CHAPTER IV

PUBLIC HEALTH

GENERAL CONDITION

THE Census report of the Nadia district for the year 1901 speaks of the district as "once famous as a health resort," but this reputation appears to be based mainly, if not solely, upon a few vague references to visit to it from more unhealthy spots, and it is extremely improbable that the district, as a whole, could ever have been anything but absolutely unhealthy. Certainly during the last fifty years or more it has been uniformly malarious to a high degree, and it has, in addition, suffered from two serious epidemics of fever. Recent enquiries have shown that there is little or no justification for the opinion, which has occasionally been expressed, that the present condition is of comparatively recent date, and has arisen from causes which should have been preventible. The first serious epidemic of fever, of which there is any complete record, occurred in the early sixties of the nineteenth century; it was investigated by a committee (usually referred to as the Epidemic Commission) under the presidency of Mr. Anderson in 1864, in which year it began to abate, though there was a subsequent slight recrudescence in the early seventies.

This first epidemic of fever is thus described in "Bengal under the Lieutenant-Governors" by C. E. Buckland:—

"A very fatal epidemic had of late years shown itself in some of the villages of the Presidency and Burdwan Divisions, but the steps taken to afford relief, viz., the appointment of native doctors and the gratuitous distribution of medicine, failed to check its progress. Towards the close of 1862 a special officer, Dr. J. Elliot, was deputed

to visit the affected districts. He traced the progress of the disease, from the Jessore and Nadia districts to Hooghly, Barasat and Bardwan, and explained the various predisposing causes which enabled an ordinary epidemic fever to become a scourge, less virulent, but, in its effects, not less desolating than cholera. The disease was described as differing only in its intensity from the ordinary form of malarious fever, 'being of a more congestive character than the ordinary intermittent, but presenting all the grades of severity between the remittent and intermittent types'; and its excessive virulence in these districts was attributed solely to villages being undrained, houses unventilated, tanks uncleaned and overgrown with noxious weeds, and to the tangled growth of jungle and rank vegetation with which the Bengali loves to surround and to obscure his dwelling.

"The mortality from the epidemic fever arising from this sanitary neglect had in some villages amounted to 60 per cent., of the population, and, in the presence of this constantly recurring visitation, the remnant who had escaped immediate death lingered on in a state of apathy and despair, unable to help themselves, and destined, unless vigorous external aid was afforded them, to fall certain victims to the fever which had already nearly depopulated the neighbourhood. Government at once proceeded to carry out the remedial measures proposed by Dr. Elliot, namely, the removal of superabundant and useless trees, shrubs, bamboo clumps and plantain groves, from the immediate vicinity of houses, the pruning and thinning of trees, the removal of trees and bamboos from the sides of tanks, the uprooting and burning of low bushy jungle, vegetation and rank grass, the deepening and cleaning of the larger tanks, and the filling in of all useless tanks, watercourses, and other excavations in the neighbourhood of houses, the appropriation of particular tanks exclusively for the supply of drinking water, the construction of a few drains and paths in each village, and the proper ordering of burial-grounds and burning ghats. This is one of the first notices of the so-called 'Burdwan' fever which recurred

again several years after this date, and will be mentioned in due course. It not only carried off its victims in large numbers, but the health of the whole population appeared to be deteriorated thereby. The sanguine hopes that were entertained in 1862-63 of the measures adopted were never realized. The fever was, generally speaking, an unusual phase of the malarial fever from which Lower Bengal is never free. The efforts of Government to mitigate its ravages were to some extent successful: after a time it appeared to die away of itself. But in 1863-64 this epidemic fever again appeared. The sanitary measures ordered had, wherever carried out with tolerable efficiency, greatly mitigated the intensity of the scourge, but they failed generally through the want of willing co-operation on the part of the people and their zamindars, and this again was owing to their inability to understand that a comparatively new visitation like the epidemic could be in any way connected with the unwholesome state of the villages, which was assuredly no new thing. A special commission drew up a report on the subject, containing a full and complete account of the nature, history and probable causes of the disease, and offering some valuable suggestions for dealing with it. The epidemic was described as a congestive remittent fever, running its course to a fatal termination, usually with great rapidity, and, where not at once fatal, leaving the patient so shattered as to be generally unable to resist a recurrence of the attack. So fatal was it that no less than 30 per cent. of the whole population of the affected area were carried off by it. The Commission came to the conclusion that the miasma, which was the immediate cause of the disease, was the result of a great dampness of the earth's surface, and that this damp had been intensified to an unusual degree of late years, owing to the fact that there had been a gradual filling up of the *bils* by the deposit brought in from the rivers, and that this again had been supplemented by a gradual, but continuous, rising in the level of the river-bed itself, thus causing a general derangement of levels so as seriously to affect the natural drainage of the country.

The remedies proposed were an improved system of drainage throughout the country, the burning of weeds, dried grass and jungle in the villages, especially at night time, the filling up of the small and filthy holes and clearing of the larger pools and tanks in the villages, and the removal of low brushwood and the thick accumulations of fallen leaves and branches. It was proposed that steps should be taken for a supply of pure drinking water, by reserving certain tanks under the charge of the police for drinking water only, and by erection, if possible, of public filters. The Commission insisted very strongly on the necessity of stringent measures being taken in all larger villages for the proper disposal of dead bodies. They condemned the practices of uneducated medicine vendors who went about the villages making money out of the ignorance of the people by the sale of drugs of the nature of which they equally were ignorant, and suggested the registration of qualified practitioners. It is on record that 'the epidemic fever disappeared entirely after the cyclone of 1864, and there was no return of it in 1865 to attract attention.' But it reappeared in 1866 and 1867."

There was another serious epidemic which lasted from 1880 to 1885, and was enquired into by the Nadia Fever Commission in 1881-82. The district was again extremely unhealthy in the years 1902 and 1905, and was visited by the Drainage Committee in the cold weather of 1906-07. The following extract is taken from the report of that Committee, which was submitted to the Government in April 1907 :—

"It is impossible to differentiate between the physical features of the different portions of the Nadia district. The whole area consists of an alluvial plain, which still receives a fair share of the Gangetic flood through the channels of the Jalangi, Mathabhanga and Gorai, but is subject to general inundation in years of high flood only. Backwaters, minor streams and swamps intersect it in all directions. A low-lying tract of black clay soil known as the Kalantar, stretches from the adjoining district of

Murshidabad through the Kaliganj and Tehata thanas on the west, but these areas do not present any special features from the point of view of health. A comparison from the different thanas arranged according to the average (*a*) total and (*b*) fever mortality during the five years 1901-05 does not disclose any marked variation in the position of each. Santipur is comparatively rather less feverish, and Kushtia rather more so, than its position in the list according to total mortality would presume. Taking the average annual district death rate from fever for the same period, 33·3, it may be said that those thanas which have a corresponding rate of 35 and over are specially unhealthy, and those with a rate of 30 and under comparatively healthy, looking to the general conditions of the district. On this basis the most unhealthy thanas in Nadia are those of Gangni and Karimpur adjoining one another on the north-west, and Jibannagar, Kumarkhali and Naopara in the east. The more healthy thanas comprise those of Krishnagar, Chapra and Meherpur, forming a little strip from north to south in the centre of the district, and Chakdaha in the extreme south. It is difficult to connect the figures showing the variations in population in the three censuses of 1881, 1891 and 1901 with a theory of the progressive deterioration of health in thanas which now show the highest rates of mortality from fever, but the outbreaks of epidemic fever in the district between 1861 and 1864 and again between 1880 and 1885 have complicated the conclusions as to normal health which may be deduced from the various fluctuations. In the census report of 1901 the thanas of Ranaghat, Santipur and Chakdaha (comprising the Ranaghat sub-division), Krishnagar and Kumarkhali are mentioned as being specially malarious, but only in the case of Kumarkhali is this borne out by the figures of mortality from fever between 1901 and 1905. As regards Karimpur, recently particularly feverish, the census report notes the falling off in population between 1891 and 1901 as difficult to explain. The tracts reported to us by the District Magistrate 'after consulting the local officers, old residents and well

known zamindars,' as specially unhealthy are Kumarkhali, Jibannagar, Chakdaha, Gangni, Alamdanga, Daulatpur, and some villages in the Meherpur and Krishnagar thanas. Except as regards Kumarkhali, Jibannagar and Gangni, the figures of mortality quoted scarcely support the statement, while the further allegation that 'almost in every village in the Meherpur Sub-division and in some villages of the Kumarkhali, Daulatpur and Alamdanga police-stations malaria fever has increased considerably in recent times' requires further verification before it can be accepted. A comparison between the total number of births and deaths registered during the five years 1901-05 shows an increase of population in the thanas of Krishnagar, Chapra, Kaliganj, Daulatpur, Meherpur and Alamdanga only. The local enquiries of Captain Stewart and Lieutenant Proctor in Nadia were too brief to permit of a comparison covering the whole district, but in the three thanas of Gangni, Kumarkhali and Jibannagar total spleen rates of 80,47 and 67 were recorded, although the number of villages examined (43 in all) was small. The most interesting point elicited was the probable presence in the Gangni thana of Leishman-Donovan infection in considerable amount, which renders nugatory the spleen test as evidence of the prevalence of malaria. In respect of malaria only it was surmised that the three thanas suffer about equally. The statement of the villagers in Gangni that fever had been severe within the last two or six years is noticeable, and is consistent with the fact that between the censuses of 1891 and 1901 the thana showed an increase of 8·5 per cent., *i.e.*, was not particularly unhealthy. Looking to the available evidence touching the medical history of the district we arrive at the following, conclusions :—

(a) the whole district is very unhealthy;
(b) similarly, the whole district is feverish;
(c) investigation upon a small scale has demonstrated the fact that some of the fever is probably due to Leishman-Donovan infection, but that the greater part is malarial;

(d) the most malarious thanas are those of Gangni, Karimpur, Jibannagar, Kumarkhali and Naopara;
(e) the least malarious areas are the Krishnagar, Chapra, Chakdaha, and Meherpur thanas."

WATER SUPPLY

Drinking water-supply is still bad, though the District Board has for some years been endeavouring to improve it by constructing masonry wells along the principal roads, and in many of the big villages, Kutcha ring wells are common, but are not often used for drinking purposes owing to religious scruples. Tanks are very common in the villages, and form the usual water supply when there is no river handy; they are generally very dirty and weed-grown, and are used for washing and other domestic purposes as well as for drinking. Where no tanks or wells exist, drinking water is got from any casual collection of water, however dirty and unwholesome it may be. When river water is drunk it is generally obtained at a spot which is also used as a bathing-ghat, and it must be remembered that, for the greater part of the year, most of the rivers have very little current. The sides of the rivers and *khals* are generally used as latrines.

In 1867 the general want of water and the decadence of the tanks in the district were brought to the notice of Government. An enquiry was held, and the Executive Engineer advocated the digging of tanks at the expense of Government. The Collector suggested that legislative interference was necessary in order to compel the landlords to provide their tenants with an adequate water supply, but no action was taken by the Government.

PRINCIPAL DISEASES

FEVER

By far the greatest number of deaths are returned under the head of fever. It is probable that the total death rate

as now recorded is reasonably accurate, but there can be no doubt that a very large proportion of the deaths attributed to fever are due to diseases other than malaria. The village chaukidar is able to detect cholera, small-pox and some other diseases with well defined symptoms, but most of the diseases which present any difficulty in diagnosis are classed as fever. The returns under this head are, therefore, less accurate than those under any other head. The Medical Officers who were deputed to assist the Drainage Committee of 1906-07 specially enquired into 195 deaths in the Nadia district which had been reported as due to fever; they found that 40 per cent. of these cases were due to malaria, acute or chronic, and the remaining 60 per cent. to bronchitis, pneumonia, phthisis, dysentery, diarrhœa, typhoid, Leishman-Donovan infection and other causes. A similar enquiry was held in the Dinajpur district in 1904, when it was found that less than one-third of the deaths classified as due to fever were actually caused by malaria. It seems probable that, ordinarily speaking, not more than one-third of the deaths imputed to fever are the direct result of malaria, though it must be remembered that malaria is probably the indirect cause of a much larger proportion, owing to the enfeeblement which repeated attacks of it cause. The conditions of registration being much the same in all districts, the returns, though incorrect absolutely, give a fairly accurate idea of the relative prevalence of malaria in different districts. During the five years ending with 1907, the death rate from fever averaged 34·12 per annum, which was the highest return from this cause of any district in the Province. During the five years ending with 1903, and during the previous five years, the corresponding figures were 28·82 and 27·13, the district taking the 7th and 13th place, respectively, in the Province.

The Drainage Committee of 1906-07 found that the local conditions which contributed to the spread of malaria were :—

(*a*) The insanitary state of the village sites due to,

(1) the thick jungle in which the houses lie imbedded (the spleen rate in villages in which jungle was thick was found to be 71·7, as against 44·5 in villages in which it was moderate or little).

(2) the large number of tanks, pits and collections of water scattered about them,

(3) the cultivation of rice in close proximity to the houses,

(4) the bad drinking supply, and

(5) promiscuous defœcation;

(*b*) the water-logged state of the country.

The operation of these two factors is in two directions, namely, that of directly increasing the amount of malarial infection by facilitating the breeding of mosquitoes, and of predisposing the constitutions of the local residents to attacks of malaria by weakening them in other directions.

CHOLERA

Next to fever the greatest mortality is caused by cholera, for which disease the Nadia district has an unenviable reputation. It has been said that cholera made its first appearance in India in the town of Nabadwip. The disease is endemic in the district and severe epidemics occur from time to time. It is generally at its worst during the cold weather months, and it gradually subsides as the year advances, and usually ceases during the rains. There was a very severe epidemic during the cold weather of 1895-96, the daily number of deaths at one period being as many as 300. During the five years ending with 1907 the death rate from cholera averaged 3·83, Nadia taking the fourth place in this respect of all the districts in the Province. In the five years ending with 1903, and in the previous five years, the rates were 3·95 and 2·32, Nadia being 3rd and 11th, respectively, in the Province.

OTHER DISEASES AND INFIRMITIES

Other diseases are not important, and claim very few victims compared with fever and cholera. Diarrhœa and dysentery prevail at times, but not of a severe type, the deaths due to these diseases seldom exceeding ·12 per mille. Small-pox is even less prevalent and is responsible for very few deaths. Plague has never become epidemic. Leprosy is not common. Infirmities such as insanity, deaf-mutism, and blindness are comparatively rare; according to the census of 1901 there are only 26 insane persons and 38 deaf-mutes per 100,000 of the population, the figures in respect of the former comparing vary favourably with those of the other districts in the Presidency Division.

MEDICAL INSTITUTIONS

There are 12 dispensaries and hospitals in class III under Government supervision in the district; they are supported by local funds. There are also two dispensaries in class V. The most important of all these is the institution at Krishnagar, in which 16,420 out-patients and 412 in-patients were treated during the year 1907. Attached to this hospital is a separate building for the accommodation of female patients, which was erected in 1895 through the munificence of Babu Nafar Chandra Pal Chaudhuri. The next institution in respect of attendance is that at Ranaghat, the head-quarters of the Ranaghat Subdivision; this was attended in 1907 by 10,004 out-patients and 102 in-patients. There are three other class III institutions in the Ranaghat Subdivision, namely at Santipur (attended by 9,951 out-patients and 23 in-patients), at Ula (attended by 6,276 out-patients), and at Chakdaha (attended by 5,978 out-patients). There is also a class V dispensary at Belgharia, supported by the trust fund created by Babu Kailash Chandra Mukhopadhyay. In the Sadar Subdivision, besides the hospital at Krishnagar, there is a hospital at Nabadwip called the Garrett Hospital, after a former Collector, and a dispensary at Debagram; the former was in 1907 attended by 4,238 out-patients and 35 in-patients,

and the latter by 6,110 out-patients. In the Chaudanga Subdivision there is only one medical institution, namely a dispensary at Chuadanga itself, in which 5,741 out-patients were treated in 1907. In the Meherpur Subdivision there is a hospital at Meherpur (attended by 8,120 out-patients and 59 in-patients), a dispensary at Shikarpur (attended by 5,644 out-patients) and a dispensary for women and children at Ratnapur, maintained by the Church of England Zenana Mission Society, aided by the District Board. In the Kushtia Subdivision lie the remaining two class III medical institutions, namely a hospital at Kushtia and a dispensary at Kumarkhali; during 1907, 7,088 out-patients and 66 in-patients were treated at the former and 2,854 out-patients at the latter. There is also in the Kushtia Subdivision a class V dispensary at Amta, maintained by the Shaha Babus of that place.

The total income of these hospitals and dispensaries during the year 1907 was Rs. 28,100 and the expenditure Rs. 22,433. Out of the income nearly Rs. 16,000 was contributed from the funds of the District Board and Municipalities.

Out of the 89,370 cases treated during 1907 by far the largest number fell, as was to be expected, under the head of malarial fevers. The next most prevalent disease was "other diseases of the skin," which accounted for rather over 10,000 cases, as compared with 36,000 cases of malarial fever. It is noteworthy that skin diseases appear to be relatively much less prevalent in Nadia than in Khulna and Jessore, the two sister districts on the east of the Presidency Division. Diseases of the digestive system, disease of the respiratory system, diseases of the eye, ulcers and worms account, in the order mentioned, for between three and four thousand cases each. The only other diseases calling for mention are leprosy and rheumatic affections, of which the district appears to be relatively free, as compared with other districts in the Presidency Division; and diseases of the spleen which are relatively far more common than in the other districts of the Division.

Besides the above institutions which are under Government supervision, there are nine private hospitals and dispensaries at which free medical aid is dispensed. The most important of these is the dispensary and hospital at Dayabari, on the outskirts of Ranaghat, instituted by the Ranaghat Medical Mission but now maintained by the Church Missionary Society; at this institution 18,350 patients were treated in 1908. Next to this comes another institution maintained by the Church Missionary Society at Santirajpur, in the north of the Meherpur Subdivision; here 15,064 patients were treated in 1908. The other private institutions are at (1) Natuda in the Chuadanga Subdivision, maintained by Babu Nafar Chandra Pal Chaudhuri; (2) Nakasipara in the Sadar Subdivision, maintained by Babu Debendra Nath Singh Rai; (3) Meherpur, maintained by the Mallik family; (4) Meherpur, maintained by the Church of England Zenana Mission Society, for women and children only; (5) Selaida, in the Kushtia Subdivision, maintained by Babu Rabindra Nath Tagore; (6) Sutragarh, in the Ranaghat Subdivision, maintained by Babu Kartik Chandra Das; and (7) Krishnagar, maintained by the Church of England Zenana Mission Society, for women and children only.

VACCINATION

Vaccination is compulsory within the limits of the nine Municipalities, where paid vaccinators are employed. In the rural areas, where vaccination is voluntary, the operation is performed by licensed vaccinators who charge two annas for each successful case. It is reported that the people have no particular prejudice against vaccination. During the year 1907-08 (the season for vaccination is September to March) 54,493 persons were successfully vaccinated, giving a ratio per thousand of 34·66; this ratio is higher than in any other district in the Presidency Division, with the exception of the 24-Parganas.