

CHAPTER IV.

PUBLIC HEALTH.

VITAL
STATIS-
TICS.

A COMPARISON of vital statistics for any lengthy periods is rendered impossible by the changes in the system of registering births and deaths which have taken place from time to time. In 1869 the duty of reporting deaths was imposed on the village *chaukidars*, and in 1876 the system was extended to births; but the returns received were so incomplete that they were soon discontinued and, except in towns, deaths alone were registered until 1892, when the collection of statistics of births as well as of deaths was ordered, and the system now in vogue was introduced.

So far as they can be accepted—and they are sufficiently accurate for the purpose of calculating the approximate growth of the population and of showing the relative healthiness or unhealthiness of different years—the returns submitted since that year show that, on the whole, conditions have been favourable to the growth of the population. There have been repeated outbreaks of cholera, causing considerable mortality; but the number of deaths reported has exceeded the births only in three years, viz., in 1892, 1894 and 1896, when there were severe epidemics; and in the nine years 1892-1900, taken together, the births outnumbered the deaths by about 30,000. During the last 5 years (1901-05) the growth of the population has been sustained, the excess of births over deaths amounting to 24,000. On the other hand, this quinquennium witnessed a falling off in the birth-rate as compared with the previous 5 years, the ratio of births declining from 40 to 39 per mille; while the death-rate rose from 31 to 34 per mille. The result is that of the three sea-board districts of the Orissa Division, Balasore showed the least advance in the second half of the decade ending in 1905. While the birth-rate rose in Puri and was practically stationary in Cuttack, it fell in Balasore; and in that district too there was the greatest relative rise in the death-rate in the quinquennium, though it is the healthiest of the three districts.

The mortality among infants is exceptionally high, and in this respect Balasore has for several years past had a very bad record; the returns of 1905 show that no less than 27·7 per cent.

of every 100 children born died during the first year of their life, a percentage higher than in any other Bengal district except Shāhābād. This high death-rate among infants may be ascribed to the operation of one or more of several causes, such as the poverty and consequent poor vitality of the majority of the parents; disregard of the primary rules of sanitation in the lying-in rooms, which are generally dark, damp and ill-ventilated out-houses; want of skilled midwives; insufficient nourishment, especially when the mother is sickly; insufficient clothing, combined with neglect and exposure; ignorance and neglect in the treatment of infantile diseases; and the immaturity of parents, leading to feeble organization in the children and enhancing the natural susceptibility to disease.

The climate is on the whole good, except in the north, where malarial fevers of a malignant type have spread from the adjacent tracts of Midnapore, and in the south-east corner of the district, at the mouth of the Dhāmra, an unhealthy locality where low malarial fevers are prevalent. The highest birth-rate in recent years was recorded in 1899, when it was 46 per mille, and the lowest (31·7 per mille) in 1892. In the latter year the death-rate reached the highest percentage yet returned (43·6 per mille), but fell in 1893 to the lowest on record, viz., 25·9 per thousand of the population.

According to the returns submitted year by year, by far the greatest mortality is due to fever, but the ignorant *chaukidār* responsible for the returns is far from being a medical expert. Drawn as he often is from the lowest dregs of the people, he can diagnose only a few well-known diseases like cholera and small-pox, and many others are indiscriminately classed under the general head of fever. It is noticeable, however, that in Balasore the mortality ascribed to fever is exceptionally low. Since the present system of returns of vital statistics was introduced, the death-rate caused by fever has never been as high as 15 per mille; it has been known to fall as low as 11·4 per mille; and the average for the 10 years ending in 1905 has only been 13·3 per thousand of the population.

PRINCIPAL
DISEASES.

Fever.

The fevers most prevalent are due to malarial affections, the commonest form being intermittent fever of a malarial type. Generally speaking, fever continues throughout the year, but the cold weather from October to March is the period of greatest intensity; practically all parts of the district are affected, but the Jaleswar thāna is the worst fever zone. Many parts of the district are low-lying, swampy and water-logged; and the houses, which are generally mud huts constructed from earth dug out of a hole in the immediate

vicinity, are surrounded by unhealthy stagnant pools, which furnish breeding places for the anopheles mosquito. Great difficulty is experienced in inducing the Oriyā to take quinine as a prophylactic, owing to his inherent prejudice against its use; but in 1904 and 1905 the free distribution of pice-packets to the poor met with some measure of success in the interior, where malaria was most prevalent. The town of Balasore has perhaps a greater immunity from fever than any other part of the district; and here steps have recently been taken to destroy mosquitoes as an experimental measure by a "mosquito brigade" working under the supervision of the Civil Surgeon; about 80 houses and compounds were cleared by the brigade in 1905, and the result was, on the whole, satisfactory.

Cholera.

Before steamer communication with other parts of Bengal had been established and before the construction of the railway, cholera annually made its appearance along the Trunk Road together with the great stream of pilgrims travelling to Puri. It was ranked first among the scourges of epidemic disease, and the mortality caused by it was appalling. In 1853 it is said that it worked its way from village to village, till there was not a single hamlet that escaped it, and very few in which the mortality fell short of 10 or 12 per cent. The whole district was panic-stricken, and the villagers fled from their houses, leaving behind the dead and dying. Another terrible visitation occurred in the famine year of 1866, the severity of which may be gauged by the fact that 88 out of 100 prisoners in the jail were attacked and 35 died.

After steam communication between Orissa and Calcutta had to a large extent cleared the Trunk Road of pilgrims, the epidemics of cholera diminished, but in 1888 it was reported that the average mortality was about 5 per mille, reaching the excessive figure of 13·7 per mille in 1889. During the decade ending in 1900 there were again frequent epidemics, the worst outbreak being in 1892, when the disease was responsible for a mortality of 15 per 1,000, a rate which was exceeded during the decade only in a terrible epidemic in Purnea in 1900. Since the latter year cholera has been an annual visitation, the average death-rate during the 5 years ending in 1905 being 4 per mille, but there have been none of the terrible outbreaks which were formerly common. It usually makes its appearance immediately before and after the rains; and there can be little doubt that its prevalence is due to a bad and scanty water-supply. In many parts of the district the people have to undertake journeys of three or four miles in order to secure potable water; and it seems an unquestionable fact that the majority at least of the peasants drink all their lives from wells and tanks charged with organic impurities.

In common with the inhabitants of other parts of Orissa, the ^{Diarrhœa and dysentery.} people of Balasore suffer greatly from diarrhœa and dysentery, but the number of deaths attributed to these affections has steadily decreased since the present system of reporting births and deaths was introduced in 1892. In the 5 years ending in 1896 the average annual death-rate was 3·6 per mille, in the next quinquennium it was 2·4 per mille, and in the 4 years ending in 1905 it fell to 1·8 per thousand of the population. The prevalence of diarrhœa and dysentery in Orissa has recently been made the subject of a special enquiry, the object being to ascertain whether their prevalence was as great as would appear from the high death-rate persistently returned or whether it was due to error on the part of reporting agency. The conclusions arrived at are that the high reported death-rate does more or less represent the state of affairs, and that diarrhœa and dysentery, particularly the former, are a frequent cause of death in this part of the country, their greatest incidence being in February and March. Dysentery is fairly common, but does not cause so many deaths as acute diarrhœa. The death-rate is, however, undoubtedly increased by the fact that typical and lingering cases of cholera are reported as diarrhœa. Infantile diarrhœa is extraordinarily common, and is the chief cause of the high death-rate, the returns of cases among children under 5 years of age being nearly equal to all those among persons over that age. Generally speaking, the cause of these diseases is the bad water-supply, the eating of new rice as soon as it is reaped, and the general ignorance of the people.

Orissa has long had an unenviable reputation for the prevalence ^{Small-pox.} of small-pox, which breaks out in epidemic form nearly every year. These outbreaks are largely due to an ancient prejudice against vaccination and to the widespread practice of inoculation, which spreads small-pox among the unprotected. In Balasore, as in the other districts of the Division, the disease is an annual visitation, but the number of deaths due to it is far less than in either Puri or Cuttack. There were somewhat severe outbreaks in 1901 and 1902, causing a total mortality of 3,590, but since then there have been no serious epidemics; and in the 4 years ending in 1905 it accounted for an average mortality of only 650 per annum. This satisfactory result is due to the fact that vaccination is steadily acquiring popularity among the conservative Oriyās.

Elephantiasis is common, but is not nearly so prevalent as has ^{Other diseases.} sometimes been represented. Thus, in the last Settlement Report (1900) it is stated that it is the most common of endemic disease and that nearly 30 per cent. of the population suffer from it; while in Hunter's Statistical Account of Bengal (1877) it is

said that elephantiasis attacks about 25 per cent. of the people and is always present in from 15 to 20 per cent. Regarding this statement, the following remarks of a former Civil Surgeon of Balasore may be quoted. After pointing out that this percentage would mean that one in every four or five persons in the district is subject to the disease, he remarks--“This, I believe, to be very far from the facts. In a household of from 20 to 30 domestics, one servant may be found with the complaint. In a jail of 80 to 100 prisoners, two or three may be found suffering from it. In gatherings in the streets and fairs I have never noticed so high a percentage as one in four or five of the people. I am of opinion that 7 per cent. would still be a high figure. That males suffer more from the disease than females is correct, and that it has a strong hereditary leaning is equally undoubted. One feature peculiar to the disease here is that the scrotum is seldom the seat of the disease, and rarely indeed do we see the large scrotal tumors seen elsewhere.”

Hydrocele and syphilis are also common, but are not nearly so common as would appear from the Statistical Account of Bengal, where it is said that 20 per cent. of the people labour under hydrocele, and that as many as 40 per cent. of the population are victims to syphilis. The latter is an excessively high estimate; and though venereal diseases are certainly common, as will be apparent from the table at the end of this chapter, it is doubtful whether Balasore is worse than other parts of Bengal in this respect. A maximum of 10 per cent. would be a more reasonable estimate; and in the case of hydrocele, 7 per cent., though still high, would be nearer the mark. Cutaneous diseases are general among the rice-eating Oriyās; ague and rheumatic affections, with cold and catarrh, are also very prevalent.

Infirmi-
ties.

Orissa stands high among the localities in which leprosy is prevalent, and the proportion of male lepers in Balasore (187 per 100,000) is greater than in any other district in the Division; the percentage among females (53 per 100,000) is much lower. Insanity is comparatively rare, and the proportion of lunatics (24 per 100,000 males and 13 per 100,000 females) is far below the average for the whole Province. Blindness is also much less frequent than in either Cuttack or Puri, and in the census of 1901 it was found that the percentage of blind persons was only 45 per 100,000 males and 44 per 100,000 females; the corresponding figures for the whole of Bengal were 95 and 85 respectively.

SANITA-
TION.

Organized and systematic schemes of sanitation are practically unknown outside the town of Balasore. Here a great advance has been made during the last 30 years. Writing in 1877, Sir William Hunter remarked--“Till lately no attempt was made at sanitation.

Balāsore town contains no fewer than 11,000 tanks, not one of which can be said to be in a wholesome state. The tanks are the receptacle of every sort of filth, fluid and solid. The one object of the Oriyā's life is ceremonial purity, which he reconciles in a surprising degree with foul drinking-water and putrid dirt-heaps at his door." Since that time the sanitation of the town has been greatly improved in spite of the limited means of the municipality. Tanks have been cleared out, drains opened, and conservancy rules rigidly enforced. The drainage of the town is good, all surplus water finding a ready exit, and these natural facilities have been aided by the introduction of an extensive system of drains and by the removal of the old drains which terminated in cess-pools.

In the interior the state of affairs is very different. Wells have been sunk and tanks cleaned, but there has been no serious attempt to improve the conditions prevailing in the mofussil villages, while the apathy of the people and the unwholesome habits to which they are rooted render the task of village sanitation on any appreciable scale most difficult. Few villages have a pure and regular water-supply, and they all abound in filthy pits and hollows containing water of the foulest character and full of decaying vegetation which constitutes a standing menace to public health. The houses throughout the district are built of mud dug up from the vicinity; and the result is that in the neighbourhood of almost every hut or house there is a dirty pit, filled to overflowing with water in the rainy season, and the receptacle of every description of filth.

Vaccination is unpopular among all classes in Orissa, where the people are more conservative, less enlightened and more wedded to superstitious beliefs than in the neighbouring Province of Bengal. Inoculation has, on the other hand, been practised for ages past, and the people believe in it. They see that its effects are serious, and they think that the powers of the goddess of small-pox are manifested by the eruption; while, as its substitute is not followed by an eruption or, as a rule, by fever, they distrust its powers of protection.

The profession of inoculator is hereditary among the Māstān Brāhmins, who are found in scattered villages all over Orissa. Their working season is usually a short one, extending from about November to March. The material used is small-pox derived from a person recovering from an attack of variola discreta and removed on or about the 21st day of the disease. After removal, the crust is covered up with cotton-wool and placed in a small hollow bamboo which is closed with a sola pith cork. When required for use—and this should be, if possible, within 3

The
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tion.

or 4 days after removal—the cotton-wool containing the crust is moistened with water and squeezed on to a snail-shell; and the turbid fluid thus obtained is used for the operation. The instrument employed is a small piece of iron, shaped like a miniature country nail-parer, with a sharp edge; with this the skin is notched until blood just appears in the scratch, and the watery fluid mentioned above is then applied. Formerly male children were generally inoculated on the forearm, and female children on the upper arm; but the Pāns, the hereditary inoculators of some of the Tributary States, select a spot on the forehead between the eyebrows as the seat of inoculation. Recently, however, owing to the prohibition of the practice, it has been found necessary to select some less conspicuous place, such as the back of the arm, knee or hand. Although there is no restriction regarding the age at which the operation may be performed, it usually takes place between the age of two and eight years, and in practice persons over 40 years of age are not subjected to it.

The operation is practically a religious ceremony. The day before it takes place a solemn offering is made to Sitalā, the goddess of small-pox, of which the essentials are coco-nuts, milk, treacle, curd, cheese, plantains, turmeric, rice, *duba* grass, plum leaves and vermilion. This *pūjā* having been completed, the child is inoculated, and incantations are made to Sitalā until the scabs fall off. Four or five days after the operation the inoculator visits the child and takes his fees; and he comes again and offers *pūjā* to Sitalā from the 9th to the 16th day, during the height of the eruption. Formerly this *pūjā* was performed openly with cornets and drums; but nowadays it takes place privately for fear of attracting attention.

After the operation the child is fed on cold rice and *feni* (a kind of sweetmeat), and has a bath daily until the eruption appears. The bath is then stopped, and rice, *dāl* and fried plantains form the dietary. During the period of convalescence the patient is humoured, dealt gently with, and never scolded, even if fractious, as it is believed that the deity presiding over small-pox is in the child's system, and any castigation or abuse might offend the goddess and draw down her wrath upon the child, in the form of confluent small-pox and death. It is also believed that the inoculators have the power of producing the exact number of eruptions which they promise before undertaking the operation; and they are credited with the power of allaying the intensity of the disease in a small-pox stricken patient. Their treatment consists in the administration of emetics and purgatives, by the action of which they believe the poison is washed away.

The danger of this practice in spreading small-pox scarcely needs illustration, but for many years past it has not been so prevalent in Balasore as in Cuttack and Puri, and it is gradually dying out. Vaccination has made steady progress among the people in spite of the fact that it is only compulsory in the Balasore Municipality, and the prejudice against it is disappearing. In 1905-06 altogether 30,600 persons were successfully vaccinated, representing 29.1 per thousand of the population, and protection was afforded to 242.6 per mille of the infant population. In the preceding 5 years the average annual number of persons successfully vaccinated was 37,360 or 35.56 per mille, as compared with the ratio of 33.2 for the whole of Orissa and of 31.1 for the entire Province.

Thirty years ago there were only 2 dispensaries in the district, the Pilgrim Hospital and Dispensary at Balasore and a branch dispensary at Bhadrakh, and the total number of persons treated at them was only 4,000. The number of dispensaries, excluding the Police Hospital at Balasore, which is intended only for members of the police force, has now risen to 11, of which 4 have accommodation for in-patients. During the 5 years 1890-1894 (when there were only 8 dispensaries) the average annual number of persons treated was 21,000, but it was more than doubled in the quinquennium ending in 1904, when it amounted to over 43,000 per annum of whom 700 were in-patients. During the same period the daily average number of in-patients increased from 20 to over 23, the cost of diet of each patient being 2 annas per diem; while the daily number of out-patients rose from 118 to 205 and the average annual income from Rs. 11,000 to Rs. 18,000. Statistics for 1905 will be found in the tables at the end of this chapter.

The principal medical institution in the district is the Pilgrim Hospital at Balasore, which was established in 1853 with the object of affording medical relief to the pilgrims passing along the Trunk Road to Puri. Pilgrims formerly constituted the great majority of the patients, but since the establishment of through railway communication with Puri, their numbers have greatly fallen off and the hospital is little used by them. This hospital has accommodation for 39 (33 males and 6 females) indoor patients, and an annual average of 6,000 patients are treated. A new hospital, called the Central Hospital, is now under construction, which it is hoped will meet a long-felt want. The main buildings have been completed and have been in use since November 1905; including the beds in the Pilgrim Hospital, it contains 42 beds for male and 6 beds for female patients. The town also contains 2 dispensaries affording outdoor relief only, viz., Rājā Shyāmā-

MEDICAL
INSTITU-
TIONS.

nanda De's Dispensary and Rānī Srimati's Female Dispensary. The other dispensaries are situated in the interior at Bālāpāl, Bhadrakh, Chāndbāli, Eram, Ghanteswar, Jaleswar and Soro. Of these the Bhadrakh Dispensary, established in 1868, has accommodation for 12 (8 males and 4 females) indoor patients and the Chāndbāli Dispensary for 18 (10 males and 8 females) indoor patients. The other dispensaries afford outdoor relief only. Recently also, as an experimental measure, an itinerant Civil Hospital Assistant has been appointed by the District Board to visit the markets in the Bhadrakh subdivision and afford medical relief to the poorer classes.

Among the medical institutions of the district may be mentioned the Pilgrims' Lodging House Fund, which contributes to the pay of the Civil Hospital Assistants in charge of the dispensaries at Chāndbāli and Jaleswar, keeps in repair the latter dispensary and that at Soro, and meets the pay of a compounder and sweeper at the two places last named. The Fund also provides for the cleaning of wells along the Trunk Road and for the up-keep of *chattis* or pilgrims' rest-houses at Turkīā, Soro and Bhadrakh (Navābazar). The annual expenditure averages about Rs. 2,500.

The following tables show the principal diseases treated together with the number of operations performed, and the receipts and expenditure of each hospital and dispensary during 1905 :—

NAME OF DISPENSARY.	DISEASES TREATED.						
	No. of operations.	Malarial fever.	Skin diseases.	Diseases of the ear.	Intestinal worms.	Vene- real dis- eases.	
Balasore {	Pilgrim Hospital	599	312	190	101	157	463
	Central ditto ...	5	18	..	...	...	1
	Rājā Shyāmananda	339	1,436	738	214	110	120
	De's Dispensary.						
	Rānī Srimati's Fe- male Dispensary.	39	294	109	101	47	64
Bālāpāl Dispensary	...	121	1,067	1,074	214	171	55
Bhadrakh ditto	...	71	528	618	301	380	93
Chāndbāli ditto	...	196	3,053	826	264	688	848
Eram ditto	...	190	376	387	188	...	28
Ghanteswar ditto	...	170	1,014	584	188	93	40
Jaleswar ditto	...	149	896	644	158	386	124
Soro ditto	...	104	1,574	578	576	...	74
Total	...	1,983	10,568	5,748	2,305	2,032	1,936

NAME OF DISPENSARY.	RECEIPTS.				EXPENDITURE.		
	Government contribution.	District Fund.	Municipal Funds.	Subscriptions and other sources.	Establishment.	Medicines, diet, buildings, &c.	
Balasore	Pilgrim Hospital ...	165	525	650	765	894	2,005
	Central ditto	5,000	640	225	620	104	1,458
	Rāja Shyāmānanda De's Dispensary	378	605	212
	Rānī Srimati's Female Dispensary	420	124
	Baliāpāl Dispensary	...	822	...	33	670	185
BhadraKh ditto	170	2,044	...	631	935	584	
Chāndbali ditto	40	1,624	...	542	1,104	419	
Eram ditto	...	833	...	...	318	315
Ghanteswar ditto	...	...	...	668	485	183
Jaleswar ditto	...	...	...	1,153	843	310
Soro ditto	...	...	...	581	489	92
Total	5,375	6,488	875	5,371	7,127	5,887	