

PART II

DEATH AND DISEASE IN THE BENGAL FAMINE

CHAPTER I.—MORTALITY

A.—TOTAL MORTALITY.

1. According to figures published by the Bengal Public Health Department, 1,873,749 people died in Bengal in 1943. The average number of deaths reported annually during the previous 5 years, 1938 to 1942, was 1,184,903, so that deaths in 1943 were 688,846 in excess of the quinquennial average. The reported death rates per *mille* in Bengal in the five years preceding the famine ranged from 19·6 to 25·0, with an average of 21·2. In the famine year of 1943 the rate rose to 30·9 per *mille*.

Nearly all the famine mortality occurred in the second half of the year. During the first 6 months mortality was only 1·9 per cent. in excess of the quinquennial average. From July to December 1943, 1,304,323 deaths were recorded as against an average of 626,048 in the previous quinquennium, representing an increase in mortality of 108·3 per cent.

2. Death continued to take its toll in 1944. In the first 6 months of 1944, 981,228 deaths were recorded, an excess of 422,371 over the quinquennial average. The death rate during the year from July 1943 to June 1944 reached 37·6 per *mille*. The complete mortality figures for 1944, which are not available at the time of writing, may show that, as far as excess mortality is concerned, the year 1944 was almost as disastrous as the previous one.

B.—ACCURACY OF MORTALITY STATISTICS.

3. All public health statistics in India are inaccurate. Mortality figures indicate trends in the death rate but can rarely be accepted as absolute. Even in normal times, deaths are not fully recorded and the number of births registered may be 20 to 25 per cent. below the number of births that have actually occurred.¹ The famine mortality statistics issued by the Bengal Public Health Department, it may be remarked, tell a sufficiently tragic story as they stand. Many people have, however, maintained that they grossly underestimate the actual number of deaths. Thus, witnesses appearing before members of the Commission in Dacca estimated deaths in the district in 1943 as one million, whereas the figure recorded by the Public Health Department was 149,000 (70,000 in excess of the quinquennial average). Professor K. P. Chattopadhyaya, Department of Anthropology, Calcutta University, made an estimate of the total mortality in 1943—3·5 million deaths—which has received wide publicity. This was based on surveys of sample groups in the worst famine areas, in which the mortality rate was 10 per cent, and it was assumed that two-thirds of the population of the province were equally affected by the famine. The method of investigation followed cannot be accepted as statistically sound: to estimate the provincial death rate from a sample of this nature is unjustifiable.² When the famine was at its height dead and dying people were all too visible in famine-stricken areas, and it is natural that in such circumstances exaggerated estimates of mortality should have gained credence.

4. While the Commission cannot accept popular views on mortality, it is nevertheless of the opinion that the official figures under-estimate the total

¹Report of the Public Health Commissioner with the Government of India, 1936.

number of deaths. In rural Bengal, as elsewhere in India, the primary collector of mortality statistics is a village functionary to whom deaths are reported by relations of the deceased in the village. The village *chowkidar*¹ (previous to 1944), reported deaths to the Union Board office, whence by several stages the records ultimately reached the office of the Director of Public Health. The *chowkidar* also reports the cause of deaths. In normal times the system scarcely lends itself to scientific accuracy and in 1942, and 1943 other factors making for errors and omissions were introduced. In certain places the salaries of *chowkidars* were not paid and they deserted their posts to obtain work on military projects and aerodromes. During the famine *chowkidars* were not immune from starvation and disease and some of them died. The replacement of dead and vanished *chowkidars* was no easy matter and several weeks or months might elapse before successors could be found, during which deaths presumably went unrecorded. Further, in the height of the famine thousands of people left their homes and wandered across the countryside in search of food. Many died by the road-side—witness the skulls and bones which were to be seen there in the months following the famine. Deaths occurring in such circumstances would certainly not be recorded in the statistics of the Director of Public Health.

5. There was a remarkable fall in 1943, in the number of deaths recorded in infants under one month. Deaths in this age group numbered 101,406, the quinquennial average being 138,780—a decrease of 26·8 per cent. This reduction in neo-natal mortality may be to a considerable extent due to a fall in the number of live births; the recorded birth-rate actually fell from 28·0 (quinquennial average) to 18·8 per *mille*. It seems probable, however, that during the famine a large proportion of deaths of infants under one month was not recorded and that a similar factor operated in the reported fall in the birth-rate. The lower mortality reported in infants under one month—an age group which normally makes a large contribution to total mortality—must be borne in mind in assessing the number of deaths by comparing deaths in 1943 with the quinquennial average.

6. At the end of 1943 a considerable effort was made, by civil and military medical authorities, to improve the registration of deaths. Emergency medical workers were instructed to supervise the recording of deaths by *chowkidars* and to check and accelerate the whole system. The result was an unquestionable improvement in the collection of mortality statistics and the figures for the first half of 1944, can probably be regarded as reasonably accurate. A graph showing recorded mortality, month by month, is given on page 113. It is significant that there was a fall in January 1944, after registration had been improved. No doubt the actual number of deaths fell at this stage owing to the provision of food supplies, but the health situation remained very serious. If the figures recorded in 1943 were a gross under-estimate (*e.g.*, half the actual number of deaths) one would expect that any real fall in the death-rate in January would be offset by the greater accuracy of registration, and that the result would have been a rise in recorded mortality.

7. In spite of the conditions produced by the famine, there was no universal breakdown in 1943 in the system of recording deaths. We made careful inquiries on this point from local officials and other witnesses. After due consideration of the available facts we are of the opinion that the number of deaths in excess of the average in 1943 was of the order of one million—that is, some 40 per cent. in excess of the officially recorded mortality. We have found no valid reason for accepting estimates in excess of this figure. On the other hand, the high excess mortality in 1944 must be added to the toll of

¹The *chowkidar* or village watchman is a part-time village servant, usually illiterate and paid about Rs. 6 or Rs. 7 a month.

mortality. On this basis we must conclude that about 1.5 million deaths occurred as a direct result of the famine and the epidemics which followed in its train.

C.—AGE AND SEX MORTALITY

8. Various views were expressed to the Commission as regards the age and sex groups on which mortality fell most heavily. In some areas women and children appeared to be the principal victims, since many of the men had left home to seek employment elsewhere. The destitutes who thronged the relief kitchens in Calcutta and other centres seemed to be for the most part children, women, and old people of both sexes, and mortality among such wandering destitutes was high. On the other hand, opinions were given that in villages from which little or no migration took place, more men died than women. The effect of the famine on the age distribution of the population of Bengal is a question which deserves careful investigation. In view of errors and omissions in the recording of deaths to which previous reference has been made, it is, however, by no means easy to reach satisfactory conclusions. The data available for study include the public health statistics for 1943 and the results of various inquiries on sample groups submitted to the Commission.

9. Male and female deaths reported in 1943 numbered 998,428 and 875,321 respectively, a difference of 123,107 to the disadvantage of males. Actually more male than female deaths are normally reported in Bengal, which is due to the higher proportion of males in the population, and to the excess of male births (108 male to 100 female), which leads to more deaths among infants of the male sex.¹ If, however, the average number of male and female deaths in the previous quinquennium is compared with the figures for 1943, it is found that the increase in male deaths was 62.5 per cent, as compared with 53.2 per cent in the case of female deaths. The preponderance of male deaths is confirmed by a sample survey carried out in various rural areas by Mr. T. C. Das, Lecturer in Social Anthropology, University of Calcutta. Of 4,833 deaths investigated, 56.7 per cent were male and 42.3 per cent female. The same trend is shown in the records of deaths in famine hospitals in various centres.

10. The excess in male deaths was more marked in the adult age groups. Up to 10 years the increase in mortality was almost equal in both sexes. In the age group 10 to 15, the rise in the number of male deaths was somewhat greater than in the case of female deaths, but the difference is not striking. In the groups between 10 and 60, 515,290 deaths in males were recorded as against 439,273 in females. the percentage increases in mortality over the quinquennial average being as follows:—

<i>Age group</i>	<i>Percentage increase over quinquennial average of deaths in 1943.</i>	
	<i>Male</i>	<i>Female</i>
15-20	98.3	48.8
20-30	82.9	59.1
30-40	98.8	88.9
40-50	103.6	90.9
50-60	93.2	76.3

¹The Census Report of 1941 gives 32,360,401 males and 29,099,976 females.

11. It must, however, be mentioned that the results of a series of sample inquiries in rural areas, analysed by Professor P. C. Mahalanobis, Statistical Laboratory, Presidency College, Calcutta, are not in agreement with the provincial sex mortality data. The investigation covered 2,622 families (13,652 individuals), inhabiting villages in 7 sub-divisions. In the groups as a whole, the percentage mortality among females in 1943 was higher than the percentage mortality among males. (Infants of both sexes below one year were left out of the calculation). There was, however, considerable irregularity in the proportionate sex mortality in the various sub-divisions, and in some sub-divisions the male mortality, on a percentage basis, exceeded the female. The aggregate figures are influenced by the data from one sub-division in which, for some reason, female deaths greatly exceeded male deaths.

12. As regards mortality by age, the decrease in the reported number of deaths in infants under one month has already been referred to. The number of deaths in infants aged 1 to 12 months increased, but the total deaths under one year declined as a result of the reported fall in neo-natal mortality. A large number of deaths occurred in the age groups 1 to 5 and 5 to 10. The number of deaths in old people over 60 was also high, 247,556 as compared with the quinquennial average of 154,405. The age groups 1 to 10 and 60 and over contributed between them 274,810 of the excess deaths in 1943, but since the mortality in these groups is normally high, their excess mortality was slightly lower than that in the intermediate age groups.

13. Mortality in Calcutta in 1943 shows different trends from those shown by the data for the whole province. The proportionate increase in male and female deaths was reversed, the former being 52.7 per cent in excess of the quinquennial average and the latter, 72.2 per cent. The percentage increase in female deaths exceeded that in male deaths in almost all the age groups. The total number of male deaths reported was greater than that of female deaths, but this is due to the preponderance of males in the industrial population of Calcutta. According to the 1941 census, males in Calcutta outnumbered females by about two to one.

14. The greatest excess mortality in Calcutta was recorded in the age groups 1 to 5, 5 to 10, and over 60, the percentage increase in mortality in these groups being 223.1, 85.1 and 192.6 respectively. The mortality statistics thus confirm the impression that women, children, and old people were in the majority in the famine-stricken population which sought food and relief in the capital. It may be added that the recording of deaths in Calcutta is likely to be more accurate than elsewhere in Bengal, since no dead body can be disposed of by cremation or burial without notifying the municipal health authorities.

15. Finally, attention should be drawn to one factor which may influence the records of age and sex mortality in the districts. Omissions in the registration of deaths may not have been equally distributed in the different age and sex groups. We have referred to unrecorded road-side deaths. It is not unlikely that these included more women and children than men.

16. The above analysis is based largely on the mortality figures of the Public Health Department as they stand. The quotation of recorded mortality figures, including digits down to the tens and hundreds, and the calculation of percentages to one place of decimals, tends to give a false air of accuracy. We must again emphasize that all the figures given are inaccurate and should not be regarded as indicating more than general trends in mortality.

17. We incline to the view that in the province as a whole famine mortality was greater among men than in women. There were, however, undoubtedly places such as Calcutta where the reverse was the case. Assuming the higher male mortality to be a fact, it is by no means easy to suggest reasons for it. Possibly men, with larger food requirements than women, suffered more acutely as food supplies dwindled away to nothing. Men may have attempted, more often than women, to remain at work in spite of increasing starvation, and thus used up their bodily reserves more rapidly. Again, women and children may have sought relief at food kitchens more readily than men. It is known that large numbers of families have been deprived of their bread-winners and large numbers of women have been left widows. Responsibility for the care of the widows and orphans of the famine has been accepted by Government as part of the rehabilitation programme. Our tentative conclusions about sex mortality emphasize the extent of the task involved.

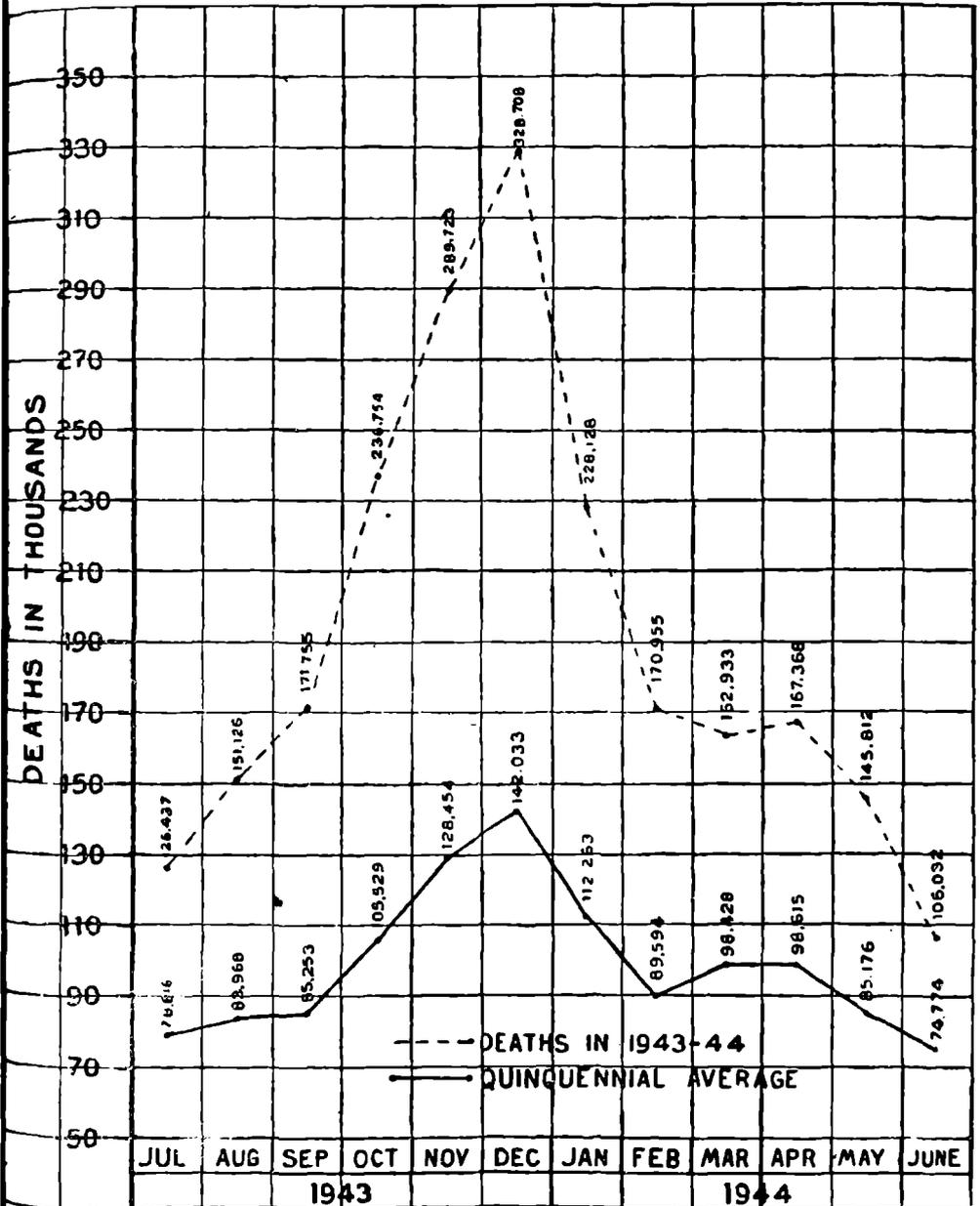
18. A considerable fall in the birth-rate must unquestionably have occurred. This effect of famine is referred to in earlier reports on famine in India. Thus, it was said that in Orissa in 1866 and 1867, the birth-rate was reduced almost to nothing. According to a report on the Madras famine of 1876-7, in 9 famine districts the birth-rate fell from 26 per *mille* in 1876 to 20·3 per *mille* in 1877, and to 13·8 in 1878. The number of births in these two years was calculated as being 200,000 less than in two average years. In certain districts the birth-rate fell to 4 to 5 per *mille*. The reported fall in the birth-rate in Bengal in 1943 from 28·0 (quinquennial average) to 18·8 means a loss of 500,000 to 600,000 births. While the accuracy of this figure may be questioned, there is no reason to doubt that births were greatly decreased in the Bengal famine, as in earlier famines. The decrease will influence the age composition of the population in future years and the curve of population growth. The latter will, of course, also be affected by the total famine mortality, and notably by the mortality among females of all ages up to the end of the child-bearing period.

19. The falling-off in the number of live births during famine is presumably due largely to an increase in the incidence of abortion, miscarriage, and still-birth resulting from malnutrition and disease. It is well known that a woman's capacity to bear living children is impaired by malnutrition, while malaria frequently leads to abortion. The disruption of family life must also be an operative factor, particularly in the later stages of famine.

D.—COURSE OF MORTALITY

20. In May and June, 1943, the death rate began to rise in the districts of Rangpur, Mymensingh, Bakarganj, Chittagong, Noakhali, and Tipperah. The most striking increase was in Chittagong and the neighbouring district of Noakhali, where, after a steep rise in May, the number of deaths was twice the quinquennial average in June, and 3 to 4 times the average in July. It was in fact in these districts that the famine first made itself evident. In July the reported death-rate was above the average in all districts except Hooghly, Jessore, and Malda, but the rise was of a comparatively small order. From August onwards, the number of deaths rose rapidly, reaching its peak in December. The actual numbers recorded monthly are shown below, in comparison with the quinquennial average. It will be noted that the famine mortality curve follows the quinquennial mortality curve, which also attained its highest point in December. This suggests that during the last few months of the year, the presence of famine accentuated the lethal effect of disease present in lesser degree in normal times.

Number of monthly deaths reported in Bengal from July 1943 to June 1944, compared with the average in the previous quinquennium.



21. The death-rate in Calcutta, unlike that in the province as a whole, reached its peak in October, 1943. The decrease in November and December was no doubt due to the distribution of food, the increase in hospital accommodation, the better care and treatment of patients, and the removal of destitutes to camps outside the city.

22. Study of the mortality recorded in the various districts in Bengal in 1943 and 1944, reveals some important facts. Some districts are normally surplus in rice supplies, others deficit, while a third group is more or less self-supporting. In 1943, the usual order in this respect was disturbed in various ways. Thus, Midnapore is normally a surplus district and was taken as such for purposes of the Bengal Government's Procurement Scheme in 1944. In 1943, however, it was heavily deficit as a result of the cyclone, which produced famine conditions and serious health problems in certain districts before the great famine began. Again, rice supplies in various districts which are normally surplus, notably certain districts in West Bengal, were reduced as a result of the short crop. No satisfactory information about rice supplies in any district, in relation to the needs of the population, is in fact available. It is thus difficult to compare mortality and the degree of scarcity district by district. Comparison is also affected by the migration of famine victims, who in general tended to wander from the worst areas to places where they had at least some hope of obtaining food.

23. In spite of these facts—to which must be added the general inaccuracy of the mortality figures—certain rough conclusions can be drawn. Early in 1943, certain districts were regarded as "buying areas" by the Government of Bengal. These were: Bakarganj, Burdwan, Birbhum, Bogra, Dinajpur, Jalpaiguri, Malda, and Rajshahi. It is impossible to say how far these districts were genuinely surplus; in Burdwan, for example, crops in two sub-divisions had been damaged in 1942 and 1943, by insect pests and flood. But at least scarcity was less acute in them than in certain other parts of the province. Chittagong, Dacca, Faridpur, Tipperah, and Noakhali, normally deficit areas, were unquestionably seriously short of supplies in the famine year. The excess mortality recorded in these districts in 1943 was in general considerably higher than in the buying areas. It ranged from 51.1 per cent in Faridpur to 121.0 per cent in Chittagong, the excess in Tipperah, Dacca, and Noakhali being 118.6, 88.7, and 95.9 per cent respectively. In the districts declared buying areas, excess mortality ranged from 2.8 per cent (Malda) to 60.5 per cent (Birbhum). In none of the others did it exceed 45 per cent. In the remaining districts of Bengal, excess mortality exceeded 50 per cent in Murshidabad (96.5), Howrah (71.5), 24-Parganas (76.1), Midnapore (58.1), Rangpur (55.4), and Nadia (82.4). Of these, Midnapore was in a special position, while Howrah and 24-Parganas, which are near Calcutta, were subject to the drain of the Calcutta demand. 24-Parganas had also suffered to some extent from the cyclone. In certain sub-divisions of Murshidabad, the *aman* crop of 1943-44, was a total failure. In the Nilphamari sub-division of Rangpur, there had been failure of crops for 2 successive years as a result of drought.

24. Thus, in a very broad way, mortality during the first six months of the famine was related to the degree of local scarcity. But in almost all the districts, whatever their position as regards production and supplies of rice, there was some increase in the death-rate. The rise in price was general throughout Bengal and led to starvation even in districts which were not obviously deficient in their total supplies. Further, epidemic diseases were not confined to the areas in which food shortage was most acute.

25. In the first six months of 1944 there was a general rise in the death-rate in the districts which had not suffered severely in 1943, while it continued on a high level in most of the latter. In Birbhum, Dacca, Rangpur, 24 Parganas, Murshidabad, Malda, and Tipperah, excess mortality in the first six

months of 1944 exceeded 90 per cent Tipperah, Rangpur, Malda, and Dacca being the worst affected. In all the other districts, except Darjeeling which is an isolated hill district dissimilar in nature to the rest of Bengal, it ranged from 26 to 86 per cent. A very appreciable fall in excess mortality occurred in Chittagong (31.3 per cent, as compared with 204.1 in the previous six months), but in Tipperah the death-rate remained extremely high, being 111.3 per cent, in excess of the quinquennial average. Of all districts in Bengal, Tipperah suffered most severely during the famine.

The mortality figures show that almost the whole of Bengal, in greater or lesser degree, was affected by the famine and the outbreaks of epidemic disease associated with it. The extent of the area involved made the problem of combating epidemics and providing medical relief an enormous one.

CHAPTER II.—CAUSES OF DISEASE AND MORTALITY

A.—HEALTH PREVIOUS TO THE FAMINE

1. In normal times, malaria, cholera, and small-pox are endemic in Bengal and serious epidemics of these diseases are of frequent occurrence. The state of nutrition of a considerable section of the population was poor. The same can of course be said of many other parts of India. The calamity of famine fell on a population with low physical reserves and circumstances were favourable for a flare-up of epidemic disease. The association between health conditions in normal times and the high famine mortality must be underlined.

B.—LACK OF FOOD

2. A high proportion of the deaths which took place in the early stages of the famine can best be described as deaths from starvation. It is true that disease of some kind or another was usually present in starving patients, adding to the seriousness of their condition. Very commonly such patients suffered from "famine diarrhoea", often seen as an uncontrollable diarrhoea which led to dehydration, rapid weakening and death. Other kinds of disease were also frequently present in starving destitutes. There was a considerable excess mortality from malaria and cholera as early as July, 1943. The difference between death from simple starvation and death occurring in a starved individual who is suffering from disease is of medical interest, but a negligible difference when the broad facts of famine mortality are under consideration.

3. We can perhaps roughly distinguish between two phases of famine mortality and disease. During the first months of the famine, the emphasis was on starvation, with or without coincident disease, as a cause of death. At a somewhat later stage, epidemic diseases took precedence over starvation. The peak in cholera mortality occurred in October and November 1943, while in the case of malaria December stands out as the worst month. By the end of the year, with the reaping of the *aman* crop, and the provision of food to the famine victims through the medium of relief kitchens, etc., deaths from sheer starvation diminished. When this stage was reached the main medical and public health problem became that of epidemic disease, notably malaria. But even when relief measures had been in operation for some time, and adequate food supplies for the province as a whole were available, the recovery of sections of the population from under- and mal-nutrition was slow, and survivors belonging to the classes affected remained in a poor state of health. Throughout the famine the provision of suitable nourishment to patients in famine hospitals was of primary importance, although it was in the early stages that the problem of resuscitating cases of starvation by suitable therapeutic measures was most acute.

C.—DISEASE IN CALCUTTA FAMINE HOSPITALS.

4. Epidemic diseases were prevalent among famine victims in Calcutta as in other parts of Bengal. For example, investigations carried out in Calcutta towards the end of 1943 showed that some 40 per cent of destitute patients harboured malaria parasites. But in general the picture seen in the Calcutta emergency hospitals from August to November 1943 was that of acute starvation and its effects. Many of the patients in the hospitals were picked up on the streets in a state of extreme weakness and collapse, often on the point of death. They were for the most part emaciated to such a degree that the description "living skeletons" was justifiable. Weight was often reduced by

as much as one-third of the normal; that of men who normally weighed 120 to 130 lbs. fell to 80 to 90 lbs. When this degree of emaciation is reached as Alexander Porter points out in his book "The Diseases of the Madras Famine of 1877-8", "life is held by a slender thread which the least untoward circumstance is sufficient to snap."

5. Many suffered from mental disorientation, showing a very marked degree of apathy and indifference to their surroundings. When taken to hospital, such patients made little effort to help themselves and received medical attention with an indifference which sometimes amounted to passive obstruction. They did not care how dirty or naked they were. Those with famine diarrhoea would repeatedly soil their beds and pay no attention to the protests of the attendants. In a few cases maniacal symptoms were present. The mental state of many starving destitutes indeed sometimes disconcerted workers in famine hospitals, who were not aware that it was a pathological condition induced by starvation. There was some tendency to regard starvation cases as needlessly dirty and uncooperative and, since they made little effort to help themselves, not worth helping. Actually, the clouding of the mind induced by starvation cleared in a few days, if the patient could be rallied by suitable dietary and medical treatment.

6. The exact causes of so-called "famine diarrhoea" are at present unknown. They may include the following:

(a) Unsuitable food which is not digested and leads to irritation of the intestines. The spectacle of starving destitutes ransacking refuse bins was common in Calcutta during the height of the famine.

(b) Impairment of the digestive functions of the intestines, and actual anatomical changes in the intestinal wall, due to the consumption of a diet grossly inadequate in quantity and defective in quality.

(c) Infection with dysenteric organisms.

A high death rate from "dysentery and diarrhoea" has been reported in earlier famines in India. In the nineteenth century, the term "famine diarrhoea" was often used. If the recorded mortality from dysentery and diarrhoea during the course of earlier famines is studied, it is found that the number of deaths ascribed to this cause rose and fell according to the severity of famine conditions, that is, the degree of starvation. A similar phenomenon is observable in the mortality statistics of Calcutta during the second half of 1943. When the famine was at its worst, famine diarrhoea was perhaps the most formidable problem with which the medical relief agencies had to deal.

7. Many patients showed famine oedema or dropsy, the dropsical swelling often masking the gross underlying emaciation. Dropsy invariably makes its appearance under famine conditions; for example, it was widely prevalent in the under-fed population of Central Europe during and just after the last war. Protein deficiency is usually considered to be the chief cause. In the Bengal famine victims, it was often associated with anaemia. An interesting observation was that malaria not infrequently developed in patients who had rallied after a few days' stay in hospital. The temperature would rise and malaria parasites would be found in the blood. This may be explained in two ways: either the parasite was unable to multiply in a starved body and revived together with its host, or during the phase of starvation, it was present as in the later febrile stage, but, owing to the low state of the patient, produced no febrile reaction.

Anaemia was prevalent in patients in famine hospitals at all stages of the famine. This was no doubt largely due to the combined effects of under-nutrition and malaria.

8. The treatment of cases of acute starvation cannot be considered in detail in this report. A research unit in Calcutta, financed by the Indian Research Fund Association, made a study of this subject and published a brochure entitled "The Treatment and Management of Starving Sick Destitutes", which contains much useful information. The essentials of treatment are the provision of nourishment in suitable form and good nursing. Nutritious food must be administered at first in small quantities and then in gradually increasing amounts as the patient recovers. Good results were obtained in cases of severe inanition by the injection of "protein hydrolysate", an extract of meat containing protein in pre-digested form. Disease present in starving patients must of course be appropriately treated.

9. Many collapsed cases admitted to the Calcutta hospitals died within a few hours. Probably no form of treatment could have saved them. Sometimes very weak patients survived for a few days in hospital and appeared to be rallying when they suddenly died. This phenomenon, which was observed by Alexander Porter in the Madras famine of 1877-8, illustrates his remark that in the circumstances "life is held by a slender thread"

10. Starving destitutes did not show vitamin deficiency diseases, which are usually associated with chronic malnutrition, with the emphasis on qualitative rather than quantitative defects in the diet. The rarity of such diseases throughout the famine was somewhat surprising. In general, the condition of destitutes in Calcutta—and no doubt in other centres—in the early stages of the famine was indicative of acute starvation, into which they had fallen within the space of 2 to 3 months, and not of prolonged under-nutrition. The destitutes who left their homes to seek relief were not simply short of food. They had no food. This is consonant with other facts on record about the onset of the famine.

D.—DISEASE TAKES PRECEDENCE OVER STARVATION.

11. From about December onwards, there was a change in the clinical picture seen in famine hospitals. Most of the beds were filled with cases of malaria. The number of cases of famine oedema gradually diminished during the early months of 1944. Cases of acute starvation and extreme emaciation became relatively rare. Patients in general were thin and weak, and obviously required plenty of nourishing food to restore them to health. The majority were anaemic. There was, however, a genuine improvement in the state of nutrition. Cases of dysentery were frequent, but the "famine diarrhoea" which was so serious a problem in the earlier part of the famine, largely disappeared. Scabies a skin disease, became almost universal among destitutes in famine camps and hospitals. In many cases the greater part of the skin surface was involved in the lesions of scabies, complicated by impetigo and localised septic infection. The epidemic of scabies was probably due to various causes. In the first place, conditions of life among destitutes, *e.g.*, lack of clean clothing, lack of opportunity for washing, overcrowding or close contact in famine camps, etc., facilitated the transmission of the infecting agent. It has also been suggested that lack of oil for inunction of the skin was an important factor. Secondly, the unhealthy state of the skin itself, resulting from malnutrition, perhaps reduced its resistance to secondary infection. It is worth adding that healthy famine relief workers sometimes contracted scabies in the course of their work and that in general the disease in destitutes responded to the familiar treatment with sulphur ointment.

12. Another condition which was common in famine hospitals was "tropical ulcer" or "Naga sore", an ulcer of the skin and subcutaneous tissues usually situated in the anterior aspect of the lower part of the leg or the ankle. It usually begins with some slight wound or abrasion which refuses to heal. In

normal times tropical ulcer is common among plantation labourers who are in a poor state of nutrition and anaemic as a result of malaria and hookworm. Presumably malaria and malnutrition were responsible for its prevalence during the Bengal famine.

A good deal of Kala-azar was seen in the famine hospitals and some doctors think that its prevalence increased in 1944. There were a few cases of cancrum oris—a distressing condition in which tissues in the neighbourhood of the mouth putrefy and are destroyed. In the Russian famine of 1920, cancrum oris was widespread, but for some reason it was not common in the Bengal famine.

It was anticipated that with the onset of the cold weather there would be numerous deaths from pneumonia. This, however, did not occur; there was very little pneumonia. Again, eye-disease of various kinds often results from malnutrition and vitamin deficiency, but eye-disease was rare in patients in famine hospitals and out-patient clinics. The relative absence of vitamin deficiency disease has previously been mentioned. This again was contrary to expectation, since a high incidence of such disease had been prophesied as acute starvation gave place to more chronic malnutrition. In fact, the picture of disease in the Bengal famine failed in many respects to conform to the anticipations of doctors and nutrition experts.

E.—EPIDEMIOS

(i) Mortality.

13. Severe epidemics of malaria, small-pox and cholera were associated with the famine. The malaria season in Bengal normally extends from July to December. A severe and widespread epidemic, beginning in June, occurred during the latter half of 1943, reaching its peak in December and continuing in 1944. From July to December 1943, 479,039 deaths from malaria were recorded, an excess of 266,208 deaths (125.1 per cent) over the quinquennial average. In the first 6 months of 1944, malaria mortality figures were of the same order: 400,901 deaths were recorded, which was 223,664 deaths (126.1 per cent) above the average. Excess deaths from malaria accounted for 41.5 per cent of excess deaths in 1943 and 53.0 per cent of excess deaths from January to June 1944. In December 1943, the reported deaths from malaria were 202.6 per cent in excess of the quinquennial average.

14. Certain districts suffered more severely than others. The largest number of malaria deaths was recorded in Nadia, Murshidabad, Mymensingh, Faridpur, and Tipperah. As regards percentage increase over the quinquennial average, Howrah, Murshidabad, Dacca and Tipperah head the list. While in general mortality from malaria was exceptionally high in the admittedly deficit districts previously mentioned, the epidemic affected all districts in greater or lesser degree.

We realise that the figures of malaria mortality are likely to be inaccurate, and more inaccurate in 1943 than in 1944. For the certain diagnosis of malaria, which may be confused with other fevers, a blood examination is necessary and the proportion of cases in which this was done was of course infinitesimal. The figures, however, suffice to show that a most formidable epidemic of malaria was associated with the famine, and indicate its general course. Bengal is normally a very malarial province, having in fact the highest incidence of malaria of any province in India except the small province of Coorg. But no epidemic approaching in severity that of 1943-4 has occurred within its recent history.

15. There was no abnormal rise in mortality from cholera in the first half of 1943. The epidemic began in July and reached its peak in October—November. In Bengal, March and April are normally the months of highest prevalence. After November there was a gradual fall in cholera deaths, and by the

end of May 1944 they declined almost to the normal level. The total number of deaths from cholera reported from July 1943 to June 1944 was 218,269, that is, 309.7 per cent in excess of the quinquennial average for 1938-42. The whole of Bengal was involved in the cholera epidemic and there was no close correspondence between cholera mortality and general mortality. The greatest number of cholera deaths was reported in Mymensingh, Dinajpur, Bakarganj, Tipperah, and Noakhali.

16. As compared with malaria and cholera, small-pox was a relatively unimportant cause of mortality in 1943. Reported deaths numbered 22,005, the quinquennial average being 7,991. A severe epidemic, however, began in December 1943 and raged during the first half of 1944, reaching its peak in March and April. From June onwards it declined. During the months January to June 1944 the number of deaths from small-pox was 125,471, that is, 118,841 in excess of the average. Some 28 per cent of the excess mortality during this period is accounted for by deaths from small-pox.

(ii) The relation of famine to the epidemics:

17. A famine-stricken population is a sick population. Famine means not only lack of food in the quantitative sense but also lack of essential food constituents which are needed for bodily health. The functioning of every tissue and organ in the body is impaired by insufficiency of food. Susceptibility to infection may be increased, and resistance to disease when contracted will be reduced. Attacked by the same disease, an ill-nourished and debilitated individual is more likely to succumb than a healthy one. The former's response to treatment is likely to be unsatisfactory, and recovery, if recovery takes place, prolonged. The disorganization of life produced by famine furthers the spread of disease of various kinds, including the major epidemic diseases. We have estimated that there were some 1.5 million deaths in excess of the average in 1943 and the first half of 1944. It is impossible to separate these into groups and to assign a proportion to starvation and under-nutrition, another proportion to epidemic disease, and yet another to non-epidemic disease. The famine and its effects on the life of the people must be held generally responsible for the high excess mortality recorded under all the headings in the mortality tables.

18. The relation between epidemics and famine requires, however, more detailed discussion. The Commission was specifically asked to report on the causes and prevention of epidemics in famine. We must also inquire how far mortality in the Bengal famine could have been reduced by effective public health measures. The problem of famine disease and its prevention was discussed by the Famine Commission of 1901 whose views, given below, are worthy of close attention:

“Before we consider, as required by our instructions, ‘in what manner the famine affected the death rate of the various provinces and districts’ and enquire into ‘the causes of any variation’, it is necessary to explain our opinion of the connection with famine of the different diseases which commonly appear in its course; *viz.*, fever, cholera, dysentery and diarrhoea, and small-pox. The last is inconsiderable, and only so far connected with famine as vaccination falls into disuse owing to the engagement of the vaccinating staff on other duties. Dysentery and diarrhoea are peculiarly famine diseases, directly caused by insufficient and unwholesome food or by reduced powers of digestion and assimilation as the result of continued privation. Again, it is practically impossible to prevent the outbreak of cholera when large masses of men are collected together in the hot weather under famine conditions: but efficient organization and careful sanitary arrangements can stay the spread of the epidemic and when these precautions are not taken, a considerable share, at any rate, of the resultant mortality must be deemed to have been preventable. Of fevers it can

only be said that they often are in origin climatic, but that their fatality is owing to the reduced power of the people to resist them, largely due to famine."

19. The severe diarrhoea which complicated many cases of starvation is unquestionably a famine disease. Dysenteric organisms were found to be present in some 30 per cent of intestinal fluxes in destitute patients in Calcutta, but it must be remembered that a large percentage of the population is infected with such organisms in normal times. Even in infected cases, the condition of the intestines induced by starvation may have been an important etiological factor. Though its underlying pathology is at present obscure, "famine diarrhoea" may be regarded as a genuine clinical entity, and an important cause of mortality in the Bengal famine. It could have been prevented only by preventing the famine, and its effective treatment, in collapsed and emaciated cases, was extremely difficult.

20. The fatality rate of almost any serious disease is likely to be increased by undernutrition and starvation. We have, however, no satisfactory information about hospital fatality rates in the case of the major epidemic diseases during the famine. Lack of food may also facilitate the transmission of disease by increasing susceptibility to infection. In the case of small-pox, there is no evidence that this factor is operative. The epidemic during the famine can be ascribed to social disorganization which increased opportunities for contagion, and to the unprotected state of the population, that is, the insufficient proportion vaccinated. The small-pox epidemic could have been largely prevented by widespread vaccination in previous years and up to the time when it flared up.

21. As regards cholera, other factors may be involved in epidemics associated with food shortage and famine. In the conditions produced by the famine there was, of course, every opportunity for the pollution of water supplies and the spread of the disease through obvious channels of infection. But, apart from this, two possible causes may be mentioned. In the first place, food shortage and famine make people more careless about what they eat and drink, and opportunities for infection are thereby increased. Secondly, the acid secretion of the stomach tends to be diminished in people who are short of food. It has been suggested that while the healthy stomach with its normal secretions may act as a barrier against the cholera *vibrio*, which enters the body by the mouth, the stomach of an ill-fed individual provides a less effective "acid-barrier" This, however, is speculation and is not based on satisfactory scientific evidence.

We agree with the views of the 1901 Commission that much of the cholera mortality "must be deemed to have been preventible" Apart from the disinfection and purification of water supplies, public health workers have to-day at their disposal another weapon against cholera in the shape of cholera vaccine. A cholera epidemic can be checked, even in a famine-stricken population, by familiar sanitary methods and by the inoculation of vaccine on a wide scale. We shall inquire later whether the anti-cholera measures in the famine were in fact adequate and efficient.

22. The relation between malaria and famine is a more complicated problem. As regards fatality, medical witnesses told us that destitutes attacked by malaria often failed to respond to appropriate treatment and succumbed readily to the disease, while healthy people attacked by malaria in the same area recovered after treatment in the usual way. This would conform to the views of the 1901 Famine Commission and of earlier Famine Commissions on "fevers" and famine. Malaria is the most prevalent and lethal of the "fevers" both in normal and famine times in India. Fulminant epidemics of malaria have often been associated with food scarcity and famine. To give one example, in 1897, an epidemic of fever, occurring in famine districts in the Central Provinces, was the subject of a special inquiry. The theory was advanced that

the fever was of a "specially malignant type" but this was not supported by the majority of observers. "Almost all the medical officers employed agreed in holding that the fever was ordinary malaria fever, which, though it attacked all classes more or less, was specially fatal only in the case of those who had suffered from privation."¹

Fever epidemics in typical Indian famines due to drought have followed a somewhat different course from malaria in the Bengal famine. They have tended to occur after the famine had been relieved, when the long delayed rains had arrived and the people were returning to their normal village occupations. During the height of a "drought famine", the parching of the land checks mosquito breeding. "The rainfall, which occurs after a few years of drought, is often excessive, giving rise to floods, and this in itself usually creates circumstances favourable for the transmission of malaria. There are other epidemiological factors which may play a part in such outbreaks. The years of drought preceding an epidemic may so lower anopheline density and longevity that little or no malaria transmission takes place for several consecutive years. The absence of malaria transmission during such prolonged periods allows the immunity of the population to fall to a low level, especially in the younger children, many of whom may never have been exposed to malarial infection. In malaria epidemics, the mortality among children is often exceptionally severe and forms a high proportion of total mortality. Widespread destruction of cattle may result in the deviation of cattle-feeding anophelines to man"².

S. R. Christophers, in his investigations of the epidemiology of malaria in the Punjab, studied the relation between famine and the disease.³ He noted that, of twelve great epidemics of malaria which devastated the Punjab in the latter half of the nineteenth century, seven followed seasons of famine or acute scarcity. Taking the price of food stuffs as an index of scarcity, he found a high correlation between scarcity and mortality from fever; the epidemics of 1870, 1872, 1878, 1879, 1881, 1887, 1890, 1892, 1900 and 1908 all occurred during periods of high prices. He found, however, an equally high correlation between famine and rainfall and concluded that "even if scarcity is in reality involved in epidemic causation, we should not expect to find it acting in the absence of the necessary factor of rainfall. We must not look for the effect of famine in this respect in the famine districts at the time of the famine, for at this time the essential factor, excess of rainfall, is absent" In the Punjab, years of scarcity or famine were usually followed by excessive rainfall and periods of high prices

23. These observations do not throw much light on the epidemiology of malaria in the Bengal famine. In Bengal there was no preceding drought followed by heavy rains and indeed in the water-logged delta of Bengal climatic conditions can have little effect on the breeding of mosquitoes. Mosquitoes could thrive when the famine was at its height and the epidemic raged at this period. It is, however, significant that so experienced and distinguished a malarialogist as Sir Rickart Christophers should have regarded food scarcity and famine as being possible factors in the genesis of severe malaria epidemics.

As in earlier famines, it has been suggested that the malaria which caused so many deaths in the Bengal famine was of an exceptionally virulent type. A stationary malaria-ridden population acquires some degree of immunity to the local strain or strains of malaria parasite. If a new strain is introduced

¹ Report of the Indian Famine Commission, 1898.

² R. Passmore and T. Sommerville, *Journal of the Malaria Institute of India* 1940. 3,447.

³ Proceedings of the Imperial Conference, Simla, 1909.

⁴ "Malaria in the Punjab"—Scientific Memoirs of the Government of India. No. 46.

immunity is weakened and the new strain may be highly virulent. In Bengal circumstances were propitious for the dissemination of unfamiliar strains; there was considerable migration of sections of the population in certain areas, and previous to the famine there had been an influx of refugees from Burma, many of whom were malarious and may have been the carriers of exotic strains. It is very difficult, from the evidence available, to reach a satisfactory conclusion on this point. We may, however, suggest that the high mortality rate from malaria can be largely accounted for without pre-supposing any change in the virulence of the infecting organisms. This opinion, tentatively expressed, is similar to that of previous Famine Commissions.

24. Malaria control in Bengal by the prevention of mosquito breeding or the destruction of adult mosquitoes is a formidable problem for which no solution has as yet been found. Anti-malarial measures of this nature were impossible during the famine. The only way of mitigating the epidemic was by supplying anti-malarial drugs in abundance and by treating as many patients as possible. The main responsibility of medical and public health authorities was to provide facilities for treatment. We shall revert to this question later, but it may be said at once that the responsibility was inadequately fulfilled.

25. An attempt has been made in the preceding paragraphs to discuss the relation between famine and epidemic diseases. The subject should not, however, be closed without reference to our present lack of knowledge of all the factors concerned in the rise and fall of epidemics and their interaction. The Croonian Lecture of Professor W. W. C. Topley entitled "The Biology of Epidemics", given before the Royal Society in 1941, brings out the complexity of the problem. It may be difficult to account satisfactorily for the cause and course of epidemics even in a well-fed static human population, even indeed, in a closed colony of experimental animals. To do so in the case of a socially disorganized famine-stricken population is an impossible task.

CHAPTER III.—MEDICAL RELIEF AND PUBLIC HEALTH WORK

A.—HOSPITALS AND STAFF.

1. The steps taken by the Government of Bengal, with the assistance of the Government of India and the military medical authorities, to meet the grave medical and public health situation created by the famine will be briefly described. During the earliest months of the famine some use was made of the A.R.P. medical organization, which had at its disposal a certain number of beds in existing hospitals and emergency A.R.P. hospitals. In the middle of August 1943 arrangements were made for doctors to attend to destitutes collapsing in the streets of Calcutta from starvation, and to provide hospital accommodation for them. By the end of September, over 2,000 emergency beds had been opened in Calcutta and its suburbs for the treatment of sick destitutes, and medical staff was recruited for the emergency hospitals and wards. The A.R.P. medical organization in the city was pressed into service. During the same months orders were issued by Government to district authorities sanctioning the opening of emergency hospitals in such places and on such a scale as the emergency demanded. By January 1944 it was reported that some 13,000 beds were available and the number in July 1944 reached 18,250. These were provided largely by the construction of Relief Emergency Hospitals containing 100, 50 and 20 beds according to local necessity. In the early months of 1944 "satellite treatment centres" were opened in association with 1,400 dispensaries, for the treatment of patients in villages remote from dispensaries.

In November 1943 military medical resources were placed at the disposal of Bengal. Military hospitals, 16 in number and situated in various centres throughout the province, provided 2,100 beds and some 50 mobile military medical units were organized. The latter were subsequently replaced by civil units when the military personnel was withdrawn. Mobile units, staffed for the most part by medical students, were also organized by the Bengal Government. In February 1944, the number of such units was about 250, but this was later reduced to 80 owing to the return of the students to colleges.

2. Steps were taken to transfer district and subdivisional hospitals from the control of local authorities to that of the Provincial Government, in order to improve their efficiency. In June 1944, 11 hospitals had been taken over by the Provincial Government, 44 were on the point of being taken over and negotiations for the transfer of the remainder were in progress.

3. The Director General, Indian Medical Service, visited Bengal during the first week of September, 1943, and made arrangements for the distribution of milk through the Indian Red Cross Society; an appeal for funds for this purpose was made in the same week by the Vicerine. At a meeting of the Nutrition Advisory Committee, Indian Research Fund Association, held in Delhi on October 1st and 2nd, 1943, the famine in Bengal was discussed and immediate arrangements made to establish a research unit in Calcutta to study methods of treating cases of starvation and famine disease. Early in October there were consultations in Delhi between the Minister for Public Health and Local Self-Government, Bengal, and the Department of Education, Health and Lands, Government of India, about the health and medical requirements of Bengal, and efforts were made by the latter to obtain doctors and nurses for famine work. The Director-General, I.M.S., newly appointed in October, and the Public Health Commissioner with the Government of India arrived in Bengal in the first week of November 1943 to advise and assist in the organization of medical relief and public health measures. Other visiting experts during 1943

included the Director of Medical Services in the Army, the Director, Malaria Institute of India, and the Director of Nutrition Research.

4. In November 1943 an I.M.S. officer was made available to the Bengal Government for the post of Director of Public Health to replace, in the interests of efficiency, the provincial service officer previously employed. Seven I.M.S. officers were released from military service, and returned to Bengal for duty at various dates during the first half of 1944. They were mostly employed as Civil Surgeons. The military authorities, in November 1943, lent the services of one Assistant Director of Hygiene, 10 Deputy Assistant Directors of Hygiene, and 56 medical officers for employment as health officers in sub-divisions. A senior officer was appointed as Medical Adviser for Famine Relief. The Assistant Director of Hygiene was concerned with general supervision, the Deputy Assistant Directors of Hygiene assumed the duties of Assistant Directors of Public Health in various parts of the province, and the medical officers were employed as health officers in sub-divisions. The duties of the additional health staff included the improvement of village sanitation and disinfection of water supplies, the carrying out of inoculations and vaccinations, the treatment of malaria cases, and the supervision of the work of the subordinate public health staff. They were also instructed to ensure the prompt reporting of vital statistics to the Director of Public Health. Before they proceeded to the districts the officers were given a brief course of instruction at the Health Unit in Singur, an organization attached to the All-India Institute of Hygiene and Public Health.

At the end of May 1944 it became necessary, owing to military requirements, to withdraw part of this staff, but two Deputy Assistant Directors of Hygiene and 40 military sub-divisional officers were left with the Government of Bengal to give time for arrangements to be made to replace them.

5. There was great difficulty in obtaining enough civilian medical officers of satisfactory calibre to meet the emergency. Other provinces were approached to supply medical officers, but since the medical cadres of all provinces had been depleted by the release of medical officers for service with the army, little help was forthcoming. The Central Provinces provided 2 medical officers, and the Government of Burma lent the services of 27 doctors who were in India awaiting the reconquest of Burma and return to their own duties. The attempts of the Government of Bengal to recruit medical officers within the province were far from successful. It was found that doctors were reluctant to serve in rural areas under the conditions produced by the famine, and moreover the pay offered was not attractive enough. There was a general increase in sickness among well-to-do people who could afford to pay for medical treatment and hence good money to be made in private practice. Up to February 1944 some 160 doctors—a quite insufficient number—were recruited. At the instance of the Government of India rates of pay were increased in March, 1944, and by the end of June 328 doctors had been obtained for famine medical work. This was about half the number which the Government of Bengal estimated to be necessary.

6. There is a great shortage of nurses in India in normal times, the reasons for which need not be discussed here. In the whole country there are only some 7,000 trained nurses, which works out as one nurse for every 56,000 of the population. A large proportion of these are at present serving with the army. During the famine the problem of obtaining additional nurses was insoluble. Neither Provincial Governments nor missionary organizations were able to help. The only way to meet the emergency was to obtain untrained male and female attendants, put them in hospitals and hope that they would learn something about nursing from the instructions of the doctors and practical experience. Clearly such attendants cannot be described as nurses in the

usual sense of the term. The medical work of famine hospitals was handicapped throughout by the lack of satisfactory nursing staff.

7. The sweeper is a functionary of vital importance in Indian hospitals, performing the essential tasks delegated to him by the customs of the country. His services were of particular importance in emergency hospitals without sanitary appliances or drainage. Great difficulty was encountered in obtaining sweepers for the famine hospitals. There was a shortage of sweepers in Bengal owing to the demands of the military and the swollen population of Calcutta. Two hundred sweepers were recruited in the United Provinces—a number altogether insufficient to meet requirements. Although their pay was nearly double that of Bengali sweepers, and the difference led to discontent among the latter, some of the U. P. sweepers deserted after brief service. In the early months of the famine, when many patients were suffering from diarrhoea and beds and wards were continually befouled, the shortage of sweepers was almost as great an obstacle to the efficient running of hospitals as the shortage of doctors and nurses. The problem remained unsolved throughout the famine.

B.—MEDICAL SUPPLIES.

8. The lethal epidemic of malaria made quinine preparations and substitutes the most important of all drugs during the emergency. In peace time the normal consumption of quinine in India is about 200,000 lbs. In 1943 some 79,000 lbs. of quinine and 20,000 lbs. of cinchona febrifuge were allotted to Bengal. In 1944, 65,000 lbs. of quinine, 30,000 lbs. of cinchona febrifuge, 500,000 quinine ampoules and 382 million tablets of mepacrine and quinacrine were supplied to the province. The latter are recently introduced synthetic preparations, resembling the German preparation "atebrin". Mepacrine has been widely and successfully used by the army in the Burma campaign. Large amounts of anti-malarial drugs were in fact supplied to Bengal during the famine and the epidemic of malaria which continued throughout 1944, the cost of those distributed free in 1944 being no less than Rs. 21,00,000.

9. One million sulphaguanidine tablets were sent from the United Kingdom under arrangements made by the Secretary of State. The main use of sulphaguanidine tablets is in the treatment of bacillary dysentery. The effect of this drug on cholera is at present under investigation.

10. The following supplies of vitamin tablets and preparations were obtained: one million compound vitamin capsules from army stocks; 50,000 vitamin B1 tablets from local stocks; one million vitamin B1 tablets and one million halibut oil capsules by air from the United Kingdom, the despatch being arranged by the Secretary of State; one million halibut liver oil capsules presented by Boots Pure Drug Co.; 700 gallons of shark liver oil from supplies in India. In the second half of 1944 a further supply of 2,900,000 composite vitamin B tablets was expected from England.

11. The civil emergency hospitals, mobile units, etc., had to be supplied with drugs, blankets, sheets, disinfectants and other necessary articles. This was the responsibility of the Government of Bengal. The military units which came into action at the end of 1943 were fully equipped, but equipment for the expansion of certain military hospitals was later provided by the Government of Bengal. Additional drugs were also supplied by the civil authorities to medical units after the initial stage. Food supplies for military hospitals were a civil responsibility.

Existing hospitals in Bengal were in general poorly equipped and there was a deficiency in the province of most medical supplies, so that there was little to build on in the task of creating hospital accommodation. After November 1943 the problem of medical relief was taken up in earnest, and by degrees the supplies required by the hospitals were obtained and

distributed—no easy task under war conditions. Needless to say, the standard of equipment of the emergency hospitals was not high, but in general it sufficed for the care and treatment of destitutes. The Government of India made available in November 1943 the services of the officer in charge of the Calcutta Medical Store Depot, his duties being to advise on the procurement of medical supplies, and to assist in their storage and distribution, pending the completion of satisfactory provincial arrangements for these purposes by the Government of Bengal. A Centre Store Depot was opened by the Government of Bengal in May 1944. The military undertook the distribution of medical supplies, and after their withdrawal in April 1944 fresh difficulties were encountered. In May the Government of Bengal reported that medical supplies were adequate but that there was a breakdown in the distribution arrangements in some areas.

C.—ANTI-EPIDEMIC MEASURES.

12. The number of vaccinations against small-pox and inoculations against cholera carried out monthly from July 1943 to May 1944 is shown below. The figures are those of the Director of Public Health.

1943	Vaccinations	Inoculations
July	114,167	721,615
August	84,167	609,306
September	71,224	568,142
October	72,781	762,019
November	167,160	610,367
December	463,738	610,854
Total for July—December 1943	973,237	3,882,303
1944	Vaccinations	Inoculations
January	1,776,166	945,436
February	3,335,542	1,141,880
March	5,139,101	2,605,882
April	7,303,137	4,339,636
May	5,700,030	2,595,186
Total for January—May 1944	23,253,976	11,628,020

By the end of May, 1944, according to these figures, over a third of the population had been inoculated against small-pox and about one-fifth against cholera. It was one of the duties of military and civil medical officers employed in famine relief to carry out inoculations and vaccinations. After very considerable delay, some 1,000 sanitary assistants were recruited by the Government of Bengal for this purpose. By October 1944 the number of inoculations and vaccinations reported had reached 18 and 32 millions respectively.

13. Bleaching powder is essential in combating epidemics of cholera. It is needed to disinfect clothing, the houses in which cholera occurs, and water supplies. Bleaching powder has been in short supply in India during the war and early in the war was placed under the control of an officer of the Government of India, the Controller of Heavy Chemicals. Supplies required by Provincial Governments, local bodies, etc., could be obtained only by application to this officer. In the emergency in Bengal this proved a cumbersome procedure, and indeed in the early months of the cholera epidemic little attempt was made by the Government or local bodies in Bengal to secure the necessary bleaching

powder. In November, 1943, at the instance of the Public Health Commissioner, the Controller of Heavy Chemicals placed 50 tons at the disposal of the Director of Public Health.

14. The water used for domestic purposes in rural Bengal comes from tube wells, tanks and rivers. Cholera is readily spread by infected tank and river water. Tube wells, when in proper order, provide a safe source of water supply and do not require treatment in a cholera epidemic. Unfortunately a large proportion of the tube wells in Bengal—one estimate given to the Commission was one-third—were out of order. The sinking, maintenance and repair of these wells are the responsibility of the District and Union Boards, the necessary funds being supplied partly from their own resources and partly from Government grants. Owing to the war the price of the materials required for tube wells has risen steeply and local Bodies, with the limited funds at their disposal, were unable to keep the wells in a satisfactory state. It may be added that there is no regular system for the inspection and repair of tube wells, and no capable engineering staff, and the state of the wells under the local bodies may be ascribed as much to indifference and inefficiency as to lack of money.

15. The severe cholera epidemic made the repair of tube wells a matter of urgent public health importance. The deficiency of wells in proper working order naturally increased the use of tank and river water and thus facilitated cholera infection. In November 1943 the Government drew the attention of all District Boards to the vital need of ensuring uncontaminated water supplies and called for information about the numbers of derelict tube wells and the quantities of materials required to put them in order. The practical results of this step were negligible. In January 1944 the Government sanctioned the expenditure of 1,500,000 rupees for the repair and maintenance of tube wells. Owing, however, to difficulties in obtaining materials and transport, and other causes suggested above, work on tube wells did not begin until two months later. By August 1944 some 10,000 tube wells had been repaired in the various ways needed to make them serviceable and a source of safe water supply.

D.—DISTRIBUTION OF FOOD

16. In famine food is the most important medicine and hence a reference to the provision of food to famine victims will not be out of place in this section of our report. During the second half of 1943, from August and September onwards, a large number of kitchens for the free distribution of cooked food were opened throughout Bengal. The number reached 6,625 in the beginning of November and it was reckoned that during this month about 2.1 million people were being fed daily. According to figures supplied by the Government of Bengal, some 110,000,000 free meals were provided; this includes meals supplied after the Midnapore cyclone in October 1942. Free kitchens were also set up by charitable agencies in both Calcutta and the mofussil, with the emphasis strongly on Calcutta, where distress was most evident to the well-to-do and voluntary relief workers easily obtainable. Nearly half the kitchens in Calcutta were run by charitable organizations.

17. Doles of uncooked food were given on a wide scale in the districts, the number of recipients reaching 257,000 in November 1943. Apart from free doles, foodgrains were sold at cheap rates to the poorest sections of the community. During the period of greatest distress, 1,801 cheap grain shops were selling foodgrains to about 492,000 families, *i.e.*, over two million people. There were also canteens selling cooked food at a cheap rate and it was reckoned that 120,000 people took advantage of them over a long period.

18. The quantities of food supplied as free doles of uncooked grains or in the form of gruel at the kitchens were very meagre. In a circular issued by

the Government of Bengal on August 20th, 1943, the following scale was laid down:—

Gratuitous relief—

- (a) *Free gruel at 2 chataks (4 oz.) of foodgrains per head.*
- (b) *Uncooked foodgrain doles per head per day.*
 - (i) *4 chatacks (8 oz.) for adults who normally do manual work.*
 - (ii) *3 chatacks (6 oz.) for other adults, and*
 - (iii) *2 chatacks (4 oz.) for minors aged 2-14.*

It was added that "expectant and nursing mothers and if possible growing children should be given 50 per cent. more than the above, preferably as a second meal". In Calcutta foodgrains for gruel kitchens were provided by the Department of Civil Supplies, which put a Relief Control Officer in charge of the kitchens. In a note dated August 28th the Department of Civil Supplies prescribed a rate of 3 *chatacks* (6 oz.) of foodgrains *per capita* daily.

In September, when the supply position had somewhat improved, it was decided to increase the quantities of food given as gruel and doles. A correction slip to the original instructions was issued on September 21st, by which the quantity of grains in the gruel was raised to 8 oz., while the allowances of uncooked grains for classes (i), (ii) and (iii) became 12, 8 and 4 oz. respectively. Government did not receive any reports from District Officers expressing their inability to introduce the new allowances for want of adequate supplies and presumably these were issued without delay throughout the districts.

The gruel supplied in the kitchens usually consisted of a mixture of grains in which millets predominated. In Calcutta equal quantities of rice, *bajra*, *jowar* and *dhal* were included. Some of the charitable organizations supplied more rice in the gruel when they could obtain it. Small quantities of other ingredients such as vegetables, spices and sugar were also usually added to the mixture. The gruel as issued did not at the best supply more than 600—800 calories for adults and about half this number for children. The millets, notably *bajra*, were unfamiliar and unpalatable food and it was widely stated that they were so indigestible that they produced intestinal irritation, diarrhoea and death in numerous destitutes.

19. Towards the end of 1943, the gruel kitchens were gradually closed down and the feeding of destitutes in poor houses, homes, orphanages, etc., assumed importance. The scales of diet varied from district to district. In some places they were reasonably generous; for example, in the Contai sub-division of Midnapore a scale for destitute homes was introduced in December 1943, providing for an adult 16 oz. of cereals and 4 oz. of *dhal*, the whole diet yielding more than 2,000 calories. In April 1944, the question of diet scales was taken up by Government. It was found on investigation that the calorie value of the diet in relief institutions was in general much below requirements and the Public Health Department recommended the following generous scale:—

For Adults

Rice or rice and wheat	16 ounces = 1 lb. (wheat not to exceed 8 oz.)
Pulses (<i>Dhal</i>)	3 ounces.
Non-leafy vegetables (Potato, Turnip, Brinjal, etc.)	6 ounces.
Leafy vegetables (cabbage, <i>sag</i> , amaranth, etc.)	2 ounces
Fat and oil	2 ounces.
Salt and condiment	In sufficient quantity.
Fish	2 ounces. (If not possible every day, at least every other day.)

Children below 12 years should get milk as available according to the following scale in addition to a proportionate amount of an adult's diet :—

For ages 2—5	12 to 16 ounces.
For ages 6—12	16 to 20 ounces.

Pregnant and lactating mothers should get over 12 to 16 ounces milk daily in addition to an adult's diet.

E.—HOSPITAL FEEDING

20. It has been remarked that in hospitals the provision of a good diet was a vital part of treatment. The dietary treatment of cases of acute starvation is a difficult problem which was studied by research workers in Calcutta. Recommendations based on these findings were passed on to hospitals throughout the province. It was observed that starved patients not infrequently refused the fluid diet appropriate to their condition and begged for a large meal of rice. When this was refused they sometimes absconded. Alexander Porter reports similar occurrences in the Madras famine of 1877-8.

21. The ordinary hospital diet provided for debilitated patients in famine wards and hospitals was by no means perfect from the standpoint of nutrition, but the condition of patients consuming it usually improved and they put on weight. The standard of diet was not uniform in all hospitals and places. There were difficulties of supply and some doctors in charge of famine hospitals made little effort to overcome those and provide the best diet possible in the circumstances. But on the whole the famine hospital diets were not unsatisfactory.

F.—MILK

22. The distribution of evaporated and dried milk was undertaken by the Indian Red Cross Society. At the beginning of September 1943, the army handed over 200 tons of milk to the Society, and with this supply distribution was begun in Calcutta and the districts. Subsequently, generous consignments were received from abroad, notably from the United States. By September 1944 some 1,850 tons of processed milk had been supplied to Bengal. Distribution was carefully organized and the milk reached those who were most in need. It was given largely to infants, young children up to 10 years and expectant and nursing mothers at gruel kitchens, and in hospitals, destitute homes, famine camps and orphanages.

At the kitchens it proved invaluable for children who were too ill to take the gruel. A rigid rule was made that the milk must be consumed at the kitchen itself, in order to avoid the possibility of its being sold by recipients. Relief workers in general were struck by the improvement in under-nourished destitute children which took place when they were given milk for a few weeks.

23. Transport of milk supplies from Calcutta to the districts presented considerable difficulties in the early months of the famine. These were alleviated when military transport became available for relief work. Hundreds of tons of milk were transported to outlying places with speed and reliability. We record with pleasure that at one point the United States Air Force co-operated by flying some tons of milk to Dacca, in response to an urgent call from the District Magistrate. To facilitate distribution in the districts the Indian Red Cross Society in 1944 appointed 18 paid agents. This arrangement was found to be more satisfactory than entrusting distribution to District Magistrates, overburdened by other work.

24. The quantities of evaporated and dried milk distributed in Bengal monthly from September 1943 to June 1944 were as follows:—

	<i>Calcutta</i>	<i>Mofussil</i>	<i>To the Surgeon-General for hospitals</i>
	Tons	Tons	Tons
1943—September	15	33	
October	15	56·75	
November	15	68	
December	10	120·5	
1944—January	10	125·5	50
February	10	122·5	25
March	10	121·5	25
April	11	121·5	17
May	11·5	208	17
June	11·5	157	20

CHAPTER IV.—THE FAILURE TO PREVENT HIGH MORTALITY

1. An objective account has been given of the measures taken to provide medical relief, check epidemics and supply food to the famine-stricken population. They are by no means unimpressive, at least as regards their scale. A very considerable effort was made by the Bengal Government to succour the millions of people affected by famine and disease. But clearly the various measures taken were on the whole unsuccessful, since the excess mortality according to our estimate may have reached 1.5 millions. The causes of the failure must now be critically examined.

A.—FAMINE AND HEALTH SERVICES IN GENERAL

2. In the story of the events leading up to the famine it has repeatedly been pointed out that only action, taken before a certain stage in the descent into catastrophe was reached, could have fully retrieved the situation. This is equally true in the health sphere. Once the position as it existed in August and September 1943 had developed, with some millions of people starving, socially disorganized and already a prey to epidemic disease, no health service, however well-staffed and organized, could have prevented heavy mortality.

We must, however, inquire whether, at the various stages of the famine, it would not have been possible to reduce mortality by more effective health measures.

B.—PREVIOUS DEFECTS IN THE PUBLIC HEALTH ORGANIZATION

3. If a public health organization is to be capable of meeting emergencies, it must reach a certain degree of efficiency in normal times. In Bengal the public health services were insufficient to meet the normal needs of the population and the level of efficiency was low. The same can of course be said of public health organizations in all parts of India, but that in Bengal was below the standard of certain other provinces. The Department of Public Health and Local Self-Government (Medical) under the charge of a Minister, is responsible for public health. At the centre there is a Director of Public Health, who at the time of the famine was an officer recruited from the Provincial Service. (The post is not a "reserved" I.M.S. post, though it may and has been filled by I.M.S. officers). The provincial health department includes 6 Assistant Directors of Public Health, 2 concerned with school hygiene and malaria research respectively and 4 for superintending public health work in the 4 Divisions.¹ Previous to the famine, three special Assistant Directors had been recruited, two for work in subdivisions of the Midnapore district badly affected by the cyclone, and one for public health work connected with A.R.P. and Civil Defence. In the malaria section there are an engineer, an entomologist and a qualified assistant. Other officers in the provincial health department include the Director of the Public Health Laboratory, the Superintendents respectively of the Bengal Vaccine Laboratory (for cholera vaccine), the Bengal Vaccine Institute (for small-pox vaccine), Maternity and Child Welfare, and Vital Statistics, and an Inspector of Septic Tank Installations. In numbers the provincial health services were at about their usual strength in 1943. A post of assistant malariologist was unfilled and there were two vacancies for epidemiologists.

4. Public health work in the districts is the responsibility of the District Boards. In each district there is a District Health Officer, half of whose salary is paid by Government, but who is actually a servant of the District Board.

¹The Burdwan Division, the Presidency Division, the Rajshahi Division and the Decca and Chittagong Division.

Subordinate health workers in the districts are also servants of the local Body. The health organization in rural Bengal in general may be illustrated by describing the organization in a typical district—Dacca. The population of Dacca is some 4.5 millions and its area 2,738 square miles. There is a District Health Officer at district headquarters on a salary grade of Rs. 300—20—500 per month, the present holder of the post having reached his maximum salary in 1932. The district is divided into 32 health circles, the population of which varies from 60,000 to 250,000 and the area from 36 to 174 square miles. In each health circle there are 3 subordinate health workers, viz., a sanitary inspector, a health assistant and a medicine carrier. In addition some 100 vaccinators are appointed temporarily for about 6 months in the year. The pay of the sanitary inspectors is Rs. 50—5—70 per month, with a travelling allowance of Rs. 15, house allowance of Rs. 3, and office allowance of Rs. 3. The health assistants are not on a salary grade, their pay being fixed at Rs. 22 per month with Rs. 5 travelling allowance and Rs. 2 house allowance. The medicine carriers receive Rs. 17 per month, while the vaccinators get from Rs. 12 to Rs. 20 according to their experience, during the period of their employment. This is the normal organization, without reference to additional staff employed during the famine.

5. Clearly one sanitary inspector, even with the help of a health assistant, a medicine carrier and a few temporarily employed vaccinators, cannot deal adequately with the health problems of a population which may exceed 200,000 and inhabit an area of over 150 square miles. Further, touring in rural Bengal is in general slow and not infrequently interrupted during the rains. This makes the work of the local health staff more difficult and also reduces the amount of supervision which can be exercised over their work by the District Health Officer.

6. In addition to inadequate staff, there were other defects in the health organization in Bengal which were repeatedly brought to the attention of the Commission. Steps have since been taken to remedy a few of these, but the use of the past tense in the paragraphs which follow does not imply that much reform has as yet been carried out. Since the district health staff was in the employ of the local Bodies, the Director of Public Health had no disciplinary control over them and no powers of selection or transfer. He could not dismiss or transfer a lazy and inefficient health officer. In the case of an emergency he had no powers to mobilize the limited resources of health personnel in the province. He could indeed give technical advice, but advice might not result in action. When epidemics occur, swift and drastic action is necessary. No general could conduct a campaign without full control of the forces at his disposal.

7. The pay and prospects of District Health Officers were not conducive to efficiency. They usually remained throughout their entire careers in the districts to which they were first appointed, having reached the maximum grade of salary long before retirement. Transfer from one district to another never occurred, so that the refreshment brought about by changes in work and environment was absent. Senior appointments to which District Health Officers could aspire in the provincial health department were few in number. Professional contacts were lacking and the officers fell out of touch with recent developments in the field of public health. The result was that they tended to get into a rut and lose the enthusiasm necessary for successful work in the health sphere.

The pay of subordinate members of the service was insufficient and had not been adjusted in accordance with the rise in the cost of living. Financial allotments for travelling on the part of all the staff were often inadequate. In view of the large areas to be covered, it was particularly important that District Health Officers and their subordinate staff should have adequate facilities for touring. In one district, the Commission was informed that no travelling allowance had been paid for 15 months previous to the famine. The part-time

vaccinators were very poorly paid and were forced to do other work in order to live. In the circumstances lack of drive and limited achievement on the part of the rural health services were only to be expected.

8. Another factor of importance was the position of the district health personnel as employees of the local elected bodies. Such bodies are often swayed by party politics and technical officers in their employ tend to get drawn into the political sphere. The Commission learnt of instances in which District Health Officers and the subordinate health staff were employed in activities other than public health, including political activities. The District Health Officer was often at the beck and call of the Chairman of the District Board. It has been claimed that District Boards are likely to understand local needs better than Government experts. This may be true as regards some of the responsibilities of District Boards, but it is not true as regards public health. The general public has not yet become "health conscious". Hence it was difficult or impossible for local elected bodies to understand the modern public health movement and its requirements and obligations.

C.—VITAL STATISTICS

9. Reference has already been made to the inaccuracy of vital statistics in Bengal as elsewhere in India. Another point of importance in connection with the famine was the delay in their compilation. Under the system operative in 1943, the village *chowkidar* sent his mortality report to the Union Board office. The President of the Union Board was responsible for collecting the figures from the various villages in the Union and forwarding them to *thana* headquarters, where they were collated by the sanitary inspector and in due course sent to the District Health Officer. In some districts they were sent to Sub-Divisional Officers and not to sanitary inspectors. In 1943 the Director of Public Health had two offices, one in Calcutta at which he himself worked, and another in Rajshahi which housed his statistical staff. Part of the public health staff was removed to Rajshahi from Calcutta in 1942 as an A. R. P. measure. The result was that it took many months for the health expert of the Provincial Government to receive information about the trend of mortality in the districts. The usual period was 3 to 6 months; in the case of certain districts, considerably longer. In November 1943 no figures for total deaths in 5 districts later than December 1942 were available in the office of the Director of Public Health. The latest completed figures for any district were those of April 1943. The reporting of outbreaks of certain epidemic diseases was somewhat more rapid. When the President of the Union Board was informed by the village *chowkidar* of an outbreak of small-pox or cholera, he sent on the information by postcard to the sanitary inspector at *thana* headquarters, who sent it to the District Health Officer, who sent it to the Director of Public Health.

In such circumstances it was impossible for the Director of Public Health to maintain vigilant watch over the health of the population and to give timely warning of deterioration and the need for urgent action. A health department in such a position is seriously handicapped when an emergency arises.

The most serious block in the sluggish channel by which mortality records reached the Director of Public Health was at the Union Board offices. In January 1944 an attempt was made to hasten the flow by removing the obstruction and making sanitary inspectors responsible for collecting figures from *chowkidars*. This produced some acceleration, which was not however uniform throughout the province, since many delays still occurred in certain districts.

D.—PREVIOUS DEFECTS IN HOSPITAL SERVICES

10. Curative medicine in Bengal suffered from much the same disabilities as preventive medicine. Nearly all hospitals and dispensaries in the districts

were financed by local bodies; only in Dacca was there a large hospital supported out of provincial revenues. The Surgeon General, an I.M.S. officer, is in general responsible for curative medicine throughout the province. In each district there is a Civil Surgeon, who is a Government officer and appointed by the Government on the advice of the Surgeon-General. Assistant Surgeons in charge of Sub-Divisional hospitals are also on the provincial cadre while sub-assistant surgeons in charge of small hospitals and dispensaries in the rural areas are employed by local bodies. Before the war some of the Civil Surgeons in Bengal were I.M.S. officers, but during the war the large majority of these were withdrawn for military service. Their places were taken by officers in the Bengal Medical Service, usually promoted Assistant Surgeons. A number of Indian Medical Department medical officers had also reverted to military duty, their posts being filled by provincial service officers. The total strength of all grades of the medical services in July 1943 was 425 against a sanctioned strength of 510, a shortage of 85. The number of Bengal Medical Service (Upper) officers was 125 compared with a sanctioned strength of 166, while the corresponding figures for the Bengal Medical Service (Lower) were 255 and 273 respectively. Recruitment to full strength in both grades previous to famine was delayed by a decision to employ only officers above military age, and also, in the case of the senior grade, by questions relating to the communal distribution of posts. In November 1943 the order restricting recruitment to candidates over military age was withdrawn. It may be observed that the Bengal Medical Services generally had not been very seriously depleted, except as regards I. M. S. and I. M. D. officers. Recruitment from the Bengal Medical Services into the army had not been extensive.

11. While the Surgeon-General was nominally in control of Civil Surgeons and Assistant Surgeons, disciplinary action against an inefficient and disobedient officer could be taken only through Government and was a lengthy process. Civil Surgeons in turn had little power of control over the subordinate medical staff in the district, which looked to local bodies for orders and policy. According to the usual procedure, all additional expenditure on the part of the Provincial Government had to be sanctioned by the Finance Department. Delay in administrative procedure which may have been of relatively little significance in normal times proved serious in the famine emergency. The financing of hospitals throughout the districts was the responsibility of local Bodies. The general organization of the medical services and hospitals was in fact such as to render mobilization and development to meet the emergency extremely difficult.

12. In the opening months of the famine Civil Surgeons in general were not aware of, or at least did not report, the development of a critical situation in their districts. Their lack of knowledge of what was happening appears to have been partly due to inability or disinclination to tour their districts. There seems to have been lack of contact and co-ordination between Civil Surgeons and District Magistrates in certain districts with regard to the medical emergency created by the famine. The Surgeon-General stated in evidence that the medical authorities at provincial headquarters did not become aware of the existence of unusual conditions until August 1943, when sick destitutes began to throng the streets of Calcutta.

13. In general the standard of efficiency reached by Civil Surgeons and subordinate medical personnel left much to be desired. Discipline and sense of duty were defective and morale low. This is in comparison, not with an ideal standard, but with standards in certain other provinces in India. Many of the Civil Surgeons had obtained their appointments at a late stage in their careers after years of service in a subordinate position. Hence they were not suited to take vigorous initiative when initiative was required. The hospitals throughout Bengal, with certain exceptions, were poorly equipped and badly run.

Representatives of the District Boards who appeared before the Commission ascribed the inefficiency of the rural public health and medical services to financial stringency. The income of District Boards has not increased *pari passu* with the increasing demand for expenditure on roads, water supply, public health services, hospitals, etc. Their powers of taxation are limited and they depend largely on grants from the provincial revenues. The Provincial Government themselves suffered severely from financial stringency for many years and were not able to provide adequate funds for public health and medical purposes. There can be no doubt that lack of money, both from provincial and local revenues, was a serious obstacle to the development and maintenance of public health services and the provision of well-equipped hospitals, but this does not excuse the state of affairs revealed in 1943 when the health and medical services were called upon to deal with the famine emergency.

E.—THE FAMINE PERIOD

14. In view of the state of medical and public health organizations in Bengal before the famine, it is scarcely surprising that they failed to rise to the occasion. On the health side, no satisfactory attempt was made during the early months to deal with the situation; there was in fact almost a complete breakdown of health services, affecting both the centre and the periphery.

15. **Cholera.**—At this time the need for the inoculation of cholera vaccine on a wide scale was urgent. The Bengal Vaccine Institute normally produces 500,000 doses of cholera vaccine per month, and abundant supplies of cholera vaccine, amounting to 12.5 million doses, were available in India as a whole. In spite of this, adequate quantities of vaccine were not available in the districts throughout the critical months of 1943, and in general cholera preventive work during this period was unsatisfactory. At the end of the year, with the help and stimulus of the military medical organization, the anti-cholera campaign by means of inoculation on a large scale was begun in earnest. It was prosecuted with vigour throughout the first half of 1944, during which period the epidemic was brought under control.

The repair of tube wells, urgently recommended by Government to local Bodies in November 1943, was not begun until many months later when the cholera epidemic had waned. While due weight must be given to the difficulty of obtaining labour and materials, the long delay reflects little credit on the engineering section of the Public Health Department and the local authorities concerned.

16. **Small-pox.**—As regards small-pox, no widespread epidemic, calling for urgent action occurred in 1943. The chief failure was the insufficient number of vaccinations carried out previous to the famine, which meant that the population was inadequately protected against an epidemic of small-pox. Reference must, however, be made to the delay in appointing additional workers for carrying out vaccinations and other public health work. In August, 1943, the Director of Public Health put forward a proposal to Government for the recruitment of 40 doctors and 10 sanitary inspectors for anti-epidemic work. Nothing resulted. In November, plans were formulated for dealing with health problems on a wider scale. It was decided, in view of the difficulty in obtaining qualified doctors and trained sanitary assistants, to engage untrained matriculates and give them a brief course of training. After some unnecessary delay due to an attempt to adhere to the communal ratio in selection, these were recruited and trained and by January 1944, 736 were at work in the districts.

17. During 1944 the vaccination of the population was pushed forward with great energy. One witness remarked to the Commission that the achievement represented by the vaccination figures could scarcely be equalled in any country in the world, even in Russia. It must, however, be noted that the

small-pox epidemic was not brought under control until June 1944. This may be accounted for in various ways. Most important is the low percentage of the population vaccinated when the epidemic began. Mention must, however, be made of the possibility that some of the lymph used had lost its potency. Until the beginning of the epidemic most of the lymph used was prepared in Bengal; later lymph was obtained from all over India to supplement local supplies. Lymph has a short active life. Again, the technique of vaccination may have been to some extent faulty; the unqualified workers recruited by Government received only a brief training. Another obvious possibility is that the workers engaged in vaccination did not in fact carry out all the vaccinations entered in their returns. Care was, however, taken by military and other medical authorities to check the accuracy of their records and little or no evidence of wilful exaggeration was detected. It must of course be borne in mind that there was no segregation of small-pox cases and abundant opportunities existed for contagion in the prevailing social circumstances.

The vaccination campaign was unquestionably a most praiseworthy effort on the part of the military and civil public health organization. There was at first considerable resistance on the part of the public to vaccination and inoculation. One military officer engaged in the task was assaulted. Sometimes men would allow themselves to be inoculated or vaccinated, but would object to their womenfolk receiving the same treatment. Much tact and ingenuity were applied to bring home the necessity for protection against disease before its appearance. Public meetings were held in *thanas* and conferences with local influential officials arranged. Vaccinations and inoculations were often given at centres for more popular relief measures, *e.g.*, the distribution of food or clothing. Roads leading to markets were picketed and wayfarers induced to accept preventive treatment. By degrees prejudice was dispelled and people learnt to submit willingly to the procedure.

18. The military sub-divisional health officers played an important part in this as in other forms of health work. They superintended the work of the subordinate health staff and stimulated the latter to unwonted activity. They occupied, in fact, a pivotal position in the emergency health organization. We shall refer later to the permanent need for sub-divisional health officers as part of the health services of the province.

19. **Quinine.**—The distribution of anti-malarial drugs was thoroughly unsatisfactory. Previous to the Japanese war supplies of quinine needed by hospitals and dispensaries were purchased from Government by the local bodies concerned, and quinine for private patients was obtained through ordinary commercial channels. The conquest of Java cut off the main source of world supplies of quinine. Accordingly it became necessary to ration quinine in the various provinces and regulate its distribution. In Bengal, the Director of Public Health was responsible for the distribution of quinine to the districts, while District Magistrates were in charge of distribution within the district.

In 1943, reasonably good supplies were available with the Government of Bengal, but a large proportion of these failed to reach the districts. The officer who was Director of Public Health up to November 1943 stated in evidence before the Commission that demands for extra quinine were not received from the District Magistrates, and accordingly additional supplies were not sent. Within the districts quinine was not satisfactorily distributed and was found to be in short supply as the malaria epidemic rose to its peak in the later months of the year. One difficulty with regard to quinine distribution was its very high price in the black market, which reached Rs. 300 per pound. Not only famine victims but also well-to-do people were suffering from malaria; the latter were prepared to pay substantially for treatment. When quinine was sent to the districts it had to proceed under an armed guard, and when it

reached district headquarters was placed under lock and key in the local gaol. A District Magistrate in need of quinine had to arrange for the armed guard to proceed to Calcutta. A more convenient arrangement would have been for an armed guard to set out from Calcutta with stocks for several districts and visit them in turn. Naturally these precautions to secure the inviolability of consignments of quinine, no doubt necessary, did not oil the wheels of distribution. The situation was reached at which there was a large and urgent demand for quinine, stocks were available in Calcutta and the districts and patients with malaria were dying for want of quinine. It was reckoned that in November 1943 there were about 43,000 lbs. of quinine available in Bengal undistributed.

20. Later the distribution of anti-malarial drugs was improved. Civil Surgeons were made responsible for distribution in districts in place of District Magistrates. Ultimately anti-malarial drugs became available for malaria patients in hospitals and dispensaries throughout the province. But even as late as the second half of 1944, in spite of numerous efforts, the general distribution of quinine was far from satisfactory. Quinine remained a substance of high financial value and the temptation to those who handled it to make sales on the black market remained. The Director of Public Health stated publicly in December 1943 that "a vast quantity of quinine issued by the Government had gone into the black market." He added that there was a bigger margin of profit on the sale of quinine than on the sale of mepacrine and that unscrupulous dealers were carrying on propaganda against the new synthetic drugs so that the public might keep on demanding quinine.

21. **The creation of hospital services.**—Reference has already been made to the sum total of achievement in this important branch of famine relief. A large number of emergency hospitals were constructed and staffed, in spite of many and serious difficulties. Previous to the famine, hospitals were not popular in rural Bengal. People were reluctant to enter them as in-patients, which is scarcely surprising in view of the low standard of nursing: In many hospitals there were no night nurses or attendants and a patient might die at night without attention. It is greatly to the credit of those responsible for the creation of the famine hospitals that the latter become popular, largely because they provided better medical care and nursing than had previously been available in local hospitals.

22. Certain criticisms of the emergency hospital organization must, however, be made. During the early stages of the famine, when things were at their worst, progress was slow. Conditions in certain famine hospitals at this time, notably the Behala hospital in Calcutta, were indescribably bad. Destitutes picked up in the streets were usually taken to the Behala hospital in the first instance. Visitors were horrified by the state of the wards and patients, the ubiquitous filth, and the lack of adequate care and treatment. In spite of their appreciation of the efforts of the nursing superintendent who was striving, against formidable odds, to alleviate these conditions. In the districts little was done during the early months. On September 20th, 1943, the Government issued general instructions to District Magistrates and Civil Surgeons, giving them full authority to build additional hospitals, to open up new wards in existing hospitals, and recruit the necessary additional staff. The districts were in fact given *carte blanche* to spend what was needed for emergency medical relief. The results were meagre. The hospital situation in the districts in the early stages of the famine is illustrated by the following extract from a report presented to the Commission:—

"Hospital accommodation was entirely inadequate to start with, both in town and country. Moreover, it was only in some of the larger towns that any proper hospitals existed. The condition of patients was usually appalling, a large proportion suffering from acute emaciation, with 'famine' diarrhoea. It was exceedingly difficult to improvise additional hospital accommodation, or to secure medical and nursing staff. Sanitary conditions in nearly all temporary indoor institutions were very bad to start with, owing to the insanitary

habits of the inmates, lack of sweepers and inefficient supervision and management."

23. In November after the visit of the Viceroy and the arrival of the military there was a change in atmosphere. Medical officers of the Government of India and Bengal and military medical officers, working in collaboration, took the health situation in hand and drift was replaced by drive. Careful plans were drawn up for the construction, equipment and staffing of wards and hospitals and these were circulated to the districts. Under strong pressure the district authorities began to move. In a number of districts—Dacca and Faridpur are examples—progress in hospital construction was rapid and by January, 1944, the necessary hospital accommodation was available. In some, however, several months elapsed before effective action was taken. Such delays were due to various causes, including difficulties of supply and defects in the administrative machinery, and insufficient initiative on the part of the District Magistrates and Civil Surgeons concerned. There was also some lack of knowledge of the requirements of different districts. When plans were made certain districts were singled out as being most severely affected by the famine and their need for famine hospitals received special attention. As we have seen, a high excess mortality occurred in practically all districts during the first half of 1944, so that there was an urgent demand for medical relief almost everywhere in the province.

24. The obstacles encountered in getting the famine hospitals constructed and in working order are vividly described in the reports of touring medical officers presented to the Commission. In one place there would be difficulty in finding contractors and materials for building, in another lack of necessary drugs and equipment, in another shortage of satisfactory staff. Problems of transport and distribution were by no means entirely solved with the coming of the military. Many Civil Surgeons were unable or unwilling to exercise adequate supervision over the work of hospitals in their districts by frequent tours of inspection. The old sub-divisional hospitals, pressed into the service of famine relief, were found to be in many respects unsatisfactory. The opening of "satellite treatment centres" in association with dispensaries was on the whole an unsuccessful venture. The dispensary doctors, who had in-patients to look after in small emergency hospitals erected in the neighbourhood of dispensaries, did not give adequate attention to the "satellite centres".

25. The doctors recruited for famine work were in general of poor calibre. Their training had given them little knowledge and experience of hospital organization and little sense of duty and discipline. The young Indian army officers employed in medical relief were far more conscientious and efficient and did excellent work under difficult conditions. The poor standard of the civilian doctors must be ascribed largely to defects in their medical education. The army doctors had a very similar educational background, but after graduating had learnt orderly habits, discipline and teamwork as part of their military training. The difference between army and civilian doctors, which struck many observers during the famine, is hopeful in connection with the future development of medical services in India, since it shows that the standard of the medical profession could be decisively raised in a very short period by changes in medical education.

26. Up to November 1944, 25,551 and 203,702 patients were admitted to famine hospitals and wards in Calcutta and the districts respectively. For the mofussil hospitals these figures are from December 1943, but in the case of the Calcutta hospitals some admissions previous to that date are included. The number of deaths was 8,912 in Calcutta and 22,992 in the districts, 34.8 and 11.3 per cent. respectively of total admissions. These are very high hospital mortality rates and reflect the serious condition of the patients who received medical care. They also reflect the inadequacy of treatment in many hospitals.

The higher death rate in the Calcutta hospitals can be explained in various ways: in general the condition of destitutes who reached Calcutta from the districts during the famine was bad, and many were picked up in the streets in a moribund state and taken to hospital to die; in Calcutta most of the destitutes who were seriously ill reached hospital, while in the mofussil a larger proportion of such destitutes probably died without receiving hospital attention; the most acute phases of the medical emergency in Calcutta were during the months August to November, 1943, before the effort to put medical relief on a satisfactory basis was fully initiated.

27. **Provincialization of District Health Services.**—The famine emergency revealed the serious defects of the public health organisation in the districts. In certain other provinces, notably Madras, an improvement in the efficiency of health services has been produced by placing District Health Officers on a provincial cadre under the control of the Director of Public Health. The provincialization of district health services in Bengal was strongly urged by the Public Health Commissioner with the Government of India in November 1943, and at this stage the Government of Bengal was on the brink of action in the matter. The District Boards learnt, however, of the proposal to deprive them of the control of their health officers, and on December 21st a deputation of chairmen of District Boards met the Hon'ble Minister for Public Health and Local Self Government and protested against the impending move. The reasons for the proposal, the gravity of the public health situation, the necessity for vigorous and immediate action, were explained to the delegates who, however, argued strongly in support of the *status quo*. The Government acceded to their wishes, but obtained an assurance of complete co-operation with the Director of Public Health and a promise that the rates of pay for health personnel laid down by Government would be restored and enforced throughout the districts. An opportunity was thus given to the District Boards to prove their mettle under the old system. The Government asked the Director of Public Health to watch the situation and report any failure to fulfil the assurances given. Subsequent reports of the Director of Public Health showed that the state of district health organizations remained unsatisfactory in many respects.

In May 1944 the Government of India issued a Public Health (Emergency Provisions) Ordinance which gave power to take over the administration of health services. No action has, however, been taken with regard to the district health organization. The Commission has recommended that District Health Officers in Bengal should be enlisted in a provincial cadre, public health in Bengal being reorganized along the lines laid down in the Madras Public Health Act, 1939.

F.—HEALTH SERVICES IN BENGAL AND OTHER PROVINCES.

23. A critical account has been given of the defects of the medical and public health services in Bengal and of their general failure to cope with the situation created by the famine. We do not wish to imply that such defects are peculiar to Bengal or that medical and health services in all other provinces, faced with similar emergency, would necessarily have acquitted themselves better. In certain provinces, medical and health services are organised on a more efficient basis than the Bengal services; in others they are not. All may deem themselves fortunate in having escaped the severe test to which those of Bengal were put.

G.—DESTITUTE KITCHENS.

29. The methods of feeding followed in the free kitchens have been severely criticised. There is no doubt that the quantity of food provided was below normal requirements—it was in fact a starvation ration. Apart from quantity, the food was unsatisfactory in nutritive quality, *e.g.*, in its content of protein

and vitamins. It was widely stated that the unfamiliar millets usually included in the gruel caused many deaths. In the districts recipients had often to walk 2-3 miles to obtain their 800 calories or less. The management of kitchens was not always what it should have been; abuse and corruption were far from infrequent.

On the other hand, the supply position during August to November 1943 made it difficult to provide a more satisfactory ration. There can be little doubt that the free kitchens run by Government and relief agencies, in spite of their shortcomings, did in fact save a large number of lives. Organized on a wide scale, they at least provided some food to many thousands of starving people. Many of the destitutes who made use of them could not, at least at the time when they first received relief in the form of food, have tolerated large meals. It is probable that most of the deaths ascribed to the inclusion of *bajra* and other millets in the gruel occurred in destitutes who were very weak and ill when they came to the kitchens. In the circumstances the swallowing of badly cooked gruel containing unfamiliar millets might produce intestinal irritation and precipitate famine diarrhoea and death. There is no evidence that this happened in any considerable number of starving destitutes. Those in a less desperate condition are unlikely to have suffered serious ill effects by consuming grains which are the staple food of many millions of healthy people in India. In other parts of India, healthy rice-eaters have been able to take millets without untoward results, beyond some intestinal discomfort during the first days or weeks of the change. In general reports of the ill effects produced by the gruel supplied by the kitchens seem to have been greatly exaggerated.

H.—RECOVERY AND THE FUTURE.

30. If an individual who has suffered from famine is freed from disease and given the right sort of food, physical recovery is usually rapid and complete. The rapidity with which starved children returned to normal when they were properly cared for and given good food often astonished relief workers. The restorative effect of milk was particularly striking. A child admitted into a home in a diseased and emaciated state could be transformed in a few months into a healthy and happy child, without any permanent physical scars.

While under such conditions individuals could quickly recover from the effects of starvation, it must be emphasized that in general the famine may produce serious after-effects in the sphere of public health. There was still much malnutrition among sections of the population in 1944. An impetus may have been given to various diseases previously present in Bengal. For some years tuberculosis has been on the increase and the famine has probably hastened its spread: while we could obtain no evidence on this point, the deduction seems justified from what is known of the epidemiology of tuberculosis. Kala-azar may also have become more prevalent. Again, the famine provided malaria parasites with remarkable opportunities for extending their range and the malaria problem is likely to be most formidable during the coming years.

31. In the circumstances considerable effort is needed, first to restore health to the low pre-famine level, and next to bring about general improvement. Health conditions in Bengal are likely to remain abnormal until the end of 1945 or for a longer period and the need for the additional organizations created for famine work has not disappeared. Further it is essential, in the interest of future development, that what has been gained should not be lost. We have referred to the inadequacy of the medical and health services in normal times. No doubt there may be certain hospitals opened during the famine which are now no longer needed in the places in which they are located, and some of the additional health workers employed on special tasks in various famine areas may now appear to be superfluous. But Bengal as a whole needs more hospitals and health workers and every effort should be made to turn over the temporary

famine and medical relief organization to the permanent service of the province. For example, 40 military officers were still employed at the end of 1944 as sub-divisional health officers pending their replacement by suitable civilian officers. The military personnel cannot be indefinitely retained and it is important that these posts should not fall vacant. The sub-divisional health officers proved of the greatest value during the famine. It may be added that there are 84 sub-divisions in Bengal and a health officer in each sub-division is a reasonable objective.

It is not the responsibility of the Commission to define long-term health policies in Bengal. We have recommended that District Health Officers should come into a provincial cadre because this seems an immediate necessity. The reorganization of health and medical services in India is being considered by the Health Survey and Development Committee, and the report of that Committee will be available to guide the Government of Bengal in the future development of curative and preventive medicine.

I.—GENERAL APPRECIATION

32. The Bengal famine resulted in high mortality the basic cause of which was lack of food. The lethal epidemics of malaria, small-pox and cholera were associated in various ways with the famine and its disruptive influences on social life. The health situation which arose in 1943, was beyond the control of any health and medical service. The health and medical services in Bengal were, however, unfitted to meet the emergency because of defects in organization and inadequacy and inefficiency of staff, and some of the mortality which occurred could have been prevented by more vigorous and timely measures. During the famine period up to November 1943, there was almost a complete breakdown in the health services. In November the atmosphere of defeatism was partially dispelled and much effective work was subsequently done in the medical and public health spheres. Even at this later period, however, there were many unnecessary delays and failures. The story is, in fact, throughout one of belated efforts to bring the situation under control. This is said with full understanding of the numerous and formidable difficulties and full appreciation of all that was eventually done to overcome them.

CHAPTER V.—HEALTH IN OTHER PARTS OF INDIA.

1. The disastrous effect on the population of Bengal of lack of food has been described in detail. We shall now briefly inquire into the health position in the rest of India during the same period. During 1942-4 the food situation in various parts of the country gave rise to anxiety. Local shortages of various kinds of food occurred, and districts, in Bombay and Madras suffered from drought and came under the operation of the Famine Code. In general appropriate steps were taken by the governments concerned to prevent hunger and catastrophe was avoided. It is, however, important to ascertain whether the food situation in India outside Bengal has had any obvious effect on public health.

A. BIRTH RATE.

2. The recorded birth-rate in British India remained steady at about 34 per mille from 1920 to 1940. In 1941 it fell to 32.1 and in 1942 to 29.4. In 1943 there was a remarkable fall to 25.6, a decline being recorded in all provinces. Of the major provinces, the largest recorded falls are in the following:

Province	Birth-rate 1935-42	Birth-rate 1943	Difference per cent
Bihar	28.6	18.2	- 10.4
Bengal	28.0	18.8	- 9.2
Bombay	37.2	29.7	- 7.5
Punjab	40.3	33.0	- 7.3
Assam	26.5	19.6	- 6.9
United Provinces	31.5	24.9	- 6.6

Relatively insignificant falls were recorded in the Central Provinces, Madras, Orissa and Sind.

Since population pressure has been held responsible for all the woes of India, a fall in the birth-rate must be regarded as an occurrence of great importance. With a population of 400 millions, a birth-rate of 34 per mille would add 13,600,000 babies to the population every year, while a rate of 26 per mille would add only 11,400,000 babies. The difference is 2,200,000, which is a very substantial difference. To the question whether the fall is a real one or a product of statistical omissions and fallacies we can only reply once more that vital statistics in India, whatever their inaccuracy, do indicate trends in the vital indices. Sources of error remain relatively constant from year to year. It can legitimately be concluded that a real fall has occurred, but its cause can be only a matter for speculation. In Bengal the fall in 1943 can be largely accounted for by the famine, but that occurring in other provinces is less easily explained. One of the major factors, in certain provinces at least, must be recruitment to the army and the transfer of male workers from rural to industrial areas usually without their families. If this is the main cause, it shows how strong the impact of the war has been on social life in India. There is little reason to suppose that, outside Bengal, shortage of food has

been an important factor in the reduction of birth-rate. Thus, a striking fall occurred in the Punjab, which certainly has not suffered from food shortage—which has, in fact been more abundantly supplied with food than ever before. In the Punjab there has been heavy recruitment of young men for the army. In Bihar, where considerable industrial development has taken place, the recorded fall was greatest. In general no relationship can be elicited between the degree of fall in the various provinces and the prevailing food situation during 1942 and 1943.

B. DEATH RATE.

3. The death rate returned for India in 1942 was 21·2 per *mille*, the lowest on record. Since the decade 1911-20, in which the recorded death-rate was about 34 per *mille*, there has been a fairly steady decline, with annual fluctuations. In 1943, there was a rise to 23·4, an increase, of 1·1 per *mille* over the 1938-42 average. This is largely accounted for by famine deaths in Bengal, but significant increases were reported in Orissa and Madras as follows:—

	<i>Death-rate</i> 1938-42	<i>Death-rate</i> 1943
Orissa	26·8	30·9
Madras .	22 5	25·5

4. The Punjab showed a rise from 24·6 to 25·4, the main cause of which was a serious epidemic of malaria. In all other provinces there was a decline in 1943. A fall in the birth-rate must in ordinary circumstances lead to a fall in the death rate, since infant deaths make a heavy contribution to total mortality. Thus a rise in the death-rate in the age groups above infancy might be masked by a reduction in the number of infant deaths. Leaving aside, however, possibilities of this nature, it is clear that in the greater part of India in 1943 no gross deterioration in health conditions, reflecting itself in rise in the death rate, took place. The famine in Bijapur in Bombay was successfully handled and there was no abnormal mortality.

5. The province of Orissa demands more detailed consideration. Orissa is a surplus province as regards rice but purchases of rice by agents and merchants from Bengal during the free trade period pushed the price almost up to the Bengal level, so that in parts of Orissa, as in Bengal, the poor could not buy enough food. The total recorded number of deaths in Orissa in 1943 was 233,584, an increase of 17·9 per cent over the quinquennial average of 198,150. In the district of Balasore, bordering on Bengal, the increase in mortality was 40·7 per cent. In this district 1,105 deaths from starvation were recorded, but many of the victims were destitutes from Bengal. The rise in the death-rate in the province as a whole was due largely to epidemics of cholera and malaria, but there was also an increase in the number of deaths reported under the head "dysentery and diarrhoea". During the months August to December, 11,194 deaths were recorded as against a quinquennial average of 7,563. The Director of Public Health, Orissa, in giving evidence before the Commission, expressed the opinion that the increased mortality in Orissa in 1943 was due to food shortage, migration within the province, and the influx of destitutes from Bengal. Some of the latter died in Orissa and moreover they carried with them epidemic diseases which spread among the Oriyas. An increase in vitamin deficiency diseases was observed in 1943. The Director of Public Health also laid stress on the poor quality of the diet consumed by the bulk of the population in Orissa, even when rice is available in sufficient quantities. There is a serious shortage of milk, fish, pulses, and vegetables, and in normal times standards of nutrition are low.

6. Much of the excess mortality in Madras in 1943 can be ascribed to the severe cholera epidemic. The relation between cholera and food shortage has been discussed in a previous section. The Director of Public Health, Madras, informed the Commission that the cholera epidemic in 1943 spread from district to district in the usual manner of such epidemics. The very severe outbreak in Malabar waned in August 1943, without any improvement in the food situation. He felt that the appearance and spread of the disease could be explained on epidemiological grounds without particular reference to food scarcity. The famine in the Ceded Districts, which affected a large population, was kept under control by the operation of the Famine Code and was not accompanied by exceptional mortality. The economic condition of the people in this part of Madras is low even in the years intervening between recurrent famines, and in famine years the reduction in malaria incidence due to drought may offset other inimical health conditions. Study of mortality rates in the deficit district of Malabar, where rice supplies are short and the population has been strictly rationed at a low level of intake, shows that mortality was well above the average during the first 6 months of 1944 and that the increase was most marked in the age groups 5 to 10 and 10 to 15. The Commission is not in a position to make a detailed investigation of vital statistics in Madras with reference to the possible effect of the food situation on mortality. That task is the responsibility of the Provincial Health Department. The effect of the food situation on health in Madras (as elsewhere in India) requires most careful watching, but at least it can be said that Madras has passed through the crisis of 1942-4 without catastrophic results in the health sphere.

7. No satisfactory mortality statistics for Cochin and Travancore are available for study. Evidence was presented to the Commission in Travancore of a fall in the weight of infants at birth and a fall in the weight of elementary school children, records of earlier years being used as the basis of comparison. It seems probable that under-nutrition and malnutrition are responsible for the change observed. Here again it is essential that the health authorities should keep a vigilant watch on health conditions and report any evidence of deterioration.

8. In Bihar there were no abnormal health conditions in 1943 and the death rate was below the quinquennial average. In 1944 severe epidemics of malaria and small-pox broke out in North Bihar and the serious public health situation in this area was ascribed to malnutrition by certain newspapers and political leaders. The Commission had no opportunity of visiting Bihar to study the position. No evidence has however been put before it in support of the view that the outbreak of epidemic disease was associated with food shortage and malnutrition.

9. While there is no statistical evidence that food shortage had led to a serious increase in mortality outside Bengal and Orissa, it must be emphasized that the study of mortality rates is a crude method of investigating the effect of the food situation on health. The possibility that the health of certain groups in the population has been adversely affected cannot be dismissed. During recent years some sections have consumed more food than before the war. The high price of grain has enabled villagers to pay their dues by selling a smaller proportion of their produce than formerly, and thus retain more for their own use. Large groups of workers in industry are being paid high wages which allow them to increase their intake of food. In some industrial areas cereal supplies for workers are heavily subsidized, while in others very substantial dearness allowances, which more than cover the increase in the price of grain, are being paid. On the other hand there are groups whose wages have not risen proportionately to the rise in the cost of living, e.g., lower middle-class people in clerical and other occupations, and their health may have

suffered through restriction in diet. In a broad survey of health conditions, deterioration in one group may be masked by improvement in another.

10. Special reference must be made to the high cost and scarcity of protective foods such as milk, fish and vegetables. The intake of such foods on the part of the poorer classes in general is low in normal times. Among certain groups it has been further reduced by high prices. Lower middle class families cannot afford to buy protective foods even in the limited quantities to which they were accustomed before the war. This is bound, in the long run, to lower standards of health and careful investigation would probably reveal that some deterioration has already taken place. It is of the utmost importance that the food problem of India should not be regarded solely as a problem of providing enough cereals and distributing them equitably so that everybody gets enough to eat. The objective must be the provision of a well balanced diet containing protective foods in adequate amounts.

11. **Recommendations.**—The Commission recommends that District Health Officers should be brought into a provincial cadre under the control of the Director of Public Health, for reasons which have been made clear in the preceding chapters. With regard to the status and duties of health officers, we are of the opinion that legislation along the lines of the Madras Public Health Act, 1939, is desirable. We do not feel it incumbent on us to make specific recommendations about the reorganization of health and medical services in general, which includes such questions as the status of subordinate health personnel in the districts. The nature of the health and medical organization required to meet the needs of Bengal is a problem for detailed consideration by experts. We have referred to the Health Survey and Development Committee which is concerned with the health problems of India and will deal with provincial requirements and organization in respect of medical and health services. We have no doubt that the Government of Bengal will give their full attention to the recommendations of this Committee.

12. We commend the steps which are being taken to provincialize hospitals at district and sub-divisional headquarters. The state of local hospitals revealed by the famine indicates the need for this measure.

13. Our terms of reference include "the provision of emergent medical relief and the emergent arrangements for the control of epidemics in those areas and in those aspects in which the present system may be found to be faulty". These questions have been dealt with in the chapters on "Death and Disease". We have shown that satisfactory "emergent medical relief" depends on the existence of a satisfactory organization in normal times. This applies, not only to Bengal, but to the whole of India. Apart from any possible danger of a recurrence of famine, the need for the improvement and development of health and medical services in Bengal is indeed obvious.

14. In conclusion we may add that, whatever future advances are planned, the need for the existing emergency medical and health organization will persist until the end of 1945, and possibly for a considerably longer period. We may further point out, that not only should there be no premature retrenchment, but that full use should be made of developments during the famine as a foundation for further progress.

PART III

FOOD ADMINISTRATION & REHABILITATION IN BENGAL

CHAPTER I.—THE SYSTEM OF SUPPLY AND DISTRIBUTION

A.—SUPPLIES AND PRICES AFTER THE FAMINE.

1. The famine of 1943, ended with the harvesting of the *aman* crop in December of that year. This crop was probably the largest in the history of Bengal. The following table shows the acreage and yield of the *aman* crop reaped in December 1943, as compared with that of the preceding two years according to estimates made by the Government of Bengal:

The Aman Crop

Year	Acreage (in million acres)	Yield (in million tons)
1941	16·91	7·40
1942	16·21	5·02
1943	18·18	8·53

According to these figures the *aman* crop acreage increased by 1·27 million acres in 1943, as compared with 1941. The figures are, however, not comparable because the method of estimating the acreage was changed in 1943. As we have explained the normal acreage assumed for statistical purposes in the past does not agree with the acreage as recorded in the settlement records and in consequence there has been a systematic under-estimation of the acreage of the *aman* crop.¹ We have been told that in preparing the estimate for the *aman* crop reaped at the end of 1943, an attempt was made to correct the acreage figures with reference to the figures given in the settlement records. The revised acreage is, however, still below the settlement figure of 19·22 million acres and hence we think that probably it is even now an under-estimate. We understand that with a view to obtaining accurate agricultural statistics the Government of Bengal have recently sanctioned two schemes: one, a plot to plot enumeration of all crops and the other a random sample survey of the jute, *aman*, and the *aus* crops. It is proposed to continue both surveys for a period of three years and then to decide on future policy. The cost is heavy, being Rs. 43 lakhs in the first year and Rs. 31 lakhs in each of the two succeeding years. We trust that as a result of this large expenditure accurate figures of acreage will be obtained.

2. As we have said, the *aman* crop reaped in December 1943, was an excellent one. During 1944 the supply position was satisfactory and the Government of Bengal were able to accumulate, by the end of the year, a reserve stock of over 600,000 tons of rice and paddy in terms of rice. It is unlikely that the whole of the surplus passed into the hands of the Government and if that be so, the carry-over at the beginning of 1945 was in all probability equal to several weeks' supply. The *aman* crop reaped in December 1944, was not as good as the bumper crop of the previous year and according to the estimates prepared by the Government of Bengal, the yield of the former is less by 1·44 million tons than that of the latter. It is probable, however, that this reduction will be offset by the increase in the carry-over at the beginning of 1945, as compared with that at the beginning of 1944.

¹ Para 9 of Appendix II

3. The bumper *aman* crop was the principal factor in the restoration of confidence and the fall in prices during 1944. There were also other factors. The Government of India undertook the responsibility of providing Bengal with a supply of rice sufficient for the needs of Greater Calcutta during 1944. This was obtained from other parts of India under the Basic Plan. This arrangement was made in order to help in the restoration of normal conditions by taking the Calcutta demand completely off the Bengal market. In 1943 the Calcutta demand had been the largest single disturbing factor in that market. Rationing was introduced into Greater Calcutta in 1944. Employers whose employees number a thousand or more, were prohibited from purchasing rice and paddy for supply to their employees except through Government. Rice mills were brought under control and prohibited from selling rice except to the procurement organization of the Government, or under permit, to a limited number of approved wholesale dealers. All employers of labour supplying foodgrains to their employees were prohibited from having in their possession, except under permit, more than two months' requirements of rice and paddy. Consumer stocks were limited by an order forbidding any person, other than a producer or a trader licensed under the Foodgrains Control Order, holding more than 20 maunds of rice and paddy without a permit. Exports from surplus districts were prohibited. A procurement organization was established for making purchases on behalf of Government in order to meet the requirements of the deficit areas, for making supplies to employers of labour who were prohibited from making private purchases, and to build up a provincial reserve. Finally, the organization for the general enforcement of food controls was developed during the year.

4. The system of price control by the fixation of maximum prices, introduced in August 1943, continued during 1944. These prices were successfully lowered at relatively short intervals. Two sets of statutory maxima are now in force in different areas of the province. They are as shown below:

	Price per maund.			
	Rice.		Paddy.	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Wholesale traders	13 8 0	and 14 12 0	7 8 0	and 8 4 0
Agriculturists	12 12 0	and 14 0 0	7 4 0	and 8 0 0

On the reaping of the *aman* crop market prices fell sharply from the abnormal levels of 1943. Thereafter they remained fairly steady until about August 1944, when there was a further fall. At the end of the year they were approximately at the same level as at the end of 1942.

B.—CONDITIONS IN THE IMMEDIATE FUTURE

5. Conditions in Bengal during 1944 were specially favourable in two respects. One was the bumper *aman* crop reaped in December 1943, and the other was the special arrangements made by the Government of India for supplying the needs (rice) of Greater Calcutta from other parts of India. It is necessary to realize the exceptional character of these two factors and to be sure that food administration in Bengal is so organized, that it will function effectively under less favourable conditions. It is true that there is a tendency for the rice acreage to increase—this may be maintained in view of the prevailing prices—but it is unlikely that the yield per acre of the *aman* crop during the next few years will be as high as it was in December 1943. Again, lean years consequent on poor *aman* crops appear to occur regularly in Bengal. The sequence in the past has been 1928, 1936, 1941 and 1943. It cannot be said when the next lean year will occur. We may hope that it will be long in coming, but it would be imprudent to assume that such an event will not happen before

imports of rice from abroad once again become available on the same scale as before the war.

6. The supplying of rice for Calcutta from other parts of India in 1944 was recognized at the time to be a special arrangement. It has since been decided that this arrangement will not continue in 1945, and allocations under the Basic Plan will be made to Bengal in the same manner as to other provinces and states, that is, with reference to their actual need for imports. This does not, of course, mean that Calcutta will not receive supplies from other parts of India. As regards wheat the necessary allotments will be made. In respect of rice the needs of Bengal will be reviewed at appropriate intervals by the Government of India, in consultation with the Government of Bengal, and allocations, if necessary, made from the stocks available to the Government of India under the Basic Plan. In making these allocations due regard will be paid to any special circumstances arising in Bengal from its proximity to the war zone, as well as to the special needs of other parts of India. It is, however, clearly necessary that Bengal should make the fullest use of its own resources. During 1944 much was done towards the improvement of food administration in Bengal. Rationing of Calcutta was a major advance. The results of procurement have been satisfactory and Government have been able to build up a large reserve of rice and paddy. But there is still room for improvement in the organization which has been developed for procurement specifically and for the enforcement of controls generally, before it can be regarded as adequate to meet more difficult conditions than those prevailing during 1944. We shall now consider the improvements required.

C.—URBAN RATIONING

7. Apart from Greater Calcutta which includes the cities of Calcutta, Howrah, and 30 other municipal towns, with a total population of about 4 millions, the only towns in which a true system of rationing has been introduced are Chittagong and Kurseong. In a considerable number of other towns "partial rationing" schemes are in force. These, however, are not true rationing schemes for, every person, in addition to the ration he draws from Government supplies, is free to obtain further foodgrains from the ordinary retail shops. There is also no restriction on private trade in rationed foodgrains. What these schemes seek to assure is a minimum ration, generally of 2 seers per adult person per week, and even that is not guaranteed, for it is liable to be reduced if Government stocks are inadequate.

8. We attach great importance to the rationing of the urban population and Bengal, in this matter, has lagged considerably behind many provinces. We note that even Dacca, a town with a population of over 200,000, has not been rationed. We recommend that the Provincial Government should undertake as rapidly as possible the rationing of every truly urban centre. Many of the small municipal towns in Bengal are in reality only overgrown villages and include within their boundaries a considerable amount of agricultural land. We do not suggest that these small towns which are, strictly speaking, not urban areas, should be rationed. It would not be worth while. What we propose is that the rationing of towns with a population of about 25,000 or more should be carried out as quickly as possible and that, thereafter, in the light of the experience gained, a decision should be taken whether towns with a smaller population should also be rationed.

D.—ENFORCEMENT

9. **The Foodgrains Control Order.**—We regard this Order as a most important weapon in the armoury of food administration in Bengal, for it is the only means by which the stocks in the hands of traders can be watched and controlled. It has, however, not been administered efficiently in Bengal. We consider that

immediate steps should be taken to enforce the provisions of the Order strictly. This will entail drastic action, for the registers are at present encumbered by the names of thousands of persons who are not traders by profession. Originally, licences were not granted to new entrants in the trade, or to those who had been in business for less than three years, unless the District Magistrate was satisfied that a public purpose would be served by granting the licence. In May 1943 when free trade was introduced into the Eastern Region, these restrictions were removed and orders were issued that the licensing authority "should issue licences freely to new entrants to business and to those who have been in the trade, irrespective of the period during which they have been in business, provided the applicants are able to satisfy the licensing authority that they have made arrangements for carrying on business, and possess storage accommodation, and have an office where accounts will be kept and business transacted" We understand that this step was taken because of the great need for obtaining the maximum amount of supplies from outside the province. The result was the issue of thousands of new licences. In one district which a Member of the Commission visited, out of 3,500 licensees over 2,000 had not submitted any return for many months. In these conditions efficient administration is impossible. We consider it very important that drastic steps should be taken without delay to restore order out of this chaos.

10. **Embargoes.**—The enforcement of embargoes round surplus districts prohibiting the export of rice and paddy, except under permit, presents special difficulty in many parts of Bengal because of the large number of rivers and *khals*. Control of transport by rail and river steamer is a simple matter and that of movement by road does not present great difficulty. But the control of country boat traffic, when that traffic, as in Bengal, travels by innumerable rivers and *khals*, throws a heavy burden on the administration. There is little doubt that cordons round many of the surplus districts are not effective because the country boat traffic is not properly controlled. And yet procurement will suffer unless these cordons are enforced strictly. A large staff is essential but an increase in staff will not of itself solve the problem. The staff, particularly the supervisory staff, must also be provided with adequate transport, that is, with launches, if success is to be achieved in controlling country boat traffic. In the riverine districts of Bengal, launches are just as essential for the efficiency of administration as are motor cars in areas where communication is by road. We realise the difficulty of obtaining launches for the civil administration under conditions imposed by the war, but we trust that it will be possible for arrangements to be made by which a reasonably adequate number of launches are made available to the Government of Bengal. It should then be possible for the Provincial Government to enforce these cordons effectively.

E.—REQUISITIONING

11. We attach great importance to requisitioning. We consider it essential that Government should be prepared to undertake requisitioning as and when necessary, whether from traders or from producers, if the flow of supplies is not maintained by voluntary sales. If it were practicable to adopt in Bengal monopoly procurement schemes on the lines of those in force in Bombay and Madras, requisitioning as a separate measure would be unnecessary. The compulsory sale of the levy quota in Bombay and the assessed surplus in Madras is a form of requisitioning. It is the impracticability of adopting such schemes which makes requisitioning in Bengal a matter of such importance.

12. One point should be made clear at this stage. When we speak of requisitioning from the producer we are not thinking of requisitioning from the cultivator who has a small surplus over and above his own needs. That, we regard as not only impracticable but also dangerous. The compulsory purchase of the surplus of such a producer is only possible where means exist for making a reasonably correct estimate of the crop he has reaped and of the needs of

himself and his family. In Bengal the agency for making such an assessment does not exist. What we contemplate, therefore, is not the requisitioning of the surplus of the small, but of the large cultivator. In practice, requisitioning will be limited to holdings with an acreage above a prescribed minimum.

13. If requisitioning is to be successful it must be prepared for in advance. This is particularly necessary in Bengal where, owing to the absence of village records and a village revenue establishment, particulars are not readily available as regards large cultivators. We understand that the District Enforcement Staff has been directed to collect information, but, so far as we could learn, little progress has been made. It is important that plans for requisitioning should be kept in readiness. What is required is a list of large cultivators so that, should requisitioning become necessary, information will be ready at hand as regards potential "hoarders". It will be impossible to prepare these lists in secret and we think it would be a mistake to attempt to maintain secrecy. If Government are prepared to undertake requisitioning it is desirable that the public should not be kept in ignorance of Government's policy and should realise why requisitioning may be necessary. Like every other activity of food administration it is essential that the policy of requisitioning should have the support of public opinion. Only then can it be successful. The hoarder must not be in a position to rely upon public sympathy. Public opinion must make him realize that hoarding grain is anti-social. Indeed, the more village opinion condemns the holding up of stocks the less need there will be for requisitioning. We attach, therefore, importance to propaganda directed to explaining Government's policy in regard to requisitioning.

14. Although occasions may occur in which requisitioning on a wide scale may be necessary and indeed imperative, we trust that these will be rare or absent. We regard general requisitioning as an extreme measure that should be resorted to only in a grave emergency such as that arising from an exceptionally poor crop. On the other hand, we regard individual requisitioning as part of the normal procedure of procurement, that is to say, as a measure which should be taken whenever, in an area, the flow of grain to the markets is slowing down owing to large cultivators holding back their stocks. This policy has been adopted with success in other provinces, for instance in the Central Provinces and Madras. In the main rice producing areas of Madras, as in Bengal, procurement normally depends upon voluntary sales by the cultivators. Usually, no difficulty is experienced during the months immediately following the harvest. Later in the year, however, the flow of grain slows down and at such times the Grain Purchase Officers have been authorized to resort to requisitioning. We understand that requisitioning, or even the threat of requisitioning, of the surplus stocks of a relatively small number of individuals usually has the desired effect. The practice is that the cultivator whose grain is requisitioned is given the option to enter into a voluntary contract for the sale of his surplus within a reasonable time after the service of the requisitioning notice. This procedure has worked satisfactorily and, in the large majority of cases, the cultivator sells his grain voluntarily and compulsory acquisition proves unnecessary.

15. We understand that the Bengal Government are considering a proposal that the large cultivator should be brought within the scope of the Foodgrains Control Order. We support that proposal. Although we have recommended that lists of large cultivators should be prepared, we recognize that their preparation, in the absence of village records showing the areas held by individual cultivators, will not be such a simple operation as would at first sight appear. Extensive and intensive inquiries will be necessary and if the lists are to be accurate the work of the staff engaged on the inquiries will require close supervision. Finally, even when the lists have been prepared it will be necessary, prior to the issue of requisition notices, to decide which cultivators have hoarded

their stocks. This will necessitate further inquiries. There is an administrative advantage, therefore, in a procedure which places upon the large cultivator the duty of submitting returns. It is also possible that an obligation to submit returns may of itself discourage him from holding back his surplus grain. He will realize, provided there is an adequate inspection staff, that he is under continual observation. Again we understand that the large cultivator is sometimes also a trader and that, by reason of being a producer, he evades the provisions of the Foodgrains Control Order. We recognize, of course, that the number of cultivators who are required to submit returns should not be unwieldy. It has been suggested that the numbers would not be too large if a limit of 25 acres was adopted, that is to say, if those who cultivate 25 acres or more of land were brought under the scope of the Order.

16. Requisitioning of stocks may be necessary not only in the case of the large cultivator; action may also have to be taken against the trader. But such action will not be possible, except in a haphazard manner, unless up-to-date records of stocks are maintained. This can only be ensured by the efficient administration of the Foodgrains Control Order to which we have already referred.

F.—RICE MILLS

17. Rice mills constitute a most important part of the procurement machine, for they form "bottle necks" through which paddy, except in so far as it is hand-pounded, passes in order to emerge as rice. Their efficient use in procurement schemes therefore is of the greatest importance. In Madras, Bombay, and the Central Provinces rice mills are under official control. We were not able to visit the rice-producing areas in Bombay and the Central Provinces, but from what we heard from official as well as non-official witnesses, we are satisfied that the system of official supervision has been a success in those provinces and that the co-operation of the rice millers has been obtained. In Madras we were able to visit two of the important rice purchasing centres, Bezwada and Tanjore, and had the opportunity of acquainting ourselves with the working of the system in that province. There too official control has operated with ease and success. The main rice surplus areas of Madras are in the north and south deltas and comprise seven districts which are well supplied with rice mills. Practically all the purchases by the official purchasing agents, Grain Purchase Officers, are made from the mills in these districts. The Grain Purchase Officers, who are selected Deputy Collectors belonging to the Provincial Service, are five in number and each is in charge of a separate area. During the period December 1942 to October 1943, the purchases made by these officers amounted to 721,000 tons, and during the ten months from November 1943 to August 1944, to 700,000 tons. The staff employed is not large and consists of 5 grain Purchase Officers, 5 Grain Movement Officers, 29 *Tahsildars* and Deputy *Tahsildars*, 66 Food Inspectors, Marketing Assistants, Grain Purchase Supervisors, etc., and 166 Clerks.

The cost to Government is very low. At the Bezwada centre the cost (excluding pensions) is about 3 pies per maund of rice purchased, while that at Tanjore is only about 1 pie per maund. Again, milling charges are not high, being about 11 annas a maund, including profit, in the southern delta, and about one anna less in the northern delta. The mills are closely supervised by the Grain Purchase Officers' staff throughout all the milling processes in order to ensure that quality is maintained and the under-milling order complied with. We visited several of the mills and found rice, both in store and in the course of production, to be of good quality. We understand, however, that at an earlier stage the quality of rice obtained from the mills and distributed by the Grain Purchase Organization, left much to be desired.

18. An important feature of the scheme is the manner in which storage difficulties have been avoided. Monthly quotas are allotted to deficit districts,

certain Indian States, the Defence Services, and the Railways, and are distributed among the Grain Purchase Officers. Each of these officers, therefore, knows the monthly demands which he has to meet and regulates his purchases from the mills accordingly. Deficit districts are supplied by merchants selected by District Officers and these merchants are also allotted monthly quotas. The merchants apply to the Grain Purchase Officer and deposit the cost of the rice in advance. The Grain Purchase Officer arranges with a mill for the delivery of the consignment at the despatching point where it is inspected by the merchant. The miller is paid after the merchant has accepted the consignment. The same procedure is followed as regards purchases for the Indian States, the Railways, and the Defence Services. The Grain Purchase Officer accepts no responsibility for transport but he keeps the railway authorities informed of probable despatches and assists the exporting merchants as far as possible. The system has worked successfully. Storage accommodation, beyond that provided by the mills, has not been found necessary and the demands for transport have been spread out uniformly throughout the year.

19. In Bengal, rice mills are under the control and supervision of the Chief Agents and it is they who are responsible for the inspection of the milling processes, for taking delivery of the rice and for making payments. The Bengal Rice Millers' Association gave evidence before us and it is clear from what they told us that the rice millers are suffering under a sense of grievance. They said quite frankly that they object to being placed under the control of other members of the trade, that is the Chief Agents. They urged that if the rice milling industry must be controlled by the State, control should be exercised directly through Government officials and not through private firms. They regarded this as a matter of principle and maintained that the present system was bound to lead to friction and misunderstanding. It is essential that the full co-operation of the Bengal rice millers should be obtained and, after our visits to other provinces, we have no hesitation in recommending that Bengal should, as regards the control and supervision of rice mills, fall into line with other provinces. We realize that the Bengal Government fear that Government officers will not be able to deal with the rice miller as efficiently as the Chief Agents have done, but if Government officers in other provinces are able to accomplish this task with success we see no reason why Government officers in Bengal should not be able to protect Government interests and at the same time deal fairly with the mills. The rice millers made no complaint against the Chief Agents individually. It is of course possible, indeed probable, that their views are influenced by circumstances in which, rightly or wrongly, they feel that they have not had a fair deal at the hands of the Chief Agents. We realise that personal differences between the millers and the Chief Agents may have strengthened the former's view in favour of direct relations with the Government instead of through the Chief Agents. But, quite apart from the possibility of individual cases of friction and misunderstanding, we take the view that the proper course is for the mills in Bengal to be brought directly under official control. As we have said, we see no reason, in the light of experience in other provinces, why officials in Bengal should not be able to exercise efficient supervision and control over rice mills.

20. In relation to the size of the crop, the number of rice mills in Bengal is small as compared with that in Bombay, Madras, the Central Provinces, Sind, and the Punjab. Further, in Bengal the mills are unevenly distributed. The surplus rice districts in West Bengal are well provided with mills and a large number are concentrated in and around Greater Calcutta. On the other hand, the majority of the surplus districts in East and North Bengal are badly provided with mills. For instance, Khulna has only nine very small mills, and Jalpaiguri only seven, of which only one has a capacity of over 500 maunds a day. Bakarganj, another heavy surplus district in East Bengal, has 64 mills but only

12 have a capacity of over 200 maunds a day. We understand that the Bengal Government are considering a proposal for the better distribution of rice mills either by the transfer of existing mills or by the erection of new ones. We agree that a better distribution of mills would be advantageous from the point of view of procurement. There is one point, however, to which special attention should be drawn. Hand-pounding of rice is a village industry of considerable importance in the rural economy of the province. Roughly one half of the market supply is dehusked by manual labour in the villages. We attach importance to the maintenance and extension of village industries. Hand-pounding of rice is a small industry specially suited to rural conditions in Bengal; it provides employment for a large number of landless persons and serves as a subsidiary means of livelihood for the smaller cultivator. We accordingly recommend that in any plan for increasing the total output of milled rice as opposed to one for redistributing existing mills, the existence of this important village industry should not be overlooked.

G.—MONOPOLY PROCUREMENT

21. Schemes under which the producer is required by law to sell the whole or a part of his surplus grain to Government are in operation in several of the provinces and states in India. An officer of the Food Department of the Government of India, who recently made a tour of the provinces and states in which "monopoly" schemes are in operation, has made the following observations in his report:—

"It is interesting and important to observe that in those areas which have gone forward towards a Government monopoly, there is not one single instance where any doubt is felt that the basic principle is right. In no case is there any thought of withdrawing even to a minor degree. On the contrary, the tendency is quite the reverse and in virtually every case the determined policy is to go forward to make the monopoly more complete."

We visited several provinces and states in which "monopoly" schemes are in force and our inquiries point to the same conclusion. Where such schemes exist they appear to be working on the whole satisfactorily, though no doubt they will be further improved as experience is gained. The advantage of "monopoly" procurement is that it enables the authorities to ensure a more equitable distribution of the available food resources. We shall now describe the schemes in operation in the Madras and Bombay Presidencies and then decide, in the light of conditions in Bengal, whether they are suitable for introduction into that province.

22. **Bombay.—The failure of the voluntary system.**—Up to the spring of 1944 procurement operations in the Bombay Presidency depended upon voluntary sales by the producer. During 1943 District Officers made purchases locally. Purchases were, however, not on an extensive scale and in the autumn of that year the Provincial Government came to the conclusion that if black markets were to be eliminated and the food resources of the Presidency equitably distributed it was essential that a more extensive scheme of procurement should be adopted. They, therefore, announced their intention to purchase 10 per cent of the millet production and 25 per cent of the rice production. The scheme was of a "voluntary" character and cultivators were under no obligation to sell any portion of their produce to Government. The scheme was only partly successful and the quantity procured fell short of the target figure. This was attributed to lack of co-operation on the part of the big landlord and the large cultivator. The failure of this scheme led the Bombay Government to adopt in the spring of 1944 a scheme of monopoly of purchase and distribution.

23. The Bombay Monopoly Scheme.—The main elements of this scheme are—

- (a) a compulsory and graded levy from the cultivator of a portion of his surplus grain; the levy quota must be sold to Government;
- (b) a Government monopoly of purchase of whatever the cultivator sells over and above the levy quota;
- (c) strict control over movements; and
- (d) a Government monopoly of distribution in all rural and urban areas.

In 1944 the scheme was introduced into three districts. In spite of certain difficulties experienced in its actual working, it was considered to have worked successfully and it has been decided to extend the scheme, subject to certain modifications in the method of calculating the levy, to all areas in the province where rice is not the predominant crop.

No private trade in a monopoly foodgrain is allowed except that the producer is permitted to sell, within the village, retail quantities for the *bona fide* consumption of the buyer and his family. All movement beyond the village boundary is prohibited except under permit. Government is entirely responsible for distribution and both rural and urban areas are rationed. In the rural areas family ration cards are issued to those who have no stocks and those whose stocks are inadequate to last them till the next crop is reaped. Rations are drawn from controlled shops, and in the rural areas these shops are so situated that no villager has to go more than 5 miles for his supplies.

The District Officer, with the assistance of the revenue staff—this has been strengthened considerably—is in charge of the procurement and distribution operations. In most districts purchases are effected by Government officers directly from the producer. In some districts, however, co-operative societies are entrusted with the task of making purchases and in others, traders are employed as purchasing agents on a commission basis.

Under the system of land revenue administration in Bombay, complete and up-to-date records are maintained by the village accountant for each village and it is primarily on the basis of these records that the levy is calculated. The prices paid by Government for the grain purchased from the cultivator are fixed and remain in force for the whole crop year.

24. Madras.—The District of Malabar is a heavily deficit area in regard to rice, the staple foodgrain. Formerly it drew a large proportion of its supplies from Burma. The Madras Government have not been able to supply rice to the full extent of the needs of the district and in order to ensure a satisfactory distribution of the total supplies available from internal and external sources, a scheme of monopoly of purchase and distribution was introduced in the district in October 1944. The main features of this scheme are two. First, the cultivator is required to sell the whole of his assessed surplus, not only a proportion of it, as in Bombay, to Government at the notified price, and secondly, the entire population of the district is rationed.

No private trade whatsoever in monopoly foodgrains is permitted and all movement beyond the village boundary is prohibited. In view of the shortage of supplies, the ration has been limited to 12 ounces of foodgrains per adult per day instead of the normal figure of 1 lb per adult per day. This standard of 12 ounces has also been adopted for the purpose of determining the quantity which the producer is allowed to retain for his own consumption.¹ As in Bombay the District Officer is in charge of procurement and distribution. Purchases are, however, not made by Government officers but by local traders acting as government agents. The distribution of foodgrains to the licensed retailers

¹It is understood that this amount has recently been increased.

is also made by approved local traders. The assessment of the surplus with each producer is made by the village accountant under the supervision and direction of the district revenue staff. The prices paid to the cultivator for his surplus produce are fixed by Government.

25. For the successful working of a monopoly scheme on the lines of those in force in Bombay and Madras, it is imperative that Government should possess an agency which can (a) prepare a reasonable and accurate assessment of the crop reaped by each cultivator; (b) can purchase and collect the quota due from each cultivator or in the alternative, supervise and, if necessary enforce the sale of that quota to approved purchasing agents; and (c) can undertake the distribution of supplies to the whole population other than those who grow sufficient grain for their own needs. In Bombay and Madras (and in other parts of India where similar monopoly schemes are in operation), the foundation for this agency exists in the form of a highly developed revenue administration. As we have explained in Chapter II, this administration consists of, first a revenue staff in each village or group of villages charged with the maintenance of village records, and secondly, a staff of revenue officers whose duty it is to assist, supervise, and control the village staff. There is no such staff in Bengal, nor can it be brought into being within a reasonable time. Its recruitment and training would certainly be a matter of years, and we are of the opinion that any attempt to improvise such a staff within a short time would result in failure. It is not only a question of appointing and training thousands of officers. The subordinate revenue staff in the provinces of Bombay and Madras has been in existence for many years and possesses great influence and authority among the villagers. But that influence and authority cannot be acquired in a day. And finally there is the question of cost. The charge would be a very heavy one. We see no prospect, therefore, of the successful introduction into Bengal of monopoly schemes of purchase on the lines of those in operation in the provinces of Bombay and Madras.

26. In Orissa, and the Central Provinces and Berar, schemes are in operation which, while they do not require the producer to sell the whole or part of his surplus grain to Government, create in favour of Government a limited monopoly of purchase over the marketable surplus, that is, over that part of the crop which the producer brings for sale to the market. Under these schemes, as in Bengal, sales by the producer are voluntary. Where they differ from the Bengal system is that Government acquire not only a monopoly of purchase of all the rice produced by the rice mills but also a limited monopoly over that part of the marketable surplus which does not pass through the mills. We shall now describe these schemes and then consider whether they are suitable for introduction in Bengal.

27. **Orissa.**—The scheme which has been in operation in Orissa since the harvesting of the rice crop in 1943, aims at directing the flow of all rice and paddy sold in wholesale quantities into the hands of Government. It has three essential features. First, the prices of rice and paddy which the producers are entitled to demand and receive, have been fixed for the whole of the crop year. Secondly, purchase or sale by any person, whether a cultivator or not, of any quantity of rice or paddy exceeding 10 maunds in any one transaction has been prohibited unless it be by or to a Government agent.¹ Thirdly, no person holding a licence under the Foodgrains Control Order is entitled to hold a stock of more than 100 maunds of rice and paddy at any one time unless he is an agent or a sub-agent of the Government.¹ The object of the exemption of the purchase and sale of quantities up to 10 maunds in a single transaction is to enable purchases and sales to continue unhampered at the small village markets and elsewhere as an essential part of the system of distribution in the

¹It is understood that these limits have since been reduced.

province. Purchases are made by agents selected from the trade. Each agent makes purchases in a definite area and in order to bring the purchasing agency within easy reach of the cultivator, the agents have been encouraged to appoint sub-agents. The agent is responsible not only for the purchase of foodgrains but also for custody, packing, and safe storage. Purchases are, as far as possible, spread over 8 months of the crop year. The District Officer is in charge of all the operations. We understand that this scheme has been on the whole successful and that the target figure, which includes a provincial reserve, has been achieved.

28. The Central Provinces.—In the rice producing areas paddy is brought to the mills and rice to the markets by the small trader and to some extent by the primary producer. Paddy is either sold outright to the miller or, after being milled on a commission basis, is sold in the market. In other areas where mills are few in number, hand-pounded rice is also sold in the market. Under normal conditions, rice in the markets is bought partly by local retail dealers but chiefly by the larger dealers either for export to the consuming areas, or resale to other dealers for export. The millers are frequently wholesale traders and exporters, but in certain areas they sell their rice in the main markets. Normally therefore it is either at the mills or at the market that rice passes into the hands of the large wholesale dealer and it is at this point that the Government monopoly of purchase normally comes into operation. The actual sanction by which this monopoly is effected is by an order under clause 4 of the Central Provinces and Berar Foodgrains (Control of Distribution) Order prohibiting any person from selling rice at places specified in the Order except to Government or their agents. The monopoly extends only to rice and not to paddy.

When the scheme was first introduced, it was found that, on the issue of an order giving Government the monopoly of purchase at an established market, sellers, in order to avoid selling to Government at the controlled price, transferred their operations to places outside the declared markets. To prevent this evasion these places were treated as market equivalents and an order passed prohibiting sales at these places otherwise than to Government. The number of such places declared as market equivalents depends upon local circumstances. If rice is not flowing freely into the markets (or the market equivalents), requisitioning of paddy from the cultivator is resorted to without hesitation. Purchase prices are fixed on the basis of delivery at railhead, and for purchases in the interior prices are reduced by the differential necessary to bring the grain to railhead. Variations are also made to allow for differences in quality. A large number of agents drawn from the trade (including the millers) are employed in making purchases. Agreements are entered into with the agents by which they bind themselves to act as Government agents only and not to trade independently. The functions of the agents are to pay for the rice, take delivery of it on behalf of Government, bag it, weigh it, mark the bags, and transport it to Government warehouses. The agents work under the close supervision of Government officers. A Food Inspector is always present at the time a purchase is made either in the market or at the mill and if there is a difference of opinion between the seller and the Food Inspector as regards the quality of the rice, the matter is referred to the local Food Officer whose decision is final. The scheme has worked successfully in the surplus rice districts of the Chhattisgarh Division.

29. An essential feature of the schemes in force in the Central Provinces and Orissa is that Government purchases are made at fixed prices. We do not, however, regard this as a serious objection to the introduction of similar schemes in Bengal. Reductions in the ceiling prices at relatively short intervals were necessary during 1944 in view of the abnormal prices prevailing at the end of

1943. Prices have now (the beginning of 1945) reached a more reasonable level and it seems to us that the time has come when it is not only possible but also desirable for Bengal to adopt a more stable price policy. Other provinces have followed a policy of maintaining a uniform price level for as long a period as possible. In Orissa prices have been fixed for both rice and paddy for the whole of the crop year and in Madras, the Central Provinces, and Bombay, prices have been maintained at a steady level over a long period. It is clearly desirable that the cultivator should be assured that Government have no intention of forcing prices down to an unduly low level. Further, it is essential that the acreage under rice should increase rather than decrease, and this can only be ensured if the cultivator is assured of a reasonable price for his grain. It is also to the advantage of the rice miller to know that prices will remain steady. Apprehensions that prices may fall must inevitably restrict his purchases of paddy and, in consequence, his outturn of rice. Again, a stable price will make Government relations with the miller easier. We accordingly recommend that the prices at which purchases on Government account will be made, should be fixed for as long a period as possible. We would prefer that this period should correspond to the crop year but, if that is not possible, we suggest that it should be for at least six months. We also consider that the prices should not be kept secret. It is desirable that the cultivator, the trader, and the miller should know the prices fixed by Government for their purchases.

30. We now return to consider whether the schemes in operation in the Central Provinces and Orissa are suitable for introduction in Bengal. In the Central Provinces monopoly purchase by Government extends to rice and not to paddy. It will not be possible to maintain this distinction in Bengal, except perhaps in a few districts which are well supplied with rice mills, because the procurement organization purchases large quantities of paddy. No difficulty, however, should be experienced in extending the monopoly to paddy. But it is doubtful whether the system in force in the Central Provinces is suitable for adoption in all districts in Bengal. We have in mind the districts in which communication is mainly by water. In these areas, rice and paddy are largely bought and sold by merchants who move about in boats. To a large extent the boat is the market, and much of the grain is not brought to an established market as in the Central Provinces. In these conditions, it would be difficult to prevent evasion of orders prohibiting the sale of rice and paddy at markets or market "equivalents", to persons other than Government agents. The only way to prevent widespread evasion would be by full monopoly. This we consider impracticable. Bengal has not the administrative machinery for full monopoly procurement, nor do we regard the establishment of such an organization a practical proposition. Full monopoly purchase also implies full responsibility for distribution. And here again, we do not consider this practicable. Subject, however, to the reservation as regards districts in which communication is mainly by water, we are of opinion that the system of monopoly procurement in force in the Central Provinces may prove suitable for adoption in Bengal. As regards the scheme in operation in Orissa, we do not anticipate that any insuperable difficulty will be experienced in introducing a similar scheme in Bengal.

31. We are of opinion that Bengal should advance towards the monopoly ideal. We therefore recommend that the schemes in force in Orissa and in the Central Provinces should be studied with a view to the introduction of a system of monopoly purchase as an experimental measure in a selected district or districts in Bengal.

H.—THE PROCUREMENT MACHINERY

32. The procurement organization which was set up at the end of 1943 and was in operation during 1944 consists of

- (i) a Purchasing Board, and
- (ii) four sole purchasing agents, called the Chief Agents.

The Purchasing Board, the functions of which are of a purely advisory character, consists of the Commissioner of Food and Civil Supplies, who acts as its Chairman, one representative of the Railways, two representatives of the Chambers of Commerce, and the four Chief Agents. Its duty is to advise Government on questions of policy such as the price at which purchases should be made, the quantities to be purchased from time to time, and the areas in which purchases should be accelerated or retarded. Four firms of standing have been appointed as purchasing agents, and districts, in which they conduct their buying operations, have been allotted to each of them. Their purchases are made at prices fixed by Government, on the advice of the Purchasing Board and the methods of buying are through rice mills, through sub-agents appointed from among the local rice and paddy dealers, and directly through local dealers, co-operative societies and cultivators. This system was in operation throughout 1944.*

33. It will be recalled that a substantially similar procurement organization was set up on two occasions during 1943 and the agency employed for making purchases under the "denial" scheme was of the same type. We have explained in an earlier chapter our view that this type of organization is not suitable for procurement in conditions of shortage.¹ In saying this we are not criticizing the manner in which any of the chief agents performed his functions during 1944. As we have said, procurement in that year was successful—more successful than was expected during the early part of the year. Government were able to purchase over one million tons of rice and paddy, and at the end of the year had built up a reserve of over 600,000 tons. The success of the year's operations reflect the success with which the Chief Agents carried out their tasks. The point we are considering is the suitability of this type of purchasing organisation in more difficult conditions when measures of coercion may be necessary in order to maintain the flow of grain. At first it might appear that a commercial firm with experience in the buying and selling of foodgrains would be a more suitable agency than a purchasing organization manned by officials. This, however, has not been the experience of the large majority of the provinces. Madras, Bombay, Orissa, Bihar, United Provinces, the Central Provinces, and the Punjab, have all preferred an official agency and, as we have pointed out, even more significant is the fact that when a change has been made, it has been the substitution of an official for a trade agency. The result of this experience, combined with the failure of the "private" agency in Bengal in the difficult times of 1943, offer lessons which, in our opinion, should not be disregarded, and are conclusive.

34. We would briefly summarize the reasons for our preference in favour of an official purchasing agency in the following terms:—

(i) The system of agents selected from the trade raises a problem of selection. It gives rise to jealousy and friction which often lead to difficulties for the agent actually chosen. Such jealousy and friction hinder co-operation between the Government and the trade, which is so important for the success of control measures. The views expressed by the Bengal Rice Millers' Association, to which reference has already been made, are relevant as illustrating this point.

(ii) It is important that the procurement agency should have the full support and co-operation not only of the local traders and the rice millers but also of public opinion generally. This is particularly necessary when the flow of grain into the market shows signs of slowing down and pressure has to be brought to bear on the producers and local traders to part with their grain. The public does not readily believe that private firms are imbued with a spirit of public service and the more difficult procurement conditions become, the more ready

the public is to assume that their object is gain at the public expense. It is just at the stage when coercion is necessary that lack of confidence in the private agency may gather momentum and prove very embarrassing.

(iii) There is a fundamental difference between normal trading and the procurement of supplies on behalf of the Government. The latter in the last resort must depend on coercion, in the form of requisitioning. Requisitioning involves the use of legal powers which must be entrusted to responsible state officials and not to private individuals. It can be undertaken more effectively, and with less risk of misunderstanding as to its necessity in the public interest, by officers who are part of the official purchasing agency than by officers who are normally outside the procurement organization and are occasionally called in to support the operation of that organization.

(iv) The continuity of an official agency is assured though individual officers may change. A system of agents chosen from the trade, on the other hand, involves danger of lack of continuity. For, should a Chief Agent retire for any reason the benefit of his experience and organization in the areas allotted to him is lost and procurement may suffer while a new organization is establishing itself and acquiring familiarity with the work involved.

(v) It has been found necessary to buttress the present procurement organization in Bengal by a Government establishment, parallel with that of the Chief Agents, for the purpose of supervising and assisting them. Originally, provision was made for a staff of 7 Regional Deputy Directors, one Additional Deputy Director, 37 Assistant Directors and Officers of equal standing, and 450 Inspectors. The duties of this very considerable staff were defined generally as being "to supervise procurement operations as well as distribution under the scheme", and specific reference was made to the inspection of the stocks purchased, requisitioning of godowns and stocks, and the control of rice mills. We understand that recommendations have recently been made to the Government for the enlargement of this staff. There is in addition a considerable establishment entrusted with the responsibility for the storage and movement of supplies. Given the position that official establishments on this scale are necessary, we feel they would be more adequately, as well as more effectively, employed if they are also entrusted with the duty of making purchases from rice mills and local traders.

35. For these reasons, we recommend that an official procurement agency be established in place of the Chief Agents. We fully recognize the fact that careful preparations will have to be made before the change we recommend can be carried out. The transition will not be effected in a day; the pace of the change-over must necessarily be a matter for practical administration in Bengal. We desire to add that there should be no undue delay in taking the necessary measures; and having regard to the considerations which we have set out in Section F, the procurement of rice from rice mills should be entrusted to an official agency as an initial step in this process of transition.

I.—ORGANIZATION IN THE DISTRICTS

36. During 1944, the staff employed in the districts in the administration of food and civil supplies and connected matters was considerably strengthened. In every district there is an Assistant Director, and under him, a number of Licensing and Returns Officers, and Inspectors. During our inquiries we gained the impression that there was some uncertainty as to the authority responsible for controlling this staff. According to the orders issued by the Government of Bengal early in 1944, this staff was placed under the Regional Deputy (or Additional Deputy) Director of Civil Supplies, an officer whose jurisdiction extends over a group of districts and who is directly responsible to the Civil Supplies Department of the Provincial Government. It was also at the same time pro-

vided that the district staff was to be "subject to the supervision of the District Magistrate". This arrangement reflected the uncertainty prevailing at the time about the respective functions to be undertaken by the District Magistrate and the Deputy Director of Civil Supplies. It was expected that the uncertainty would be removed in course of time, as a result of mutual settlement between these officers with reference to local conditions; and that some definition of functions would emerge as a result of the practical working of the *aman* procurement scheme. This expectation, however, was not realised, and during 1944, officers, generally speaking, were not clear about their functions and powers. We consider it desirable that the responsibility for procurement, distribution, and enforcement of controls should be clearly defined.

37. We think there can be no doubt that the District Magistrate, except for certain clearly specified purposes, should be the authority responsible to the Government for food administration in his district, and that the staff employed for this purpose should be controlled by an officer or officers subordinate and responsible to him. We understand that the Provincial Government have recently decided that the District Magistrate, assisted by a staff over which he will have complete control, shall be solely responsible for all matters concerning the distribution, storage, and movement of supplies within the district from the point or points at which they are made available for use within it. The uncertainty as regards the authority responsible for distribution within a district has therefore been removed and we need say nothing further on this point. We consider however, that the District Magistrate should also be responsible for the enforcement of controls within his district, and we recommend that this principle should be observed. We agree that in those districts where a staff is specially employed for the purpose of making purchases on behalf of Government, or controlling and supervising such purchases, the District Magistrate and his staff should have no responsibility in the matter of procurement and operations connected therewith. We suggest, however, that in districts classed as deficit districts, the District Magistrate should be authorised to undertake procurement, should this prove necessary, in local surplus areas in order to provide supplies for other parts of the district.

38. There has also grown up recently a large staff which, while it performs a number of functions relating to the Jute Regulation, the Rural Reconstruction, and the Agricultural Development Departments, is also employed in connection with the distribution of controlled commodities. We understand that this consists of 10 Assistant Development Commissioners, 30 District Development Officers, 82 Chief Inspectors and Inspectors in Charge, 154 Range Inspectors, 1,000 Assistant Inspectors, 1,000 *Amins*, 6,000 Development Assistants, and 12,000 part-time Local Crop Recorders. A considerable proportion of this staff belongs to the Jute Regulation Department, and the remainder represents the staff sanctioned in 1943 and 1944 for the "Grow More Food" campaign and the collection, by a plot to plot enumeration, of agricultural statistics. The "jute" staff was utilized during 1943 in connection with the food drive and subsequently in relief measures. About the end of 1943, Government decided to introduce a scheme for the equitable distribution of controlled commodities, e.g., kerosene, salt, sugar, and in a very limited field, foodgrains, throughout the province. Again, in 1944 Government formulated a scheme for the "modified rationing" of foodgrains in the smaller towns and rural areas. This scheme has so far only been brought into force in certain rural areas in the Chittagong District. But, if we understand the position correctly, the intention is to introduce it as a relief measure should it become necessary to undertake the distribution of foodgrains at subsidized rates in other parts of the province. This scheme also contemplates the utilization of local food committees, the work of which will be supervised by the Jute Regulation Staff. It is possible that the functions we have referred to are such that they can be combined with advant-

age in one organization but we consider it a defect that the staff should be, as at present, organized independently of the District Magistrate in a separate hierarchy directly subordinate to the officer who holds the posts of Chief Controller of Jute Regulation, Director of Rural Reconstruction, and Special Officer, Rural Rationing. We have drawn attention more than once in our report to the weakness in the district administration in Bengal arising out of the absence of revenue and village establishments similar to those in the *ryotwari* provinces. Apart from the *Amins* and the part-time Local Crop Recorders, we assume that a considerable proportion of the establishment to which we have referred, will be retained permanently. It seems to us, therefore, that the existence of this staff affords an opportunity for organizing a subordinate administrative establishment under the control of the Circle Officers, which will be of great value in enabling the District and Sub-divisional Officers to maintain closer contact with the villages. We understand that the whole question of the organization of administration in Bengal is at present under review, and we recommend that the suggestion we have set out above be borne in mind in any scheme of re-organization.

J.—OTHER MATTERS.

39. **Co-operative Societies.**—Although an attempt was made in 1944 to utilize co-operative societies as agents for the purchase of grain from producers, little success was achieved. On the one hand, the co-operative societies attribute this lack of success to the "unsympathetic attitude" of the employees of the Chief Agents with whom they had to deal, whereas, on the other hand, we understand that the Chief Agents complain that the societies refused to sell paddy and rice at the prices at which they (the Chief Agents) were authorized to buy. We cannot say what truth there is in these allegations and counter-allegations, but we think it unfortunate that the co-operative societies should have this sense of grievance. We consider that not only in Bengal but throughout India, endeavour should be made to develop co-operative societies as part of the procurement organization because they are perhaps the most effective way of obtaining the support of the cultivator in procurement operations. At the same time, however, we recognize that the rate of progress cannot be spectacular. Indeed, there is a real danger in attempting too rapid an advance and the history of the co-operative movement, certainly in Bengal, affords a clear warning of that danger. An official agency is now operating in the Bakarganj district and what we suggest is that a scheme should be worked out for the utilization of the marketing and agricultural credit societies in that district as part of the procurement machine. We feel convinced that the wise course is to concentrate on a particular area and to postpone, except in regard to the few large and well established marketing societies in other areas, any attempt to introduce on a wider scale procurement through co-operative societies until further experience has been gained.

40. **Corruption.**—Many persons who gave evidence before us spoke with great concern of the extent to which corruption prevails in connection with food administration (and other matters) in Bengal. Food administration, particularly in conditions created by war, unfortunately offers special opportunities for dishonesty and the atmosphere in Bengal has been charged, for some considerable time, with rumours of widespread corruption among both officials and non-officials. We have little doubt that the conditions prevailing in Bengal in 1943, encouraged the growth of speculation and dishonesty and it is possible that this explains why the evil seems to be more serious in that province than in other parts of India. The disease demands drastic treatment. A cure will only be effected by vigorous action in three directions. First, rigorous disciplinary action against officials of whatever standing guilty of corruption, secondly, strict enforcement of controls and the punishment of those who break the law, and

thirdly, the mobilization of public opinion against every form of corruption. The eradication of the evil is necessary for the full recovery of Bengal and for her future progress.

41. Public Co-operation.—In paragraph 25 of Chapter X in Part I, we have drawn attention to the existence in other provinces of *ad hoc* advisory bodies which have been of assistance to the Provincial Governments in reaching satisfactory decisions on matters of food administration and in obtaining support of public opinion in executing them. We have also referred to the fact that a proposal to set up such a body in Bengal was considered and that Government and the Opposition could not agree on its functions. In spite of the difficulties experienced in the past, we recommend that a Provincial Advisory Council should be representative of producers, traders, and consumers. We also recommend that District Advisory Committees should be established for the assistance of local food administrations in those districts in which such a body does not at present exist. In particular, we consider that it would be an advantage if a separate advisory body were to be established for Greater Calcutta. We are clear that the functions of these bodies should be of a purely consultative and advisory nature; they should not possess any executive power. The responsibility of Government for the maintenance of the supply and distribution of food is to-day no less important than that for the maintenance of law and order. Government must, therefore, accept full responsibility for all measures taken in regard to the food of the people and cannot share that responsibility with food councils and committees. We have recommended the formation of these bodies not with the object of absolving Government and their officers of responsibility for securing and distributing food supplies, but because we consider that they will enable public opinion to play a more effective and helpful part in shaping food policy, in devising measures and reviewing their execution, and also in assisting to remove questions affecting the food of the people from the sphere of party politics.

42. Summary.—Our main recommendations arising out of this chapter are:—

(1) The rationing of towns with a population of about 25,000 or more should be carried out as quickly as possible, and in the light of the experience gained, rationing of smaller towns considered.

(2) (a) Immediate steps should be taken to review licences issued since May 1943 under the Foodgrains Control Order, and to remove from the register of licensees persons who are not traders by profession.

(b) Cultivators holding land exceeding a prescribed acreage limit should be brought within the scope of the Foodgrains Control Order. A limit of 25 acres is suggested as suitable.

(3) Embargoes round the surplus districts should be effectively enforced: an adequate number of launches should be made available for the purpose.

(4) Requisitioning should be undertaken, as and when necessary, from traders and large producers, if the flow of supplies is not maintained by voluntary sales. Public opinion should be enlisted in support of requisitioning by suitable propaganda directed to explaining the policy of Government.

(5) An official procurement agency should be established in place of the present system of procurement through Chief Agents chosen from the trade. The pace of the change-over must necessarily be a matter for practical administration in Bengal. It is desirable, however, that there should be no undue delay in taking the necessary measures. The procurement of rice from rice mills should be entrusted to an official agency as an initial step.

(6) The systems of monopoly procurement in force in Orissa and the Central Provinces should be studied with a view to the introduction of a system of monopoly purchase, as an experimental measure, in a selected district or districts in Bengal.

(7) (a) The respective functions of District Magistrates and Deputy Directors of Civil Supplies in regard to the procurement and distribution of supplies and the enforcement of controls should be clearly defined.

(b) The District Magistrate should be responsible for all matters concerning the distribution, storage and movement of supplies and the enforcement of controls in the district.

(c) In those districts where a staff is specially employed for making purchases on behalf of Government or for controlling and supervising such purchases the District Magistrate and his staff should have no responsibility in regard to procurement and operations connected therewith. In other districts, the District Magistrate should be authorized to undertake procurement, should this prove necessary, in local surplus areas in order to provide supplies for other parts of the district.

(8) The existence of a large staff under the Jute Regulation, Rural Reconstruction, and Agricultural Departments affords an opportunity for organizing a subordinate administrative establishment which will be of value in enabling District and Sub-divisional Officers to maintain closer contact with the villages. The possibility of such a reorganization should be considered.

(9) It is no longer necessary to reduce prices at relatively short intervals. A more stable price policy is recommended.

(10) Co-operative societies should be developed as part of the procurement machine. It is recommended that a beginning should be made in the utilization of the marketing and agricultural credit societies in the Bakarganj district as part of the procurement machinery.

(11) Vigorous action against corruption is called for in three directions. First, disciplinary action against officials of whatever standing guilty of corruption, secondly, strict enforcement of controls and the punishment of those who break the law, and thirdly, mobilization of public opinion against every form of corruption.

(12) (a) A Provincial Food Advisory Council, composed of officials and non-officials, should be established. Producers, traders, and consumers should be adequately represented on this council.

(b) A separate advisory body for Greater Calcutta should be established as also District Advisory Committees in those districts where they do not at present exist.

CHAPTER II.—REHABILITATION

1. **Short and long term schemes.**—In previous chapters we have described the effect of the famine in Bengal and the relief measures taken during the emergency period. The first necessary steps were to provide food, to get the wanderers back to their homes, and to bring the health situation under control. By the beginning of 1944, adequate supplies of food were available, the majority of wandering destitutes had returned to their villages, and throughout the year the health situation slowly improved, until at its close the death rate was not far above the usual unsatisfactory level. But more is needed to repair the damage inflicted by the famine.

We do not propose to deal here with long term schemes for improving the economic condition of the population. These concern the whole of India and will be considered in a later report. In order to remove any threat of future famine, far-reaching developments in irrigation, animal husbandry, and industry are required. But such developments will take time. Meanwhile there is an immediate problem of rehabilitation in Bengal. We obtained abundant evidence, both during our tours in rural Bengal and in the examination of witnesses, of the need for effective measures to hasten the economic recovery of the classes affected by the famine. Such measures should conform with, and ultimately merge into, broader schemes of reconstruction and development.

2. **Restoration of lands.**—Late in 1943 the Bengal Alienation of Agricultural Land (Temporary Provisions) Ordinance was promulgated to enable petty cultivators who sold their land during the famine to get it back. According to the Ordinance, any small-holder who during 1943 transferred agricultural land by sale "for any consideration the amount and value of which does not exceed Rs. 250", can apply to the District Officer for restoration. He must satisfy the latter that "he could not have maintained himself or his family except by making such alienation of such land", and the transferee has the right of being heard. The small holder who regains his land must repay the sum he received from the sale in 10 annual instalments. If the small-holder so desires he may, however, instead of applying for a restoration order, apply for the conversion of the sale into a complete usufructuary mortgage for a period of 10 years. The Ordinance ceased to operate on March 11, 1944, under the provisions of the Government of India Act, 1935, regarding such Ordinances. A Bill was thereupon introduced in the Legislature and passed by the Council; it could not, however, be passed by the Assembly owing to the prorogation of the latter. On September 7, 1944, Government issued a fresh Ordinance embodying the provisions of the Bill. Over 7,000 cases were filed under the original Ordinance. Out of these only a small proportion were disposed of during the period of the first Ordinance and in September 1944 the number of pending cases was 6,498. The disposal of these, and of further cases which may be filed, will place a heavy burden on District Officers and their staff. Considerable importance must be attached to the settlement of cases with the greatest possible speed.

Restoration of land is a very necessary part of rehabilitation. No information is, however, available as to the number of dispossessed small holders who would be entitled to take advantage of the Ordinance. Probably only a small fraction have already applied, or will apply, for restoration. Many of those who sold their land will find it difficult to raise the money necessary to pay the annual instalments, and thus regain immediate possession. If they prefer to apply for the usufructuary mortgage, they will regain their land in 10 years.

unless they can pay off the mortgage debt earlier, but meanwhile will have to find other means of earning a living.

3. Expenditure on rehabilitation.—Rehabilitation schemes involving the expenditure of Rs. 4 crores have been formulated by the Government of Bengal. The schemes include the establishment and maintenance of workhouses, homes and orphanages for destitutes, free grants for house building, the rehabilitation of artisans, and various irrigation projects. The Revenue Department is in charge of the work of rehabilitation.

4. Workhouses and destitute homes.—It is proposed to centralize relief institutions, at present scattered, into 60 institutions consisting of a workhouse, a destitute home, and homes for orphans, deserted children and young women with and without children. Workhouses are planned as centres for encouraging cottage industries. They will provide work for (a) inmates of destitute homes, if any, attached to the workhouse, (b) such residents of neighbouring areas as wish to come and work for a living and (c) for local people who may take materials from the workhouses, produce goods in their homes, and return the latter to the workhouse against suitable payment. The kinds of work to be carried out include paddy-husking; cane-work and bamboo work; mat-making; spinning; weaving; net-making; rope-making; toy-making; paper-making; and nail-making. Other suitable handicrafts may be suggested by the Director of Industries.

The care of widows is one of the major problems of rehabilitation, and presumably the majority of adults who will be housed in, or otherwise assisted by, relief institutions will belong to this class.

5. Orphans.—The number of orphans requiring care does not appear to be very accurately known. Preliminary estimates made by District Officers gave a total of over 30,000, but later this figure was reduced to 10,000. The Government of Bengal have accepted the responsibility of looking after all famine orphans, the Education Department being entrusted with their care. Voluntary bodies will also assist. Any private organization which undertakes the charge of orphans must, however, submit proposals to the Director of Education for approval and guarantee to feed the children on an approved type of diet and to educate them in accordance with principles laid down by the Director. It is proposed that the orphans should receive elementary education with particular emphasis on hand work, and that at a later stage they should be given a training in some craft which will provide a means of livelihood and render them independent of state aid.

In August 1944, 11 Government orphanages, with accommodation for about 1,700 children, had been constructed and occupied, or were nearing completion. The bulk of the orphans were still housed in workhouses, temporary orphanages etc., scattered all over the province, their care being the responsibility of District Officers. Some orphanages were also being run by voluntary organisations.

6. House building.—Expenditure of Rs. 10 lakhs has been sanctioned for this purpose. Free grants will be given to homeless destitutes to enable them to re-build their huts. There has been particular need for this in the cyclone-damaged areas, but elsewhere also huts need repairing. In the chapter on relief we have told how famine victims sold doors, windows, roofs, etc., in the early stages of the famine.

7. The rehabilitation of artisans.—This is a task of great importance. It is proposed to assist workers such as fishermen, weavers, potters, carpenters, etc., by subsidies and loans, and by the supply of raw materials and trade implements at cost price. Fishermen suffered severely during the famine and their rapid rehabilitation is particularly necessary in order to increase supplies of a valuable protective food. Boats, nets and other fishing tackle must be

supplied to set fishermen who lost their belongings at work again. One difficulty which was mentioned to the Commission is the shortage of water-proofing material to prevent the deterioration of nets.

8. **Irrigation.**—Irrigation Schemes, at a cost of Rs. 100,00,000, are projected as follows:—

(a) Rs. 10,00,000 for expenditure on the re-excavation of derelict irrigation tanks, mostly in western Bengal.

(b) Rs. 26,00,000 for the execution of small irrigation projects which do not require much expert supervision by engineers. This will be spent by District Officers.

(c) Rs. 64,00,000 for expenditure on the more important irrigation schemes which are ready for execution, under the supervision of the Irrigation Department.

9. **Comment on rehabilitation.**—Plans have thus been laid for the care and rehabilitation of those who suffered during the famine and considerable sums of money have been allotted for the purpose. It is, however, one thing to draw up schemes and provide money, and another to produce satisfactory practical results. We are by no means satisfied with the progress hitherto made towards rehabilitation and wish to stress the need for more energetic and co-ordinated action.

There seems to be some lack of knowledge about the nature and extent of the problem to be tackled. Thus, it is known that the famine has had important effects on village life and economy, but no clear picture of the changes it has produced is available. Many small-holders sold their land, and many artisans their trade implements and have not the means to resume their normal means of livelihood. The numbers involved are, however, unknown. There has been loss of life which must considerably affect the availability of labour and opportunities for employment. Will the village labourer, on account of the shortage of labour, be better off than before the famine? On a number of such questions there is at present no accurate information, and the Commission heard many conflicting opinions. Clearly it is essential to make a careful study of the whole position, in order to guide rehabilitation policy. Unless this can be done expenditure on rehabilitation, however, generous, may be mis-directed and the results obtained disappointing.

A strong staff is needed for rehabilitation, both at the centre and the periphery. We shall refer shortly to the question of central direction. With regard to the actual task of rehabilitation in the rural areas, we fear that the ordinary district staff, overburdened as it is with other work, will not be able to give sufficient time and attention to this important matter. We accordingly are of opinion that special officers, trained in rehabilitation work, should be appointed.

While some good orphanages already exist, the present position with regard to the care of a large proportion of orphans is by no means satisfactory. Plans for their accommodation in Government institutions seem slow in maturing and meanwhile the conditions in which many are living leave much to be desired. We would, therefore, emphasize the need for establishing suitable homes for all destitute orphans without unnecessary delay. We are by no means satisfied that this task is being prosecuted with sufficient energy.

It is essential that when private organizations are entrusted with the care of orphans, Government should have powers of supervision and inspection to ensure that the necessary standards are reached and maintained. Provided such powers are conscientiously exercised, there is every advantage in making use of the services of suitable voluntary bodies, supported by subventions from Government. Children in a well-run voluntary institution would probably

receive more sympathetic attention than in a Government institution. On the other hand, voluntary bodies may undertake the care of orphans during the wave of enthusiasm for relief work engendered by the famine, and lose interest in their charges as the years pass. This possibility should be borne in mind in enlisting the help of such bodies.

While the Revenue Department is responsible for the organization of rehabilitation and the allotment of funds, rehabilitation is also the concern of other Departments, *e.g.*, Commerce and Industry, Development, Health, Agriculture, Fisheries, etc. These departments must, therefore, be closely associated with rehabilitation work and the necessary co-ordination between them and the Revenue Department, which is directly responsible for rehabilitation, must be assured. Secretariat delays, *e.g.*, delays in obtaining sanction for expenditure on suitable schemes, should be avoided. For the rehabilitation of the affected classes, instruments and materials (*e.g.*, seed, fishing boats, yarn, etc.), have to be provided immediately, and this demands joint action on the part of the various departments concerned.

Recommendation.—We are of the opinion that a Rehabilitation Commissioner, generally responsible for rehabilitation work in all its aspects, should be appointed without delay, with whatever additional staff is necessary both at the centre and in the districts. Such an officer would be in a position to initiate a survey of the existing situation, with the object of obtaining a clear idea of the economic and social effects of the famine, and of the measures necessary to repair the damage. His main task would, however, be to provide the drive necessary to overcome obstacles and difficulties, and to ensure that the work of rehabilitation was not hindered by lack of contact and co-ordination between the various Departments. Drive and co-ordination are needed to speed up rehabilitation.

CHAPTER III.—PROTECTIVE AND SUPPLEMENTARY FOODS

A. THE PRESENT POSITION

1. **General.**—The famine of 1943, was a famine in rice. Typical Bengali diets are composed largely of rice which may provide 80 to 90 per cent. of total calories. While, in the feeding of Bengal, adequate supplies of rice (and of wheat, to fulfil the Calcutta demand) are the primary necessity, the importance of other foods must not be overlooked. In the first place, such foods supply additional calories and hence a reduction or increase in the quantities available influences requirements of cereals. Secondly, the nutritive value of a diet based largely on rice is unsatisfactory. To be adequate for health, such a diet must be supplemented by other foods which help to make good the deficiencies of rice in respect of protein, vitamins and mineral salts. Such foods are often called "protective" foods, and include milk and milk products, meat, fish, eggs, pulses, vegetables and fruit. Vegetable oil (usually mustard oil in Bengal) and sweet potatoes are not usually placed in the protective group, but they have certain useful properties. Sweet potatoes provide calories and some varieties are rich in pro-vitamin A. Vegetable oil, while it contains no vitamins, is a source of fat and the fat content of Indian diets is in general undesirably low. Further, one part of vegetable oil is equivalent, in calorie value, to about $2\frac{1}{2}$ parts of cereal so that an assured supply of vegetable oil, sufficient to provide one ounce *per capita* daily, would have an appreciable effect on rice requirements.

2. In nearly all parts of India there is, in normal times, a scarcity of protective foods. The poorer classes live on an ill-balanced diet composed almost exclusively of cereals. Intake of protective foods rises with increasing income, but even middle class families may consume too little of them. In Bengal, at the present time, the scarcity and high price of protective foods have led to in general reduction in their intake, never sufficient from the standpoint of nutrition. This has affected mainly the middle classes, accustomed to some variety in diet. The Commission heard many complaints about the difficulties encountered by middle class families in obtaining milk, fish, vegetables, etc. The scarcity is felt less by the poor, who were used to go without such foods, or to consume them only in very small quantities. The fact, however, that their intake of protective foods may not have been greatly influenced by the scarcity does not indicate that their need for them is less than that of the middle classes. More protective foods are required, not only for those who can afford to purchase them in reasonable quantities in normal times, but for the whole population of Bengal.

In the case of rice and wheat fairly adequate data about supplies and distribution are available. The position with regard to various non-cereal foods is more obscure. We propose to discuss the situation in the light of whatever information we have been able to obtain.

3. **Pulses.**—Pulses are a valuable supplement to cereal diets since they supply protein and various vitamins. Bengal is normally deficit in pulses. The Government of Bengal were not able to provide the Commission with any figures relating to the normal production and import of gram (*Cicer arietinum*). Under the Revised Basic Plan nearly 62,000 tons were received in Bengal and the quantity allotted for the period May 1944 to April 1945 is 38,000 tons. It appears, however, that gram is not a popular pulse in Bengal, and a considerable proportion of the 62,000 tons remains unconsumed. A small part of the consignment of 38,000 tons was accepted, but the balance was cancelled at the request of the Government of Bengal since large stocks were already available in the province.

4. Imports of pulses other than gram during the years 1937-40 averaged 120,690 tons. Under the Revised Basic Plan, Bengal was allotted, in April 1944, a quota of 70,050 tons of pulses other than gram for the period November 1943 to April 1945. Previous to April 1944, 11,450 tons were obtained by special arrangement from various provinces and states, which were not debited to the quota of 70,050 tons. Roughly speaking, a quantity equal to about half the usual import is due to Bengal during the present financial year under the Basic Plan

The quota as originally formulated included the following:

	Tons
<i>Dhal arhar</i> (<i>Cajanus indicas</i>)	20,300
<i>Mung dhal</i> (Green gram, <i>Phaseolus radiatus</i>)	16,200
<i>Masur dhal</i> (Lentil, <i>Lens esculenta</i>)	12,350
<i>Khesari dhal</i> (<i>Lathyrus sativus</i>)	20,000
<i>Urd</i> (Black gram, <i>Phaseolus mungo</i>)	1,200

5. The most popular pulses in Bengal are *masur dhal* and *mung dhal*. Of the pulses included in the allotment, *khesari* and *urd* are in no demand, and the Government of Bengal surrendered the quotas of these pulses. They asked the Government of India to reduce the quota of *dhal arhar* by half and raise those of *masur dhal* and *mung dhal* to 40,000 and 20,000 tons respectively. While these negotiations were proceeding the actual import of pulses into Bengal was small. Up to November 1944, nothing was received except some quantities of *masur dhal* from Bihar.

6. The pulse position in Bengal cannot, therefore, to put it mildly, be regarded as satisfactory. The Commission, during its tours in various parts of India, observed lack of direction and co-ordination with regard to the supply of pulses. In some provinces there was a glut and in others a shortage, and demand and supply appeared to be uncorrelated. Existing difficulties seem to be partly due to lack of knowledge of local preferences for different kinds of pulses. These are important, since local methods of cooking are often based on the use of certain familiar pulses and people may be as reluctant to change their favourite pulse as their staple cereal. There is also some lack of knowledge about the supply and distribution of pulses in normal times.

It is the task of the Government of Bengal to encourage production within the province of the various pulses which the population requires. The despatch of pulses to Bengal under the Basic Plan is, however, the responsibility of the Government of India and the provinces concerned. The whole position needs to be clarified and the existing chaos reduced to order.

7. **Fish.**—More fish is consumed in Bengal than in most other provinces in India. The many rivers, large and small, which flow through the province abound in fish and the mouths of the great estuaries are exceptionally rich fishing grounds. There are also numerous tanks which are a good source of fresh-water fish. Both fresh-water and salt-water fish are important; about 40 per cent of the fish reaching the Calcutta market in 1941 was sea fish and the remainder fresh-water fish.

During 1943 and 1944 there has been a serious scarcity of fish and prices have been high. In April 1944 the price of common varieties sold in the Calcutta market was 2 to 3 times in excess of the pre-war level. The present position is due to a variety of causes. First, the removal of boats under the Denial Policy, and the restriction on the movements of boats, affected the fishing industry in the greater part of the estuarine area. Secondly, fishermen were among the classes seriously affected by the famine. Considerable mortality occurred amongst them and many, reduced to destitution, have not yet been able to resume their trade. A good many have found other employment. Thirdly, there are difficulties in obtaining motor boats, and petrol and kerosene

for the few motor boats that are available. Ordinary boats are also in short supply. Fourthly, there is a shortage of yarn and water-proofing material for nets. Fifthly, transport of fish from the fishing grounds is affected by the prevailing conditions on the railways, the lack of motor boats and shortage of ice. Lastly, there is a considerable military demand for fish and ice which reacts on the civil markets.

8. The Denial Policy.—An account has already been given of the removal of boats under the Denial Policy. Both large and small boats are used for fishing in the estuarine area. In 1942 most of the larger fishing boats were taken away and the movement of all boats was restricted. In normal times fishing boats may go 10 or 15 miles out to sea. By degrees the restrictions have been relaxed. Except in certain localities, boats are now allowed to go up to 3 miles from the shore and a number of fishing boats requisitioned under the Denial Policy are now in use again. These are being supplied to fishermen either free or on a hire-purchase system. The provision of loans and subsidies to fishermen to enable them to buy boats and fishing apparatus is an important item in the rehabilitation programme. No information is available to the Commission about the construction of new fishing boats.

9. Motor boats.—Motor boats are not used to any extent in actual fishing operations in Bengal, which remain primitive and undeveloped. The chief function of motor boats is the transport of fish and ice to and from centres at which fish is collected. While the number of motor boats employed in this way was not large, those engaged in the trade played a useful part in supplying the Calcutta market. During 1942 motor boats and launches were requisitioned for military purposes and have not been returned. Attempts are being made to secure their return and to put a few boats, which are lying idle, into commission. For running motor boats petrol and kerosene are necessary, and this, it appears, involves further difficulties under present conditions.

It is the Calcutta market which is mainly affected by the lack of motor boats. For the provision of fish in villages and towns remote from the main fishing centres and markets, the rehabilitation of fishermen operating in small craft is the chief necessity.

10. Nets.—The yarn needed for the manufacture of nets is in short supply and what is available is so expensive as to be beyond the means of the average fisherman. Many nets previously in use have perished during the last two years. Water-proofing is necessary to preserve nets and for this purpose coal-tar is the most satisfactory material. In normal times it was transported from Calcutta to the important fishing centres, but now it is unobtainable. Various local tanning materials, such as gab fruit and saran bark, are used for water-proofing; these are reasonably effective if not as good as coal-tar. The Controller of Supplies, Government of India, was approached in June 1944, for supplies of coal-tar for the Bengal fisheries. He replied that coal-tar was unprocurable and suggested the use of a preparation of bark called "cutch". Supplies of the latter were available in Bareilly in the United Provinces. Cutch cannot be used for nets once water-proofed with coal-tar, but appears to be reasonably satisfactory for application to new nets. After some delay two wagon-loads of cutch were obtained from Bareilly in October, 1944.

11. Ice.—Ice is essential for the transport of fish to the Calcutta market. Nearly all the ice factories are in Calcutta. Previous to the war, ice factories were established at various fish-collecting centres, but most of those within easy reach of Calcutta had to close down owing to underselling on the part of the Calcutta factories. The present position is that there is little production of ice outside Calcutta, while the factories in the Capital cannot meet the military and civil demand. The Government of Bengal have allotted a quota of 120 tons daily for military use, a quantity which is actually considerably below estimated requirements. The demand for ice in military hospitals in the hot climate

of Bengal is heavy. The Director of Fisheries, Bengal, stated in evidence that within 40 miles of Calcutta fish was being thrown away for lack of ice. Salt for fish preservation is also in short supply. Late in 1944 an Ice Control Board was set up, with the functions of controlling the production and distribution of ice and of allocating available supplies, and an Ice Controller was appointed.

12. **Railway transport of fish**, which is affected by the shortage of ice, is by no means satisfactory. Insulated wagons are not available. A number of trains carrying fish have been cancelled without alternative arrangements being made for its transport. Trains often run late, to the detriment of so perishable an article of food as fish. Arrangements for loading and unloading fish at railway sidings are defective. Railways in Bengal are at present under heavy strain owing to the additional demands imposed by the war. We would, however, ask the Railway Board to do whatever is possible to improve and accelerate the transport of fish.

13. **Military demand.**—The amount of fish purchased by the Army in Calcutta is only a small fraction of the total quantity estimated to reach the Calcutta market in normal times. It is probable, however, that military demand has been a serious drain on supplies reduced by the conditions in the fishing industry which we have described. In 1944 there was some controversy into which we need not enter, between military and civil authorities about army purchases of fish. Steps are now being taken by the military to develop their own sources of supply and thereby relieve the Calcutta market.

14. **Tank fisheries.**—A considerable development of tank fisheries is contemplated by the Government of Bengal. Such fisheries in general, supply local demand, so that problems of storage and distribution do not arise. The project involves the cleaning of tanks, their stocking with fish fry, and periodic draining to ensure aeration of the floor of the tank to prevent the formation of poisonous gases. As a preliminary experiment, fry is being distributed free in certain areas in the Sunderbans to villagers who have cleaned their tanks and embanked their paddy fields to make them suitable for fish culture. It is hoped that the encouragement of tank fisheries will considerably increase the fish supplies of the province.

15. **More fish.**—The potential supply of fish in Bengal is enormous. While an increase in the production of milk and meat presents great difficulties, fish is there waiting, so to speak, to be caught and eaten. Meanwhile, for reasons which we have briefly outlined, fish is scarce and dear. Of all measures designed to improve nutrition in Bengal the resolution of the present difficulties in the fish trade, and the development of fisheries generally, are perhaps the most promising. The Commission is glad to note that the Government of Bengal have taken the preliminary step of strengthening the Fisheries Department. In 1942 the Department consisted of a Director of Fisheries and two District Fishery Officers. It is now proposed to employ, in addition to the Director, 4 Deputy Directors, 8 Superintendents, 32 District Fishery Officers and 90 Fishery Demonstrators.

The immediate difficulties regarding nets, motor boats, ice and transport do not appear to be beyond solution. The case for the supply of the necessary materials from within India or abroad is a strong one. We feel that immediate steps should be taken by the Government of Bengal and the Government of India to obtain motor boats, the necessary machinery and materials for the construction of additional ice factories, water-proofing material for nets, and whatever else is needed for the reorganization of the fishing industry in Bengal. Military and civilian demand could be more amicably adjusted and plans laid to turn channels of supply developed by the Military to civilian use when the war is over. Closer co-ordination between military and civil authorities with regard to fish supplies is obviously desirable.

16. **Milk.**—In the "Report on the Marketing of Milk in India", published in 1941 by the Central Agricultural Marketing Department, the daily *per capita* consumption of milk and milk products in Bengal is estimated as 2.8 oz. This is a low figure, which may be compared with 15.2 oz. in the Punjab, 40.3 oz. in Denmark, and 55.6 oz. in New Zealand. The same report gives the daily *per capita* milk consumption in Calcutta as 3.8 oz. In normal times the milk supply of Bengal was in fact grossly inadequate, and a large proportion of the urban and rural populations consumed no milk at all.

During the last two years supplies of milk and milk products have been reduced for various reasons and prices have risen. In the famine year there was high mortality among cattle owing to disease and inadequate feeding and care. Bengal normally imports cattle from neighbouring provinces, but exports are now prohibited by these provinces. Bihar has recently agreed to the export of a very small number. The slaughter of cattle for meat may also have reduced milk supplies to some extent. Bengal's consumption of butter and ghee was normally in excess of production, the balance (some 638 and 12,858 tons in the case of butter and ghee respectively) being obtained from provinces which now restrict their exports. In 1944 the Governments of the United Provinces, Bihar and Madras were asked to allot export quotas from these provinces to Bengal. As a result 440 tons of butter were obtained from Bihar and 1,837 tons of ghee from the United Provinces.

The Government of Bengal have themselves prohibited the export of milk and milk products from the province except under permit. To conserve the cattle population a Meat Control Order enjoining two meatless days per week throughout the province has been issued.

17. The increase in the population of Calcutta has accentuated the demand on the city's limited milk supply. Military purchases of milk are of importance in Calcutta, and in other places in Bengal. The Army consumes large quantities of tinned milk, imported from abroad, but fresh milk is also consumed, particularly in hospitals; actually some 50 per cent of the total military consumption of milk is in the form of fresh milk. In one important town the military offtake of fresh milk amounted in 1944 to 102 tons monthly, which must represent a considerable proportion of the total milk supplies available. Some 75 per cent of the total military requirement was, however, being provided in the form of tinned milk.

18. The total production of milk in Bengal can be substantially increased only by far-reaching developments in agriculture and animal husbandry. Improvement in milk marketing is also essential to the growth of the dairy industry. Meanwhile the existing problem of scarcity and high price has to be faced. Among the immediate measures which would help to relieve the situation are the following: An increase in the import of milch cattle and dairy products; prohibition of the use of milk for non-essential purposes; a rationing system whereby infants, young children, and expectant and nursing mothers are given prior claims on available supplies; a reduction in military demand.

19. With regard to imports, we may urge that other provinces should consider sympathetically the requirements of Bengal, where the need for nourishing food is particularly pressing, in respect of cattle and milk products. We understand that the Government of Bengal contemplate prohibiting the manufacture of luxury articles, such as ice-cream, for which milk is required. This has already been done in Bombay. Such a measure would not, of course, increase total supplies, but it would presumably have some effect towards making more fluid milk available and reducing its price.

20. The Commission was very favourably impressed by the Bombay Municipal Corporation's scheme for the distribution of milk to infants, initiated in 1944. Under this scheme, which is financed by the Government of Bombay, 8 oz. of milk daily can be bought at half price by those entitled to benefit.

The actual cost of this quantity is $1\frac{1}{2}$ annas. Milk cards are issued at Rationing Offices in the different wards and the milk is issued to card-holders in the early morning at numerous distributing centres, in return for cash payment. The supplies for the various centres, bought from contractors, are inspected by the Health Department of the Municipality to ensure their freedom from adulteration. At the beginning of January 1945 the scheme was extended to include children up to 6 years of age and expectant and nursing mothers. At that time 36,705 milk cards were registered under the scheme and about 18,500 lbs. of milk were being distributed daily at 192 centres.

21. We hope that other municipalities in India will follow the lead of Bombay. The first step would be to discover whether sufficient quantities of milk are obtainable and, if they are not, to reorganize the milk supplies of the municipality concerned in order to provide them. There is nothing to prevent card-holders re-selling the milk at market prices, but it is assumed in Bombay that family affection will ensure that the milk reaches the child for whom it is intended in the great majority of cases, and little evidence of abuse has been obtained. We realize that conditions in Calcutta and Bombay are not the same. Milk supplies in Calcutta are probably smaller, in relation to the size of the population, than in Bombay, and for various other reasons the organization of a scheme of this nature might tax the resources of the Calcutta Corporation. Nevertheless we feel that the authorities in Bengal should give the matter their earnest attention.

22. Military demand can be reduced by the greater use of tinned milk and the development of military dairy farms. Nutritionally speaking, imported tinned milk is generally superior to local fresh milk and there is no objection to its use in military hospitals. Soldiers, however, get tired of tinned milk and relish fresh milk for a change. The quantity of processed milk which can be made available for military use in Bengal depends on the supplies of the United Nations, the distribution of which is a matter of high policy with which we have no concern. We can, however, suggest that there is a strong case for relieving local markets in Bengal as far as possible of military demands for milk.

23. **Meat.**—As compared with fish, meat is not an important food in normal times in Bengal. Its present dearness and scarcity seriously affect only the small section of the population accustomed to consume it regularly. The reasons for its scarcity are very similar to those which have led to a shortage of milk. Though the bulk of army consumption of meat has been in the form of tinned meat and meat imported from other provinces, the military demand on local supplies has been very considerable. It is now, however, being reduced. Schemes for breeding pigs and poultry for army purposes have been developed and it is anticipated that by the middle of 1945 frozen meat will be available in substantial quantities.

We are informed that Regional Control Boards consisting of civil and military representatives have been, or will be, set up in each division to control available supplies of fresh meat. The Bengal Government have urged the military authorities to reduce Army consumption of local meat to the greatest extent possible.

24. **Eggs.**—Eggs, always an expensive article of diet, were in 1944 almost beyond the means of all but the wealthy. The estimated annual production in Bengal in 1938 was some 500 million eggs, which works out at less than one egg per month per head of population. Military demand, including the large American demand, amounts to a considerable fraction of total production, though the Army cannot obtain all the eggs it requires. Steps are being taken by the military to increase supplies of eggs by the creation of duck farms. It has been found that ducks are less liable to disease in Bengal than poultry, and easier to handle generally. We commend to the Government of Bengal the

idea of encouraging duck-rearing in the province, on the basis of the experience gained in the military venture.

The export of poultry and eggs from Bengal is now controlled, no one being allowed to take more than one bird and 6 eggs out of the province, except under permit. We understand that the Government of Bengal are now taking some steps to develop poultry farms and encourage the rearing of poultry in villages.

25. Vegetables.—Both Indian vegetables and vegetables of the European type are produced and consumed in Bengal. The latter grow well anywhere in the province during the cold weather and can be grown in the hills throughout the year. In 1944 there was a shortage of all kinds of vegetables for the civilian market, and prices in Calcutta were 2 to 3 times in excess of the pre-war level. A large farm for the production of vegetables for the Army has been created in Darjeeling, a small proportion of its produce being available for the civilian market. The Bengal Government have also developed vegetable farms in Darjeeling and a scheme has been sanctioned for the creation of farms in other centres. It is proposed to put 5,000 acres near Calcutta, and 1,000 acres somewhere in East Bengal, probably near Dacca, under cold weather vegetables. No serious attempt has been made by Government to control the price of vegetables.

26. The supply of home-grown potatoes in Bengal is normally insufficient for the needs of the province. The average annual imports from 1937 to 1942, which included imports from Burma, were about 62,000 tons. Since 1942 the import from Burma, which amounted to 40 per cent of the total imports, has ceased, and provinces which previously supplied potatoes to Bengal have restricted or prohibited exports. A small export to Bengal was allowed in 1944 by the Government of Madras, and in September 1944, the Government of Bihar temporarily removed the ban on exports. The shortage of seed potatoes is an obstacle to an immediate increase in the production of potatoes within the province. Sweet potatoes are widely grown in Bengal, but no data about the quantities produced are available. Their price in the Calcutta market in 1944 was one to three annas per pound. Ordinary potatoes were selling at about 8 times this price.

27. The present scarcity of vegetables of all kinds obviously calls for a vigorous "grow more vegetables" campaign. We feel that this is an important matter which should receive the special attention of Government. As regards control of price, we would draw attention to the fact that in England the price of vegetables has been fixed by the Government, although the Government does not itself purchase vegetables for distribution, and that prices have been successfully kept in check. Vegetables are rapidly perishable. If reasonable prices are fixed and made known to the public, and the public learns to insist on paying no more than the fixed rate, opportunities for refusing sale and subsequent disposal in the black market are limited. In Bombay vegetables are sold at fixed rates in ration shops. The sale of even a limited quantity of vegetables at controlled prices would help to keep the general price level down. We have little information about the fruit position; but it appears that fruits, like vegetables, are scarce and dear. The quantities reaching the Calcutta market are considerably less than before the war. The scarcity is no doubt due to approximately similar causes to those which have reduced supplies of other supplementary foods.

28. Mustard oil.—About half of Bengal's supply of mustard seeds for the manufacture of oil formerly came from other provinces. Here again, imports have almost entirely ceased owing to embargoes on export imposed by other provinces. The actual quantity imported annually from 1937 to 1942 averaged

about 170,000 tons. This would yield some 60,000 tons of oil, equivalent in calorie value to perhaps 140,000 tons of rice.

B.—COMMENT ON PROTECTIVE AND SUPPLEMENTARY FOODS.

29. We have emphasized the value of non-cereal foods from the nutritional standpoint. Another point to which attention must be drawn is that the aggregate contribution made by such foods to the quantitative food needs of the province is by no means negligible. Pulses, fish, potatoes and vegetable oil are the most important in this respect. We have dealt with the matter in some detail because we feel that it must be given a prominent position in the programme of reconstruction in Bengal. Clearly, there is not one single problem, but many both large and small which require solution. Few of these appear, however, to be insoluble. We would lay immediate stress on the need for the following: an improvement in distribution of pulses on an all-India basis, with particular reference to the requirements of Bengal; more motor boats for Bengal and more ice and its better distribution; more potatoes for seed and consumption; an energetic effort to grow more vegetables; closer collaboration with the military about the question of military purchases. With regard to the last, the establishment of Regional Control Boards, including military and civil representatives, to co-ordinate military purchases of various foods, is strongly to be recommended. We hope that the efforts of the army to develop its own sources of supply will be intensified and that when the war is over arrangements will be made to utilize and develop certain of these sources to meet civilian needs. It may be added that many of the problems considered in this Chapter concern not only the Bengal Government, but also Governments of provinces which normally fulfilled Bengal's demands for non-cereal foods, and the Government of India. We are aware that shortage and dearthness of supplementary foods are not peculiar to Bengal at the present time. A similar situation exists in many other parts of the country. It is, however, particularly urgent and serious in Bengal.

C. THE SUBSTITUTION OF RICE BY WHEAT.

30. In view of the present all-India shortage of rice, the use of wheat and other cereals in place of rice is a question of importance. During the famine large supplies of wheat and millets were sent to Bengal and helped to relieve food shortage. They were supplied to rice eaters through the free kitchens but efforts to persuade people to eat them in their homes in place of rice met with little success. Reference has already been made to the unpopularity of *bajra* and other millets. Wheat is somewhat more acceptable, but in general is consumed with reluctance by habitual rice-eaters. When in Bengal, we were informed of the difficulties of increasing the offtake of wheat and we visited numerous grain stores in which quantities of wheat, mainly in the form of *atta*, were deteriorating for lack of demand. In Travancore we found a similar situation. It may be added that from the standpoint of nutrition, the partial substitution of rice by wheat is a good thing, since wheat is richer in protein and certain vitamins than rice.

31. The reasons why little progress has been made in increasing the consumption of wheat by rice-eaters may be briefly analysed. Wheat as a staple food is eaten in two principal forms: as bread, or as unleavened cakes, known as *chappaties*. In this country bread is eaten only by well-to-do people and bakeries are confined to towns and cities. The domestic baking of bread is unknown, except possibly in limited areas in the North-West. To make *chappaties* an iron grid is needed, and it takes skill and experience to produce a light and palatable *chappati*. The poor rice-eater does not possess the necessary iron utensil and if he did would not know how to use it. Further, *chappaties* as a food differ in bulk and consistency from a bowl of rice. The rice-eater is accustomed to bulky meals of soft consistency which give him a

feeling of repletion, and does not relish more concentrated food which needs chewing.

32. In certain parts of the country wheat is eaten in small amounts by rice-eaters in the form of special preparations made from *atta* or semolina. Generally speaking, this habit is confined to the middle classes. Such preparations add variety to a diet largely composed of rice, but are not taken as a staple article of diet to replace rice. In the same way, people in Europe or America may take some rice in the form of curries or puddings, while the bulk of their diet is made up of other foods.

33. In wheat-eating areas whole wheat is stored as such and ground into *atta* in mills or stone *chakkies* before being made into *chappaties*. It is not stored in the form of *atta*. In Bengal there are few wheat mills outside Calcutta and the people do not possess stone *chakkies*. Hence wheat sent to Bengal has to be ground before distribution, mainly in Calcutta, and the resulting ground flour or *atta* readily goes bad on storage. There would be no point in distributing unground whole wheat, since it is difficult to use wheat in this form, and as has been said the people have no facilities for grinding it. In Bombay, on the other hand, *chakkies* are generally available and wheat can be distributed unground.

34. We noted that in Travancore tapioca is preferred to wheat as an alternative to rice largely because people are used to it and it can be cooked in the same way as rice. Tapioca is an inferior starchy food, containing less than one per cent. of protein as compared with 11 to 12 per cent in wheat. We may also refer to the experience of Ceylon which, before the outbreak of the war with Japan, imported over two-thirds of her rice supplies and has since been forced to consume Australian wheat as an alternative. The following is an extract from a recent report on the food situation in Ceylon:

"The change-over of the diet of the people from rice to substitutes was not done in one stroke nor without disappointments and tears. At first, whole wheat was issued and used by the population in the same way as rice. Government too put out propaganda, during the early days of the change-over, trying to teach people how wheat could be boiled like rice after being broken up or roasting, or how local preparations could be made from ground wheat exactly in the same manner as with rice flour. Failure of this plan to produce in wheat an exact substitute for rice was soon discovered and, under stress of necessity, the preparation and serving of wheat flour in the form of bread (baked in European style) was popularised, in addition to the use of flour (*maida*) for whatever local forms of preparations for which it was suitable. Vigorous propaganda was carried out through schools, local Government Bodies and health officers, in all the languages of the country by lectures, demonstrations and posters, explaining the value of bread and the methods of preparation of the more successful varieties of dishes according to styles with which the people were familiar. It was pointed out that while there was bread available to eat there was no necessity to starve; and bread was available outside the ration. Government vigorously encouraged the establishment of bakeries throughout the country, including the rural areas and estates. Large numbers of bakeries have in fact been so established and the consumption of bread (as baked in European style) has increased considerably. Bread is eaten with curry or chutney."

35. The problem of increasing the consumption of wheat and other cereals by rice eaters is obviously a most difficult one and we do not find it easy to make constructive suggestions. As long as rice is available, rice eaters in general will consume it in preference to other grains and in such circumstances "eat more wheat" campaigns are not likely to be very effective. Propaganda based on nutritional arguments might, however, carry some weight with certain sections of the public. Even when shortage of rice makes the consumption of alternative foods necessary, mere visual and verbal propaganda by itself cannot

achieve much in changing the habits and preferences of the mass of the population. Such propaganda must be reinforced by practical demonstration. Suitable recipes must be devised and popularized by sale in canteens, government restaurants, etc. Before undertaking an educational campaign, it is essential to be fully informed about the cooking habits and tastes of the people and their facilities for adopting unfamiliar methods of cooking (utensils, etc.). More use could be made of women for studying domestic food questions, and the improvement of methods of preparing and cooking food, and also for teaching the public about desirable changes in diet—for work, in fact, on what has been called the "Kitchen Front" in England. Domestic science institutions have played a useful part on the "Kitchen Front" in England and other countries and we feel that they could also do so in India.

36. If school-feeding schemes are developed, alternative cereals could be used for school meals, as in Cochin, and their offtake thereby increased. Further, if children learn to take such foods, they may carry the preference into later life. Children are more flexible in their dietary habits than adults.

37. Whatever methods are adopted in the attempt to encourage the use of wheat in place of rice, progress is likely to be slow. We feel, however, that in view of the position of Bengal as regards rice supplies, steady and persistent efforts should be made in that province to increase the consumption of wheat, particularly in urban areas. It is obviously easier to influence people in cities and towns than the rural population. A greater offtake of wheat under existing rationing schemes is most desirable in connection with Bengal and all-India food policy. The problem of how to wean rice-eaters from their determined preference for a food in short supply and reluctance to turn to alternative grains is, as we have already pointed out, not peculiar to Bengal, but is of all-India importance.

J. A. WOODHEAD, *Chairman*

S. V. RAMAMURTY

MANILAL B. NANAVATI

M. AFZAL HUSAIN*

W. R. AYKROYD

R. A. GOPALASWAMI, *Secretary*
New Delhi, the 10th April 1945

* Signed subject to separate minute.

MINUTE BY MR. M. AFZAL HUSAIN

The following minute sets out briefly the conclusions, which I have reached in respect of the questions of the existence of a carry-over, and the effects on the economy of Bengal of the inter-provincial trade barriers. It has been shown, in Section A of part I of the minute, that during recent years, and particularly in the beginning of 1943, there was no carry-over. In Section B the course of events leading to the famine of 1943 has been traced from 1941, and it has been shown that the shortage (considered in Section C) was really large and could not be made up without imports from other provinces. Section D shows that the shortage was aggravated by Calcutta remaining on the Bengal market. It has been shown (Section E) that imports became impossible, because of the barriers which were set up in the way of inter-provincial trade. Thus Bengal had to face a very serious problem during the war and the Government had a very difficult task (Sections F and G).

In Part II of the minute a brief account has been given of the general unpreparedness of India to meet a food emergency.

I. THE CAUSES OF THE BENGAL FAMINE

A—THE FALLACY OF CARRY-OVER

In Chapter X of the Report, under Section B, the causes of the Bengal Famine have been discussed, and one of the causes mentioned is:-

“a shortage in the stock of old rice carried forward from 1942 to 1943”
(p. 77).

In Appendix II, the problem of the, “production and consumption of rice in Bengal”, has been dealt with very fully, and is summarised in Chapter III, C. It is stated that “the carry-over at the beginning of 1943 was probably sufficient for about 6 weeks’ requirements” (p. 15). In other words it was 11.5 per cent of the annual requirement.

The idea that there has been, even during recent years, a substantial ‘carry-over’ of rice in Bengal, has been responsible for the miscalculations that led to the Bengal disaster, and, on ‘looking back’, this impression still causes a great deal of confusion. This conception of “huge stocks somewhere” may prove dangerous in the future as well, as it is likely to give a sense of false security. It is necessary, therefore, that the true nature and significance of ‘carry-over’ should be fully understood. The theory of ‘carry-over’ is a survival from the era of plenty when Bengal produced far in excess of the requirements of its population and exported rice. The unconsumed stocks constituted the ‘carry-over’. Those days are long past. Absolutely no data are available regarding the stock position of rice (or any other foodgrain) from month to month, or year to year, in Bengal, or any other part of India. Such data, in fact, are not available for any rice eating country of Asia, with the single exception of Japan. According to Wickizer and Bennett, “Japan is about the only Oriental country which has followed a regular practice of storing considerable quantities of rice”. And even in Japan “normally the carry-over at the close of a season is equivalent to one month’s or six weeks’ consumption, but at the end of the bumper crop year 1933-4 it was approximately twice as great”.¹

¹ The Rice Economy of Monsoon Asia, 1941.

Wickizer and Bennett sum up the position thus "Rice stocks are commonly held in many hands: by growers for the need of the family, and by numerous intermediaries and distributors scattered throughout the market. Such holdings are necessarily small, and are intended generally to meet requirements only until the next harvest. Except where governments have intervened in order to influence a rice price situation, rice stocks do not ordinarily become concentrated, nor are they carried over for more than one season. Hence annual production of rice tends to correspond closely with annual utilization". The last sentence of this quotation is significant. In arid zones, where rainfall is scarce and uncertain, where a good crop is obtained once in five years or so, and where fluctuations in production are wide, climatic conditions, types of food-grains—jowar and millets—psychology of the people, all tend to bring about the storage of an occasional surplus crop. These factors do not operate in a region of abundant rainfall; at least, not to any appreciable extent.

2. There are other causes also of the illusion about the existence of a carry-over. Some 'high class' varieties of rice improve in storage and are kept for more than a season. The rich few who have more than they need may store rice. Traders have a small stock left at the end of the year. There may be isolated pockets of carry-over in some heavily surplus districts. Such stocks, however, are too insignificant to alter the general food supply situation of a province of over 60 million people, with an overall deficit production.

3. The real cause of the misunderstanding, however, is that "most rices are not really suitable for consumption until at least two or possibly three months have elapsed from the date of harvesting....." The new rice has "an insipid watery taste", cooks into "a meshy glutinous consistency", a "pasty mass" which "cannot be digested as satisfactorily as grains which retain their individuality". Therefore, "wherever it is possible to exercise preference, no consumer will eat rice which has only just been harvested"¹ Thus the year of production and that of consumption normally do not coincide. The point may be elucidated by a statement of what actually happens. The *aman* crop is harvested from November to December, and may be said to be assembled by the beginning of January; the *boro* crop is harvested by March-April, and the *aus* crop in August-September. The year of production may be regarded as from January to December. Ordinarily the year of consumption will be, approximately, let us say, from March-April to March-April next year.

Jan/Feb/Mar/Apr/May/Jun/Jul/Aug/Sep/Oct/Nov/Dec/Jan/Feb/Mar

(..... Production Year)

(..... Consumption Year)

Only that quantity which is left over as *surplus* after full twelve months' consumption is strictly speaking a 'carry-over'. But the quantity in stock during January to March-April is not 'carry-over'; it represents the actual requirement for the last two or three months of the year of consumption. The year of consumption is not rigidly fixed. It slides over the year of production backwards and forwards according to the quantity of stocks available for consumption. When the quantity during the previous year is short of full requirements, the consumption of the new *aman* starts earlier, and when the quantity is in excess of requirements it starts later. This overlapping acts as a 'shock absorber', and is of great importance. The crop assembled in January is certainly available for early consumption, but if consumed prematurely will leave a deficit at the end of the year of consumption, unless the crop produced is more than the requirement of 12 months and will, therefore, meet the additional requirements up to the end of the normal year of consumption.

¹Report on the Marketing of rice in India and Burma, 1941.

4. Ever since the annual production, or supply, has begun to be only equal to, or less than the actual requirements, the deficiencies due to very short crops have been met, not to an appreciable degree from the accumulated reserves of previous years, but mainly by an earlier consumption of the aman harvest. It was Bengal's good fortune that years of serious crop shortages have been well spaced and have invariably been followed by years of very heavy crops. For instance:

- 1 { 1928 with 7.1 million ton short-crop, was followed by
1929 with 9.2 million ton crop; and eight years later,
- 2 { 1936 with 7.8 million ton short-crop, was followed by
1937 with 10.7 million ton crop; and again,
- 3 { 1941 with 7.4 million ton short-crop, was followed by
1942 with 10.3 million ton crop.

Therefore, during recent years, it is not so much on his accumulated reserves, carried forward from year to year, that the subsistence farmer of Bengal has existed, but on the 'advances' that he has been able to draw. The deficit of a poor crop he made up by starting consumption of the next crop before its normal period of 'maturity'. He lived by borrowing and this applied to money and food equally. When his 'debts' increased beyond a certain limit he collapsed. It may be stated that the triennium 1941-3 was the first in the recent history of Bengal when a bumper crop year (1942) was preceded and succeeded by years of very poor crops (1941, 1943).

5. In Appendix II, a study is made of the actual conditions in Bengal relating to the yearly requirements of rice. The correctness of the statistics of acreage, yield, consumption, and even population has been rightly questioned. It has been recognised that the acreage estimate is too low and so is that of the yield, and an increase of 20 per cent over the Director of Agriculture's estimate has been made (Statement III). With statistics so hopelessly defective, either no attempt at all should be made to evaluate the position, or the conclusions drawn from the estimates available should be subjected to various tests and their reliability determined. In what follows, the second alternative has been employed in determining whether a 'carry-over', i.e., a surplus really existed in Bengal.

6. "India, without Burma, is not self-sufficient in the production of food-grains. Before the war a comparatively small and diminishing exportable surplus of wheat was offset by a large and increasing import of rice". In pre-war years India's dependence upon rice imports was progressively increasing.¹

	1937-8	1938-9	1939-40	1940-1
Net Imports of Rice and Paddy (in tons).	+1,165,072	+1,253,098	+2,138,600	+1,097,198

In view of these large and increasing imports, any substantial 'carry-over' of rice could not be a reality in India.

Similarly, since 1934 Bengal has been, except for a single year (1937), an importing province, in other words not completely self-sufficient in respect of the production of rice. It was, therefore, not producing more than it actually needed. This must be admitted. It is true that the volume of net imports did not correspond with the variations in production, but the significant fact is that year after year imports were made and their quantity showed a tendency towards increase. In such circumstances any appreciable accumulated carry-over was not likely to emerge, for imports would not be made if the demand

¹ Report of the Foodgrains Policy Committee, 1944.

could be satisfied from the carry-over. According to the estimates made this carry over, from 1932 to 1940, varied between 13 and 33 per cent. of the total crop harvested (Statement I, Appendix II). (See paragraph 12 *infra*).

7. From 1934 to 1941 there was no increase in rice production in Bengal (Appendix II, Statements I and III). Yield per acre had shown a downward tendency [Appendix II, paragraph 9 (ii)]. The population, on the other hand, had increased from 53 million in 1934 to 60.3 million by 1941. Therefore, during this period the food position was steadily deteriorating. From being an exporter, Bengal had become an importer. From solvency in regard to food it had reached the stage of insolvency. If there ever was a 'carry-over' in the sense of surplus over consumption, it must have vanished years ago.

8. Another test of whether supplies were adequate would be an assessment on the basis of actual food and seed requirements and production. On the basis of *per capita* consumption, as worked out by Prof. Mahalanobis, there has been since 1936 (except for the year 1937) a definite shortage in the quantity of rice available. It is difficult to reconcile this unquestionable shortage with any surplus or 'carry-over'. A more detailed study of figures will be fruitful. Reference may be made to the statement below, which is based on the data of supplies as given in statement III of Appendix II. It should be made clear that any notion of the quantity consumed being absolutely inelastic is inadmissible. In fact during years of plenty a person eats a little more, and during years of scarcity he eats less; and the margin is fairly wide, and may range from a mere subsistence ration to the full satisfaction of hunger. Further, during scarcity there is increased use of other available food such as tubers. Ignoring these considerations, and even admitting, merely for the sake of argument, a progressive accumulation of surpluses—which is very unlikely—there was a deficit in 1941 of 1.55 million tons. The previous 'carry-over', if any, must have disappeared by the end of 1941, a year of poor crop. The adjusted supply figures (involving a 20 per cent increase over the estimates of the Director of Agriculture Bengal) and the data of actual consumption requirements obtained by Prof. Mahalanobis, fit in admirably with the supply and consumption position in Bengal during the last 15 years and give a picture very close to the reality. These data also fit in with the change-over of the province from the position of a net exporter to that of a net importer. These figures, therefore, provide a very good test of the food resources of the province in respect of rice.

Year	Population (Million)	Adjusted supply (‘000 tons) including net imports or exports	Net imports (+) or exports (-) (‘000 tons)	Seed (‘000 tons)	Net available supply (‘000 tons)	Requirement at 3·58 seers per week (tons)	(-) Deficit (+) Surplus (Million tons)	Progressive total of Col. VIII or Carry over (Million tons)
I	II	III	IV	V	VI	VII	VIII	IX
1928	49·0	7,563	+ 161	422	7,141	8,377,873	-1,237*	
1929	49·44	9,662	-250	411	9,251	8,436,005	+ 815	-422
1930	49·68	9,009	-311	437	8,572	8,504,137	+ 68	-354
1931	50·1	9,940		441	9,499	8,565,947	+ 933	+ 579
1932	51·1	9,945	-239	440	9,505	8,736,924	+ 768	+ 1,347
1933	52·1	10,771	-31	438	10,333	8,907,901	+ 1,425	+ 2,772
1934	53·1	9,927	+ 414	425	9,502	9,078,878	+ 423	+ 3,195
1935	54·1	9,840	+ 150	424	9,416	9,249,855	+ 166	+ 3,361
1936	55·1	8,251	+ 155	448	7,803	9,420,832	-1,618	+ 1,743
1937	56·1	11,218	-185	446	10,772	9,591,809	-1,180	+ 2,923
1938	57·1	9,981	+ 133	446	9,535	9,762,786	-228	+ 2,965
1939	58·1	9,596	+ 482	445	9,151	9,933,763	-783	+ 1,912
1940	59·1	9,882	+ 358	440	9,442	10,104,740	-663	+ 1,249
1941	60·3	7,954	+ 323	482	7,472	10,275,717	-2,804	-1,555
1942		10,774	-2	467	10,307	10,446,694	-140	-1,695

Consumption per million per annum—170,977 tons.

* It may appear that a 'negative' carry-over has no meaning. Reference is invited to paragraphs 3 and 4 of this minute, as stated deficiencies are made up by early consumption of the crop of the succeeding year.

A comparison of columns VI and VII shows that since 1936 net available supplies have been considerably short of the minimum requirements, as calculated on the Mahalanobis formula, every year with the exception of 1937. Before 1936 supplies were in excess of requirements; Bengal then was an exporting province. Surpluses and deficits are shown in column VIII. Further, when supplies were adequate the people were able to eat more, and perhaps lay by some stocks. Since 1936-7, the people have been on short rations.

The figures in column IX, provide a test for the accuracy of the assumption of a carry-over. If there was an accumulated surplus, it had disappeared by 1941, and 1943 opened with nothing more than the *aman* crop of 1942, assembled by January, 1943.

9. The test supplied by the economic condition of the people leads one to the same conclusions. The distribution of holdings given on p. 6 of the Report is as follows:—

More than 5 acres	2 million families
Between 2-5 acres	2
Less than 2 acres	3.5

It is stated that 5 acres will be the minimum area required to keep the average family in reasonable comfort, but the size of holding will have to be 7 acres if the land is capable of growing nothing but *aman* paddy. If the number of holdings above 5 acres capable of growing *aman* paddy only is taken to be 0.5 million, the number of families which live below the level of 'reasonable' comfort will be 6 millions. What happens to these 6 million holders when the crop is very short? Such families could just balance income and outgo in a normal year. They cannot have any carry-over of either money or grain. In many cases a substantial portion of the crop goes to the money-lender. The only possibility is that during years of short-crops consumption of rice must be reduced in order to meet the constant factor of the standing charges. Alternative foods such as sweet potatoes are grown and consumed and make up for the deficit. During normal years the consumption increases, and carry-over is possible only when the production is much above the requirements. Such occasions have become rare since population increase has outstripped food supply.

10. The nutritional standard of the people of Bengal supports the above contentions. Since the days (1933) when Sir John Megaw (p. 7, para. 9) conducted his inquiry, there has been a marked deterioration in the food position. There has been no increase in production and a steep rise in population. The Foodgrains Policy Committee arrived at the following conclusion "..... though it is true that taking India as a whole and taking an average of years, she may broadly be described as only slightly less than self-sufficient in foodgrains as a whole, nevertheless the self-sufficiency implied by this statement at the very best is self-sufficiency at a very low level of *per capita* consumption. There is very little room, taking the country as a whole, for the process of tightening the belt. We have it on the authority of the highest nutritional expert in this country, Dr. Aykroyd, that there is at all times serious under-nourishment of some third of the population".¹ With a considerable proportion of the population living at a level of under-nourishment, if not starvation, it is difficult to accept the hypothesis of large surpluses or stocks remaining unconsumed year after year, and getting accumulated, even to the extent of

¹ Report of the Foodgrains Policy Committee, 1943, p. 33.

33 per cent of the annual production (paragraph 8 above and statement). Under-nourishment of a large section of the population and huge accumulations of stocks cannot go together.

11. The results of the "anti-hoarding" campaign or the "food drive" which was undertaken in Bengal in June 1943 (excluding Calcutta, Howrah and a few other areas) supports this conclusion. From the data available the following conclusions may be drawn.

1. Population of the area of this drive	55·748 million	
2. Total requirement of this population from 16th June to 31st December in terms of rice at 3 seers per capita per week ¹	4·4	tons
3. Actually consumed by this population from 1st January to 15th June, at the same rate	3·8	
4. Stocks on 16th June, 1943 (at 25 per cent excess of those actually discovered)	1·17	
5. Total consumed and in stock i.e. 3 plus 4	4·97	
6. Total consumed by the remaining population (6·5 million) up to 15th June 1943, at the above rate.	0·44	
Total consumed and in stock on 16th June 1943	5·4	
Estimated aman crop assembled in January 1943	6·0	
Balance unaccounted for	0·6	

Even allowing for undiscovered stocks if there had been a large carry-over, much bigger stocks would have been found. (There had been import of rice and other grains as well during this period). Similarly the Calcutta Food census in July 1943 discovered stocks of the order of 31,000 tons, which is just one month's rice consumption of that city. Had there been a substantial 'carry-over', the stocks would have been larger.

12. In Appendix II, Section B, the relation of supply of rice to requirements for the ten years 1928 to 1937 has been examined, and the conclusion arrived at is stated thus :

"...*prima facie*, it would appear that stocks carried over from year to year must have been accumulating in the province during the period" (page 209, paragraph 13).

Similarly in Section C, the supply position in relation to requirements for the years 1938 to 1942 has been examined, and the following conclusion is arrived at :

"The state of current supply during 1941 supports the conclusion reached in paragraph 14 above, namely, that the stocks carried over from year to year must have been considerable." (page 210, paragraph 16). Again, in Section D, the supply position in relation to requirements for the year 1943 has been discussed and it is stated :

"The carry-over at the beginning of the year was sufficient for the requirements of about 6 weeks" [page 212, paragraph 23(ii)(b)].

¹ This figure is lower than Prof. Mahalanobis' estimate of actual consumption.

It is to be determined if these conclusions are correct. The table below has been compiled from the data of surpluses and deficits as given in Appendix II, Statement IV

I	II	III	IV
Year	+ Surplus — Deficit (Million tons)	Progressive Net total of Col. II (Million tons)	— Export (—) Imports (+) (‘000 tons)
1928	—1·20		
1929	+0·79	—0·41	
1930	+0·01	—0·42	
1931	+0·80	+0·38	
1932	+0·69	+1·07	
1933	+1·39	+2·46	
1934	+0·44	+2·9	+414
1935	+0·24	+3·14	+150
1936	—1·50	+1·64	+155
1937	+1·35	+2·99	—185
1938		+2·99	+133
1939	—0·51	+2·48	+482
1940	—0·34	+2·14	+358
1941	—2·43	—0·29	+323
1942	+0·29		—2

Column III of this table shows the stocks of rice in the province at the end of each year, on the assumption that accumulation of surpluses was taking place; while Column IV shows the net imports or exports of the province. If, as the Report has concluded, accumulated stocks were available in the province in each of the years 1931 to 1940, and during certain years those stocks were very large, it becomes impossible to explain the net imports in these years for the following reasons. The population of Bengal may be divided into the four classes:—

(a) those who grow their own food but whose production is just equal to or less than their requirements;

(b) those who buy their requirements;

(c) traders;

(d) big land-holders who have surplus over their requirements.

Of these it is only classes (c) and (d) who would hold surplus stocks of rice. The big landlords would accumulate unnecessarily large stocks only if they were unable to find a market for them. Therefore, stocks would come to be concentrated in the hands of traders. And it is this class which imports rice. If the traders had been accumulating stocks, would they still import and thus add to their unsold stocks? No wise trader would hold stocks much in excess of his annual turnover. The existence of net imports is thus incompatible with the accumulation of large stocks.

13. In 1942, according to Statement IV, of Appendix II (p. 216), the current supply, seed deducted, was 10·81 million tons and consumption 10·02 million tons, leaving a surplus of 0·29 million tons, equal to 1·5 weeks' supply. Is it too much to say that this so-called 'surplus' was completely wiped out by the cyclone of October 1942 in the districts of Midnapore and the 24-Parganas, and by the export of 185,000 tons which was allowed to take place during 1942? There was definite shortage during November-December, as is evident from

the prevailing distress, and this supports the conclusion that the supplies had been exhausted.

Conclusion

One is, therefore, forced to the conclusion that in Bengal, and in fact in the rest of India as well, there are no surplus stocks of such magnitude as to serve as "huge" reserves. What we find is a hand to mouth existence, at a very low level of consumption. Events of the last two years have proved this conclusively. In spite of the 'Grow More Food' campaign, the food situation still causes anxiety. At any rate, this much is certain that Bengal had no carry-over of rice worth considering in the beginning of 1943.

B—THE COURSE OF EVENTS LEADING TO THE FAMINE

14. The cycle of events which terminated in the famine of 1943 may now be described. One need not labour the point that every event has a history and its true cause cannot be determined by a study merely of factors involved at the moment of its occurrence, but must be traced to its past. To borrow a phrase from biology, every event has a phylogeny. Therefore, the immediate causes of the famine of 1943 have to be traced from 1941. These events may be traced year by year.

1941.—(Appendix II, Statement III). The *aman* crop which was assembled in January 1941 was 5·178 million tons (adjusted figures by addition of 20 per cent to the Director of Agriculture's figure)—the shortest crop for fifteen years and with *boro* and *aus*, supplemented by 323,000 tons imports, and after deduction of seed requirements, gave 7,472,000 tons of rice, for the consumption of 60·3 million people, which was the population of Bengal at that time. According to the estimate of 3·58 seers *per capita* per week (the estimate of Prof. Mahalanobis) the total quantity required for 12 months was over 10·25 million tons. Thus there was a shortage of 2·8 million tons, *i.e.*, 14 weeks supply. Normally the *aman* crop would come into consumption, let us say, from March-April 1941. The total crop being short, it was barely enough for nine months, and was therefore, consumed by about the end of the year 1941. Nothing was available for the last two or three months of the consumption year 1941-42 (January-February-March 1942).

1942.—The *aman* crop assembled by January 1942 was 8·876 million tons—the highest since 1937. The *boro* crop of 1942 gave 206,000 tons and the *aus* 1·694 million tons. There were no imports. The total quantity available for consumption (*minus* seed requirements) was 10·3 million tons. This crop would normally have come into use from March-April, but as the previous crop was very short and had been consumed by the end of the year 1941, the new crop was drawn upon most probably from about the beginning of January 1942. It would have sufficed for twelve months, *i.e.*, till the end of December 1942, and possibly even beyond that period with some effort, but during this year various unforeseen factors adversely affected the position:—

(i) A quantity of rice was exported (187,500 tons in the year, of which 184,618 tons were exported between January and July 1942). [Report p. 28].

(ii) There was short supply of wheat during later part of 1942:—57,377 tons [Chapter V—para. 23].

(iii) The disastrous cyclone of October 1942 destroyed large stocks of rice in important surplus districts in Bengal, *viz.*, Midnapore and the 24-Parganas. The quantity destroyed has not been determined but is described as very large.

(iv) There was an influx of refugees, estimated at several lakhs.

(v) There was a very large increase in the strength of the Defence Forces in Bengal, and also rapid increase in the industrial population, labour for mili-

tary works etc., etc., which directly or indirectly depleted the foodgrain resources of the province.

In view of these considerations (a) of heavier demands and (b) of serious loss, it would not be incorrect to hold that by the end of the year 1942 the year's production had been completely consumed.

This view is supported by the fact that reports of distress were made early in December (Appendix VI), and by the end of the month hunger-marches had started. The price of rice had risen enormously, and there was shortage in some places even in the villages. This was at the time when the *aman* crop was being harvested. The situation at that time has been described in the Report (Chapter V, paragraph 29):—

“The evidence presented by these contemporary documents leaves no room for doubt that the upheaval in the Bengal markets towards the end of 1942, was due to the fact that in November and December of that year, that is, before the bulk of the *aman* crop had been reaped, unusual purchases were being made by persons who were convinced, quite correctly, that the yield of the *aman* crop would be so short and stocks in hand so low, that a crisis in supply was inevitable and was fast approaching”

In face of these observations any material ‘carry-over’ at the end of 1942 was a mere myth.

1943.—Therefore, it may be assumed, with considerable justification, that 6.024 million tons *aman* crop, assembled by January 1943, came into consumption almost immediately, if not even earlier during the harvest, i.e., November-December 1942.

According to the Rice Marketing Report, on the average of the years 1934-35 to 1936-37, out of the total production of 8.4 million tons, 3.9 millions were kept for domestic consumption and 376,000 tons for seed. The marketable surplus was 3.87 million tons. It is generally the *aman* crop which comes into the market, and when it is taken into consideration that—

(i) this crop was very short (1.5 million tons short of the previous fifteen years average),

(ii) there was a general feeling of insecurity, on account of the military situation,

(iii) prices were rising rapidly,

(iv) there was no carry-over, not even for the usual period of ‘maturing’ of the harvested crop, and

(v) all these facts were being widely advertised, the conclusion is irresistible that the cultivator retained a larger quantity than the normal for his own use, and the marketable surplus was reduced, perhaps to 2 million tons, in a market which used to get double that quantity during times of peace and stability. Consumers began to secure supplies in excess of immediate requirements, priority concerns to lay by stocks to ensure supplies for their labour, traders to make money, all joined the *mêlée*. The sources of supply having dried up, panic set in. This was a critical stage. Effective action was not taken, stocks had been captured, and those left without food had to pay prices which many could not afford. Famine had really begun from the commencement of the year 1943 although its results became manifest some months later, and its effects even continued in the heavy death-rate during the first half of 1944.

C—THE REAL EXTENT OF THE SHORTAGE

15. The conclusions arrived at in the Report regarding supplies are given in paragraph 15 (iii), p. 15 and in paragraph 23 of Appendix II, of the Report (p. 212), and these may be summarised thus:—

(1) The current supply during 1943, was sufficient for the requirements of about 43 weeks (8.36 million tons).

(2) The carry-over at the beginning of the year 1943, was sufficient for the requirements of about 6 weeks (1.16 million tons).

(3) Therefore, the absolute deficiency of supplies was of the order of the requirement for 3 weeks, i.e., 0.58 million tons.¹

With these conclusions it is difficult to agree. From what has been said above (p. 15), it is evident that there was no carry-over of any significance at the end of 1942. The *aman* rice crop available for consumption from January to September 1943 (when the *aus* crop becomes available), was approximately 5.5 million tons (adjusted figures with 20 per cent increase over Director of Agriculture's estimates). If all grain available had been procured and distributed equitably, it would have provided 2.44 seers *per capita* per week for a population of 63 million for 9 months. At a rate of 3 seers *per capita* per week, with a perfect system of control and distribution, 6.7 million tons would have been the required quantity, and, at 3.2 seers *per capita* per week 7.2 million tons. It is evident, therefore, that the absolute shortage, at a very conservative calculation, could not have been less than 1.5 million tons. The Government of Bengal had placed their demands for all foodgrains at 1.36 million tons, of which rice was 0.9 million tons. These were indeed very modest estimates. The Director of Agriculture informed the Commission that an enormous area had been put under sweet potatoes during 1943. This must have helped to mitigate the effect of the shortage. Taking everything into consideration one is forced to the conclusion that the shortage was large and far more than 0.58 million tons. It was certainly of a magnitude, that by mere manipulation of supplies actually available in the province, it could not have been wiped out. This was not realised early enough. The 'carry-over' mentality had bred complacency. To avert disaster, a timely supply in regular and substantial instalments of foodgrains to the extent of *at least* a million tons was absolutely necessary. The quantity of foodgrains which actually arrived in Bengal was of the order of 0.65 million tons, but it came sometimes in dribbles, sometimes in torrents, and most of it came too late, towards the end of the year.²

All the rice that came into Bengal was within the country and if the large quantities which came after May had come earlier deaths might have been avoided. Regular arrivals would have produced confidence and kept the prices down.

D—CALCUTTA ON THE BENGAL MARKET

16. The shortage considered in the last section was aggravated by the fact that, throughout the famine of 1943, Calcutta, was on the Bengal market.

¹ If the actual shortage was of the magnitude of 0.5 million tons, i.e., a little in excess of the net Burma imports, then would not free trade have supplied this deficiency from the so-called 'stocks' all over the country? Had not the rest of India accumulated the same carry-overs which, it is suggested, Bengal possessed? The theory of carry-over thus stands exploded.

*The arrivals of rice and wheat into Bengal during 1943 were:—

	Rice.	Wheat.
January	17,452, tons.	26,000 tons.
February		
March		
April	15,827	38,000
May		
June		
July		
August		
September	30,689	99,000
October		
November		
December	99,334	176,000

On 'looking back' the feeling grows strong that the most obvious and correct step, which was taken in 1944, should have been taken in 1943. With the first signs of distress, Calcutta should have been immediately *taken off* the Bengal market. This was obvious. For wheat Calcutta had been off the Bengal market always. The average imports of Burma rice were roughly equal to the rice requirements of Calcutta. Therefore, for many years Calcutta had been virtually off the Bengal market both for rice and wheat. During the year of a short crop, after cyclone and flood, with the enemy knocking at the gates, the population increasing through an influx of refugees, increased concentration of war industries, and a huge army depleting the market of milk, fish, egg, poultry, vegetables, and fruit, Calcutta was on the Bengal market, armed with a huge purchasing power. The inevitable result was famine in Bengal. This should have been easily foreseen. This is a lesson for the future.

E—THE STORY OF THE BARRIERS

17. From what has been said above it is evident that there was no carry-over in the beginning of 1943, the previous year's crops had been consumed by the end of 1942, the *aman* crop available was very short, imports from Burma were not possible, the external and internal situation was disquieting, panic had set in, prices were soaring. The only thing which could stem the tide was an assured supply of foodgrains. There were obstacles. To appreciate the difficulties of Bengal a review of the conditions leading to these obstacles is necessary.

18. In Chapter IV, paragraphs 1 and 2, are described changes in the economic and administrative organisation of the country as a result of the control of trade by Governments. In this change, which has been rightly described as 'tremendous', the period when 'barriers' were springing up to prevent the movement of grain from one district to another and from one province to another has been very correctly described as "a critical and potentially most dangerous stage". The erection of barriers may be regarded as a necessary step in the assumption by Government of control over trade (para. 4), but was the step taken at the right time and in the right direction? And, these are the two essential attributes of a wise step. Government control over trade was admittedly a most urgent wartime necessity, but stopping the flow of trade, without creating adequate channels for the flow of food supply, is like putting a dam across a river first and planning to dig irrigation channels afterwards. The consequences of such a mistake are evident. It may be argued that in the absence of a well-planned scheme of food control and distribution, on an all-India basis, barriers set up by Provinces and States independently, without co-ordination or even mutual consultation, essentially to protect their own interests, had become *inevitable*. Nevertheless, it cannot be denied that, as anticipated, these barriers led to the conditions which, were responsible, in no small measure, for the scarcity and famine that visited Bengal—the province which had the singular misfortune of being in the war zone, and falling a victim to floods, a devastating cyclone, a short crop, political unrest and enemy action, and with 'denial' and defence measures leading to dislocation of internal economy. I, therefore, agree with the following view: "If there was a single root cause . . . for the initial dislocation of the whole 'food economy' and 'food morale' of this densely populated area it was the incautious use of newly created provincial barriers."

In paragraph 32, p. 24, the possibility of such a danger is recognised. It is stated that if the machinery of control could not be completed speedily "any serious and sudden deterioration in internal supply arising out of natural causes, was liable to lead to disaster," and this is exactly what happened in Bengal.

19 The dangers inherent in those barriers, or measures restricting trade, did not come as a surprise. They were evident and had been fully anticipated. Categorical statements prophesying disaster as the consequence of such measures had been repeatedly made. The Bihar Central Advisory Committee on Price Control meeting on 18th December 1939, emphasised "the need of some form of inter-provincial control"¹ and this opinion was communicated to the Government of India as early as the 8th January 1940.

20. In the Third Price Control Conference of the official representatives of the Centre, Provinces and States, held at Delhi in October 1941, the President (Sir Ramaswami Mudaliar) stated "the Government of India wished to keep inter-provincial trade as free as possible, but if the control was applicable within a particular area he saw no objection to it". The views expressed were: It was "feared that restriction of inter-provincial or inter-State movement of supplies would lead to difficulties" (Bihar). It "was clear that the Central Government's intervention was necessary in respect of inter-provincial trading, for provincial boundaries were not economic boundaries" (Madras). It was suggested that the "control should extend from the producing stage right down to the final stage" "imports should be flattened", and "the possibility of not merely controlling prices but also regulating the movement of rice to the competing consuming provinces" should be considered (Assam). The scramble for rice supplies in the Central Provinces, was leaving a deficit in the province's own requirements.

A foretaste of such unco-ordinated control had already been experienced when, on account of scarcity in Arakan, the Burma Government had prohibited export of rice, just as some Provincial Government had prohibited export of rice from their own areas to adjacent areas. The Government of Burma had finally lifted the embargo, but by that time the favourable season for shipping rice had practically ended.

The President emphasised: "We do not contemplate at all the possibility of provincial barriers for export of this product (rice) or any product for the matter of that", and he added: "If any Government finds itself in such an unfavourable position as a result of the activities of its surrounding provinces or States, it can come to the Government of India who will use their good influence to get over the difficulty".

It is clear from the above that by October 1941, difficulties had arisen, and barriers were considered dangerous, and need for a central controlling agency, was evident.

21 The Fourth Price Control Conference met on 6th/7th February 1942. (A day previously the Rice Conference had met at the instance of the Bihar Government. At this Conference Bihar and Assam had expressed the opinion that provincial control of exports would lead to chaos.) By then the problems had "become more complicated, their solutions were more urgent and the administrative difficulties greater than they had ever been." Bans "had been put by certain Administrations, both Provincial and State, on the movements of commodities", the President (Sir Ramaswami Mudaliar) remarked "At first flush it looks as if such a ban was eminently justified and that the Provincial or State authority concerned had a duty towards the population in its charge to see that the movement of goods, when scarcity conditions were about to prevail, was checked so far as its area was concerned, that is to say, that foodstuffs available within the area are not transported beyond its border. One or two Provincial Governments have done it; and some States have done it; and I must also admit with thankfulness that some Provincial Administrations have stoutly resisted the temptation to put such a ban

1 Perhaps this referred to Price Control only.

The free movement of commodities up to the last stage is the most vital factor that will check the growing rise of prices and will also try to preserve for the consumer adequate supplies in every area. India may be geographically called a 'continent'; it is after all one country and under one Administration; and consequently the Central Government is concerned with the safety and the conditions of living of all the people within this geographical area, India." He continued: "The Central Government cannot, therefore, view with equanimity any attempt at tying up stocks of a particular commodity, within a specified area, and leaving other areas to look after themselves . . . If this movement is widespread then it will create the most chaotic conditions, nay, absolutely famine conditions in several parts of the country. The theory of self-sufficiency has led to ruin so far as Sovereign States are concerned; and if that theory of self-sufficiency were to be incorporated in provincial and State units in this great Federation, not only ruin but something worse will be our lot. We have agreed, not with enthusiasm, to such bans as a very temporary measure in certain areas. But the decisive view of the Government of India is that such bans on export do much more harm than good, and to the utmost possible extent should be avoided." He also referred to the anxiety of certain governments to build up stocks.

While on the one hand certain provinces considered that their first care was the supply of food to those who lived within their jurisdictions, and help to other provinces could not be given to the extent of facing a shortage themselves (Punjab, Madras), on the other hand a higher degree of control over transport and supplies was demanded (Bombay), to the extent of an all-India control of stocks (C. P.). It was stressed that the unit was not the province or the district, but the whole of India, and a shortage of any particular commodity had to be shared equally (N. W. F. P.), by means of control at the Centre (Bihar) and that bans on exports should not be placed (Bihar), as restrictions on inter-provincial trade would be suicidal (Mysore). It was claimed that in certain emergent circumstances, such as the danger of a famine, stoppage of exports from a particular area would be justifiable. The President, summing up the discussion stated "that the process of tightening up the belt must be a universal process and not a process which must apply only to those unfortunate provinces which were in short supply with reference to any particular commodity". He drew the conclusion "that broadly speaking there should be no attempt on the part either of the Provinces or States to put a ban on the export of commodities but that when a proper transport authority which would co-ordinate the interests of various Provinces and States began to function at the Centre, it could be left to that authority so to adjust the transport that there was no draining of all resources of one province to its own disadvantage and to the advantage of accumulating stocks in the neighbouring province or State. He, however, agreed that if there were a famine condition in a local area, something must be done on the spot, and he did not "object to a particular kind of emergency power being used by district officer or local officer"

22. Barriers continued to be put up. In March 1942, the Central Provinces, after a scramble for rice, had stopped export of foodgrains to places outside the province. The Government of India had in some cases issued directions against such steps. When the Food Production Conference met in April 1942 the question of barriers came up for a good deal of discussion. The President (Mr. N. R. Sarker) stated in his opening remarks: "..... that in case intensive and planned efforts (to Grow More Food) failed to make good the shortage of a commodity, then substitution of this commodity by some other surplus foodstuff shall have to be considered. And, even if this remedy failed to fill up the gap, then it would be for the various governments to consider how

far an all-round cutting in the consumption of the commodity must be voluntarily accepted by all the Provinces and the States."

Sir Ramaswami Mudaliar said: "The Central Government has been up against this problem of every province, of every State, of every area thinking in terms of its own population, and not willing to recognise the needs of the population elsewhere in India..... That is a most dangerous doctrine to be preached.....It would bring about such confusion in trade, commerce and transport that it would harm the interests of the whole country.....When we have gone to the extent of including a country like Ceylon into (our) economic orbit in respect of food production and food supply, it seems to me the most unnatural thing to suggest that each province or State will look after itself and only when there is a surplus and to the extent that (province or) State judges there can be a surplus, having provided for all the contingencies which might arise in the future and having provided for all that is necessary for the province (or State), would it allow export from its territory.....That sort of attitude, would completely break up the economic structure of the country.....We have been resisting this idea that each area should look after itself first, leaving others alone.....I do venture to suggest that we cannot take the view that each province or State must first look after itself and then to other provinces or States." He further emphasised his point of view by taking a specific example. "Taking wheat consumption as 10 million tons, and supposing there is only 9 million tons in the country, we know how it is distributed to various provinces from the surplus; would it be an impossibility to say that Punjab will have nine-tenths and all the other importing provinces will have nine-tenths of their normal imports?" In the same meeting Sir Pheroze Kharegat explained this point of view further. He stated that if in spite of the best efforts of the surplus and deficit areas, there was a shortage of a particular commodity in the country, for instance rice, then "*the whole lot of rice available in the country should be treated as one and it should be distributed equitably between all the Provinces and States throughout the country, so that all may suffer equally and benefit equally* Where there is a deficit in a particular commodity in the country as a whole, it should be distributed as equitably as possible humanly, and as equitably as transport facilities may allow" The underlying idea was equality of sacrifice of all consumers. As a logical corollary to this proposition representatives of many Provinces and States stressed the need for a *Central authority with executive power*. No steps were taken to set up such an authority.

The Food Department which was established in December 1942 set out on the task of disentangling the food tangles.

The Second All-India Food Conference was held on the 24th-26th February, 1943. The Secretary of the Food Department once again preached the gospel of 'equality of sacrifice'. He stated "Although shortage of production was in the neighbourhood of 4 or 5 per cent, the main difficulty was to distribute the deficiency over the whole body of consumers. If equitably distributed no one would feel the deficiency but if the whole weight was to fall on certain unfortunate localities then the shortage in these areas would be severe. Every area therefore must be prepared to take its share of the shortage." It was emphasized that "the only solution to the difficulty must be for all areas in surplus to surrender slightly more than their actual surplus". It was necessary that the stocks collected, whether for the use of the province where these were collected or for another Province or State, should become the property of the Central Government. The gravity of the position in Cochin and Travancore was emphasized, and it was stated that it could only be "alleviated" in a satisfactory manner if the Central Government were to exercise a considerable measure of centralised control". Mr. Pinnell (Bengal) held that, "there was one

rice crop in the North East India, that was the concern of every province. There was need for co-ordination of purchase and that co-ordination could only be exercised by the Central Government. There must be one authority if an effective control over prices and supplies was to be secured and he expressed that very early arrangements for such purpose should be made." It was emphasized that the artificial boundaries between the Punjab and Delhi ought to be removed. The control measures introduced by Provinces and States which placed an embargo on exports were reacting harshly on small territories (Coorg). Mr. Maqbool Mahmud (the Chamber of Princes) considered a co-ordinated scheme on an all-India basis as essential. The representatives of the Government of India held that "if control was to be effective, it must be a strong control", and dwelt on the absolute necessity that provision be made for the last word and decision in any matter resting with the Central Government. It was felt that certain provinces were not prepared to give up anything beyond the food balance left there after providing for their own normal consumption, however, serious the position, and it was therefore, 'urged that the Government of India should control surpluses on the lines of equality of sacrifice' (Sind). Centralised control, and even a high degree of centralised control, was considered to be the only way in which the problem of the country could be solved (Bombay, Madras, Bihar). Such control did not materialise.

23. This is the story of the barriers. The food position continued to deteriorate. Isolated actions had been taken, natural flow of food supplies had been stopped, no controlled channels on an all-India basis had been created, the country had drifted into independent food-kingdoms. Price control without control of supplies, disappearance from the market of commodities thus controlled, black market, de-control, ineffective requisitioning, wranglings over the quotas of the 'Basic plans', failure to obtain supplies for the 'rescue plans' of Bengal, present a sorry spectacle. Frustration is writ large on the history of this period. As clearly foreseen and predicted; disaster and famine were the result. The weakest organ was attacked and succumbed to the disease. Bengal, the province which had suffered from a series of calamities, was the victim, and sank deeper and deeper into famine conditions.

F—THE PROBLEM FOR BENGAL

24. The facts which emerge from a study of the position as it developed in Bengal during the later part of 1942 and the early months of 1943, justify the following conclusions.

There was a serious shortage of foodgrains, far more serious than Bengal had faced previously for at least twenty years. The shortage was such that it could not be met by husbanding Bengal's own resources, without large-scale supplies from outside the province. The position was aggravated by acute psychological factors which were the results of the war, and of the military situation at the time. Burma had fallen, refugees were pouring in, retreating troops were coming into Bengal, the danger of invasion was imminent, Calcutta had been bombed, there was danger of further air raids, serious doubts existed as to the capacity of British troops to stem the Japanese 'Blitzkrieg', the 'denial' policy had been put into action, political unrest of serious magnitude had manifested itself within the province and in the neighbouring areas, the 'quit India' demand had been made, political dissensions in Bengal were serious, cyclone and floods had destroyed human life, cattle, and crops and stores of foodgrains, and there was an atmosphere of tension. No one knew what was coming. Everyone played for safety; food, the most urgent requirement of man, was to be conserved. The producer wished to lay by stocks for his own consumption; consumers were anxious to secure supplies. Employers of big industries wished to make adequate provision to feed their employees. Essential services had

to be maintained. Traders knew that money could be made. The marketable quantity had diminished. The combination of these formidable factors created unprecedented conditions. A series of calamities, each one of unprecedented magnitude, followed in such quick succession that the administration was overwhelmed. It was a 'Dunkirk' on the food front in Bengal. It was in these circumstances that the Government of Bengal had to discharge its tremendous responsibilities.

A full and complete control over supplies and distribution of all available foodgrains might have saved Bengal—excellent in theory but not so in practice under the then existing conditions. Statutory price control had been tried and it had failed. Procurement operations in December and January had not been successful. Another attempt was made on the 9th of January but abandoned on the 17th of February. This obtained 2,200 tons. The Foodgrains Purchasing Officer did not purchase more than 3,000 tons. By the beginning of March stocks were down to such a low level in Calcutta that it looked as if the city must starve within a fortnight unless large supplies arrived quickly. Price control was abrogated on the 11th of March and then the Food Purchase Officer was able to obtain 17,000 tons from 12th to 31st March. Early in March the Government of India started their 'rescue plan' which was to obtain 60,000 tons within three weeks to a month, but succeeded in obtaining only half the required quantity. The Basic Plan had not started functioning as, by March 1943 when the need of Bengal became acute, the Government of India's arrangements for supply of foodgrain were not complete. The preliminary figures of the first Basic Plan were issued on the 13th April 1943. By the end of April the stocks of rice in Calcutta were again running low and reports of distress in the districts clearly indicated famine. By April it was clear to everybody, including the Government of India, that the Basic Plan would not function.

G—INTO THE BREACH

25. About the end of March 1943 the Ministry went out of office. For a month the Governor of Bengal was in charge of the administration. It was at this time that the Muslim League party was invited to accept responsibility, and a Coalition Ministry was sworn in on the 23rd of April. This was the most critical period in the recent history of Bengal and the new Ministry had to face the unprecedented problem of impending famine, during a world war, with imminent threats of invasion. There cannot be two opinions that in this crucial period an All-Parties Ministry was obviously the only right thing. Various attempts were made to secure such a combination, but they proved abortive. Congress was in any case out of it, having refused to "co-operate". The European Group had adopted the policy of not sharing responsibility in the cabinet. The Hindu Mahasabha was prepared to join, but on the condition that the Muslims outside the Muslim League had a share. This the Muslim League was not prepared to accept. The blame must be shared equally by all the parties for this *impasse*.

On 'looking back' one cannot help feeling that the Muslim League party took a great risk in accepting office, so as to continue a parliamentary form of government, at a time when it was evident that a terrible famine was approaching and formidable difficulties lay ahead. The difficulties were such as demanded for their solution undivided attention, vigorous action, full support and complete co-operation from everyone in Bengal and outside. They knew they could not obtain such full co-operation. On the other hand, when called upon to shoulder a grave responsibility, at the most difficult period in the history of the province and country, a refusal would have meant abdication of all constitutional rights. It would have meant a desire to *rule* during peace and prosperity and to seek safety during trials and tribulations. It would have meant

political *hara kiri*. They decided to fill the breach. Criticism of the Ministry in the Legislatures and in the Press was bitter and unrelenting. There was no respite. Such was the atmosphere in which the Ministry had to function.

As stated (report page 84, para. 24) a non-political organization in charge of food would have been the second best alternative to an all-parties government. The Government have been accused of not grasping the hand of co-operation offered to deal with the food problem. In an atmosphere charged with suspicion, bred of intensive propaganda, it is a pity that mutual understanding was not achieved.

26. The situation had become grave and menacing by the end of April. The short supplies had been eaten into for four months, further reducing the available quantity and more particularly the quantity in the market. The Basic Plan of the Government of India had not functioned even by this time. The country had become divided into numerous independent food monarchies, all thinking of their own limited interests. The new Ministry tried to grapple with the deteriorating situation which it had inherited. It groped, fumbled, sometimes blundered, sometimes floundered. But it continued its efforts. The magnitude of the problem had not been appreciated. Even the diagnosis of the disease had been wrong. At one time there was doubt regarding the shortage of grain supply in Bengal. The "carry-over" spectacles had coloured the vision. There were no data to go by. In the circumstances the "propaganda of plenty" was prescribed. The remedy, if successful, would have been trumpeted as a wonderful achievement. However, the treatment proved wrong. It failed, it engendered mistrust. The need was food, and not propaganda; propaganda alone could not appease hunger. Valuable time was lost. Another prescription was indicated. The traditions in which generations in India had been brought up was:

"If half a loaf a man of God eats, the other half he gives to those in need" (Saadi).

Instead, the more materialistic doctrine of self-preservation dominated. The geographical, economic and racial unity of India had receded into the background.

27. The condition caused grave anxiety. Food had to be obtained at any cost, anyhow. Persuasion and entreaties had failed. The evident solution was to pay the price and save life. *Basic Plan, Modified Free Trade and Free Trade* presented the possible alternatives, and a graded series to choose from. Absolute shortage of supplies was the real cause of the disease; high prices, like high temperature, were merely the symptom. Hence, the demand of the Bengal Ministry, in the beginning of May 1943, was for a guarantee from the Central Government that the quota of foodgrains according to the Basic Plan would be made available within a few months. May had arrived. August-September would bring in the *aus* crop. Three to four months of grave shortage lay ahead. Was the demand for the *approved quota, within a few months*, unreasonable or excessive? The Government of India presumably were not prepared to give the guarantee demanded. The Basic Plan had not started functioning. Was the middle course of Modified Free Trade rapid enough to resolve an acute emergency which had arisen? Modified Free Trade was a younger sister of the Basic Plan. It might have matured slowly and borne fruit. The urgency of the situation, however, called for quick action. It is not possible to determine the ethical value of a measure by detaching it from its context. It may be urged by some that free trade in war-time was wrong in principle. In the peculiar circumstances, however, which obtained in India in 1943, when some parts of the country were unwilling to share in the 'equality of sacrifice', free trade was the only course which had at least some chance of averting the impending disaster. But those

who had accepted the expediency of free trade had not taken into account the power of obstruction of the local administrations. Free trade, hemmed in by transport priorities and other difficulties, was strangled by strong local measures. The provinces requisitioned and froze stocks, put traders behind the bars. Buying was like trying to get stuff from behind doors bolted and locked and well guarded. Free trade was not allowed to function and it is not possible to determine what results would have been achieved if it had been allowed to function, even for a short while. During the operation of free trade the economic unity of India was on trial. Free trade engendered much bitterness and much mud-slinging. It was withdrawn. The Government of India stood vanquished for the time, and the Government of Bengal shared their defeat. At least one thing happened, namely, as is evident from later events, the shock of Free trade resuscitated the Basic Plan. In this role free trade was a significant factor in resolving difficulties which months' discussions had failed to resolve. It must also be remembered that if rice and wheat had come into Bengal during May-July 1943 in the same trickle at which they were coming from January to April 1943, the distress would have been acuter. Free trade produced over 90,000 tons of rice and saved Bengal for a while—at least for a while.

28. It was in these circumstances that the Third All-India Food Conference was called in July 1943. In this conference the Government of India lost the 'Free Trade', but regained the 'Basic Plan' What was considered impossible became possible. Foodgrain was procured and moved into Bengal. Unfortunately it was too late. Had the quantity which reached Bengal during the third and fourth quarters of 1943 been sent during the first and second quarters, the whole story would have been different.

29. All along the Government of Bengal failed to appreciate the enormity of the problem facing them. This applied also to the handling of foodgrains, in quantities amounting to hundreds of thousands of tons.

An experienced witness deposed that the quantities of foodgrain moved after May 1943 was greatly in excess of those moved in peace-time in two ways, "..... first, in peace-time civil supplies moved in an even flow according to requirements. In this case next to nothing had moved for months, and the supplies were 'bunched' as we call it in technical transportation parlance; secondly: Bengal is a war area and army stores were moving in considerable quantities" In reply to an enquiry as to the time necessary to build up an adequate organisation in an emergency the witness stated, "..... it is a colossal business Government has not got the staff and when they have recruited men have to be trained." Asked whether it was possible to have foreseen that the movements of the grain coming in would be so tremendous, the witness replied: "I think it would have been very difficult indeed to have foreseen it because it was an entirely new situation in India and it must have been extremely difficult for the Provincial Government to realise beforehand that difficulties would arise in transportation in areas not far from the front-line" I do not think that with peace-time resources they would have been able to deal adequately with such emergencies in war-time"

It should have occurred to those in authority, that only an army, with trained staff, tried organisation, well equipped with transport, could cope with such a big job. A soldier grasped the problem and solved it.

30. *Inefficiency and corruption.*—These running sores of society, are serious obstacles to stability and progress, economic and social, and during an emergency lead to complete breakdown. They can neither be created nor destroyed in a day. The conditions of distress in a social organisation which lacked vigour led to defeatism, fatalism and inefficiency. Profiteering, a war-time disease, in face

of a serious shortage of food supplies, led to increased corruption. If India hopes to march on the path of progress, she must get rid of inefficiency and corruption, and every possible means should be adopted for the eradication of these evils as early as possible.

II. UNPREPAREDNESS OF INDIA TO MEET FOOD EMERGENCY

31. On 'looking back' one is astonished at the unpreparedness of India to meet the food situation during an emergency. In England a complete food scheme had been worked out before the war started. It has not been possible to ascertain whether His Majesty's Government had, at any stage, suggested a similar study of the food problem of India in case of war. It may be said that India had passed through the last Great War without any food difficulty, and, therefore, the position did not demand attention. On the contrary, for years, numerous investigators and writers on economic, agricultural, medical and nutritional problems had been pointing to the seriousness of the food situation in India. Stationary, if not declining, food production, rapidly increasing population, under-fed millions, disease and high mortality had been the topics of serious thought and discussion. Was the Government ignorant of the normal food situation in the country? Did not dwindling exports and increasing imports for a pre-eminently agricultural country indicate danger?

Even after war had been declared, the food question received little attention. Even after Japan entered the war, food was still considered a problem of secondary importance. The Bihar Government's warning of 1940 was not heeded. A series of Price Control Conferences and Food Conferences had urged a better and co-ordinated control of food. They caused not a stir, till the situation was out of hand.

32. The Allies were carrying on a world war on several fronts, with unity of objective, and unity of action. The Russians were sacrificing men in millions. The Americans and the British were fighting in the deserts of Africa thousands of miles from their homes. All resources of men and material had been pooled. American factories were working for England and Russia, and British factories manufactured equipment for all the Allies. Russia had to be provided with munition and supplies. She could be supplied through Iraq and Iran with greater facility. A passage had to be obtained and a passage was obtained. Again, to carry on the war effectively the independent countries of the Middle East were organised for food supply. Unity of effort was achieved.

In contrast, what happened in India? India was fighting starvation and famine. The Government of India used persuasion, made demands for food-grains in the name of the unity of India, and equality of sacrifice. These failed. The last effort was free trade. The power of money, to get out grain which had not been produced, was employed. But free trade was resisted and it failed. Unity of effort was not achieved. Till July nothing effective was done. Free trade failed, but led to the working of the Basic Plan. Grain was produced from *within* the country. It was too late to save thousands who had marched too far on the path of starvation. Deaths continued during 1943 and during a part of 1944.

33. October 1943, in the fifth year of the war, witnessed a sudden change in the attitude of the Government of India. At the Fourth Food Conference held in October 1943 the President (Sir J. P. Srivastava) said "..... we must think of each other and not of ourselves. In the mobilisation of India's resources the Government of India will have to take and implement, decisions which may at times conflict with what appear to be local or sectional interests. Whenever possible, and to the greatest extent possible, the Government of India

will proceed after consultation with you and with your consent, but if circumstances should compel us to proceed otherwise, I look to you to accept and implement those decisions which we, and we alone can take on behalf of all We can no longer afford either failure or prospect of failure, and I, in the discharge of the duty which is mine, shall not hesitate to exercise whatever degree of superintendence and control at every stage may be necessary, or to invoke the use of whatever powers are essential to ensure success". This is what had been urged from the beginning of 1940. An early decision on these lines would have saved Bengal. This decision, one is constrained to say, was arrived at when the famine had almost spent itself.

M. AFZAL HUSAIN.

APPENDIX I

Agricultural families and their holdings

1. The results of investigation into the means of livelihood of the population of Bengal have been tabulated at pages 121 to 125 of Volume IV of the Census of India, 1941. The form of the Tables differs from that of the Imperial Tables of 1931 by reason of the more detailed classification of dependants. As a measure of economy extraction did not proceed beyond the category of the class.

2. All occupations providing means of livelihood have been divided into four classes, namely, (A) production of raw materials, (B) preparation and supply of material substances, (C) public administration and liberal arts, and (D) miscellaneous. The cultivation of land naturally falls under (A). As indicated already, there are no separate figures for occupations falling under this class other than the cultivation of land. It is seen, however, from page 69 of the Statistical Abstract for British India, published in 1942, that "extraction of minerals" accounts for only 0.3 per cent and "fishing and hunting" for 1.4 per cent of the total; we may, therefore, roughly assume 2 per cent to be the allowance to be made under this class for occupations other than the cultivation of land.

3. It is seen from page 123 of the Census Tables, Volume IV, that the number of persons for whom particulars have been furnished, was 1,193,754 in the province of Bengal. It is presumed that this was a representative sample. The summary at page 122 shows that the numbers enumerated under the heads P, PS, and TD together add up exactly to this total. The figures thus added are shown below :—

Class and type of occupation	Number of persons	Percentage to total
A—Production of raw materials	883,584	74.0
B—Preparation and supply of material substances	161,141	13.5
C—Public administration and liberal arts	38,253	3.2
D—Miscellaneous	110,776	9.3
Total	1,193,754	100.0

The following explanations have been furnished for the terms P, PS, and TD :—

- P : Principal means of livelihood without subsidiary means of livelihood ;
- PS : Principal means of livelihood with subsidiary means of livelihood ;
- TD : Total dependants on this means of livelihood.

From this (and with reference to what has been said at paragraph 2 above) it may be concluded that all persons deriving the whole or a major part of their income from the cultivation of land, whether as owners of land, cultivating tenants or labourers working on the land, together with the members of their families dependent on them, amount to 72 per cent of the total population (60.31 millions) of Bengal, that is, 43.4 millions.

4. The subsidiary table at page 4 of the Census of India Tables, Volume IV, shows that in 1941, the number of persons per thousand houses in Bengal was 5,412. Assuming on the average that the size of a family is equal to the average number of inhabitants per house, the number of families in a population of 43.4 millions comes to 8 millions.

5. At the instance of the Land Revenue Commission, Bengal, certain special enquiries were made in 1939. The results have been tabulated as Appendix IX at pages 88-123 of Volume II of the Report of that Commission. Table VIII(b) (pages 114-115) shows that the 19,599 families enquired into held 85,470 acres and that the average holding of these families was 4.36 acres. Table No. VI(a) (pages 107-108) shows that the total area of all land held in *khas* by *raiyyati* and *under-raiyyati* holders in Bengal is 31.06 million acres. If the average holding of the sample which was investigated was roughly the same as the average of the province as a whole, the total number of families dependent on the cultivation of land should be 7.1 million.

6. The question arises whether the estimate of 8 million families arrived at on the basis of 1941 census figures is too high or whether the above estimate is too low. The figure of 8 millions is probably too high because it includes persons who are merely rent receivers. It also appears not unlikely that the estimate of 7.1 millions is too low, particularly if the families enquired into were not sufficiently representative of the poorest classes of cultivating families. There is some reason to think that this may have been the case, as will now be explained.

7. It is seen from Table No. VIII(d) (page 117) that 22.5 per cent of the families enquired into were "living mainly or entirely on agricultural wages". As a footnote to the Table points out, the corresponding figure according to the census of 1931 was 29.2 per cent. This

is one indication that the sample was inadequately representative of the class of cultivating families for the province as a whole. This is also corroborated by information furnished at page 121 of the Census of India 1941, Bengal Tables (Volume IV). This shows that out of a total of 453,689 persons who were wholly or principally dependent on the cultivation of land, 121,804 persons were agricultural labourers and their dependants. In other words, the percentage according to the 1941 census was 26.8. Similarly, Table No. VIII(d) (page 117) referred to above shows the percentage of families living mainly or entirely as *bargadars* (i.e., crop-sharing tenants) was 12.2 per cent. The corresponding percentage obtained from information given at page 121 of the Census of India 1941, Bengal Tables is 15.3 per cent.

8. It is, however, not surprising that estimates based on different methods of sampling vary, more especially since the census figures of dependants are not based on the treatment of the family as an ascertained unit. The census figures themselves have varied from one decennium to another. The inference which, we think, can safely be drawn is that the number of families in Bengal who depend mainly or entirely on the cultivation of land is approximately 7.5 millions.

9. Table No. VIII(b) (pages 114-115) shows that the proportion of families with less than 2 acres is 46.0 per cent of families with between 2 and 5 acres is 28.6 per cent of families with between 5 and 10 acres is 17.0 per cent; and of families with above 10 acres is 8.4 per cent. We accept these results, subject to the uncertainty indicated already and make the following deductions:

(i) Less than 2 million families hold more than 5 acres each and about one-third of this number hold more than 10 acres each.

(ii) About 2 million families hold between 2 and 5 acres each.

(iii) All others, who constitute about one half of all the families who depend wholly or mainly on the cultivation of land, are either landless or hold less than 2 acres each.

10. Table No. VIII(d) (page 117) shows that the proportion of families living mainly or entirely as *bargadars* is 12.2 per cent and the proportion of families living mainly or entirely on agricultural wages is 22.5 per cent. Reference has already been made at paragraph 7 above to the reasons for believing that the actual percentage for Bengal as a whole was probably rather higher. The available figures permit the following inferences to be drawn:

(i) The cultivating families of Bengal include roughly about one million families who live mainly or entirely as *bargadars*, i.e., crop-sharing tenants.

(ii) The number of families who live mainly or entirely on agricultural wages is about 2 millions.

APPENDIX II

Production and consumption of Rice in Bengal

1. PRELIMINARY.—It is necessary to make an estimate of the supply of rice available in Bengal during 1943, and to determine how this supply compared with—

(a) the supply available in previous years, and

(b) the requirements of the province during 1943.

No conclusions can be formed on these matters except by a survey of all available statistical information relating to a series of years; and, as there are defects and gaps in the information available, any conclusions finally reached must necessarily be tentative. The object of this note is to assess the effect of errors and omissions in available statistics and formulate the conclusions which appear to be the most probable.

2. DEFINITIONS.—Some of the terms used in this note are defined below.

(i) *Year*.—Except where otherwise stated, this means the calendar year.

(ii) *Rice*.—Means de-husked paddy and includes paddy in terms of rice. It also includes rice-products.

(iii) *Old rice*.—Of the rice available in the province during any year, the rice grown or imported during previous years is called "old rice", but it does not include the yield of the *aman* crop harvested at the end of the immediately preceding year.

(iv) *Carry-over*.—The 'carry-over' of any year means the stock of "old rice" physically in existence in Bengal on the first day of the year.

[*Note*.—This definition is sufficiently accurate for practical purposes. A stricter definition would be that the "carry-over" of any year means the stock of all rice physically in existence in Bengal on the first day of the year, minus the yield of the *aman* crop harvested in the immediately preceding year. A difference exists between the two definitions, only in so far as any portion of the *aman* rice harvested in the closing months of a year may be consumed in that year. This happens only in very lean years, and the quantities thus consumed are small in proportion to the *aman* supply as a whole.]

(v) *Aman supply*.—In relation to any year, the 'aman supply' means the entire yield of the *aman* crop grown in the immediately preceding year.

(vi) *Boro supply* and *aus supply*.—In relation to any year, these terms mean the yield of the *boro* and *aus* crops grown and harvested during the year.

(vii) *External supply*.—By this is meant the excess of imports over exports. When exports exceed imports, "external supply" is negative.

(viii) *Current supply*.—In relation to a year, this means the sum of *aman*, *boro*, *aus* and external supplies (that is to say, production plus imports minus exports).

(ix) *Total supply* means the sum of the carry-over and the current supply (that is to say, the carry-over plus the *aman*, *boro* and *aus* supplies, plus imports, minus exports).

(x) *Requirements* means the quantities estimated as required for seed and for consumption. The estimates are made on the basis of prevailing average rates—variations due to abnormal conditions being disregarded.

(xi) *Consumption*.—This is primarily meant to signify human consumption.

[*Note*.—Wastage and the use of rice for purposes other than seed and human consumption are not separately allowed for, nor is allowance made for consumption of cereals other than rice. The two factors are deemed to offset one another in the province as a whole.]

(xii) *Surplus or Deficit*.—The difference between *aman*, *boro* and *aus*, and external supplies on the one hand, and requirements on the other, is a 'surplus' when the supply exceeds requirements, and a 'deficit' when the supply falls short of requirements.

(xiii) *Supply in terms of weekly requirements*.—This means the number of weeks during which any given supply (whether carry-over, *aman*, *boro*, *aus*, external, current, or total) may be expected to be consumed, at the prevailing rate of consumption and after deducting seed requirements.

(xiv) *Shortage of supply and absolute deficiency*.—A distinction is drawn in this note between "shortage of supply" and "absolute deficiency". The latter exists when total supply falls short of the requirements of the year and is an advanced stage of 'shortage'. Supply is taken to be short when it is so relatively to the average supply of a period assumed to be the standard for purposes of comparison. In this note, the supply during 1943 is compared with the average of the immediately preceding 5 years as the standard; and the latter, in its turn, is compared with the average of 10 years preceding 1938.

SECTION A—REVIEW OF INFORMATION AVAILABLE

3. **POPULATION**.—According to the census, the population of Bengal was 60·31 millions in 1941. The rate of increase at ten-yearly intervals had been 2·8% from 1911 to 1921, 7·3% from 1921 to 1931, and 20·3% from 1931 to 1941. It has been suggested that these figures do not reflect the real rate of increase, but an over-statement of actual numbers in the 1941 census or an understatement in the 1931 census or both. This may be true, but there are no reliable data to indicate the degree of error, if any, involved. There is, therefore, an element of uncertainty about the actual population in any particular year which must necessarily affect all estimates of the aggregate consumption of rice in the province as a whole.

4. **RATES OF CONSUMPTION OF CEREALS**—(i) *Standards* (per adult and per capita).—The standard advised by the Government of India for purposes of rationing, and generally followed throughout India, is one pound a day per adult. The standard adopted in the rationing of Calcutta is 4 seers per week per adult, equivalent to 19 ounces per day. These standards are not based on ascertained actual consumption. It is generally assumed that the consumption of 100 persons of all ages is equivalent to that of 80 adults. On this basis, the standard rates of per capita consumption are 80% of those of adult consumption.

(ii) *Actual off-take of Greater Calcutta under Rationing*.—The average weekly off-take, on the basis of 22 weeks' actuals, was 5,529 tons of rice and 3,562 tons of wheat and wheat-products, or 9,091 tons in all. The number of registered ration card holders in Greater Calcutta was 4·10 millions. Of these 3·36 millions are adults, 0·68 million are children entitled to a half ration, and the rest are infants not entitled to any cereal ration; in other words, the total in terms of adults is 3·70 millions. If these figures represent the actual population, then the actual average off-take would be as follows :—

<i>Average off-take</i>	<i>In seers per week</i>	<i>In ounces per day</i>
Per adult	2·68	13
Per capita	2·41	11

But the number of registered ration cards cannot safely be assumed to be equivalent to the number of the total population, for the former include "dead cards" which, though registered are not used. The proportion of "dead cards" among those registered with Government stores is 16 per cent and it is believed that the proportion is smaller among cards registered elsewhere. Hence the actual average off-take is somewhere between the figures given above and those given below which are obtained by multiplying the figures by 100/84.

<i>Average off-take</i>	<i>In seers per week</i>	<i>In ounces per day</i>
Per adult	3·20	15
Per capita	2·87	14

(iii) *Estimates furnished by Professor Mahalanobis, Honorary Secretary, Indian Statistical Institute, Calcutta.*—Professor Mahalanobis has analysed the results of five different surveys conducted at different times between 1936 and 1942. Some of these were made at the instance of the Bengal Government and others were undertaken by the Indian Statistical Institute or the Viswabharati Institute of Rural Reconstruction. The following estimates, relating to the consumption of cereals, are based on his report :—

Per capita consumption of all cereals	In seers per week	In ounces per day
General average rate for Bengal	3·58	17
Sectional average rates—		
(a) Rural population	3·65	17
(b) Calcutta middle classes	2·79	13
(c) Mofussil Urban middle classes	2·75	13
(d) Industrial working classes	3·47	16
(e) Families whose monthly expenditure is Rs. 10 or less	2·95	14

[*Note.*—The number of families whose monthly expenditure was Rs. 10 or less, was 3,212 as against a total of 15,409 families in the sample ; and the number of persons included in such families was 11,788, as against a total of 81,554 in the sample.]

(iv) *Other estimates.*—Many other estimates have been made in the past which need not be referred to here. These were reviewed by the Foodgrains Procurement Committee, appointed by the Bengal Government during 1944. This Committee drew attention to the wide divergence between the estimates, and concluded that the general average rate of consumption in the province as a whole was probably higher than 4 seers per week per adult. If this view is accepted, the *per capita* rate is not less than 3·20 seers per week or 15 ounces per day.

(v) *Conclusions.*—(a) *General average.*—The available data do not permit of conclusions being drawn with certainty. It is probable that the true average rate is somewhere between the following limits :—

Per capita consumption	In seers per week	In ounces per day
Lower limit	3·2	15
Upper limit	3·6	17

(b) *Sectional averages.*—The rate of consumption of cereals is higher in the villages than in the towns and cities and higher for the working classes than the middle classes.

(vi) *Under-nourishment.*—A low rate of cereal consumption does not necessarily mean under-nourishment. The figures supplied by Professor Mahalanobis show that the relatively lower rates of cereal consumption of the urban middle classes are associated with relatively higher rates of consumption of protective and supplementary foods. But the figures for “families whose monthly expenditure is Rs. 10 or less” indicate a cereal consumption rate of 14 ounces per day with a very low rate of consumption of other foods. This class, which accounts for one-seventh of the total number, is probably under-nourished even in normal times. It is probable that the actual proportion of the population which is under-nourished in normal times is larger than one-seventh, but precise information on this point is not available.

5. *DIRECT ESTIMATES OF ANNUAL CONSUMPTION.*—If, as mentioned already, the probable rate of consumption per head per week is anything between 3·2 seers and 3·6 seers, the probable annual consumption of a population of one million during one year might be anything between 153,000 tons and 172,000 tons. As the population of Bengal during 1941 was (according to the census) 60·3 millions, the probable annual consumption of the province may have been anything between 9·2 million tons and 10·4 million tons during 1941. The elements of uncertainty inherent in any estimate of total consumption of the province during any particular year include the following :—

(a) There is a range of error of over one million tons, arising out of the uncertainty about the average rate of consumption.

(b) The population of Bengal during 1941 may have been less than the census figure of 60·3 millions. If the true figure was smaller by as much as, say, 3 millions, the figure of consumption would have to be reduced by nearly half a million tons.

(c) An estimate of consumption for any earlier or later year depends on an allowance being made for the increase of population. This might, in view of the doubts mentioned already, be anything between 0·7 per cent per annum and 2 per cent per annum.

(d) For the following reasons it cannot be assumed that an average rate of consumption per head remains constant over a series of years :

(i) The proportion of the population which is under-nourished in normal times may be increasing. There is, however, no means of determining the effect of such a change on total consumption.

(ii) The poorer classes in rural areas, whose standard of consumption is normally low, probably reduce their consumption in lean years and increase it in years of good harvest. Likewise the urban poor increase their consumption in periods when the prevailing level of wages and employment rises more rapidly than the price of cereals, and decrease it when the opposite occurs. It is, however, not possible to make any satisfactory allowance for such variations, because neither the numbers of the classes whose consumption may vary for these reasons, nor the range of the variation, is known.

It may thus be concluded that the information available is such that any estimate of the annual consumption of the province based on population statistics and an assumed average rate of individual consumption is likely to err by as much as 2 million tons—or about 25 per cent of the estimate. So wide a margin of error blocks this method of approach.

6. BASIS OF INDIRECT ESTIMATES OF CONSUMPTION.—The annual consumption of the province may be estimated indirectly, without making any assumptions about the rates of individual consumption. Thus, if information is available as regards (i) the stock in hand in Bengal at the beginning of the year (ii) the stock added to it in the course of the year as a result of production and the balance of imports and exports, and finally, (iii) the stock carried forward at the end of the year, then (i) + (ii) — (iii) represents consumption and seed. Estimates of consumption have been made on this basis. Attention must, however, be drawn to the following difficulties :—

(i) Information is available about production, imports, exports and seed requirements. These are, however, subject to errors which in Bengal and other permanently settled areas are of considerable magnitude.

(ii) There is no information available about stocks carried over from year to year. An attempt may be made to overcome this difficulty taking a long period of years and assuming that the difference between the stocks at the beginning and end of the period is negligible in comparison with the consumption during the period as a whole. This is a reasonable method of procedure, but can give only the average annual consumption over the whole period and not the consumption of any particular year. In order to deduce the latter, some assumption has to be made as to the rate at which consumption varied from year to year during the period, and this is subject to uncertainties referred to in item (d) of paragraph 5 above.

7. STATEMENT I EXPLAINED.—(i) *Production*.—Information furnished by the Government of Bengal about the estimated acreage and yield of crops during 1943, and during the 15 preceding years, is given in tabular form in Statement I. The figures are based on crop forecasts prepared over a series of years by the Director of Agriculture, Bengal. The three rice crops (*aman*, *boro* and *aus*) are shown separately. The *aman* crop in any particular year is the crop which came into supply during that year, having been harvested towards the end of the preceding year. The *boro* and *aus* crops are those which are harvested during the year against which they are shown.

(ii) *Imports and Exports*.—Particulars of imports and exports, as furnished by the Bengal Government, are included in the statement. These are based on statistics compiled by the Department of Commercial Intelligence and Statistics. They relate to the financial year, except for 1943 for which figures for the calendar year are furnished (figures for earlier years have not been separately worked out in terms of the calendar year, since the difference involved is unlikely to be material for purposes of this analysis).

(iii) *Current supply*.—Current supply during each year is production *plus* imports *minus* exports. This has been determined for each year and shown in the statement.

(iv) *Seed requirements*.—In the Report on the Marketing of Rice in India and Burma, it has been estimated that the seed requirements of 21·27 million acres in Bengal are 376,000 tons, i.e., an average of 1·77 tons per hundred acres. On this basis, the seed requirements of the sown area of each year have been worked out and shown in the Statement.

8. STATEMENT II EXPLAINED.—(i) *Consumption (Average over 15 years)*.—Figures of current supply (less seed), as determined from Statement I, are set out in column 2 of Statement II against the years noted in column 1. The average of the figures of current supply during 15 years (1928-1942) is taken, for the reasons explained in paragraph 6, to be the average annual consumption in this period as a whole. This amounts to 8·14 million tons.

(ii) *Consumption (year to year)*.—To deduce from this figure an annual estimate of consumption some assumptions must be made about the variation in consumption from year to year.

It is assumed that consumption increased at the rate of 0·10 million tons each year during the period.¹ The results are set out in column 3 of Statement II.

(iii) *Surpluses and Deficits.*—If we compare current supply (less seed) with consumption, the difference is either the surplus or the deficit according as supply exceeds or falls short of the requirements.² These figures have been determined and set out in Statement II.

(iv) *Current supply, surpluses, and deficits, in terms of weekly requirements.*—(i) 'Weekly requirements' may be estimated by dividing the estimates of annual consumption by 52. The number of weeks during which current supply may be expected to be consumed is obtained first by deducting seed requirements from current supply and then dividing by the figure representing 'weekly requirements'. This has been worked out and shown in Statement II. Similarly, surpluses and deficits are also expressed in terms of weekly requirements.³

9. STATEMENTS III AND IV EXPLAINED.—Statements I and II have been compiled on the basis of statistics of production, imports and exports, as available; and without alteration. But it is known that they are subject to certain errors and omissions. It is now necessary to consider the latter and make reasonable allowances for them.

Statements III and IV are the result of a revision of Statements I and II in the light of the following considerations:—

(i) *Estimates of acreage.*—The figures of acreage under the *aman*, *boro* and *aus* crops of different years as set out in Statement No. I are those given by the Director of Agriculture, Bengal. There is an important difference between the manner in which these figures are arrived at in Bengal (and certain other permanently settled areas) on the one hand, and the *ryotwari* areas of India, on the other. In the latter, the figures are arrived at by an enumeration of survey fields under crop, and the ascertainment of areas from land registers and village records.

In Bengal, the figures are arrived at by estimating the area in a particular year as a proportion of an assumed *norm*. It has been ascertained in evidence, that these *norms* were assumed in the past without any reference to areas under crop as recorded in settlement reports of different districts in different years. A comparison of the total of areas thus recorded in settlement reports with the acreages furnished in crop forecasts indicates that there has been a systematic under-estimation of acreages over a long period of years. This is also the opinion of an experienced administrative officer of Bengal, as well as of Professor Mahalanobis who has studied the

¹This implies an increase of consumption at the rate of 1·34 per cent per annum in 1928, diminishing slowly to 1·13 per cent per annum in 1942. Whether the allowance is reasonable or not depends primarily on what the rate of increase of population has been. Here it has been assumed that the rate of increase is not as small as 0·73 per cent per annum (as a comparison of the census figures of 1921 and 1931 suggests) nor as high as 2·03 per cent per annum (as a comparison of the census figures of 1931 and 1941 suggests). It is probable that the actual rate of increase of population has been more steady, approximately equivalent to the mean of these two figures, *i.e.*, 1·38 per cent per annum. If this is accepted, and given the proportion of the poorest classes to the total population, an increase in the assumption made in Statement II about the variation from year to year is not unreasonable.

It should be immediately added that the derived figures are intended to be estimates of quantities required for consumption. It is possible that the actual consumption during any particular year may be a little below or a little above requirements—this depending on conditions of season and prices. In years of very poor (or very good) harvests, it is not merely possible but probable, that actual consumption may be significantly in defect (or in excess as the case may be of estimated consumption. These facts must be borne in mind, in drawing conclusions from the estimates of consumption, which are estimates of the quantities likely to be consumed by the population as a whole, at the average rate of consumption of the different classes of the population, in the immediately preceding years.

²It is probable that surpluses, worked out in this manner, may in years of very good harvests be larger than the actual surpluses—to the extent to which the poorer classes consume more than normally. It is probable also that deficits, estimated in the same way may, in years of very poor harvests, be larger than the actual deficits—to the extent to which the poorer classes consume less than normally.

³There is an advantage in expressing supply figures in terms of weekly requirements which may be explained as follows:—

The object of this note is to draw, from statistical data which may be subject to large errors, conclusions which are as little as possible vitiated by such error. It is a well known rule of statistical analysis that the error in a ratio between two terms is very nearly the difference between the errors in the two terms. If the errors in the terms are in the same direction, they tend to neutralize one another; and, if they are also nearly equal, the error in the ratio is very small. As estimates of weekly requirements are deduced from figures of current supply, the error in the latter is likely to be reflected by an error of the same order in the former. The errors thus tend to neutralize one another.

subject. It may, therefore, be regarded as well established that there is an under-estimation. The correction to be made can be deduced from the following figures :—

	Area sown (in million acres)	
	Aman	Boro and aus
Standard (1938-1942)	15.99	6.40
Total of Settlement Reports	19.22	6.32

These figures justify the assumption that the estimated acreages of *aman* crop are likely to be closer to the true figures, if they are increased by one-fifth. Figures, revised on this basis, are set out in Statement III annexed to this note.

(ii) *Estimates of yield.*—After the acreage is estimated, the yield is estimated by a process involving two factors, *viz.* (a) the assumption of a 'normal' rate of yield per acre, and (b) the estimation of the actual rate of yield of the year as a proportion of the 'normal'.

Errors incidental to the latter are unavoidable, but will probably not affect the comparability of estimates made in different years. As regards 'normal yield rate', this is settled at quinquennial intervals by means of crop-cutting experiments. The assumed rates are shown below :—

Period	Assumed 'normal' rate of yield in maunds per acre		
	Aman	Boro	Aus
1928-32	13.5	15.0	12.4
1933-37	12.5	14.5	11.1
1938-42	12.4	13.6	10.9

The 'normal yield' is the absolute value attached to a 12 anna crop, and has been defined as the yield which "in the existing circumstances might be expected to be attained in the year if rainfall and season were of a character ordinary for the tract under consideration, that is, neither very favourable nor the reverse". If (as is implicit in this definition) the effect of the season is regarded as constant, the only factors which influence the yield rate per acre are the extension of cultivation to marginal lands, alteration in the fertility of the soil or changes in methods of cultivation. These are factors the effect of which is perceptible only over a long period. In reply to an enquiry on this point, the Director of Agriculture as well as the Department of Civil Supplies, Bengal, have agreed that the assumed rates of 1928-1932 were overpitched. It seems, therefore, reasonable to assume that the *aman* yield figures of 1928-1942 should be reduced by 1/15th, and the *aus* yield figures should be reduced by 1/12th, in order to make them comparable with the corresponding figures of succeeding years.¹ As regards the *boro* rates, the differences between successive years are unduly wide, though nearly equal; but, in view of the very small proportion which this crop bears to the total, it is not worth while disturbing the *boro* figures. Figures of yield, revised in this manner, are exhibited in Statement III.

(iii) *Imports and Exports.*—The figures of imports and exports set out in Statement II are not estimates. They are based on the actual registration of receipts and despatches made by Port and Railway authorities and the statistics, compiled by the Department of Commercial Intelligence and Statistics, are far more accurate than estimates of yield of crops. The figures, however, do not include movements across the provincial frontiers by road or by country-boat. Such movements take place in both directions and, except for the trade with Assam and Arakan, probably balance one another. On the balance of recorded movements, the position during each of the three quinquennial periods was as shown below :—

Period	Net Imports (+) Net Exports (—) (in thousands of tons)
Average (1928-32).	—128
Average (1933-37).	+51
Average (1938-42).	+159

¹ On this basis the rates of normal yield of the *aman* and *aus* crops are as follows :—

	(In maunds per acre)	
	<i>aman</i>	<i>aus</i>
1928-32 .	12.6	11.4
1932-37.	12.5	11.1
1938-42 .	12.4	10.9

It has been suggested that the effects of the economic depression on agricultural economy generally may be a possible cause of diminution of the rates of normal yield.

The quantities are relatively small. The unrecorded movements are probably smaller. It is proposed to assume that unrecorded movements are equivalent to net imports of roughly 50,000 tons per annum in the second quinquennium and 100,000 tons in the third quinquennium. This would probably suffice to remove the possibility of the true extent of the dependence of Bengal on external supply being under-estimated. Figures of external supply, revised on this basis, are exhibited in Statement III.

10. COMMENTS ON ORIGINAL AND REVISED FIGURES.—(i) The most important difference between Statements I and II based on original figures, and Statements III and IV based on revised figures, is the increase in the supply figures which results from increasing the *aman* acreage by one-fifth. There is evidence suggesting that the revised figures are nearer the truth. In paragraph 5 above, it has been pointed out that the probable limits of consumption during 1941 were 9·2 and 10·4 million tons. This result was deduced from direct estimates of consumption, without reference to supply statistics. According to Statement II, the consumption requirements are estimated for this year as 8·74 million tons; while, according to Statement IV, the estimate is 9·90 million tons. These estimates were arrived at without any reference to estimates of actual consumption, but indirectly from supply statistics. The fact that the estimate arrived at in Statement IV lies between the probable limit, while the estimate arrived at in Statement II is smaller than the lower limit by nearly half a million tons, suggests that the revised figures are likely to be more accurate.

(ii) Other changes, *viz.*, reduction of yield rates in the quinquennium 1928-32 and increase of net imports in the subsequent decade, are quantitatively of smaller importance.

(iii) In the course of further discussion in this note the figures contained in Statements III and IV will be referred to, as they are regarded as likely to be nearer the truth than the corresponding figures of Statements I and II. Both sets of figures are, however, available for comparison, when necessary.

SECTION B—SUPPLY IN RELATION TO REQUIREMENTS FROM 1928 TO 1937

11. In this section it is proposed to examine the relation of supply to requirements during the ten years 1928 to 1937. The points to be considered are—

- (i) the relative importance of the different elements in current supply during the period as a whole, *viz.*, the yields of different crops and external supply;
- (ii) the variations of supply, and surpluses and deficits in different years;
- (iii) the carry-over and total supply in years of serious shortage of current supply.

In the next section, these points will be examined in relation to the period 1938 to 1942. Later figures of 1943 will be compared with those of the two previous periods.

12. The following table shows average current supply, in the ten years 1928 to 1937 :—

	<i>Supply in terms of weekly requirements¹</i>
(i) <i>Aman</i> supply	42
(ii) <i>Boro</i> and <i>aus</i> supply	12
(iii) External supply	..
Current supply	54

The yield of the *aman* crop, the most important source of supply, provided on the average the food required by the province for 42 weeks. The *boro* and *aus* crops provided 12 weeks' food. (Of these two crops, the *aus* is much more important. The *boro* accounts for a little more than one week's food). Taking the period as a whole, the external supply was quantitatively negligible. During the first half of the decade, the province was a net exporter of less than one week's supply per annum; and, towards the end, it was a net importer of less than one week's supply per annum. Thus current supply, on the whole, exceeded requirements by a margin equivalent to nearly two weeks.

13. The variations of current supply from year to year, during this ten-year period, are shown below :—

Year	Current supply in terms of weekly requirements	Year	Current supply in terms of weekly requirements
1928	45	1933	60
1929	57	1934	55
1930	52	1935	53
1931	57	1936	44
1932	56	1937	59

¹Rounded to the nearest week.

Two years stand out from this table, *viz.*, 1928 and 1936, as years of serious shortage in current supply. During the remaining 8 years there was no shortage of current supply, and in a number of years it was substantially in excess. Surpluses exceeded deficits by a considerable margin; and, *prima facie*, it would appear that stocks carried over from year to year must have been accumulating in the province during the period. Are these inferences consistent with experience?

14. There is no doubt that there was a serious shortage of current supply during 1928 and 1936. It is known that the yield of the *aman* crop harvested in the years immediately preceding 1928 and 1936 was unusually low, and there was serious distress among the poorer classes in parts of the province. Relief measures were undertaken on a considerable scale during those years. So far, the figures are confirmed by known facts. But the question arises, in respect of 1936, why, if stocks had been accumulating as the figures suggest, considerable distress should have occurred during that year? Two answers are possible: One is that the surpluses of previous years were not, in fact, substantially carried over, but were eaten up because, when crops are good and prices low, actual consumption by the poorer classes is in excess of the "requirements" indicated by the figures. The other possibility is that the surpluses indicated by the figures were substantially carried over; that the province as a whole did possess during 1936 a carry-over which, together with current supply, was more than sufficient for requirements; that distress nevertheless, occurred because large numbers among the poorer classes whose income was diminished by the failure of the crop, were too poor to buy the supplies which were physically available. The latter is probably the correct view. It is true that the consumption of the poorer classes is variable. Large numbers who live on the margin of subsistence consume more when they can and less when they must. But the range of this variation should not be over-estimated. The following considerations suggest that increase of consumption could not have wiped out the whole, or even a large part, of the surpluses of the years preceding 1936:—

(i) The cultivators and non-cultivating landholders who have a surplus in excess of their normal annual requirements are likely to consume an adequate ration even in normal times and unlikely to increase their consumption in years of good supply or low prices. Though this class may not be larger in numbers than those who produce less than their annual requirements, it is likely to be in physical possession of a large proportion of the total surplus produce. This is likely to have been carried over in full,—as stocks in the hands either of producers or traders.

(ii) From 1930 onwards for a number of years, the price of rice was abnormally low. This meant that the poorer cultivators,—who could have increased their consumption—were obliged to sell a larger quantity of produce than normally, in order to secure the same amount of cash for paying rent, debts, and other pressing cash obligations.

(iii) The period of abnormally low prices also coincided with a fall in the level of employment. Therefore, labourers who could have increased their consumption in prevailing conditions were probably handicapped to some extent by diminution of their earnings.

It may, therefore, be concluded that during 1936 there was a carry-over which largely exceeded the deficit in current supply during the year; and that distress prevailed, not because the supplies required for the adequate nourishment of the poorer classes were unavailable, but because these classes could not afford to buy them. This is an important conclusion, in connection with the supply position in 1943.

SECTION C—SUPPLY IN RELATION TO REQUIREMENTS FROM 1938 TO 1942.

14. The following table shows the average current supply in the 5 years 1938 to 1942:—

	Current supply in terms of weekly requirements ¹
(i) <i>Aman</i> supply	38
(ii) <i>Boro</i> and <i>aus</i> supply	10
(iii) External supply	1
	—
Current supply	49

If we compare these figures with those in paragraph 12, it appears that, on the whole, current supply was in deficit during this period. The *aman* crop provided on the average a supply which was 4 weeks shorter than in the previous decade. The *boro* and *aus* crops provided a supply which was 2 weeks less. On the other hand, the province had become a net importer during the period, and external supply accounted for rather more than one week's supply. The difference between the two periods can be explained as follows:—First, the rate of increase of cultivation of rice was falling behind the rate of increase of population, and there was thus a long-term tendency towards decreasing surpluses and increasing deficits. Secondly, this tendency was

¹Rounded to the nearest week.

to some extent offset by a preponderance of good seasons in the previous period, and emphasized in this period by a preponderance of unfavourable seasons. This is illustrated by the figures in the following table :—

	Total area sown (In millions of acres)	Average rate of yield per acre (In tons)
Average (1928-1932)	23·71	0·39
Average (1933-1937)	24·53	0·40
Average (1938-1942)	25·53	0·37

15. The variations of current supply from year to year during this five-year period are shown below :

Year	Current supply in terms of weekly requirements
1938	52
1939	49
1940	50
1941	39
1942	54

On comparing these figures with those furnished in paragraph 13 above, 1941 stands out as a lean year even more clearly than 1928 and 1936 in the ten-year period previously considered. There was only one year (1942) when there was a surplus and the surplus was relatively small. Thus it appears that stocks must have been drawn upon during this period, and particularly heavily during 1941. Distress occurred in rural areas during this year, and relief measures were undertaken on a considerable scale.

16. The state of current supply during 1941 supports the conclusion reached in paragraph 14 above, namely, that the stocks carried over from year to year must have been considerable. The deficit in the current supply was as much as 13 weeks. It is difficult to believe that the whole, or even a large part, of this deficit could have been met by restriction of consumption. Undoubtedly, the actual consumption of large classes of the poor must have been reduced to a significant extent. Let us suppose that one half of the population restricted their consumption in varying degrees, so that one-sixth reduced its in-take of rice by half for 6 months, one-sixth for 4 months, and the remainder for 2 months and that all this was *in addition* subject to such under-nourishment as exists in normal years. The reduction of consumption thereby effected would amount to only 4 weeks' supply.

17. It is arguable that there must have been a large consumption of the new *aman* crop reaped at the end of 1941 and this helped to make the deficit good. This is, no doubt, true. There is evidence that in 1941 there was noticeable increase of such consumption. Here again we may ask how much could this have amounted to ? The interval between the reaping of the *aman* crop and the end of the year is small, and those sections of the poorer classes who have to get their supply from the markets, and not directly from the fields, would still consume only earlier grown or imported rice. Making allowance for all these factors, it still remains probable that in 1941, as in 1936, there was not an absolute deficiency of supply. The total supply, consisting of the carry-over and current supply, must have been smaller than in 1936, but not necessarily short of the requirements of the province as a whole. The distress prevailing in the year 1941 was, as in 1936, primarily due to the lack of purchasing power in the hands of the poorer classes who were affected by the crop failure.

18. An attempt can be made to discover whether there was any stock left at the end of 1941, as the carry-over¹ at the beginning of 1942, in the following manner. The carry-over at the beginning of 1928 is unknown. Supposing it was entirely wiped out by the deficit of that year, we may consider only the surpluses and deficits of succeeding years as set out below :—

Year	Surplus (Million tons)	Year	Deficit (Million tons)
1929	0·79	1936	1·50
1931	0·80	1939	0·51
1932	0·68	1940	0·34
1933	1·40	1941	2·43
1934	0·44		
1935	0·24		
1937	1·35		
	5·70		4·78

These figures indicate the existence of nearly one million tons, as the carry-over at the beginning of 1942—that is, about 5 weeks' supply for that year. (This might have been rather more, if the

¹ The stock of all rice at the beginning of 1942 minus the yield of the *aman* crop harvested in 1941, see paragraph 2 (iv) above.

carry-over at the beginning of 1928 had been larger than the deficit during that year). There is of course little direct evidence in support of this conclusion. All that can be said is that it is a reasonable inference drawn from the analysis made in this note. It is not rendered improbable merely because actual consumption is variable and not identical with the assumed figures of 'requirements'. If consumption increased in good years and decreased in bad years, the surpluses would no doubt be smaller, but the deficits would also be smaller.

SECTION D—SUPPLY IN RELATION TO REQUIREMENTS IN 1943.

19. The following table shows the particulars of current supply during 1943 :—

	Supply in terms of weekly requirements ¹
(i) <i>Aman</i> supply	29
(ii) <i>Boro</i> and <i>aus</i> supply	13
(iii) External supply	1
	43
Current supply	

If we compare the figures with those of the *average* of the preceding 5 years (as set out in paragraph 14 above), current supply was short by about 6 weeks. This was mainly due to the low yield of the *aman* crop reaped at the end of the previous year which provided food sufficient for only 29 weeks, as compared with the average, viz. 38 weeks. There was a shortage in the *aman* supply to the extent of about 9 weeks. The *boro* and *aus* crops yielded more, thus reducing the shortage of current supply. External supply was about the same during 1943 as compared with the average.

20. Thus, 1943 was a lean year, comparable with the three years 1941, 1936 and 1928 already considered. Current supply in these years is compared below :—

Year	Current supply in terms of weekly requirements
1943	43
1941	39
1936	44
1928	45

The shortage of current supply was a little more serious during 1943 than in 1936 and 1928, but less serious than in 1941. This table brings out the need of forming some idea of the carry-over. If consumption is so variable that it can adjust itself to large variations in current supply and variability of consumption is of much greater importance than the carry-over, it is difficult to understand why an unprecedented tragedy befell Bengal during 1943, when current supply was larger than in 1941 by nearly 4 weeks' supply. It is clear, however, from the examination of the supply position in past years—

(i) that the total supply consisting of the carry-over, as well as current supply, has generally exceeded annual requirements by a considerable margin in past years ;

(ii) that distress occurs even when such a margin is adequate, primarily because the poorer classes in rural areas affected by crop failure, lack the purchasing power necessary for buying supplies even though they are physically available in the province ; and that this was so both during 1941 and 1936*.

21. If the conclusion stated in paragraph 18 is accepted some estimate of the carry-over during 1943 may be reached. The carry-over at the beginning of 1942 was about 5 weeks requirements. During 1942, current supply exceeded annual requirements, and there was a small surplus of between one and two weeks' requirements. This suggests that the carry-over at the beginning of 1943 was about 6 weeks' requirements. If this is correct, the total supply during 1943 was probably as follows :—

	Supply in terms of weekly requirements
(i) Carry-over	6
(ii) Current supply	43
	49
Total supply	

Thus, it is probable that total supply during 1943 was not adequate for the requirements of the year. In other words, there was an absolute deficiency, the probable magnitude of which was equivalent to about 3 weeks' requirements.

¹ Rounded to the nearest week.

* It is not possible to say anything about 1928, as the supply position prior to that year has not been examined.

22. It must, however, be emphasized that there is no direct information available about the carry-over of any year, and that the basis for assessment of surpluses and deficits involves many assumptions, none of which is conclusively provable. It can, therefore, be argued that the carry-over at the beginning of 1943 was smaller or larger than has been estimated in the previous paragraph. Some of the points in favour of either view are referred to below :—

(i) The conclusion that the carry-over at the beginning of 1942 was about 5 weeks' supply was based on the assumption that the carry-over at the beginning of 1928 was so small that it was wiped out by the deficit in that year. It may have been larger. This is possible, but there is some reason to believe that it may not have been very large. The *aman* crop of 1926 which came into supply during 1927, was also a poor one ; and this makes it likely that the carry-over was not large at the beginning of 1928.

(ii) It may be urged that there was never any large carry-over during these years, and that whatever existed was completely exhausted at the end of 1941 ; and that since the current supply in 1942 was only a little more than sufficient for annual requirements, there could have been practically no carry-over at the beginning of 1943. The reasons for believing that there had been a substantial increase in stocks during the years of depression and a few years thereafter have already been explained.

(iii) Lastly, mention should be made of the results of the ' food drive ' conducted in June 1943 by the Bengal Government. In its course a census of stocks was taken and the requirements for the remainder of the year, as well as the anticipated yield of the *aus* crop, were ascertained. The conclusion reached by the Bengal Government was that there was an absolute deficiency of 1·06 million tons—roughly equal to 5 weeks' requirements on the basis of the present analysis. The results are, however, not conclusive because it was known at the time that stocks were under-estimated, on account of under-statement by the owners as well as concealment. The Bengal Government assumed that the under-estimation was equivalent to one-fourth of the ascertained stocks. There is no way of determining whether this allowance was adequate. If it was not, the deficiency would have been less. The statistical results of the food drive are indeed of value in that they suggest that there was an absolute deficiency. The total of ascertained stocks at the time of the drive was 0·94 million tons. Unless, therefore, the stocks which were under-stated or concealed largely exceeded the ascertained stocks, it is evident there must have been some deficiency. On the whole, therefore, the results of the ' food drive ' are consistent with the conclusions about the supply position reached in the preceding paragraphs.

23. To sum up, the supply position in 1943 may be described as follows :—

(i) *Comparison with previous years.*—(a) There were three years, within a period of 15 preceding years, when the shortage in current supply was comparable with that in 1943.

These were 1941, 1936 and 1928. In these years, the shortage was due to the failure of the *aman* crop, there was distress among the poorer classes in rural areas affected by the crop failure, and relief measures were undertaken on a considerable scale. The current supply during 1943 was smaller, in relation to requirements, than in any previous year except 1941.

(b) The carry-over was smaller in 1943 than in 1941 and much smaller than in 1936.

(c) The total supply, including the carry-over, was probably smaller in 1943 than in any of the preceding 15 years.

(ii) *Estimated supply in relation to requirements of the year.*—(a) The current supply during 1943 was sufficient for the requirements of about 43 weeks.

(b) The carry-over at the beginning of the year was sufficient for the requirements of about 6 weeks.

(c) The total supply during the year was sufficient for only about 49 weeks. It is, therefore, probable that there was an absolute deficiency of supply, of the order of 3 weeks' requirements.

STATEMENT I.—UNADJUSTED CURRENT SUPPLY AND SEED REQUIREMENTS IN BENGAL.

(Figures in '000)

Year	Aman crop		Boro crop		Aus crop		External supply			Current supply	Seed requirements
	Acreage	Yield	Acreage	Yield	Acreage	Yield	Imports	Exports	Net imports (+) or exports (-)		
1	2		4	5	6	7	8	9	10	11	12
1928	13,210	Tons 4,731	400	Tons 160	5,649	2,119	Tons 668	Tons 507	Tons +161	Tons 7,171	Tons 368
1929	15,357	7,405	398	162	5,031	1,589	270	520	-250	8,906	359
1930	14,794	6,453	400	160	5,082	2,107	208	519	311	8,409	384
1931	15,120	6,943	380	156	6,163	2,190	571	571		9,289	386
1932	15,571	7,150	394	152	5,795	2,209	360	599	-239	9,272	385
1933	15,590	6,958	394	198	5,775	2,254	549	630	81	9,329	380
1934	15,499	6,226	399	200	5,571	1,842	978	614	+364	8,632	372
1935	14,760	6,222	408	209	5,851	2,015	433	333	+100	8,546	372
1936	14,837	5,003	404	189	5,757	1,903	570	465	+105	7,200	392
1937	15,804	7,692	432	209	5,865	1,963	244	479	235	9,629	390
1938	15,923	6,873	414	198	5,727	1,403	710	677	+33	8,507	390
1939	15,836	5,963	425	201	5,742	1,758	1,156	774	-382	8,304	388
1940	16,096	6,504	418	194	5,416	1,525	752	494	-258	8,481	387
1941	14,917	4,315	437	203	6,485	2,250	759	536	+223	6,991	422
1942	16,914	7,396	444	206	6,507	1,694	274	376	102	9,194	410
1943	16,207	5,020	480	218	6,500	2,390	275	11	+264 (a)	7,892	472

(a) Calendar year figure as per "Trade" Statistics.

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STATEMENT II.—CONSUMPTION, SURPLUSES AND DEFICITS IN BENGAL.
(In millions of tons)

Year	Current supply less seed	Consumption	Surplus (+) or Deficit (—)	In terms of weekly requirements	
				Current supply	Surplus (+) or Deficit (—)
1	2	3	4	5	6
1928	6·80	7·44	—0·64	47·5	—4·5
1929	8·55	7·54	+1·01	59·0	+7·0
1930	8·03	7·64	+0·39	54·6	+2·6
1931	8·90	7·74	+1·16	59·8	+7·8
1932	8·89	7·84	+1·05	59·0	+7·0
1933	8·95	7·94	+1·01	58·6	+6·6
1934	8·26	8·04	+0·22	53·4	+1·4
1935	8·17	8·14	+0·03	52·2	+0·2
1936	6·81	8·24	—1·43	43·0	—9·0
1937	9·24	8·34	+0·90	57·6	+5·6
1938	8·12	8·44	—0·32	50·0	—2·0
1939	7·92	8·54	—0·62	48·2	—3·8
1940	8·09	8·64	—0·55	48·7	—3·3
1941	6·57	8·74	—2·17	39·0	—18·0
1942	8·78	8·84	—0·06	51·6	—0·4
Total 1928-42	122·08				
Average 1928-42	8·14				
1943	7·42	8·94	—1·52	43·2	—8·8

STATEMENT III.—ADJUSTED CURRENT SUPPLY AND SEED REQUIREMENTS IN BENGAL.

(Figures in '000)

Year	Aman crop		Boro crop		Aus crop		External supply	Current supply	Seed requirements
	Acreage	Yield	Acreage	Yield	Acreage	Yield	Net imports (+) or exports (-)		
1	2	3	4	5	6	7	8	9	10
		Tons		Tons		Tons	Tons	Tons	Tons
1928	15,852	5,299	400	160	5,649	1,943	+161	7,563	422
1929	18,429	8,293	398	162	5,031	1,457	-250	9,662	411
1930	17,752	7,228	400	160	5,082	1,932	-311	9,009	437
1931	18,144	7,776	380	156	6,163	2,008		9,940	440
1932	18,686	8,008	394	152	5,795	2,024	-239	9,945	440
1933	18,708	8,350	394	198	5,775	2,254	-31	10,771	435
1934	18,598	7,471	399	200	5,571	1,842	+414	9,927	425
1935	17,712	7,466	408	209	5,851	2,015	+150	9,840	424
1936	17,804	6,004	404	189	5,757	1,903	+155	8,251	448
1937	18,064	9,231	432	209	5,865	1,963	185	11,218	446
1938	19,107	8,247	414	198	5,727	1,403	+133	9,981	446
1939	19,003	7,155	425	201	5,742	1,758	+482	9,596	445
1940	19,315	7,805	418	194	5,416	1,525	+358	9,882	440
1941	17,900	5,178	437	203	6,485	2,250	+323	7,954	482
1942	20,297	8,876	444	206	6,507	1,694	-2	10,774	467
Total 1928-42	276,271	112,387	6,147	2,797	86,416	27,971	+1,158	144,313	6,608
Average 1928-42	18,418	7,492	410	186	5,761	1,865	+77	9,620	441
1943	19,449	6,024	480	218	6,500	2,390	+264 (a)	8,896	537

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(a) Calendar year figure as per "Trade" Statistics.

APPENDIX

STATEMENT IV.—CONSUMPTION, SURPLUSES AND DEFICITS IN BENGAL.
(In millions of tons)

Year	Current supply less seed	Consumption	Surplus (+) or Deficit (-)	In terms of weekly requirements	
				Current supply	Surplus (+) or Deficit (-)
1	2	3	4	5	6
1928	7.14	8.34	-1.20	44.5	-7.5
1929	9.25	8.46	+0.79	56.8	+4.8
1930	8.57	8.58	-0.01	51.9	-0.1
1931	9.50	8.70	+0.80	56.8	+4.8
1932	9.50	8.82	+0.68	56.0	+4.0
1933	10.34	8.94	+1.40	60.1	+8.1
1934	9.50	9.06	+0.44	54.5	+2.5
1935	9.42	9.18	+0.24	53.4	+1.4
1936	7.80	9.30	-1.50	43.6	-8.4
1937	10.77	9.42	+1.35	59.4	+7.4
1938	9.54	9.54		52.0	
1939	9.15	9.66	-0.51	49.2	-2.8
1940	9.44	9.78	-0.34	50.1	-1.9
1941	7.47	9.90	-2.43	39.3	-12.7
1942	10.31	10.02	+0.29	53.5	+1.5
Total 1928-42	137.70				
Average 1928-42	9.18				
1943	8.36	10.14	-1.78	42.8	-9.2

APPENDIX III

TABLE I.—RICE SUPPLY (INDIA) DURING 10 YEARS

Period	Production	Imports (a)	Exports (a)	(In millions of tons)	
				Net imports (+) or exports (-)	Productions minus net exports plus net imports
1	2	3	4	5	6
5 years ending 1937-38 (Average)	25.84(c)	1.96(b)	0.24(b)	+1.72	27.56
1938-39	23.96(c)	1.56	0.31	+1.25	25.21
1939-40	25.73(c)	2.43	0.29	+2.14	27.87
1940-41	22.19(d)	1.37	0.28	+1.09	23.28
1941-42	25.35(d)	1.07	0.36	+0.71	26.06
1942-43	24.90(d)	0.02	0.28	-0.26	24.64
5 years ending 1942-43 (Average)	24.42	1.29	0.30	+0.99	25.41
10 years ending 1942-43 (Average)	25.13	1.62	0.27	+1.35	26.48

NOTE.—Paddy in the case of trade figures has not been converted into Rice, the proportion being very small.

(a) Trade figures taken from the Memorandum of the Food Department, Government of India.

(b) Calculated on the basis of figures taken from the Report on the Marketing of Rice in India and Burma (1941).

(c) Taken from "Estimates of Area and Yield".

(d) "Crop Forecast" published by the Department of Commercial Intelligence and Statistics.

TABLE II.—WHEAT SUPPLY (INDIA) DURING 10 YEARS
(In millions of tons)

Period	Production	Imports	Exports	Net imports (+) or exports (—)	Production <i>minus</i> net exports <i>plus</i> net imports
1			4		6
5 years ending 1937-38 (Average)	9·81(a)	0·02(c)	0·22(c)	—0·20	9·61
1938-39	9·96(a)	0·17(d)	0·36(d)	—0·19	9·77
1939-40	10·77(a)	0·10(d)	0·08(d)	+0·02	10·79
1940-41	10·03(b)	0·02(d)	0·14(d)	—0·12	9·91
1941-42	10·04(b)	0·02(d)	0·28(d)	—0·26	9·78
1942-43	11·03(b)	(Negligible) (d)	0·03(d)	—0·03	11·00
5 years ending 1942-43 (Average)	10·37	0·06	0·18	—0·12	10·25
10 years ending 1942-43 (Average)	10·09	0·04	0·20	—0·16	9·93

(a) "Estimates of Area and Yield of Principal Crops in India."

(b) "Crop Forecasts and Publications issued by the Department of Commercial Intelligence and Statistics."

(c) "Report on the Marketing of Wheat in India (1937)."

"Accounts relating to Sea-borne Trade and Navigation of British India."

"Trade at Stations adjacent to Land Frontier Routes."

"Annual statement of the Sea-borne Trade and Navigation of Burma."

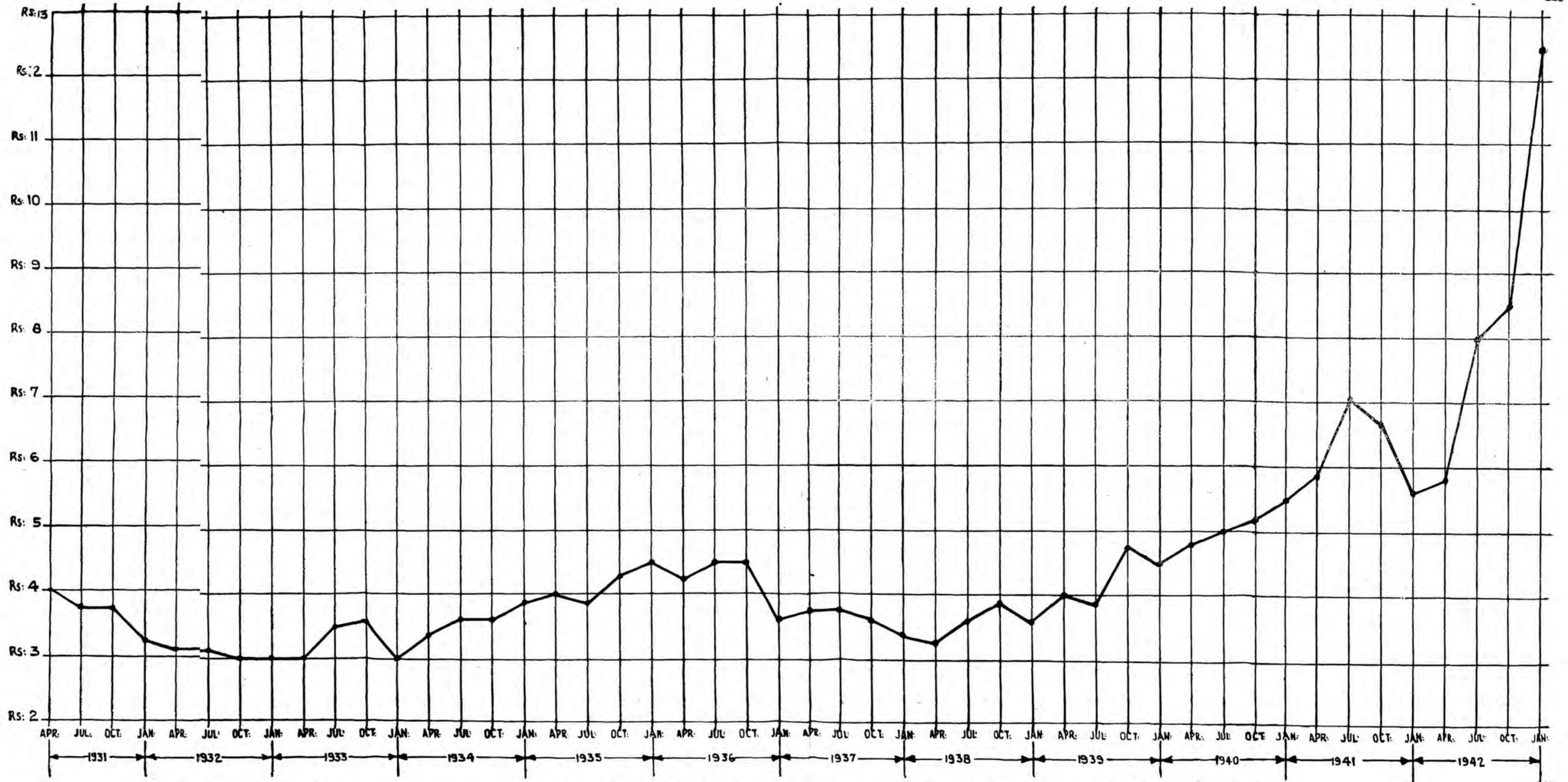
(d) "Memorandum of the Food Department, Government of India."

APPENDIX III

TABLE III.—INDEX NUMBERS OF AVERAGE MONTHLY WHOLESALE PRICES¹

	Primary Commodities			Manufactured Articles	
	General	Rice (Calcutta)	Wheat (Lyallpur & Karachi)	General	Cotton manufac- tures
Week ending 19th August 1939	100	100	100	100	100
1939—					
September	107·6	111	117	110·4	105
December	135·9	114	156	144·5	126
1940—					
March	128·0	114	140	133·9	123
June	112·4	121	117	120·0	118
September	110·3	133	133	111·6	110
December	114·0	140	160	119·7	117
1941—					
March	111·8	139	146	127·2	127
June	122·3	163	148	142·9	143
September	138·3	169	193	166·3	190
December	139·5	172	212	157·8	198
1942—					
March	139·4	159	202	162·5	193
June	152·3	207	214	166·5	212
September	160·4	218	223	179·1	282
December	175·6	218	232	221·5	414

¹ Issued by the office of the Economic Adviser, Government of India. The base period is the week ending 19th August 1939.



WHOLESALE PRICE OF COARSE RICE AT CALCUTTA. FROM APRIL 1931 TO JANUARY 1943.

APPENDIX V

Distribution of Supplies in Bengal (1943).

1. There is no accurate information about the quantities of rice and paddy stocks held in Calcutta at the beginning of 1943. The Foodgrains Control Order came into force on the 15th December 1942. For various reasons, it was not satisfactorily enforced. According to the returns received, total stocks in Calcutta at the end of January 1943 were 3.84 lakh maunds of rice and 0.80 lakh maunds of paddy, or roughly 16,000 tons of rice and paddy in terms of rice, a quantity which would cover the requirements of Calcutta for about three weeks. The stocks held by dealers must clearly have been in excess of this. An officer of the Civil Supplies Department, Bengal, pointed out that many dealers had not taken out licences by this time, not all licensed dealers submitted returns, and there were glaring discrepancies between the stocks reported under the Foodgrains Control Order and the returns secured under a separate Order under the Defence of India Rules at the same time.

2. The following figures, based on Trade Statistics compiled by the Department of Commercial Intelligence and Statistics, throw some light on the position.

	Rice and paddy (in terms of rice) (In Tons)	
	1941	1942
Imports into Calcutta	583,930	271,475
Exports out of Calcutta	280,343	156,950
Net retention in Calcutta	303,587	114,525

The normal annual rice consumption of the area served by the supplies received into the Calcutta trade block cannot be stated precisely, and the quantities arriving by country boat which should also be taken into account, are unknown. The area is somewhat smaller than the area of Greater Calcutta at present under rationing, but it can be safely assumed that the normal annual consumption would be somewhere between 200,000 and 250,000 tons. It is, therefore, likely that the net retention in Calcutta during 1942 was short of annual requirements by several months, and that while stocks in Calcutta at the end of 1941 were above the normal level, they were severely depleted by the end of 1942. Stocks held on the first day of 1943 were probably much smaller than those held on the corresponding day of previous years, though it is impossible to say how many weeks' stocks were actually carried in the aggregate by consumers, mills, and traders.

3. Imports into Calcutta, of rice and paddy (in terms of rice), during the first quarter of 1943 were as follows :—

	(In Tons)			
	January	February	March	Total
(i) From within Bengal by rail and river steamer ¹ . . .	6,253	4,521	13,383	24,157
(ii) From outside Bengal by rail and river steamer ¹ . . .	1,077	3,607	5,639	10,323
(iii) By sea and coast ¹	259		212	471
(iv) By country boat ²	3,219	1,674	2,960	7,853
Total	10,808	9,802	22,194	42,804

Exports out of Calcutta during the first quarter of 1943 were as follows :—

	(In Tons)			
	January	February	March	Total
(i) To Bengal districts by rail and river steamer ¹ . . .	1,040	2,334	3,154	6,528
(ii) To outside Bengal by rail and river steamer ¹ . . .	243	170	1,210	1,623
(iii) By sea and coast ¹	2,087	81	69	2,237
(iv) By country boat ²	438	66		504
Total	3,808	2,651	4,433	10,892

¹Trade Statistics compiled by the Department of Commercial Intelligence and Statistics.

²Based on figures furnished by Civil Supplies Department of the Government of Bengal.

4. On this basis, the net retention in Calcutta during the first three months of 1943 was as follows :—

Month	Rice and paddy (in terms of rice) (In Tons)
January	7,000
February	7,151
March	17,761
Total	31,912

These figures indicate the seriousness of the position in Calcutta during these months.

5. The Bengal Government have furnished the Commission with figures showing arrivals on Government account into Calcutta, month by month, despatches to deficit districts, the deliveries made to employers' organizations and essential services, and to the general public in Calcutta through "Controlled Shops" and "Approved Markets". The relevant figures for the first three months of 1943 are shown below :—

	Rice and paddy (in terms of rice) (In Tons)		
	January	February	March
(i) Arrivals in Calcutta	1,200	6,361	15,727
(ii) Despatches out of Calcutta to the districts		392	2,074
(iii) Deliveries to Employers' Organizations and Essential Services		4,445	12,487
(iv) Deliveries to Controlled Shops and Approved Markets		6,988	

6. Imports into Calcutta during the second quarter of 1943 were as given below :—

	Rice and paddy (in terms of rice) (In Tons)			
	April	May	June	Total
(i) From within Bengal by rail and river steamer ¹	13,824	14,267	13,483	41,574
(ii) From outside Bengal by rail and river steamer ¹	11,746	11,675	27,796	51,217
(iii) By sea and coast ¹	2,010	2,125	1,014	5,149
(iv) By country boat ²				
Total	27,580	28,067	42,293	97,940

Exports out of Calcutta during the same period were as given below :—

	Rice and paddy (in terms of rice). (In Tons)			
	April	May	June	Total
(i) To Bengal districts by rail and steamer ¹	2,042	1,415	5,343	8,800
(ii) To outside Bengal by rail and steamer ¹	79	69	128	276
(iii) By sea and coast ¹	13	4	30	47
(iv) By country boat ²		249		249
Total	2,134	1,737	5,501	9,372

7. The quantities of stocks which were retained in Calcutta according to the foregoing figures were as follows :—

Month	Rice and paddy (in terms of rice) (In Tons)
April	25,446
May	28,330
June	36,792
Total	88,568

The figures reflect the improvement in supply produced by a number of measures namely, the Rescue Plan, De-control in Bengal, and the introduction of Free Trade in the Eastern Region.

¹Trade statistics compiled by the Department of Commercial Intelligence and Statistics.

²Based on figures furnished by Civil Supplies Department of the Government of Bengal.

8. The distribution of supplies passing through the hands of the Bengal Government during the second quarter is shown below :—

	Rice and paddy (in terms of rice)			
	(In Tons)			
	April	May	June	Total
(i) Arrivals in Calcutta	17,550	13,186	18,370	49,606
(ii) Despatches out of Calcutta to the districts	5,405	7,006	3,126	15,537
(iii) Deliveries to Employers' Organizations and Essential Services in Calcutta	16,361	12,399	7,303	36,063
(iv) Deliveries to Controlled Shops and Approved Markets in Calcutta	7,578	6,516	4,188	18,282

9. Imports into Calcutta during the third quarter of 1943 are given below¹ :

	Rice and paddy (in terms of rice)			
	(In Tons)			
	July	August	September	Total
(i) From within Bengal by rail and river steamer	7,914	8,081	6,141	22,136
(ii) From outside Bengal by rail and river steamer	28,933	11,906	9,998	50,837
(iii) By sea and coast		1	3,460	3,461
Total	36,847	19,988	19,599	76,434

Exports out of Calcutta during the same period are given below :—

	Rice and paddy (in terms of rice)			
	(In Tons)			
	July	August	September	Total
(i) To Bengal districts by rail and river steamer	6,353	2,390	4,059	12,802
(ii) To outside Bengal by rail and river steamer	945	1,413	57	2,415
(iii) By sea and coast	75	101	3	179
Total	7,373	3,904	4,119	15,396

10. The distribution of supplies passing through the hands of the Bengal Government during the 3rd quarter of 1943 is shown below :

	Rice and paddy (in terms of rice)			
	(In Tons)			
	July	August	September	Total
(i) Arrivals in Calcutta	16,776	8,780	10,742	36,307
(ii) Despatches to the districts from Calcutta	9,690	3,713	5,753	19,156
(iii) Deliveries to Employers' Organizations and Essential Services in Calcutta	7,315	4,344	6,243	17,902
(iv) Deliveries to Controlled Shops and Approved Markets in Calcutta	5,301	4,396	4,647	14,344

11. During the last quarter of 1943, imports into Calcutta were as below :—

	Rice and paddy (in terms of rice)			
	(In Tons)			
	October	November	December	Total
(i) From within Bengal by rail and river steamer	3,997	5,921	10,760	20,678
(ii) From outside Bengal by rail and river steamer	19,854	23,955	25,169	68,978
(iii) By sea and coast	7,760	2,653	7,394	17,807
Total	31,611	32,529	43,323	107,463

¹ The figures for the 3rd and 4th quarters do not include the arrivals by country boat as no records were maintained for two months and the amounts were small for the other months

Exports out of Calcutta during the same period were as below :—

Rice and paddy (in terms of rice)
(In Tons)

	October	November	December	Total
(i) To Bengal districts by rail and river steamer	2,470	7,820	4,468	14,758
(ii) To outside Bengal by rail and river steamer	14	751	96	861
(iii) By sea and coast	14	1	5	20
Total	2,498	8,572	4,569	15,639

12. The distribution of supplies passing through the hands of the Bengal Government during this quarter is shown below :—

Rice and paddy (in terms of rice)
(In Tons)

	October	November	December	Total
(i) Arrivals in Calcutta	23,662	31,016	32,639	87,317
(ii) Despatches to the districts from Calcutta	7,484	11,108	9,201	27,793
(iii) Deliveries to Employers' Organizations and Essential Services in Calcutta	7,421	9,639	3,104	20,164
(iv) Deliveries to Controlled Shops and Approved Markets in Calcutta	5,922	2,462	2,481	10,865

13. There is a difference between the figures furnished by Bengal Government for despatches to the districts from Calcutta and the trade statistics of exports from Calcutta to Bengal districts by rail and river steamer. The figures are as follows :—

Rice and paddy (in terms of rice)
(In Tons)

	(Despatches Government figures)	Exports (Trade Statistics)
1st quarter	2,466	6,528
2nd quarter	15,537	8,800
3rd quarter	19,156	12,802
4th quarter	27,793	14,758
Total	64,952	42,888

The two sets of figures are not strictly comparable chiefly because the "Despatches" include movements by road and country boat while the "Trade Statistics" do not.

14. The total quantity of wheat despatched to Bengal from other provinces and from abroad during 1943 amounted to 373,000 tons and the total arrivals were 339,000 tons. The total amount received on Government account was 322,000 tons out of which 120,000 tons were despatched to the districts. The arrivals quarter by quarter were :—

	(In Tons)
1st quarter	26,000
2nd quarter	38,000
3rd quarter	99,000
4th quarter	176,000
Total	339,000

The arrivals during the 1st quarter were less than half the normal off-tako. Those during the second quarter were better but they were still much below requirements.

15. The production and consumption of millets in Bengal are normally negligible. In view of the general shortage of rice and of the urgent need of Bengal for supplies, the Central Government arranged, under the Basic Plan, for the importation of millets into Bengal. Over 65,000 tons of millets were despatched during the year, out of which about 55,000 tons arrived. The arrivals were heavy in September and October. The United Provinces despatched 43,000 tons, and the Punjab 13,000 tons; and the remainder was despatched by a number of States. Out of the arrivals, 46,000 tons were sent to the districts.

16. The following table shows the figures of despatches to the districts of Bengal as furnished by the Government of Bengal :—

District	(In Tons)			
	Rice and paddy in terms of rice	Wheat and wheat-products	Millets	Total
24-Parganas	8,157	5,114	6,524	19,795
Nadia	1,367	2,080	165	3,612
Murshidabad	679	3,348	552	4,579
Jessore	184	898	56	1,138
Khulna	2,266	7,543	3,469	13,278
Burdwan	3,200	10,755	1,023	14,978
Birbhum	..	1,729	..	1,729
Bankura	..	4,710	..	4,710
Midnapore	4,963	11,807	3,928	20,498
Hooghly	2,461	6,004	1,287	9,752
Howrah	11,049	4,997	1,128	17,174
Rajshahi	..	654	..	654
Dinajpur	..	631	..	631
Jalpaiguri	540	2,175	232	2,947
Darjeeling	323	5,154	325	5,802
Rangpur	105	3,069	745	3,919
Bogra	..	313	112	425
Pabna	1,301	2,690	2,773	6,764
Malda	..	202	..	202
Dacca	6,727	15,019	4,831	26,577
Mymensingh	956	4,693	3,259	8,908
Faridpur	4,709	5,597	6,187	16,493
Bakarganj	1,485	2,671	1,092	5,248
Chittagong	9,814	9,469	4,083	23,366
Tippera	2,922	5,092	2,918	10,932
Noakhali	1,744	3,809	1,201	6,754
Total	64,952	120,023	45,890	230,865

ANNEXURE I TO APPENDIX V

EXTRACT FROM A NOTE ON "ARRANGEMENTS FOR RECEPTION AND DESPATCHES IN CALCUTTA PRIOR TO THE FORMATION OF THE DIRECTORATE OF MOVEMENTS IN NOVEMBER 1943" SUPPLIED BY THE CIVIL SUPPLIES DEPARTMENT, BENGAL.

The following problems confronted the Department :—

- (i) Creation of a widespread organization covering all the points of arrivals and despatches and rapid transmission of information to the headquarters ;
- (ii) Creation of a superior staff at the headquarters to control these arrangements and undertake frequent inspection of the work of the subordinates ;
- (iii) A careful watch over the accommodation in godowns and adoption of prompt steps in advance to meet any difficulty that may arise in this respect, and
- (iv) To assist the Clearing Agents in their difficulties about transport, etc., which became apparent very soon.

Staff.—The Department began to look for staff at a time when other competitors, (*e.g.*, the Army, the Supply Department of the Government of India, etc.), had already been in the field and taken over practically all suitable personnel available for recruitment. The Department was in dire need of staff not only for its own storage and movement organization but also for the Calcutta Rationing Scheme. All attempts to secure suitable men from the business houses proved abortive. At the beginning of September there were only one Transportation Officer and 4 Inspectors and the first essential was to obtain a sufficient number of inspectors and sub-inspectors for being placed at the different receiving points as well as for supervising despatches at several other points. It requires time to train men for such work but the Department had no time to wait. Inspectors and sub-inspectors were withdrawn from other branches and even from Calcutta Rationing and posted to the terminals and the docks. In this way, the staff was increased to 21 inspectors and 23 sub-inspectors by the end of October. In the meantime recruitment was proceeding under the Controller of Rationing both for his office and for the Directorate. It was soon found that the existing Transportation Officer was hardly able to handle problems and

officers superior to inspectors were necessary both for supervising the work of inspectors and for taking charge of the more important reception centres, e.g., Howrah, Kantapukur and the docks. Mr and a Sub-Deputy Collector from the Department were deputed to take charge of Kantapukur and Howrah respectively and with great difficulty one Chief Inspector (an *ex-Transportation Inspector of the East Indian Railway*) was obtained for Howrah in the end of September another for other sidings in October and a third in the beginning of November for the docks. The Department was still in search of a suitable Transportation Officer, when Mr was offered by the Regional Commissioner and was appointed as Controller of Transport at the end of September But it became apparent soon that besides planning programmes for movements, both *ex-Calcutta* and from outside to the province, he had no time to supervise the despatches with the result that wagons were sometimes not utilised by the Agents. Another officer was therefore appointed on the 8th October to supervise storage and despatches. From the very beginning his entire attention was absorbed at the docks as shipment of foreign foodgrains began to be rushed and considerable despatches had to be made to Chittagong at very short notice. On the 18th October, Mr who had experience of transport in the trade was recruited as Storage and Movement Officer but at the very outset he had to be placed under the Controller of Rationing for Calcutta Rationing.

While the organization was thus being improved, it was soon found that the existing clearing agents were not in a position to cope with the work which they were required to do. They were incapable of working under such stress and it was apparent that considerable supervision and training were necessary before they could work at high speed. Moreover, the difficulty of securing adequate road transport from the military sidings to their godowns was one of the principal causes of their inefficiency. This difficulty was due to diversion of lorries and bullock-carts to work under military contractors and also due to the difficulty of securing adequate petrol supplies. Arrangements were made to supply petrol to the agents according to their requirements by the Department and this enabled them to secure more lorries. But this was only a partial solution of the difficulty. The most important clearing and haulage firms were requested to take up this work but they expressed their inability to undertake any liability of this kind under the difficult conditions prevailing in Calcutta. A number of new clearing agents were however, appointed on their producing evidence that they had some transport and possessed adequate godown accommodation. The problem of coping with the daily arrivals still remained. This problem was made more difficult by the fact that the rate of arrivals was irregular and very large quantities were unloaded at very short notice at one or the other of the railway terminals. A further complication was caused by the arrival of a number of ships carrying foodgrains from Australia and Karachi. About 13,000 tons of foodgrains arrived at the port in September and 30,000 tons in October respectively. The conditions of work in the docks were far more difficult due to the following reasons :—

1. Sufficient labour was not available for loading the agents' vehicles ;
2. Railway wagons which were formerly available for removing consignment from the dock sheds to the various points in the city were available only in small numbers ;
3. Due to heavy arrivals of war and other materials and requirements of gate passes facilities for working lorries had been greatly reduced. . . .

In view of the difficult transport situation, it was decided at the end of September to acquire a fleet of 50 lorries to supplement the agents' transport, whenever necessary. Although order had been placed at the beginning of October for 50 lease-lend vehicles with specially fitted bodies only 3 vehicles were delivered on the 22nd October and 22 on the 23rd and the balance on the 18th November. About this time, Army transport was made available and when the Department vehicles were put into commission, transport difficulties were overcome and work went on smoothly.

A further point should be stressed in this connection. Both at Howrah and at Kantapukur a large number of consignments were being received on account of private merchants who were unable to make prompt clearance. Requests were received both from the E. I. R. and the Port Commissioners to remove the congestion caused by private merchants as otherwise the siding would get choked and further booking of supplies would be stopped. In spite of its own troubles the Department had to undertake this work from time to time. These consignments, unless they were removed within a week, were requisitioned and acquired by Government and removed to their own godowns. Some idea of the magnitude of this work may be obtained from the fact that during a period of about 30 days in October-November, the congestion at Kantapukur was reduced from 133,112 bags to 16,677 bags. . . .

In conclusion it may be stated that though the Department had to work under conditions of exceptional difficulty it managed to keep the Railway terminals open and never had occasion to slacken the rate of despatches to districts *ex-Calcutta*.

ANNEXURE II TO APPENDIX V

Storage in the Royal Botanical Gardens

Storage in Calcutta continued to be a serious problem even after the arrival of the Army had expedited distribution to the districts. On the 1st November, the stock in hand was 50,000 tons and the approximate covered storage available in Calcutta was only 40,000 tons. At this stage a considerable amount had to be left in transit sheds at the docks. By the beginning of December stocks had increased to 82,000 tons and covered storage by requisitioning had increased to 80,000 tons. By the end of the month, stocks stood at 159,000 tons and covered storage had risen to

130,000 tons. Imports were still pouring in and could not be delayed. Stoppage of imports could not be contemplated as this would have resulted in a serious shortage when Calcutta was about to be rationed. It was also impossible to delay unloading the ships as the port had to be kept clear. In these circumstances, a depot was started in the open as a temporary measure in the Royal Botanical Gardens. Arrivals in Calcutta continued to exceed the increase in storage accommodation till February. At the beginning of February, the stocks stored in the open rose to 87,000 tons and then gradually diminished to 59,000 tons on 1st March 1944, to 28,000 tons on 1st April, to 26,000 tons on 1st May, to 18,000 tons on 1st June, to 14,000 tons on 1st July and to 4,000 tons on 1st August. In all about 120,000 tons passed through the depot. Of this total quantity 101,500 tons were distributed to the districts and to Calcutta through the rationing organization and 15,000 tons of undamaged stocks were sold to the trade. Of the balance of 3,000 tons, 2,200 tons were sold irrespective of condition and the remainder (the actual figure is 800 tons) became complete loss. On the 1st September 1944 the amount, 3,194 tons, which remained at the Royal Botanical Gardens, was removed for destruction by dumping as totally unfit for issue. This figure of 3,194 tons includes the 600 tons which had become a total loss and about 2,600 tons which had been sold to the trade but had deteriorated badly and had not been removed by the purchasers.

ANNEXURE III TO APPENDIX V

Stocks of Aus Paddy at Jessore

A number of witnesses have referred to the stocks of *aus* paddy at Jessore and especially to those stacked in the station. It has been said that although there was local need for rice these stocks were not released for distribution. It has also been urged that these stocks should have been sent to relieve the distress in other areas and finally it has been alleged that a large part of these stocks were damaged. The Bengal Government have furnished a report on this matter. The salient facts according to that report are as follows: Under the *aus* purchasing scheme of 1943, 3.70 lakh maunds of paddy were purchased of which about 78,000 maunds were purchased by the District Magistrate and the remainder by the Purchasing Agent of the Bengal Government. Over two-thirds of the total amount purchased was procured in November. The District Magistrate who had authority to release stocks for local consumption did not find it necessary to do so except for small quantities in October and November, 2,400 maunds in December 1943 and about 12,000 maunds in January and February 1944. An endeavour was made early in December to release appreciable quantities of paddy through the trade in the Jessore district. But though the price was reduced from Rs. 7-12-0 a maund to Rs. 6-4-0 a maund towards the end of December the off-take was poor, the reason being that the *aman* crop had been reaped. By the end of the year 2 lakh maunds had been despatched; part was sent to deficit districts, a small quantity to the District Magistrate, 24 Parganas, and the balance to Calcutta. In March 1944 the stocks which still remained (1.50 lakh maunds) were sold to the Calcutta rice mills at an average price of Rs. 7-7-0 a maund, 1.06 lakh maunds were moved between the 21st March and 27th May 0.29 lakh maunds were despatched early in July and at the time the report was made the balance was being moved gradually as the stocks were brought to rail-head. Except 75,000 maunds which were kept in the station yard, partly in the open, the entire stocks were stored in warehouses. Even the grain kept in the station yard has not shown any signs of deterioration. Reliance has been placed upon the sale of the *aus* paddy at Rs. 7-7-0 a maund in March 1944, when the market price for *aman* paddy was Rs. 9 a maund, as indicating that the stocks were not seriously damaged.

APPENDIX VI

Extracts from Reports from Commissioners and District Officers

I.—PRESIDENCY DIVISION

28th December 1942.—Hunger marches organized by communists.

26th February 1943.—Agricultural labourers in difficulty as agricultural wages have not risen proportionately with the rise in the price of foodstuffs.

26th March 1943.—Acute distress prevails in certain areas of Kandi sub-division of Murshidabad district and number of labourers is gradually increasing at test works. It is necessary to continue test works for a long time.

22nd April 1943.—Cultivating classes in general are in acute distress in Nadia district due to abnormal rise in prices of foodstuffs. Paddy seed has been consumed by cultivators. They require loans immediately for purchase of seed.

5th May 1943.—Widespread distress in Khushtia sub-division of Nadia district due to rise in prices, warranting sanction of immediate gratuitous relief.

10th July 1943.—In 24 Parganas conditions are appalling owing to rice and paddy having been drained away for Calcutta market. Food kitchens being opened in Murshidabad.

10th August 1943.—Nadia district passing through the most acute stage of distress.

11th September 1943.—Food kitchens extending rapidly everywhere. Cases of emaciation numerous.

9th October 1943.—Rice has disappeared, following the previous drop in the controlled price. Village responsibility for running soup kitchens will be enforced.

II.—BURDWAN DIVISION

12th December 1942.—Outturn of *aman* in Birbhum and Bankura districts 6 annas ; in other districts also outturn is poor. Sudden and abnormal increase in price of rice.

12th January 1943.—All District Magistrates have given up attempts to control prices of rice and paddy. Shortage of rice in villages in Howrah district.

26th February 1943.—Rice position in Howrah grave. Midnapore apprehends acute shortage in May. Relief operations will be necessary in parts of Bankura, Hooghly and Birbhum.

28th March 1943.—Owing to de-control of prices of paddy and rice, situation getting worse in Burdwan. Economic condition grave. Crime against property increasing, and paddy looting cases have become frequent. Hunger marches going on in some places.

27th April 1943.—Major economic catastrophe apprehended after three or four weeks unless prices came down and sufficient supplies were ensured. Rice not available to feed test work labourers in Katwa and Ulubaria sub-divisions. Increase in crime.

13th May 1943.—Economic conditions approaching a crisis. Rice out of reach of the poor. Rice should be imported if the people are not to starve.

12th June 1943.—Economic position most serious. Bands of people moving about in search of rice. Labourers at test works demanding payment in rice, which is not possible in all cases.

22nd July 1943.—An area of 200 square miles comprising 14 unions in Sadar, 15 in Katwa, and 10 in Kalna, affected by floods. Boats required for relief work. Agricultural loans required immediately in flood-affected areas, where *aman* seedlings have been destroyed. Similar reports from Midnapore.

17th August 1943.—Severe famine conditions likely to prevail after transplantation of *aman*. Many deaths due to malnutrition. Destitutes from villages flocking to towns.

27th September 1943.—Situation in Contai and Tamluk terrible. Disposal of dead bodies in Contai, a problem.

28th October 1943.—Rice scarce in Burdwan. Position in Hooghly and Howrah bad. So also in Contai and Tamluk sub-divisions. Kitchens closed occasionally in Midnapore for want of supplies.

III.—RAJSHAHI DIVISION

11th December 1942.—Increase in price of rice due to speculative buying by traders.

12th January 1943.—Prices remain high. Outturn of *aman* poor in Rajshahi and bad in Pabna and Malda.

25th February 1943.—Prices of rice going up. Unauthorised exports from the division taking place.

26th March 1943.—Difficult to obtain *aus* seeds with the lifting of control of price of rice. Cases of paddy looting reported from Dinajpur and Rangpur.

2nd April 1943.—Widespread distress in many areas of Bogra due to shortage of food supply and high prices.

6th May 1943.—Beggars and landless people are in acute distress and threatened with starvation in Pabna district. Gratuitous relief necessary in Sadar and Serajganj.

26th July 1943.—In spite of good *aus* crop the price of rice is still high.

26th September 1943.—Serious distress in Nilphamari. Deaths from starvation reported from all districts except Malda. Many deaths due to taking food indiscreetly after long period of abstinence.

15th October 1943.—Free kitchens opened in Pabna, Rajshahi, Dinajpur, Jalpaiguri and Bogra.

IV.—DACCA DIVISION

28th December 1942.—Price of rice has risen alarmingly. Profiteering in every article on the increase. Black markets prevail.

12th January 1943.—Economic condition in Sadar and Goalundo sub-divisions of Faridpur daily becoming worse due to failure of paddy crop and high prices of all commodities. Opening of test works on an extensive scale essential and six more officers needed. Distribution of gratuitous relief should also be continued up to July 1943.

10th February 1943.—Price of rice increasing. Difficulty experienced owing to fall of export from surplus districts. People having to go without food in Bhola and Barisal towns of Bakarganj district.

24th March 1943.—Rice position very serious. Situation in Goalundo and parts of Sadar of Faridpur district now much worse than was expected.

25th April 1943.—Food position serious. Huge exports from Bakarganj. Poorer classes will starve.

22nd May 1943.—Great distress in Bhola sub-division of Bakarganj district among landless labourers who can find no employment. Situation aggravated by the fact that a large number of fishermen lost their boats as a result of "denial". Opening of test relief immediately necessary.

23rd June 1943.—Situation in Faridpur has deteriorated still further. Relief operations were for long confined to Sadar and Goalundo but the resources of most of the people in other areas have also been exhausted and urgent steps should be taken to alleviate their distress.

17th July 1943.—Situation in Bhola sub-division is alarming. Town filled with thousand of beggars who are starving. There is not enough rice available.

18th August 1943.—Opening of gruel kitchens necessary in Tangail and Kishoreganj.

16th September 1943.—Food situation in all sub-divisions of Faridpur has further deteriorated. Supply of rice and paddy has become alarmingly insufficient. Free kitchens have been opened in large numbers to save people from starvation. Homes for destitutes and camp hospitals have also been opened.

25th October 1943.—Supplies arriving but no hope of saving those who are starving.

V.—CHITTAGONG DIVISION

11th December 1942.—Sudden rise in price of rice to almost double the previous price.

10th January 1943.—Food problem very serious. Attempt to get emergency supply through Director of Civil Supplies failed. Position in Chittagong town extremely bad as price of rice has been kept below the prevailing price in mofussil.

27th February 1943.—Indications of distress among local people in Chittagong district, particularly of the fishermen class. It is immediately necessary to start test works. Gratuitous relief will also be necessary.

8th March 1943.—Situation serious in Chittagong. Rice position has not improved in Noakhali. Position equally bad in Tippera.

11th April 1943.—There are signs of rice crisis easing in Noakhali. Rice is being distributed by District Magistrate in famine areas of Begamganj and Senbagh at controlled rate. In Chittagong district no famine area. Distress among fishermen prevailing in certain areas. Supplies have started to arrive.

29th May 1943.—Many people starving in Chittagong district owing to high prices. First gruel kitchen started in Chittagong.

28th June 1943.—Number of destitutes in town increased. Eleven deaths in streets.

11th July 1943.—Test and gratuitous relief necessary in Chandpur sub-division of Tippera district, as well as Brahamanbaria and Sadar sub-divisions. Food census has disclosed immediate scarcity in Sadar and prospective scarcity in Brahamanbaria. Chandpur has also suffered from "Denial" policy.

10th August 1943.—Owing to distress in rural areas of Chittagong district, a large number of beggars wandered into the town. With the opening of relief kitchens in villages, they were repatriated. But there is still a number who are sick and disabled. A poor house, an orphanage and a hospital have been opened for them.

9th September 1943.—Deaths still occurring in Chittagong town.

9th October 1943.—Control prices not working except where prices have naturally fallen. The middle class are in trouble.

APPENDIX VII

LIST OF PERSONS INTERVIEWED BY THE COMMISSION

NEW DELHI

		Date
1. The Hon'ble Somerset Butler.	Special Officer, Department of Food, Government of India.	27-7-1944
2. Mr. R. H. Hutchings, C.M.G., C.I.E., I.C.S.	Secretary, Department of Food, Government of India.	27-7-1944 and on 5-12-1944
3. Mr. W. H. J. Christie, O.B.E., I.C.S.	Deputy Secretary, Department of Food, Government of India.	28-7-1944
4. Mr. W. H. Kirby	Rationing Adviser, Department of Food, Government of India.	28-7-1944
5. Lt. Gen. J. B. Hance, C.I.E., O.B.E., K.H.S., I.M.S.	Director General, Indian Medical Service	29-7-1944
6. Lt. Col. E. Cotter, C.I.E., I.M.S.	Public Health Commissioner with the Government of India.	29-7-1944
7. Mr. D. R. Sethi, C.I.E., I.A.S.	Agricultural Production (and Marketing) Adviser to the Government of India, E. H. & L. Department.	31-7-1944
8. The Hon'ble Sir Md. Azizul Haque, C.I.E., D.Litt.	Member, Executive Council of the Governor General (Commerce, Industries and Civil Supplies).	2-8-1944
9. Mr. D. L. Mazumdar, I.C.S.	Deputy Secretary, Department of Labour, Government of India.	4-8-1944
10. The Hon'ble Mr. B. R. Sen, C.I.E., I.C.S.	Director General of Food, Department of Food, Government of India.	4-8-1944

11. Mr. N. M. Buch, O.B.E., I.C.S.	Director of Civil Supplies, Punjab . . .	5-8-1944
12. The Hon'ble Sir J. P. Srivastava, K.B.E.	Member, Executive Council of the Governor General (Food).	5-8-1944 and on 15-2-1945
13. Mr. J. D. Tyson, C.B.E., I.C.S.	Secretary, E. H. & L. Department, Government of India.	} 7-8-1944
14. Sir P. M. Kharegat, C.I.E., I.C.S.	Additional Secretary, E. H. & L. Department, Government of India.	
15. Brig. Mac. D. Fraser, I.M.S.	Inspector of Medical Services, General Headquarters.	8-8-1944
16. Mr. I. E. Jones, I.C.S.	Director of Food Purchase, Punjab . . .	8-8-1944
17. The Hon'ble Sir S. N. Roy, C.S.I., C.I.E., I.C.S.	Secretary, War Transport Department, Government of India.	} 8-8-1944
18. Sir Hugh Raper	Member, Railway Board	
19. The Hon'ble Dewan Bahadur Sir A. Ramaswami Mudaliar, K.C.S.I.	Member, Executive Council of the Governor General (Supply).	17-11-1944

CALCUTTA

20. Major General E. Wood, C.I.E., C.B., M.C.	Formerly Secretary to the Government of India, Department of Food.	12-8-1944
21. Mr. O. M. Martin, C.I.E., I.C.S.	Commissioner, Post War Reconstruction, Government of Bengal.	12-8-1944
22. The Hon'ble Mr. Justice H. B. L. Braund, Bar.-at-Law.	Formerly Regional Food Commissioner, Eastern Region.	14-8-1944
23. Mr. L. G. Pinnell, C.I.E., I.C.S.	Formerly Officer on Special Duty, Department of Civil Supplies, Bengal.	15-8-1944 and on 4-9-1944
24. Mr. N. M. Ayyar, C.I.E., I.C.S.	Secretary, Department of Civil Supplies, Bengal.	16-8-1944
25. Mr. H. S. E. Stevens, C.S.I., C.I.E., M.C., J.P., I.C.S.	Food and Civil Supplies Commissioner, Bengal.	16-8-1944 and on 17-9-1944
26. Mr. A. A. McInnes	Formerly Foodgrains Purchasing Officer, Bengal.	17-8-1944
27. Mr. M. A. Ispahani	Partner, Messrs. M. M. Ispahani, Limited, Chief Agents for Procurement, Government of Bengal.	17-8-1944 and in New Delhi on 1-12-1944
28. Major General W. C. Paton, M.C., M.A., Ch.B. (Edin.), F.R.C.S. (Edin.), K.H.P., I.M.S.	Surgeon-General, Bengal (Offg. Director General, Indian Medical Service).	18-8-1944
29. Lt. Col. K. S. Fitch, M.R.C.S., F.R.C.S. (Edin.), I.M.S.	Deputy Surgeon-General, Famine Relief, Bengal.	18-8-1944
30. Dr. B. Mukerjee, M.B., D.P.H.	Deputy Director of Public Health, Bengal .	18-8-1944
31. Major C. K. Lakshmanan, I.M.S.	Director of Public Health, Bengal .	18-8-1944
32. Mr. E. W. Holland, C.I.E., I.C.S.	Secretary, Public Health and Local Self-Government Department, Bengal.	19-8-1944
33. Mr. K. C. Basak, I.C.S. .	Secretary, Department of Education, Co-operative Credit and Rural Indebtedness, Bengal.	19-8-1944
34. Mr. A. C. Hartley, O.B.E., I.C.S.	Controller of Rationing, Calcutta	19-8-1944
35. Dr. J. B. Grant	Director, All India Institute of Hygiene and Public Health, Calcutta.	19-8-1944
36. Major General A. V. T. Wakely, C.B., D.S.O., M.C.	Director of Movements, Bengal	21-8-1944
37. Nawab Habibullah Bahadur of Dacca.	Formerly Minister, Bengal (Food)	21-8-1944
38. Mr. M. Carbery, C.I.E., D.S.O., M.G., M.A., B.Sc., I.A.S.	Director of Agriculture, Bengal.	21-8-1944
39. Mr. P. N. Banerjee, M.A., B.L., P.R.S., Bar.-at-Law	Formerly Minister, Bengal (Revenue)	22-8-1944
40. Mr. A. K. Fazlul Huq, M.A., B.L.	Formerly Chief Minister, Bengal	23-8-1944
41. The Hon'ble Mr. H. S. Subrawardhy.	Minister, Bengal (Civil Supplies)	23-8-1944 and on 17-9-1944

42. Mr. L. Aldridge	Formerly Procurement Officer, Middle East.	31-8-1944
43. Mr. K. W. P. Marar, O.B.E., I.C.S.	Secretary, Supply Department, Assam	1-9-1944
44. Dr. N. Sanyal, M.A., Ph.D. (Lond.), M.L.A.	Chief Whip of the Congress Parliamentary Party, Bengal.	} 1-9-1944
45. Mr. A. C. Ukil	Nutrition Expert, Congress Parliamentary Party, Bengal.	
46. Mr. Shamsuddin Ahmed	} Representatives of the Nikhil Banga Krishak Proja Party.	} 1-9-1944
47. Mr. Syed Jalaluddin Hashemi		
48. Mr. Humayun Kabir		
49. Mr. Rajani Mukherjee		
50. Prof. Binoyendra Nath Banerjee.	Representatives of the Indian Federation of Labour, Radical Democratic Party.	2-9-1944
51. Miss Sobha Mazumdar	} Representatives of the Bengal Committee of the Communist Party of India.	} 2-9-1944
52. Mr. Bhowani Sen		
53. Mr. Somnath Lahiri		
54. Mr. Bhupesh Gupta		
55. Mr. Bankim Mukherjee		
56. Mr. Krishna Binode Roy	} Representatives of the Bengal Provincial Kisan Sabha.	} 2-9-1944
57. Mr. B. Guha		
58. Mr. Promode Sen	Representative of the Bolshevik Party of India.	2-9-1944
59. Mr. K. N. Gutgutia	} Representatives of the Marwari Chamber of Commerce.	} 4-9-1944
60. Mr. C. M. Saraff		
61. Mr. M. L. Khemka		
62. Mr. B. D. Tharad		
63. Mr. J. K. Mitter	} Representatives of the Bengal National Chamber of Commerce.	} 4-9-1944
64. Mr. B. C. Ghosh		
65. Mr. S. R. Biswas		
66. Mr. D. P. Khaitan		
67. Mr. G. L. Mehta		
68. Mr. R. L. Nopany	} Representatives of the Indian Chamber of Commerce.	} 4-9-1944
69. Mr. Abdur Rahman Siddiqi, M.L.A.		
70. Mr. Manoranjan Chaudhuri	} Representatives of the Bengal Provincial Hindu Mahasabha.	} 5-9-1944
71. Prof. Haricharan Ghosh		
72. Rai Bahadur C. L. Roy	} Representatives of the Indian Association.	} 5-9-1944
73. Rai Bahadur B. B. Mukherjee		
74. Mr. J. M. Datta		
75. Mr. K. C. Neogy		
76. Mr. P. N. Singh Roy		
77. Dr. Sachin Sen, Ph. D.		
78. Kumar B. C. Sinha		
79. Kumar J. C. Sinha	} Representative of the British Indian Association.	} 5-9-1944
80. Khan Bahadur Jasimuddin, M.L.A.		
81. Khan Bahadur Nurul Amin	} Representatives of the Bengal District Boards Association.	} 6-9-1944
82. Rai Bahadur Debendra Mohan Bhattacharya.		
83. Mr. R. E. Russell, C.S.I., C.I.E., I.C.S.	Adviser to H. E. the Governor of Bihar	7-9-1944
84. Mr. R. A. E. Williams, I.C.S.	Formerly Secretary to the Government of Bihar, Revenue and Commerce Department.	} 7-9-1944
85. Mr. J. S. Wilcock, O.B.E., I.C.S.	Secretary, Supply and Price Control Department, Bihar.	
86. Mr. A. P. Cliff, I.A.S.	Director of Agriculture, Bihar.	
87. Mr. C. S. Jha, I.C.S.	Secretary, Department of Supply and Transport, Provincial Controller of Supply and Transport and Director of Food Supplies, Orissa.	} 8-9-1944
88. Mr. H. Lal, I.C.S.	Director, Development, Orissa.	
89. Lt. Col. A. N. Chopra, M.B. B.S., D.T.M. (Liv.), D.P.H. (Eng.), I.M.S.	Director of Public Health and Inspector General of Prisons, Orissa.	
90. Rai Sahib Nihar Chandra Chakravarty.	Additional Assistant Secretary, Department of Agriculture, Bengal.	
91. Mr. B. K. Guha, I.C.S.	Additional District and Sessions Judge, 24-Parganas (Formerly Relief Co-ordination Officer, Calcutta).	8-9-1944

92. The Hon'ble Mr. T. N. Mukherjee.	Minister, Bengal (Revenue)	9-9-1944
93. Mr. S. Banerjee, I.C.S.	Secretary, Revenue Department, Bengal	9-9-1944
94. Rai N. C. Sen Bahadur, O.B.E.	Additional Controller of Rationing, Calcutta.	} 9-9-1944
95. Rai U. N. Ghosh Bahadur	Special Officer, Finance Department, Bengal.	
96. Mr. D. C. Dutt	Special Officer, Rent Drive, Board of Revenue.	
97. Mr. K. D. Jalan	} Representatives of the Marwari Relief Society, Bengal.	} 11-9-1944
98. Mr. R. N. Bhojanagarwala		
99. Prof. K. P. Chattopadhyaya	} Representatives of the People's Relief Committee.	} 11-9-1944
100. Mr. Panchu Gopal Bhadury		
101. Mr. K. C. Roy Chowdhury	} Representatives of the Bosepukur Relief Committee.	} 11-9-1944
102. Babu Natabar Pal		
103. Mr. S. M. Osman	} Representatives of the Muslim Relief Committee.	} 11-9-1944
104. Mr. M. S. Vawda		
105. Mr. T. G. Davies	Representative of the Friends' Ambulance Unit.	11-9-1944
106. Dr. K. P. Mukherjee	} Representatives of the Bengal Public Health Association.	} 11-9-1944
107. Mr. P. C. Bhattacharyya		
108. Mr. K. Chawdhury	} Formerly Minister, Bengal (Finance)	} 12-9-1944
109. Dr. Shyamaprasad Mookerjee		
110. Mr. S. C. Sawoo	} Representatives of the Bengal Rice Mills Association.	} 12-9-1944
111. Mr. C. K. Ghose		
112. Mr. L. N. Hazra	} Secretary, Department of Commerce, Labour & Industries, Bengal.	} 12-9-1944
113. Mr. M. K. Kirpalani, I.C.S.		
114. Major General D. Stuart, C.I.E., O.B.E.	Headquarters, 303 L of C Area	13-9-1944
115. Prof. P. C. Mahalanobis B.Sc. (Cal.), M.A. (Cantab.) F.S.S. F.N.I., O.B.E., I.E.S.	Hony. Secretary, Indian Statistical Institute, Statistical Laboratory, Calcutta.	13-9-1944
116. Mr. M. Barman	} Representatives of the Calcutta Corporation	} 13-9-1944
117. Dr. M. U. Ahmad		
118. Mr. S. Lahiri	} Representatives of the All Bengal Mahila Atma Raksha Samity.	} 14-9-1944
119. Mr. K. C. Ghosh		
120. Mrs. Renu Chakravarty	} Representatives of the All India Women's Conference (Relief Committee).	} 14-9-1944
121. Mrs. Ela Reid		
122. Mrs. Saudamini Mehta	} Representative of the Rotary Club	} 14-9-1944
123. Dr. (Mrs.) Maitreyee Bose		
124. Mrs. S. C. Roy	} Deputy Controller of Distribution, Department of Civil Supplies, Bengal.	} 15-9-1944
125. Mrs. Ayesha Ahmad		
126. Mr. J. K. Biswas, M.A., J.P.	} Controller of Procurement (Formerly Dy. Director, Department of Civil Supplies, Bengal).	} 15-9-1944
127. Mr. V. N. Rajan, I.C.S.		
128. Mr. W. A. S. Lewis, O.B.E., I.C.S.	Shellac and Produce Merchant, Calcutta	15-9-1944
129. Mr. Hanumanbux Biswanath	Dy. Director of Civil Supplies, Region VI Dacca.	15-9-1944
130. Mr. S. K. Chatterjee, M.B.E., I.C.S.	Registrar of Co-operative Societies, Bengal	15-9-1944
131. Khan Bahadur Maulvi Chowdhury Afsar Ali.	Rice Merchant and Agent to the Government of Bengal.	16-9-1944
132. Mr. Ashutosh Bhattacharyya	Representative of the Bengal Provincial Muslim League.	16-9-1944
133. Mr. Hamidul Haq Chowdhury	Formerly Member, Executive Council of the Governor General.	16-9-1944
134. Mr. N. R. Sarker	Chief Minister, Bengal.	16-9-1944
135. The Hon'ble Khwaja Sir Nazimuddin, K.O.I.E.		
136. Sir John Burder	} Representatives of the Bengal Chamber of Commerce.	} 18-9-1944
137. Mr. F. C. Guthrie		
138. Mr. R. H. D. Campbell	} Representatives of Messrs. Shaw Wallace & Co., Agents for the Bengal Chamber's Foodstuffs' Scheme.	} 18-9-1944
139. Mr. D. C. Fairbairn		
140. Mr. P. C. Chowdhury	} Representatives of the Calcutta Relief Committee.	} 19-9-1944
141. Mr. C. S. Rangaswami		
142. Mr. Jnananjan Niyogi		

143. Rai Dr. S. L. Hora Bahadur D.Sc., F.R.S.E., F.R.A.S.B., F.Z.S., F.L.S., F.N.I.	Director of Fisheries, Bengal	10-9-1944
144. Mr. M. A. H. Ispahani	} Representatives of the Muslim Chamber of Commerce & Relief Committee.	19-9-1944
145. Khan Bahadur G. A. Dossani		
146. Mr. C. J. Minister		
147. Mr. M. M. Stuart, O.B.E., I.C.S.	D. I. G., C. I. D., Bengal Collector of Chittagong	20-9-1944 20-9-1944
148. Major General F. H. Skinner, O.B.E.	Headquarters E. C. No. 12, A. B. P. O.	22-9-1944
149. Mr. F. A. Karim, I.C.S.	District Magistrate, Faridpur	22-9-1944
BOMBAY.		
150. Mr. A. D. Gorwalla, C.I.E., I.C.S., J. P.	Supply Commissioner, Government of Bom- bay.	} 28-9-1944
151. Mr. D. S. Bakhle, O.B.E., I.C.S., J. P.	Director of Civil Supplies, Bombay	
152. Mr. J. Booth, I.C.S.	Director of Civil Supplies, Districts	
153. Mr. R. N. Samarth, M.B.E.	Controller of Rationing, Bombay	
154. Mr. G. L. Sheth, I.C.S.	Grains Purchasing Officer, Thana & Colaba and B.S.D. and Deputy Controller of Ra- tioning (in addition).	} 29-9-1944
155. Mr. Sankpal	Statistician	
156. Mr. M. J. Desai, I.C.S., J. P.	Secretary, Revenue Department, Bombay	} 29-9-1944
157. Mr. W. J. Jenkins, C.I.E., I.A.S.	Director of Agriculture, Bombay	
158. Mr. A. V. Thakkar, (Vice- President.)	Representatives of the Servants of India Society.	29-9-1944
159. Mr. Dinkar D. Desai	} Adviser to His Excellency the Governor of Bombay.	} 30-9-1944
160. Sir Henry Knight, K.C.S.I., C.S.I., C.I.E., I.C.S., J. P.		
161. Mr. C. N. Vakil	Representatives of the School of Economics & Sociology, University of Bombay, Bom- bay.	30-9-1944
162. Mr. J. J. Anjaria	} Members of the Standing Committee of Food Advisory Council, Bombay.	} 2-10-1944
163. Mr. N. N. Wadia		
164. Mr. S. C. Joshi, M.A., LL.B., M.Litt.		
165. Mr. M. V. Rajab	Secretary, Bombay Humanianist League	2-10-1944
166. Rao Bahadur J. N. Mankar	Director, Gokhale Institute of Politics & Economics, Servants of India Society	2-10-1944
167. Prof. D. R. Gadgil, M.A., M.Litt.	Home, Poona.	2-10-1944
168. Dr. K. A. Gandhi, M.B. B.S., D.P.H., D.T.M. & H., J.P.	Director of Public Health, Bombay	} 3-10-1944 (Dr. T. B. Patel again at Bijapur on 5-10-1944
169. Dr. T. B. Patel, M.B., B.S., D.P.H.	District Health Officer, Bijapur	
170. Sir William Stampe, C.I.E.	Irrigation Adviser to the Government of India, E., H. & L. Department.	3-10-1944
171. Mr. G. F. S. Collins, C.S.I., C.I.E., O.B.E., I.C.S., J. P.	Adviser (Revenue) to His Excellency the Governor of Bombay.	3-10-1944
172. Mr. Aziz Ghafoor Kazi, M.L.A., J.P.	} Representatives of the Provincial Muslim League, Bombay.	} 3-10-1944
173. Mr. I. I. Chundrigar (President)		
174. Mr. A. K. Sheikh	} Representatives of the Bombay Muslim Chamber of Commerce.	} 3-10-1944
175. Mr. Habib Ibrahim Rahim- toola, (President).		
176. Mr. Ghulamhussain Sonawala (Vice-President).		
177. Mr. M. M. Killedar (Vice- President).		
178. Mr. Sikander Khan Dehlavi (Secretary).		
BIJAPUR		
179. Mr. V. N. Sausman	Land Development Officer, Bijapur	5-10-1944
180. Mr. S. B. Desai, M.L.A.	Bijapur	5-10-1944
181. Diwan Bahadur Sardar Desh- mukh.	President, District Local Board, Bijapur	5-10-1944

182. A			5-10-1944
183. M.	B.A., LL.B	Collector of Bijapur	5-10-1944
184. Mr. H. S. Kaujalgi,	B.A., LL.B.	Joint Secretary, Famine Relief Committee, Bombay.	6-10-1944

MADRAS

185. Mr. A. F. W. Dixon,	C.I.E., I.C.S.	Acting Commissioner of Civil Supplies, Madras.	9-10-1944 and 10-10-1944
186. Rao Sahib M. A. Kuttalalingam Pillai.		Deputy Commissioner of Civil Supplies	9-10-1944 (Madras) & 24-10-1944 (Tanjore) & 26-10-1944 (Bezwada)
187. Rao Bahadur P. V. Subba Rao		Deputy Commissioner of Civil Supplies	9-10-1944 and 10-10-1944
188. Mr. W. Scott Brown,	C.S.I., C.I.E., I.C.S.	Commissioner of Civil Supplies (on leave)	9-10-1944
189. Sir Purushotamdas Thakurdas,	C.I.E., M.B.E.		9-10-1944
190. Mr. C. E. Wood,	C.I.E., I.C.S.	} Members of the Board of Revenue, Government of Madras.	10-10-1944
191. Mr. A. R. C. Westlake,	C.I.E., I.C.S.		
192. Dr. R. M. Mathew,	M.B.B.S., D.P.H., D.T.M. & H., M.R.C.P.	Director of Public Health, Madras	10-10-1944
193. Rao Bahadur Dr. B. Viswanath,	C.I.E., D.Sc., F.I.C.	Director of Agriculture, Madras	10-10-1944
194. Janab Abdul Hamid Khan		} Members of the Provincial Food Council, Madras.	11-10-1944
195. Sir P. T. Rajan			
196. Mr. R. Suryanarayana Rao		Honorary Secretary, People's Food Committee, Madras.	11-10-1944
197. Sir Hugh Hood,	K.C.I.E., C.S.I., I.C.S.	First Adviser to His Excellency the Governor of Madras.	11-10-1944
198. Mr. H. S. Town		Representative of the Madras Electric Supply Corporation Ltd., Madras Tramway (1904) Ltd., M/s. Binny & Co., The Buckingham Carnatic Co., Ltd., and the Bangalore Woollen Cotton & Silk Mills Ltd.	12-10-1944
199. Mr. C. Nageswara Row		Joint Secretary of the Rayalaseema Famine Relief Fund, Bombay.	12-10-1944
200. Mr. A. Khaleeli,	I.C.S.	Director of Industries and Commerce, Madras.	12-10-1944
201. Mr. K. Govindan		} Representatives of the South Indian Chamber of Commerce.	12-10-1944
202. Khan Bahadur Adam Hajee	Mohamed Sait.		
203. Mr. Yusuff Sait			
204. Mr. C. M. Kothari (President)			
205. Mr. P. Raghava Nair			
206. Mr. G. Bapiraju Chaudhury		} Land Lord, Tanjore	13-10-1944
207. Sri Rao Bahadur Thyagaraja Mudaliar,	M.A.		
208. Mr. L. N. Sahu		Joint Secretary, Orissa Relief Committee	13-10-1944
209. Sri B. Ramachandra Reddi,	C.B.E.	Land Lord, Nellore	14-10-1944
210. Rao Bahadur Govindaraja Ayyangar.		Chief Engineer (Irrigation), Madras	14-10-1944

CALICUT

211. Mr. E. Kannan,	M.L.A. (Madras).	Representative of the Scheduled Castes	16-10-1944
212. Mr. Sankaran Nambiar		District Agricultural Officer, Calicut	16-10-1944
213. Dr. K. Viswanath,	L.M.S., D.T.M.	District Health Officer, Calicut	16-10-1944
214. Rao Bahadur K. V. Suryanarayana Aiyer.		Public Prosecutor and Advocate, Member, Provincial Food Council, Madras.	16-10-1944