Rajyasevanirata Dr. C. O. Karunakaran, Superintendent, Public Health Laboratory, Trivandrum.

"But tapioca contains very little nourishment except starch, and so while it supplies energy and a filling diet, it is wholly inadequate to preserve health and promote growth... That, age for age, the boys

and girls of the tapioca-eating group are poorer in height and weight than the boys and girls of the neighbouring Tamil villages in British India, is surely due to the diet consisting almost entirely of tapioca. Experiments in the Laboratory with rats have shown that a tapioca diet is detrimental to growth. But in addition to the progressive deterioration in height and weight of successive generations, there is also a lowering of vitality which makes the people easy victims of diseases like tuberculosis, leprosy, hookworm, etc., which are widely prevalent in this country than in other parts of India. The experience of western countries has shown that their success in their campaign against diseases like tuberculosis, is due largely to dietary improvements and better nutrition. If the insidious physical deterioration of the people of this country is to be arrested and if the spread of diseases like tuberculosis is to be controlled, it is highly essential that this tapioca regime should receive our early and serious attention. I do not say for a moment that tapioca is an un-mitigated evil. Indeed it has saved the people of this country from the horrors of famine, which has periodically visited other parts of India. It has enabled the people not only to escape famines but also to breed and breed rather profusely....The problem is to restrict its use and cultivation and to supplement it with fish and leafy vegetables".

(Travancore Srimulam Popular Assembly Proceedings. 28th March 1942. P. 395).

APPENDIX 1

NOTES ON FAMILY DIETS

Pudupally, Karunakapally Taluq

Family No. 1.

(1 nazi 9.3 oz. and 1 edangazi = 37.25 ounces. 28½ chuckrams = 1 Re.)

A woman and her child of 10 years. She earns 4 annas per day by coir yarn. She and her child take half a cup of tea without milk with what is left over of the previous night's tapioca. No food during the midday. At night they take rice 1½ nazi (or wheat 2 nazis on some days), tapioca boiled 2 lbs. (1½ chuckrams worth), fish 1 to 2 ounces and chillies and spices to taste. For two days in the week we use green gram amounting to 1 nazi in all. Twice a week we use also watery butter milk about 18 oz. in all. Total daily consumption in ounces is rice 14.4, jaggery 1, tapioca 32, fish 2, green gram 1.37, and butter milk 1.

Family No. 2.

Adults 4, children 3, consumption units 5½.

Noon. Rice 1½ nazi (or wheat 1½ nazi on some days), fish 3 to 6 ounces (3 chuckrams worth) of which a portion is kept for the night meal, one cocoanut (gives 10 to 12 oz. of pulp), and tapioca 4 lbs.

Night. Rice 1½ nazis, and tapioca 4 lbs. cooked with cocoanut and cocoanut oil cakes. 5 nazis of green gram are used for the whole week. Total consumption in ounces is rice 28.83, tapioca 128, cocoanut 12, fish 6, and green gram 7½.

Family No. 3.

(A boatman family) 4 children and 3 adults, consumption units 5.

Morning. 2 nazis of stale rice water and 2 lbs. of previous night's tapioca are used by women and children while the working men go to tea shop.

Midday. 5 nazis rice, 6 lbs. tapioca, 4 oz. fish.

Night. 4 lbs. of tapioca and 1 nazi of wheat, 1 cocoanut is used for the whole day. On those days when we have no cocoanut, we use cocoanut oil cakes. Once or twice a week, we use in all 2 nazis of butter milk. We use "Chembu", yams raised in our own garden for six months in a year when available. Men bring from the tea shop rice or tapioca pudding for their children. Total consumption for the day in ounces is rice 45.15, tapioca 192, fish 4, wheat 9.31, cocoanut 8 and butter milk 2.7.

CHERIAZHICKAL

(A coastal village on the sea beach in Karunagapally Taluq)

The fishermen families in this village get little fish from the sea between May 15th and September 15th when they find it hard to make a living.

Family No. 1.

3 children, 1 orphan of 2 years, and 3 adults. Consumption units 5. The 2 women do yarn work and the men fishing.

Morning. Wheat conjee of 3 nazis for 5 days in the week, 3 lbs. of tapioca with spices and a little cocoanut per day.

Midday. Women take tapioca and gruel and children are served rice. 2 nazi of rice and 5 lbs. of tapioca. Green gram is used for 3 days in the week, in all 3 nazis. We use vegetables 2 or 3 times a month. Cocoanut oil is used occasionally.

Night. 2 nazi of rice and fish and no tapioca. We use 20 ounces of fish per day in all in available seasons. Total daily consumption in oz. is rice 37.2, tapioca 128, fish 20, wheat 20, cocoanut 8, and green gram 4.

Family No. 2.

(A better class family).

5 adults and 3 children. Consumption units 7. Women help in the preparations for fishing. Men take each tea and tapioca or rice pudding and plantains from the tea shop worth two annas.

Morning. Fish about 8 ounces, wheat conjee 2 nazis and 2 lbs of tapioca with spices.

Midday. Rice 2 nazis, tapioca 4 lbs., and plenty of fish about 2 lbs. Three days in a week we take green gram. This will amount to 8 to 10 nazis per week. Cocoanut, one per day. Cocoanut oil, one chuckram worth (1½ ounces). Total daily consumption in ounces is rice 18.62, tapioca 96, fish 40, wheat 18.62, cocoanut 8, cocoanut oil 1.5 and green gram 10.64.

Family No. 3.

Very poor. Consists of 3 women aged 65, 30 and 25. Consumption units 3. They earn 5 or 6 chuckrams per head per day.

Morning. We eat about 3 lbs. of boiled tapioca and drink water.

Night. One nazi of rice or wheat per head with fish 2 ounces mixed with spices. No tapioca for the night. No cocoanut or cocoanut oil. Total daily consumption in ounces is rice 4, tapioca 48, fish 6, and wheat 4.

Family No. 4.

Consists of 2 men, one woman and 3 children aged, 8, 10 and 12. Consumption units 5. For three days in a week men go to the tea shop. They may buy for children green gram and coffee. Milkless tea with jaggery is quite common.

Midday. 3 nazi rice, wheat on alternative days, fish for the 2 meals (3 to 5 chuckrams in value = 8 to 10 ounces), tapioca 4 lbs., cocoanut one (3 chuckrams), and no cocoanut oil. Green gram is recently available but not always.

Night. What remains of the food cooked during the day is taken at night. Total daily consumption in ounces is rice 14.9, tapioca 64, fish 10, cocoanut 8, and wheat 14.9.

Family No. 5.

2 women and 1 child a year old, coir-yarn making. Earn 6 chuckrams a day. Consumption units 2½.

Morning. 1¼ nazis of wheat gruel

Midday. Only tapioca 5 lbs.

Night. If rice is available we consume cooked rice (and not gruel) for 5 days in the week plus fish. The rice ration amounts to 2½ nazis per day. When fish is not available, vegetables will be used. On days of wheat 6 oz. cocoanut (½ cocoanut) costing 1½ chuckrams is used. On days of rice 3 oz. of cocoanut is used. 2 chuckrams worth of fish is got free from the neighbouring fishermen. Green gram is not used. ½ chuckram oil for spices per day. We use ¼ chuckram salt per day and ¼ chuckram tamarind. Total daily consumption in ounces is rice 23, wheat 14, tapioca 80, cocoanut 4, and fish 4.

Family No. 6.

2 males, one female, and 4 children. Consumption units 5. Men do fishing work, and no work for women. Generally fishermen take hot gruel in the morning and have a full meal in the afternoon when they return from the sea, and take light food at night.

Morning. Two nazi of rice or wheat gruel, 8 lbs. of tapioca of which half is kept for the evening meal. The earning member goes to the shop and takes milkless tea, tapioca or rice pudding and green gram. Tapioca or rice pudding, green gram and pappadams will be mixed and supplied. 2 chuckrams (1½ pies) pudding, ½ chuckram (3½ pies) green gram, ½ chuckram (3½ pies) pappadam, and 1½ chuckram tea is the morning menu of the earning member in the hotel. It will cost 4½ chuckrams or 2 as. 7 pies, every day. The fisherman do not drink toddy. The earning member will get weekly for one chuckram for three children one-half pudding. One full pudding costs two chuckrams.

Noon. Rice and wheat on alternate days is cooked, 3 nazis used. Also fish is used. ½ cocoanut per day is used for 2 meals. No cocoanut oil is used for spicing the foods, but bathing oil will be bought for all for ½ chuckram. On festival days we use vegetables. Dried fish will be kept for the slack season. In slack seasons of fishing we use a kind of paste made of cocoanut, chillies, salt, etc., called 'sammandhi' as additional dish along with rice. We use ten fishes a day called 'Ayila' which if bought will cost 6 chuckrams.

Night. Afternoon food will also be used for the night. Total daily consumption in ounces is rice 28, wheat 18, tapioca 128, fish 10, and cocoanut 4.

Perumpalli (Karthikapally Taluq)

Family No. 1.

A family of 3½ units (3 adults and one child). Daily consumption in ounces amounts to rice 28, wheat 8, fish 2, tapioca 24 and green gram 8.

Family No. 2.

A family consisting of 3 adults and 3 children. Consumption units 5. Total daily consumption: Wheat gruel 1 nazi, rice 2 nazi, tapioca 6 lbs., fish 2 ounces, and cocoanut oil $\frac{1}{2}$ oz. Total daily consumption in ounces is rice 18.6, tapioca 96, wheat 9.3, fish 2 and cocoanut oil $\frac{1}{2}$ oz.

Family No. 3.

4 adults and 2 children (Fishermen). Consumption units 5.

Morning. Women alone take tapioca and coffee without milk. Men will go to tea shop and take green gram and rice or tapioca pudding.

Noon. 2 nazis of wheat or rice (when wheat is used, no tapioca is used). Tapioca 2½ lbs., vegetables once a week, no fish for noon meal.

Night. 3 nazis of wheat or rice. Green gram (1½ nazi per day) is used only for 4 days in a week, drumstick leaves, and fish. Small fishes 3" $\times$ $\frac{1}{2}$ " are sold at ten for one chuckram. They use fifty of these fishes during the day. These families being fishermen will starve on certain days when the catch is so poor that it will not give them enough money for purchasing other articles. Total daily consumption in oz. is rice 28, wheat 18.6, tapioca 40, green gram 2.3 and fish 15.

Family No. 4.

4 adults and 4 children. Consumption units 6.

Morning. Earning member visits the tea shop for coffee. Others make and drink 2 nazis of wheat gruel.

Midday. Tapioca 8 lbs. for the family mixed with cocoanut oil cakes, chillies, and salt. These families do not take rice or wheat at noon as they take gruel in the morning.

Night. 4 nazi of rice, no tapioca. Fish daily for 4 chuckrams (8 oz.), green gram used once in two days, $\frac{1}{8}$ nazi for each day, cocoanut $\frac{1}{2}$ lb., and $\frac{1}{8}$ nazi oil for the whole day. Total daily consumption in oz. is rice 37.24, wheat 18.6, tapioca 128, fish 8, green gram 1.2 and cocoanut 8.

Kayamkulam**Family No. 1.**

6 adults and 2 children. Consumption units 7.

Morning. Wheat or rice gruel of previous night, 14 big tapioca pieces (3½ lbs.) for all.

Midday and Night. Rice or wheat 1 edangazi and 1 nazi = 47 oz. (for two meals for 7 adults)—One cocoanut for 2 meals—2 chuckrams worth cocoanut oil for 2 meals—green gram used for 2 days in the week—fish for two meals (for each one chuckram) amounting to 14 ounces for the family—Total daily consumption per day in oz. is rice 28, wheat 19, tapioca 56, green gram 2.7, and fish 14.

APPENDIX 2

(Table of food values of diets in Appendix 1)

	Grams per Adult.	Protein (Grms.)	Fat (grms.)	Carbo- hydrates (Grms.)	Calorific Value.
Pudupalli					
Rice	272.6	23.00	1.60	210	951
Tapioca	606	4.25	1.20	236	961
Fish	37	7.90	0.59	—	37
Green Gram	26	6.10	0.33	14.70	86
Buttermilk	17	.18	0.18	0.08	2.5
Jaggery	17	0.06	0.01	16.10	65
		41.49	8.91	475.88	2102.5
Rice					
Rice	148	12.6	0.9	114	516
Tapioca	661	4.6	1.8	256	1052
Fish	31	6.7	0.5	—	31
Cocoanut	61	2.7	25.8	8.0	275
Green Gram	89	9.0	0.5	22.0	180
		85.6	29.0	400.0	2004
Rice					
Rice	264	22.4	1.50	204	921
Tapioca	1090	7.6	2.20	422	1738
Wheat	88	6.2	0.80	87.70	183
Fish	28	4.9	0.40	—	28
Cocoanut	45	2.0	18.70	5.90	200
Buttermilk	15	0.1	0.16	0.07	2
		48.2	28.76	669.67	3062
Cheriankara					
Rice	210	17.90	1.8	163	788
Tapioca	727	5.0	1.5	281	1156
Wheat	114	13.0	1.7	81	894
Fish	114	24.50	1.8	—	114
Cocoanut	45	2.00	18.7	5.9	200
Green Gram	28	5.50	0.3	18.0	77
		68.30	25.3	548.9	2674
Rice					
Rice	78	6.5	0.48	59	265
Tapioca	891	2.7	0.78	150	622
Wheat	76	8.9	1.14	55	259
Fish	162	34.8	2.59	—	162
Cocoanut	31	1.4	12.90	4.0	138
C. Oil	6	0.2	2.49	0.8	26
Green Gram	43	10.3	0.56	24	144
		64.8	20.22	292.8	1616

	Grams per Adult.	Protein (Grms.)	Fat (grms.)	Carbo- hydrates (Grms.)	Calorific Value.
Rice	38	8.2	1.2	23	132
Taploca	454	8.2	0.9	176	721
Wheat	88	4.5	0.6	27	131
Fish	57	12.2	0.9	—	57
		23.1	3.6	232	1041

Cherlasika 1

Rice	85	7.9	0.5	6.6	297
Taploca	364	2.5	0.7	141	589
Wheat	85	10.0	1.3	61	294
Fish	57	12.2	0.9	—	57
Cocconut	45	2.0	18.7	5.9	200
		24.0	22.1	214.5	1437

Rice	281	22.1	1.6	202	912
Taploca	909	6.4	1.8	352	1445
Wheat	148	17.5	2.2	105	512
Fish	45	9.7	0.7	—	45
Cocconut	45	2.0	18.7	5.9	200
		57.7	28.0	664.9	3114

Rice	159	13.5	0.95	123	555
Taploca	727	5.0	1.50	281	1156
Wheat	102	11.9	1.50	78	852
Fish	57	12.2	0.90	—	57
Cocconut	28	1.0	9.50	3.0	102
		49.6	14.35	430.0	2222

Perumballi

Rice	227	19.1	1.36	176	792
Taploca	199	1.4	0.39	77	816
Wheat	63	7.4	0.90	45	217
Fish	17	8.6	0.27	—	17
Green Gram	63	15.1	0.82	86	210
		46.6	3.74	334	1852

	Grams per Adult.	Protein (Grms.)	Fat (grms.)	Carbo- hydrates (Grms.)	Calorific Value.
<i>Perumballi</i>					
Rice	114	9.7	0.7	88	398
Taploca	605	4.2	1.2	234	962
Wheat	59	6.9	.9	42	204
Fish	11.4	2.5	.18	—	11
O. Oil	2.84		1.4	—	12

		28.8	4.38	364	1587
Rice	159	13.5	0.95	128	555
Taploca	227	1.6	0.45	81	861
Wheat	105	12.4	1.53	75	368
Fish	85	18.2	1.86	—	85
Green Gram	13	8.1	0.17	7.3	48

		48.8	4.51	293.3	1407
Rice	176	14.9	10.5	126	614
Taploca	605	4.2	1.2	284	962
Wheat	83	10.3	1.3	68	304
Fish	37	7.9	0.6	—	37
Cocconut	37	1.7	15.3	5	164
Green Gram	5.7	1.4	.07	3	19

		40.4	28.97	441	2100
<i>Kayankulam</i>					
Rice	114	9.7	0.7	88	398
Taploca	227	1.6	0.45	88	361
Wheat	77	9.0	1.1	55	266
Fish	57	12.2	0.9	—	57
Green Gram	11	2.6	0.14	6	27

		35.4	3.29	287	1119
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APPENDIX 3

A NOTE ON NUTRITIONAL OEDEMA

A close relation has been found to exist between taking insufficient food, too much water and salt, and a diet wanting in protein. When harvests failed in certain parts of Spain in 1937 and 1938 the people lived on dried cassava (roots) and a little maize. Many showed emaciation, exhaustion and oedema. (Nutritional Abstract, October 1940. P. 390).

In certain parts of the Congo the villagers live on a root called manioc, and minimum of maize and groundnuts. The disease is called 'bushki' and the following are its symptoms:—A dull, dry, rough, scaly, or nutmeg-grater-like skin with general loss of pigment of varying degree, desquamation of the skin, of the palms and soles; the hair thinned, lank and depigmented with perhaps patches of alopecia; loss of weight and muscular wasting, sometimes cachexia; the face puffy, the lower extremities oedematous as also the genitalia; a distended abdomen with moderate ascites and sometimes mild diarrhoea; peri-articular rheumatic pains and marked anaemia. On the other hand, there are no signs referable to the nervous system or special senses, no visceral or bony lesions, no other gastro-intestinal symptoms, no stomatitis, no albuminuria, the patient improves on a well-balanced diet. Nutritional Abstract V. 9. No. 4. P. 1018.

Nutritional Abstract (V. 9. 4. April 1940 P. 1017) refers to the condition of native children in Africa living mainly on maize diet. The disease is called 'Culebrilla' in Mexico and 'Kwashiorkor' in Gold coast. The following are its symptoms: Oedema of the legs, and sometimes of the arms and face also, coldness of the extremities, with cyanosis, congestion, and perhaps inflammation of lips and gums, (the rouge sign), and sometimes a certain degree of stomatitis. Erythema might extend from the legs over the abdomen and nates even to the arms. It resembled that of pellagra in being symmetrical, and in severe cases desquamation might continue for weeks or even months. As in pellagra too, attacks of gastro-intestinal disturbance with diarrhoea occurred in nearly all cases. Bleeding from the gums was sometimes seen, also conjunctivitis and xerosis. The blood showed little change beyond a moderate anaemia and reduction of haemoglobin; it was not due to ankylostomiasis.

In Morocco (Zagora) famine oedema has appeared in cases which took little animal protein. The cases responded to meat and lemons. (Ibid P. 1034).

In Egypt 18 infants aged 1½ to 10 months were admitted to hospital with gastro-intestinal disorders. The infants were on starvation diet for long periods and oedema appeared in from 3 days to 2 months. (Ibid V. 8. 3rd January, 1939. P. 743).

In Madrid there was food scarcity at the end of 1937 and beginning of 1938. "The neuropathic and pellagrous conditions accounted for about 45% of the cases". Bread, rice and small amounts of dried pulses were the chief articles of diet. When no animal protein was available, oedema increased from November 1938. "The neuropathic disorders were prevalent from October 1937 until the end of the war and retrobulbar neuritis was also found throughout the long period". The patients were living on bread, lentils, a little rice, and garlic soup or coffee. The food was deficient in every way. (Nutritional Abstract V. 11. 1st July 1941. P. 115).

In the Netherland India the poorest people lived on dried cassava (tapioca) maize and rice owing to scarcity of food. Earthnuts and cocoanuts were sold and with the cash realised maize and rice were bought. There was emaciation. Oedema first affected the feet and legs. It spread in long standing cases to the whole body. There was severe anaemia. Mortality was high in the hospitals. "Where treatment was begun early the response to a balanced and plentiful diet was immediate" (Nutritional Abstract V. 11. 3rd January 1942. P. 464).

The poor people in occupied areas and the prisoners in camps, got swellings over the body during the last war. Famine oedema, hunger swelling, prison dropsy are the words used to indicate this disease. They occur in epidemics in China and India and they exist in an endemic form as well in these countries. "It is an ever present threat in any country whose people live near the borderline—as far as nutrition is concerned and is to be expected whenever there is a failure of good supplies for any but short period". The principal findings which have been reported are a great emaciation with a complete loss of fatty tissue. There is atrophy of the heart, liver and of other tissues but the thyroid gland shows the greatest atrophy of all. Effusions into the serous cavities are characteristic. Histologically there is a complete absence of fat droplets and a loss of glycogen deposits in the liver. These findings suggest that an insufficiency of calories has been present as well as a deficiency of protein. (Nutritional deficiencies by John B. Youmans. M.S.M.D., Lipincott Co., U.S.A. P. 240).

Although the oedema itself of mild to moderate severity affects the patient but little, its presence presents a constant threat of the development of such complications as pneumonia, pulmonary oedema, infection, and in surgical patients it is probable that the oedema is a decided deterrent to wound-healing and the recovery of tissues. Therefore a prompt relief of the oedema and restoration of the serum protein to normal is often desirable. In such individuals the restoration of body proteins and the raising of serum proteins to normal is often desirable. (Ibid P. 254).

NUTRITIONAL SURVEY

By

DR. J. ANANTA BHAT, L.I.M.

*Kuthiathodu and Eramallur (Shertellay Taluq) and
Palliport (North Panur Taluq).*

I visited Eramallur which is on the main road to Alleppy from Cochin on 30th January 1945. It is a sandy place near to the sea. Coir industry and fishing are the occupations in the area. The wages of an ordinary family range between 4 annas and one rupee. A majority do not purchase rations. Rice, tapioca, and fish are the articles of food but rice and fish are costly. So people consume only little of these. The consumption of rice ranges between 5 and 10 ounces per adult per day and that of tapioca 12 to 24 ounces. A few alone take vegetables. Milk and milk products are taken only by the very rich. The cattle wealth is poor. Dhall and green gram are used occasionally. People dig pits in sand and use them as latrines. Such types of latrines only spread the hook worm disease.

I visited Kuthiathodu another village on the main road between Ernakulam and Alleppy on 9th February. Occupations and diet are similar as in the previous village. Anaemia and filariasis were the commonest diseases noted in the area. Hookworm troubles are great in Kuthiathodu.

I visited on 12th and 17th February Palliport (Travancore) which is within 15 miles of Cochin on the backwaters leading to Cranganore. Hookworm among adults and roundworm among children were common. On my second visit I distributed medicines (Bland's pills, Shark liver oil, calcium lactate, calcium gluconate, sulphur ointment, and zinc oxide ointment) placed at my disposal by the Servants of India Society Travancore and Cochin Relief Centre.

Anaemia in all the areas is due to worm-infection and diet deficiency.

Case numbers 17, 18, 20 and 21 Eramallur were cases of leprosy. On enquiry I learnt that three fourths of the members of these families were also suffering from the same disease. In this connection the remarks of the Public Health Commissioner of the Government of India about leprosy in Puri district quoted in I.J.M.R. 27. P. 453-463 are noteworthy:

"(a) The soil. When the soil is poor and vegetable and fodder crops do not thrive and cereal crops are apt to fail, a high incidence of leprosy occurs.

(b) Leprosy is common in areas in which vegetables and milk products are not consumed in adequate quantities". (Diet and nutrition in Orissa. Major J. R. Dogra. I.J.M.R. Vol. 27. 1939-40. page 453-463).

I examined 140 cases in Kuthiathodu, 143 in Eramallur and 120 in Palliport. I enclose an analysis of oedema cases, the number of diseases of patients, and also the combinations of important diseases having a nutritional bearing.

I. Cases of Oedema in combination with other diseases

Case No. Kuthiathodu

1. Anaemia, poor nutrition and hookworm.
4. Severe anaemia.
43. Peripheral neuritis and anaemia.
96. Chronic diarrhoea and severe anaemia.
108. Poor nutrition and anaemia.
129. Anaemia and dental abnormalities.

Eramallur

28. Roughness of skin, chronic digestive trouble, respiratory troubles, bronchitis and palpitation.
29. Anaemia, and epistaxis (pregnancy).
33. Anaemia and filariasis.
104. Anaemia, poor nutrition and emaciation of lower limbs.

107. Sever anaemia and palpitation.

141. Chronic diarrhoea, severe anaemia, poor nutrition, chronic digestive troubles, beading of ribs, and dental abnormalities.

Palliport

1. Peripheral neuritis, poor nutrition, chronic digestive trouble, photophobia and lachrymation.

4. Anaemia, chronic digestive troubles, and lachrymation.

33. Scabies, anaemia and ulcer foot.

39. Anaemia and sore throat.

II. Analysis of the number of diseases of patients.

(The three figures for each disease relate to the villages Kuthiathodu, Eramalloor, and Palliport respectively).

Anaemia (moderate) 57, 38, 52; Anaemia (severe) 10, 8, 3; Oedema 7, 6, 4; Ulcer legs 2, 9, 2; Muscular emaciation 5, 16, nil; Lack of subskin fat 3, 6, nil; Nutrition very poor 2, 5, 4; Nutrition poor 36, 63, 23; Diarrhoea 24, 7, 16; Digestive troubles 18, 25, 24; Peripheral neuritis 24, 21, 36; Respiratory troubles 30, 28, 34; Liver, spleen enlargement 2, 6, 1; Bilateral dermatitis 16, 17, 7; Scabies 9, 16, 18; Phrynoderma 5, 1, 1; Roughness of skin 5, 16, nil; Soreness of angles of mouth 5, 6, 5; Glossitis 2, 5, 2; Spongy bleeding gums nil, 1, nil; Emaciation of lower limbs 5, 8, 7; Beading of ribs 7, 6, 5; Night blindness 4, 1, nil; Lachrymation nil, 2, 3; Photophobia nil, 1, 1; Discolouration of conjunctiva nil, 1, nil; Dental abnormalities 4, 6, 4; Leprosy 3, 6, nil.

Other diseases

Filariasis 7, 18, nil; Filarial fever 8, 2, nil; Roundworms 4, 3, 10; Eczema 3, nil, nil; Piles 2, 4, 3.

III. Analysis of the number and names of important diseases found together in single patients

(The three figures for each disease relate to the villages of Kuthiathodu, Eramalloor, and Palliport respectively).

A. Anaemia with other diseases

Poor nutrition and skin diseases 5, 5, nil; Poor nutrition and respiratory troubles 3, 1, 2; Diarrhoea, digestive troubles and skin diseases 4, nil, 1; Diarrhoea and digestive trouble 10, 4, 9; Skin diseases 3, 3, 4; Poor nutrition 10, 8, 6; Respiratory troubles 6, 1, 5; Peripheral neuritis 12, 8, 15; Peripheral neuritis and digestive troubles nil, nil, 4; Peripheral neuritis and poor nutrition 1, 2, 1.

B. Digestive troubles with other diseases

Anaemia 10, 4, 9; Skin diseases 8, 7, 7; Poor nutrition 9, 13, 11; Respiratory troubles 5, 3, 8; Peripheral neuritis 4, 2, 9.

C. Skin diseases with other diseases.

Anaemia 3, 3, 4; Digestive trouble 8, 7, 7; Poor nutrition 15, 24, 6; Respiratory troubles 4, 2, 4; Peripheral neuritis 2, 2, 4.

D. State of poor nutrition with other diseases

Anaemia 10, 8, 6; Digestive troubles 9, 13, 11; Skin diseases 15, 24, 6; Respiratory troubles 6, 16, 7; Peripheral neuritis 3, 2, 8.

E. Respiratory troubles with other diseases

Anaemia 6, 1, 5; Digestive troubles 5, 3, 8; Skin diseases 4, 2, 4; Poor nutrition 6, 16, 7; Peripheral neuritis 3, nil, 4.

F. Peripheral neuritis with other diseases

Anaemia 12, 8, 15; Digestive troubles 4, 2, 9; Skin diseases 4, 2, 4; Poor nutrition 3, 9, 8; Respiratory troubles 3, nil, 4.

THE POOR LEPROSY HOSPITAL, SHERTELLAY

By

REV. JOSEPH, K. W. THOMAS

There are 41 in-patients of lepers in our hospital. One aged below 5, 8 aged between 5 and 15, 27 between 16-50, and 5 above 50. The average food expenditure for maintaining these in-patients amounts to Rs. 17/- per head. In addition, our overhead charges for three sisters, three trained kitchen-maids, a peon, a gate keeper and a watchman and for honorarium to the doctor amounts to Rs. 261/-. The cost of medicines comes to Rs. 75/-. In all, we spend on these patients a sum of Rs. 915 every month. There is also an out-patient department, the average number of patients attending this section being 120. Diseases one year old may be cured totally but all our cases are advanced from 6 to 20 years. The place from which patients are coming are round about Shertellay namely, Aroor, Pallithod, Eramallur, Thaikkattu-cherry, Kattoor, and Puchacal. We give injections to the patients. The general meals comprise rice, wheat, beans, tapioca, coffee, bread, and meat. We advise the patients to abstain from all alcoholic drinks. It is believed that dry fish and dried tapioca chips increase leprosy. The use of milk and mutton are good for the lepers. The number of out-patients ranged between 53 and 189 in 1942, and between 194 and 300 in 1943. The number increased from 312 in January 1944 to 460 in June 1944. It came down from 220 in July 1944 to 121 in January 1945. These figures are revealing, as showing the relation between food shortage and increase of leprosy. There were five deaths owing to leprosy in 1942, 4 in 1943, and 14 in 1944.

The census report for 1931 says:—

Shertellay has the highest proportion of lepers (217) 14 per 10,000 or 140 per lakh as against 55 for the whole State.....only 318 out of 2,789 lepers have gone into the asylums. The vast majority of them still remain at large as potential sources of infection. During the decade 1921-30 the number of lepers have increased by 35.5%.

The State manual refers to an increase in the number of lepers from 1,414 to 2,789 between 1901 and 1931.

VITAL STATISTICS AND PUBLIC HEALTH

By

K. G. SIVASWAMY

Estimate of excess deaths due to high prices and food shortage.

The death rate of 12.81 (per 1,000 population) for the year 1944 is the highest one recorded during the last one decade. In these words the report of public health department for the number of deaths of 1942-43. The total number of deaths during the year was 80,637 giving a death rate of 12.81 on the 1941 census population of 63,21,000. This average of 12.81 is calculated for a population of 63,21,000 in the hope that population would have increased to 65,00,000. The number of deaths in 1943-44 was 85,203 giving a death rate of 14 per 1,000 on the census population of 61,00,000. The correctness of these figures will be ascertained if we compare them with the number of registered deaths in 1943 and 1939. These were 58,830 and 59,206. These are only of registered deaths. Many do not inform the authorities of deaths in their families. Unless the authorities consciously strive to get these figures on their own, there is bound to be deficiency in registration. In health reports the net increase of population is taken into account of the annual average increase noted in census reports. The census reports have worked out a percentage of deficiency in registration. The census reports for 1943 are as follows: "Health Statistics, 1943" is certain areas. That showed that the number of deaths was 58,830 and 59,206. If these are compared with the census they will be a high figure of about 25 per 1,000 population. The total number of deaths in 1943 was 85,203. The average death rate for the year 1943 was 14 per 1,000 population. The average death rate for the year 1944 was 12.81 and for the State of Madras for the year 1944. An addition of 50% to the number of deaths in a year will give us the death

rate of 15 per 1,000, the average worked out in the recent census report. The following then will be the number of registered deaths and of deaths calculated in accordance with the death rate stated in the recent census enquiry :

	Registered deaths.	Estimated deaths. (Add $\frac{1}{2}$)	Average deaths as per census enquiry (15 per 1,000).	Excess over the average.
1940-41	69,248	1,03,872	91,050	12,822
1941-42	67,131	1,00,696	91,050	9,646
1942-43	80,637	1,20,956	91,050	29,906
1943-44	85,253	1,27,880	91,050	36,830
Total	3,02,269	4,53,404	3,64,200	89,204

In as much as vital statistics of births and deaths give only a net increase of about 1% while 1.9% is the intercensal increase between 1931-41,⁹ the actual number of births and deaths should be far greater than the registered number of deaths. To this should be added the actual number of increased deaths due to malaria in spite of the increased number of malarial dispensaries.¹⁰ Deaths by dysentery increased in certain villages.¹¹

9. Public Health Department Report 1117, page 4 para on General population.

10.—1. Mr. K. P. Abraham moved an adjournment motion in the Assembly about the numerous deaths occurring on the Munnar-Kothamangalam road, of malaria stricken coolies while walking back to their distant homes during the rains from the cardamom estates and other places of their work in Kallar, Kundale, and other neighbouring mountainous regions V. 20—Assembly proceedings July 1942. page 60.

2. For the last 5 months malaria has begun to raise its head. Some malarial dispensaries are continuing in the Neyyatinkara taluq. But there is not sufficient supply of quinine, etc., V. 22 July-August 1945—page 740.

3. An increase in the prevalence of malaria has been observed from October last in the area from Aryanad in Nedumangad taluq to Kunnathukal in Neyyatinkara taluq, Travancore Information V. 5—5, January 45.

11. Adjournment motion of Mr. C. K. Madhavan about the prevalence of dysentery in the coastal villages of Chirayinkil and Trivandrum taluqs. (V. 24, Aug. 1944, Assembly, p. 70).

Cholera deaths also increased in all the areas during the years 1942-44 being 4,700 in the first year and 1,849 in the second year in spite of the phenomenal work of the department to control such deaths by inoculation. Without taking note of these exceptional number of deaths in different areas between the years 1941-44 but taking only the figures as mentioned in official records, we can safely estimate the number of excess deaths over the average of 15 per 1,000 as eightynine thousand two hundred for the years 1940-44 or 14.7 per thousand. Excess deaths between 1942-44 which were years of food shortage, partial rationing, and high prices amounted to sixtysix thousand seven hundred or 11 per thousand. Professor K. P. Chattopadhyaya, Head of the department of anthropology, Calcutta University calculates the number of excess deaths over the normal in Bengal by famine between June to December 1943 as 34 lakhs and the Government as about 18 lakhs working to a death rate of 56 and 28 per 1,000 respectively for a population of 62½ millions.

2. Estimated deaths on the basis of parish figures.

Deaths during the first two years were mainly caused in the coastal areas owing to unemployment and high prices. They were far less than the number of deaths in 1942-44. Most of these deaths have happened in the year 1943 and the beginning of 1944, that is during the last 4 or 5 months of the official year 1943 and the first 5 or 6 months of the official year 1944. The severity of these deaths will be apparent by a study of the parish figures of deaths among Christians. We are grateful to the several parishes for supplying this information which we have appended as Statement 1. On the basis of this information we have calculated the total number of deaths among christians. To this we have added proportionate deaths among Hindus and Muslims which according to the vital statistics enquiry report of the census report 1941 works to 133% and 125% respectively of the number of deaths among christians. Details of deaths worked on the basis of

parish census will be found in Statement 2 A. The parish records are thoroughly reliable in so far as each priest has to perform religious rites in connection with every death. We have got them only for three taluqs. But in these three taluqs having a population of 7.07 lakhs, the excess number of deaths were 44,973 giving an excess death rate of 63 for the last 4 years and an annual excess death rate of 15.75 (vide totals of column 7 and column 8 in Statement 2 A). Excess death rate in Shertellay Taluq was 75 giving an annual excess death rate of 19 per 1,000 population (vide item 2, column 8, Statement 2 A).

If we take into consideration the number of excess deaths for the last two years when food shortage, high prices and partial rationing had their severe impact on the life of the population, the excess death rate has been far higher than the average of the last 4 years. The number of excess deaths were 27,993. This worked to an average death rate of 40 for the two years and 20 for each year. (Vide columns 11 and 12 in Statement 2 A). The excess death rate in Shertellay Taluq was 46.5 giving an annual excess death rate of 23.25 during these two years. (Vide column Col. 12, 2 in Statement 2 A).

3. Estimate of deaths in eight affected taluqs on the basis of official figures.

Elsewhere we have given an estimate of the excess number of deaths according to the administration reports of the Public Health department in eight affected taluqs (Statement 2 B). They have a population of 14.88 lakhs according to the 1941 census. These figures are revealing as compared with the average number of excess deaths for the whole State. Out of 89,200 excess deaths for the years 1940-44 working to an excess death rate of 14.7 per thousand, these eight taluqs account for excess deaths numbering 43,932 working to an excess death rate of 29.5 (Vide Statement 2 B). Similarly out of the total

excess number of deaths of 66,700 for the whole state working to a death rate of 11 per 1,000 for the last 2 years, these taluqs accounted for 28,658 deaths working to a death rate of 19.26 for the same period (vide statement 2 C). According to official figures the excess number of deaths in Shertellay Taluq per year between the years 1940-44 was 9.5, and 10.5 between the years 1942-44. The main point to be noted as a result of the comparison of official and parish figures is that the death rate per 1,000 rate on the basis of official figures was nearly half of the death rate on the basis of parish figures for these areas. The excess number of deaths according to official figures will have therefore to be doubled to find out the probable number of deaths. An additional number of 43,932 deaths will have to be added for these eight affected taluqs to the total number of excess deaths calculated for the whole State, thereby increasing it to 1,13,136 excess deaths for four years or an excess death rate of 21.9 per 1,000. Similarly we should add to the total number of excess deaths namely 66,736 for the last two years an additional 28,658 deaths, thus giving a total of 95,394 deaths or an excess death rate of 15.7 per 1,000. These calculations on the basis of parish figures are strengthened by the fact that the death rate is high even according to official figures for municipal towns where one could expect better registration of deaths than in rural areas. In Alleppey town the number of deaths increased according to official figures from 1,076 in 1941-42 to 1645 in 1942-43.

4. Deaths in 1940-41.

We are separately discussing in this para the number of deaths caused in 1940-41 as these were not directly related to food shortage, ill-regulated distribution and high prices, but mainly to unemployment created by war conditions. According to the census of 1941 those engaged in "other fibres", chiefly coir, numbered 1,69,656 of whom 48 % were women. Those engaged in the cultivation of cocoanut were 2,07,577. If we add to this, the number of those employed in the several processes of manufacture of cocoanut products and their market-

ing, the total number of families engaged in cocoanut industry would be about 300,000, i.e., about a fifth of the population. Those engaged in the coir industry alone formed 25% of the industrial workers. (Travancore Information, March 1943, page 14).

The first consequence of the war was the cessation of coir exports. Trade in copra fell from 4,56,791 cwts. in 1938-39 to 2,60,629 in 1939-40, and to 2,86,329 in 1940-41. Trade in cocoanut oil fell from 6,49,363 cwts. in 1938-39 to 3,51,133 cwts. in 1940-41. Trade in coir fell from Rs. 212,30,134 in 1939-40 to Rs. 128,19,098 in 1940-41. (See chapter 11 on Trade in Administration Reports). The Dewan of Travancore realised the gravity of the situation as would be evident from the following extract of his speech in the Srimulam Assembly:

The Government realise that relief should be extended not only to Shertellay but to many other places but the distress in Shertellay has been so overwhelming and so urgent that Government have to concentrate upon that.... Let us hope that the Government and the people will work together so that the distress which is so widespread and so melancholy may be dealt with in a spirit of humility, in a spirit of fellow-feeling, and in a spirit of mutual confidence. The situation I have already said is dark and pitiable.

Proceedings of the Travancore Sri Mulam Assembly Vol. 19, parts 1 to 5, p. 32.

The crisis created by unemployment in the coastal areas where coir was the only source of living to many was accentuated by other causes too. Seasonal and permanent crops were affected by drought and heavy showers in 1939-40 (Administration Report 1939-40—page 98). The year 1940-41 was equally an unfavourable year. (Administration Report 1940-41—page 104). There was not only drought in Kottayam Taluq, but the taluqs of Parur and Kunnathnad were severely affected by cholera. (Travancore Administration Report 1940-41—page 41—Travancore Information October 1941—P. 13 to 16). But even though the distress was severe, the amount spent was Rs. 2 lakhs on

public works in 1940-41 out of Rs. 5 lakhs provided for relief of distress.¹²

The following extracts from the special famine number of the Arunodaya 1941—November and December, a monthly published at Kottayam, will indicate the real extent and intensity of the distress in that year:

Ven: Archdeacon T. G. Stuart Smith:—It would be a hard heart that could be unmoved by the sight of little walking skeletons, such as are frequently seen in this neighbourhood. Some of them seem to be just skin and bone with no flesh on them. Their arms and legs are like sticks and their little ribs protrude in an ugly and terrible manner. The fact that these sad sights are to be seen particularly at bus-stands and boat-jetties is a reminder that the effects of this starvation are not only physical. The moral effects are almost worse, when small children are encouraged to beg from those who come and go—p. 175.

R. Krishna Ayyar, Tatapuram:—The present war has resulted in the loss of the coir trade which was the main industry on the Malabar Coast and which was maintaining several lakhs of people from Calicut

12. Dewan's statement—Assembly Proceedings—Vol. 19—page 31. Mr. K. K. Kuruvilla—When I read the Financial Secretary's speech, I was disappointed to some extent. He has stated that only half the amount which was provided last year for the relief of distress was spent. I wonder whether the need was so little that only half of the amount was required.—Proceedings of State Council—Vol. 18—August 1941—p. 78.

Mr. G. Narayana Iyer—It is rather surprising to find that Government did not bestow proper attention in giving ample relief to those parts which are very seriously affected by the recent cyclone—p. 87.

Mr. V. Sankara Menon—The two words are food and clothing. Sir, the people of Travancore, the majority of them, are now finding it difficult to keep their body and soul together and to cover their nakedness. I have heard that in certain places in the villages the people are wearing synthetic clothes, bits of gunny bags, mats and even plantain leaves. I do not say this for the purpose of creating any undue impression; but that is a fact. With regard to food, I think it is high time for Government to see that synthetic food also is available as a substitute for rice which is the staple food, for the sustenance of the people—p. 105.

to Quilon. The human skeletons one sees when one goes from Cochín to Alleppey are pathetic and heart-rending—p. 181.

Mr. A. P.:—The women have a pathetic look in their eyes which reminds you of a hurt animal. The process of coir-spinning goes on, but in a mechanical way. They do it from force of habit, without zest or enthusiasm. They have not the energy for it. Besides, how can you work with pleasure when you know your toil will bring no gain?

It might sound rather strange, but one felt that tearful and insistent demands for food by the children were few and far between. The cruel experience of months seems to have shown them that crying for food is as useless as crying for the moon. They lay here and there, unable to talk or walk. It was a sight that moved the hearts even of strangers. And we ceased to wonder why it was that the mothers more than others, looked the picture of despair born out of months of poverty, starvation and disease—p. 170.

The following extract from the report of Relief Reconstruction Committee for coastal areas will also indicate the extent of distress in the area :

A pretty large number has migrated to other places for begging. Those who remain in their dilapidated huts are in a condition of incalculable misery and privation. Death on account of starvation is not a rare occurrence.

It was rather unfortunate that the relief work of the official and non-official agencies was stopped in the latter half of 1942. The Dewan-President made a statement in July 1942 (Vol. 20—page 20) that, owing to better prices for rubber, cocoanut oil and copra, ginger and pepper, and a larger use of coir for war purposes, "the result has been a repercussion in the way of a fairly general prosperity in the localities I have referred to". There was no doubt some repercussion but not sufficient enough to restore pre-war conditions. As compared to 1940-41, there was a slight decrease in the deaths in 1941-42 but, none the less, the number of deaths were far greater than in 1939-40. (The number of deaths in 1939-40 was 59,406, in 1940-41, 69,248, and in 1941-42, 67,131).

The seriousness of the crisis would be apparent from the fact that the number of registered deaths rose from 59,406 in 1939-40 to 69,248 in 1940-41. Actual deaths should certainly be more, being double if the deficiency is treated as 50% of

the registered number of deaths on the basis of 1931 census report, and being half at the rate of 15 per 1,000 which is the figure arrived at in the vital statistics enquiry of 1941 census report. The following is a statement of deaths, per 1,000 population for the years 1939-40 and 1940-41 as mentioned in the Public Health reports for the six coastal taluqs affected by unemployment. The health report for 1939-40 calculates birth and death rates for the population of the year 1931, while these rates are calculated for 1940-41 for the population of 1941. The rate is therefore higher for 1939-40 than what it actually should be, and to this extent the rates for 1940-41 look lower when compared with those of the previous year. We have therefore calculated the figures of births and deaths per 1,000 population for 1939 population after adding the intercensal increase of about 16% to the census population of 1931 and retained the rates for 1941 as they are.

	Population after adding the intercensal increase of 1/6 to 1931 census.	1939-40.		1940-41.	
		Birth rate.	Death rate.	Birth rate.	Death rate.
Karunagapally.	2,24,408	14.1	9	14.69	11.73
Karthigapally.	1,66,688	16	10.4	15.28	15.01
Kumbalapur.	2,57,563	20.4	12.2	18.18	13.41
Kuttallay.	2,38,553	15	9.6	13.44	14.92
Pattom.	1,79,346	22.1	13.4	20.57	17.24
Puthoor.	2,15,053	11.1	7.1	11.80	9.41

These figures indicate a sudden increase in the death rate between the years 1939-40 and 1940-41. It is 50% higher than the previous year in the taluqs of Karthigapally and Kuttallay.

5. A low birth rate, & high death rate, and excess deaths over births.

2. The birth rates per 1,000 population of certain taluqs and towns suddenly fell between 1939-40 and 1942-43 while their death rates increased during these years.

	Births 1,000 population 1939-40.	per 1942-43.	Deaths 1,000 population 1939-40.	per 1942-43.
Kalkulam Taluq	.. 37.22	26.28	16.18	18.19
Karunagapally Taluq	.. 16.49	14.55	10.54	15.48
Kartikapally Taluq	.. 19.10	15.63	12.12	16.68
Ambalapuzha Taluq	.. 23.83	15.93	14.22	18.38
Shertellay	.. 17.57	10.42	11.30	17.01
Alleppey Town	.. 34.14	23.70	24.07	29.20
State	.. 22.95	20.13	11.66	13.28

It should be noted that while the number of births were in excess of deaths in 1939-40 by roughly ten, there have been excess deaths over births ranging between one and seven per thousand population in 1942-43 except in Kalkulam Taluq and the State as a whole.¹³

The number of excess births over deaths for the whole state was 11.3 in 1939-40 while it dwindled to 6.85 in 1942-43. Also the vital index for the whole state, i.e. the ratio of births to 100 deaths fell from 203 in 1938-39 to 152 in 1942-43.

6. Deaths in Shertellay, Ambalapuzha and Parur Taluqs

Elsewhere is given in the appendix the parish census of births and deaths for three years 1941 to 1944 (Statement 1).

13. Dr. Cornish records that the birth-rate began to fall off early in the famine and speedily decreased, till some nine months after the height of the famine it reached in the famine districts an annual ratio of 4 to 5 against an average of 29. (Famine diseases by Alexander Porter—1889).

It will be found that the largest number of deaths have occurred round about Shertellay. During the years 1942-44 the number of deaths have been double the number of births in a few parishes, while they have been more than 50% in some others in the Taluq of Shertellay. Aroor, Manakodem, Thankey, Arthingal North and South, Vayalar, and Muttam were the parishes with the greatest number of deaths over births. In these parishes the total births and deaths in 1942-43 have been 461 and 719 and in 1943-44, 474 and 769 respectively. In Ambalapuzha Taluq the number of deaths have been terrible between the years 1942 and 1944. During these years the number of births in Kattoor were 160 and the number of deaths 354. At Poonkavu the number of births were 129 and the number of deaths 312. At Alleppey the number of births were 338 and the number of deaths 531. At Vattal the number of births were 118 and deaths 187 in 1943-44 only. In Parur Taluq, the worst affected places were Palerivattam, Kotully, Manjumeey, Verapoly, Chathanad, Paroor, Pallipport and Kizekkeambalam. The number of excess deaths over births has not been very noticeable in these parishes in 1942-43. But in 1943-44 the total number of births in them amounted to 575 and the total number of deaths 854. It should also be noted that malaria took its toll in upland areas. The parish figures indicate for Nagapuzha 76 births and 86 deaths and for Arikuza 47 births and 63 deaths.

7. Cause of deaths.

We will now examine the causes of these deaths. In the first place medical relief through State and State-aided hospitals decreased and in consequence the number of out-patients fell from 24 lakhs in 1939-40 to 20.96 lakhs according to official figures. Secondly Government spent little for the dieting of in-patients.¹⁴

14. Government reply: V. 24-7-22-8-44 Assembly proceedings—
8 was the daily expense on dieting in Paruru hospital.

It is noteworthy that the percentages of mortality among in-patients rose from 2.98 in 1938-39 to 3.16, 3.86, 3.97, and 4.53 during the succeeding years. According to health reports the number of deaths by bowel diseases increased from 6,152 in 1939-40 to 6,867, 8,088, 7,565, and 9,321 in succeeding years. Then again there were 4,756 deaths in 1942-43 and 1849 deaths in 43-44 by cholera according to the health reports. In all the areas deaths by dysentery for 1,000 population increased during these years as would be evident from the following figures.¹⁵

	1939-40	1942-43
Thovaza Taluq	.. 2.96	4.68
Karthikapally Taluq	.. 1.79	2.88
Ambalapuzha Taluq	.. 1.69	3.30
Shertellay Taluq	.. 1.34	2.13
Vaikom Taluq	.. 1.60	2.68
Alleppey Town	.. 2.92	5.45
Vaikom Town	.. 1.30	4.13
Parur Town	.. 2.64	3.96

The Health and Administration reports of the Government refer to the diseases arising from malnutrition as causes of deaths during these years. The health report for 1940-41 says:—

Malnutrition was the foremost defect observable in the students attending the Malayalam Primary Schools. It may be seen from the table that more than 37% of the students were actually starving during the noon and most of the other students were also presumably not getting a balanced diet.

15. The vital statistics enquiry conducted along with 1941 census showed that deaths by diarrhoea and dysentery, respiratory diseases, and diseases of the circulatory system amounted to 2.9, 2.8, and 2.1 per 1,000 population, and 19.3%, 18.4%, and 14.5% of the total number of diseases causing deaths.

The reports of the Public Health Department for 1941-42 and 42-43 say that "malnutrition was particularly acute in the coastal areas on account of economic distress".

The report for 1942-43 says:—

The food situation naturally impaired the general standard of health among the people hitting the poorer classes rather sorely. (Introduction P. 1). The food situation grew rather disquieting bringing in its wake malnutrition, ill-health, and low resistance. Time was also ripe for the cyclical visitation of cholera. (P. 67) The epidemic of cholera caused over 6,800 attacks and 4,700 deaths altogether in the state during the year.

The Government order on this report says:—

The epidemic of cholera and the diseases arising from low vitality and malnutrition have mainly contributed towards this high mortality.

The Administration report for 42-43 says in P. 134:—

The scarcity of rice the staple food of the people was one of the causes that contributed to affecting the public health of the State adversely.

Again it says in the para under school Medical Inspection:—

The most prevalent disease observed among the school children was malnutrition which was accentuated by the prevailing scarcity of food stuffs. The other defective conditions were hookworm, ringworm, and diseases of teeth and gums.

The report of the Public Health Department refers to various diseases of school children in the chapter on medical inspection. The statistics relating to these diseases are given elsewhere (Statement 3). Two facts about these figures are noteworthy. The number of children starving during midday has been practically half and more than half of the number examined in Karthikapally Taluq and about one-third in Ambalapuzha Taluq. In Shertellay it was 60% in 1940-41, 73% in 41-42, and 90% in 42-43. In Vaikom it ranged between 20 and 40% during these years, and in Parur 30 and 40%. Among the students that were found defective, those suffering from malnutrition formed a considerable number.

The causes of deaths mentioned in parish records which we have published elsewhere (Statement 4), and whose abstract we give below are revealing.

	Shertellay.	Ambalapuza.	Parur.
Starvation ..	37	9	—
Oedema and Dropsy ..	372	102	123
Diarrhoea and Dysentry ..	107	68	69
Other stomach diseases ..	26	2	87
Scabies ..	261	58	92
Fever ..	126	59	75
Consumption ..	Not classified	26	16
Other diseases ..	239	130	145
Total ..	1,168	454	607

Deaths due to what is called 'neeru' which means swellings caused by want of blood in the system formed 33% of the total in Shertellay; 25% in Ambalapuza, and 20% in Parur Taluqs. Diarrhoea, dysentry and other stomach diseases formed 11% in Shertellay, 16% in Ambalapuza and 25% in Parur Taluq. Scabies formed 22·3% in Shertellay, 13% in Ambalapuza, and 12½% in Parur Taluq.

An enquiry was made by our honorary workers in Ambalapuza, Arattupuza and Prakkad villages. The classification of deaths according to different causes is published elsewhere (Statement 5). According to this classification, out of a total of 680 deaths, 188 were caused by 'neeru', 84 by diarrhoea and dysentry, 44 by other stomach diseases, 38 by scabies, 124 by fevers, 49 by respiratory troubles, and 153 by other diseases. These diseases worked to a percentage of the total as 27·6, 19, 6, 18, 7·4, and 22 respectively.

Another enquiry conducted by one of our workers in Thuravoor South between 10th and 14th April 1944 showed that there were 68 deaths in 93 families examined by him.

Of these 38 were caused by 'neeru', 2 by starvation, 7 by dysentry, 1 filarial attack, 1 small pox, 1 heart trouble, 1 old age, and 1 vomiting. More than three fourths of these deaths happened in a year.

Another enquiry was made of deaths between 17—8—44 and 15—10—44 in Thevarvattam hamlet of Thaikattuchery Village (Shertellay Taluq). There were 23 deaths during this period 13 due to dysentry and diarrhoea, 5 'neeru', 3 fever, 1 bloodlessness and rheumatism, and 1 consumption. Many suffered from the monthly fever due to filariasis in this village.

Another enquiry was made in Pudupally and Karunagapally villages of Karunagapally Taluq. The following will indicate the cause of deaths in the areas.¹⁶

	Pudupally			Karunagapally		
	1941-42.	1942-43.	1943-44.	1941-42.	1942-43.	1943-44.
Gastritis.	9	17	8	—	—	—
Dysentry.	4	36	38	38	41	30
Diarrhoea.	16	23	17	—	—	—
Cholera.	31	—	—	—	291	91
Nephritis.	43	32	28	31	24	82
Anaemia.	—	—	—	31	17	28
Scabies.	—	—	—	29	10	22
Tuberculosis and Asthma.	11	15	9	32	19	33
Total deaths.	170	191	184	276	488	381
Total births.	162	150	185	327	352	394

16. I want to mention in passing one group of diseases—those falling into the category of dysentry and diarrhoea in the health returns. It is interesting in studying the old famine reports to which I referred a few moments ago to note how, invariably, in times of food scarcity the death rate from dysentry and diarrhoea doubled or more than doubled the deaths during the Hissar famine. Colonel McCarrison, in 1921, as a result of some experimentation he carried out in Coonoor,

A report of the families of the children in the several orphanages is appended as a note (Statement 6). This will indicate the causes of deaths of their parents and relations.

What do all these health statistics of the Public Health Department, the parish records, and our own enquiries indicate?

1. As compared with normal years the number of deaths by bowel diseases increased by 50% (6,152 in 1939-40 to 9,321 in 1942-43).

2. Deaths by dysentery increased from 50% to 300% between 1939-40 and 1942-43 in the affected taluqs.

3. Cholera deaths occurred in 1942-43 and 1943-44 amounting to 6,605.

4. According to parish records in these taluqs oedema and dropsy were the causes of 20 to 33% of deaths, dysentery 11 to 25%, and scabies and ulcers 12 to 22%.

5. According to our own enquiries in Ambalapuzha Taluq oedema and dropsy caused 27.6% of the deaths, bowel diseases 25%, scabies 6%, and respiratory troubles 7% of the deaths.

6. A special enquiry of 93 families in Turavoor south showed 50% of the deaths which happened within a year as due to 'neeru' (oedema and dropsy), and 10% to dysentery.

reached the conclusion that the health of the gastro-intestinal tract is dependent on an adequate provision of accessory food factors and observed that experiments with animals have led us to expect that acute intestinal disorders will be among the commonest of the consequences of deficient and ill-balanced food.

More recently, Rao has produced in monkeys a chronic diarrhoea accompanied by atrophic changes in the small intestine by feeding with ill-balanced rice diets. It is perhaps significant that the death rate from dysentery and diarrhoea in the Punjab (probably the best-fed province in India), where the staple foods are wheat and milk, is usually from one-fourth to one-sixth that of Orissa, the Central Provinces, and Madras.—W. R. Aykroyd—speech at department of agriculture, U.S.A.—War Food Administration N.F.C 11).



Children at S. N. D. P. Kuthiathodu Relief Centre waiting for their rice gruel (25th October 1944).



Hon. Dr. Pandit Kunzru serving rice gruel at S.N.D.P. Relief Centre at Kuthiathodu, 25th October 1944.

Tr. to T. N. Archives
Vide F. No. 125781



A family group—Kuthiathodu (North Travancore) January 1944.

7. The Thaikattuchery enquiry showed 50% of deaths as due to diarrhoea and dysentery, and 20% to "neeru".

8. Pudupally and Karunagapally enquiries showed greater number of deaths as due to dysentery and diarrhoea and cholera. Deaths due to respiratory trouble formed between 5 and 10% of the total number of deaths.

We have separate analysis of deaths by respiratory trouble as stated in the parish records as they have not been classified for all the parishes. They range between 5 and 10% of the total number of deaths.

8. Statistics of deaths due to famine diseases.

The following is the classification of deaths by diseases before and after famines.

During the Madras famine of 1877-78 deaths per 1,000 population in famine and non-famine districts were respectively the following :

Cholera	..	5.8	1.8
Small-pox	..	2.4	1
Fevers	..	28	13.7
Bowel complaints	..	5.9	1.9
All causes	..	55	35.2

Alexander Porter says in his book on Famine diseases (published by Madras Government in 1889) that the ratio of different causes of deaths to total deaths in relief camps in all districts was the following: diarrhoea and dysentery 58.4%, dropsy, debility, privation, and ulcers, etc., 30.2%, Cholera 6.5%, Fevers 3.3%, and Small-pox 1.3%.

In the Hissar famine the total number of deaths in the worst famine year (1939) was 37,767 as compared with 20,910 in 1937.¹⁷

17. W. R. Aykroyd's speech at the U.S.A. department of Agriculture published by War Food Administration 1944 N.F.C-11.

A comparison of diseases during these famines with those in Travancore between the years 1941 and 1944 surely points to a similarity of conditions.

9. Comparison of diseases during famines.

We are thankful to the Karapuram Mission Hospital at Shertellay for maintaining statistics of diseases treated in the hospital between the years 1942 and 1944. We give them below:

Classification of diseases of Karapuram Mission Hospital during the years 1942, 1943, 1944.

	1942.	1943.	1944.
Oedema and Dropsy	.. 179	252	176
Diarrhoea	.. 102	194	222
Dermatitis and Scabies	.. 455	655	751
Anaemia	.. 68	126	134
Chronic digestive troubles	.. 13	11	21
Diseases of Digestive system	.. 292	328	352
Respiratory Infections	.. 580	1,132	833
Pneumonia and Bronchial Pneumonia	.. 40	49	107
Dysentery	.. 205	222	265
Round worms	.. 585	1,089	1,007
Anklystomiasis	.. 133	206	227
Ulcers	.. 134	487	411
Yaws	.. 84	298	116
Syphilis	.. 122	170	209
Pyrexia of uncertain origin	.. 102	231	266
Leprosy	.. 33	31	56

We have no figures of this hospital for any prewar years for purposes of comparison. Though the year 1942 was one of partial employment and high prices, food shortage has not become so acute nor the prices so high in this year as in 1943 and 1944. It will be interesting to compare the increase in the number of certain diseases in this area with that in Hissar District. The following are the figures for hospitals and dispensaries in Hissar district during the normal year of 1937 and the famine year of 1939.

Respiratory diseases excluding pneumonia and pulmonary tuberculosis 1937, 25,178 cases; 1939 44,117 cases; Pneumonia 1937, 1,409 cases; 1939, 1,942 cases; Tuberculosis of the lungs, 1937, 696 cases; 1939, 973 cases; Dysentery and diarrhoea 1937, 10,268 cases; 1939, 19,907 cases; Enteric fever, 1937, 282 cases 1939, 539 cases; Trachoma, 1937, 21,031 cases; 1939, 26,550 cases; Pyrexia of uncertain origin, and other diseases due to infection 1937, 2,925 cases; 1939, 5,216 cases.

Dr. W. R. Aykroyd's speech at U.S.A. Department of Agriculture.

Certain features about deaths in times of food scarcity are noteworthy. The number of deaths by diseases which occur in normal times increases. There is a rise in the death-rate. There are more deaths among children and old persons. More than all, diet in normal times has also a relation to the incidence of diseases during times of food shortage.

10. Poverty and poor food in normal times.

Growing conditions of poverty are a point chiefly noticed in the recent census report. The density of population per square mile in the lowlands ranged between 1,833 and 2,407. Lands cultivated by an agriculturist family were roughly 20 to 25 cents. The following remarks from the census report of 1941 explain the physical and the consequent mental and moral deterioration of the population as a result of growing poverty:—

The progressive reduction in unit-yields along with the smaller size of the agricultural holdings, the high proportion of food crops to total cultivated area, the low unit-yields and the low densities of livestock has resulted in under-nutrition which, when chronic, may itself be taken as one of the most important indices of overpopulation..... Here most of the agricultural holdings are insufficient for family subsistence as is evident from the Economic Survey (para 125).

The misery caused by years of poor unit-yields in the marginal and sub-marginal areas is accentuated by the general difficulty in obtaining cheap food from outside, mainly through other money-crops not being available to the poor people to enable them to obtain the necessary cash for purchases (para 127).

The low standard of living among the agricultural classes, especially the more densely populated areas, is generally associated with lower

skill, the general cultural standard being severely affected by the struggle for mere subsistence from the soil....When social degradation and misery go below a certain level, it is not possible to expect a response in the form of a sustained struggle against unfavourable conditions. On the contrary, it often results in an apparent loss of this capacity of reaction and the sinking into a state of sheer despondency. Chronic under-nutrition, which is a common feature in these agriculturally overpopulated regions, results in disease and general loss of vitality. Together these conditions undermine what remains of the spirit of enterprise (para 128).

The Economic Survey conducted along with the present census has disclosed conditions perhaps worse than what existed in 1931 (para 130).

The number of gainful workers is therefore progressively decreasing while that of children in the lower age groups is progressively increasing thus proving the intensity of the pressure of population (para 166).

When it is found that nearly 50 per cent of the total population are females, who form only a small percentage of the gainful workers, the progressive diminution of the effective male population must necessarily cause some concern (para 168).

The Census report of 1931 has calculated the total food consumption of the population as 3,00,000 tons of home-grown rice, 2,04,000 tons of imported rice, 4,00,000 tons of dry tapioca roots and 60,000 tons of fish. This gives an average consumption, according to the report, of 400 lbs., per head per year. The daily consumption works to 21 oz. in the ratio of 11 oz. rice, 9 oz. tapioca and 1 oz. fish. Writing about the protein deficiency in this kind of diet the report says the following:—

"People who live on food deficient in proteins and rich in fats and carbohydrates have low nervous energy and high fertility. The staple foods of an ordinary Travancorean are rice and tapioca, both of which contain plenty of starch and very little of proteins".

It should also be noted that imported rice was not of high food value. The poor also went in for broken rice from Burma as it was very cheap. It is on this background of people struggling to live even in normal times on a diet of excessive carbohydrates we should view the reactions of the food shortage of 1942-44. When rice could not be had for

sometime and when the poor could not buy it owing to its high price even when it became available, the use of substitute foods as tapioca, cocoanut, and groundnut oil cakes and root vegetables became common. The quantity consumed became also insufficient. We shall consider in the next chapter how this food shortage came about and to what extent it could have been averted. Meanwhile we give below a few extracts to indicate the suffering and distress and the diseases caused by food shortage.

11. Periodical review of conditions.

October 1943: The Hon. Sir C. P. Ramaswamy Aiyar, the Dewan of Travancore said at the Food Conference at New Delhi:—

This distressing process of undernourishment and famine conditions the population of 61 lakhs in the State of Travancore had been undergoing unrelieved for the past one year. The conditions in Cochin were in no way better. If the present state of things continues and if the scarcity, which is enveloping us is prolonged, I would be very sorry to be responsible for the good temper of people who are on the verge of starvation. Divide the quantity available by the number of people that are there to eat the quantity and let the Government of India take courage in their hands to so distribute the quantity among those people that at least a general ration or an approach to general ration is attempted and achieved. (Indian Express 19th October)

January 1944: Mr. G. Narayana Aiyar spoke as follows when moving his adjournment motion in the Chitra State Council on inadequate supply of rice.

The conditions of starvation in Travancore are different from those reported from Bengal. Starvation is greater in Travancore, though there is less advertisement. I know of cases in coastal areas in the Parur taluk where finding it impossible to get rice, the people live on cocoanut punnac and kanji (rice gruel) water. For the most part, the diet of foods. They get nasty diseases soon and die of diseases of which statistics are not published in our papers.... 50 per cent of the population are miserably underfed—though they do not die in numbers, they are more moving skeletons, worse than to dying men. The malnutrition is very acute and calls for immediate tackling. (Chitra State Council V. 23 p. 24 and 25).

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Mr. T. Mahomed Ismail spoke as follows on the same motion :—

But if the difficulties and the sufferings of the people of Travancore are brought to the notice of the people in Northern India, I can say that they will immediately come to the conclusion that we are not in any way less affected than those in other parts of India. If anybody has got any doubt as to our own difficulties, it is enough if he travels in the train from Quilon to Trivandrum when on the way he will see men and women—who are supposed to be human beings but who are really skeletons—having two children one on either shoulders who are equally in a famished condition. When we see them, we feel doubtful whether they are alive or dead. Sir, if only these pictures are published in newspapers, we can give some idea at least of the difficulties that we are suffering from. If we go to the hotels even in Trivandrum, we can see these poor beggars—men, women, and children disabled and affected by starvation, struggling with dogs for the leaves thrown out from the hotels.

It is true that our hospitals do not give any statistics about the deaths due to starvation. If only a direction is given to our hospitals to publish death rates due to starvation, I believe that the number of deaths will be known to be quite considerable. It will also be news to us as well as to the public outside. I bring these matters to the notice of Government who might bring home to the authorities concerned and make them realise that the starvation problem in Travancore is really serious. (Ibid p. 48).

The Hon. Dr. Pandit Hridayanath Kunzru issued a statement about conditions in Kerala in January 1944 from which the following are extracts :—

In Cochin there was lack of vigour among the people, the position in coastal villages was worse, and the condition of children was such as to cause anxiety. The food situation in Travancore is worse than in Cochin. The rural population is getting substantially less food than in Cochin. It is not surprising that the health of the people at least in certain parts of the State has considerably gone down. I saw emaciation among the people, particularly among children in many places. At a free kitchen in Alleppey, I saw hundreds of people whose condition was no better than that of the people I had seen in Bengal and Orissa in October last. The children and particularly the poorer children in schools deserve the special attention of the authorities. It is unfortunate that the public have only a slight knowledge of the conditions that prevail in this part of India.

Mr. Amritlal Sheth, Editor Janmabhoomi, Bombay made a visit to relief centres by the end of January 1944 and issued a statement from which the following are extracts :—

One remarkable fact that came out during my investigation was that these parts are always more or less poverty-stricken.....The situation is this that a labourer gets as his wages a little more than half of what he needs for his maintenance and then the grain, which is his usual food, meaning rice, is hard to get. There is therefore a very general underfeeding in the whole of these coastal areas. All this is due to the present world war.....Situation does not look to be so bad on paper. But if one could see with his own eyes the destitutes of these areas one would be shocked by the miserable plight of these armies of skeletons.....I was informed that the same situation, more or less, prevailed during the 1914-1918 world war. Although Burma was not lost then, owing to U. Boat losses, Burma rice was hard to get.

March, 1944: The Dewan of Travancore spoke the following to the press on 22nd March 1944 :

It is absolutely correct to say that no such thing as general starvation need be apprehended in the State. But there are several people who are too poor to buy foodgrains available under the rationing scheme and this kind of distress is prevalent in some localities though not in many. (Press interview of the Dewan on 22nd March).

October, 1944 : After visiting coastal villages in Travancore and Cochin between 24th and 26th October 1944, the Hon'ble Dr. Pandit Kunzru, President, Servants of India Society, said in his press statement of November 7, 1944 :—

As more food is available now than in January last, I am glad to say that the health of the people is much better than it was. The Assembly and State Congress members and others complained of the inferior quality of foodstuffs supplied in rural areas and gave instances to show that about 40 per cent of the people did not make full use of their ration cards, due partly to the large quantity of wheat which they were required to buy, and partly to the higher price of wheat. How distressing the condition of the rural areas is, has been indicated by the information supplied to me that not a few people in the northern area used cocoanut and groundnut cakes as food. The health of the people seems to me to be unsatisfactory in the coastal areas of Cochin. The health of children except where they can get milk is even more unsatisfactory than that of adults. In the northernmost portion of Travancore (Shertellay and Alleppey taluqs) which I saw, the position seemed to be less satisfactory than in Cochin. The children deserve special attention.

After visiting the coastal areas of Cochin and northern Travancore on 27th and 28th October 1944, Srimathi Kamaladevi, President, All-India Women's Conference, said in her press statement :—

The colour of the skin showing bloodlessness, the paleness of the face, and the enlargement of spleen among children of the poor and destitute classes in Vypin island of Cochin State are all indications of malnutrition, particularly owing to the use of tapioca, fish, and cocoanut oilcakes as substitute foods by the poorer classes. Cases of dysentery and diarrhoea also occur as a result of taking to poorer classes of foods.

Destitution among women and children of the poorer classes is greater in Shertellay area. The poor people here go in not only for cocoanut oilcakes but also for groundnut cakes which are consumed by cattle elsewhere. Wages for coir-spinning industry are low. Diet-deficiency diseases as oedema and anaemia to a smaller extent, and scabies, dysentery and diarrhoea to a larger extent are found commonly among the poorer classes. There is a general emaciation and reduced vigour and vitality among them. The children at least, if not the older destitutes, should immediately be taken care of.

November, 1944: The Dewan of Travancore said in his speech at the opening of the Alleppey poor home on November 20, 1944 :—

It is true that the price of grain here is very high.....High transport charges have to be met. We have spent up to 12 or 13 crores of rupees for purchase of food stuff. I always said that I was prepared to lose one crore in that transaction. I was prepared to stand by that statement. I was prepared as a result of this transaction to write off one crore in respect of our grain transaction, but with the post-war programme and other ameliorative matters that are in contemplation, I cannot afford to lose more than one crore. Therefore the price has to be a pooled price and has to be high.

Mr. G. Leslie Cross, local Secretary of Friends' Ambulance Unit wrote to Travancore Information, November 1944, the following :—

Famine is an ugly word, striking fear into the heart by its very sound alone; famine and fear usually work hand in hand and make a most dangerous partnership. For this reason the word should not be lightly used.

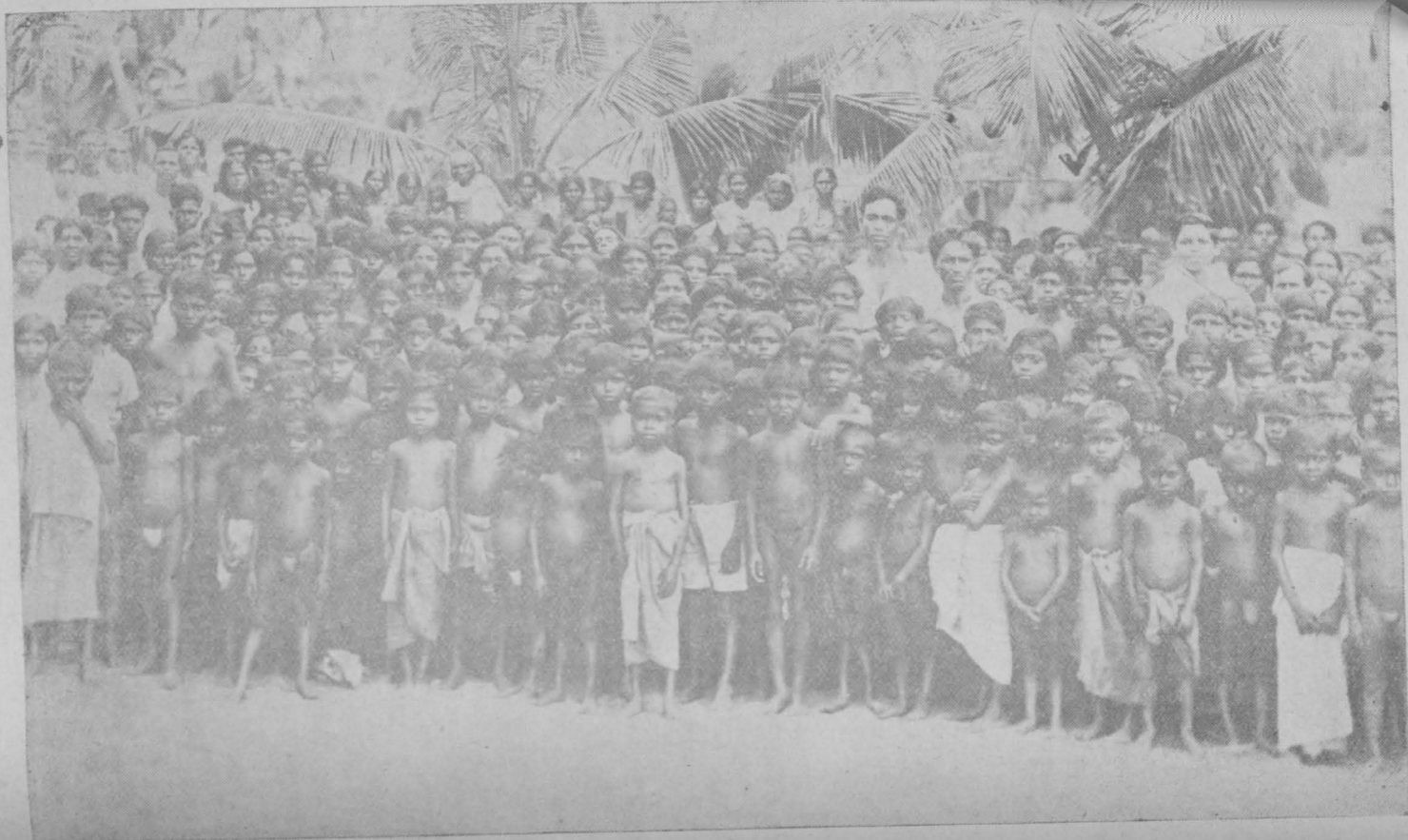
So far as I have seen, acute famine conditions do not exist anywhere in Travancore and there is no reason to expect them; poverty there is here as elsewhere in India, though fortunately not so severe or so widespread as in some other parts. There is severe malnutrition among children, due partly to poverty and partly to unsuitable diet.



A group of children—Kuthiathodu (North Travancore) January 1944.



A family group—Palliport (North Travancore) January 1944.



A village in Karthikapally taluk (December 1943).



A village in Karthikapally taluk (December 1943).

But happily, nowhere in Travancore State need one be the helpless witness of the deplorable and disgraceful sights which were so common in Calcutta and in Bengal generally only a few months back.

December, 1944: Dr. T. V. Swaminatha Sastri of Trichinopoly and Dr. P. N. Bhat of Kasergod said in their medical survey of Shertellay the following:—

It was rare to find any considerable number of healthy people in these areas. A larger proportion among men looked healthy than among women and children. Emaciation among the latter was noticeable. Possibly poverty has told on them and created a state of mind which resigns itself to fate, as any effort on their part has not succeeded in preserving life.

January 1945: Mr. N. M. Joshi, M.L.A. Central, made the following press statement on 30—1—1945 about the needs of relief:—

I visited the relief centres in Shertellay Taluq on 28th January at Aror, Kuthiathodu, Calavamcodam, and Shertellay. I saw more than 2,000 people who were given on the occasion food and grains in these centres. Some of the women were anaemic in condition. In one centre a few tapioca chips and some kind of gram were distributed for which a larger number had come from long distances, thereby indicating their poverty and struggle for living.....Relief should be undertaken by Government if the problem is to be fully solved. The prices should be equated to those in British India. Food grains should be sold by Government at their cost at a specially lower price to the poorer classes treating the loss as a subsidy. Government ought to see that the village coirspinners get a proper wage suited to the present cost of living index which is not less than 2½ times prewar, start more works for the unemployed, and conduct noonday feeding of school children.

Dr. C. O. Karunakaran, Superintendent, Public Health Laboratory, Trivandrum, says the following in an article contributed to Travancore Information of January 1945:—

In Travancore the problem of food is one of peculiar complexity. Diet surveys carried out among families of different economic strata show that the vast majority of the people live on diets which are quantitatively insufficient and qualitatively unsatisfactory. These diets are even more inadequate than the oft-condemned diet of the "poor rice eater" of South India. The masses have got so attuned to chronic undernourishment that there is grave risk of physical deterioration, which successive generations are already manifesting, going on unchecked.

Travancore is one of the most densely populated countries in the world, with less than 0.5 acre of arable land per capita. It is estimated that a minimum of 1.8 acres per head is necessary for a satisfactory diet at minimum cost.

February, 1945: Dr. M. E. Naidu, Dr. S. Balasubramonia Pillai, and Dr. S. Muthukaruppa Pillai said in their medical survey of two villages in south Travancore:—

It will be seen from the above that the majority of the cases were anaemic. The cases betray a marked deficiency of all the food factors particularly iron, calcium, and vitamins A, B, C, and D. The general resistance to diseases has been found to be too low as can be seen from the prevalence of diseases such as scabies, bronchitis, dysentery and diarrhoea, eczema, etc. Apart from the noted cases, on enquiry it was found that many others were also victims of chronic diarrhoea, though they do not consider even four motions a day as pathological. Majority of these may safely be said to be cases of amoebic dysentery or hookworm. It was found that small-pox was widely prevalent in an epidemic form in both the villages.

Those who were normal in health and appearance without marked symptoms of any disease were grouped under A. The fact that the number falling under this group is so low as 11 speaks for itself regarding the state of nutrition of the people of these villages. Cases whose state of nutrition appeared to be very bad have been classified under group C which numbered 86 coming to 43% of the total number of cases examined. Others who though they could not be said to be in a normal state of nutrition but appeared to be comparatively in a fair condition of nutrition have been put under group B, which comes to 109 in number.

March, 1945: Lt.-Col. T. S. Shastri made a report of health conditions after a personal visit to Shertellay and examining 178 cases from which the following are extracts:—

Chronic digestive troubles are due to ill-balanced food. As D.M.O. Tinnevely, I had opportunities of visiting the Neyyur hospital and discussing with Dr. Somerville the many cases that were operated for peptic ulcer. Even in normal times a larger use of tapioca in the diet affected the health of the people and has caused many number of diseases. The high price for rice and wheat has compelled the people to use a greater quantity of tapioca. Use of tapioca has no doubt prevented deaths by starvation but has also led to severe malnutrition and consequent diseases. Food scarcity has no doubt led to a reduction in the quantity of food consumed and an excessive consumption of carbohydrates leading to diarrhoea and nutritional oedema.

STATEMENT 1.

Parish census of Christian population of Syrian and Latin Churches in Travancore.

	July '44. Popula- tion	1941-42		1942-43		1943-44	
		Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
<i>Shertellay Taluq.</i>							
Aroor.	3,403	83	58	83	93	67	132
Manakodam.	1,357	29	42	24	37	31	58
Thankey.	3,010	74	62	66	118	53	108
Arthingal North	2,085	58	59	39	101	60	100
Arthingal South.	7,053	232	180	101	212	149	173
Vayalar	664	19	4	17	29	Nil	26
Muttam.	3,948	133	93	131	129	114	172
Pallithodu.	2,919	88	83	61	65	56	55
Azikkal.	2,159	83	56	53	55	57	77
Pallipuram.	1,803	40	35	40	57	38	38
Eramalloor.	2,863	70	19	—	—	112	130
Ezupana.	868	2	45	—	—	15	31
Uzava.	232	5	14	6	8	3	7
Valamangalam.	670	21	23	18	20	21	—
Kavil.	934	16	19	19	28	15	16
Kokamangalam.	813	24	20	—	—	20	29
Chalil.	935	26	26	22	31	29	25
Thannirmukkam.	336	9	5	—	12	5	9
Thalkattuchery.	2,286	62	46	60	58	60	73
Panavally.	578	21	17	13	19	14	20
Total.	38,896	906		1,072		1,279	
<i>Ambalapuzha Taluq.</i>							
Kattoor.	5,069	192	104	116	174	44	180
Poonkavu.	4,560	30	99	81	142	48	170
Thumboly.	7,500	217	203	160	205	131	125
Alleppey.	7,780	189	152	175	251	163	280
Vattal.	6,480	182	99	—	—	118	187
Total.	31,389	657		772		942	

	July '44. Population.	1941-42		1942-43		1943-44	
		Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
Paroor Taluq.							
Palarivattam.	3,291	94	64	104	94	95	138
Kotully.	1,262	28	26	22	40	27	49
Manjumey.	1,879	65	24	65	48	57	83
Verapoly.	7,044	175	157	176	168	151	231
Chathanad.	924	27	29	37	41	26	41
Paroor.	854	22	9	11	11	10	18
Palliport.	5,680	153	133	132	159	140	196
Kizekkeambalam.	3,384	101	59	101	53	69	100
Kunjithai.	860	6	9	9	8	12	14
Paroor Kootackav.	3,449	90	112	90	101	102	116
Alangad.	2,588	73	42	64	44	62	72
Thurithipuram.	1,100	23	31	32	33	28	32
Total.	32,315		695		800		1,088
Vaikom Taluq.							
Vaikom.	3,429	110	74	104	90	95	116
Thottakam.	925	29	20	30	23	24	25
Uplands.							
Nagapuza.	2,071	78	28	75	41	76	86
Arikuza.	1,726	57	26	84	37	47	60

Statement 2 (A) (Parishes).

Calculation of number of deaths on the ratio of such deaths for different taluqs among Christians according to parish records and Muslim and Hindu deaths on the ratio of 125% and 133% of deaths among Christians as calculated in the census enquiry of 1941.

Note:—The number of deaths in Shertellay Taluq for 1941-42, 1942-43, and 1943-44 according to parish registers is 906, 1072, and 1279 for a population of 38,896 (vide statement 1). This gives an average death rate of 23·3, 27·6, and 32·9 per 1,000 population for these three years respectively. Parish records being more reliable than any other one, we have taken them as the basis and multiplied these averages for the total population for finding out deaths among Christians. The method we have adopted to find out deaths among Muslims and Hindus is the following:—

The vital statistics enquiry report of the census report 1941 has classified deaths per 1,000 population as 12 among Christians, 15 among Muslims, and 16 among Hindus. The increase works to a ratio of 25% and 33% respectively for Muslims and Hindus as compared with the number of Christian deaths. On the basis of this ratio we have calculated the number of deaths among Muslims and Hindus. It should be noted that this is a lower estimate than the one mentioned in public health reports which put the figures of Hindu deaths at a higher figure of 26·61 as against 18·2 for Christian deaths per 1,000 population for both the two years 1941-43 or an increase of Hindu over Christian deaths by 50%.

The percentage of deaths to total Christian population in parishes in Ambalapuza and Parur Taluqs has been similarly multiplied for the total population to find out the total number of deaths among Christians. A percentage of 33 and 25 have been added to this number to find out the number of Hindu and Muslim deaths respectively. The figures in brackets denote the death rate per 1,000 population.

	Ambalapuzha taluq.	Shertellay taluq.	Parur taluq.
Population:			
Christians.	83,923	46,454	62,982
Muslims.	26,320	9,523	21,430
Hindus.	1,59,576	1,73,443	1,23,199
Total.	2,69,829	2,29,420	2,07,611

Number of deaths.

1. 1941-42:			
Christians.	(20.9) 1,744	(23.3) 1,081	(21.5) 1,354
Muslims.	(26.1) 687	(29.1) 277	(26.87) 576
Hindus.	(27.9) 4,451	(31.1) 5,394	(28.66) 3,531
Total.	6,882	6,752	5,461
2. 1942-43:			
Christians.	(21.1) 1,771	(27.6) 1,282	(24.75) 1,559
Muslims.	(26.4) 695	(34.5) 328	(30.94) 663
Hindus.	(28.1) 4,484	(36.8) 6,383	(42.075) 4,066
Total.	6,950	7,993	6,288
3. 1943-44:			
Christians.	(30) 2,518	(32.9) 1,528	(33.66) 2,120
Muslims.	(37.5) 987	(41.1) 391	(42) 902
Hindus.	(40) 6,383	(43.9) 7,614	(44.88) 5,529
Total.	9,888	9,533	8,551
4. Add for 1940-41 death figures of 1941-42. ¹⁸	6,882	6,752	5,461
5. Total for four years.	30,602	31,080	25,781
6. Estimated deaths at 15 per 1,000 for four years.	16,200	13,740	12,480
7. Excess deaths for four years.	14,402	17,290	13,281
8. Death rate per 1,000 population for four years.	53.3	75	64
9. Total for two years (1942-44.).	16,838	17,526	14,839
10. Estimated deaths at 15 per 1,000 for 1942-44 (2 years).	8,100	6,870	6,240
11. Excess deaths for 1942-44 (two years).	8,738	10,656	8,589
12. Death rate for 1942-44.	32.3	46.5	41.5

18. Owing to absence of parish figures for 1940-41, figures of 1941-42 which could only be less owing to a slight decline in famine conditions. has been taken for 1940-1941.

STATEMENT 2 (B)

Estimate of deaths for eight effected taluqs on the basis of official figures for four years 1940-1944.

	Total number of deaths for 4 years after adding the figures of 1942-43 for 1943-44. ¹⁹	Add ½ for deficiency.	Estimated deaths at 15 per 1,000 (4 years).	Excess deaths for 4 years.	Excess death rate.	Population.
Karunagapally Taluq	11,741	17,611	13,080	4,531	20.78	2,18,018
Karthigapally Taluq	9,407	14,110	9,060	5,050	33.35	1,51,393
Ambalapuzha Taluq	16,984	25,476	16,200	9,276	34.37	2,69,829
Shertellay Taluq	14,963	22,444	13,740	8,704	37.9	2,29,420
Parur Taluq	8,392	12,588	12,480	108	0.52	2,07,611
Vaikom Taluq	12,651	18,976	10,479	8,497	48.65	1,74,646
Mavelikara Taluq	10,965	16,447	11,619	4,828	24.98	1,93,659
Thovaza Taluq	3,692	5,538	2,600	2,938	67.78	43,324
				43,932	29.53	14,87,900

19. The number of deaths in 1943-44 has been greater than in 1942-43. Hence there can only be an underestimate in assuming the figures of 1942-43 for 1943-44.

STATEMENT 2 (C)

Estimate of deaths for eight affected taluqs on the basis of official figures for two years 1942-1944.

Taluqs.	Deaths in 1942-1944 (figures of 42-43 multi- plied by 2)	Add ½ for deficiency.	Estimated deaths at 15 per 1,000.	Excess deaths for two years.	Excess death rate.
Karunagapally.	6,748	10,122	6,541	3,581	16.42
Karthigapally.	5,032	7,548	4,530	3,018	19.9
Ambalapuza.	9,920	14,880	8,100	6,780	21.42
Shertellay.	7,804	11,706	6,870	4,836	21.1
Parur.	4,542	6,813	6,240	573	2.76
Vaikom.	6,672	10,008	5,239	4,769	27.3
Mavelikara.	6,016	9,024	5,809	3,215	16.6
Thovaza.	2,124	3,186	1,300	1,886	43.5
				28,658	19.26



Poor feeding, Shertellay (December 1943).

STATEMENT 3

Diseases of School Children (Extracted from Health Reports of Government).

	1940-41	1941-42	1942-43	1940-41	1941-42	1942-43	1940-41	1941-42	1942-43	1940-41	1941-42	1942-43	1940-41	1941-42	1942-43
	Karthikapally			Ambalapuzha			Shertallay			Vaikom			Parur		
1. No. of schools visited	34	65	18	44	67	23	28	46	25	29	48	41	41	40	
2. Number examined	4,959	4,778	1,648	6,676	6,676	2,240	5,134	5,275	2,340	4,004	5,099	4,288	5,917	4,597	
3. Number starving during midday	2,400	2,799	956	2,561	2,116	710	3,111	4,042	2,108	1,645	1,191	1,043	2,392	1,375	
4. Number found defective	2,083	1,684	521	3,081	2,621	838	2,569	1,939	818	1,852	2,881	1,605	3,552	2,963	
5. Malnutrition	514	347	123	3,213	2,628	873	2,624	1,460	940	859	815	640	1,020	734	
6. Diseases of the eye	28	37	11	389	125	41	374	286	114	251	20	15	289	177	
7. Teeth and gums	325	215	63	404	234	81	1,164	1022	411	63	559	44	236	485	
8. Diseases of the skin	159	129	41	175	185	64	104	180	72	238	172	125	295	145	
9. Hookworm	336	370	123	39	33	11	144	115	16	296	443	340	279	137	
10. Ascariasis	135	Nil	Nil	848	Nil	Nil	876	Nil	Nil	511	Nil	Nil	1,597	Nil	
11. Roundworm	Nil	193	61	Nil	673	231	Nil	268	104	Nil	1,181	823	Nil	706	

STATEMENT 4

Analysis of diseases causing death as mentioned in parish records. records for 1943-44.

	Starvation and malnutrition.	Swelling, dropsy and Oedema.	Diarrhoea and Dysentery.	Gas, Stomach pain.	Scabies.	Fever.	Other diseases.	Total.
<i>Shertellay Taluq.</i>								
Arthinkal South ..	14	48	25	8	51	12	14	167
Muttam ..	—	60	18	10	26	15	15	144
Eramallor ..	1	21	2	—	31	24	50	129
Thankey ..	7	37	13	1	18	6	10	92
Arthinkal North ..	7	27	2	—	20	7	15	78
Thykattucheri ..	—	23	5	—	13	4	22	67
Manakodam ..	5	33	4	—	9	5	11	67
Pallithode ..	—	1	9	7	21	—	21	66
Ezupana ..	—	12	9	—	4	7	8	40
Kocomangalam ..	—	17	4	—	11	4	8	40
Pallipuram ..	—	16	3	—	5	8	7	43
<i>Thannirmukkam and</i>								
Vechoor ..	—	18	3	2	13	3	1	38
Kannankara ..	—	6	2	—	10	6	11	35
Chalil ..	—	6	1	—	10	—	12	29
Vazamangalam ..	—	13	3	—	4	1	6	27
Karumancheri ..	3	4	2	—	2	11	4	26
Kovil ..	—	11	1	3	3	—	4	22
Uzava ..	—	9	—	—	4	1	6	20
Panavally ..	—	11	1	—	2	2	3	19
Vayalar ..	—	1	—	—	4	3	11	19
Total. ..	37	372	107	26	261	126	239	1,168
<i>North Parur Taluq.</i>								
Palliport (41-42) ..	—	34	12	—	18	22	36	122
Palliport (42-43) ..	—	44	13	—	21	20	46	144
Palliport (43-44) ..	—	65	20	—	22	21	47	175
Verapoly ..	—	—	24	82	48	24	68	246
Palarivattam ..	—	58	22	2	15	18	23	138
Kottully ..	—	—	3	3	7	12	23	48
Total (43-44) ..	—	123	69	87	92	75	145	607
<i>Ambalapuzha Taluq.</i>								
<i>Alleppey Town</i>								
(43-44) ..	5	71	58	2	34	29	80	279
<i>Alleppey Town</i>								
(44-45) ..	2	7	19	2	21	17	29	97
Kattoor (43-44) ..	4	31	10	—	24	30	76	175
Kattoor (44-45) ..	—	16	5	—	35	26	13	95
Total (43-44) ..	9	102	68	2	58	59	130	454 (20)

20. Consumption cases have not been classified for Shertellay taluq. These were 12, 15, and 16 of the other diseases for the 3 years in Palliport, and 17 and 12 for the two years in Alleppey Town, and 9 for Kattoor for 1943-44. Of the total number of deaths 44, 11, 20, and 28 were caused by Cholera in Verapoly, Kottully, Alleppey Town and Kattoor respectively in 1943-44.

STATEMENT 5
Analysis of diseases causing death according to surveys conducted by relief workers.

	Starvation and malnutrition.	Swelling, dropsy and Oedema.	Diarrhoea and Dysentery.	Gas, Stomach pain.	Scabies.	Fever.	Consumption.	Other diseases.	Total.
Ambalapuzha Pakuthyzi (August 1943 to July 1944)	—	42	35	3	13	27	6	39	165
Ambalapuzha Town (Feb. to Oct. 1944)	—	77	5	25	15	17	26	28	193
Arattupuzha Pakuthy (Aug. 1942 to July 1943)	—	29	32	13	7	32	17	14	144
Arattupuzha Pakuthy (Aug. 1943 to July 1944)	—	24	28	9	5	40	7	10	123
Prakkad (Aug. 1941 to July 1942)	—	25	6	11	2	30	—	41	115
Prakkad (Aug. 42 to July 1943)	—	40	12	3	3	48	—	72	178
Prakkad (Aug. 1943 to July 1944)	—	30	6	4	8	17	—	29	94
Total for Arattupuzha and Prakkad for 1942-43 and for Ambalapuzha Town and Pakuthy 1943-44	—	188	84	44	38	124	49	153	680

21. Pakuthy means village divided into a number of hamlets.

STATEMENT 6

A few statements of children in several orphanages about the causes of deaths of their parents and relations.
Calavancodam (near Shertellay)

(March 1945)

1. *Velayudhan*. Father died 3 years back of diarrhoea.
2. *Kochunarayanan*. Father sick, mother left. His sister is in the treatment centre of the children's home.
3. *Prasanan*. Mother died within 3 years by neeru (oedema).
4. *Visuvanathan*. Within 3 or 4 years his two brothers died, one of karapan and the other of neeru. He and his brother, sisters are in children's home.
5. *Chandravathi*. Father died of neeru four years back. She has a blind uncle at home.
7. *Bharathi*. Father died of neeru last year. A little sister is at children's home.
8. *Ammani*. Father died two or three years back by neeru.
9. *Gouri*. Father died of diarrhoea and vomiting 4 years back. Mother's elder sister died two years back of neeru and another sister died of 'Andravayu'.
10. *Rajamma*. One year back father died of 'Andravayu'. She and her elder isster are deaf.
11. *Ravindran*. Mother has neeru in her legs.
12. *Ponnappan*. Father is suffering from rheumatic fever. Younger brother suffers from cough and itches.
13. *Meenakshi*. Father's brother died two years back of neeru.
14. *Banuvikraman*. Mother's sister died of neeru two years back.
15. *Sarada V. G.* Father died of neeru 3 years back.

Kadakarapally (near Shertellay)

Mehal. Two younger children died of Karappan during the last three years.

Valiathankappan. He is suffering from fever and is weak.

Rosa. Suffering from typhoid fever.

Vavachan. Younger is in the sick centre suffering from pitham (anaemia) and neeru.

Treatment Centre (near Karapuram Mission Hospital)

1. *Antony*. Father is suffering from neeru, pitham, itches. Mother is suffering from rheumatism and itches. Brothers and sisters are suffering from neeru, itches, 'Velarcha' (bloodlessness) and weakness of the heart.

2. *Anthappan*. Mother is suffering from cough and fever. His elder brother is suffering from itches, velarcha, and pitham. His

younger brother is suffering from pitham, itches, and anaemia. He is suffering from cough, frequent fever, itches, and anaemia.

3 & 4. *Joseph, Thresia*. Joseph is suffering from fever and cough and Thresia from pain in the jaws.

5. *Gopalan*. Father and brother died of pitham and neeru. Mother is suffering from stomachache. He is suffering from pitham and worms.

6. & 7. *Vasu and Devaky*. Father died of pitham and neeru owing to want of food. Mother is not well. Both the children are suffering from worms.

8. *Karunakaran*. Father died of 'neeru' and 'velarcha'. Mother is suffering now from stomachache. She was operated 2½ years back. He is suffering from stomachache.

9. *Chellappan*. Brothers died of neeru. Father died of malaria. His mother left him and he is suffering from anaemia and neeru.

10. *Cherukappan*. Parents died of neeru. He is suffering from anaemia.

11. *Darmagadan*. Parents and brothers are suffering from itches. He is suffering from worms, itches, and anaemia.

12. *Kochuthakappan*. He has no parents. Five in all died in his family of starvation and 'neeru'. He is suffering from itches and worms.

13. *Vasumathi*. Sister died of 'neeru'. She is suffering from worms and his other sisters are weak.

14. *Kochusarada*. She is suffering from anaemia and fever. Mother left her.

15. *Antony*. He is suffering from anaemia and neeru.

Vayalar (near Shertellay)

Janaki. Mother suffers from consumption and her father left her.

Devaki and Kanthimathy. Father died 2 years back of typhoid. Their mother left them for Peeremade, a year back with the last child. Mother's father died 3 years back of neeru and starvation.

Janaki and Devaki. Father died of starvation and neeru in 1941-42. They are suffering from bloodlessness.

Gangadaran and Damodaran. Father died of starvation and neeru in 1941-42. Gangadaran is deaf.

Bhavani and Pankajakshi. Father is very weak and cannot work.

Lonan and Rosa. Father suffers from mandhi (elephantiasis). He has ulcers in the legs. Mother is very weak. Ouseph left the area.

Velamma Grandmother died of starvation 2 years back. Rosa is suffering from anaemia.

Raphael and Augustian. They are children of the maid servant of the home. Father suffers from ulcers in the legs. Two younger, one male and one female child died within the last 3 years due to famine conditions.

Thankamma. Father died one year ago by famine.

Aley and Scisily. Father is in goal as a punishment for murder. Grand-father died in famine in 1942-43.

Prabakaran. His father and his sister aged 45 and 5 respectively died in famine in 1942-43. The whole family left. The remainder have returned recently.

Pavithram. Father died of starvation in 1941-42.

Gopalan. His maternal uncle died of famine in 1943-1944.

Thambi. Father died of famine in 1943-44.

Y. W. C. A. Aroor.

(Aroor is the last village on the Aleppey Ernakulam road before one crosses the ferry and enters the Cochin State from Travancore).

9-2-45.

1. Two sisters—The elder has a sore mouth. The elder sister of these two sisters died six months back. Father left them six months back.

2. Girl—Father died a year and a half ago owing to the ripening of his leg.

3. Girl—Father died six months back with ulcers in the leg.

4. Girl—Father died two years back of neeru (swelling). Mother died a year back of small-pox. Three months back younger brother died.

5. Girl—Mother died a month back of inflammation of stomach.

6. Girl—Daughter of a fisherman. Four months back Narayani 12 years old and Lakshmi 10 years old died of cholera. Raghupathy six years old died six months back of weakness.

7. Boy—Brother Bhaskaran 15 years old, died six months back of neeru (swelling). Purushan Elayathu also died, the cause of which he does not know.

Y. W. C. A. Orphanage Thannirmukkam.

(This place is within 25 miles from Ernakulam by boats running between Ernakulam and Alleppey).

10-2-45.

1. Girl—A year back her father died of neeru (swelling). One younger sister and one younger brother also died. One of these died by diarrhoea. Mother is deaf.
2. Boy—Aged six years. Younger brother and younger sister died.
3. Boy—Father lives by carrying headloads of tapioca. Mother does coir-spinning. Two of his brothers aged 5 and three months respectively, died of Pithaneeru (anaemic dropsy).
4. Boy—Father died a year ago. He was struck by paralysis of hands and legs. He suffered from inflammation in the stomach.
5. Girl—Father left us two years back. Mother is anaemic. The whole family left for Kottayam two years back and have come back. They lost one girl child a year back at Kottayam.
6. Girl—The family returned back from Kottayam. Elder brother 11 years old is still there.
7. Girl—Mother died three years ago of consumption.
8. Boy—Father died in Assam. Sister and brother died of neeru (swelling).
9. Girl—Father is suffering from Rakthavadam (bad blood and ulcers).
10. Boy—Father died two years ago of neeru (swelling). The younger died last year.
11. Boy—Aged 8. Father died of consumption three years back. Three children died in the family during the last three years of which one is Kathyayini.
12. Boy—Father cannot do any work. He is suffering from 'Chuma' (Respiratory disease).
13. Boy—Father emigrated. One elder brother and one elder sister died within the last three years.
14. Girl—Father emigrated.
15. Girl—Father emigrated.
16. Boy—Last year Davaki died in the house. She was 8 years old.

Servants of India Children's Home Calavancodam.

(This place is three miles north of Shertellay).

11-2-45.

1. Boy—Father died of neeru (swelling) one and a half years ago. Father's elder brother died of old age. Mother's elder sister died of neeru (swelling). Father's father died of old age. Younger brother three years old died a year and a half ago. Eyesight of my mother is bad.
2. Boy—Father died two years back of neeru (swelling). Elder brother died of Karappan. He had Kochal (fits), Chori (scabies), and Charira Thadippu (thickening of the skin).
3. Boy—Elder brother aged 14 years died a year ago of neeru (swelling); younger sister six years old died of the same disease.
4. Girl—Father died three years ago of neeru (swelling) in the legs. During the famine mother went to the hills and died there. Younger brother aged two years and sister aged 4 years died last year.
5. Boy—Three children of this family were taken care of by a Vaidyan. One elder brother and one younger brother died two years back. Mother died during delivery in the C.M.S. Hospital two years ago.
6. Boy—Father suffers from filarial fever. Younger sister died a year back.
7. Boy—Father was operated for Vayithu Vedana (Inflammation of the stomach and intestines). Grand-father died of neeru (swelling) a year back.
8. Boy—Mother is unwell owing to cough and pain in the lungs. Two younger ones died within two or three years by fever.
9. Girl—Uncle died two years back of neeru (swelling).
10. Boy—Father got swelling in the legs. Then owing to ulcers the feet got broken. He cannot work. Mother is pregnant. Two younger sisters died two months back.
11. Boy—Father is suffering from stomach pain. Sister aged 3½ years and two of my brothers aged 12 years and 2 years died during the last three years.

12. Boy—Father died a year back of 'Vayitru Elakkam' (diarrhoea).

Palliport.

(This place is 15 miles from Ernakulam on the backwaters between Ernakulam and Caranganoor. The orphanage is situated in four acres of British territory. Most of the orphans are from Palliport, Chettikad, and Kunjithai which are Travancore Villages).

12-2-45

1. Girl—Brother died of 'neeru' and 'chori' (swelling and scabies) after the Christmas.
2. Girl—Aged 11. Father died two years back. He could not walk. He suffered from cough.
3. Girl—6 died in the family who were brothers and sisters to this girl.
4. Girl—During the last two years, two infant brothers one week old and another 40 days old died.
5. Girl—Mother died 8 months ago of fever. Three years ago younger sister died.
6. Girl—Father died two or three years ago of cough. Elder brother named Thomas aged 16 died two years back of fever.
7. Girl—Mother died five months back of neeru (swelling).
8. Girl—Brother died three years back of neeru (swelling). At first it came on the legs and then it spread over the whole body.
9. Girl aged 14—Father died of cough three years ago. Brother aged 22 died of fever three years ago.
10. Woman—Elder brother died three years back of fever. Husband died a year back. She has remarried.
11. Woman—Brother died of lunacy three years back.
12. Two sisters—Mother died three years ago of neeru 'swelling'. Uncle died of neeru two years back.

II. FOOD SHORTAGE AND STATE CONTROLS

By

K. G. SIVASWAMY

I. Early Controls

Food shortage in Travancore was caused by the cessation of rice imports from Burma since 1942. Even from the commencement of the war the Government were anxiously watching the price situation regarding food grains, as they had before them the experience of the last war. When they found that merchants unduly inflated the prices from 1941 onwards, they adopted the following measures. They periodically fixed the maximum prices for different varieties of imported rice based on the ruling market prices at Cochin. They stocked some rice as a check against rise in prices. They issued instructions to officers to prevent export of food stuffs on a large scale from the State. The price however doubled by this time from Rs. 6 per bag of 160 lbs. to Rs. 11. With the declaration of war by Japan, prices further increased. The government saw early enough that there was need to regulate internal supplies and sales with a view to prevent hoarding and profiteering. They issued the Essential Commodities census order (Dec. 1941) to collect data regarding the stock position of rice, paddy and other essential commodities available for consumption in the State. They gave facilities to big business men to import rice. They moved the railway authorities to provide wagons for transport (V. 19 P. 257 March 1942). But fixation of price by itself could hardly solve the problem of black markets, when there was rice shortage.² Further there was a free market in adjoining British territories tending to high prices. Merchants also

1. Due to scarcity of shipping space, the price of Burma rice rose and the government therefore negotiated with the export agencies in such places like Bengal, Coorg, and South India as a measure of control of the price of rice. V. 17 P. 628. Assembly 31st July 1941.

2. V. 20, P. 20, Assembly, July 1942.

began to hoard. The Food Grains Futures and Options Prohibition order was passed in June 1942. Government also confiscated some of the paddy purchased by these merchants with a view to corner them.³ They began to regulate stocks and sale of paddy and rice from July 1942. The Food Grains Control Order prohibiting sale of grains above a certain limit to non-licensees and prescribing the form of returns for quantities received and delivered by merchants was issued in July 1942. Cochin and Travancore Governments came to an agreement to apply to other Governments for imports of rice jointly and divide such imports as 1/5 and 4/5 on the basis of their population. The two Governments were able to get the assistance of the Madras Government, through the efforts of the Government of India, for an import of 18,000 tons per month for July, August and September 1942 for both Cochin and Travancore. The promised quota from Madras was however 2,20,000 tons. But in October 1942 not a single grain came as the Madras Government discovered that Madras itself was a deficit province.⁴

2. Failure of Government of India

From now on developed the food crisis. The quantity of rice that was required for consumption at the rate of 240 lbs. of rice per capita per year for an adult population of 55 lakhs (treating one fourth of the population as non-adults) was 6 lakhs of tons. The total annual production was estimated at 2½ lakhs of tons. The net deficit was thus 3,60,000 tons i.e., 30,000 tons per month. For Cochin it was 90,000 tons per year or 7,500 tons a month. The joint quota received by both the States from Madras amounted only to 15,000 tons in November 1943 (including 2,245 tons for tea and other estates), and 6,000 tons in December 1943 including the same quota for the estates.⁵ The Government of India allotted under the

original basic plan 2 lakhs of tons of rice, 1,68,000 tons of millets and over 10,000 tons of wheat for 1943.⁶ The plan broke down from the beginning. 3 lakhs of tons of rice were required from July 1942 to April 1943. The quantity received was only 88,000 tons. The deficit was 2,12,000 tons.⁷ For May, June and July 1943 Travancore should have got 82,160 tons. It only got a third.⁸ From August to November 1943 the allotment of all food grains taken together has fallen short of the deficit (deficit of 30,000 tons per month) by about 59% and that the net shortage on the basis of actual delivery was 64% of the deficit.⁹ In reply to Hon. Dr. Pandit Kunzru's statement of the position in January 1945 the Government of India issued a press statement. They admitted therein that the deficit for both the States was 4½ lakhs of tons and that they could allot for 1943 only two lakhs of tons of rice and 1 lakh of other grains.¹⁰ It should be noted that one-third of the grains imported was millets, wheat, gram and gram-flour to the use of which the people of the States were hardly accustomed. The position no doubt improved from March 1944. But what one has to notice throughout the period is the invariable failure of the Government of India to deliver even the allotted quotas of rice. The following statement will illustrate this fact in regard to rice.

Period.	Deficit Tons.	Allotted quota Tons.	Quantity received Tons.
1-12-42 to 31-7-43.	2,40,000	1,33,600	75,800
1-8-43 to 1-12-43.	1,20,000	32,280	20,720
1-11-43 to 31-10-44.	3,60,000	2,13,108	1,29,692
1-11-44 to 31-10-45.	3,60,000	1,60,000	28,915

Note: There was a carry over of about 96,000 tons.

6. 23-8-43 Press communic—Food control in Travancore, P., 57.

7. V. 21, P. 165.

8. Dewan's speech at the joint session of the legislature on July 19, Travancore Information, Aug. 1943, P. 11.

9. Food control in Travancore orders, etc., P. 77.

10. The delivery out of this allotment was far less.

3. V. 19, P. 399.

4. Dewan's statement—Assembly—Jan. 1943, V. 21.

5. Reply of Additional Secretary. V. 21, Jan. 1943. Assembly P. 12-13 and P. 22.

3. Failure of controls.

The government of Travancore was therefore forced to regulate the internal available supplies by controlling sales of paddy and rice and their transport. The rice and Paddy Acquisition Order empowering District Magistrates to acquire surplus stocks was passed in October 1942. But the stock account asked for from producers and merchants under the Government order was not produced at all.¹¹ Surpluses with producers holding above a certain minimum were ordered to be handed over to the Government. This order was again evaded.¹² The fixing of prices by Division Peishkars was hardly heeded by merchants. For some days they even closed the shops in Quilon.¹³ There was exorbitant increase in the price of food-stuffs.¹⁴ Supplies were inadequate in Parur and Kunnathunad Taluqs.¹⁵ Supply went underground in Quilon and its suburbs.¹⁶ Distress and starvation were prevalent among fishermen in the sea coast.¹⁷

4. Food production

To increase food production within the State by a systematic campaign was another policy inaugurated by the State. The seasons were unfavourable. We have two contradictory reports of conditions, for the year 1942-43.

The original report said :—

“The seasons were not favourable for important crops like paddy, tapioca, sugarcane, etc. Both the North-east and

11. This census was a farce because nobody co-operated in complying with it and district authorities did not understand its meaning. Dewan's statement V. 21 1943, P. 11.

12. A certain institution in South Travancore getting a return of about 2,000 paras promptly distributed the stock to its sub-institutions and got themselves beyond the purview of its rule. V. 21, P. 14, Dewan's statement Jan. 1943.

13. V. 20, 23rd July 1942, P. 187.

14. Vide adjournment motions V. 20, 23rd July 1942, P. 60 and 61.

15. Ibid P. 139.

16. Ibid P. 188.

17. V. 20, 31st July 1942, Questions, P. 1013.

South-west monsoons were erratic and heavy. The south-west monsoon set in too early and continued actively till the end of the year. This seriously affected the paddy crop throughout the State. In many places the crop was a complete failure. Heavy showers after sowing caused considerable damage to the paddy crop in the State”.

The slip pasted on this matter said :—

“The seasons were favourable for important crops like paddy, tapioca, cocoanut, sugarcane, etc.”.

Again there was crop failure in September 1944. “The September crop of 1944 was a failure on account of scanty rainfall” (Travancore Information V. 5, Dec. 1944, P. 6).

In the midst of such conditions, the Dewan did his best for increasing food production. When it was found that the owners of lands would not combine to dewater the lands under water in Kuttanad and cultivate them annually instead of once in two years, the Government issued a press communique to the following effect :—

“The only method by which Government can achieve this object is to apply the provisions of Rule 76 of the Defence of Travancore rules under which for maintaining services and supplies essential for the life of the community the Government may requisition the lands and deal with them in such manner as may appear to them to be expedient. They have accordingly decided to issue necessary orders, taking over the lands referred to above for purposes of cultivation during this season” (Press communique Oct. 1942).

This communique had the desired effect. There was no need to put it into force. The landholders fully co-operated in the scheme. The scheme was to bring into cultivation half the extent out of an area of one lakh and fifty thousand acres which lay fallow once in two years. But unfortunately the ring bunds put up to prevent flooding broke in consequence of floods in rivers. Government promised help to those who effected the necessary repairs and saved the crops. Since then annual cultivation of these lands with single crops

by dewatering them has become a regular feature of cultivation. Government also gives every facility for pumping water by engines worked by kerosene and crude oils from these lands. Various other schemes were also proposed for increasing food production. An area of 3685 acres cleared in forest areas was cultivated with paddy, tapioca and ragi in 1942-43. There were also schemes for converting single crop into double crop lands with the aid of lift irrigation. But what little was raised in these ways could only have gone to make up only a little of the losses of crops due to unfavourable seasons.

The biggest scheme which the Government have taken up is the starting of a factory for the production of fertilisers. The use of these fertilisers will double the yield of paddy in the State of Travancore and solve the food problem once for all for the State. "The output of the new industry will be 50,000 tons of ammonium sulphate annually, sufficient for the production of extra food for 25 lakhs of people. About 4,000 workers will be employed in the factory". (Extract from Indian Information Jan. 1945 P. 33. Extract from Evening Standard, London).

The success of any scheme of food production will rest on the re-organisation of agricultural economy. The parasitic elements which are burdening agriculture such as the rentier class, the money-lenders, owners in charge of agricultural processes for converting raw materials into finished articles for marketing, and traders, should be put in their proper place so that the cultivator gets a legitimate return for his labour. The structure of the agricultural economy will have to be so changed as to economise costs and obtain the maximum yield. Every facility by way of power and machinery will have to be provided for. Under-capitalised farming should be replaced by a system of agricultural production assisted with every kind of credit for achieving economy, efficiency, and service to the consumer. Radical alteration in tenures will be required. The agricultural labourer should be provided with a minimum of decent living. Mixed farming

by combining production of foodgrains and cattle foods is necessary, so that the livestock industry may be a useful adjunct for the cultivator. Breeding of fowls, pigs, fish and sheep has an important place to fulfil in the agricultural economy. There should be provision for creating work for the under-employed. In short, the agricultural economy should be so organised as to help in maximum production and provide a decent standard of living for the cultivator.

5. Procurement policies

A number of measures were adopted to facilitate procurement. Permits were enforced for movement of paddy or rice or for its sale from 8th January 1943.¹⁸ Transport by private lorries without permits was prohibited.¹⁹ The government found that many persons had misunderstood and were of the view that weekly returns need not be submitted and permits were not necessary for stocking and transport. In order to prevent secret hoarding and illicit transactions, the government issued a notification in Nov. 1943, "that paddy or rice stocked or transported without permit, or for which weekly returns were not submitted, were liable to be forfeited without prejudice to any penalty to which the stockholder or the person who transported the stock would be liable for contravention of the provisions of notifications on the subject". The Government also notified by a press note of November 1943 that "they would reject all petitions for withdrawal of prosecutions for offences in connection with the transport stocking and disposal of food grains, and that they regarded influential and rich persons who infringed the law in this period of food crisis as dangerously anti-social elements and they would be dealt with as such".²⁰

18. Notification (28) Food Control Orders 11-2-43.

19. Notification 58. Ibid 9-8-43.

20. Prosecutions started in the previous year were withdrawn to give an opportunity to people not to commit any illegal acts and to get their good will and co-operation for the policy of procurement. Dewan's statement V. 21 Jan. 1943, P. 19.

The experience of the Government of Travancore in the matter of procurement is of great value for future control of supplies and distribution. It was found that a special staff of Grain Purchase Officers was necessary if surplus stocks were to be collected and made available for deficit areas. These officers explained to the landholders the need for their co-operation in the scheme. But the statements of stocks from landholders could not be relied upon.²¹ The help of the village committees was sought by revenue officers in preparing these statements. The position did not improve. The village officers' statements of surpluses differed from landholder to landholder.²² So in February 1942 it was decided to collect paddy on the basis of the area of land, to exempt holdings of less than one acre from the scheme, and to raise the collection on a sliding scale for landholders who held above a certain area. But this scheme was defective, because the quota fixed had no relation to the yield of lands; secondly, even holders of one acre had to part with a certain portion of paddy and then to wait on Government for their supply particularly when the latter had not committed themselves to any scheme of rationing.²³ Thirdly, big landholders had to part with little under the formula based on acreage.

All these measures did not bring more than 38 lakhs of paras in the harvest of Feb. 1943.²⁴ A revision of the formula in fixing the quotas was therefore thought of. Government

20. Local police officials had power to prosecute those who infringed control orders. This power was withdrawn later in the latter half of 1943 possibly owing to indiscriminate prosecutions, and sanction of government was made necessary for each prosecution. The consequence was that the police became indifferent to this work.

21. You may take it that all the statements are false and misleading. Dewan, V. 21, P. 49, State Council Jan. 1943.

22. State Council V. 21, P. 14. President's statement about Village Officers.

23. State Council 12th Jan. 1944, V. 23, P. 52, Food Controller's speech.

24. Government's reply to Q. 35, V. 22 July 1943, P. 72. The expected gross yield was 400 lakhs of paras. One para of paddy = 11½ lbs. of rice.

thought that the quota should be fixed on the basis of yields. This information was available in the old Settlement Registers as the portion in kind to be paid to Government after deducting cultivation expenses and what was due to the cultivator and the landholder, has been calculated in these registers. This settlement assessment in kind was fixed as the quota to be collected from landholders. But the quality of the land might have changed. Or new lands would have been brought into cultivation. Then there was the question of the collection of surplus stock from big landholders over what was necessary for the maintenance of the family in as much as the settlement assessment would enable the government only to collect a third of the gross produce. The settlement assessment might leave little for the maintenance of the family in the case of the small holder. The smallness of the quota itself being a fourth of gross produce would leave a wide field for black marketing by the producers. When confronted with these questions, the government issued a press communique on 1st September 1943, which practically set at nought every previous formula and declared a policy of full power for the state to commandeer every bit of available paddy.

The general principle on which the purchase has now been ordered by Government is that the entire paddy produced in the State is at the absolute disposal of Government for general distribution among the people and that the entire quota is liable to be purchased by government compulsorily except such quantity as the landholder or the cultivator will be permitted to retain for purposes of seed, cultivation expenses and bonafide domestic consumption.

The procedure adopted for collection of paddy made the public suspect some foul play in the whole affair. As collection of the quota of grain varied from area to area landholders began to suspect that revenue officers had powers to vary the quota as they liked. The fact was that the government collected the grain in two stages, a basic quota on the acreage basis from all landholders and surplus stock above this quota from big landholders. In some taluqs the former work proceeded, while in some other the latter.²⁵

25. Dewan's statement, V. 21, Jan. 1943, State Council P. 102.

A perusal of the proceedings of the Assembly and Council of State indicate certain other difficulties in procurement. These were damages to paddy if not immediately removed from places of storage (Vol. 23 Assembly P. 78), delay in purchase of food crops (V. 21 Council, P. 47), and use of a bigger para for purchase and a slightly smaller para for storage and distribution (V. 21 Council P. 147).

6. Why procurement failed

As a result of various measures the government expected to collect one crore of paras of paddy in 1943 on quota and excess bases from landholders and cultivators. Their total collection however was not more than 65.36 lakhs of paras out of an estimated yield of 400 lakhs of paras or 1.6 of the yield.²⁶ In the adjoining state of Cochin it was 29,300 tons in terms of rice one yield of 73,426 tons or 2/5 of the yield. The quantity collected in Travancore in 1944 till the end of July 1944 was 70 lakhs of paras. If to this we add 28 lakhs of paras for the September crop on the average of the previous year, the collection would amount to 98 lakhs for 1944 or roughly 1/4 of the yield. This small improvement in procurement in 1944 was due to a greater efficiency of the staff, reversion to the older policy of procuring whatever could be had from the land-holders, and more than all, to the introduction of state-wide rationing which made it difficult for producers to develop black markets, and thus drove them to acquiesce if not co-operate in the commandeering policy of Government. If the adjoining state of Cochin succeeded in getting 40% of the yield, it was because of the greater integra-

26. We find that notwithstanding our best efforts not more than 50% of the total amount that was expected in paddy and rice has been collected from the state. And this is not withstanding control orders and a very large staff on this duty. Dewan's statement State Council V. 23, 12th Jan. 1944, P. 10. (2) Speaking of the conditions in the early part of 1943 the Dewan said in the State Council "I have very little doubt in saying that notwithstanding the arrangements made by Government, there is a very large number of people (a) operating to profit (b) smuggling and (c) practising active corruption. Instances have come to my notice so widespread so authentic, that I cannot shut my eyes to that basic fact. V. 21, P. 134.

tion in administration, greater public co-operation, less corruption among the staff, uniform and understandable rules of procurement, and more than all the simultaneous introduction of state-wide rationing along with procurement from January 1943.

7. Want of integration in administration

There is no doubt great difficulty in all Indian states in the faithful execution of government rules by the subordinate staff. Rule by ordinances and proclamations, and leniency in administration lead to a position when the orders of the Secretariat look on paper counsels of perfection, but administration at the bottom will vary according to the personality of the Tahsildar and the police officers. This want of integration becomes more apparent in states like Travancore ruled by a strong Dewan, whose energy and zeal for public work unsettle the routine work of subordinate officers and make them mere automatons, as many of whom never think or act for themselves in carrying out orders. And when too many orders and suggestions are poured forth from the Dewan to the bewilderment of the officers, they feel that their part of the duty ended with hero-worship and parrot-like repetition of these orders. They have often found too that the Dewan was an unceasing propagandaist and it was rather difficult for many to discriminate between propaganda and orders. Ruling as the States do by orders and ordinances, personal rule evinces a pathetic faith in press communiques. Achieving mass obedience even for revolutionary doctrines. How else are we to explain an order calling on all and sundry owners of land to submit a stock return every week of their paddy or rice, failing which they would lose the stock and be further punished? The situation demanded remedies far in advance of the present social structure which never considered profiteering by businessmen even at the cost of life of consumers, as criminal.

8. Corruption

Officers of government too were not above practising immoral profiteering so long as they could not be brought under

the clutches of the law. The first result of authorising revenue officers to commandeer paddy and rice quotas, and police officers to book persons acting against food control orders was that scope was provided for rampant corruption.²⁷ Government took steps to purify the administration but these were abruptly stopped. Traditional habits could hardly be rooted out by vehemence of expressions in press communiques and a theatrical prosecution of subordinates without sufficient evidence and consequent discharge of many among them.

9. Absence of Public Co-operation

It was a tragedy that the Government did not seek the co-operation of the political and labour party leaders whose assistance would have toned up the administration, created a public spirit in the producers and business men and facilitated equitable distribution. The state congress and labour leaders and their rank and file could not be expected to forget their sense of frustration and offer their unwanted help to officials. Barring some state congress leaders and workers who rose above prejudice and heartily co-operated with officials and all parties, their followers did not consider it wrong to profit by the black market while every other person benefited by it. Government subordinates were naturally careful, lest they might displease their bosses at the top of administration, in the selection of non-officials to local committees, by avoiding public leaders and workers who could have given active help in putting down black markets and in procuring maximum paddy from landholders.

10. State Vs. Trade Agency

Leniency and hesitation were evident in the policies of procurement. At no time was it the policy to collect all the

27. See President's statement in the Assembly V. 21 Jan. 1943 P. 167. Reference to an Inspector of Police. It came to the notice of Government that in recent times there were large number of mortgage and sale transactions in favour of certain officers or their close relations. Speech of the president, V. 22, Aug. 1943 P. 71

surplus grain from landholders. Grain Purchase Officers had to collect quotas according to certain formulas. Let us note what the Administration report of food supplies department in the Cochin State says on this point:—

Any such rigid standard is likely to work hardship in individual cases and may adversely affect the incentive to cultivation which may ultimately retard the production of paddy in the State. Cases are easily conceivable where any assessment based on a rigid standard will not leave sufficient quantity of paddy with the cultivator to meet his minimum needs due to the comparatively low yield of the land, failure of the crop or other like reason. It may also give undue advantage to persons who, owing to fortunate circumstances, could manage their paddy expenses with a comparatively smaller quantity. Hence the system adopted by us viz., to ascertain with particular reference to each individual case, the surplus paddy which a cultivator can surrender to Government after making provision for his minimum requirements such as domestic consumption, cultivation expenses and any other unavoidable necessity would seem to be most suitable to our present conditions.

If this policy which was first initiated by the State had been followed, and grain purchase officers collected all the surplus with a staff of their own, after fixing the quota themselves with the aid of village officers, there would possibly have been a greater amount of success in procurement. Much is made of the fact in a note by the Dewan that direct purchase by Government agencies was preferable to trade agencies.²⁸

28. Employment of trade agencies for purchase from specific areas was the first of these experiments. The system failed completely. The cultivator was evading sales to the authorised purchaser against payment of the price at control rates, and on the other hand it was extremely difficult to keep track of the disposals by the authorised purchaser of the stock procured by him from time to time. The purchase effected was of certain specified stock in the custody of very large land-holders and even there the progress of purchase was slow due to the obvious conflict of interests between the stock-holder and authorised purchaser. The same difficulty was experienced in the working of the import quota from the Madras Presidency by the wholesale merchants. Purchase and transport were sometimes suspected to be deliberately delayed with a view to create conditions of scarcity and possibilities of profiteering. Leaving aside the merchants, Government began to purchase the quota directly by themselves. Similarly in the case of local paddy Government started the programme of

It was not the agency that really mattered, but the need for the fixing of the quotas by grain purchase officers and their staff which any merchant might be asked to collect as was done in Malabar.

11. *Ban on milled rice*

Procurement was made more difficult in the State by the enforcement of an order that no owner, manager or other person in charge of a rice mill shall engage in the business of hulling of rice in any part of the state.²⁹ This order was promulgated with the best of intentions for encouraging the use of hand-pounded rice. The following were the difficulties experienced in Cochin State when they undertook sale of paddy in the early stages:—

When the milling of paddy was attempted to be stopped, the services of mill-owners could no longer be obtained. Other agencies were not forthcoming to take up the work of transport at reasonable rates. The officers experienced considerable difficulty regarding transport and storage. A huge staff was found necessary. Issue of ration in the shape of paddy was not liked also by a section of the public especially those living in towns. Our rice supply from outside is mostly as rice. There were also complications created by the fact that paddy was liable to shrinkage which varied with the variety and dryness of the paddy stored. Wet paddy has a tendency to sprout and became unfit for consumption unless milled immediately. It was not always possible especially in rainy season to get paddy in well-dried condition. Rapid movements of stock was found difficult in the case of paddy which owing to its increased volume took comparatively longer time and larger number of vehicles to move from one place to another. Report of food supplies department 1118.

To these may be added other difficulties, as the necessity to which certain class of labourers were put to, to purchase paddy and convert it into rice for which they could hardly

purchase through their regular local revenue staff of whatever stock was available with the more important among the land-holders. On the adoption of this programme the land-holders attempted to disperse their stock. (Food Control Orders in Travancore P. 73).

29. R.O.C. 2477 C.F.S. 1-2-43, Food Control in Travancore P. 30.

find the time after the day's work. Many more complications were equally created as sale of hand-pounded rice at a higher price in the black market, in as much as the Government permitted sale of paddy and imported rice alone through licensed shops.³⁰

Thus a greater task than what the revenue officers could shoulder was put on them. Even though prohibition of milling has not been of unmixed advantage to the people, it should be said in its favour that the ordinary consumers have not complained about this reform. The reform only strengthened the existing custom of using handpounded rice. In fact a great change which was necessitated by war conditions of using more milled rice was averted by this bold policy.

This policy of banning milling of rice will be more beneficial to the people if hand-pounded rice were also permitted to be sold in ration shops at a price fixed by Government.

12. *Absence of rationing resulted in failure of procurement*

But the real cause for the failure of procurement was the absence of a distributing agency which would make the black market a redundancy. A policy also of storing of paddy without quick distribution helped the black market and consequently created difficulties of procurement. A quick turnover would have solved some of the difficulties of storage.³¹

30. Mr. K. Kunju Panickar—May I know from government that by fixing the price of the local paddy without fixing the price of the local rice, people are resorting to all sorts of unscrupulous methods to see that paddy is converted into rice and then sold at Rs. 7 and 8 per para (control price is Rs. 4-8). Mr. K. R. Narayana Iyer (Director of Food Supplies)—Government are considering that problem V. 21 Jan. 1943, P. 25.

31. The following facts will indicate large retentions of paddy in storage: 1. 98 lakhs of paras of local paddy were purchased during the year and 61 lakhs of paras were rationed to public V. 24 Aug. 1944, P. 25. 2. In answer to a question, Mr. K. R. Narayana Ayvar, Director of Food Supplies said on 21-8-44 V. 24, P. 330 that 135 lakhs of paras were purchased since Jan. 1943 and there was a balance of 51 lakhs of paras in July 1944.

Mr. K. K. Kuruvilla, M.L.C., referring to the sufferings of the poor in consequence of the absence of a simultaneous policy of distribution along with procurement said:—

If therefore you allow these people to beg, borrow, or steal, to go freely in this country till government realise their purpose and ideals of purchasing the quantity of rice in this country and of getting adequately for a just distribution, till that time, my request is that the rice which comes into this country should be allowed to go from place to place without interruption.³²

Mr. G. Narayana Aiyar referred to the Cochin system where government distributes rice at a particular price only to the poor or average man and the rich are all allowed to purchase at any price they can afford to pay.³³

13. *Inequalities in distribution*

Government introduced in Feb. 1943 a scheme of distribution with the Division Peishkar as Divisional Authority, Tahsildar as taluk authority, local committees for preparing a demand list of requirements once a fortnight and licensed merchants selected by Tahsildars for distribution. The local committees were to issue ration cards to each householder "specifying the full quantity in terms of units to which he is normally entitled in the event of cent per cent supplies". "According to the actual allotment during each instalment the value of the unit mentioned in the card will vary". Under this scheme the Divisional authority could make direct allotments to Government servants and institutions.³⁴ At the top a Director of Food Supplies was appointed. A Food Advisory Council comprising 4 members of the Assembly and 2 members of the State Council was also formed.

Let Government themselves speak how this scheme was worked:—

Mr. A. S. Damodaran Asan (State-rationing officer)—With regard to rationing, even before we introduced this rationing under the State Rationing Order, there was a system of rationing in most of the taluks.

32. State Council proceedings V. 21, Jan. 1943. P. 49

33. Ibid P. 50.

34. G. O. Roc. 2382-43,15--2--43.

That was done by the Tahsildar of the taluks. What they did was to prepare ration cards after taking a census of the population of the taluk, issue the cards through the committee members and the conveners, and distribute the stock allotted to the taluk by the Government in an even manner. Of course in certain taluks Tahsildars kept large portions for special supplies and gave only a small portion for general distribution. But in many of the Taluks the Tahsildars never cared to reserve any portion of the stock with them for special supplies and gave away the whole allotment for general distribution in the taluk. There were complaints on account of the absence of a uniform system in all the taluks. Another complaint was that there was no provision for checking the census taken and that persons who gave false figures were getting larger quantities of food-stuffs while those who gave only correct figures were suffering.³⁵

In a press communique of 23rd August 1943 Government admitted that "inequalities have been noticed in the matter of distribution as among certain groups of individuals and institutions".

Mr. K. K. Kuruvilla said in the State Council:³⁶

"In distributing them the district magistrates say that so much is intended for Government servants, so much for staff, so much for a particular department, and so forth. Now I ask you what about rice for the man in the street, a labourer, or a worker, who go to a particular place for rice, came back at times with tears in their eyes, and at other times after paying 20 to 21 chuckrams a measure" (Prewar price is 3½ chuckrams a measure).—Out of these 17,400 paras of paddy allotted for Tiruvalla Taluk for a fortnight, 6,583 paras are reserved for Government servants and 2,800 or 3,100 paras for private institutions. So out of the total allotment, there remains only 7,400 paras to be distributed among the people of 26 pakuthis with a population of 3,35,000 and out of these 3,35,000, nearly 3,00,500 depend on Government supply. Therefore nearly rather more than 3 lakhs of people have to be supported by less than 50% of the total allotment sent to that taluk (14 paras of paddy = 162 lbs. of rice).

It should also be noted that each department of Government tried to get paddy in their own way "when no control measures came into force".³⁷

35. Speech of grain control officer in State Council, January 1944 V. 23, P. 567.

36. 27—1—43 V. 21, P. 49.

37. Dewan's statement V. 21 Jan. 1943 P. 20.

The local village committees were not properly selected by Tahsildars in spite of the orders of Government to associate all groups and particularly to take the advice of members of legislature in making selections.³⁸

Members of the legislature voiced the public discontent against the vagaries of distribution by Tahsildars with the assistance of village committees and retail merchants.³⁹

38. (1) Mr. Damodaran Asan's (State-rationing Officer) reference in Council of State to such complaints Jan. 1944 V. 23, P. 76; (2) "So far as I know I am not aware of a committee having functioned in Alleppey for the past 5 months". Mr. N. Narayana Kurup 10th Jan. 1944 V. 23, P. 6.

39. 1. Mr. K. Kunju Panicker's of a nazi=1½ oz. as adult ration in Kottayam Municipality V. 21, P. 27, Jan. 1943.

2. Mr. N. Narayana Kurup's adjournment motion on the dissatisfaction and unrest prevalent among the public due to the disparity and inequality shown in rationing rice in the different towns of the State and the coastal areas V. 21, Jan. 1943 P. 32.

3. Mr. K. R. Narayanan's adjournment motion on the serious situation created in Kottayam division in general and in Vaikom taluq in particular on account of the present scarcity of essential food materials (Ibid).

4. Mr. A. K. Kumaran Vaidyan's adjournment motion about the distress of the people of the State on account of shortage of food materials (Ibid).

5. Mr. N. Narayana Kurup's adjournment motion of 31st May 1943 on the distress, misery, and starvation and bad dieting to which a vast section of the rural folks in the State who have no paddy of their own are subjected to due to the non-supply of controlled or uncontrolled rice or paddy and the consequent prevalence of contagious diseases among them and the necessity to adopt uniform rationing of food supply throughout the state V. 21, P. 194 May 1943.

6. Mr. M. R. Narayana Pillai's motion about the sad consequence that may result to the people by the present system of food control, Ibid.

7. Adjournment motions of Mr. K. Dominic Joseph, and Mr. K. S. Sebastian, Ibid.

8. Mr. Kunju Panicker's question how people could live on 2 to 4 oz. a day. Ibid P. 289.

9. Mr. Kerby, special rationing officer of the Government of India must have been critical of the system of rationing as would be evident from the remarks of the Dewan in his speech of July 1943

14. Double ration for Government servants

In consequence of public agitation against these inequalities in distribution, Government slightly altered the scheme on 23rd August 1943. Landholders and Government servants however got a double quota as ration (2 Nazi of rice for a day for each adult). Government dared not fix the same ration for landholders as for others as such a course might react on production. A basic ration of 3 oz. of rice and a mixed ration of 5 oz including bajra and wheat was fixed for all. An inspecting agency for checking distribution was also announced in the communique though nothing was heard about its working later.

The public could not reconcile themselves to the position of a special ration for all Government servants which only widened the gulf between the latter and themselves. It was a puzzle that the Chief Secretary to Government should defend a higher ration for Government servants in the Assembly in July 1943.⁴⁰ On the other hand the richer among them can afford to live with other food articles than rice. Mr. K. Kuruvilla asked a pointed question on this subject in the State Council:

"When the boat is going to sink, should they (Government servants) be the first to get into the life-boats leaving the other passengers to be drowned".

15. Government reluctant about rationing

The fact was that Government was rather afraid to introduce rationing, as the quota of imported rice was not dependable, and as procurement proved a hide and seek game

in the Assembly when he said: "He has gone away a converted man; at all events I have reason to think so (Travancore Information V. 3, 12th Aug. 1943 P. 13).

10. Mr. K. M. Kesavan's questions whether any rationing prevails in coastal taluqs and reply of the Director of Food supplies that Tahsildars had discretion in the matter of supplying to the most distressed and needy section of the population and that there was no rationing in non-municipal areas V. 22. State Council. Aug. 1943, P. 381 and 382.

40. V. 22, P. 223.

between landholders and the grain purchase staff. They were also staggered by administrative difficulties in the introduction of statewide rationing.⁴¹ The Dewan knew fully that the latter alone would solve the inequalities of distribution.⁴² But he was not sure of its practical working from the start.

"If Government were to take upon themselves the purchase of rice for the whole State or for a proportionate area of the State, the result will be the exercise of a great deal of power. Possibilities for irregularities would at once ensue...After all we have to rely on human agencies. There is the wholesale dealer as well as the retail dealer. With a certain amount of give and take and arbitrary action in some cases on the part of magistrates, we get on somehow...If everybody is both a magistrate and wholesale dealer or retail dealer, this stranglehold of officialdom on the people and the possibilities for clash between the people and the officialdom may become so extensive that I do not think honourable members would relish such a change."⁴³

The Dewan was equally doubtful about public good-will for rationing.⁴⁴ Experience during the last war about Government opening rice depots was 'neither encouraging nor satisfactory'. (Dewan's speech V. 20, State Council August 1942, P. 133). The Dewan therefore stuck to the policy of not running State depots. This was in marked contrast to the policy in Cochin State and some British provinces where shops were directly managed under Government control. The Dewan had also doubts about the ration card system about which he had many complaints and he wanted to gather more experience whether ration cards or village committees would be preferable. Even in Municipalities it had only been introduced as an experiment.⁴⁵ By middle of June 1943 Government have introduced card-rationing in municipal areas only and its working was being watched.⁴⁶ It

41. See Chief Secretary's speech in the Assembly, V. 22 July, 1943, P. 222.

42. The defect in regard to distribution of imported rice can be cured only by the introduction of a state-wide rationing scheme. Dewan President's statement V. 21, Jan. 1943, P. 102.

43. July 1942 V. 20, P. 347. cmfwyp cmfwypwm

44. Dewan's speech V. 21, Assembly proceedings, Jan. 1943, P. 125.

45. Ibid P. 180.

46. Ibid, Reply of Director of Food supplies to a question P. 289.

was noteworthy that the legislatures also shared in the halting attitudes and vacillating policies of Government towards rationing.⁴⁷

16. State-wide rationing

Slowly government was compelled by force of circumstances and public opinion to introduce statewide rationing, in December 1943 in Trivandrum City, in Jan. 1944 in Alleppey town and 8 other taluqs, and in February 1944 in all other taluqs. They fixed the ration as 6/7 nazi of rice (8 oz.), 3/7 nazi of wheat (4 oz.), and 1/2 nazi of bajra (1.3 oz.) per adult per day.⁴⁸ Rice ration was further increased to one Nazi of rice = 9.3 oz. from 26th November 1944. Special rations for government servants were discontinued. The eyes of the Government of India were opened by the statements of the Dewan at the Food Conference in Delhi in October 1943 about "unparalleled distress, chronic undernourishment and famine conditions unrelieved for a year", the later press statements of the Hon. Dr. Pandit Kunzru, and the representations of the regional food commissioner, Dewan Bahadur C. P. Karunakara Menon. With the introduction of state-wide rationing the sphere of black markets began to dwindle since March 1944.⁴⁹

47. Joint resolution of the two houses on 27th and 28th Jan. 1943.

1. That a system of distribution of all the available supplies of paddy within the State on a per capita basis need not be given effect to.

2. That a system of distribution throughout the state subject to certain reservations may be adopted. Food Control in Travancore P. 32.

48. 9th Feb. 1944 Press note.

49. During 1943 black market for paddy and rice was recognised as a necessary adjunct to State distribution by public opinion.

1. Sale of Kottar rice at Trivandrum at Rs. 17 with a margin of Rs. 10 per kotta July 1942 V. 20, P. 346.

2. Sudden rise in the price of rice by Rs. 3 per bag in Alleppey and Kottayam V. 20 State Council, August 1942, P. 370.

3. Black market sales in Mavalikara, Jan. 1943 V. 21 P. 88.

4. Hoarding of paddy for transport to hills, Director of food supplies 27-1-43 State Council V. 21, P. 68.

5. Paddy is procurable during nights—Mr. K. K. Kuruvilla, V. 22 State Council, Aug. 1943, P. 409.

17. *Insufficient and unbalanced food*

How then did the people manage to get their food during this period, before the introduction of state-wide rationing? The Dewan said that "we have been reduced to the extent of relying largely on tapioca because of the shortage of rice".⁵⁰ Even as late as July 1942 the Dewan said in his statement before the Assembly that "any restriction on the export of tapioca will be to the disadvantage of the State". But he had to revise his views and appeal to the people to eat the very thing which he had condemned from several platforms as an unwholesome food. Tapioca export was prohibited. Its price was fixed but it always sold at a higher price. The poorer middle classes began to live on one meal. The poorer classes began to drink more of rice gruel and eat even boiled tapioca leaves. Some of them began to use cocoanut oil cakes as an article of food.⁵¹ Bajra and wheat, though they were novel articles of diet were equally consumed as hunger knows no taste. Groundnut cakes and groundnut were also consumed in Shertellay area as would be evident from the trade returns of Cochin merchants and the sales of local merchants. It is not possible to explain these sales as consumption by cattle or for manure purposes as no one uses them for these purposes. Also a kind of wheat flour which was unfit for human consumption, and 'similar supplies' had to be distributed to the consumers.⁵² Gram and Gram-flour were sent as substitutes for rice by Government of India.⁵³ The Director of Indian Medical Service Major General Hance reported in January 1944 that the Government of India would not be able to supply more than half their requirements by way of rice and they should take to other grains "if progress

50. V. 21, Assembly, P. 6, 26th Jan. 1943.

51. In answer to a question by Mr. K. P. Abraham in the Assembly, Government replied that (punnac refuse of cocoanut copra) was not a desirable human food, could not be made an adequate food in combination with other cheap articles, and in some coastal areas punnac is resorted to as food by the poor 22—7—1942.

52. Dewan's statement V. 23, Assembly—Jan. 1944, P. 2.

53. Note by the Dewan—Food Control in Travancore, 1944, P. 77.

in deterioration in health were to be avoided". Though dietary traditions cannot be changed suddenly, it is unnatural to think that a person will rather starve than take to grains to which he is unaccustomed. The better classes who could afford to live on various kinds of food may reject these grains but not the needy and the starving. The problem was entirely a different one, it was the high price that stood in the way of using these grains like wheat and Bajra. We have dealt with the price factor as a cause of famine elsewhere. Suffice it to say here that fish, grams, and cocoanut which could have supplemented a tapioca diet were not within the reach of the poor classes.

18. *Consequences of partial starvation*

These conditions of partial starvation forced the helpless among the people to leave the area. The able-bodied who could leave for work to the estates or for labour elsewhere emigrated from Travancore. "In the town of Kottayam the beggar nuisance has become a veritable menace largely after the migration of hundreds of people from Shertellay and other places" (Assembly V. 22, July 1943, P. 141). Another event of great significance was the exodus of about 12,000 people to Malabar from the Kottayam division.

19. *The exodus to British Malabar*

This great event unfortunately has not received the public attention it deserves. Owing to the high prices of rice since the fall of Burma and the absence of any form of rationing in rural areas till March 1944, a large number of people habituated to the cultivation of uplands in Travancore left their native homes in the hope of settling in similar uplands in Malabar. The attractions were the provisions for security of tenure under the Malabar Tenancy Act which were not available in Travancore, the availability of waste lands with the landowners of Malabar who according to law have a traditional proprietary right over all classes of lands and forests, and the lowness of rent. Lands have become fractionised into holdings of 5 or 10 cents in Travancore and

they sold at high prices owing to the growth of a new class of investors in land. Older settlements of Travantoreans in Malabar were mainly by Syrian Christian planters who could invest money and develop coffee, tea, rubber and orange cultivations. But these enterprising estate-holders could not absorb the settlers since 1941 whose number would not be less than 12,000. The year 1942 brought in a few settlers; 1943 and 1944 were years of a continuous and huge emigration. These settlers, mostly Christians and a few Hindus brought about Rs. 200 each by selling all in their native homes, spent part of it in travelling, paid another portion as rent advance to the landowner, and began to cultivate between 5 and 8 acres on the average. Tips and commissions to land brokers, and to agents of landholders and considerations for different claimants of ownership had also to be paid out of their slender pockets. They negotiated unsympathetic if not hostile surroundings. They first settled in the jungles and then cleared them and thus caught malaria. The creation of slow-moving streams for paddy cultivation helped in the breeding of mosquitoes. Actual rationing began in Malabar only from November 1944. The settlers had to buy rice at black-markets. Tapioca became their main food. Beef they cannot get. Fish sells even today at fancy prices. They have to buy the other necessities by selling tapioca which was their main crop. The local Government have banned its export. That lowered their purchasing power still. The exodus was to the uplands, and the Waynad area above 2,000 feet running parallel to the coast between Calicut and Kanhangad, a distance of about 100 miles. My enquiries of death rate in one colony of 3,000 population showed 114 per 1,000 in 1944. The total births were 10 per 1,000. In all the colonies there have been excess deaths over birth. These deaths have occurred consecutively for two years 1943 and 1944. Quinine pills are not available as before. The hospital records at Tellicherry and Manantody will indicate the number of deaths of in-patients. Gastro-intestinal disorders due to partial starvation and eating excess of tapioca, anaemia, malarial fever and enlargement of the spleen are the common diseases of these colonists.

A severe form of malaria was cerebral malaria. The patient suffering from this disease lost his brains. One consequence of these settlements has been the growth of orphanages at Marikunnu, and Peravoor, for the poor or orphaned children of these colonists. They have also been admitted in older convents at Kolayad and Manantody. Those who had some hopes of living in their native country as compared to the conditions in these colonies returned back, some, after leaving their cultivations and losing their all in them, to their native country to struggle there for their existence or to die of malaria. It is a tragic story of terrible deaths of children and old persons and of chronic diseases for the middle aged. They travelled between 125 and 225 miles by railway train and 80 to 100 miles by road without any kind of help for the development of these areas either from the Government of Travancore or that of British India. They are hard workers who have cleared these malarial areas during the last three years and introduced paddy, tapioca, ginger, turmeric, rubber, oranges and so on. They are to-day heavily indebted to the moplal traders and money-lenders who take from them promissory notes of an additional 50% of the actual principal lent. This community of Syrian Christians have got the spirit of endurance in them to raise crops amidst malaria and wild animals, themselves living in open huts having little protection of any kind. What they require is an unlimited supply of quinine pills, secondly the raising of the ban on tapioca, thirdly credit for the purchase of goats, cows, and fishing nets and for raising short and long-term crops. I have represented all these facts to Government. The settlements organised and assisted by Government in Coimbatore and Salem Districts are a miserable apology for assisted colonies. A considerable number of houses are untenanted; non-agriculturists like gold-smiths have been chosen as settlers; the men in charge have little faith in these colonies. In some cases the lands are gifts to agricultural labourers working in the lands of other landholders. Whether Government wakes up or not, here are a fine set of men who take gold out of land which was barren for centuries, and assistance to whom

will build up a bold and intelligent peasantry on the countryside. Commercial banks can take a lead and advance money to these settlers. The Government may give all the facilities which they are at present giving and propose to give to 'settlements' and under 'the Grow More Food Campaign'. These settlers have increased food production in paddy, tapioca, plantains and other vegetables without any aid from Government. It is hoped that those who can afford to help them will come forward and give a helping hand to them so that they may not cease to exist by malarial deaths and prolonged deterioration in health and these lands again become barren of cultivation as of old. The department of Public Health have taken up a regular campaign against malaria in these areas. If only the settlements are taken up by the Agricultural department, they will show better results than the agricultural department had so far. Government should remove the ban on tapioca. And if tapioca is so much necessary as an article of food for Malabar that the ban cannot be removed, then these growers are discharging an essential function and they should be protected from the clutches of money-lenders and traders, and be assured every facility for production and a fair price too. May I appeal to the Government of Travancore, and the Syrian Christians of Travancore to come to the rescue of these people? The reader may usefully peruse the pamphlet on the 'exodus' published by us which contains fuller information on the subject. Since writing this note, we understand that Government have issued eviction orders against these settlers at Sultan Battery. We hope that these orders will be withdrawn and Government will show some consideration to these settlers who have improved these lands and raised food crops.

20. Famine deaths and diseases

With what consequence did the people live on this insufficient and unbalanced food? The Dewan paid "a tribute and homage to all the people of Travancore who though half-starved and badly hit by the war had, thanks to their loyalty and devotion to their Ruler, refrain-

ed from those violent crudities and manifestations which have disgraced other parts of the country where the food problem was acute" (V. 21, January 1943, P. 164). But the calm suffering of the people would hardly help in reducing the number of deaths and diseases caused by food shortage.

The chapter on vital statistics and public health details the consequences. Suffice it to say here that :

1. The number of registered deaths in 1942-43 and 1943-44 exceeded the deaths of prewar years by 45,000.
2. These excess deaths calculated as 15 per 1,000 (the census average in the vital statistics enquiry of 1941) amounted to 66,700.
3. These excess deaths when calculated at the death rate of parish records for eight affected taluqs and added to the previous figures would amount to 1,13,000.
4. These excess deaths when added to those of 1940-42 due to unemployment and high prices as calculated on the basis of 15 per thousand would amount to 1,35,000.
5. Deaths by dysentery increased by 50% from 6,152 in 1939-40 to 9,321 in 1942-43.
6. That deaths by diarrhoea and famine oedema constituted 2/3 of the number of deaths in 1942-44 as would be evident from parish records.
7. That, while the number of registered births were in excess of registered deaths in 1939-40 by 10 per 1,000, the excess number of registered deaths over births ranged between 1 and 7 per 1,000 in the affected taluqs in 1942-43.
8. That the ratio of registered births to 100 registered deaths fell from 203 in 1938-39 to 152 in 1942-43 for the whole state.
9. And that the following was the excess death rate in the affected taluqs on the basis of parish figures and official figures.

Average excess death rate per 1,000 population for each year.

	1940-44 (4 years average)	1942-44 (2 years average)
Parish figures for 3 taluqs ..	15.75	20
Official figures for 8 taluqs ..	7.4	9.63
Parish figures for Shertellay Taluq ..	19	23.25
Official figures for Shertellay Taluq ..	9.5	10.5

10. That the number of diseases treated in the Karapuran C.M.S. hospital increased between 50 and 100% particularly in respect of Oedema and dropsy, diarrhoea, anaemia, scabies, digestive troubles.

times the number ulcer cases in 1942), leprosy and pyrexia of uncertain respiratory infections, round worms, ulcers (it was more than three origin, thereby indicating conditions as in famine times.

Where however rationing has been introduced early as in British Cochin, the phenomenon of excess deaths over births which happened in Shertellay, Ambalapuzha, and other coastal taluqs of Travancore was not at all noticeable as would be evident from the following parish record.

		Births.	Deaths.	
British Cochin.	Cathedral.	213	177	1942-43
		248	218	1943-44

21. Problems of transport and shortage

We shall now deal with state-wide rationing from March 1944 and experiences in its working. Along with this subject we shall also consider the various connected problems of transport, storage agencies for distribution, prices and margins, quality of food-stuffs and future policy.

Transport and storage created any number of problems. There was the damage caused at the wharves and often railway platforms by exposure to wind and rain. Rice and other foodgrains were kept for long periods in Karachi and other places for want of shipping space and wagon facilities. There was no co-ordination of various transports by rail, by sea and by backwaters. A single wet rice bag will do for the creation and manifold multiplication of weevils which feed on the rice. The more nutritious the rice the greater are the chances of their rapid spreading. In a damp atmosphere they multiplied all the more. The rice bags were damaged further when transported by country crafts from Cochin to Alleppey.

"Transportation, handling and storage charges work out to Rs. 2-8 to Rs. '3 on every bag of rice (60 lbs.) transported from Cochin to Alleppey or Trivandrum. This transport very often involves considerable damage to and loss of grains on account of wetting due to stress of weather and sinking of canoes in the backwaters".¹

1. Director of Information. April 5, 1944—published in *The Hindu* of April 10, 1944.

It should be noted that canoes with rice bags were sunk in the backwaters. Rice bags damaged by wetting or restored to country crafts by removing them from the waters easily spoil the other bags. And when they are stored in godowns not scientifically constructed and with crevices in floors and walls, they become a fertile soil not only for the growth of moths and weevils but also for the sprouting of the paddy and sometimes for the growth of paddy plants too. In addition to these troubles there were those created by pilferage in transit. Boatmen were paid after many months in 1943 as transport officers were not provided with cash to make immediate payments. Possibly the boatmen reimbursed their pay to themselves by sharing some of the rice bags. Government appointed a special district magistrate in January 1944 to commandeer canoes, boats and other vessels and also godowns and other buildings. The Dewan explained the method of transport in one of his speeches in the Assembly in August 1944 (V. 24-2, P. 42):—

A special officer has been appointed and 400 policemen with a supervising staff are functioning on escort duty and checking. Nevertheless transport was not as quick as could be desired and pilferage and damage could not be avoided. Efforts were therefore made to transport by sea from Karachi to Alleppey and Trivandrum which saved the situation. The State purchased some schooners and kotials. The War Transport and the Indian Shipping Controller rendered valuable assistance by providing a shuttle steamer service.

The Dewan estimated the loss by damages to paddy and rice as one crore. Difficulties were also experienced in commandeering country canoes. Many boatmen registered themselves in Cochin, thus making it impossible for the Government of Travancore to interfere. Also, owing to inexperience, more canoes than what were necessary were commandeered.²

2. "The Government consider that it is not necessary to commandeer and keep in their control vallams (country boats) to a greater extent that may be actually required to meet the present situation. This is being investigated and it is anticipated that Government will be able to release immediately about 400 vallams out of nearly 1,000 odd vallams which have been commandeered". (Pre communique of 3rd Jan. 1944. P. 112, Food control in Travancore).

The owners of canoes complained that foodgrains were not immediately unloaded and they had to spend more days at destinations for which they were not paid. Some of them also complained of damages to their boats for which they were paid no compensation.

Godown accommodation was another problem. When there was not a quick turnover in 1943 owing to the poor spending capacity of Division Peishkars and when paddy had to be stored, (as rice milling is prohibited) storage became an acute problem. A sufficient number of godowns were no doubt obtained,³ but it would take a long time before scientifically constructed godowns came into existence and helped in minimising the damage to foodgrains by rats, weevils, and moths. The recent publication of the food department of the Government of India on principles of cereal storage may be usefully followed. In this connection the efforts taken by the Government of Mysore for the preservation of grain by a special staff are noteworthy. We have appended a note on pests of stored rice at the end of this chapter. The Government of Travancore provided for a budget of eleven lakhs for procurement, transport, storage control, and distribution of food-stuffs. (V. 24, Assembly, 14th Aug. 1944, P. 25). But one does not know from these figures the actual expenditure on the food department, the amount that should be borne by the consumer, and that set apart for construction of godowns.

22. Distributing agencies

The next problem was that of distribution of the stored paddy, rice and wheat to the consumer. Government originally

3. Government are now using 388 godowns for storing the food grains. Besides these godowns there are granaries hired for stocking local paddy. Of the godowns 86 are Government buildings and 302 have been hired from private owners. The total storage of these godowns exceeds 20 lakhs of bags. Three permanent godowns at Trivandrum and two at Alleppey have been constructed at a total cost of Rs. 3 lakhs. (V. 24, Assembly, Aug. 1944. P. 40).

thought of permitting retail distributors to buy grains direct from Government, so that the margin might be reduced.⁴ However, the system of wholesale distributors came into being from whom all retail traders purchased the grains. Afraid of the losses incurred in the initial stages in the direct storage of food grains by themselves, Government introduced another set of big wholesalers called 'Alias' (foreign merchants in Alleppey and other towns) from whom country wholesalers bought and distributed to retail shops. The existence of too many middlemen is in direct contrast to conditions in Cochin where Government acts as the wholesaler and sells to ration shops. Another complaint was that when government measured paddy to wholesalers, a bag of 8 paras measured 2 to 4 endangazis short i.e. 2 to 4%. There was still another complaint about inequality of measurement which was however set at rest by the introduction of standard measures from January 1944.

23. The co-operative organisation

It is surprising why the co-operative organisation has not been actively promoted in the State of Travancore. The Government have not only no objection but on the other hand advise the people also to combine into co-operative societies. However there is no active policy of promoting them. In the midst of corrupt trade practices by private traders, the

4. If the retail distributors are allowed to purchase directly from Government godowns, the intermediate agency could be eliminated and the profit now allowed to wholesale distributors avoided for the benefit of the consumer. But the services of wholesale distributors are necessary for retail distributors who have only to deal in small stocks and whose centres of distribution are situated far away from the Government godowns. Therefore the retail distributors who want to get their stocks from the Government godowns directly will be permitted to do so, while the other retail distributors must get themselves registered with an authorised wholesale distributor for the supply of rationed articles (Circular 26th Nov. 1943—P. 108-109. Food Control Order).

societies too are not above such methods. The Chief Secretary to Government referred to a co-operative society in the city of Trivandrum which acted partially in the distribution of sugar. I myself have seen in a co-operative store at Ambalapuzha the issue of receipts for purchases without carbon copies, thus making it easy for the office staff to note any quantity they liked in the counterfoil of the receipts. At a place near Angamali the people complained in January 1944 that while the price for thirty-seven ounces of rice is $7\frac{1}{2}$ annas, the store charged them $8\frac{1}{2}$ annas. It is indeed a sorry tale that, while both the Dewan and the leaders of the State Congress are agreed in at least one respect, namely in showering encomiums on the people of Travancore for their literacy, public spirit, desire for a higher standard of living etc., that the co-operative organisation is undeveloped and that co-operative public opinion is not sufficiently strong to maintain the administration free from malpractices. Not that the Dewan and the State Congress are in any way mistaken in their judgment of the existing social standard. There are some societies too which give efficient service to the people as in Karthikapally taluk. The State Officers should be definitely told that they should enlist the co-operation of all groups irrespective of their political differences with the Government in power. There should be a Registrar solely for Co-operative Societies. There should be a special Joint-Registrar for promoting the store movement. District Co-operative wholesale societies and primary stores are today helping in the distribution of food grains in some British Indian districts. They are acting as the agents of District Collectors for procurement through a system of branches and by distributing food articles to the several stores. The same method of procurement and distribution ought to be possible also in Travancore.

24. *Need for audit staff*

One great defect in the present policies of procurement and distribution is the absence of a checking staff. The Grain Control order in Madras province is enforced by Commercial

Tax Officers and their staff who insist on certain returns and check the stocks of merchants. Where the distributing agency is the co-operative store, audit is done by the staff of the co-operative department. Here too there are any number of loopholes which make it easy for merchants to conduct a black market. In Travancore where a tight procurement policy is followed, the need for checking traders' accounts is greater than in the province of Madras. The ration shops again get little inspection except from the taluq rationing officers who cannot do justice to audit work. Considering the fact that the revenue department is responsible for safe custody of procured grains and the Food department for proper distribution, the checking agencies should not be under the control of these two departments, but should be a different one under the Finance department. Such a policy will tone up the system of accounting and minimise malpractices in State godowns and distribution shops.

25. *High prices for food grains*

While too many middle men agencies increased the price for the consumer, various other causes too contributed to a high price. Rice was imported at very high price from several provinces. Madras cost Rs. 19 per bag of 2 maunds, Eastern States Rs. 36, Sind Rs. 39 and Punjab Rs. 47. Government therefore fixed a pooled price of Rs. 25 per bag weighing 156 lbs of rice in June 1943. It was raised to Rs. 28 per bag of 160 lbs. in September 1943, on the ground that the major portion of the consignments imported by Government has been from distant areas like Sind, Baluchistan and Punjab. It was further raised to Rs. 29 in December 1943, while the same bag of rice (160 lbs.) sold at Rs. 27-5-8 in Cochin and at Rs. 20-4-0 in British Malabar. The Regional Commissioner of Food Supplies said in a press interview on 12th April 1944 "that the Government of India by fixing the ceiling price of rice, wheat etc., for the whole country including the surplus provinces, and by other measures like making purchases themselves, expect to stabilise the prices of foodgrains and to bring them down to lower levels than those obtaining at present".

There was some lowering of the price by the exporting provinces, but while this increased the margin of profit to Government, it did not benefit the consumer at all both in Travancore and Cochin States. The question of the man in the street is something like the following :—

I live in British Cochin and I pay 4 as. 3 ps. for an edangazi of rice weighing 37 oz. My neighbour who resides within a furlong of my house in the State of Cochin has to pay for the same quantity 6 as. 4 pies, and my other neighbour within 3 or 4 miles in the State of Travancore pays 7 as. 2 ps. for more or less the same quantity. Why are my neighbours penalised to pay a higher price for no fault of their own?

The only defence in support of this inequality is that these three areas comprise independent governments to which the Government of India cannot dictate. But will this argument hold water for a moment? The poorest country where people live on rice gruel and tapioca roots, where the prevailing lowest unit of currency is less than 50% in value to that in British India, where the people have reached the limit of sartorial decency in their dress, and where the income of more than four-fifths of the families is below Rs. 300 per annum is hardly the place for any government to collect the highest price by sale of paddy and rice. In richer countries prices have been kept down and the cost of living index is lesser than in India. The inflation of the currency is mainly responsible for the sufferings of the poorer consumer classes throughout India. The present difficulties regarding imports and want of shipping and wagon facilities are all due to war conditions. The Government of India ought to come forward to equate the price of rice in the Native States to that in British India and meet all the losses which may arise in this respect. It was not merely food shortage but the high prices that were the cause of partial starvation and consequent diseases leading to deaths. If it were possible to find money for the conduct of a big war, it ought to be equally possible to find money too to mitigate the sufferings of the poorer classes who are the victims of an inflated currency.

26. *Quality of grains and health staff*

In Travancore the price of food grains became high for other reasons too. There was no reason to increase the price of a bag from Rs. 28 in September 1943 to Rs. 29 in December 1943, unless it be to make up the losses from transport and storage caused by the inefficiency of the Government Officers. Possibly the increased price was due to charging godown rent, interest on bank overdrafts and loans, and insurance charges. There was equally no reason why rice should be sold in Travancore at an anna more than in Cochin for every edangazi of 36 or 37 oz. Sufferings were equally great in Cochin due to high prices but the harbour gave employment to tens of thousands. The military and the air force gave work to many. The position in Travancore was worsened by the fact that the rice which was released for sale after the introduction of state-wide rationing was a badly damaged one. The protein contents of Sind rice have been completely eaten away by the weevils. Some of the rice was soft and brittle. Some contained dirt, grit and dust. If it was washed with water to remove its rancidity, it was so soft that it became a paste. Government was only interested in selling their stocks. To a question in the Assembly in August 1944 about the distribution of unwholesome food materials and what punishment was meted out to the traders, Government had no other reply than to say that they have been warned (V. 24, Assembly, Aug. 1944—P. 61). Nothing prevented Government from deputing a health staff to destroy all food-stuffs unfit for human consumption. When the Travancore Government are responsible for distribution, the Government of India should intervene with a health staff for a test check of the quality of grains. Even if of bad quality, the people would have preferred to buy any available rice, firstly if they could afford it, and secondly if the compulsory portion of wheat which they were forced to buy was not sold at an exorbitant price. As regards those who had some resources to purchase rice, they sold their wheat to ration shops at 2 as. less per 37 oz. and paid 3 as. more than the control price for

the same quantity of rice. The better classes purchased hand-pounded rice which could not be legally sold in ration shops and sold in black markets between 10 and 12 as. per edan-gazi of 37 oz.

27. *Surplus profits of the State*

It should be noted that Governments both in Cochin and Travancore purchased paddy between Rs. 1-6-0 and Rs. 1-8-0 per para and sold between Rs. 1-12-0 and Rs. 1-14-0 i.e. at a six annas margin to the consumer. A bag of rice weighing 2 maunds or 160 lbs was equal to fourteen paras of paddy. At the rate of 6 as. a para it gave a margin of Rs. 7/- per bag. The usual margin allowed per bag in the Madras province was 8 annas per bag. A huge margin was therefore available to Government in the sale of paddy which they could very well utilise to lower the prices. Secondly, very large purchases were made at low prices in the year 1942 from Bez-wada, Central Province and Tanjore. This gave them a surplus margin. Thirdly Government profiteered in the wheat trade, even after fixation of the basic price by the Government and a consequent fall in prices. While the wholesale selling price of wheat was Rs. 29-12-0 per bag of 224 lbs. in Cochin, it was sold at Rs. 40/- in Travancore. It was reduced by a sum of Rs. 5 from May 1944 and by another sum of Rs. 3 from September 1944. The wholesale price in Shertellav area for wheat in February 1945 was Rs. 31/4 per bag. In fact the Central Food Advisory Committee recommended a reduction from Rs. 5 to Rs. 3 in September 1944 "with a view to the expeditious disposal of the large stocks of wheat with Government". Recently in May 1945 Government were willing to surrender 4,000 tons of wheat from their present stocks to other areas (A.P.I. message, New Delhi, May 12 by Mr. B. R. Sen, Director-General of Food). A greater quantity of wheat would have been consumed by the poorer classes if only it was within their reach. At any rate the huge profits made on wheat were equally available for reducing the price of rice.

28. *Low off-take of rice and wheat and surrender of excess stocks*

Even with the benefit of all these margins the price of rice was high. We will now examine the consequence of these high prices. It is commonly admitted that since the introduction of state-wide rationing the rice off-take was only 40% of what was allotted to ration-card holders. What a tragedy! While the consumers struggled for rice and when there was rice in the godowns of Government, it did not reach them in 1943. Much had to be destroyed owing to wetting and damage. In 1944 the State came forward with a policy of state-wide rationing. But the people purchased only 40% of their quotas. The Dewan explained it by saying that 'during the harvest season the average monthly offtake did not exceed 40% of the requirements' (Assembly V. 24, Aug. 1944, P. 41). But the harvest season could not explain the low off-take. It has persisted even during other months. For the better classes there was the black market. For the poorer classes they managed with less rice and more tapioca owing to the high price of foodgrains. The offtake of rice in Cochin was 82%. The wheat offtake was generally 2/5 of rice in Cochin. In fact the Government of Travancore lost a substantial portion of its stocks of rice by damage, and surrendered last December another substantial portion of 15,000 tons of rice to Cochin. A recent communique says that they are willing to surrender about 12,000 tons of rice for other needy areas (A.P.I. message, New Delhi, May 12, by Mr. B. R. Sen, Director-General of Food). These indicate that Travancore could not digest all the rice and wheat imported by them. They have also raised the rice ration from 6 nazis a week (56 oz.) per adult to 9 nazis (84 oz.) in successive stages. There is a proposal to raise it to 14 oz. too. With the sale of the old stocks during 1944, the quality of rice too has comparatively improved. But while an increased ration of rice will help those who can afford to buy rice at high prices, it can hardly help the poor who used to buy boiled rice in the prewar days at one-fourth of the present price, and broken rice from Burma at a further reduced price.

29. *State aid for employment*

We do not minimise the efforts taken by the Government to increase the purchasing power of the people, though they meant little considering the magnitude of the problem. When thousands were faced with unemployment owing to cessation of exports of coir products in 1941 and onwards, orders for 44 lakhs of rupees were obtained from the Government of India for these products. The purchases of timber for the war were another source of income to the people. 55,000 men have been recruited as labour for Assam and for the Army whose remittances to their dependents are of great help during the war crisis.

Certain relief works were started in 1941 though there were unfortunately stopped in the latter half of 1942 from a mistaken impression that conditions have improved. However, the daily wage paid by Government in relief works in 1942 was no more than 5 annas 9 pies a day in Shertellay taluq which was hardly in keeping with the soaring prices. (V. 20, July 1942, Assembly P. 1017). The state could do a great deal by undertaking public works and particularly health activities as removal of the pistia plant, and construction of latrines in coastal areas. They could also stipulate in government contracts the wages that ought to be paid for labour, consistently with the present increase in prices till the end of 1944.

30. *Small fraction only helped by Vanchi Fund according to its Treasurer*

The Vanchi Poor Fund, a quasi-official organisation conducted under the presidency of the Dewan and treasurership of his private secretary for noon-feeding of school children and other charitable purposes was no doubt blessed in its auspices to attract funds to itself from several persons. Its purpose was mainly to erect an endowment for the future and to spend annually only the interest on the fund. The value of this fund therefore in relieving present distress for one full

year reduces itself to one-thirty-third part of the fund. Secondly it functions mainly in the city of Trivandrum. Its branches are left to raise their own local funds which is negligibly little. The Director of Public instruction estimated the number of children for noon-feeding in the affected taluqs in a letter to the Secretary of Servindia Centre, Alleppey, in January 1944 as two lakhs. The Dewan himself estimated the number of school children who would require to be fed by a funded capital of one crore and a half of rupees as 60,000 (Travancore Information, January 1944, P. 10). Reviewing the progress of the fund in December 1944, the treasurer of the fund said that over 8,000 school children belonging to 127 schools were given noon meals and about 800 destitutes were fed daily. It should be noted that this service was mainly in towns and little in the affected coastal taluqs. However much the Dewan might try to create the impression that Travancore refuses to receive any donations from outside and it never lacks money, by constant repetition in the press, the fact existed that a sum of Rs. 1,29,566 has been donated by non-Travancoreans to this fund (Vide Chief Secretary's reply in the Assembly, 18th Aug. 1944, P. 311). Another fact to be noted about the fund is that, though it collected money by appealing to the present distress, it funded them into a corpus for future use. No wonder that the treasurer of the Fund had to say: "These figures, although gratifying, showed that only a small fraction of those who deserved help had been touched" (A.P. statement of Dec. 20 published in Indian Express of 26—12—44). Mr. K. K. Kuruvilla appealed to the Dewan in the State Council in the following words:—A few more lakhs of rupees should be spent for the poor people and for our poor children already in schools. There has been a fairly decent collection in the Vanchi Annadana Fund. (V. 22, July, 1943, P. 56). In the small adjoining State of Cochin 48,000 school children are fed at a cost of Rs. 60,000 per month out of which Government contributes a third. Feeling as he does in this matter, it is for the Treasurer of the Fund to apply to the Committee and release the corpus for relief of immediate distress.

31. *The State and protective foods*

The purchasing power of the people increased from last November owing to greater demand from other sources than the Government of India for cocoanut and coir products. But still it could not meet the high cost of living. If even school children whose parents should certainly have better resources suffered for want of noon-day meal, how much worse should be the condition of school-going children outside the schools? The American Friends' Service and the Government of India help with free milk in 400 canteens children of 7 years and below and nursing and expectant mothers. Multi-vitamin tablets are supplied by the Friends' Service and the Red Cross as a course of treatment. But these services do not reach children above 7 years, which the Government of Travancore may as well take on hand. Government will have also to continue these services when they are stopped by these organisations.

32. *Subsidy needed for lowering prices as in U.P., Orissa, and Mysore*

The help given by the State to relief agencies was almost nil. A paltry sum of Rs. 2,500 per month was promised for certain relief agencies for six months from November last, but it has not gone beyond the stage of an offer as would be evident from a press statement of the Director of Information published in the Indian Express of 30th April 1945. When the announcement was made, it was admitted that the prices were high but later on it was said in February 1945 that relief agencies did not come forward to take the help. If Government were really serious in subsidising the purchase of rations by the poorer classes, they could have easily done so as in Orissa, U.P., and the State of Mysore.

33. *Dearness allowances*

In addition to the poorer working classes in rural areas, clerical employees, salesmen and servants in unorganised

trades and Government servants on low salaries have been hit hard by the present high prices. In a town like Alleppey salaries of employees in shops ranged under three grades of Rs. 1½ to Rs. 10, Rs. 10 to Rs. 20, and Rs. 20 to Rs. 30. Government servants in the lower ranks whose salary was proverbially low as compared to that in any part of India excepting Zamindaries, were granted a hopelessly poor allowance, ranging between Rs. 7 and Rs. 12 per month for salaries up to Rs. 125. Certainly many of the factory employees and day labourers earned more than those belonging to fixed income groups. The low-paid servants of Government have presented individual petitions to Government, as combined representations are illegal in Travancore, explaining their miserable condition.

"The economic strain to which Government servants of the petitioner's category have been put continues unabated, notwithstanding the revision of salaries and the introduction of war allowances by Government... There are many days in the month in which the petitioner and his family are obliged to live on a single meal in a day and that sometimes not a full meal because of the inadequacy of funds to purchase the periodical rations allotted for the month. Even during pre-war times the petitioner's income was such that himself and his family could lead a hand-to-mouth existence... The petitioner is fast becoming immersed in debts... The education of his children is becoming uncertain, with his family undernourished and weighed down by debt and the prospect of disease and death shadowing them... Government be pleased to sanction him a war allowance equal to the pay now drawn by him"

34. *Need for control of tapioca supply and sale*

Excepting cultivators of paddy, the common people in Travancore did not live on more than 9 oz. to 12 oz. of rice even in normal times. They supplemented it by tapioca, coconuts, grams and fish. Even though tapioca sold at double the control price, it was available and was within the reach of the poor because of prohibition of exports. It was a pity however that Government did not issue special licenses and control the sale of tapioca (Control price of tapioca is 2½ lbs. for 7 pies). It was sold at 10 to 14 pies per lb. i.e. at four times

the control price.⁵ The price of rice being 3½ times the pre-war price, made it impossible for the poor to purchase the full ration. They depended more on tapioca as an essential article of food.

35. *Need for control of supply of grams and pulses*

A tapioca-rice diet could be balanced by a sufficient supply of grams and pulses and fish. But the Government permitted merchants to import and sell grams and pulses in the free market, while in the province of Madras green gram, black gram, Bengal gram and red gram were controlled commodities like rice and dry grains. As a safeguard against hoarding the Government of Travancore purchased large quantities of grams from the U.P., Punjab and other areas. But these grams, dhalls and peas could not be easily sold. So Government changed the compulsory ration namely that, instead of dry grains which formed 1/10 of the ration, the people should buy these grams from October 1944 (Travancore Information V. 5, November 1944, Modified rations, P. 10). The dhal which was supplied consisted of moth-eaten thick balls which were unfit for human consumption. It was forced down the throat of every consumer so that Government might not lose in the business. Further, the ration card-holder was forced to pay 14¾ chukrams = 8 as. for an edangazi (37 oz.) of this kind of dhal while better dhal sold in the open market for 8 chukrams i.e. 4 as. 6 pies. Green gram sold in the open market at Rs. 110 per candy while the ration card holder was forced to purchase it at Rs. 130 per candy. Members represented in the State Council about the need for controlling prices of pulses, grams, etc.,

5. In the adjoining State of Cochin, according to the Tapioca Control Order, only those who possessed special license from the department could purchase tapioca from cultivators and sell it. These licences were responsible to stock sufficient tapioca and sell it at prices fixed by Government. Government also purchased tapioca from cultivators and sold it to consumers at fixed prices. Statutory prices were also fixed for the sale of tapioca in the State.

which were exorbitantly high to which the Dewan replied that Government servants could under no circumstances be at the head of depots but that the people might form co-operative Societies in combination with wholesale merchants (V. 22, July 1943, P. 397 and 398). It is doubtful how far a society of consumers will work successfully with merchants dealing in the same commodities in the directorate. Grams being a necessary supplement to a tapioca-rice diet, it is hoped, that Government would make them available and within the reach of the poorer classes. The new plan for control of pulses by Government of India which has come into force from 1st May 1945 fixes the ceiling price in the exporting provinces. This ought to help a great deal, states like Travancore in obtaining supplies at fair prices.

36. *Fish and eggs*

The protein deficiency in a tapioca-rice diet would have been supplied by a control of the fish markets. But though this was promised in an early press communique, it was not followed up in action:—

"In order to meet the present emergency it has become necessary both to restrict that export and simultaneously to facilitate the supply and transport of fish as well as of dried and salted fish to various markets within the State. It is not the intention of Government to put either fishermen or dealers in fish who have already been hit hard in many ways to any loss in this matter and their only object is to enable the non-vegetarian population of Travancore to supply their diet at this difficult period by a commodity of undoubted nutritive value" (Press communique P. 18—Food control in Travancore, 29th Sept. 1942)

How one wishes that this were followed up in action and fish prices were kept down to pre-war level? This was possible in Travancore owing to the cessation of fish exports. A recent communique says that fish was being exported to Ceylon from May 1945. A study of vital statistics of parishes indicates

that while there has been more births than deaths among fishermen between Kazakuttam and South of Trivandrum, the reverse has been the case in Shertellay and Ambalapuzha taluks where fish was not available sufficiently to supplement the tapioca diet. It is hoped that Government will estimate fish production and see that every adult gets 4 oz. of fish and non-adult 2 oz. every day. Eggs too are exported in large quantities for the Army and Navy. Their cost has gone up abnormally high to two annas per egg. It is worth investigation how far Travancore can bear the strain of this export.

37. *Pig-rearing and tapioca*

Tapioca cultivation in conjunction with pig-keeping has a great future. The following extract from 'Tapioca in Malaya' by V. R. Greenstreet, F.I.C., Assistant Agricultural Chemist and J. Lambourne, Assistant Agriculturist, Department of Agriculture, Straits Settlements and Federated Malay States, indicates the possibilities in this direction :

"Pig-rearing undertaken in conjunction with the cultivation of tapioca is suggested as a profitable combination since tapioca refuse or root together with tapioca leaves would provide the bulk of the pig's ration. This suggestion is supported by the fact that tapioca factory owners usually keep pigs and that refuse is frequently transported to distances up to hundred miles from the factory to the pig-keeper".

"A fattening pig will consume tapioca refuse at the rate of about 20 lbs. daily, so that an acre of land yielding ten tons of roots per annum would provide sufficient refuse for 1,500 pigs in addition to the usual output of the flake-tapioca. A rotation of crops in order to provide proteins to balance the pig diet is a natural concomitant of this system of husbandry".

38. *The value of groundnut flour*

The Government of Travancore seems to be upset by the publication of the fact that people in Shertellay area used

groundnut cakes as supplementary food. This formed an important part of the food of the people in 1941 and 1942 which were years of severe unemployment in coastal areas. In fact children used to appeal to passengers travelling by buses and cars to give them a small cash so that they might buy groundnut cakes and eat. Later on they were used as additional dish when taking rice-gruel in the Shertellay area. They were also used as spices in making tapioca, vegetable, and fish dishes. Groundnut supplies enough fat and its protein is of high biological value. It is a highly nutritional food within the reach of the poor man and it supplies the protein deficiency in a vegetarian diet. Aversion to groundnut cake arises from the fact that it is used as cattle-fodder and manure. But there are few agriculturists in the coastal areas of Travancore who use it for these purposes and hence no such tradition exists here. Parts of the outer shell and grit are added in pressing so as to extract a large amount of oil. It is this indigestible matter that creates intestinal trouble. Clean, unbroken, and handpicked groundnuts should be used and they should be crushed after removing the red skin and without adulterating it with grit and sand. Groundnut flour is being sold to the public in the Kolhapur State. The reader may usefully peruse the note on the subject published in the Bombay Information July 1944.

39. *Nutritional diseases*

We have referred already to excess deaths due to partial starvation and the increase in nutritional diseases till the beginning of 1944 when procurement was not efficient, distribution was inequal, and the import quotas promised by Government of India did not reach in time. Since April 1944 state-wide rationing was in force but the hardship due to high prices was there. Prices for coir products began however to increase from November 1944 which was of great help to the poorer classes. Those who left the area began slowly to return. Even though famine conditions disappeared, there was however the aftermath of famine. There was 'severe malnutrition among children' (G. Leslie Cross, 'Travancore

Information November 1944 P. 29). There was 'the chronic undernourishment with the grave risk of physical deterioration which successive generations are already manifesting, going on unchecked' (Dr. C. O. Karunakaran, Travancore Information Jan. 1945).

Nutritional anaemia, scabies, and gastro-intestinal diseases are common in the coastal areas. It is very difficult to find a considerable number of healthy people in these areas among women and children. Now that the coir industry has revived and increased the earnings of the people, and rice ration too has been increased, conditions have become controllable by the State. The number of hospitals and dispensaries should be so increased, as to intensify medical help to the people in the coastal areas. Arrangements for dieting of in-patients for which there is no provision at present should be introduced. Shark liver oil and oral liver extract injections, calcium tablets and calcium lactate powders should be immediately made available in order to prevent anaemia and improve the growth of thin and stunted children.

40. Recommendations

1. Government should appoint a special committee to make recommendations about the re-organisation of agricultural economy from the point of view of maximum production and decent living for the cultivator. (Para 4).

2. Procurement should be on the basis of a demand on landholders by an independent staff of grain purchase officers, assisted by their own inspectors, and the village officers at the bottom. The agency for procurement should as far as possible be wholesale supply co-operative societies. (Paras 5-10 and 23).

3. The ban on milled rice should be supplemented by making hand-pounded rice available in ration shops at a controlled price. (Para 11).

4. The Government of Travancore and the Syrian Christians should give every support to the settlers numbering

about 12,000 who have left their homes in the Kottayam division of Travancore and settled in the uplands of Malabar. While the Government of Madras are no doubt doing everything possible to mitigate sufferings due to malaria, they should take over these settlements under the Agricultural Department and give them every help as in the case of other settlers. They should stop the eviction proceedings against the settlers at Sultan Battery. If the ban on tapioca exports cannot be removed so as to make it possible for these settlers to earn a little more money for purchase of the necessities of life, and if the ban is due to the fact that tapioca is an essential food article for preventing famines, it is all the more reason, that the Government of Madras should see that these growers who are engaged in the essential service of saving the lives of civil population by growing such vital commodities should be protected in every way. They should get credit facilities for cultivation and marketing, initial help to start life, dispensaries and medical relief, and proper houses to live in. (Para 19).

5. Transport of foodgrains by country crafts and steamers should be more efficient so as not to lead to damage of rice bags by wetting and the sinking of canoes with rice bags. Sufficient economy should be exercised in regard to transport charges. (Para 21).

6. The principles of cereal storage published by the Food department of the Government of India should be strictly followed. (Para 21).

7. There should be only two middlemen between the Government and the consumer, i.e. the Government and the retail trader (private or co-operative). A special staff of co-operative officers should promote co-operative stores as a state-wide campaign. (Paras 22 and 23).

8. There should be an audit staff under the Finance department for inspecting stocks and accounts of all licensed traders. The health staff should have powers of checking the quality and publishing reports. The Government of India

should appoint its own test staff for the purpose. (Paras 24 and 26).

9. The following steps should be immediately adopted in order to prevent malnutrition and deterioration in health particularly in the coastal areas where it is difficult to find a considerable number of healthy people, and anaemia and scabies are common diseases.

9 (a) Prices of rice and wheat should be lowered to those in British Malabar. The Government of India should meet any losses caused thereby or failing which, the Government of Travancore should do so. A special lower price should be fixed for supplies to poorer classes as in Orissa, U.P., and recently in Mysore State. Godown and other insurance charges should be borne by Government as in the Cochin State. (Paras 25-28 and 32).

(b) One method of increasing the purchasing power of the people would be the undertaking of public works and health projects such as removal of the pistia plant and construction of latrines in coastal areas. The State should also stipulate in Government contracts the wages that should be paid for labour consistently with the present increase in prices. (Para 29).

(c) Noonday feeding of deserving school children should be taken up as a State activity as in the State of Cochin. The Vanchi Poor Fund should immediately release its corpus for the purposes. (Para 30).

(d) The milk canteens and distribution of vitamin tablets should be continued, if stopped by the Friends' Ambulance Unit, and also extended by the State. (Para 31).

(e) Increased allowances and salaries should be paid to Government servants drawing below Rs. 200. A special officer should be appointed to raise these allowances in unorganised trades and establishments, and to standardise them in organised factories. (Para 33).

10. Control of distribution through ration shops should not stop with rice, but include tapioca, grams and pulses and

fish and cocoanuts. Not only their price should be fixed but they should be made available. The export of fish should on no account be permitted until every consumer can get 3 to 4 oz. fish every day. Eggs should not be permitted to be exported for the military and navy without satisfying local needs. (Paras 34-36).

11. Pig-rearing along with tapioca cultivation should be promoted. (Para 37).

12. Groundnut flour made out of clean unbroken hand-picked groundnuts after removing the red skin should be popularised as a food of nutritive value for poor classes as in the State of Kolhapur. (Para 38).

13. The number of hospitals and dispensaries should be increased. Arrangements for dieting of in-patients for which there is no provision at present should be introduced. Shark liver oil and oral liver extract tonics and liver extract injections, calcium tablets and calcium lactate powder should be immediately made available in order to prevent anaemia and improve the growth of thin and stunted children. (Para 39).

APPENDIX

NOTE ON PESTS OF STORED WHEAT AND RICE

(Some extracts)

The rate of insect multiplication increases with the period of storage and the loss to the owner may amount to several lakhs of rupees. A single pest, *Calandra Oryzae*—the common rice-weevil—sometimes causes a loss of stored wheat, valued at nearly one crore of rupees a year in India alone. Therefore, the proper preservation of grain by suitable precautions before and during storage is very important.

The greatest amount of damage by the weevil (*Calandra oryzae*) is done between August and November; it is comparatively less in February and March, still less in December-January and is least during the hot weather. It has been estimated that one pair of weevils may give rise to a progeny numbering four to six thousand in a single season. The weevil feeds on the grain (sound or damaged) both in the grub and adult stage.

Sound grain is attacked if there is pest—infested grain lying near granaries or if it is placed in sheds or stores where infested grain had been previously lying or is stored in the same room which already has old infested grain of the previous season.

Grain containing less than 8 per cent moisture is not suitable for the development of insects.

The new grain brought into such a store house from where the previous year's grain has not been most carefully removed and which has not been thoroughly disinfected, must necessarily be attacked and in its turn must serve to propagate the pest and carry on the infestation to grain.

Walls and ceilings must be whitewashed with lime, and the floors should be scrubbed with water containing soft soap or carbolic acid (5 per cent solution). All cracks and crevices should be filled up. Similarly, all uneven wall or floor surfaces should be well plastered to remove all possible niches where the pests harbour as they have the habit of hiding themselves in chinks, cracks and crevices.

If an insect attack is discovered, the grain should be heated by exposure to sun or otherwise fumigated with carbon bisulphide or hydrocyanic acid gas or any other suitable fumigant given under 'Remedial Measures'.

Miscellaneous Bulletin No. 57. The Imperial Council of Agricultural Research—Stored Grain Pests and their Control by Pruthi and Mohan Singh. 1943. ICAR 8. 57/375.

The losses through damage by weevils can be done away with or at least kept within control if the present system of handling storage, and transport be replaced by bulk handling. Our conditions of wheat production in Australia are different from those in America and India. Our wheat lands are not yet compacted, but are broken up and scattered all over the States making bulk handling a difficult problem both to the farmer and the railway authorities. The farmers strip or harvest their wheat into bags in the paddocks; the policy of the railway authorities has been to place a siding for the accommodation of the farmer wherever any area of land is under cultivation.

Problems of wheat storage 1917. (Commonwealth of Australia Advisory Council of Science and Industry).

The Rice Weevil

Rice often arrives from India infested with this weevil. It is not uncommonly considerably damaged and rapidly becomes unfit for consumption.

A thorough treatment with either carbon bisulphide, hydro-cyanic gas or sulphur dioxide would necessitate the opening of the bags, the spreading of the grain in thin layers on the floor and its repacking. These operations, which would have to be repeated at least twice yearly, would necessarily entail an expenditure that would not be recouped if the losses the merchants have been used to consider as unavoidable are taken as the basis for calculation.

Owing to local conditions, such as situation of the stores in the commercial centres of the town, the narrowness of the stores when compared with the enormous quantities of grains they contain, and the different varieties of grain in sewn bags, which render carbon bisulphide and hydrocyanic gas treatments very expensive, the sulphur dioxide gas method seems to be the most practical and economical one in spite of the limited penetration of the gas.

Insects injurious to stored grains. 1915. (By D. D'Emmerez De Charmoy, Dept. of Agri., Mauritius).

Warm, damp weather is very favourable for their development and grain which is at all damp is much more liable to attack than very dry grain. Also grain stored in badly ventilated granaries or store-houses is more likely to be attacked than that which is stored in well-ventilated places.

In old mills, godowns and places where grain has to be stored year after year, the worst attacks often take place.

The chief of the precautions are the following :—

1. Do not store your grain and other produce in a damp condition but be sure that it is dry.
2. Ventilate your granary or store-house so that it also may be kept dry.
3. Store-houses which have previously held grain, should be well cleaned out before fresh grain is put in. All refuse should be removed and as insects often hide

in holes or cracks in the floor and walls, these should, if possible, be filled in.

4. Grain which is already infested is sure to become worse when stored; such grain should therefore not be stored unless treated with carbon-bisulphide. One insect is often sufficient to infest a large heap of seed.
5. Stored grain which become infested, may be at once milled or sold. If not, it should be treated or it is sure to become worse.

Granary Pests. 1909. (By E. Thompstone, B.Sc., Dept. of Agri, Burma, *Pests of Stored Products and Insects affecting Cattle and other domestic animals*).

The meal worm moths include the rice moth, the Indian meal moth, and the fig moth. One or other of these is commonly found on various stored products such as vegetable powders of different kinds, cholam, maize, rice grains, seeds of groundnut, cashewnut, etc. The rice moth appears to be one of the commonest of these meal worms in Southern India and though known as rice moth, it infests a variety of other stored products. The fig moth has been noted to infest groundnut seeds and the meal moth often attacks stored cashewnuts with another moth in South Kanara.

Handbook of Economic Entomology for South India by T. V. Ramakrishna Ayyar.

In the south of the province, the wastage apparently caused by this agency (weevils) is considerable. Tanjore reports indicate a loss of 2.50 per cent over 4 to 6 months and Coimbatore 4 per cent over 2 or 3 months.

Apart from short term storage of rice which gives little opportunity for destruction by vermin, the consensus of trade opinion regards 0.25 to 0.50 per cent as the average annual wastage by the depredations of rats, mice, etc. However, in

some markets of the Central Provinces and Madras Presidency, a loss as high as 1.50 per cent on an average has also been reported.

Polishing or milling to normal commercial standards removes most if not all of the oil-bearing bran and eradicates the source of rancidity or decomposition. Hence, well-milled rices keep better and for longer periods than hand-pounded or under-milled grains.

Parboiled rice, however, has one advantage over raw rice as regards storage in that it is less affected by weevil attack. Report on the marketing of rice in India and Burma, Government of India, 1941. P. 334-337.

PART II (STATISTICS)

Pages 1-36 are extracts from the parish records of different areas. These records give the name of person dead, his age, the name of the disease that caused the death, and the date of death. We have omitted the names of persons dead as they would be available in the records themselves. But in the case of enquiries by non-official workers (vide later pages 14 to 42 at the end) we have mentioned the names of the dead in the absence of any other source material to refer to. The number of deaths and their causes have been tabulated for Shertallay taluk from pages 1-12, for North Parur taluk from pages 12-22, for Ambalapuzha taluk from pages 23-32, for Vaikom taluk in page 22 and pages 32-34, and for Muvattupuzha taluk in pages 35 and 36. A classification of these statistics of deaths according to the proportion of different diseases that caused them, either made by our own workers or extracted from the parish records, is given in the statements in Part I pages 114-116. Comparative totals for 3 years between 1941 and 1944 of births and deaths among Christians as extracted from the parish records is given in page 107. It is therefore not necessary to repeat these different analyses again here.

The succeeding pages of these statistics relate to the data collected by Mr. K. K. Chandy about malnutrition and diseases and the surveys made of the number of deaths and their causes by non-official workers. Pages 1-13 relate to the nutritional surveys of families in 3 villages by Mr. K. K. Chandy assisted by college students and some members of the Relief Committee. The articles of food consumed, the number of meals a day, the number of days without meals in a month, the number of untorn clothes in the family, and the general condition of each family are noted in these surveys.

Pages 14-42 give the names of dead persons, causes of their deaths, as surveyed by the workers of the different

relief centres. These surveys were made in the taluks of Ambalapuzha and Karthikapally in the State of Travancore. Though a number of families were visited and the names of dead persons, their age and cause of death were noted by our workers, their surveys could not be taken as complete for all the families. But the information collected by them are certainly useful in indicating the major causes of death during the period of food shortage. The survey in Ambalapuzha taluk was organised by the late Mr. K. Kunju Pillai, B.A., L.T., whose recent death has snatched away from us one of the sincere relief workers in the area. We all mourn his loss and we hope that his work will be continued by the other workers in the area. The survey in Karthikapally taluk was organised by Mr. Pandavam Sankara Pillay for one village called Arattupuzha, to whom our thanks are due.

K. G. SIVASWAMY

ARTHUNKAL NORTH				ARTHUNKAL SOUTH			
No.	Age	Name of disease that caused the death	Date of death	No.	Age	Name of disease	Date of death
1	64	Karapan	27-3	54	8 months	Karapan	4
2	30	Starvation	31	55	38	Swelling	23
3	4	Swelling	10	56	42	do	24
4	30	Starvation	3	57	2	Swelling	27-3
5	55	Typhoid	3	58	2	Swelling	27-3
6	65	Swelling	10	59	6	Karapan	9
7	64	do	10	60	50	Swelling	10
8	2 Months	Karapan	10	61	32	Karapan	20
9	70	Starvation	10	62	50	Swelling	21
10	1	do	10	63	4	do	22
11	64	Karapan	17	64	4	do	23
12	55	Rheumatism	17	65	4	do	24
13	12	Karapan	17	66	4	do	25
14	37	Karapan	24	67	34	do	26
15	4	do	24	68	34	do	27
16	4	do	24	69	34	do	28
17	19	Typhoid	19	70	34	do	29
18	23	Swelling	23	71	34	do	30
19	23	do	23	72	34	do	31
20	4	Karapan	29	73	34	do	32
21	22	Dysentery	5-11	74	34	do	33
22	71	do	17	75	34	do	34
23	35	Swelling	23	76	34	do	35
24	35	Rheumatism	23	77	34	do	36
25	35	Swelling	23	78	34	do	37
26	70	Erysiplo	26	79	34	do	38
27	50	do	26	80	34	do	39
28	65	Starvation	1-12	81	34	do	40
29	60	Karapan	5	82	34	do	41
30	14	do	5	83	34	do	42
31	24	do	5	84	34	do	43
32	66	Erysiplo	5	85	34	do	44
33	65	Swelling	7	86	34	do	45
34	15	Rheumatism	14	87	34	do	46
35	70	Leprosy	18	88	34	do	47
36	2	Karapan	20	89	34	do	48
37	14	Swelling	21	90	34	do	49
38	12 days	Karapan	23	91	34	do	50
39	15	Swelling	25	92	34	do	51
40	60	Rheumatism	25	93	34	do	52
41	10 days	Karapan	3-1	94	34	do	53
42	40	Starvation	4	95	34	do	54
43	6	Swelling	7	96	34	do	55
44	12	Cancer	8	97	34	do	56
45	20	Swelling	25	98	34	do	57
46	55	do	26	99	34	do	58
47	6 months	Karapan	3-2	100	34	do	59
48	6	do	10	101	34	do	60
49	58	Typhoid	11	102	34	do	61
50	8	Swelling	22	103	34	do	62
51	34	Typhoid	22	104	34	do	63
52	54	Karapan	28	105	34	do	64
53	12	Swelling	1-3	106	34	do	65
1943				1944			
1943-44 60 100				1944-45 60 100			
1942-43 39 101				1941-42 58 59			
1941-42 58 59				Births-Deaths			
				ARTHUNKAL SOUTH			
				1	20		23-12
				2	55	Repentino	"
				3	48	Swelling	"
				4	50	do	24
				5	50	do	"
				6	65	do	28
				7	32	do	29-2
				8	10 months	Karapan	30-12
				9	3 days	do	"
				10	22	Dysentery	"
				11	3	Karapan	"
				12	42	Starvation	3-1
				13	72	old age	4
				14	12M	Karapan	9
				15	48	Repentino	14
				16	14	Karapan	"
				17	58	Swelling	17
				18	55	do	"
				19	24M	Karapan	19-2
				20	1 day	Delivery	18
				21	60	Swelling	20
				22	68	do	21
				23	29	Dysentery	"
				24	48	do	"
				25	68	Swelling	24
				26	3	Karapan	31
				27	70	Old age	1
				28	40	Swelling	5

29	45	Starvation	5-2	02	38	do	8
30	55	Swelling	6	03	70	do	9
31	32	Do	8	91	3 Months	Karapan	12
32	60	Do	14	95	82	Oldage	17
33	62	Do	19	96	35	Swelling	18
34	30	Dysentery	"	97	30	Dysentery	21
35	25	Do	"	98	14	Worms	26
36	30	Starvation	20	99	30	Dysentery	28
37	1 day	Karapan	21	100	2	Karapan	3-7
38	15	Dysentery	22	101	62	Swelling	6
39	72	old age	23	102	42 days	Karapan	7
40	4M	Karapan	24	103	44	Swelling	"
41	22	Fever	29	104	6	Karapan	20
42	62	Swelling	28	105	30	Dysentery	22
43	63	Swelling	31	106	25	Swelling	"
44	18	Fever	3-3	107	64	Karapan	23
45	2	Karapan	3	108	45	Swelling	2-8
46	75	oldage	6	109	32	Do	"
47	45	Dysentery	7	110	65	Do	7
48	50	Swelling	9	111	60	Do	13
49	2	Karapan	13	112	1 year	Karapan	16
50	1 day	do	15	113	42	Dysentery	26
51	35	Swelling	18	114	72	old age	27
52	60	Dysentery	22	115	6 months	Karapan	28
53	64	Swelling	23	116	65	Swelling	2-9
54	1	Dysentery	23	117	1 month	Worms	6
55	60	Fever	25	118	62	Swelling	8
56	22	Swelling	25	119	70	Do	10
57	65	Karapan	29	120	30	Dysentery	14
58	1 day	Swelling	30	121	58	Do	17
59	65	do	3-4	122	15 days	Karapan	25
60	50	Starvation	6	123	3	Do	30
61	28	Swelling	7	124	34	Do	3-10
62	52	Karapan	7	125	5	Do	5
63	44	oldage	9	126	38	Dysentery	8
64	76	Karapan	11	127	56	Swelling	11
65	1 Month	do	12	128	40	Do	19
66	24	do	13	129	64	Do	22
67	24	Fever	17	130	9	Karapan	25
68	10	do	22	131	28	Starvation	26
69	62	do	24	132	45	Do	28
70	18 day	Karapan	25	133	2	Karapan	29
71	2	Vira	25	134	42	Starvation	30
72	80	oldage	28	135	35	Dysentery	31
73	60	Swelling	2-5	136	52	Fever	3-11
74	28	Fever	2	137	65	Swelling	4
75	1	Karapan	6	138	14	Karapan	8
76	55	Swelling	8	139	2	Do	11
77	56	Starvation	11	140	5	Do	16
78	58	do	12	141	4	Do	19
79	65	Fever	14	142	60	Starvation	22
80	3	Karapan	15	143	55	Repentino	25
81	32	Swelling	16	144	67	Starvation	26
82	5	Karapan	18	145	2 months	Swelling	28
83	50	Swelling	19	146	6	Do	28
84	45	do	20	147	3	Karapan	28
85	2	Karapan	22	148	22	Fever	7-12
86	3	do	24	149	6 months	Karapan	7-12
87	27	Fever	29	150	5	Do	15
88	42	Swelling	5-6	151	1	Do	15
89	55	Dysentery	7	152	70	old age	18
90	50	do		153	6	Karapan	22
91	71	do		154	72	old age	24

155	1 day	Karapan	29	14	14	do	23	
156	2	Do	2	12	15	71	Dysentery	23
157	56	Dysentery	7	"	16	60	Gastric trouble	27
158	9 months	Karapan	9	"	17	3	Karapan	31
159	48	Fever	17	"	18	39	Swelling	2-9
160	52	Do	22	"	19	7	do	4
161	50	Swelling	21	"	20	28	Fever	5
162	1	Karapan	23	"	21	9 days	Karapan	6
163	35	Dysentery	24	"	22	34	T. B.	11
164	8 months	Karapan	26	"	23	4	Swelling	12
165	2 months	Do	27	"	24	67	do	12
166	75	old age	28	"	25	3	do	12
167	42	Swelling	"	"	26	39	Gas	14
					27	38	Swelling	16
					28	2	Diarrhoea	16
					29	14	Fever	17
					30	7	Swelling	17
					31	6	do	20
					32	69	do	21
					33	65	Gas	23
					34	66	Rheumatism	28
					35	67	Swelling	30
					36	24	do	1-10
					37	16	Fever	4
					38	60	Swelling	3
					39	19	Fever	5
					40	8	Karapan	6
					41	5 days	do	8
					42	66	Swelling	7
					43	15 days	Karapan	9
					44	7	Swelling	9
					45	56	do	12
					46	4	do	16
					47	79	do	17
					48	6	do	18
					49	5	do	18
					50	17 days	Karapan	19
					51	51	Swelling	21
					52	69	do	21
					53	69	R. F.	23
					54	66	Dysentery	24
					55	68	Gas	27
					56	IM	Karapan	28
					57	51	Dysentery	28
					58	46	Gas	28
					59	65	Swelling	31
					60	14	Karapan	4-11
					61	60	Swelling	7
					62	14	Karapan	8
					63	18	do	16
					64	14	Swelling	18
					65	89	do	23
					66	4	do	24
					67	8	Dysentery	26
					68	3	Svera	28
					69	43	Typhoid	28
					70	52	R. Mant	7-12
					71	8 days	Karapan	7-12
					72	62	Dysentery	15
					73	66	Swelling	15
					74	66	do	18
					75	59	Fever	22
					76	65	Swelling	24

	</							

Births		Deaths
1943-'44	149	173
1942-'43	101	212
1941-'42	232	180

VAYALAR

		1943		
1	40	Rheumatism	Aug. 21	
2	80	Old age	28	
3	6 months	Karapan	Sep. 3	
4	8 months	do	8	
5	14	Cholera	19	
6	17	Fever	28	
7	63	Old age	Oct. 10	
8	54	do	10	
9	83	do	30	
10	70	do	Dec. 18	
			1944	
11	42	Rheumatism	Jan. 22	
12	46	do	Feb. 8	
13	30	do	Feb. 25	
14	31	Fever	Mar. 4	
15	25	Consumption	30	
16	5	Swelling	Apr. 16	
17	1	Karapan	23	
18	7 months	do	June 4	
19	73	Fever	Aug. 28	

Births		Deaths
1943-'44	Nil	26
1942-'43	17	29
1941-'42	19	4

MUTTAM

		1943		
1	6	Swelling	16-7	
2	58	Dysentery	16	
3	57	Rheumatism	16	
4	59	do	17	
5	50	Dysentery	23	
6	63	Swelling	29	
7	12	do	29	
8	22	do	29	
9	24	do	1-9	
10	30	do	2	
11	24	Diarrhoea	6	
12	45	Swelling	19	
13	64	do	21	

		Typhoid	28	138	3	Accident	11
77	33			139	11	Karapan	13
			1944	140	23	Operation	13
78	3 days	Karapan	2-1	141	I	Karapan	13
79	12	do	9	142	4	Swelling	14
80	28	T. B.	12	143	60	Rheumatism	15
81	76	Swelling	14	144	32	Typhoid	16
82	17	do	14				
83	55	T. B.	15				
84	67	Rheumatism	29				
85	65	Gas	3-2	1943-44	114	Deaths	
86	10	Swelling	4	1942-43	131	172	
87	4	do	7	1941-42	133	129	
88	3	do	14			93	
89	9	Dysentery	16-2				1110
90	1½	Accident	16	(1943 Aug.—1944 July)			
91	57	Phneumonia	17	I	69	Dysentery	3-2
92	2½	Swelling	21-2	2	46	Swelling	5
93	14	do	24	3	6	Karapan	7
94	2M	Fever	2-3	4	4	do	7
95	13	Swelling	2	5	41	Starvation	10
96	44	Cancer	7	6	I	Karapan	13
97	13	Karapan	8	7	34	Dysentery	16
98	5	do	12	8	43	Repentino	16
99	2M	Fever	12	9	11	Swelling	19
100	56	Swelling	13	10	34	do	20
101	2M	Fever	20	11	12	Dysentery	24
102	3M	do	22	12	46	Swelling	26
103	67	Rheumatism	24	13	43	Vatham	4-3
104	28	Swelling	7-4	14	5 Months	Karapan	12
105	34	R. Fever	20	15	8	Swelling	13
106	I	Karapan	28	16	35	Pneumonia	15
107	4	Swelling	28	17	5	Typhoid	17
108	55	Dysentery	28	18	43	Dysentery	19
109	IM	Karapan	24	19	43	do	20
110	¾	Swelling	26	20	14	Swelling	23
111	1½	Karapan	28	21	34	do	24
112	62	Swelling	29	22	15 days	Karapan	25
113	3	Karapan	4-5	23	43	Swelling	30
114	¾	do	7	24	53	Rheumatism	7-4
115	28	Swelling	15	25	1½	Drowned	12
116	53	do	17	26	45	Typhoid	14
117	3	do	23	27	4	Typhoid	14
118	84	Gas	2-6	28	48	Swelling	15
119	80	Gas	5	29	12	Starvation	19
120	I	Gas	6	30	2½	Dysentery	20
121	20	Swelling	6	31	3½	Karapan	26
122	4	do	5	32	3	do	27
123	3	Karapan	7	33	50	Starvation	3-5
124	IM	do	7	34	43	Swelling	6
125	14	Typhoid	8	35	65	Dysentery	9
126	28	Swelling	13	36	2M	Karapan	16-6
127	45	Dysentery	17	37	12	Swelling	17
128	IM	Karapan	21	38	50	Dysentery	21
129	2	Dysentery	21	39	2½	Karapan	22
130	47	Swelling	22	40	2	Swelling	26
131	3	Diarrhoea	22	41	9	do	27
132	10	Dysentery	25	42	76	Old age	2-7
133	38	Swelling	26	43	55	Swelling	5
134	40	T. B.	1-7	44	11	do	7
135	18	Diarrhoea	2	45	58	do	11
136	34	T. B.	2	46	78	Rheumatism	16
137	60	Swelling	II	47	49	Swelling	

[illegible]

40	71	Old age	Aug. 1	16	14	Fever	12
41	79	do	4	17	3 Months	Karapan	17
42	60	Swelling	21	18	65	Dysentery	17
				19	45	Fever	28
				20	7	Drowned	27
				21	65	Fever	30
				22	40	Rheumatism	17-1
				23	18	Swelling	24
				24	6	do	29
				25	18	do	4-1
				26	70	do	15
				27	2	Karapan	16
				28	1	Swelling	17
				29	52	do	28
				30	14	do	29
				31	5	Starvation	30
				32	17	do	19
				33	2	Karapan	15-1
				34	81	Dysentery	28
				35	70	do	2-3
				36	60	Swelling	7
				37	1	do	10-3
				38	16 days	Karapan	19
				39	55	Swelling	21
				40	50	Gas	25
				41	60	Swelling	28
				42	4 months	do	29
				43	50	do	7-4
				44	7	Swelling	10
				45	6 months	Karapan	18
				46	6	Swelling	24
				47	26	Starvation	5-5
				48	24	Karapan	16
				49	2	Swelling	17
				50	62	Dysentery	27
				51	55	Swelling	30
				52	60	do	1-6
				53	40	Fever	9
				54	70	Gas	13
				55	50	Swelling	24
				56	12 days	Karapan	30
				57	1	Swelling	14
				58	52	do	18-7
				59	50	do	14
				60	18	Consumption	29
				61	45	Swelling	9
				62	4	Karapan	19
				63	46	Swelling	14
				64	5 months	Karapan	14-9
				65	50	Tumor	28
				66	80	Old age	13
				67	47	Tumor	14

1943-44	Births.	Deaths.
1942-43	24	43
1941-42	24	20

VALAMANGALAM

I	51	Swelling	Jly. 12	1943
2	5 Months	Karapan	Aug. 19	
3	24	do	23	
4	64	Cholera	Sep. 14	
5	36	do	16	
6	13	Swelling	19	
7	9	do	18	
8	1	Drowned	18	
9	34	Swelling	Oct. 7	
10	50	Dysentery	16	
11	60	Old age	18	
12	6	Swelling	28	
13	30	Fever	30	
14	15	Rheumatism	Nov. 13	
15	30	Swelling	Jan. 25	1944
16	35	do	Feb. 10	
17	2	Karapan	13	
18	25	Swelling	19	
19	18	Consumption	20	
20	50	Swelling	Mar. 11	
21	44	Karapan	Apr. 7	
22	58	Dysentery	8	
23	3	Swelling	May 19	
24	56	Dysentery	19	
25	5	Swelling	June 13	
26	4	do	July 8	
27		do	Oct. 2	

1943-44	Births.	Deaths.
1942-43	21	26
1941-42	18	20
	21	23

MANAKODAM

I	5	Swelling	4-9	1943
2	58	do	14	
3	5	do	19	
4	55	do	18	
5	24	Consumption	20	
6	32	Swelling	25	
7	50	Consumption	27	
8	68	Swelling	1-9	
9	75	Rheumatism	2	
10	65	Swelling	3	
11	75	Swelling	8	
12	40	do	10	
13	28	Fever	14	
14	6	Starvation	22	
15	2	do	1-10	

1943-44	Births.	Deaths.
1942-43	31	58
1941-42	24	37
	29	42

CHALI

1	79	Gas
2	50	Swelling

EZHUPANA

1943 Aug. 1944 July

8	2	Karapan	6-9	
4	49	Swelling	9	53
5	4	do	2-10	2
6	3	do	13-11	3
7	25	do	24	4
8	63	Rheumatism	14-12	5
9	65	do	1944	6
10	15	Karapan	10-1	7
11	8	Drowned	3-2	8
12	79	Rheumatism	4	9
13	50	do	9	10
14	2	Karapan	20	11
15	19	Rheumatism	25	12
16	19	Gas	6-3	13
17	2	Karapan	20	14
18	54	Swelling	25	15
19	63	Rheumatism	9-4	16
20	55	Consumption	15	17
21	4	Karapan	29	18
22	21	Dysentery	1-6	19
23	2	Karapan	19	20
24	4	do	25	21
25	69	Gas	11-7	22
26	4	Karapan	12	23
27	4	do	27	24
28	4	do	2-8	25
29	3	Drowned	14	26

1943-44	Births.	Deaths.
1942-43	15	29
1941-42	22	31
	26	26

UZHAVA

1	-	Rheumatism	1943
2	10	Swelling	29-7
3	15	do	22
4	17	Fever	24
5	3	Swelling	1-10
6	6	Karapan	6
7	29	Swelling	16
8	7	do	20
9	5	Karapan	9-11
10	55	Heart failure	19

Aug. 1943 to Aug. 1944	Births.	Deaths.
1942-43	22	40
1941-42	25	25
	13	12

ERAMALIUR

11	53	Swelling	13-3	1943
12	69	Rheumatism	22	
13	30	Swelling	7-4	
14	13	Jaundice	30-6	
15	14	Karapan	3-0	
16	2	do	22	
17	1	Accident	29	
18	60	Swelling	25-11	
19	2 days	Too early birth	26	
20	28	Swelling	2-12	

28-7-43 to 2-12-44	Births.	Deaths.
1942-43	14	20
	6	8
1941-42	5	14

1	20	Fever	18-2
2	45	Pneumonia	17-3
3	21	Fever	19
4	40	do	24
5	50	do	30
6	60	Swelling	30
7	3	Karapan	14-5
8	77	Swelling	15
9	8	Fever	27
10	60	Dysentery	30
11	75	Fever	6-6

No.	Age.	Disease & month of death.
		1943
		Aug.
1	20	Fever
2	2	Swelling
3	12	Fever
4	60	Old age
5	22	Swelling
		Sep.
6	1	Karapan
7	1	do
8	17	Fever
9	14	do
10	22	Swelling
		Oct.
11	80	Dropsy
12	60	Old age
13	25	Fever
14	4	Karapan
15	18	Fever
		Nov.
16	2	Swelling
17	5	Karapan
18	30	Swelling
19	25	Consumption
20	15	Anaemia
21	3	Swelling
22	30	do
		Dec.
23	17	Swelling
24	75	Old age
25	34	Heart failure
26	3	Karapan
		Jan.
27	16	Swelling
28	18	Accident
		Feb. 1944
29	24	Dysentery
		May
30	30	Dysentery
31	31	do
		June
32	45	Swelling
33	29	do
34	2	Karapan
		July
35	22	Swelling
36	16	Fever
37	35	Swelling
38	30	do
39	45	do
40	30	Fever
		Births
1943 Aug. to 1944 Aug.		36
1942-43		40
1941-42		40

PANAVALLY

1943		
		Aug.
1	3M	Karapan
2	5	Swelling
3	46	do
4	20	do
		Sep,
5	12	do
6	2	do
		Nov.
7	49	Fever
		Dec.
		Swelling
8	53	Fire
9	5	Jan.
		Old age
10	73	Swelling
11	17	March
		Swelling
12	41	April
		Swelling
13	46	May
		Piles
14	6	June
		Dysentery
15	20	July
		Swelling
16	3	Karapan
17	2	Fever
18	50	Swelling
19	14	
		Deaths
1943-44	14	20
1942-43	13	19
1941-42	21	17

THAIKATTUCHERY

1943		1944		1943		1944	
Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1	65	2	31	3	40	4	35
5	50	6	55	7	65	8	3
9	3	10	2	11	52	12	22
13	36	14	13 days	15	11	16	45
17	49	18	12	19	12	20	12

19	60	Old age
20	18	Swelling
21	78	Old age
22	71	do
23	1 day	Fever
24	39	Coughs
25	49	Oct.
26	1 day	Karapan
27	1 day	Karapan
28	30	Swelling
29	5M	Karapan
30	8M	do
31	55	Swelling
32	7	Malaria
33	39	Fever
34	2	Nov.
35	85	Swelling
36	5	Rheumatism
37	6	Dysentery
38	35	Dec.
39	47	Swelling
40	6	do
41	67	do
42	6	Old age
43	52	Swelling
44	7	Jan.
45	63	Swelling
46	5M	do
47	1	Rheumatism
48	45	Dysentery
49	65	Feb.
50	54	Karapan
51	82	Swelling
52	4	Old age
53	56	Small pox
54	2	Old age
55	78	Karapan
56	63	March
57	6	Swelling
58	60	do
59	5	do
60	70	April
61	73	Cancer
62	36	May
63	54	Dysentery
64	2	June
65	1	Piles
66	4	Karapan
67	20	Old age
1943-44	80	Consumption
1942-43	80	Piles
1941-42	82	Karapan
		July
		Accident

PALLITHODE		
1943		
1	65	Dysentery
2	30	Fever
3	6	Karapan
4	70	Old age
5	60	Aug
6	14	Old age
7	52	Dysentery
8	65	Fever
9	65	Heart disease
10	10 months	Dysentery
11	62	Karapan
12	65	Stomachache
13	75	Dysentery
14	5	Old age
15	40 days	Sep.
16	60	Karapan
17	9 months	Dysentery
18	25 days	Karapan
19	72	Oct.
20	62	Old age
21	70	Gas trouble
22	60	Nov.
23	5 months	Old age
24	14	Karapan
25	24	do
26	16	Dec.
27	70	Karapan
28	2 months	Drowned
29	3	Old age
30	68	Karapan
31	23	Swelling
32	24	Dysentery
33	4	Karapan
34	81	do
35	24	1944 Jan.
36	70	Old age
37	40	Karapan
38	4	Old age
39	14	Fever
40	64	Karapan
41	62	Old age
42	4	Karapan
43	72	Feb.
44	62	Old age
45	3 months	Paralysis
46	60	Fever
47	8	Old age
48	7	March
49	60	Karapan
		April
		Gas

KANNANKARA		
1943		
1	68	Dysentery
2	57	Swelling
3	18	Oedema
4	76	Rheumatism
5	36	Sep.
6	34	Leprosy
7	10	Oct.
8	1 month	Fever
9	34	Nov.
10	40	Karapan
11	2	do
12	40	Dysentery
13	70	Karapan
14	70	Fever
15	5 months	do
16	22	Dec.
17	2	Karapan
18	1	Feb.
19	42	Karapan
20	62	Oedema
21	1	Rheumatism
22	2 days	March
23	72	Drowned
24	74	Karapan
25		Rheumatism
26		do

THANNIRMUKKAM & VECHOOR		
1943		
1	27	Swelling
2	47	Fever
3	3	Oct.
4	45	Swelling
5	4	Dysentery
6	46	Karapan
7	27	Nov.
8	2	Swelling
9	70	Dec.
10	20 days	Swelling
11	17	Karapan
12	61	Fever
13	43	Swelling
14	16 days	Jan.
15	60	Dysentery
16	3	Karapan
17	18	Swelling
18	72	Feb.
19	47	Swelling
20	25	do
21	1	Gas
22	3	Karapan
23	57	do
24	54	Mar.
25	4	Swelling
26	4	Apr.
27	1	Karapan
28	2	do
29	60	May
		Karapan
		Rheumatism

Births. Deaths.
1943-44 31 35

30	24	Gas	June	38	80	Old age
31	7	Karapan	July	39	42	Swelling
32	40	Swelling	July	40	31	Consumption
33	32	do	July	41	24	Fever
34	3	do	July	42	19	Do
35	1	Karapan	July	43	3 M	Karapan
36	16	Swelling	Aug.	44	38	Swelling
37	5	Karapan	Aug.	45	58	do
38	8	do	Aug.	46	18	Consumption
				47	80	Old age
				48	3 M	Karapan
				49	5	Swelling
				50	66	do
				51	4	Diarrhoea
				52	78	Swelling
				53	1	Karapan
1943-44						
Births. Deaths. 34 38						
NORTH PARUR TALUK						
PALLI PORT						
July 1942 - June 1943						
1942 July						
1	6 months	Karapan		54	41	Rheumatism
2	1 1/2	do		55	4	Swelling
3	82	Old age		56	19	Fever
4	75	Subitance		57	30	do
5	53	Consumption		58	40	Dysentery
6	1	Karapan		59	3 1/2	Karapan
7	2	Swelling		60	6	Swelling
8	60	do		61	65	Rheumatism
9	5 months	Karapan		62	13	Fever
10	60	Swelling		63	65	Rheumatism
11	2	Karapan		1943 Jan.		
12	10	Swelling	Aug.	64	5	Swelling
13	47	do		65	53	Consumption
14	75	do		66	1 1/2	Karapan
15	9	Fever		67	3	Asthma
16	58	Swelling		68	97	Old age
17	73	Old age		69	4	Diarrhoea
18	21	Rheumatism		70	19	Fever
19	26	Consumption		71	70	Swelling
20	20	do		72	38	Consumption
21	6 months	Fever		73	6	Diarrhoea
22	85	Sudden death	Sep.	1943 Feb.		
23	52	Fever		74	4 1/2 M	Karapan
24	85	Old age		75	85	Old age
25	45	Swelling		76	61	Rheumatism
26	68	do		77	58	Old age
27	45	Consumption		78	1 M	Karapan
28	45	Dysentery		79	10	Fever
29	6 months	Karapan		80	78	Old age
30	12	Swelling		81	5	Swelling
31	22	Fever		82	32 days	Karapan
32	14	do		83	60	Fever
33	26	do		84	17	Swelling
			Oct.	85	10 M	Diarrhoea
34	2	Swelling		86	60	Swelling
35	78	Old age		87	18	Fever
36	20	Swelling		88	22	Consumption
37	62	do		1943 March		
				89	91	Old age
				90	1	Karapan
				91	28	Fever
				92	37	Fits
				93	78	Swelling
				94	5	Swelling

No.	Age.	Disease.
95	52	Diarrhoea
96	65	Swelling
97	5	do
98	12	Cough
99	3 1/2	Swelling
100	3	Karapan
101	45	Cholera
102	5	Diarrhoea
April		
103	30	Swelling
104	55	do
105	58	Rheumatism
106	60	do
107	6	Swelling
108	4	Karapan
109	46	Fever
110	46	Consumption
111	2	Swelling
112	80	Old age
113	1 1/2	Karapan
May		
114	44	Consumption
115	42	Swelling
116	58	Consumption
117	65	Rheumatism
118	9	Swelling
119	12m	Karapan
120	70	Dysentery
121	2	Karapan
122	3	Febriis
June		
123	78	Old age
124	77	Swelling
125	—	Partus
126	48	Consumption
127	11	Dysentery
128	72	Old age
129	5	Diarrhoea
130	3	Swelling
131	2	do
132	60	Fever
133	11	Defecientia cordis
134	66	Diarrhoea
135	—	Piles
136	23	Consumption
137	76	Fever
138	80	Old age
139	3	Karapan
140	6	Swelling

No.	Age.	Disease.
141	5	Diarrhoea
142	80	Swelling
143	12m	Karapan
144	12	Consumption
July 1943 — June 1944		
No.	Age-	Name of disease.
'M' after age means month and 'D' means days.		
1943 July.		
1	14	Swelling
2	4	Karapan
3	28	Consumption
4	40	Fever
5	2	do
6	20	Dysentery
7	5	Swelling
8	55	Swelling
9	4	do
10	64	Consumption
11	68	Swelling
12	5	do
13	5	Dysentery
14	7	Fever
15	15	Swelling
16	22	Partus
17	6	Karapan
18	60	Swelling
19	3	Karapan
20	66	Swelling
21	62	Old age
22	2 1/2	Dysentery
23	13	do
24	58	Swelling
25	6	Karapan
26	9	Fever
Aug.		
27	20	Karapan
28	3	Swelling
29	3	Karapan
30	62	Old age
31	5	Swelling
32	26	Consumption
33	58	Swelling
34	4	do
35	63	do
36	12	Cholera
37	42	do
38	19	Fever

No.	Age.	Disease.	No.	Age.	Disease.
39	5	Swelling	85	68	Swelling
40	24	Cholera	86	48	do
41	3	Diarrhoea	87	56	Consumption
42	2	Swelling	88	7	Swelling
43	30	Rheumatism	89	25	do
44	18	Swelling	90	65	do
45	45	Consumption	91	42	Consumption
46	75	Swelling	92	65	Swelling
47	75	do	93	7	Fever
48	72	Cholera	94	6	Swelling
49	87	Old age	95	67	do
50	30	Partus			Dec.
51	48	Swelling	96	8	Swelling
52	46	do	97	1m	Karapan
		Sep.	98	48	Swelling
53	4	Swelling	99	4	do
54	32	Consumption	100	7	do
55	3	Swelling	101	67	Fever
56	5m	Karapan	102	4d	Karapan
57	55	Swelling	103	32	Swelling
58	70	Sudden death	104	2	do
59	45	do	105	8	do
60	9	Swelling	106	27	Piles
61	55	do			January 1944
62	5	do	107	55	Diarrhoea
63	3	Karapan	108	35	Consumption
64	32	Consumption	109	10	Swelling
65	60	Swelling	110	11	Fever
		Oct.	111	80	Swelling
66	3	Cholera	112	78	Rheumatism
67	60	Fever	113	42	Consumption
68	35	Consumption	114	8m	Karapan
69	67	Swelling	115	16d	Karapan
70	55	do	116	81	Rheumatism
71	65	Piles	117	59	Diarrhoea
72	75	Sudden death			Feb.
73	62	Swelling	118	12	do
74	52	do	119	9d	Karapan
75	5	Diarrhoea	120	65	Rheumatism
76	52	Rheumatism	121	75	Swelling
77	3	Diarrhoea	122	60	Cordis
78	58	Old age	123	18	Fever
79	45	Consumption	124	46	Swelling
80	80	Old age	125	16	Fever
81	4	Swelling	126	73	Swelling
		Nov.			March
82	31	Fever	127	40d	Karapan
83	6	Karapan	128	59	Fever
84	22	do	129	75	Sudden death

No.	Age.	Disease.	No.	Age.	Disease.
130	32	Diarrhoea			July 1944 — Jun. 1945
131	—	Swelling			July
132	18	Fever	1	50	Consumption
133	65	Diarrhoea	2	70	Dyspepsia
134	27	Fever	3	56	Swelling
135	72	Rheumatism	4	28	do
136	3	Karapan	5	4	do
137	7	Diarrhoea	6	61	Fever
		April	7	16d	Karapan
138	35	Swelling	8	7	Dysentery
139	34	Consumption	9	63	Swelling
140	45	Swelling	10	65	Fever
141	4	Fever	11	5	Diarrhoea
142	50	—	12	11m	Dysentery
143	32	Diarrhoea	13	6	Dysentery
144	3	Karapan	14	60	Consumption
145	35	Fever	15	77	Swelling
		May	16	35	Consumption
146	54	Swelling	17	1m	Karapan
147	78	Fever	18	38	Swelling
148	50	Swelling	19	7	Diarrhoea
149	45	Consumption	20	60	Swelling
150	39	Swelling	21	7	Dyspepsia
151	2	Diarrhoea			Aug.
152	13	Fever	22	6	Fever
153	11	Fever	23	59	Consumption
154	12m	Karapan	24	3	Diarrhoea
155	55	Small-pox	25	—	Dysentery
156	85	Swelling	26	60	do
157	5	do	27	70	Old age
158	54	Consumption	28	85	Old age
		June	29	51	Fever
159	9m	Karapan	30	34	Consumption
160	58	Consumption	31	4	Diarrhoea
161	2	Dysentery	32	4m	Karapan
162	4	Swelling			Sep.
163	5	Dysentery	33	10d	Karapan
164	2m	Karapan	34	2	do
165	4	Diarrhoea	35	33	Consumption
166	65	Old age	36	6	Diarrhoea
167	58	Diarrhoea	37	3	Karapan
168	3	Dysentery	38	62	Bilious
169	4	Karapan	39	6	Bilious
170	45	Sudden death	40	3m	Karapan
171	1m	Dysentery	41	52	Swelling
172	11	Fever	42	3	Karapan
173	62	Swelling			Oct.
174	5	Dysentery	43	65	Bilious
175	30	Swelling	44	75	Swelling

No.	Age.	Disease.
45	1d	Karapan
46	63	Piles
47	7	do
48	9	Fever
Nov.		
49	2	Diarrhoea
50	3	Karapan
51	4d	do
52	1	do
53	7	do
54	13	Swelling
Dec.		
55	40	Fever
56	64	Dysentery
57	75	Consumption
58	2m	Karapan
59	10	do
Jan. 1945		
60	45	Tuberculosis
61	34	Karapan
62	81	Old age
Births. Deaths.		
1943-44	140	196
1942-43	132	159
1941-42	153	133

VERAPOLY.

June 1943 to 31st May 1944.

No.	Age.	Disease
1	50	Inflammation
2	52	Inflammation
3	94	Inflammation
4	14	Dysentery
5	55	Dysentery
6	14d	Karapan
7	82	Dysentery
8	75	Dysentery
9	70	Inflammation
10	47	Dysentery
11	2m	Karapan
12	52	Fever
13	6m	Karapan
14	28	Inflammation
15	30	Fever

No.	Age.	Disease.
16	2	Dysentery
17	55	Dysentery
18	16	Fever
19	45	Inflammation
20	8	Dysentery
21	72	Dysentery
22	62	Old Age
23	6	Dysentery
24	7	Karapan
25	2	Karapan
26	14	Dysentery
July		
27	61	Dysentery
28	6	Dysentery
29	62	Dysentery
30	3	Karapan
31	25d	Karapan
32	2	Karapan
33	36	Inflammation
34	6	Inflammation
35	45	Cholera
36	3	Karapan
37	52	Inflammation
38	65	Inflammation
39	12	Cholera
40	75	Fever
41	3	Scabies
42	28	Jaundice
43	3m	Scabies
44	22	Dysentery
45	5	Karapan
46	2	Karapan
47	3	Cholera
48	40	Cholera
49	70	Inflammation
50	42	Inflammation
51	60	Inflammation
52	4	Inflammation
53	55	Inflammation
54	65	Inflammation

No.	Age.	Disease.
Aug		
55	3	Karapan
56	65	Inflammation
57	48	Fever
58	3	Inflammation
59	35	Inflammation
60	18	Dysentery
61	35	Partus
62	54	Inflammation
63	2	Karapan
64	48	Ventris
65	64	Rheumatism
66	2	Karapan
67	19	Cholera
68	35	Inflammation
69	75	Inflammation
70	5	Dysentery
71	32	Cholera
72	30	Cholera
73	8	Cholera
74	78	Inflammation
75	16	Cholera
76	62	Rheumatism
77	34	Karapan
78	12	Karapan
79	43	Cholera
80	24	Cordis
81	45	Cholera
82	62	Dysentery
83	40	Cholera
84	8	Dysentery
85	4	Cholera
86	13	Cholera
87	12	Cholera
88	7	Cholera
89	58	Cholera
90	72	Inflammation
Sep		
91	35	Cholera
92	8	Cholera
93	2	Karapan

No.	Age.	Disease.
94	65	Cholera
95	58	Fever
96	76	Inflammation
97	56	Inflammation
98	32	Cholera
99	62	Cholera
100	6	Cholera
101	6	Cholera
102	56	Inflammation
103	2	Cholera
104	70	Inflammation
105	56	Fever
106	60	Inflammation
107	65	Inflammation
108	3	Inflammation
109	52	Dysentery
110	38	Inflammation
111	14	Karapan
112	24	Karapan
113	6	Inflammation
114	40	Cholera
115	3d	Karapan
116	3m	Karapan
117	20	Fever
118	9	Cholera
119	17	Cholera
120	14	Karapan
121	80	Old age
122	80	Inflammation
123	36	Cholera
124	8	Inflammation
Oct		
125	22	Cholera
126	18	Cholera
127	14	Karapan
128	24	Karapan
129	17	Cholera
130	35	Inflammation
131	55	Cholera
132	70	Inflammation
133	12	Cholera

No.	Age.	Disease.	No.	Age.	Disease.
134	45	Inflammation	173	82	Inflammation
135	7	Inflammation	174	40	Inflammation
136	26	Cholera	175	60	Inflammation
137	28	Inflammation	176	74	Inflammation
138	40	Cholera	177	45	Inflammation
139	1½	Karapan	178	20	Inflammation
140	45	Inflammation	179	65	Inflammation
141	5	Inflammation	180	40	Inflammation
142	72	Cholera			Jan
143	35	Cholera	181	26	Electricitate
144	2½	Dysentery	182	85	Inflammation
145	1½	Karapan	183	6	Inflammation
146	1	Dysentery	184	2	Karapan
147	75	Inflammation	185	65	—
148	4½	Inflammation	186	63	Inflammation
149	20	Fever	187	9	Inflammation
150	1m	Karapan	188	55	Tuberculosis
151	52	Inflammation			Feb
152	65	Inflammation	189	2	Karapan
153	2	Asthma	190	72	—
154	75	Inflammation	191	30	Karapan
155	9m	Karapan	192	75	Inflammation
		Nov	193	15	Inflammation
156	11	Fever	194	60	Inflammation
157	3m	Karapan	195	11	Fever
158	52	Inflammation	196	30	Inflammation
159	85	Rheumatism	197	53	Inflammation
160	65	Inflammation	198	50	Karapan
161	4½	Inflammation	199	20	Karapan
162	22	Cholera	200	15	Defectoonordis
163	75	Inflammation	201	2½m	Karapan
164	4m	Karapan	202	2d	Karapan
165	85	Inflammation	203	64	Inflammation
166	75	Rheumatism	204	52	
		Dec			March
167	8d	Karapan	205	5	Dysentery
168	20	Fever	206	72	Inflammation
169	2m	Karapan	207	45	Fever
170	7m	Karapan	208	3	Karapan
171	9	Fever	209	84	Inflammation
172	56	Inflammation	210	38	Pestis

No.	Age.	Disease.	PALARIVATTAM		
			June to May 1944		
			No.	Age	Disease
211	12	Fever			
212	1	Karapan			
213	8	Inflammation	1	45	Fever
214	67	Indigestion	2	35	Swelling
215	8	Inflammation	5	28d	Karapan
216	67	Indigestion	4	5	Drowned
217	7	Inflammation	5	6	Diarrhoea
		April	6	32	Fever
218	37	Fever	7	2	Diarrhoea
219	65	Inflammation	8	26	Fever
220	3	Inflammation	9	2	Diarrhoea
221	70	Fever	10	3½	Swelling
222	1½	Inflammation	11	32	do
223	70	Inflammation	12	7m	Karapan
224	10	Carbuncle	13	3½	Diarrhoea
225	2	Karapan			July
226	18	Fever	14	55	Swelling
227	65	Inflammation	15	4	do
228	41	Fever	16	30	do
229	74	Inflammation	17	10	Piles
		May	18	52	Diarrhoea
	11	Fever	19	12	Worms
230	13	Fever	20	81	Old age
231	15	Fever	21	43	Diarrhoea
232	1½	Karapan	22	6d	Karapan
233	40	Tuberculosis	23	23	Pneumonia
234	23	Fever	24	60	Diarrhoea
235	38	—	25	28	Fever
236	46	Fever	26	3	Diarrhoea
237	1	Karapan	27	75	Fever
238	2m	Karapan	28	15	Diarrhoea
239	75	Dysentery	29	5	do
240	75	Inflammation	30	10m	Asthma
241	60	Inflammation	31	75	Swelling
242	90	Old age	32	42	Fever
243	72	Inflammation	33	55	do
244	2	Inflammation	34	40	do
245	12	Small pox.	35	41	Diarrhoea
246			36	6	Swelling
		Births. Deaths.			
1943-44	151	231			
1942-43	176	168			
1941-42	175	157			

No.	Age.	Disease.	No.	Age.	Disease.
37	2	Diarrhoea	74	4m	Karapan
38	65	Dropsy	75	8	Fever
39	58	Fever	76	45	Pneumonia
40	78	Fever	77	2m	Fever
41	1	Swelling	78	41d	Karapan
		Aug.	79	12	Swelling
42	12	Swelling	80	9	Do
43	2½	do			Nov
44	20	do	81	30	Pneumonia
45	5	Diarrhoea	82	70	Swelling
46	50	do.	83	6	Fever
47	5½	Swelling	84	6m	Swelling
48	3	Astma	85	6	Do
49	2	Diarrhoea	86	75	Diarrhoea
50	65	Do			Dec
51	60	Do	87	82	Rheumatism
52	78	Do	88	3	Diarrhoea
53	35	Swelling	89	38	Swelling
		Sep.	90	15	Diarrhoea
54	44	Swelling	91	73	Do
55	70	Do	92	71	Do
56	78	Do	93	77	Swelling
57	3	Diarrhoea	94	2m	Karapan
58	1m	Karapan	95	28	Fever
59	72	Rheumatism			1944 Jan.
60	55	Swelling	96	68	Swelling
61	85	Do	97	33	Jaundice
62	48	Do	98	3d	Asthma
63	33	Do	99	75	Stomachache
64	3	Fell in boiled water	100	78	Swelling
65	75	Swelling	101	65	Do
66	3	Do	102	62	Do
67	70	Do			Feb
		Oct.	103	62	Stomachache
68	2½	Karapan	104	63	Swelling
69	52	Rheumatism	105	32	Do
70	52	Swelling	106	75	Do
71	4	Do	107	28d	Asthma
72	2	Karapan	108	8	Swelling
73	47	Swelling	109	5	Do

No.	Age.	Disease.	No.	Age.	Disease.
110	12	Swelling			Aug.
111	6d	Karapan	4	4	—
112	66	Swelling	5	17	Fever
		March	6	15	Cholera
113	60	Pneumonia	7		Fever
114	28	Swelling	8	75	Cholera
115	4	Karapan	9	48	Fever
116	2m	Fever	10	3	Fever
117	23	Consumption	11	60	—
118	1	Karapan	12	36	Cholera
119	62	Rheumatism	13	30	Cholera
120	44d	Karapan			Sep
121	60	Fever	14	8	Cholera
122	40	Rheumatism	15	3	Cholera
123	1½	Fever	16	9	Fever
		Apr	17	48	Asthma
124	6	Swelling	18	1d	—
125	28	Do	19	36	Cholera
126	1	Karapan	20	66	—
127	68	Swelling	21	36	Cholera
128	70	Rheumatism	22	27	Dysentery
129	75	Swelling	23	7	Karapan
130	1m	Karapan	24	17	Cholera
131	25	Swelling	25	53	Cholera
		May	26	43	Dysentery
132	50	Do			Oct
133	27	Do	27	3	Karapan
134	48	Leprosy			Nov
135	6	Swelling	28	15	Fever
136	65	Do	29	24	Cholera
137	62	Do	30	45	—
138	45	Fever			Dec
		Births, Deaths.	31	52	Fever
1943-44	95	138	32	26	Fever
1942-43	104	94			Jan
1941-42	94	64	33	70	Pneumonia
		KOTTULLY	34	10	Inflammation
		June 1943—May 1944			Feb
1	6	1943 June	35	60	Inflammation
2	53		36	2½	Karapan
		July	37	4	Karapan
3	70	Rheumatism			

No.	Age.	Disease.	No.	Age.	Disease.
38	2½	Karapan	15	55	Feb
		Mar			Swelling
39	20	Malaria			March
40	10	—	16	71	Swelling
		Apr	17	65	do
41	63	Stomachache	18	3	Karapan
42	12	Fever			April
43	5	Diarrhoea	19	24	Swelling
44	60	Rheumatism	20	70	Heart failure
		May	21	0	Swelling
45	68	Rheumatism	22	63	Swelling
46	1½	Karapan			May
47	28	Diarrhoea	23	51	Cancer
48	3	Karapan	24	5	—

	Births.	Deaths.
1943-44	27	49
1942-43	22	40
1941-42	28	26

VAIKOM TALUQ THOTTAKAM

July 1943

1	7	Dysentery	30	45	Dysentery
		Aug			Oct
2	63	Swelling	31	21	Typhoid
		Sep.	32	94	Old age
3	6m	Karapan	33	16	Fever
4	62	Swelling			Nov
5	35	do	34	6½	
		Oct.	35	6m	Swelling
6	25	Swelling	36	35	Diarrhoea
7	76	do			Dec
		Dec.	37	53	Swelling
8	9d	Karapan	38	1m	Diarrhoea
9	74	Swelling	39	35	Swelling
		Jan 1944	40	17	Typhoid
10	3	Swelling			Jan
11	4	do	41	37	Swelling
12	45	do			Feb
13	78	do	42	70	Dysentery
14	3½	do			Births

	Deaths
1943-44	24
1942-43	30
1941-42	29

AMBALAPUZA TALUK ALLEPPY TOWN

(Extracts from parish records)

July 1943 to June 1944

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
1	6	Cholera	34	2	Swelling
2	7	Swelling	35	84	do
3	6	Dysentery	36	4	Anaemia
4	50	Swelling	37	51	Consumption
5	50	do	38	12	Swelling
6	31	Anaemia	39	35	Cholera
7	31	Dysentery	40	9	Swelling
8	4	Anaemia	41	25	do
9	33	Accident	42	48	do
10	73	Gastritis	43	6	do
11	6	Anaemia	44	34	Dysentery
12	35	Swelling	45	52	Swelling
13	1½	Scabies	46	55	Diabetes
14	1	Worm trouble	47	9	Dysentery
15	4 Days	Karappan	48	3½	Swelling
16	1	do	49	10	Cholera
17	80	Dropsy	50	38	do
18	50	Dysentery	51	55	do
19	70	Diabetes	52	6	Swelling
20	50	Dysentery	53	9m	Malnutrition
21	50	do	54	2½	Dysentery
22	3	Swelling	55	50	Swelling
23	63	Swelling	56	50	Cholera
24	32	Cholera	57	52	do
25	1	Scabies	58	32	do
26	4	Swelling	59	50	Rheumatism
27	20	Dysentery	60	6m	Dysentery
28	71	Swelling			August
29	60	Consumption	61	3	Anaemia
30	40	Dysentery	62	4	Scabies
31	35	do	63	4	Fever
32	65	do	64	6	Dysentery
33	65	Swelling	65	16	Cholera
			66	13	do

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No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
67	78	Cholera	110	4m	Dysentery Sept.
68	50	Fever	111	6	Stomachache
69	45	Cholera	112	5	Scabies
70	2½	Fever	113	7	Swelling
71	3½	Dysentery	114	60	do
72	55	Filariasis	115	48	Typhoid
73	1	Dysentery	116	60	Rheumatism
74	27	Cholera	117	59	Piles
75	63	Swelling	118	80	Old-age
76	8	Cholera	119	6	Typhoid
77	52	Fever	120	28	do
78	35	Cholera	121	45	Consumption
79	38	do	122	50	Swelling
80	40	do	123	95	Old-age
81	6	Swelling	124	62	Swelling
82	40	Dysentery	125	7	do
83	40	do	126	5	do
84	9	Anaemia	127	2	Scabies
85	9m	Convulsion	128	95	Old-age
86	58	Dysentery	129	3m	Scabies
87	25	Blood impurity	130	3	do
88	1	Scabies	131	70	Piles
89	1	Swelling	132	2m	Scabies
90	82	Fever	133	1m	Malnutrition
91	60	Swelling	134	4	Swelling
92	65	do	135	94	Old-age Oct.
93	19 days	Scabies	136	75	Rheumatism
94	1m	Dysentery	137	45	Typhoid
95	47	Swelling	138	18	Fever
96	2½	Scabies	139	7m	Scabies
97	1	Dysentery	140	3½	Swelling
98	30	Swelling	141	2½	Anaemia
99	3	Dysentery	142	78	Dysentery
100	2½	Scabies	143	75	do
101	75	Old-age	144	45	do
102	60	Swelling	145	75	do
103	16	do	146	48	Swelling
104	16	Cholera	147	3m	Scabies
105	85	Fever	148	6m	Dysentery
106	60	Dysentery	149	8	Typhoid
107	70	Heart-failure	150	60	Swelling
108	85	Dysentery			
109	54	Fever			

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No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
151	75	Fever	192	48	Swelling
152	75	Swelling	193	46	Consumption
153	24	Consumption	194	9m	Swelling Jan.
154	19	do	195	50	Dysentery
155	70	Rheumatism	196	1½	Cholera
156	55	Consumption	197	3m	Scabies
157	5m	Dysentery	198	32	Typhoid
158	5	do	199	3m	Scabies
159	65	Swelling	200	38	Consumption
160	1	Dysentery Nov.	201	35	Jaundice
		do	202	58	Dysentery
161	80	Fever	203	42	Swelling
162	48	Swelling	204	75	Fever
163	60	Jaundice	205	4m	Dysentery
164	12	Old-age	206	1m	Malnutrition
165	68	Dyspepsia	207	45	Dysentery
166	78	Dysentery	208	1m	Malnutrition
167	80	Swelling	209	21	Fever
168	6	Consumption	210	56	Cancer
169	38	Plague	211	3m	Scabies
170	15	Accident	212	6m	Convulsion
171	1½	Swelling	213	60	Swelling
172	3	Rheumatism	214	6m	Fever Feb.
173	45	Fever	215	27	Accident
174	52	do	216	35	Consumption
175	8	Dysentery	217	40	do
176	2	Swelling	218	1½	Karapan
177	3	Kidney trouble	219	27	Small-pox
178	55	Fever	220	9m	Dysentery
179	5	Karapan			March
180	40 days	Swelling	221	16	Pneumonia
181	50	Dec.	222	65	Swelling
		Dysentery	223	2	Karapan
182	45	Wound in leg	224	7m	do
183	55	Dysentery	225	24	Heart failure
184	30	do	226	2	Swelling
185	58	Consumption	227	60	do
186	35	Scabies	228	62	Pneumonia
187	11 days	Rheumatism	229	15 days	Malnutrition
188	35	Fever	230	1	Karapan
189	1	Dysentery			April
190	6	do	231	50	Ascitis
191	22				

No	Age.	Cause and Month of Death	No	Age.	Cause and month of death
232	68	Swelling	256	5	Dysentery
233	5	Typhoid	257	1m	do
234	45	do	258	2	Scabies
235	2½	Dysentery	259	66	Fever
236	5	Fever	260	56	Swelling
237	4	Dysentery			June
238	3m	Karapan	261	1	Fever
239	"	do	262	5	Fits
240	62	Cancer	263	38	Rheumatism
241	65	Rheumatism	264	23	Consumption
242	40	Swelling	265	31	Swelling
243	4m	Dysentery	266	1	Diarrhoea
		May	267	72	Rheumatism
244	35	Consumption	268	70	Asthma
245	52	Swelling	269	56	Heart failure
246	6	do	270	1	Swelling
247	65	Rheumatism	271	9	do
248	3	Anaemia	272	30	Consumption
249	3	Karapan	273	8	Dysentery
250	2m	do	274	45	Consumption
251	6	Drowned	275	6	Dysentery
252	69	Dysentery	276	2	Scabies
253	2½	do	277	72	Dysentery
254	6	Swelling	278	19	Diarrhoea
255	85	Fever	279	1	Scabies
		Total births			Total deaths
1943-44		163			280
1942-43		175			251
1941-42		189			152

No	Age.	Cause and Month of Death	No	Age.	Cause and Month of Death
1	5	Dysentery	11	77	Rheumatism
2	70	Fever	12	8	Diarrhoea
3	63	Dysentery	13	80	Fever
4	7	Diarrhoea	14	2	Scabies
5	20	Consumption	15	23	Rheumatism
6	1½m	Scabies	16	25	Typhoid
7	1	do	17	28	Anaemia
8	80	Fever	18	30	Fever
9	55	Rheumatism	19	78	Diarrhoea
10	7m	Malnutrition			

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
		Aug.	58	1½	Scabies
		Nov.			
20	1	Diarrhoea			
21	55	Typhoid	59	1	Scabies
22	70	Piles	60	70	Old age
23	1	Diarrhoea	61	17	Typhoid
24	2 days	Scabies	62	1	Pneumonia
25	5	Dysentery	63	32	Swelling
26	3	Diarrhoea	64	59	Asthma
27	18	Fever	65	2	Dysentery
28	55	Dysentery	66	22	Plague
29	1 day	Scabies	67	17 days	Scabies
30	3 days	do	68	50	Fever
31	5m	Diarrhoea			Dec.
32	1½	Accident	69	1m	Scabies
		Sept.	70	55	Rheumatism
33	38	Consumption	71	25	Consumption
34	3	Swelling	72	65	Rheumatism
35	35	Dysentery	73	50	Stomachache
36	50	Consumption	74	12 days	Scabies
37	21	do			Jan.
38	2	Dysentery	75	58	Dysentery
39	9	Malnutrition	76	5	Fever
40	83	Old age	77	13 days	do
41	38	Consumption	78	35	Pneumonia
42	2½	Dysentery	79	4	Scabies
43	55	Consumption	80	9 days	do
44	22	Accident	81	65	Fever
45	64	Old age	82	6	Convulsion
46	1½	Swelling	83	37	Consumption
47	6	Dysentery	84	93	Old age
48	55	Swelling	85	6m	Diarrhoea
		Oct.	86	1	Scabies
49	1	Scabies	87	55	Fever
50	28	Consumption			Feb
51	2 days	Scabies			
52	2½	do	88	35 days	Scabies
53	50	Swelling	89	48	Heart failure
54	28	Consumption	90	60	Swelling
55	3	Asthma	91	2½	Scabies
56	2m	Scabies	92	85	Old age
57	55	Rheumatism	93	1½	Scabies

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of death
		March	96	57	Intestinal ulcer
94	8	Diarrhoea	97	32	Piles
95	1m	Convulsion			Total births.
					Total deaths 97

KATOOR

July 1943 to June 1944

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
		July			
1	81	Old age	29	36	Malaria
2	60	do	30	69	Swelling
3	33	Cholera	31	51	Cholera
4	2	Malaria	32	39	do
5	12	Swelling	33	50	Fever
6	35	Cholera	34	6m	Scabies
7	6	do	35	43	Cholera
8	70	Old age	36	48	Rheumatism
9	1	Scabies	37	24	Cholera
10	55	Swelling	38	9	do
11	6 days	Scabies	39	7	Dysentery
12	44	Fever	40	22	Swelling
13	81	Asthma	41	58	Rheumatism
14	10	Cholera	42	72	Cholera
15	38	do	43	58	do
16	61	Old age	44	6	do
17	55	Cholera	45	42	do
18	12	do	46	14	Fever
19	45	do	47	9	Swelling
20	7m	do	48	25	Consumption
21	2½	do	49	5	Fever
22	51	Rheumatism	50	71	Old age
23	5	Swelling	51	41	Swelling
24	25	Cholera	52	41	Cholera
25	65	Fever	53	71	Old age
26	78	Cholera	54	6m	Fever
27	23	do	55	21	Rheumatism
28	50	Rheumatism	56	35	Cholera
		August	57	33	Fever

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
58	24 days	do	99	2	Dysentery
59	25	Cholera	100	1½	Accident
60	35	Rheumatism	101	3½	Scabies
61	6	Swelling	102	4	Fever
62	30	do	103	62	Starvation
63	11	Cholera	104	5	Swelling
64	7	do	105	7	Fever
65	1	Scabies	106	3	do
66	23	Malaria	107	25	Asthma
67	1	Scabies	108	2	Scabies
68	50	Swelling			November
		Sept.	109	10m	Fever
69	1½	Scabies	110	65	Asthma
70	48	Ulcer	111	45	Dysentery
71	1½	Scabies	112	50	Starvation
72	51	Rheumatism	113	57	Consumption
73	66	do	114	68	Swelling
74	68	Starvation	115	72	Starvation
75	5	Dysentery	116	29	Fever
76	40	Pneumonia	117	58	do
77	22	Swelling	118	39	Pneumonia
78	35	Consumption	119	20	Fever
79	50	Tumor			Dec.
80	3	do	120	65	Old age
81	1½	Scabies	121	½	Scabies
82	60	Dysentery	122	55	Swelling
83	58	do	123	70	Rheumatism
84	2	Scabies	124	52	Consumption
85	11	Swelling	125	82	Old age
86	7	Scabies	126	40	Rhemuatism
87	1½	do	127	55	Consumption
88	6	Cholera	128	70	Asthma
89	50	Rheumatism			January
90	2	Swelling	129	1	Swelling
91	8m	Scabies	130	5½	do
92	60	Old age	131	1	Karapan
93	75	Swelling			Feb.
		Oct.	132	5½	Fever
94	5½	Swelling	133	2	Karapan
95	2	Scabies	134	1	Asthma
96	3	do	135	2½	Karapan
97	57	Fever			March
98	42	Consumption	136	5	Swelling

No.	Age.	Cause and Month of Death	No.	Age.	Cause and Month of Death
137	5	do	155	10	Swelling
138	6	do	156	55	Leprosy
139	2	Karapan April	157	55	Asthma
140	4	Karapan May	158	48	Rheumatism
141	7	Karapan	159	40	Dysentery
142	2½	Swelling	160	70	Rheumatism
143	2	Fever June	161	70	do May
144	2	Fever	162	40	Consumption
145	7	Dysentery	163	55	Swelling
146	7m	Karapan	164	70	Swelling
147	9m	Fever Adults	165	77	Fever
		Jan.	166	48	Asthma
148	40	Swelling	167	49	Fever
149	75	do Feb.	168	38	Typhoid June
150	51	Swelling March	169	61	Rheumatism
151	65	Oldage	170	30	Consumption
152	34	Typhoid	171	10	Fever
153	80	Old age	172	12	Swelling
154	45	Dysentery	173	72	Rheumatism
			174	55	Dysentery
			175	65	Consumption
Total Births		44	Total deaths		180
1943-44		116	1942-43		174
1941-42		192			104

July 1944 To March 1945.

No.	Age.	Cause and Month of Death (Children)	No.	Age.	Cause and Month of Death
		July			Aug.
1	2	Swelling	9	8	Karapan
2	4 days	Karapan	10	4	Swelling
3	1 day	do	11	3	Karapan
4	1 day	do	12	6m	Karapan
5	4½	do	13	3	do
6	1	Fever	14	5	Dysentery
7	1	Karapan	15	4½	Fever
8	2½	Swelling			Sept.
			16	3	Fever
			17	3	Karapan

No.	Age.	Cause and Month of death.	No.	Age.	Cause and Month of Death
18	4	Karapan Oct.	55	64	Swelling
19	5	Karapan Nov.	56	50	do Aug.
20	1 day	Karapan	57	45	Consumption
21	1	Fever	58	80	Oldage
22	4½	Fever	59	62	Swelling
23	1½	do	60	38	do
24	2½	Karapan Dec.	61	45	Dysentery
25	1½	Karapan	62	81	do
26	5	do	63	61	Leprosy
27	16 days	Fever	64	62	Swelling
28	3	Karapan	65	55	Rheumatism
29	10m	do Jan.	66	41	Tumor
30	5	Ulcer	67	80	Rheumatism
31	28 days	Karapan			Sept.
32	3	do	68	23	Malaria
33	8m	do	69	71	Oldage
34	2½	do			Oct
35	4m	do	70	40	Swelling
36	7	do	71	71	do
37	5	Fever	72	10	Dysentery
38	20 days	do	73	13	Typhoid
39	1½	Karapan	74	45	Swelling
40	6	Pneumonia	75	35	Typhoid
41	8m	Karapan Feb.	76	34	Fever
42	3	Karapan	77	65	Dysentery
43	3	do	78	57	Sudden death
44	6	Fever			Nov.
45	2m	do	79	71	Fever
46	5m	Karapan	80	38	do
47	4½	do			Dec.
48	1 day	do	81	32	Sudden death
49	5m	do	82	60	Swelling
50	3	Karapan	83	55	Rheumatism
51	6	Swelling	84	10	Swelling
52	Adults	July	85	56	Asthma
53	75	Rheumatism	86	26	Fever
54	80	Fever			Jan.
	60	Fever	87	12	Fever
			88	26	do
			89	55	Rheumatism
					Feb.
			90	22	Swelling

No.	Age.	Cause and Month of Death.	No.	Age.	Cause and Month of Death.
		March	94	55	Ulcer
91	70	Fever	95	22	Typhoid
92	28	do			Total births
93	58	Swelling			Total deaths 95

VAIKOM TALUK

VAIKOM PARISH

July 1943—January 1945

No.	Age.	Cause and Month of death.	No.	Age.	Cause and Month of Death.
		1943—July			
1	48	Consumption	28	20	Cholera
2	11 days	Karappan	29	4	Oedema
3	5	do	30	3	Cholera
4	9 months	do.	31	53	Fever
5	50	Consumption	32	49	Oedema
6	85	Old age	33	60	Dysentery
7	59	Oedema	34	18	Consumption
8	9	Dysentery	35	6	Oedema
9	70	Oedema	36	6	do.
10	11 months	Karappan	37	49	Consumption
11	1½	Gastritis	38	4	Karappan
12	8 months	Karappan	39	52	Oedema
13	68	Rheumatism			September
14	44	Jaundice	40	5	Fever
15	1½	Karappan	41	45	do.
16	53	Fever	42	76	Oedema
17	30	do.	43	45	Gas
18	7	Oedema	44	13	Fever
		August	45	49	Jaundice
19	23	Fever	46	3	Karappan
20	9 months	Karappan	47	36	Consumption
21	33	Oedema	48	54	Oedema
22	70	do.	49	48	Cholera
23	15 days	Karappan	50	44	Oedema
24	12	Cholera	51	56	Fever
25	80	Old age	52	7	Karappan
26	4	Dysentery			October
27	69	Oedema	53	24	Fever
			54	35	Delivery

No.	Age.	Cause and Month of Death.	No.	Age.	Cause and Month of Death.
55	60	Oedema	90	15 days	do.
56	73	Old age	91	2 months	do.
57	35	Oedema	92	29	Fever
58	80	Old age	93	69	Oedema
59	47	Fever	94	58	Dysentery
60	1	Karappan			March
61	11	Rabid dog bite	95	73	Rheumatism
		November	96	60	do.
62	19 months	Karappan	97	20	Consumption
63	71	Old age	98	3	Oedema
64	1½	Karappan	99	79	Oedema
65	13	Oedema	100	3	Karappan
66	52	do.	101	54	Oedema
67	1½	Karappan			April
68	18 months	do.	102	69	Fever
69	9	Oedema	103	14	Oedema
		December	104	84	Old age
70	78	Old age	105	60	Oedema
71	81	do.	106	10	Fever
72	33	Delivery	107	30 days	Karappan
73	1½	Karappan	108	67	Dysentery
74	39	Oedema	109	55	Fever
75	20	Fever	110	34	Delivery
76	2½	Karappan			May
77	57	Inflammation	111	68	Oedema
78	60	Oedema	112	58	do.
79	6	Epilepsy	113	45	Fever
80	47	Oedema			June
81	10	Fever	114	58	Fever
		1944—January	115	34	Consumption
82	4	Karappan			1944—July
83	53	Oedema	116	4	Karappan
84	37	do.	117	47	Jaundice
85	69	Old age	118	86	Old age
86	57	Gas	119	22	Fever
87	14	Rheumatism	120	28	Delivery
		February	121	55	Rheumatism
	2	Karappan	122	60	Fever
	4	do.	123	79	Old age

No.	Age.	Cause and Month of Death.	No.	Age.	Cause and Month of Death.
124	1	Karappan	151	5	Karappan
		August	152	78	Old age
125	11	Fever	153	5	Karappan
126	30	Oedema	154	33	Fever
127	9 months	Karappan	155	2	Karappan
128	20 days	do.	156	1	Karappan
129	6	do.			November
130	9 months	do.	157	51	Oedema
131	35	Oedema	158	76	Old age
132	54	Fever	159	34	Oedema
133	67	Fever	160	69	do.
134	1	Karappan	161	40	Dysentery
135	3 months	do.	162	24	Fever
136	2	Anaemia			December
137	10 days	Karappan	163	3 months	Karappan
		September	164	12 days	do.
138	1	Karappan	165	6 months	do.
139	70	Old age	166	26	Oedema
140	37	Fever	167	2	do.
141	7 days	Karappan			1945—January
142	65	Fever	168	64	Fever
143	1	Karappan	169	50	Diabetes
144	61	Fever	170	76	Oedema
145	3	Karappan	171	15 days	Karappan
		October	172	73	Rheumatism
146	55	Rheumatism	173	3 months	Karappan
147	19	Fever	174	67	Oedema
148	54	do.	175	11	do.
149	3	Karappan	176	92	Old age
150	10 days	do.	177	2	Karappan
		Total births			Total deaths
1943—44		95			116
1942—43		104			90
1941—42		110			54

MUVATTUPUZA TALUK

ARIKUZA

Age.	Cause and month of death	No.	Age.	Cause and month of death
	1943—July	30	48	Fever
1	72	31	64	do.
2	102	32	51	Oedema
3	88			March
4	52	33	4	Oedema
5	73	34	1½	Fever
6	85	35	15 days	Karappan
	August	36	78	Old age
7	13 days			April
8	85	37	3½ months	Karappan
9	22	38	93	Old age
10	17 days	39	1½	Karappan
	September	40	1	Vomiting
11	22			May
12	10	41	29	Delivery
13	23	42	69	Fever
14	14	43	53	Oedema
15	6	44	3½	Karappan
16	36			June
17	2 days	45	3	Karappan
	October	46	½	Do.
18	3½ months	47	66	Abscess of Live
	November			August
19	73	48	55	Cough
20	83	49	50	Oedema
	December	50	5 days	Karappan
21	56	51	4	Gastric pain
22	2	52	64	Old age
	1944—January			September
23	92	53	1½	Karappan
24	13 days	54	80	Old age
25	9 months	55	2	Pakshipeedi
26	70			(Disease by a bird)
27	9	56	30	Consumption
	February	57	1½	Karappan
57	Dysentery	58	2½	Fever
34	Spleen enlargement			

No.	Age.	Cause and Month of Death.	No.	Age.	Cause and Month of Death.
59	1	Fever	65	52	Consumption
60	72	Old age	66	61	Oedema
61	3 days	Karappan	67	75	Old age
62	55	Gastric ulcer			February
63	44	Fever	68	1	Karappan
64	4 months	Karappan	69	41	Accident
Total births			Total deaths		
1943—44		47			63
1942—43		84			37
1941—42		57			26

A NUTRITIONAL SURVEY—SHERTALLA, TRAVANCORE.

Survey of Variakad, Uzava and Vavalar by Mr. K. K. Chandy assisted by College students and members of Relief Committee.

(SEPTEMBER 1944)

The undermentioned statistics have been analysed and discussed in the survey report of Mr. K. K. Chandy. All the figures are not published as the book will become voluminous. The food consumed, the number of meals a day, number of days without meals in a month, number of untorn clothes in each family, the condition of the hut, the classification of nutritional diseases and remarks about each family are given below. Mr. Chandy has been kind enough to send me all the survey papers for analysis and observations. These figures indicate the following about the nature and quantity of food consumed.

Many families consume between 1 to 2 lbs. of tapioca per head a day. The rice unit supplied as weekly ration by the Government amount to 6 nazis per adult. Assuming that a family consists of between 3 and 4 adult equivalents on the average (treating children below between the age of 10 and 3 as half adults), a family should at least buy a weekly ration of 4½ to 6 Edangazis (4 nazis = 1 Edangazi which measures 37½ oz. of rice in weight by flat measurement). The total number of families that have not purchased this ration amount to more than 100 families out of the 271 families examined. They will naturally be consuming more tapioca, say 1½ to 2 lbs. per day. They will be consuming less than 9 oz. of rice. The spices that are purchased such as salt, tamerind, dried chillies, amount roughly to a rupee to 1½ rupees per month in the case of the poor families. Vegetables are rarely bought, though what is grown in the garden hut may be used occasionally. Mr. Chandy calculates an average expenditure per head per day of 24 cash or vegetables which works to one and a half annas per month for the whole family.

The only hope of balancing a tapioca-rice diet lies in the availability of fish. Calculating at half chackram for an oz. of fish which is a very liberal estimate, an adult should spend two chackrams or one to one and a half annas a day for getting 3 to 4 oz. of fish. A family of 4 adults should spend about four to six annas a day on fish

if each of them is to get 4 oz. But the number of families who spend one rupee and less on fish per family per month is 130 out of the 271 families examined. Families who spend Rs. 2/- and more on fish per month are 46. The others spend between one and two rupees a month.

It is common to use at least one cocoanut a day for cooking purposes if a family can only afford it. But the figures indicate that a large number of families, more than 100 out of 271, do not use cocoanut at all. Such poor families use tapioca, cocoanut cake and groundnut cake, as they are cheaper for making additional dishes. A cocoanut at present costs 2 annas. The value of the purchases indicates that many families do not even buy half a cocoanut on the average. The average daily expenditure for a family on oilcakes and cocoanuts is half a chackram. Sums spent on cocoanut oil for bath and for dressing the food roughly amounts to a rupee or less per month for all the persons in the case of many families.

Intoxicants are not a major item of expenditure. 185 families do not drink. The sum spent on drink ranges in the case of other families between one rupee and five rupees a month. Coffee and tea form a major item of expense. Where there are earning male members, they invariably go to tea shops for filling their stomach with rice and tapioca-pudding, and for washing them down with tea or coffee. The cost will work to at least 2 annas a day. When there is no employment available, this sum will not be spent. This is a more economical method than making eatables and tea at home which few families can afford. Further the difficulty of getting milk for each house has necessitated central tea shops which can get a little milk for tea or coffee. The non-earning women and children drink milkless tea or jaggery water and the old rice gruel of the previous day if available. A kind parent may also buy and bring to the home from the tea shop for his last child a sweet or savoury pudding or a plantain. But generally all families take only two meals a day. Tobacco is another item of expenditure. It costs between quarter to one chackram per day for each family. The westcoast consumer, wanting in nervous strength owing to protein deficiency in his food, makes up for it by these stimulants.

Note:—Tapioca, rice, wheat, bajra are given in the figures as weekly consumption and other articles as monthly consumption. 28½ chackrams make one British rupee and 16 cash make one chackram. No. of days without meals are calculated for a month. —K. G. SIVASWAMY.

REMARKS ON THE GENERAL CONDITION OF FAMILIES ACCORDING TO THEIR SERIAL NUMBER.

VARIAKAD.

1. House-wife weak. Delivered two still sisters.
2. Housing condition. Very poor.
3. Orderly.
4. Damp, dirty, Well-ventilated.
5. Well ventilated.
6. No protection by any wall thatch.
9. Pitiable. No male members. Wears borrowed cloth.
12. Very miserable, scanty food, scanty clothing.
15. Hut very dirty. No protection.
17. Poor sanitation.
18. Not clean.
19. Poor.
20. Hard to make both ends meet.
23. Miserable.
25. Miserable.
26. Family in debt.
27. No ventilation.
28. Very poor.
29. Kitchen unthatched.
30. Unclean not floored.
31. Kitchen not thatched.
33. Hut unclean and insanitary.
34. Sanitation satisfactory. A scheduled class family.
35. Mother and child show symptoms of malnutrition.
36. 3 days complete starvation, most pitiable.
37. 4 days without food.
39. Even one meal a day not sure on all days.
40. Lives with her brother as husband left.
42. Wife protected by her father as husband left.
44. Miserable, suffering unbearable pain.
51. Helpless, a dirty hut.
53. A happy family.
61. All 3 affected also by jaundice.
67. Also itches and filariasis.
69. Miserable.
70. Of these, two suffering from consumption and two filariasis. Two women left home owing to hunger. Two women support the family.
71. Also suffering from consumption.
72. 3 days without food. Only one cloth for all children together.

Serial No.	No. of persons	No. of Children	Tapioca (lbs)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies tamarind etc.	Vegetables	Fish	Coconuts and Coconut & ground-nut oil cakes (No. or value)	Oil for bath and consumption
1	4	2	60	1½	¾	¾	0 15 0	0 27 0	1 0 0	—	1 7 0
2	4	1	40	3	1½	¾	1 0 0	0 5 0	0 7 0	—	1 0 0
3	3	nil	30	4½	2½	¾	1 5 8	0 16 0	0 15 0	—	1 9 0*
4	6	3	90	3	1½	¾	3 15 0	0 20 0	—	—	0 26 0
5	7	1	90	3	1½	¾	1 1 8	0 21 0	—	—	1 7 0
6	6	4	90	3	1½	¾	1 14 0	0 4 0	—	—	1 10 0
7	4	2	60	12	6	2	0 18 0	—	1 8 0	0 24 0	0 18 0
8	7	4	60	6	3	1	1 8 0	—	1 0 0	—	—
9	4	2	45	—	—	—	0 15 0	—	1 0 0	0 20 0	0 3 0
10	3	1	15	1½	¾	—	0 8 0	—	0 15 0	0 15 0	0 2 0
11	4	1	10	—	1½	¾	0 20 0	—	0 7 0	—	0 7 0
12	7	4	30	¾	¾	¾	1 0 0	—	0 20 0	—	0 8 10
13	5	2	40	3	1½	¾	0 15 0	—	0 25 0	—	0 15 0
14	5	2	20	—	—	—	0 3 0	—	2 0 0	—	3 0 0
15	9	5	15	2½	3½	1½	—	—	1 4 0	—	1 0 0
16	7	2	80	3	1½	¾	—	—	2 4 0	2 18 0	1 7 0*
17	8	nil	24	4½	1½	¾	1 0 8	—	1 0 8	0 9 0	0 14 4
18	4	2	32	3	1½	¾	1 12 0	—	1 0 0	0 24 0	0 14 0
19	6	4	45	3	1½	1½	1 0 0	—	2 0 0	0 24 0	1 7 0
20	4	2	45	4½	1½	¾	1 0 0	0 7 0	1 0 0	0 24 0	1 4 0
21	8	6	16	16	8	2½	1 9 0	0 7 0	2 0 0	—	1 0 0
22	5	3	45	6	1½	¾	0 15 0	—	0 15 0	0 7 8	1 0 0
23	4	1	6	1	—	—	0 15 8	—	1 0 0	—	0 7 8
24	8	4	nil	18	9	3	1 17 0	—	2 0 0	2 18 0	1 2 0
25	3	1	20	9	4½	1½	1 2 0	—	0 15 0	0 20 0	1 0 0
26	3	nil	46	9	4½	1½	1 2 0	0 7 0	0 20 0	0 20 0	0 15 0
27	6	4	45	12	6	2	1 5 0	1 0 0	2 3 0	0 14 0	0 18 0
28	3	nil	30	6	3	1	1 0 0	0 4 0	0 15 0	0 16 0	0 15 0
29	3	2	25	3	1½	¾	0 21 0	—	0 15 0	0 8 0	0 16 0
30	4	2	40	2½	1½	¾	1 0 0	—	0 15 0	0 8 0	0 7 0
31	3	1	40	3	1½	¾	0 22 0	—	1 0 0	0 18 0	0 18 0
32	6	4	15	3	1½	¾	1 2 0	—	1 0 0	0 24 0	1 0 0
33	5	3	20	24½	12	4	1 5 8	—	1 1 8	1 0 0	0 20 0
34	7	3	90	6	3	1	1 14 0	—	—	1 21 8	2 0 0
35	2	1	30	1½	¾	¾	1 0 0	—	1 0 0	0 8 0	0 15 0
36	4	2	8	—	—	—	0 7 0	—	0 15 0	0 15 0	0 7 8

* The sums relate to Rs. chackrams and cash.

Intoxicants	Coffee and Tea	Tobacco	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
AKAD	7 0 0	2 0 0	2	—	4	yes	1	—	—	—	—	1	—
8 0 0	—	1 1 8	1	—	6	not	—	—	—	—	—	—	†1
5 0 0	—	2 0 0	3	—	10	yes	—	—	—	—	—	—	—
nil	—	2 0 0	2	—	2	not	—	—	—	—	—	—	—
2 0 0	—	4 0 0	2	—	12	yes	—	—	—	—	—	—	—
10 0 0	—	1 21 8	3	—	4	"	—	—	—	—	—	—	—
7 14 0	—	1 17 0	2	—	3	"	1	—	—	—	—	1	—
0 6 0	—	1 14 0	2	—	7	"	—	—	—	2	—	2	—
2 21 0	—	—	1	—	3	"	—	—	1	—	—	1	—
—	—	0 15 0	1	—	3	"	—	—	—	—	—	—	—
—	—	0 15 0	1	—	4	"	2	—	—	*1	3	—	—
—	—	1 14 0	1	—	3	"	—	—	—	2	—	2	—
—	—	0 15 0	2	—	5	"	—	—	—	2	—	2	—
—	—	0 15 0	3	—	18	"	—	—	—	—	—	—	—
7 14 0	—	5 14 0	2	—	8	"	—	—	—	—	—	—	—
3 14 4	—	—	2	—	5	"	1	—	—	—	—	1	—
—	—	2 3 0	1	—	—	"	—	—	—	—	—	—	—
—	—	2 3 0	2	—	14	"	—	—	—	—	—	—	—
—	—	1 18 0	1-2	—	7	"	1	—	—	—	—	1	—
—	—	0 15 0	2	—	10	"	—	—	—	—	—	—	—
3 0 0	—	2 3 0	2	—	16	"	—	—	—	—	—	—	—
—	—	—	1	—	20	"	—	—	—	1	—	1	†1
—	—	1 2 0	1	—	3	"	—	—	—	—	—	—	†1
4 0 0	—	1 0 0	1-3	—	30	"	—	—	—	—	—	—	—
—	—	1 0 0	2	—	3	"	—	—	—	—	—	—	§1
—	—	1 2 0	2	—	7	"	—	—	—	—	—	—	†1
7 0 0	—	4 0 0	3	—	1	"	1	1	—	—	—	2	—
2 0 0	—	1 2 0	2	—	6	"	1	—	—	—	—	1	†1
8 0 0	—	1 16 8	2	—	1	"	1	—	—	—	—	1	—
—	—	1 14 0	2	—	8	"	—	1	—	—	—	1	—
—	—	2 0 0	2	—	3	"	—	nil	—	—	—	—	—
—	—	0 15 0	2	—	7	not	—	—	—	—	—	—	—
—	—	3 8 0	3	—	6	"	—	—	—	—	—	—	—
—	—	2 14 0	3	—	15	yes	—	—	—	—	—	—	—
—	—	0 14 0	2	—	—	"	2	—	—	—	—	—	—
—	—	1 9 0	1	—	4	not	3	—	—	—	—	3	—

* Abdominal pain. † Rheumatic. ‡ Rheumatism. § Cough. § Leg ulcers. * Stomach

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies * tamarind etc.	Vegetables *	Fish	Coconuts and nut oil cakes (No. or value) *	Oil for bath and consumption *
37	5	2	60	3½	1½	1	2 0	—	3 6 0	1 9 0	3 21 0
38	4	1	30	9	6	2	0 15 0	—	1 2 0	1 9 0	1 9 0
39	4	3	22½	2½	1½	1½	0 7 4	—	0 15 0	—	0 7 8
40	2	nil	22	6	3	1	2 0 0	—	2 0 0	0 20 0	1 14 0
41	5	3	30	12	6	2	0 15 0	—	0 20 0	0 21 0	0 8 0
42	2	—	30	9	4½	1½	0 15 8	—	1 0 0	0 20 0	0 20 0
43	2	—	17½	2½	1½	1	0 7 8	—	1 14 0	2 21 0	0 8 0
44	3	1	7	—	—	—	—	—	—	—	0 7 0
45	6	2	60	3	1½	1	7 0 0	0 5 0	1 14 0	—	1 1 8
46	6	4	90	15	7½	2½	1 1 8	—	2 3 0	—	0 16 0
47	6	2	45	1½	1	1	1 8	—	—	—	0 9 0
48	7	3	150	1½	1	3	6 0 0	0 5 0	2 3 0	1 1 8	2 3 0
49	5	4	30	1	1	0	4 0 0	—	0 7 0	—	0 7 0
50	1	—	7	1	1	0	2 0 0	—	0 4 0	—	—
51	8	6	60	5½	2½	1	1 0 0	—	1 14 0	0 8 0	0 10 0
52	6	5	45	1½	1	1	0 10 0	—	0 15 0	—	0 4 0
53	5	—	60	—	—	3	0 0 0	1 0 0	4 0 0	—	1 0 0
54	4	2	60	3	1½	1	0 0 0	2 0 0	—	3 0 0	4 8 0
55	6	2	150	8	6	3	1 0 0	—	3 0 0	4 0 0	1 0 0
56	4	2	30	6	1½	1	0 14 4	—	0 21 8	—	0 17 8
57	6	4	20	11	5½	2½	0 7 0	—	0 14 4	—	0 17 8
58	5	3	60	3	1½	1½	2 0 0	—	3 0 0	—	1 0 0
59	3	1	60	9	2½	1	2 0 0	—	—	0 14 4	3 0 0
60	5	3	60	3	1½	1	0 14 4	—	0 7 0	0 10 8	1 0 0
61	6	5	45	1	1	0	7 0 0	—	1 0 0	—	0 7 0
62	10	4	—	—	—	0	7 0 0	—	3 8 0	—	2 12 0
63	3	2	30	1	1	0	3 8	—	0 14 4	—	0 7 0
64	3	3	16	18	9	3	5 0 0	0 7 0	6 2 8	2 18 0	5 14 0
65	5	—	—	1	—	—	—	—	—	—	—
66	4	2	60	9	4½	1½	0 21 0	—	2 0 0	1 9 0	1 2 0
67	4	1	30	6	3	1	0 15 0	—	0 21 0	0 20 0	0 12 0
68	5	1	30	1	1	0	10 0	—	0 19 0	—	0 4 0
69	6	1	45	3	1½	1	0 15 0	—	1 0 0	0 7 8	0 15 0
70	7	3	60	9	4½	1½	1 0 0	—	1 14 0	1 9 0	—
71	3	1	37½	11½	7½	—	0 15 0	—	0 15 0	—	—
72	8	5	45	1	1	1	2 0 0	1 2 0	0 15 0	1 9 8	—
73	6	3	60	15½	9	1	1 2 0	2 0 0	2 4 0	1 2 0	—

* The sums relate to Rs. chackrams and cash.

Intoxicants *	Coffee and Tea *	Tobacco *	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
1 0 0	4 0 0	3 6 0	1	—	7	not	—	—	—	—	†1	1	—
5 0 0	4 8 0	3 6 0	2	—	5	yes	—	—	—	—	†1	1	—
—	—	1 17 0	1	—	3	not	—	1	—	—	—	1	—
—	—	2 0 0	1	—	4	„	—	—	—	—	*1	1	—
2 0 0	0 5 0	0 14 0	2	—	3	yes	—	—	—	—	—	—	\$1
—	0 10 0	3 6 0	2	—	3	„	—	—	—	—	\$1	1	—
—	0 8 0	—	1	—	3	„	—	—	—	—	—	—	\$1
2 0 0	0 15 0	0 8 0	1	—	2	„	—	—	—	—	—	—	\$1
1 14 0	7 14 0	2 0 0	2	—	3	„	—	—	—	—	—	—	—
—	—	0 15 0	2	—	1	„	—	—	—	—	—	—	—
—	—	1 1 8	2	—	3	„	—	—	—	—	—	1	—
—	5 4 0	3 6 0	2.1	—	3	„	—	—	—	—	—	—	—
—	—	—	1	—	1	„	—	—	—	—	—	—	—
—	—	2 0 0	1	—	1	„	1	—	—	—	\$1	2	—
—	—	0 7 0	1.2	—	—	„	—	—	—	—	—	—	—
—	—	1 0 0	2	—	—	„	—	—	—	—	—	—	—
12 0 0	—	3 0 0	2	—	3	„	—	—	—	—	*4	4	—
—	—	1 8 0	2	—	1	„	—	—	—	—	—	—	—
—	—	0 14 4	2	—	2	„	—	1	—	—	—	1	—
—	—	0 17 8	2	—	2	„	—	—	2	—	—	2	—
—	—	0 14 4	3	—	2	„	—	—	—	—	—	—	—
—	—	—	1	—	—	„	—	—	—	—	—	—	—
—	—	0 7 0	2	—	—	„	—	—	—	—	—	—	—
—	—	—	1	—	3	„	3	—	—	—	—	3	—
—	—	8 0 0	2	—	—	not	—	—	—	—	—	—	—
—	—	0 3 8	1	—	1	yes	—	—	—	—	—	—	—
—	—	—	3	—	30	„	—	—	—	—	—	—	—
—	—	—	—	—	10	„	—	—	—	—	—	—	—
—	—	2 4 0	3	—	9	„	—	—	—	—	—	—	—
1 0 0	5 0 0	1 0 0	3	—	5	„	3	—	—	—	—	3	—
—	—	—	2	—	1	„	—	—	—	—	—	—	—
—	2 0 0	1 0 0	1.2	—	2	„	2	—	—	—	—	2	—
—	—	3 0 0	2	—	3	not	4	—	1	1	—	6	—
—	—	—	1.2	—	—	yes	2	—	—	—	—	2	—
—	—	1 14 0	1.2	3	3	not	1	—	—	1	—	2	—
—	2 8 0	1 2 0	1.2	—	4	yes	—	—	2	—	—	2	—

Consumption. † Anaemic paralysis. * Jaundice. \$ Asthma. § Filaria. ¶ Pitham.

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies tamarind etc.	Vegetables	Fish	Coconuts and Coconut & ground-nut oil cakes (No. or value)	Oil for bath and consumption
1	2	1	22½	—	—	—	0 15 0	—	0 15 0	0 10 0	0 8 0
2	5	3	60	3	1½	1½	1 1 8	—	1 1 8	—	1 0 0
3	6	5	78	9	4½	1½	1 1 8	0 8 0	0 10 0	—	0 21 0
4	5	2	60	3	1½	½	1 1 8	—	1 1 8	—	1 1 8
5	6	4	60	—	—	—	1 3 0	0 10 0	1 3 0	0 24 0	0 14 0
6	3	1	60	2½	1	½	0 22 8	—	3 3 0	0 15 0	0 15 0
7	4	—	60	6	3	1	1 14 0	—	1 1 8	—	0 22 8
8	2	—	30	3	1½	½	1 1 8	—	0 12 8	0 21 0	0 16 0
9	9	4	240	9	4½	1½	1 1 8	—	1 1 8	—	0 15 0
10	5	3	25	2	—	—	0 14 0	—	0 14 0	—	0 10 0
11	9	7	60	6	—	—	2 0 0	—	1 14 0	—	2 0 0
12	4	—	45	2½	1½	½	1 0 0	—	1 0 0	—	1 0 0
13	2	—	40	½	½	½	0 10 0	—	1 0 0	—	—
14	7	5	60	3	2	½	1 0 0	—	1 0 0	6	0 7 0
15	7	5	90	11½	7½	1½	1 0 0	—	1 0 0	4	1 0 0
16	5	1	60	2½	1½	½	0 14 0	—	2 0 0	5	0 14 0
17	2	—	—	6	3	1	0 14 0	1 12 0	1 11 8	1 1 8	1 0 0
18	9	3	20	21	10½	3½	1 3 8	0 20 0	1 20 0	—	1 11 8
19	5	1	15	24	12	4	7 0 0	—	—	—	0 16 0
20	6	1	60	3	1½	½	0 22 8	—	1 1 8	—	1 3 8
21	7	5	90	—	—	—	1 1 8	—	2 3 0	—	1 0 0
22	5	3	60	1½	½	½	1 1 8	—	2 7 0	—	2 3 0
23	2	1	10	—	—	—	0 3 0	—	0 4 0	—	—
24	4	1	10	3	1½	½	0 15 0	—	1 1 8	0 24 0	0 14 0
25	2	—	15	1½	½	—	2 3 0	0 5 0	0 15 0	1 7 0	0 16 0
26	6	1	45	6	3	1½	2 3 0	—	2 3 0	0 12 0	1 1 8
27	7	2	60	11½	7½	1½	0 10 0	—	2 0 0	0 21 0	0 14 0
28	8	3	20	7½	5	1½	0 13 0	—	1 0 0	0 25 0	0 15 0
29	3	1	10	22½	15	3½	0 15 0	0 14 0	1 14 0	—	0 14 0
30	1	—	15	1½	1	½	0 10 0	—	0 15 0	—	0 5 0
31	4	2	60	18	12	3	0 20 0	—	—	—	1 1 8
32	7	4	30	15	10	2½	0 20 0	—	1 7 0	—	0 15 0
33	3	1	10	3	2	½	0 12 0	—	1 14 0	0 20 0	0 15 0
34	6	2	60	15	10	2½	1 0 0	—	2 0 0	—	1 1 8
35	5	3	8	9	4½	1½	1 0 0	—	0 21 0	—	0 21 0
36	4	2	45	4	1½	½	0 22 0	—	1 0 0	0 17 8	1 0 0

* The sums relate to Rs. chackrams and cash.

Intoxicants	Coffee and Tea	Tobacco	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
UVA													
—	—	—	1-2	3	2	yes	—	—	—	—	—	—	—
3 4 0	—	3 4 0	2	—	4	"	—	—	—	—	—	—	—
—	4 7 0	2 14 0	2	—	5	"	—	—	—	—	—	—	—
2 3 0	—	1 1 8	1-2	—	5	"	—	—	—	—	—	—	—
—	4 0 0	1 14 0	2	—	6	not	—	—	—	—	—	—	—
1 12 0	—	0 15 0	2	3	2	"	—	—	—	—	—	—	—
1 0 0	4 0 0	1 1 8	2	—	9	yes	—	—	—	—	—	—	—
2 0 0	3 0 0	2 3 0	2	2	2	"	—	—	—	—	—	—	—
3 0 0	—	1 1 8	2	10	—	"	—	—	—	—	—	—	—
0 24 0	—	1 0 0	1	—	2	yes	—	—	—	—	—	—	†1
—	2 0 0	2 0 0	3	—	10	"	—	—	—	—	—	—	—
—	1 14 0	1 7 0	1-2	—	4	"	—	—	—	—	—	—	—
—	—	—	—	—	2	"	—	—	—	—	—	—	—
—	3 0 0	1 14 0	1	—	6	"	—	—	—	—	—	—	—
—	—	2 0 0	2	—	6	"	—	—	—	—	—	—	—
—	4 0 0	2 0 0	2	—	6	"	—	—	—	—	—	—	—
—	—	1 0 0	2	—	4	"	—	—	—	—	—	—	—
—	0 14 0	—	2	3	6	"	—	—	—	1	—	1	—
5 0 0	15 0 0	4 0 0	1	4	3	not	—	—	—	—	—	—	—
—	6 0 0	0 14 0	3	—	12	yes	—	—	—	—	—	—	—
—	—	1 14 0	1	—	3	not	—	—	—	—	—	—	§1
5 7 0	—	2 3 0	2	—	3	yes	—	—	—	—	—	—	—
3 0 0	—	1 1 8	2-1	—	2	not	—	—	—	—	—	—	—
—	—	0 7 0	1	12	—	"	—	—	—	—	—	—	—
—	—	0 15 0	1-2	—	3	yes	—	—	—	—	—	—	—
—	7 14 0	8 6 0	1-2	3	1	"	—	—	—	—	—	—	—
4 7 0	4 7 0	2 3 0	1-2	3	3	"	—	—	—	—	—	—	—
—	—	2 14 0	1	8	7	"	1	—	—	—	—	1	—
—	2 0 0	1 14 0	2	5	6	"	—	—	—	—	—	—	—
—	3 0 0	1 1 8	3	—	5	"	—	—	—	—	—	—	—
—	—	0 10 0	1	6	1	"	—	—	—	—	—	—	—
—	—	1 14 0	3	—	5	"	—	—	—	—	—	—	—
—	2 0 0	1 0 0	2	2	4	"	—	—	—	—	—	—	—
—	2 0 0	2 2 8	2	—	5	"	—	—	—	—	—	—	—
—	15 0 0	3 14 0	2	5	6	"	—	—	—	—	—	—	—
3 0 0	3 0 0	1 8 0	2	—	5	not	—	—	—	—	—	—	—
2 0 0	—	2 0 0	2	4	3	yes	1	—	—	—	—	1	—

† Rheumatism. § Typhoid.

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies * tamarind etc.	Vegetables *	Fish	Coconuts and Coconut & ground- nut oil cakes (No. or value) *	Oil for bath and consumption *
37	5	3	—	6	3	1	1 8 0	—	1 0 0	2 0 0	1 0 0
38	4	—	20	—	—	—	0 25 0	—	0 14 0	0 15 0	0 8 0
39	3	1	30	12	6	2	1 0 0	—	1 0 0	0 20 0	0 15 0
40	3	1	30	12	6	2	1 14 0	—	1 12 0	1 0 0	0 25 0
41	5	3	35	24	12	4	1 14 0	—	1 0 0	1 0 0	0 7 0
42	4	2	22	24	12	3	1 3 8	—	1 17 0	1 4 0	0 15 0
43	7	5	60	15	7	2	1 14 0	0 10 0	2 4 0	2 19 0	0 25 0
44	3	—	—	3	1	—	0 7 0	—	0 14 0	0 20 0	0 7 0
45	2	1	25	—	7	—	1 0 0	—	0 15 0	—	1 0 0
46	4	2	30	3	1	—	1 14 0	0 14 0	1 0 0	0 10 0	0 15 8
47	6	3	60	9	4	1	1 0 0	0 21 0	4 8 0	2 7 0	1 15 0
48	8	2	60	24	12	3	1 0 0	—	1 0 0	0 25 0	1 0 0
49	5	3	60	6	7	1	1 21 0	—	2 0 0	0 25 0	1 0 0
50	2	—	30	12	2	2	0 15 0	—	1 0 0	0 25 0	0 7 0
51	5	3	60	6	3	1	1 14 0	—	0 15 0	0 25 0	0 10 0
52	8	4	60	24	12	4	1 0 0	—	2 0 0	2 14 0	0 14 0
53	7	2	60	21	10	3	1 0 0	—	3 0 0	2 14 0	0 10 8
54	7	1	120	21	10	3	2 0 0	0 12 0	1 0 0	4 21 8	1 0 0
55	4	2	15	12	6	2	2 0 0	—	0 15 0	2 21 8	1 14 0
56	6	4	24	9	4	1	0 10 0	—	0 10 0	2 21 8	—
57	15	10	77	15	7	2	2 0 0	—	2 14 0	—	0 7 0
58	2	—	30	—	—	—	1 14 0	—	1 0 0	0 20 0	1 0 0
59	7	—	30	—	—	—	1 0 0	—	1 0 0	1 14 0	1 0 0
60	6	2	40	—	—	—	2 0 0	—	1 0 0	0 7 0	0 14 0
61	6	4	16	6	3	1	1 0 0	—	1 14 0	—	2 0 0
62	2	—	60	1	—	—	0 15 0	—	1 0 0	0 16 0	0 16 0
63	4	2	—	3	1	—	3 14 0	—	—	—	4 7 0
64	4	2	2	6	3	1	1 14 0	—	—	2 3 0	1 20 0
65	3	1	50	1	—	—	1 0 0	—	0 21 0	—	0 14 0
66	3	1	30	4	2	1	1 14 0	2 0 0	0 20 0	1 0 0	—
67	4	1	10	3	1	—	0 14 0	—	0 4 0	0 4 0	1 0 0
68	2	—	5	—	—	—	0 7 0	—	0 4 0	—	0 2 0
69	5	2	120	16	8	4	1 14 0	—	2 7 0	2 7 0	—
70	4	1	90	11	5	1	1 0 0	—	—	—	—
71	3	2	30	—	—	—	1 0 0	—	0 4 0	—	0 14 0
72	7	1	30	6	3	1	1 0 0	—	1 0 0	—	0 14 0

* The sums relate to Rs. chackrams and cash.

Intoxicants *	Coffee and Tea *	Tobacco *	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
—	3 0 0	1 0 0	2	3	5	not	—	—	—	1	—	1	—
3 0 0	—	2 0 0	1	3	—	yes	1	—	—	—	—	1	—
—	—	1 0 0	2	2	—	"	—	—	—	—	—	—	—
2 0 0	2 0 0	1 14 0	2	2	1	"	—	—	—	—	—	—	—
6 0 0	3 0 0	1 0 0	2	5	2	not	2	—	—	—	—	2	—
—	4 14 0	3 0 0	2	3	10	yes	3	—	—	—	—	4	—
1 0 0	0 7 0	2 0 0	1	8	2	not	3	—	—	—	—	3	\$1
—	—	0 21 0	2	4	—	yes	—	—	—	—	—	—	—
7 14 0	6 0 0	1 14 0	2	1	2	not	—	2	—	—	—	2	—
3 0 0	—	1 14 0	2	2	5	"	—	—	—	—	—	—	—
7 14 0	—	1 21 0	2	2	8	"	—	2	—	—	—	2	—
2 0 0	2 14 0	2 0 0	2	3	3	yes	1	—	—	—	—	1	—
—	—	1 0 0	1	5	—	"	—	—	—	—	—	—	\$2
—	3 0 0	1 14 0	1	—	4	not	1	—	—	—	—	1	—
0 3 0	—	2 14 0	2	—	6	yes	—	—	—	—	—	—	—
—	1 0 0	2 14 0	3	—	9	"	—	—	—	—	—	—	—
—	—	3 0 0	2	—	7	"	—	—	—	—	—	—	—
—	4 0 0	3 0 0	2	—	4	"	—	—	—	—	—	—	—
0 6 0	9 0 0	1 7 0	2	3	4	"	—	—	—	—	—	—	—
—	—	4 0 0	2	—	6	"	—	—	—	—	—	—	—
—	11 0 0	—	2	—	4	"	—	—	—	—	—	—	—
2 0 0	1 14 0	4 0 0	3	—	6	"	—	—	—	—	—	—	—
—	5 0 0	2 0 0	2	—	8	"	—	—	—	—	—	—	—
0 21 0	0 10 8	2 18 0	2	—	2	"	—	2	—	—	—	2	—
—	—	2 0 0	1	—	1	"	—	—	—	—	—	—	—
—	—	1 0 0	4	—	16	"	—	—	—	—	—	—	—
—	—	2 0 0	3	—	7	"	—	—	—	—	—	—	—
—	—	1 0 0	2	—	2	"	—	—	—	—	—	—	—
2 0 0	—	1 14 0	2	—	3	"	1	—	—	—	—	1	—
—	—	1 7 0	1	4	2	"	—	—	1	—	—	1	—
—	—	0 14 0	1	5	1	"	—	—	—	—	—	—	—
0 7 0	5 0 0	2 7 0	2	2	10	"	—	—	—	—	—	—	—
—	2 0 0	1 14 0	1	—	2	"	—	—	—	—	—	—	—
—	—	1 0 0	1	5	2	"	—	—	—	—	—	—	—
0 21 0	—	1 0 0	1	—	7	"	—	—	—	—	—	—	\$1

* Ulcers in the body. † Leper. § Rheumatism.

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies, tamarind etc.	Vegetables	Fish	Coconuts and ground-nut oil cakes (No. or value)	Oil for bath and consumption
73	3	1	45	—	—	—	0 4 0	0 4 0	—	—	—
74	6	4	60	—	—	—	0 14 0	—	1 14 0	—	0 7 0
75	4	3	45	—	—	—	0 14 0	—	0 14 0	—	1 0 0
76	5	—	—	—	—	—	5 0 0	—	—	—	2 0 0
77	5	2	60	1 1/2	2	2	2 0 0	—	3 0 0	—	2 0 0
78	1	—	30	—	—	—	0 4 0	—	—	—	0 4 0
79	2	2	15	—	—	—	0 4 0	—	—	—	—
80	3	—	60	1 1/2	2	—	1 14 0	—	0 14 0	0 4 0	0 15 0
81	4	3	15	1 1/2	2	2	0 15 0	—	0 8 0	—	0 14 0
82	5	4	20	6	3	1	1 0 0	1 8 0	0 24 0	0 7 0	0 25 0
83	6	2	60	15	7 1/2	2 1/2	1 17 0	0 4 0	2 0 0	1 9 0	1 0 0
84	4	2	30	6	3	1	0 14 0	—	0 18 0	0 20 0	0 7 0
85	4	1	40	1 1/2	2	2	1 0 0	—	1 0 0	0 16 0	0 10 0
86	4	1	45	1 1/2	2	—	—	—	1 0 0	—	0 20 0
87	4	2	15	1	—	—	0 21 0	0 14 0	0 10 0	1 2 0	0 5 0
88	6	1	45	12	—	—	2 0 0	—	—	1 0 0	0 24 0
89	2	1	16	3	1 1/2	—	0 8 0	—	—	1 0 0	—
90	8	3	45	18	9	3	2 0 0	—	0 12 0	1 0 0	1 17 0
91	5	1	15	24	12	4	3 0 0	—	4 0 0	1 7 0	3 0 0
92	4	2	30	9	4 1/2	1 1/2	0 15 0	—	1 14 0	—	1 8 0
93	7	2	12	9	4 1/2	1 1/2	1 18 0	—	0 4 0	0 3 0	0 7 0
94	9	2	120	36	18	6	3 0 0	—	3 0 0	3 0 0	3 0 0
95	2	1	5	—	8	—	1 15 0	—	—	0 10 0	0 15 0
96	8	5	—	15	7 1/2	2 1/2	—	—	—	—	—
97	5	3	—	9	1 1/2	2	0 16 8	—	—	1 0 0	—
98	5	—	45	9	4 1/2	1 1/2	1 14 0	—	0 20 0	—	0 24 0
99	5	2	43	—	—	—	1 0 0	—	0 14 0	—	1 0 0
VAY											
1	8	6	70	5 1/2	3 1/2	1	1 14 0	—	3 0 0	1 0 0	2 0 0
2	5	4	90	1 1/2	2	2 1/2	1 14 0	—	1 14 0	—	0 20 0
3	7	5	75	3 1/2	2 1/2	9/16	1 14 0	—	2 0 0	1 7 0	1 14 0
4	9	5	120	3 1/2	2 1/2	9/16	—	—	—	—	0 16 0
5	7	4	100	3	2	2	2 0 0	—	—	—	1 0 0
6	5	—	80	1 1/2	2 1/2	2 1/2	1 0 0	1 0 0	1 0 0	1 0 0	0 10 0
7	3	1	80	1 1/2	2 1/2	2 1/2	1 1 8	0 8 0	1 1 8	0 16 0	0 16 0

* The sums relate to Rs. chackrams and cash.

† Nuzhi.

Intoxicants	Coffee and Tea	Tobacco	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
—	—	0 14 0	1	—	—	yes	—	—	—	—	—	—	—
—	—	1 14 0	1	—	2	"	—	—	—	—	—	—	—
—	—	0 21 0	1-2	—	2	"	—	—	—	—	—	—	—
—	8 0 0	4 0 0	3	—	3	"	1	—	—	—	—	1	†1
—	—	3 0 0	2	—	1	"	—	—	—	—	—	—	—
—	—	1 0 0	1	—	1	"	—	—	—	—	—	—	—
—	—	0 7 0	1	—	1	not	—	—	—	—	—	—	—
—	—	0 15 0	1	4	3	yes	—	—	—	—	—	—	—
—	—	0 14 0	1	2	2	"	—	—	—	—	—	—	—
—	3 0 0	—	1	—	5	"	—	—	—	—	—	—	—
—	1 10 0	2 0 0	1-2	—	4	"	—	—	—	—	—	—	—
3 0 0	0 15 0	1 0 0	1	4	2	"	—	—	—	—	—	—	—
0 14 0	1 18 0	2 0 0	1	4	1	"	—	—	—	—	—	—	—
—	—	0 15 0	1-2	4	4	not	—	—	—	—	—	—	—
—	0 25 0	0 15 0	2	5	3	yes	—	—	—	—	—	—	—
3 0 0	—	2 14 0	2	—	12	"	—	—	—	—	—	—	†2
—	—	—	1	—	2	"	—	—	—	—	—	—	—
3 0 0	1 20 0	1 2 0	2	—	10	"	—	—	—	—	—	—	†1
—	1 0 0	2 0 0	3	—	—	"	—	—	—	—	—	—	—
2 8 0	—	1 0 0	2	—	3	"	—	1	—	—	—	1	—
—	1 0 0	0 14 0	2	—	7	"	—	—	—	—	—	—	—
—	7 0 0	2 0 0	2	—	18	"	—	—	—	—	—	—	—
0 14 0	1 0 0	0 15 0	1	—	1	"	—	—	—	—	—	—	—
—	—	1 0 0	2	—	2	"	—	—	—	—	—	—	—
2 14 0	3 0 0	3 0 0	1	—	3	"	—	—	—	—	—	—	—
—	0 10 0	2 7 0	1	—	7	"	—	—	—	—	—	—	—
—	—	—	1	2-3	2	"	—	—	—	—	—	—	—
ALAR													
—	6 0 0	2 0 0	2	—	3	yes	—	—	—	—	—	—	—
—	4 0 0	5 0 0	1	10	2	"	—	—	—	—	—	—	—
—	7 0 0	3 0 0	3	—	7	"	—	—	—	—	—	—	—
8 0 0	5 0 0	3 0 0	2	—	3	"	—	1	—	—	—	—	—
—	5 0 0	2 0 0	1	4	3	"	—	—	—	—	—	—	—
0 10 0	0 15 0	3 0 0	2	4	3	"	—	—	—	—	—	—	†1
0 16 0	2 0 0	0 16 0	2	5	3	"	—	—	—	—	—	—	—

† Nuzhi. † Rhenmatism. * Vayn.

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies * tamarind etc.	Vegetables *	Fish	Coconuts and Coconut & ground- nut oil cakes (No. or value) *	Oil for bath and consumption *
8	3	—	45	14	4	\$4	1 0 0	—	1 0 0	1 14 0	0 14 0
9	4	2	60	14	4	\$4	1 7 0	—	2 0 0	2 0 0	0 15 0
10	4	—	30	14	4	\$4	1 0 0	—	2 0 0	0 21 0	0 1 0
11	2	2	20	6	6	6	2 0 0	—	2 0 0	1 14 0	0 2 0
12	3	3	50	6	6	6	1 0 0	—	0 20 0	1 0 0	0 16 0
13	8	6	60	14	14	14	0 15 0	—	0 8 0	0 2 0	0 20 0
14	7	5	90	14	14	14	0 15 0	—	1 0 0	0 15 0	1 0 0
15	3	1	25	3	3	3	0 15 0	0 15 0	0 15 0	0 17 0	1 0 0
16	7	3	60	3	—	—	2 0 0	—	2 0 0	1 0 0	0 16 0
17	8	6	180	—	—	—	1 0 0	—	—	—	0 21 0
18	6	1	40	—	—	—	0 14 0	—	—	—	0 7 0
19	6	4	32	—	—	—	1 7 0	0 21 0	1 14 0	—	2 0 0
20	7	5	12	—	—	—	0 4 0	—	1 14 0	—	—
21	7	4	90	24	12	4	1 0 0	0 4 0	2 0 0	0 16 0	0 16 0
22	5	—	60	12	6	2	1 14 0	0 4 0	0 2 0	0 22 0	1 14 0
23	6	4	45	18	9	3	2 0 0	—	4 0 0	0 22 0	1 14 0
24	3	1	60	12	6	2	1 0 0	—	0 21 0	0 20 0	1 0 0
25	3	2	30	12	6	2	0 7 0	—	0 12 0	0 7 0	0 6 0
26	4	1	45	12	6	2	0 15 0	—	1 0 0	0 12 0	0 7 0
27	3	—	45	24	12	4	1 0 0	—	1 0 0	0 15 0	0 7 0
28	6	4	60	—	—	—	1 0 0	—	2 0 0	0 11 0	0 16 0
29	3	—	60	3	12	6	2 0 0	—	1 0 0	0 20 0	1 0 0
30	3	1	20	—	—	—	1 0 0	—	0 21 0	0 20 0	0 15 0
31	5	2	30	14	—	—	0 14 0	—	1 0 0	1 0 0	0 14 0
32	6	2	60	6	—	—	1 14 0	—	0 14 0	0 10 0	1 0 0
33	2	—	30	6	—	—	1 0 0	—	1 0 0	0 18 0	1 0 0
34	2	—	7	14	—	—	0 14 0	—	0 14 0	0 8 0	0 4 0
35	4	—	12	6	—	—	0 7 0	—	0 10 0	0 7 0	0 7 0
36	7	2	50	—	—	—	1 0 0	—	4 0 0	0 20 0	0 2 0
37	4	2	6	—	—	—	0 7 0	—	0 7 0	—	—
38	4	2	28	12	—	—	1 0 0	—	2 0 0	0 16 0	—
39	4	—	45	—	—	—	1 14 0	—	1 14 0	0 11 8	—
40	4	2	20	14	1	3	0 15 0	—	1 0 0	0 2 0	0 18 0
41	5	2	30	24	14	4	1 0 0	—	1 0 0	0 20 0	0 10 8
42	5	3	40	22	11	34	1 0 0	—	0 25 0	0 20 0	0 20 0
43	7	5	—	8	8	—	4 8	—	0 10 0	—	—

[illegible]

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies tamarind etc.	Vegetables	Fish	Coconuts and Coconut & ground-nut oil cakes (No. or value)	Oil for bath and consumption
44	5	3	50	3	1½	2	1 8 0	—	0 15 0	0 14 0	0 17 4
45	7	5	45	3½	2	2	0 27 0	—	1 18 0	0 15 0	0 14 0
46	2	1	30	6	3	1	0 12 0	—	0 17 0	—	0 14 0
47	6	3	15	4½	2½	1	1 21 0	—	0 25 0	0 8 0	1 14 0
48	8	5	45	9	4½	1½	0 15 0	—	0 7 0	—	1 14 0
49	5	3	30	9	4½	1½	0 15 0	—	0 25 0	0 7 8	1 0 0
50	3	1	30	1½	—	—	0 10 0	—	0 7 8	—	0 4 0
51	3	1	60	9	4½	1½	1 1 8	0 10 0	1 1 8	—	0 16 0
52	7	4	90	6	3	1	0 21 8	—	1 14 0	—	0 21 0
53	2	1	30	—	—	—	0 15 0	—	0 15 0	—	0 7 0
54	7	4	60	12	6	2	1 1 8	—	2 3 0	—	1 0 0
55	3	—	15	3	1½	2	1 10 0	—	1 12 0	—	0 21 8
56	2	1	15	3	1½	2	0 15 0	0 4 0	0 21 0	0 4 0	0 8 0
57	9	2	30	6	3	1	0 15 0	—	0 20 0	—	0 15 0
58	3	1	30	—	—	—	0 7 8	—	0 5 0	—	0 2 0
59	1	—	8	—	—	—	0 7 8	—	0 5 0	—	—
60	7	2	45	27½	13½	4½	2 3 0	—	2 0 0	—	2 0 0
61	3	2	10	1	4	—	0 7 0	—	0 3 0	—	0 7 0
62	5	3	20	11	—	—	0 7 0	—	—	—	0 7 0
63	7	5	20	—	10	—	0 8 0	—	0 4 0	—	—
64	2	—	30	4	2	1	1 15 0	0 12 0	0 24 0	0 13 0	0 8 0
65	3	1	20	3	1½	2	0 18 0	0 4 0	0 15 0	0 4 0	0 12 0
66	5	4	15	1½	2	2	0 15 0	—	0 2 0	—	0 7 0
67	6	5	15	3	1½	2	0 15 0	—	0 8 0	—	0 2 8
68	2	—	—	2½	1½	2	0 15 0	—	—	—	0 20 0
69	6	4	40	18½	9	3	1 14 0	—	1 0 0	2 0 0	0 20 0
70	4	2	25	18	9	3	1 0 0	0 7 0	1 14 0	0 15 0	1 0 0
71	3	1	30	12	6	2	1 14 0	—	1 0 0	0 14 0	0 21 0
72	8	1	60	24	12	4	2 0 0	—	1 14 0	—	0 24 0
73	5	3	25	36½	18	6	1 14 0	—	2 0 0	0 25 0	0 21 0
74	2	1	20	12	6	2	0 7 0	—	0 4 0	—	0 4 0
75	4	2	35	—	—	—	0 7 0	—	0 7 0	—	0 6 0
76	3	1	20	12	6	2	1 0 0	—	1 15 0	0 7 0	0 10 0
77	8	6	60	24½	12	4	1 0 0	—	1 14 0	0 20 0	0 10 0
78	3	2	30	12	6	2	0 13 0	—	0 20 0	0 15 0	0 14 0
79	4	—	30	6	3	1	1 0 0	—	0 21 0	0 10 0	1 0 0

* The sums relate to Rs. chakrams and cash.

Intoxicants	Coffee and Tea	Tobacco	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
—	—	0 21 0	—	—	—	—	—	—	—	—	—	—	\$1
—	2 14 0	1 0 0	—	—	—	—	—	1	—	—	—	1	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
1 14 0	0 7 0	1 14 0	—	—	—	—	—	1	—	—	—	1	—
—	—	0 15 0	2	—	4	yes	—	1	—	—	—	1	—
0 12 0	1 14 0	1 2 0	2	—	2	—	—	—	—	—	—	—	—
—	—	—	2-1	3	1	—	—	1	—	—	—	1	—
7 8 0	5 7 8	2 3 0	2	6	3	—	—	—	—	—	—	—	\$1
—	5 14 0	1 16 8	2-1	4	4	not	—	2	—	1	—	3	—
—	—	—	2-1	6	—	—	—	—	—	—	—	—	†1
2 0 0	2 3 0	—	2-1	3	1	yes	—	—	—	—	—	—	—
—	5 16 0	1 14 0	2-1	—	2	—	—	—	—	—	—	—	—
—	0 7 0	1 1 8	2-1	4	3	—	—	—	—	—	—	—	—
3 0 0	5 7 8	1 1 8	2-1	3	2	—	—	—	—	—	—	—	—
—	—	0 7 8	1	8	—	—	—	—	—	—	—	—	†1
—	—	1 1 8	1-2	3	—	—	—	—	—	—	—	—	—
—	—	4 14 0	2	—	10	—	—	—	—	—	—	—	\$1
—	—	1 0 0	1	5	1	not	—	—	—	—	—	—	\$2
—	—	—	1	6	1	yes	—	—	—	—	—	—	†1
0 4 0	1 14 0	0 2 0	1	7	1	—	—	—	—	—	—	—	†1
—	1 0 0	0 10 0	2	5	2	—	—	—	—	—	—	—	*1
2 25 0	1 15 0	0 20 0	2	4	1	not	—	1	—	—	—	1	—
—	—	—	1	8	—	—	—	—	—	—	—	—	†1
—	—	1 0 0	2	4	1	—	1	—	—	—	—	1	—
—	1 20 0	1 0 0	1	5	1	yes	—	—	—	—	—	—	†1
2 0 0	—	—	2	—	2	—	—	—	—	—	—	—	—
—	3 8 0	0 14 0	1	3	4	not	—	—	—	—	—	—	—
3 0 0	3 0 0	1 0 0	2	3	4	yes	—	—	—	—	—	—	—
3 0 0	8 0 0	2 0 0	2	2	6	not	1	—	—	—	—	1	—
5 0 0	3 0 0	1 0 0	2	—	3	—	—	—	—	—	—	—	—
—	—	—	1	4	2	—	—	—	—	—	—	1	—
—	3 0 0	1 0 0	2	3	1	yes	1	—	—	—	—	1	—
3 0 0	1 14 0	2 0 0	1	4	2	—	—	—	—	—	—	—	—
—	4 0 0	1 14 0	2	2	4	—	—	—	—	—	—	—	—
—	—	0 14 0	1	3	2	not	1	—	—	—	—	1	—
—	4 0 0	1 14 0	2	2	1	yes	—	—	—	—	—	—	†2

‡ Consumption § Filaria † Leprosy † Rheumatism § Chest trouble * Weak † Vaginal

Serial No.	No. of persons	No. of Children	Tapioca (lbs.)	Rice (Edangazi)	Wheat (Edangazi)	Bajra etc. (Ed.)	Salt, chillies * tamarind etc.	Vegetables *	Fish	Coconuts and Coconut & ground- nut oil cakes (No. or value) *	Oil for bath and consumption *
80	6	2	40	9	4½	1½	2 0 0	—	1 12 8	0 16 0	0 20 0
81	4	—	30	6	3	1½	2 0 0	0 5 0	1 1 8	—	2 0 0
82	7	2	90	6	3	1½	0 22 8	—	1 0 0	—	1 0 0
83	3	—	—	1	½	½	2 0 0	2 0 0	1 14 0	—	1 0 0
84	5	3	30	3	1½	½	1 0 0	—	0 14 0	—	0 8 0
85	6	—	60	3	1½	½	1 0 0	—	0 20 0	—	0 4 0
86	2	—	20	1½	½	—	1 0 0	—	0 15 0	—	0 4 0
87	6	2	20	1	½	½	0 15 0	—	0 20 0	0 4 0	0 4 0
88	6	2	25	6	3	1½	1 1 8	—	1 14 0	—	0 8 0
89	4	1	90	9	4½	1½	3 4 0	—	1 14 0	—	2 3 0
90	5	2	8	8	3	1	2 3 0	—	1 1 8	0 12 0	0 4 0
91	11	4	16	6	3	1	0 15 0	2 3 0	1 1 8	—	0 15 0
92	6	4	16	6	3	1	1 1 8	—	0 12 0	—	0 15 0
93	7	4	30	1	½	½	0 15 0	—	0 15 0	0 2 8	0 8 0
94	4	2	16	4	2	½	0 22 0	—	0 16 0	0 10 0	0 14 0
95	2	—	16	—	—	—	0 12 0	—	0 15 0	0 12 0	0 6 0
96	6	4	12	—	—	—	0 4 0	—	—	—	0 2 0
97	1	—	20	—	—	—	0 7 0	—	0 14 0	0 7 0	0 15 0

* The sums relate to Rs. chackrams and cash.

Intoxicants *	Coffee and Tea *	Tobacco *	No. of meals a day	Days without meals	No. of untorn clothes	Whether house thatched or not	No. of persons with anaemia	No. of persons with scabies	No. of persons with oedema	No. of persons with rickets	No. other malnutrition diseases	Total with malnutrition symptoms	No. other diseases
—	4 0 0	1 14 0	2	—	12	yes	—	—	—	—	—	—	—
0 8 0	5 0 0	1 14 0	1-2	3	4	"	—	—	—	—	—	—	—
1 0 0	1 0 0	1 14 0	1-2	2	4	"	—	—	—	—	—	—	\$1
—	—	—	1	2	—	"	—	—	—	—	—	—	—
—	1 0 0	0 22 8	2-1	—	2	"	—	—	—	—	—	—	—
0 2 0	—	1 0 0	1	3	2	"	—	—	—	—	—	—	—
1 0 0	—	0 15 0	1	5	1	"	—	—	—	—	—	—	—
—	—	—	1-2	4	3	"	—	2	—	—	—	2	—
—	3 0 0	—	—	—	—	—	—	—	—	—	—	—	—
—	3 0 0	1 1 8	2-1	4	4	"	—	—	—	—	—	—	—
—	5 7 0	1 14 0	2	1	3	"	—	—	—	—	—	—	—
—	5 0 0	2 3 0	1	1	1	"	—	—	—	—	—	—	—
2 0 0	4 0 0	1 16 0	2	—	—	"	—	—	—	—	—	—	—
—	2 3 0	2 4 0	2-1	—	3	"	—	—	—	1	—	2	—
—	—	—	1-2	—	2	"	—	—	—	—	—	—	—
—	—	2 0 0	1-2	3	2	"	—	—	—	—	—	—	—
—	—	0 15 0	1-2	3	2	"	—	—	—	—	—	—	—
—	—	0 3 0	1	10	—	"	—	—	—	—	—	—	—
—	—	—	—	4	—	not	—	—	—	—	—	—	—

§ Asthma.

ERRATA.

Page 1, para 2 last but one line. Read 'of' for 'or'

Page 6, Serial number 10, column 5, Read '2' as 2 units=1½ Edangazis rice, 1 Edangazi wheat, and ½ Edangazi maize.

Page 6, Serial number 11, column 5, Read '6' as 6 units=4½ Edangazis rice, 3 Edangazis wheat, and ½ Edangazi maize.

Page 9, Serial number 43, delete 8 under column 6. Read '8' under 'rice' as for all grains.

Page 10, Serial number 62, Read '11' under 'rice' as for all grains.

REMARKS ON THE GENERAL CONDITION OF FAMILIES ACCORDING TO THEIR SERIAL NUMBER.

UZHUVA.

1. Woman deserted by husband leads miserable life.
3. Condition somewhat satisfactory.
9. Spends too much on toddy.
18. Want of food. Pale and sickly.
20. Middle class. Somewhat satisfactory.
24. Poor and miserable.
26. Unhappy.
27. Has also elephantiasis and fever.
37. Spacious not neat.
38. Very dirty kitchen.
39. Not neat.
41. No floor.
42. Very dirty, tottering hut.
44. One case jaundice. Very dirty, no care taken of children.
45. Members very old. None to support.
46. Wife deserted by husband. Lives with one child.
48. Dirty, no floor.
49. Kitchen dirty.
51. Not floored.
52. Not neat.
53. One child died owing to famine a year ago.
60. One who has joined the military is sending Rs. 20 monthly.
69. Two very poor women.
76. Very poor.
81. Very poor, prepares food in the open. No male members.
82. Miserable. No male members.
83. Poor.
85. Poor.
86. Elders drink.
87. Drink habit.
89. Satisfactory.
90. Miserable. Deserted by husband.
92. Well off.
93. Not satisfactory.
94. Under-fed.
95. Somewhat better condition.
96. Head of family supports dependents by begging, miserable.
97. Poor hut. Sides unprotected.
98. Better condition.
99. Deplorable, struggling for living.

VAYALAR.

4. Four people were attacked with small-pox.
10. More expenses than income.
12. Very poor.

20. Badly in need of cloths. Lives by borrowing.
21. One man serving in the military. Kitchen very bad.
22. Kitchen very poor.
24. Somewhat well-to-do.
25. No flooring.
26. Nobody to support.
27. No floor, Damp.
28. Very poor. Once a middle class family.
29. Housing condition very poor.
30. No floor for the house.
40. Living in a small hut by 6'X4'X5'. A husband, wife, and two children save also something for a beggar home.
42. Family lying tired in open air without any meals.
44. Hardly any means for livelihood.
45. Mother unwell, itches. Poor hut.
46. Pitiuble life with one child.
47. Poor.
50. No floor.
51. No earning member.
52. No outside work. Members suffering from itches. Sanitation poor.
53. Miserable, young son suffering from leprosy. Other children died.
54. Kitchen not thatched.
58. Kitchen not thatched.
59. Only one old woman.
62. Very miserable.
63. Miserable.
64. Miserable.
66. Two girls of 20 and 22 years, unmarried.
67. Poor, no father.
68. Woman left alone by husband.
70. No floor, and a tottering hut.
71. " "
72. " "
73. " "
74. " " Helpless mother and child.
75. " "
76. " "
77. " "
78. Neat floor, but family helpless.
79. Kitchen dirty.
85. Two children died last year for want of food.
86. An old father and daughter, miserable life.
87. Children suffering from itches and want of food.
93. Utterly destitute.
95. Woman divorced seven years ago.
96. Destitution.
97. Hut fallen down.

SURVEY OF DEATHS WITH THEIR CAUSES IN CERTAIN VILLAGES & THE TOWN OF AMBALAPUZHA IN AMBALAPUZHA & KARTHIKAPALLY TALUQS (TRAVANCORE)

NOTE:— These statistics are published to indicate the main causes of death during the period of food—shortage. Swelling means oedema. Karappan is a skin disease of children.

AMBALAPUZHA PAKUTHY.

No.	Name of dead.	Age	Diseases that caused the deaths.
Deaths in 1943—'44.			AUGUST.
1.	Anna	 2	Gas
2.	Damanakutty	 3	Fever
3.	Abduljamar	 3½	Karappan
4.	Devaki Amma	 1	Child's disease
5.	Asyaumma	 19	Fever
6.	Kunjipennu	 54	Dysentery
7.	Sukumari	 1	Karappan
8.	Muhamadkunju Musaliar	 52	Gas
9.	Pathummakunhu	 30	Dysentery
10.	Kathijakutty	 5	Swelling
11.	Kesavan	 26	Consumption
12.	Ismankutty	 85	Swelling
13.	Raman Pillai	 48	Fever
14.	Beevikutty	 2	Swelling
			SEPTEMBER
15.	Bava	 45	Rheumatism
16.	Abdullakunji	 6	Cholera
17.	Lakshmi Amma	 53	Dysentery
18.	Bhaskaran	 17	Fever
19.	Amsa	 2	Dysentery
20.	Krishnan Nair	 40	Rheumatism
21.	Kunjan	 18	Cholera
22.	Asyaumma	 22	Fever
23.	Mariabeevi	 2	Swelling
24.	Sandamma	 7	do.
25.	Gauri Amma	 33	Cholera

No.	Name of dead	Age	Diseases that caused the deaths
26.	Kunju	 73	Dysentery
27.	Padmanabha Pillai	 68	do.
28.	Karappan	 45	do.
29.	Kochu Pillai	 35	Cholera
30.	Nangeli	 64	Dysentery
31.	Aravikunhu	 64	Cough
32.	Pappi Amma	 40	Cholera
33.	Kalyani Amma	 65	do.
34.	Krishnan Kutty	 8	do.
35.	Gaurikutty Amma	 18	do.
36.	Narayana Pillai	 58	do.
			OCTOBER.
37.	Ali	 78	Anaemia
38.	Nanu	 21	Fever
39.	Krishnan	 55	Hanged
40.	Velayudha Panikar	 60	Swelling
41.	Saraswathi	 11	Rheumatism
42.	Anna	 10	Diarrhoea
43.	Nani	 22	Swelling
44.	Padmanabha Kurup	 65	Dysentery
45.	Sarasamma	 11	Rheumatism
46.	Sasidharan	 4	Dysentery
47.	Viswambaran	 1	Karappan
48.	Parameswaran	 6	Dysentery
49.	Kunjitikunjamma	 65	do.
50.	Gopala Kurukkāl	 41	do.
51.	Chiruth	 34	do.
52.	Padmanabhan	 37	Rheumatism
53.	Chenni	 58	Swelling
54.	Kunjamani	 72	Dysentery
55.	Kalyani Amma	 67	Swelling
56.	Chakkey	 62	Rheumatism
57.	Kunji	 42	Swelling
			NOVEMBER.
58.	Velayudhan	 31	Fever
59.	Kalyani Amma	 42	Diarrhoea

No.	Name of dead	Age	Diseases that caused the deaths
60.	Leela	 1	Karappan
61.	Devaki	 8	Diarrhoea
62.	Kousama	 9	Dysentery
63.	Sarojini	 9	Karappan
64.	Bhavani	 26	Diarrhoea
65.	Bharatham	 6	Karappan
66.	Parameswaran Pillai	 65	Dysentery
67.	Raman Kutty	 43	Rheumatism
68.	Ravindran	 4	Swelling
69.	Nabeesa	 5	Fever
70.	Ammukunju	 41	Rheumatism
71.	Narayanan	 3½	Dropsy
72.	Ouseph	 68	Cough
73.	Kunjan	 65	Consumption
74.	Bhageerathan	 22	Fever
DECEMBER.			
75.	Ouseph	 54	Swelling
76.	Kesavan	 37	do.
77.	Lakshmi	 26	do.
78.	Kochuneeli	 80	Rheumatism
79.	Madhavan	 5	Asthma
80.	Narayani Amma	 62	Heart disease
81.	Gopi	 3	Swelling
82.	Kochunni	 45	do
83.	Vasumathi	 20	Typhoid
84.	Indira	 6	Karappan
85.	Kalyani Amma	 63	Swelling
86.	Indiramma	 6 months	Karapan
87.	Vasudevan Pillai	 37	Swelling
88.	Krishna Pillai	 33	Consumption
89.	Karisakuman	 2	Karappan
90.	Vally Amma	 40	Dysentery
91.	Perumal	 60	Swelling
92.	Rajamma	 2	Karappan
93.	Sankara Panikar	 54	Fell from height
94.	Ponnamma	 5	Cough

No.	Name of dead	Age	Diseases that caused the deaths
95.	Mary Isac	 48	Dysentery
96.	Ayyappan	 38	Swelling
97.	Pakki	 34	Consumption
98.	Meenakshi Ammal	 16	Dysentery
JANUARY.			
99.	Kunji Amma	 62	Rheumatism
100.	Narayana Panikkar	 67	Dysentery
101.	Muhammed Kunhi	 12	Swelling
102.	Swaminatha Kurup	 3½	Drowned
103.	Avisa Umma	 85	Rheumatism
104.	Kurumba	 75	Swelling
105.	Gopala Kurup	 48	Fever
106.	Sivasankara Kaimal	 4	do.
107.	Kanakamma	 5	Anaemia
108.	Saralamma	 2½	Swelling
109.	Muhammedkutty	 55	Enlargement of spleen
110.	Abdulkadir	 25	Fever
111.	Nanu	 57	do.
112.	Muralidharan	 3½	Karapan
113.	Sukumaran	 12	Fever
FEBRUARY.			
114.	Pachu Kurup	 50	Typhoid
115.	Nani	 5	Swelling
116.	Mustava	 7	Fever
117.	Nanu	 33	Swelling
118.	Kochumma	 65	Dropsy
119.	Kunhipennu	 57	do.
120.	Ishaumma	 70	Gas
121.	Avvokkar	 6	Swelling
122.	Gauri Amma	 35	Dysentery
123.	Konni	 30	Anaemia
124.	Ali	 65	Swelling
125.	Pathumma	 49	do.
126.	Krishna Panikar	 48	Fever
127.	Kochukarappan	 64	Swelling

No.	Name of dead	Age	Diseases that caused the deaths
128.	Karthiayani	 25	Cough
129.	Bharathi	 3½	Fever
			MARCH.
130.	Ittykunjamma Parukunjamma	65	Cough
131.	Ayyar	 77	Swelling
132.	Parvathi Amma	 77	Oldage
133.	Kutty	 54	Cough
134.	Janaki Amma	 30	Swelling
135.	Cherian	 12	Fever
136.	Kittan	 70	Cough
137.	Pappi	 64	Dysentery
138.	Thresia	 70	do.
139.	Sumathi	 6	Swelling
			APRIL.
140.	Lakshmi Amma	 70	Dysentery
141.	Pappi	 57	Cough
142.	Mani	 32	Consumption
143.	Avvaraumma	 7	Fever
144.	Gopalan	 4	Dysentery
145.	Kathijaumma	 1½	Fever
146.	Suhara	 1	Karapan
147.	Kutty Amma	 42	Swelling
			MAY.
148.	Krishna Kaimal	 83	do.
149.	Kochukunju	 34	Diarrhoea
150.	Mani	 78	Consumption
151.	Kunjan Marar	 75	Rheumatism
152.	Kochu Kurup	 25	Fever
153.	Kesava Pillai	 37	do.
			JUNE.
154.	Urukkiyath	 2	Karapan
155.	Mani	 60	Swelling
156.	Kutty	 55	Fever
157.	Janaki Amma	 25	Swelling
			JULY.
158.	Kunjukunju	 25	Fever
159.	Kathirkutty	 40	Dysentery

No.	Name of dead	Age	Diseases that caused the deaths
160.	Kunjumani	 64	Fever
161.	Asyaumma	 33	Dysentery
162.	Karthiayani Amma	 45	do.
163.	Karambi	 60	do.
164.	Nani	 5	Swelling
165.	Ayyappan	 75	do.

Total births 125

Total deaths as per survey 165

NOTE:— The number of deaths and births may be a little more as all houses have not been surveyed.

AMBALAPUZHA TOWN

No.	Name of dead	Age	Diseases that caused the deaths
			DEATHS IN 1944.
			FEBRUARY
1.	Ambikakutty	 3	Drowned
2.	Kutty	 22	Swelling
3.	Kochukuttan	 20	do.
4.	Haidros Kunj	 7	do.
5.	Narayana Panikar	 70	do.
6.	Saraswathi	 10	do.
7.	Parvathi Amma	 70	do.
8.	Kamalamma	 2	do.
9.	Kakachy	 60	Rheumatism
10.	Hameedu	 25	do.
11.	Kurumba	 62	do.
12.	Kochuneeli	 58	Swelling
13.	Vasudevan	 6	do.
14.	Madhavan Pillai	 45	Consumption
15.	Kunjamma	 7	Stomachache
16.	Veerabhadran	 50	Swelling
17.	Vasudevan Namboori	 64	Rheumatism
18.	Anna	 2½	Swelling
19.	Janaki	 2½	Karappan

No.	Name of dead	Age	Diseases that caused the deaths
20.	Kaliamma	74	Swelling
21.	Kaliamma	61	do.
22.	Narayana Panikkar	35	Rheumatism
23.	Velu	38	Fever
24.	Velunni	35	Rheumatism
25.	Karampan	40	Swelling
26.	Karutha	60	Diarrhoea
MARCH			
27.	Neela	2	Karappan
28.	Radhamma	2	do.
29.	Dasappan	2	do.
30.	Raveendran	22	Fever
31.	Karambi	78	Swelling
32.	Kochu Pillai	42	Fever
33.	Aneumma	37	Consumption
34.	Sankara Pillai	83	Swelling
35.	Ramani	22	do.
36.	Thankamma	52	Fever
37.	Raman	80	Swelling
38.	Krishna Pillai	83	Fever
APRIL			
39.	Veeramony Iyer	60	Consumption
40.	Chinna	19	do.
41.	Thomas	70	Swelling
42.	Narayana Panikkar	72	Rheumatism
43.	Kalyani Amma	53	Consumption
44.	Chellamma	6 months	Karappan
45.	Narayana Pillai	33	Swelling
46.	Kunjamma	50	Rheumatism
47.	Muttu Amma	60	do.
48.	Pappi	63	do.
49.	Karthiayani Amma	68	Swelling
50.	Anna	82	Karappan
51.	Lakshmikutty Amma	50	Rheumatism
MAY			
52.	Sarada	8	Stomachache
53.	Rudrani	10	Swelling

No.	Name of dead	Age	Diseases that caused the deaths
54.	Dasappan	70	Rheumatism
55.	Sreedharani Pillai	55	Consumption
56.	Kaliani Pappi	60	do.
57.	Adippappan	64	Swelling
58.	Narayani Amma	62	Stomachache
59.	Radhamoney	15	Swelling
60.	Kochakka	40	Stomachache
61.	Sivaraman	23	Consumption
62.	Kaliani Amma	68	Rheumatism
63.	Neelakantan	22	Swelling
64.	Gopalakrishna Menon	43	Consumption
65.	Varghese	37	Swelling
66.	Thankappan	7 months	—
JUNE			
67.	Kunji Amma	20	Stomachache
68.	Parvathy Variasir	55	Heart disease
69.	Neelakanda Pillai	76	Swelling
70.	Kali	68	Stomachache
71.	Kotha	65	Swelling
72.	Vasudevan	11	Consumption
73.	Thankamma	18	Swelling
74.	Narayana Kurup	80	do.
75.	Kalyani	25	do.
76.	Kunjankunju	60	do.
77.	Sukumari	22	Diarrhoea
78.	Itikali	40	Consumption
79.	Thresia	60	Swelling
80.	Narayana Puthuwal	28	do.
81.	Vasudevan Pillai	44	Cough
82.	Gopi	27	Stomachache
83.	Thresia	88	Swelling
84.	Ramachandran	5	do.
85.	Gopi	29	do.
86.	Isha	55	do.
87.	Unnikrishnan	11	Stomachache

No.	Name of dead	Age	Diseases that caused the deaths
JULY			
88.	Neelakandan	 50	Consumption
89.	Sankara Panikar	 51	Fell from tree
90.	Vasumathi	 18	Typhoid
91.	Mary Isac	 45	Stomachache
92.	Indira	 6	Diarrhoea
93.	Kochukunji	 42	Swelling
94.	Krishna Pillai	 34	Consumption
95.	Gopi	 5	Swelling
96.	Perumal	 60	Stomachache
97.	Ayyappan	 36	Swelling
98.	Madhavan	 52	Consumption
99.	Meenakshi Ammal	 16	Stomachache
100.	Rajamma	 2	Diarrhoea
101.	Pataki	 32	Consumption
102.	Kalyani Amma	 12	Swelling
103.	Indira Amma	 2	Consumption
104.	Narayani Amma	 61	Heart disease
105.	Rasumana Iyer	 60	Rheumatism
106.	Abdulkadirkunju	 22	Stomachache
107.	Kochuneeli	 47	Rheumatism
108.	Parvathi Amma	 60	Swelling
109.	Remai	 75	Rheumatism
110.	Narayanaswami Iyer	 10	Swelling
111.	Lakshmi	 26	do.
112.	Ouseph	 50	do.
113.	Thankappan	 18	do.
114.	Palani	 30	do.
115.	Anna	 35	do.
116.	Ouseph	 60	do.
117.	Raghava Kurup	 40	Consumption
118.	Karthiayani Amma	 16	Diarrhoea
119.	Plamena	 13	Stomachache
120.	Kunjacharru	 65	Fever
AUGUST			
121.	Veluthakunju	 40	Stomachache

No.	Name of dead	Age	Diseases that caused the deaths
122.	Kochukutty Amma	 5	Karapan
123.	Pody Amma	 4	Consumption
124.	Kalyani Amma	 60	Stomachache
125.	Kunjanpoovan	 42	Swelling
126.	Unnooli	 30	do.
127.	Radha	 2	Stomachache
128.	Veluthamakan	 3	Karappan
129.	Rama Kurup	 50	Heart disease
130.	Thankamma	 2	Karappan
131.	Kuttappan	 44	Consumption
132.	Gauri	 5	Karappan
133.	Chellappan	 12	Typhoid
134.	Saithumammed	 60	Swelling
135.	Kunji	 64	Consumption
SEPTEMBER.			
136.	Ananthalakshmi Ammal	 70	Swelling
137.	Devasia	 5	Consumption
138.	Pappu	 75	Rheumatism
139.	Narayani Amma	 64	Swelling
140.	Krishna Pillai	 47	do.
141.	Krishnanunni Kaimal	 70	Stomachache
142.	Vasudevan Pillai	 50	Pneumonia
143.	Janaki	 24	Stomachache
144.	Parvathi Amma	 60	Consumption
145.	Sankaran	 5	Swelling
146.	Sumathi	 6	Consumption
147.	Padmanabha Pillai	 44	Swelling
148.	Bonnamma	 22	Fever
149.	Anandavalli Amma	 28	Rheumatism
150.	Kali	 57	Stomachache
151.	Thankamma	 5	Swelling
152.	Kunjipennu	 42	do.
153.	Velayudhan	 30	Typhoid
154.	Abdulrahiman Koya	 15	Swelling
155.	Paramaswaran Pillai	 52	do.
156.	Kunjupeanu	 40	do.

No.	Name of dead	Age	Diseases that caused the deaths
157.	Kittu	 45	Swelling
158.	Raghava Iyer	 50	do.
159.	Subramonia Iyer	 20	Fever
160.	Alamelu Ammal	 24	do.
161.	Iswara Iyer	 70	Swelling
162.	Vijaya Amma	 4	Stomachache
163.	Parvathi	 74	Swelling
164.	Gopalan	 20	Pneumonia
165.	Pappu	 54	Fever
166.	Santha	 4 months.	Karappan
167.	Thankappan	 2	Consumption
168.	Ramasundara Ammal	 33	Stomachache
169.	Kutty Amma	 44	Swelling
170.	Meenakshi Amma	 7	Stomachache
171.	Rajappan	 3	Fever
172.	Kamalakshi Amma	 40	Swelling
173.	Paru	 15	do.
174.	Kasi	 60	Consumption
175.	Anna	 71	Swelling
176.	Pathumma	 5	—
177.	Absabibi	 6	Karappan
OCTOBER.			
178.	Srinivasa Pai	 41	Swelling
179.	Thasurumma	 61	do.
180.	Kambhan	 35	do.
181.	Neelakanda Sarma	 58	do.
182.	Govindan	 43	Stomachache
183.	Kunjicheetha	 62	do.
184.	Velu Pillai	 60	do.
185.	Gomathy	 5	Consumption
186.	Sathi Amma	 70	Stomachache
187.	Parvathi Amma	 10	Fever
188.	Shunmukam	 4	Karappan
189.	Kalyani Amma	 40	Swelling
190.	Viswam	 2	Karappan

No.	Name of dead	Age	Diseases that caused the deaths
191.	Padmavathy	 42	Swelling
192.	Rosa	 3	Anaemia
193.	Madhava Variar	 55	Swelling

ARATTUPUZHA PAKUTHY.

No.	Name of dead.	Age	Diseases that caused the deaths.
Deaths in 1942-'43. AUGUST.			
1.	Raman	 64	Stomachache
2.	Elayakunju	 36	Swelling
3.	Rajappan	 3	Karappan
4.	Sisu	 4	Fever
5.	Ramakrishnan	 3	Karappan
6.	Bhavani	 7	Fever
7.	Sarada	 5	Consumption
8.	Divakaran	 4	Swelling
9.	Pathummakunju	 20	Eever
10.	Kali	 44	Rheumatism
11.	Kochu	 52	Consumption
12.	Narayanan	 70	do.
13.	Narayini	 36	Stomachache
14.	Kunjulakshmi	 60	Consumption
15.	Kurumba	 66	Rheumatism
16.	Muhammed Kunju	 56	do.
17.	Neelakantan	 25	Swelling
18.	Gauri	 33	do.
19.	Saradha	 3	Fever
20.	Amboojakshi	 6	Diarrhoea
21.	Srivasan	 7	do.
22.	Omana	 8	do.
23.	Balakrishnan	 42	Fever
24.	Gopi	 2	Diarrhoea
25.	Gomathi	 7	Swelling
26.	Kochupennu	 80	Consumption

No	Name of dead	Age	Diseases that caused the deaths
27.	Kutty	 3	Swelling
28.	Raghu	 4	Stomachache
29.	Lathy	 4	Fever
30.	Sulaiman	 64	Diarrhoea
31.	Madhavan	 72	Swelling
32.	Padmanabhan	 53	Consumption
33.	Kunjukunji	 52	Swelling
34.	Kumaran	 50	Consumption
35.	Velayudhan	 42	Stomachache
36.	Kochu	 56	Rheumatism
37.	Karumbi	 51	Swelling
38.	Aiyappan	 40	Rheumatism
39.	Sisu	 2	Fever
40.	Kochu	 33	Gas
41.	Kaliani	 30	Anaemia
42.	Kochayappan	 64	Diarrhoea
43.	Ammakunju	 50	Swelling
44.	Krishnan	 72	do.
45.	Kunjuchannaty	 60	Consumption
46.	Krishnan	 70	Swelling
47.	Aiyappan	 80	Consumption
48.	Muthukunju	 55	Swelling
49.	Kunjukunju	 43	Consumption
50.	Madhavan	 40	do.
51.	Narayini	 43	Swelling
52.	Govindan	 45	Gas
53.	Kunjupennu	 66	Swelling
54.	Kunjuraman	 42	do.
55.	Velutha	 50	do.
56.	Devakaran	 6	do.
57.	Krishnan	 46	Dysentery
58.	Sisu	 2	Fever
59.	Kunjupennu	 62	Rheumatism
60.	Ravidharan	 4	Karappan
61.	Abdul Kadhar Haji	 53	Fever

No.	Name of dead	Age.	Diseases
62	Kunjuachan	83	Rheumatism
63	Sarada	7	Swelling
64	Hydrose	54	do
65	Abdul Kader Kunju	80	Consumption
66	Karutha Kunju	80	Dysentery
67	Pappy	35	Fever
68	Lakshmi	4	Karappan
69	Yusuf Kunju	60	
70	Kali	74	Rheumatism
71	Kittan	63	do
72	Pankajashi	3	Swelling
73	Oonikali	32	Fever
74	Kannipennu	52	Dysentery
75	Kali	54	Diarrhoea
76	Kutty	10	Dysentery
77	Kittan	50	do
78	Madhavi	14	do
79	Kunjupaniker	42	Typhoid
80	Ammakunju	29	do
81	Karampi	58	do
82	Chellamma	10	do
83	Nanu	34	do
84	Sumathi	2	Diarrhoea
85	Saraveevi	25	Fever
86	Kunjuramapaniker	95	do
87	Kesavan	63	Rheumatism
88	Ammakunju	66	Dysentery
89	Sowrabhan	8	Swelling
90	Velutha Kunju	68	Rheumatism
91	Sulaiman Kunju	12	Fever
92	Kujan	48	Gas
93	Chellamma	4	Karappan
94	Kittu	42	Gas
95	Bharathi	2	Swelling
96	Kumaran	73	Fever
97	Sivaraman	2	Swelling
98	Kunjupennu	40	Diarrhoea
99	Janardhanan	11	do
100	Mahammad		
	Kutty	10 months	Karappan
101	Ankunju	2	Diarrhoea
102	Vawa	17	do
103	Parvathy	42	Swelling
104	Veluthukochu	20	Diarrhoea

No.	Name of dead	Age.	Diseases
105	Paniker	6	Stomachache
106	Vasudevan	20	Diarrhoea
107	Vasavan	12	do
108	Ponnappan	4	do
109	Nanu	20	do
110	Kochucherukan	2	Karappan
111	Krishnamma	4	Diarrhoea
112	Sisupalan	20	Fever
113	Velayudhan	47	Fever
114	Rajan	4½	Swelling
115	Karthiyani	22	Diarrhoea
116	Janaki	20	Diarrhoea
117	Kesavan	70	Consumption
118	Janaki	14	Swelling
119	Kunjupennu	35	Consumption
120	Chandramathy	4	Stomachache
121	Ammakunju	74	Diarrhoea
122	Kittan	40	Consumption
123	Sumathy	8	Diarrhoea
124	Neelakandan	52	do
125	Kochukarambi	60	Consumption
126	Kochukali	80	Rheumatism
127	Alikunju	63	Diarrhoea
128	Mani	65	Consumption
129	Sisu	..	Delivery with dead child
130	Kunjupennu	14	Stomachache
131	Puspanadhan	3	Swelling
132	Pathrose	26	Stomachache
133	Sankaran	45	do
134	Kamalakshi	5	Typhoid
135	Neela	73	do
136	Sreedharan	15	
137	Raman	51	Diarrhoea
138	Pankajakshi	7	Typhoid
139	Kali	22	do
140	Kochuneeli	28	do
141	Devaki	12	do
142	Panjami	9	do
143	Devaki	30	do
144	Sukumaran	10	do

ARRATTUPUZHA PAKUTHY

1943 August — July 1944

No.	Name of dead	Age.	Diseases
	Velumby	52	Swelling
1	Nanu	5	Typhoid
2	Devaki	33	do
3	Bharathan	15	do
4	Kunjupennu	42	do
5	Sankaran	60	do
6	Sarojini	6	do
7	Kutty	21	do
8	Kochukunju	70	Rheumatism
9	Mary	26	Diarrhoea
10	Kunjupillai	35	do
11	Kochurikalli	63	Typhoid
12	Parvathi	17	do
13	Kumaran	58	Stomachache
14	Nalini	7	Diarrhoea
15	Nangelli	50	Typhoid
16	Kunjupennu	53	do
17	Kunju	20	do
18	Achankunju	87	Diarrhoea
19	Karathkunju	52	Typhoid
20	Krishnan	51	Diarrhoea
21	Krishnan	44	Typhoid
22	Bhavani	13	Stomachache
23	Kochikka	46	Diarrhoea
24	Kunjukunju	20	Typhoid
25	Dathan	5	Diarrhoea
26	Divakaran	14	Typhoid
27	Govindankutty	1½	Karapan
28	Sathia	4	do
29	Abdulrahiman	62	Rheumatism
30	Kunju	32	Stomachache
31	Kunju	57	Typhoid
32	Ramachandran	1½	Karapan
33	Madhavi	30	Fever
34	Adavia	16	Swelling
35	Kunjukunju	37	Stomachache
36	Sankaran	60	do
37	Lalitha	4	Swelling
38	Karunakaran	14	Stomachache
39	Velutha Kunju	30	Typhoid
40	Janapennu	22	Fever
41			

No.	Name of dead	Age.	Diseases
42	Thankappan	3	Diarrhoea
43	Sulaimaamma	34	Fever
44	Pankajakshan	1	Diarrhoea
45	Sarada	13	Fever
46	Leelavathi	6	Diarrhoea
47	Sivadas	3	do
48	Sankaran	74	Rheumatism
49	Nanu	36	Consumption
50	Thankamma	3	Diarrhoea
51	Chandrakanthan	6	Swelling
52	Kaliyani	33	Stomachache
53	Rohini	3	Fever
54	Kunjupennu	48	Consumption
55	Chakky	66	Diarrhoea
56	Kochu	31	Fever
57	Kochupennu	35	Rheumatism
58	Saraswathy	3	Swelling
59	Kumara	73	Diarrhoea
60	Summangali	3	Diarrhoea
61	Ammakunju	58	Swelling
62	Kochupikali	70	Fever
63	Ummuni	83	do
64	Sisu	7 days	do
65	Kalikunju	74	do
66	Remabhai	6	Stomachache
67	Chellamma	2	Karappan
68	Padmanabhan	48	Swelling
69	Kunjukunju	61	Rheumatism
70	Chellappan	25	Fever
71	Unnikali	55	Swelling
72	Parvathi	37	do
73	Tharuneeharan	8	do
74	Abduallatheef	5	do
75	Veluthakunju	76	Diarrhoea
76	Kunjukunju	77	do
77	Pappi	80	Rheumatism
78	Velayudhan	69	Swelling
79	Pappi	40	Diarrhoea
80	Kunjamma	32	Fever
81	Janaki	20	Consumption
82	Kali	50	Rheumatism
83	Janamma	2	Drowning
84	Gangadharan	22	Tuberculosis
85	Kaliyani	36	Dysentery

No.	Name of dead	Age.	Diseases
86	Ummni	50	Swelling
87	Rajamma	3	Fever
88	Nanu	30	Diarrhoea
89	Nani	50	Fever
90	Nachi	70	do
91	Kochu	32	Consumption
92	Kochan	50	Diarrhoea
93	Ammakunju	40	Fever
94	Podikochu	24	Dysentery
95	Chakky	42	Fever
96	Saraswamma	10	do
97	Sisu	64	do
98	Kochupappu	20	Swelling
99	Nani	60	Dysentery
100	Kunjupennu	50	do
101	Kochukunju	80	Fever
102	Kochuvelampi	44	Anaemia
103	Sukumaran	14	do
104	Kali	48	do
105	Abdulrahiman	14	do
106	Adhavia	14	do
107	Ammukunju	30	do
108	Kaman	50	do
109	Vasudevan	16	Fever
110	Kochukrishna	60	Anaemia
111	Kali	78	Consumption
112	Sankiri	24	Diarrhoea
113	Chathan	98	do
114	Kumaran	1	Karappan
115	Abdul Kadhar	52	Consumption
116	Kochika	74	do
117	Kunjupaniker	64	Swelling
118	Kunjikochu	60	Diarrhoea
119	Yamunabhai	68	Stomachache
120	Achamma	30	Fever
121	Karambi	70	Swelling
122	Raman	50	Diarrhoea
123	Kunjamma	60	Rheumatism

APPROXIMATE No. of BIRTHS and DEATHS		
1940-41	100	170
1941-42	74	100
1942-43	120	160
1943-44	180	220

PRAKKAD

(1941-1942) (August)

No.	Name of dead	Age.	Diseases
1	Kandukali	76	Old-age
2	Pappamma	75	Swelling
3	Kunjali	81	Old-age
4	Chellappan	12	Fever
5	Neelakantan	40	Swelling
6	Sebastian	4	Fever
7	Bhaskaran	4	do
8	Gopi	2	Swelling
9	Ayyanakunju	71	Old-age
10	Veluthakocha	35	Fever
11	Mariam	45	Typhoid
12	Kesavan	50	Swelling
13	Chindana	80	Old-age
14	Veevikunju	30	Rheumatism
15	Kaliyani	22	Fever
16	Saramma	28	Stomachache
17	Kunjipennu	60	Old-age
Sept.			
18	Lakshmi	22	Fever
19	Lawarence	36	Tuberculosis
20	Madhavan pillai	70	Fever
21	Changu	70	Old-age
22	Govindapai	13	Stomachache
Oct.			
23	Velayudhan	35	T. B.
24	Pappu	50	Rheumatism
25	Abdulkhader	3	Fever
26	Sankaran	40	do
27	Neelakantan	65	Rheumatism
28	Achava	8	Swelling
29	Kochu kali	50	Stomachache
30	Thampimani	6	Karapan
31	Kunjan	67	Swelling
32	Devaki	6	Stomachache
33	Kesavan	30	Rheumatism
Nov.			
34	Chellamma	6	Stomachache
35	Kadarkunju	28	do
36	Kochuvelu	22	Fever
37	Alamma	4	Stomachache
38	Thresia	4	Anaemia

No.	Name of dead	Age.	Diseases
39	Chandran	1	Fever
40	Kotha	75	Rheumatism
41	Saraswathi	74	Gas.
42	Mamma	35	Fever
43	Chaki	50	Swelling
44	Nani	28	T. B.
45	Chindana	70	Dysentry
Dec.			
46	Prasanan	6	Drowned
47	Kunjupennu	55	Rheumatism
48	Jathaki	3	Karapan
49	Bharghavan	16	T. B.
50	Kali	60	Rheumatism
51	Velayudhan	76	do
52	Abdulkari	46	Fever
53	Annathi	2	Swelling
Jan.			
54	Mariam	78	Rheumatism
55	Ayyappankunju	36	Fever
56	Veluthapennu	22	do
57	Kunjamma	12	Swelling
58	Suradharan	2	do
Feb			
59	Kochayyappan	50	Rheumatism
60	Kathijakutty	30	do
61	Veluthakunju	45	Asthma
March			
62	Vattu	54	Dysentry
63	Parvathi	70	Old-age
64	Kochkantan	50	Typhoid
65	Aley	7	Stomachache
66	Krishnapillai	70	Anaemia
April			
67	Parvathi	60	Swelling
68	Vasu	3	Fever
69	Thankamma	45	Rheumatism
70	Kutta	65	do
71	Chacki	75	Swelling
72	Joseph	8	Fever
73	Parameswaran	3	Swelling
74	Kunjamma	3	Rheumatism
May			
75	Kesavan	35	T. B.
76	Vava	40	Headache
77	Kochupillai	60	Rheumatism

No.	Name of dead	Age.	Diseases
78	Kuppachi	65	Rheumatism
79	Thomas	20	Fever
June			
80	Kavanathi	80	do
81	Kunjan	55	Gas
82	Thamarashi	4	Swelling
83	Karuppan	23	Fever
84	Ayyappan	40	Gas
85	Chacki	30	Swelling
86	Aripadan	80	Dysentery
87	Krishnamma	7	Fever
88	Neeli	70	do
89	Velayudhan	22	Cough
90	Sankaranembran	70	Fever
91	Kaliamma	8	do
92	Ayyappan	48	Rheumatism
93	Karupan	22	Fever
94	Chokkan	90	T. B.
95	Achari	60	Headache
96	Krishnan	30	Rheumatism
July			
97	Velubhan	60	Swelling
98	Adimakunju	60	Dysentery
99	Kuppan	35	Swelling
100	Parameswaran	3	do
101	Vasanth	4	Worms
102	Acharu	70	Dysentery
103	Lakshmi	35	Anaemia
104	Beevikunju	65	Rheumatism
105	Maideenkunju	55	Swelling
106	Sivadhasan	7	do
107	Selimkunju	1	Diarrhoea
108	Kaliamma	56	Rheumatism
109	Kozhachan	69	T. B.
110	Chinnamma	3	Fever
111	Kochupappy	40	T. B.
112	Padmanabhan	6	Fever
113	Neela	60	Swelling
114	Gopalan	30	Typhoid
115	Nani	32	Swelling

Total Births 141 Total deaths 116

1942 August — 1943 July

Aug.

1 Parameswaran 16 Fever

No.	Name of dead	Age.	Diseases
2	Kesavan	70	Piles
3	Chellamma	10	Fever
4	Kittan	65	Swelling
5	Velutha	60	Fever
6	Lakshmi	70	Swelling
7	Ayyappan	40	Fever
8	Aysa	67	Typhoid
9	Karuthamma	77	Swelling
10	Bai	50	do
11	Karuthamma	60	Typhoid
12	Suhara	7	Swelling
13	Chindan	62	do
14	Anna	80	Fever
15	Kuppa	57	Swelling
16	Kunjupennu	48	T. B.
17	Santhamma	3	Diarrhoea
18	Kali	60	Typhoid
19	Sadasivan	2	Typhoid
Sept.			
20	Bhargavan	5	Fever
21	Kochu	32	Rheumatism
22	Kochayyappan	55	Gas
23	Sudishena	2	Fever
24	Rudrani	10	Typhoid
25	Ramanpillai	73	do
26	Raman	64	Fever
27	Kutti	30	Swelling
28	Kali	48	do
29	Padmanabhan	40	do
30	Velayudhan	57	Anaemia
31	Karumbi	16	Swelling
Oct.			
32	Saraswamma	3	Swelling
33	Kali	13	Stomachache
34	Chakki	48	T. B.
35	Kali	8	Rheumatism
36	Karthiyani	4	Anaemia
37	Chakki	80	Fever
38	Thankamma	7	Piles
39	Vijamma	4	Typhoid
40	Neela	64	Rheumatism
41	Kora	19	Fever
42	Kuttappan	1	Dysentery
43	Raghava menon	38	T. B.

No.	Name of dead	Age.	Diseases
44	Sisula	7	Karappan
45	Kaviamma	Nov. 48	Swelling
46	Varghese	60	do
47	Gopalan	2	do
48	Kunjipennu	40	T. B.
49	Velayudhan	4	Fever
50	Raman	30	T. B.
51	Valsala	4	Fever
52	Kutty	48	T. B.
53	Sukumaran	Dec. 8	Swelling
54	Kutty	10	do
55	Kittan	74	do
56	Kadarukunju	30	do
57	Bhavani	12	Fever
58	Thankamma	Jan 2	Diarrhoea
59	Kutty	42	Swelling
60	Thresia	18	do
61	Lakshmi	43	Diarrhoea
62	Karthiayani	1	Karappan
63	Chellappan	Feb 12	Stomachache
64	Pennamma	16	Fever
65	Gopalan	40	Malaria
66	Kuduvally	64	Typhoid
67	Kumaran	64	Fever
68	Vilasani	3	Typhoid
69	Kunjipennu	40	Swelling
70	Kunjan	34	Fever
71	Padmanabhan	40	Malaria
72	Bharathan	2	Fever
73	Sankaran	60	Dysentery
74	Sarojini	March 2	Typhoid
75	Mariam	68	Fever
76	Haimavathi	12	do
77	Velayudhan	50	Swelling
78	Kittan	60	Fever
79	Kittan	April 60	Small-pox
80	Achamma	16	do
81	Lakshmi	24	do

No.	Name of dead	Age.	Diseases
82	Chakki	40	T. B.
83	Chinnamma	16	Small-pox
84	Pennamma	38	do
85	Punniyan	40	do
86	Velayudhan	50	Swelling
87	Kochu	41	Fever
88	Gopalapillai	50	Accident
89	Chakki	74	Typhoid
90	Kali	May 50	Swelling
91	Kunjachan	54	T. B.
92	Chellppan	2	Swelling
93	Ayyappan	44	Fever
94	Veluthapennu	20	Swelling
95	Kochupappi	16	do
96	Suradharan	2	Diarrhoea
97	Pappy	64	Fever
98	Mary	3	Typhoid
99	Kalikunju	50	Dysentery
100	Kunjunni	6	Fever
101	Gopi	7	Small-pox
102	Raman	23	do
103	Sankaran	50	Rheumatism
104	Kali	40	Swelling
105	Velayudhan	30	Small-pox
106	Ayisha	June 36	Small-pox
107	Abdulkadar	4	Swelling
108	Bhargavi	2	Karapan
109	Sarasamma	8	Small-pox
110	Maniamma	28	do
111	Chellappan	10	do
112	Janardhanan	12	do
113	Prabhakaran	7	do
114	Ayyappan	11	do
115	Kamalakshi	3	Diarrhoea
116	Ayyappankunju	60	Small-pox
117	Chandrasekharan	20	do
118	Moideen	58	Fever
119	Sarala	1	Diarrhoea
120	Sukumaran	6	do
121	Narayanan	38	Small-pox
122	Indira	5	Worms
123	Kochukrishnan	60	Dysentery

No.	Name of dead	Age.	Diseases
26	Kochu	60	Swelling
27	Muthalachi	64	do
28	Kali	73	Rheumatism
Dec.			
29	Thampi	2	Fever
30	Ahammad	80	Rheumatism
31	Nalani	5	Swelling
32	Devakiamma	31	Fever
33	Rajamma	9	Karapan
Jan.			
34	Velayudhan	30	Swelling
35	Maniyan	6	Fever
36	Kesavan	50	Swelling
37	Pappu	36	Stomachache
38	Ayyappan	50	Fever
39	Devak	2	Karapan
40	Ramachandaran	6	Swelling
41	Narayanan	40	do
Feb.			
42	Thankamma	4m	do
43	Nelakantan	65	Rheumatism
44	Pappu	30	Swelling
45	Chakki	70	do
46	Kochukunju	60	Old-age
47	Ommavanbevi	3	Karapan
48	Sarojini	6	Rheumatism
49	Abdualkariam	22	Stomachache
50	Bhaskaran	12	Fever
51	Sarala	5	Anaemia
52	Ammani	10	Fever
53	Gouri	6	Anaemia
March			
54	Venkitesaprabhu	40	Swelling
55	Ahammad kunju	6	Old-age
56	Krishnapillai	78	Old-age
57	Assankunju	4	Karapan
April			
58	Mani	50	Dysentery
59	Bhaskaran	3	Karapan
60	Bhavani	24	Dysentery
61	Kochayyappan	70	Old-age
62	Rudrani	12	Fever
63	Bhargavan	24	do
64	Kochuamma	76	Old-age

No.	Name of dead	Age.	Diseases
65	Visalan	56	Old-age
66	Lakshiamma	72	do
67	Madhavi	1	Karapan
68	Kochukunju	3½	Cough
69	Narayani	5	Karapan
70	Thresia	80	Swelling
71	Ouseph	2	Diarrhoea
May			
72	Devakaran	26	T. B.
73	Kochukali	65	Old-age
74	Kadirkunju	64	do
75	Sarada	7	Dysentery
76	Koovara	2	Fever
77	Kocha	35	T. B.
78	Kathija	30	Gas
79	Rahiman	6	Swelling
80	Velutha	40	do
81	Prushan	4	do
82	Bhavani	2	Fever
83	Onnuurkochu	35	Swelling
84	Kunju	30	do
85	Paru	32	do
86	Nalani	2	do
87	Moidalli	63	Oldage
88	Kochuperumal	80	do
July			
89	Nenchia	1	Swelling
90	Innikali	70	Old-age
91	Yogi	67	do
92	Murugan	2	Karapan
93	Ayyakunju	32	Swelling
94	Jagadamma	10	Fever

This enquiry is in complete. But it is valuable in showing the nature of the diseases that caused the deaths.

Total births ? Total deaths 94
1944 — August To 1945 — January

	August	Sept.	
1	Karthiayani	20	Fever
2	Kochuponnamma	24	T. B.
3	Neell	54	Old-age
4	Chowunammal	34	Anaemia
5	Kochakki	70	Old-age
6	Pennamma	2	Karapan

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No.	Name of dead	Age.	Diseases
7	Kochappu	60	Dysentery
8	Sirisak	3	Fever
9	Niskalan	2	Fever
10	Thresia	60	do
11	Pareed	50	Swelling
12	Pennamma	24	Stomachache
13	Kashiamma	10	Swelling
		Nov.	
14	Panchami	10	do
15	Anachi	50	do
16	Ibrahim	104	Old-age
		Dec.	
17	Kalikunju	45	Swelling
18	Kunju	80	Fever
		Jan.	
19	Ommasam	2	Dysentery
20	Alias	30	T. B.
21	Cheriyam	24	Dysentery
22	Dinagan	3	Swelling
23	Kunjukunju	42	Fever
24	Karthiayani	2	do

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