CHAPTER III.

THE PEOPLE.

Since 1872, when the first census was taken, the population of the 24-Parganas has increased by 852,656, or 54 per cent., and now numbers 2,434,104; the figures of each census are shown in the margin. Though the population as a whole has grown steadily and uninterruptedly, there have been considerable local variations. In 1881, when there was a net increase of 6.9 per cent. for the whole district, there was a decline in the north and east owing to the prevalence of malaria. Burdwan fever appeared there in 1861; and, though it was said to have died out after three years, the tract continued to be very unhealthy, and the Barrackpore subdivision had a loss of 9 per cent. and the Naihati thana of 10.4 per cent. In 1891 the district showed a further increase of 11.9 per cent., but several of the northern and central thanas remained stationary or lost population, the worst being Habra, where there was a decline of 5.4 per cent. In the next decade (1891-1901) another increase of 9.9 per cent. was registered, in spite of the fact that the central and northern thanas showed no improvement. On the other hand, the riparian population grew by 12 per cent. owing to the development of the industrial towns along the Hooghly, and the rate of growth was twice as fast in the southern thanas, where the progress of reclamation in the Sundarbans attracted numerous settlers.

Conditions between 1901 and 1911 were in favour of a further growth of population. The public health was good, the births exceeding the deaths by 100,000. The outturn of the crops was well up to the average during the first four year of the decade. In 1905 they were short owing to heavy but unevenly distributed rainfall, while the rainfall next year was deficient and the outturn was again poor. Consequently, in 1907 there was distress,
to meet which agricultural loans and other relief measures were necessary. On the other hand, there was a continued and increasing activity in manufacturing and industrial centres, which led to an addition of 50 registered factories (i.e., factories employing 50 hands or more) and of 75,000 employees. Considerable progress was also made in the reclamation of the Sundarbans, where agricultural colonies are growing rapidly in spite of the absence of facilities of communication. The north of the district has no such drawbacks, for areas which were without railway communication are now served by the Bārāsāt-Basirhat Light Railway, which was opened to traffic in 1905 and extended to Hasnābad in 1909; another line from Beliaghata Bridge to Patipukur was opened in 1910. The suburban traffic between Calcutta and stations in this district has also developed rapidly: in 1910 the number of season tickets issued to and from Sealdah was 31,766. The extension of the Calcutta electric tramway to Alipore, Tollygunge and Behala has assisted in the development of those places, while the Port Commissioners' steamer service has popularized the riverain municipalities in

<table>
<thead>
<tr>
<th>Tahā, etc.</th>
<th>Population 1911</th>
<th>Variation per cent. 1901-11</th>
<th>Density per square mile 1911</th>
</tr>
</thead>
<tbody>
<tr>
<td>SADAR SUB-DIVISION—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bāraṇpur</td>
<td>165,350</td>
<td>+ 10.49</td>
<td>1,056</td>
</tr>
<tr>
<td>Meglā</td>
<td>98,624</td>
<td>+ 15.49</td>
<td>185</td>
</tr>
<tr>
<td>Jāmshāv</td>
<td>333,300</td>
<td>+ 14.72</td>
<td>2,064</td>
</tr>
<tr>
<td>Bhākā</td>
<td>87,552</td>
<td>+ 14.86</td>
<td>791</td>
</tr>
<tr>
<td>Behāla</td>
<td>80,462</td>
<td>+ 14.93</td>
<td>1,364</td>
</tr>
<tr>
<td>Tollygunge</td>
<td>98,197</td>
<td>+ 10.62</td>
<td>3,932</td>
</tr>
<tr>
<td>Sārāpur</td>
<td>47,353</td>
<td>+ 26.81</td>
<td>1,155</td>
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<tr>
<td>Vīchartā</td>
<td>81,768</td>
<td>+ 9.26</td>
<td>1,552</td>
</tr>
<tr>
<td>Rudge, Rudge</td>
<td>98,197</td>
<td>+ 16.54</td>
<td>1,659</td>
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<tr>
<td>DIAMOND HABOUR SUBDIVISION—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magra Hāt</td>
<td>140,019</td>
<td>+ 7.36</td>
<td>1,264</td>
</tr>
<tr>
<td>Patā</td>
<td>57,350</td>
<td>+ 9.38</td>
<td>1,168</td>
</tr>
<tr>
<td>Diamond Harbour</td>
<td>78,533</td>
<td>+ 11.11</td>
<td>1,287</td>
</tr>
<tr>
<td>Kulpī</td>
<td>130,214</td>
<td>+ 12.08</td>
<td>1,573</td>
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<tr>
<td>Mathurāpur</td>
<td>87,565</td>
<td>+ 21.30</td>
<td>91</td>
</tr>
<tr>
<td>BARKAKPORE SUBDIVISION—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bārmāgor</td>
<td>13,010</td>
<td>+ 13.52</td>
<td>5,480</td>
</tr>
<tr>
<td>Bārackpore</td>
<td>72,253</td>
<td>+ 10.29</td>
<td>5,558</td>
</tr>
<tr>
<td>Nāypur</td>
<td>58,238</td>
<td>+ 18.52</td>
<td>4,396</td>
</tr>
<tr>
<td>Hārdhat</td>
<td>26,053</td>
<td>+ 13.06</td>
<td>1,611</td>
</tr>
<tr>
<td>Dugga-Dum</td>
<td>22,987</td>
<td>+ 13.06</td>
<td>858</td>
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<tr>
<td>Nāllāpur</td>
<td>41,767</td>
<td>+ 20.58</td>
<td>1,009</td>
</tr>
<tr>
<td>BĀRASHT SUB-DIVISION—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hālī</td>
<td>71,206</td>
<td>+ 5.21</td>
<td>772</td>
</tr>
<tr>
<td>Bagūna</td>
<td>67,265</td>
<td>+ 12.72</td>
<td>842</td>
</tr>
<tr>
<td>Bārsāk</td>
<td>166,290</td>
<td>+ 12.36</td>
<td>1,094</td>
</tr>
<tr>
<td>RASIRHAT SUB-DIVISION—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bādakī</td>
<td>43,940</td>
<td>+ 7.34</td>
<td>316</td>
</tr>
<tr>
<td>Bāstānhat</td>
<td>98,729</td>
<td>+ 13.57</td>
<td>1,065</td>
</tr>
<tr>
<td>Hā實現</td>
<td>68,482</td>
<td>+ 11.14</td>
<td>1,307</td>
</tr>
<tr>
<td>Hasnābad</td>
<td>130,353</td>
<td>+ 21.43</td>
<td>74</td>
</tr>
<tr>
<td>SUBURBS OF CALCUTTA—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcutta-Ship</td>
<td>46,178</td>
<td>+ 18.23</td>
<td>18,806</td>
</tr>
<tr>
<td>Mandālaitā</td>
<td>66,767</td>
<td>+ 68.91</td>
<td>18,834</td>
</tr>
<tr>
<td>Garden Reach</td>
<td>46,290</td>
<td>+ 68.56</td>
<td>13,323</td>
</tr>
</tbody>
</table>
the Barrackpore subdivision. The result is that a growing number of clerks employed in Calcutta offices live outside the city and are daily passengers on the trains, trams or ferry steamers.

The total increase of population since 1901 is 355,745 or 17 per cent., nearly half of which may be ascribed to the increased number of immigrants (as shown in the margin), most of whom are attracted by the good wages offered in the mills along the Hooghly or for agricultural labour in the interior. Their number has risen by 176,000 since 1901, and they now constitute one-sixth of the total population. On the other hand, there has been a loss of 20,000 by emigration, and more than half of the increment of population must be attributed to natural growth. The Barrackpore subdivision has a phenomenal increase, representing 42 per cent., which is nearly entirely due to the influx of mill-hands—the proportion of males to females in the whole subdivision is 5 to 3. In none of the other subdivisions, whether industrial or agricultural, is the rate of growth under 10 per cent. There is no sign of a drain of the population to Calcutta; on the contrary, the development of suburban railways and river steamer services points to the fact that an increasing proportion of the workers in Calcutta prefer to have their homes outside the city.

A special inquiry made by the Bengal Drainage Committee in 1906-07, showed that the noticeably malicious thanas are Dum-Dum, Khardah, Barrackpore, Naopara, Naibiti, Deganga and Habra, and that the least malarious areas are Bhogpur, Matla, Diamond Harbour and Budge-Budge. In the healthy thanas the rate of increase has varied from 11 to 17 per cent.; in the unhealthy thanas the natural loss of population by death or lowered vitality is counterbalanced by immigration. Five of the seven unhealthy thanas lie along the Hooghly in the Barrackpore subdivision, where mill-towns cluster closely together, and the effect of malaria is obscured by the shifting of population to industrial centres. Habra has an increase of only 5 per cent., a rate which is only a little below that in the adjoining thana of Baduria. The two thanas last mentioned lie in the extreme north-east of the district, and have advanced at a relatively slow pace, compared with the thanas immediately to the south of them, viz., Barasat, Deganga and Basirhat, which have all benefited by
the opening of the light railway and have grown at a uniform rate of 13 per cent. There has been even more rapid progress in the Sundarbans thanas to the south and south-east, where cultivation is rapidly spreading. Hasinabad, which has also been opened up by the railway, has a gain of 32 per cent., and Mathurapur of 21 per cent.

Proportionately, the greatest growth of population has taken place in the Suburbs of Calcutta, i.e., the three towns of Cossipur-Chitpur, Maniktala and Garden Reach, where it amounts to 45·3 per cent. The most progressive of these towns is Maniktala, which has added 66 per cent. to its numbers. It is closely followed by Garden Reach with 60·6 per cent., while Cossipur-Chitpur is content with the more modest advance of 18·2 per cent. The increase in Maniktala and Cossipur-Chitpur is nearly entirely due to the greater influx of immigrants, the extent of which may be gauged by the marginal figures. In Garden Reach the addition of 17,084 persons is partly the result of an extension of the municipal boundary, the added area having a population of 6,444, or onethird of the net gain. It is also partly due to industrial activity; at the time of the census no less than 10,460 males, or nearly two-fifths of the total male population, were employed in the mills and dockyards situated within the town. As regards the increase in the number of immigrants residing in Garden Reach, it should be explained that altogether 21,986 persons, or nearly half the population, returned their birthplace as Calcutta, and that only 2,797 were recorded as born in the 24-Parganas, whereas the corresponding figures in 1901 were 1,865 and 14,270 respectively. It appears certain that at this census a large number of persons, who were born in Garden Reach, returned their birthplace as Calcutta thinking that the town formed part of Calcutta and not being aware that for administrative purposes it is included in the 24-Parganas.

### Table: Increase since 1901

<table>
<thead>
<tr>
<th>Town</th>
<th>Total</th>
<th>Immigrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cossipur-Chitpur</td>
<td>7,428</td>
<td>5,916</td>
</tr>
<tr>
<td>Maniktala</td>
<td>21,380</td>
<td>13,296</td>
</tr>
<tr>
<td>Garden Reach</td>
<td>17,084</td>
<td>28,567</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45,892</td>
<td>53,769</td>
</tr>
</tbody>
</table>

**Density.** In the district as a whole there are 502 persons to the square mile, but the average is reduced by the uninhabited forest area in the Sundarbans, a labyrinth of tidal rivers and swampy forests, which extends over 1,711 square miles or more than a third of the district; if this area is excluded, the mean density is 777 per square mile.
Numerous towns, with busy jute and cotton mills, stretch along the whole length of the Haloghly from Garden Reach northwards, but away from its banks, the population is almost entirely rural and devoted to agriculture. Density in the different subdivisions varies accordingly, being as high as 1,540 in the Barrackpore subdivision, which is a narrow riparian strip crowded with municipal towns, factories and mills. In the Diamond Harbour subdivision it is less than a third of this, and in the Baisirhát subdivision there are only 223 persons per square mile. Both these subdivisions, however, lie to the south and merge in the Sunderbans. The difference between conditions in the north and south is even more plainly seen in the thana returns; no less than 19 thanas have more than 1,000 persons per square mile, the density rising to over 5,000 in Barragore (5,489) and Barrackpore (5,558), while in two (Mathurapur and Hasanabád), which extend into the Sunderbans, there are less than 100 per square mile.

The population clusters most thickly in the suburbs of Calcutta, where the density is no less than 23 per acre. There is not much difference in this respect between the three towns, there being 25 persons per acre in Mániktala, 23 in Cossipur-Chitpur and 21 in Garden Reach. There is, however, considerable disparity between the different wards, as shown in the margin. In Cossipur-Chitpur the most populous wards (Nos. 1 and 2) lie along the Haloghly. In Mániktala density gradually increases from north to south. In Garden Reach it is highest in the circle next to Calcutta, and steadily falls the further one goes from the city, the minimum being reached in the circle furthest from Calcutta.

Since 1901 the foreign-born population in the 21-Parganas Migration has increased by no less than 176,000, and now amounts to 402,000, or 16.3 per cent. of the total population. The immigrants who outnumber the emigrants by 262,000, are drawn mainly from Bihár and Orissa and the United Provinces. The latter province contributes 84,000, and the former 145,000, of whom 97,000 come from Bihár (chiefly from the districts shown in the margin), 34,000 from Orissa and 14,000 from the Chota Nagpur Plateau. Eastern Bengal and Assam can claim only
9,000, while the Central Provinces accounts for 2,000 and Madras for 5,000; in Titagarh alone there are over 3,000 mill-hands from Ganjam and Vizagapatam. The great majority of the immigrants are employed in industrial and manufacturing concerns, but the reclamation of the Sundarbans in the south attracts a number of cultivators and labourers from Midnapore and also from Chota Nagpur. The emigrants from the 24-Parganas do not spread far beyond its limits, all but 17,000 being enumerated in adjoining districts.

In the population as a whole males outnumber females by 177,000, the excess being due to the influx of immigrants, who find temporary employment in the mills, factories etc., and leave their families at home. In the district-born population there is actually a small excess of females, amounting to 28,000, but among those born outside the district, and enumerated in it, there are two males to every female. The disparity between the sexes is most pronounced in the mill towns, where the population is largely foreign-born. In places such as Bhutpara, Cossipur-Chitpur, Garulia and Titagarh, the males outnumber the females by two to one, but in the non-manufacturing towns the sexes are equally represented, or the female element predominates.

The 24-Parganas is the most distinctly urban district in Bengal, 548,514 persons, or 22\% per cent. of its population, being inhabitants of towns. There are altogether 26 towns (including two cantonments) as shown in the margin, of which two have a population of over 50,000, six of 20,000 to 50,000, twelve of 10,000 to 20,000 and six of 5,000 to 10,000; the average population is 21,097.

These towns may be divided into four groups. (1) The first consists of five towns adjoining Calcutta, which are suburban in character, and from a structural point of view can scarcely be distinguished from it, viz., Cossipur-Chitpur, Maniktala,
Garden Reach, South Suburbs and Tollygunge; taken together, these five towns have added 40 per cent. to their population since 1901. (2) The second class consists of eight industrial towns which, with the exception of Budge-Budge, stretch northwards from Calcutta along the bank of the Hooghly, viz., Barrackpore, the adjoining town of Kāmarhatī, Naihatī, the two contiguous towns of Hálishabar and Bhāṭpāra, Tītāgarh, Budge-Budge and Gāruḷā. The increase in these towns has also been very great, averaging no less than 67 per cent. (3) There are three other towns along the Hooghly, viz., South Barrackpore, North Barrackpore and Pānihatī, which, however, are not industrial centres: of these, only South Barrackpore has shown an advance since 1901, which is partly accounted for by the increase of population in the Barrackpore Cantonment. (4) The remaining ten towns are situated inland, and are mostly rural in character; altogether, they have an addition of 6 per cent., the most substantial increases being found in South Dum-Dum, Bāruipur and Bāṣīrhāṭ. The growth of Bāruipur may, however, be partly accounted for by an addition to its area.

The average town population has increased by 38 per cent. since 1901, and no other district in Bengal has such a record of urban growth. The whole riparian strip along the Hooghly north of Garden Reach is, in fact, becoming urbanized: already, owing to their growing density of population, it has been found necessary to subdivide the South Suburbs, South Barrackpore and Naihatī municipalities twice since their creation, so that they now constitute nine municipalities. Exceptionally large increases were returned for the mill towns in 1911. The aggregate population of seven has risen by 87 per cent., and Tītāgarh has trebled, while Bhāṭpāra has more than doubled its population. The latter town has, indeed, increased five-fold since 1881 and is now the fifth largest town in Bengal. These large increases are accounted for by the influx of factory labour, as illustrated in the marginal table. The character of the population has changed so greatly owing to this influx, that some mill towns are now practically foreign towns planted in the midst of Bengal. In Bhāṭpāra, for instance, four persons speak Hindi to each person speaking Bengali: in Tītāgarh 75 per
Villages. — The census village corresponds to the mauza or survey unit of area, except in the Sundarbans, where it corresponds to the "lot," or grant of land. As a rule, there is not much difference between the mauza and the residential village, i.e., a continuous collection of houses bearing a common name, with its dependent hamlets, but this is not so in tracts which were uninhabited at the time of the revenue survey and in which villages have since sprung up. Altogether 77½ per cent. of the population reside in villages, of which the number is 3,385, their average population being 557. Of the rural population 29 per cent. live in villages with under 500 inhabitants, 50 per cent. in villages with 500 to 2,000, 15 per cent. in villages with 2,000 to 5,000, and 6 per cent. in villages with over 5,000 inhabitants.

The village generally consists of small groups of houses scattered through the rice and jute fields: large compact villages, where periodical markets are held, are usually found only on the banks of the rivers. The villagers live, more or less secluded, in detached homesteads, surrounded by a belt of fruit trees or bamboo thickets: the screen of trees and jungle secures that privacy which the Bengali likes for his domestic life. The oldest villages are almost invariably found on the banks of the rivers or in their neighbourhood, where there are ridges of comparatively high land and of considerable extent. The central basins between such ridges are swampy and unhealthy, but as the population increases and the village site becomes more crowded, the people build their houses further away from the river bank on mounds artificially raised in order to keep them above flood-level.

The following account* of their external experience is reproduced from the volume of Hunter's Statistical Account of Bengal dealing with this district:

* The dense mass of vegetation in which all Bengalis delight to shroud themselves, and which enircles the rich land-holder's

* First published in the Calcutta Review.
palace as well as the peasant’s hut, is everywhere more or less productive. It is composed of the materials for food or for building—the coconut, the bamboo, the jack tree, and the mango. There may be seen the slender stalks of the betel tree, and the towering stems of the coconut above them, their long arms waving in the breeze; on the other side, probably, a thick garden of plantains, that curious link between the vegetable and the timber; in the background, an underwood of wild cane, twining itself round everything of firmer bulk; and a little further on, an undistinguishable mass of thorn, creepers and underwood of every shade, length and denomination. The husbandman must have his fruit tree and his bamboo, which yield him a return for no expenditure of labour but that required for gathering and cutting, his protection for the womankind, and his shade against the fierce sun of April and May. If he attains these primary objects, he is content, no matter how much misma may be exhaled from the decaying vegetation, how much disease may lurk in that fair but deceitful mass of green foliage, how many reptiles and venomous snakes may be concealed in the unwholesome shades which surround his paternal inheritance. The sun, and gaze of the passing neighbour, must alike be excluded. Grant him this, and he will endure, with stoical fortitude, the periodical fever, the steamy heat of the rains and the fetid water which stagnates in the pools whence he has dug the materials for his homestead site (bhītā), and which never feels the influence of the breeze and the light.”

Major Smyth (in his Revenue Survey Report, 1867) gives Houses, the following account of the houses of the people:—“Their habitations, with some exceptions among the richer classes, are built of mud; the poorer classes often use brushwood, plastered with mud, to avoid the labour and expense of raising a wall; they are thatched occasionally with grass, but chiefly of paddy straw, and congregated in a dense mass of jungle. These huts have no apertures or windows of any kind beyond the doorway, the only ventilation being through the small space left between the thatch and the top of the wall, which also serves the purpose of a chimney. No whitewash within; on the contrary, the blacker they become with the smoke, the more comfortable they are considered. Exteriorly, they are washed, by the females of the family, with a mixture of cowdung and mud, which, when dry, gives them a somewhat cleanly appearance.”

Writing seventeen years later, Sir William Hunter quoted this passage from Major Smyth’s report, and added:—“Only the wealthy classes live in brick houses; the shopkeepers and the
husbandmen generally in mud huts. The building materials of a shopkeeper’s house consist of bamboo, timber posts, and thatching grass or golpata leaves. The cultivator’s hut is even more primitive and consists merely of bamboo and thatching grass or golpata leaves, with mud walls. The number of rooms or huts to each household varies according to the condition of the family. A shopkeeper with a mother, wife and three children would have a hut with two or three verandahs for the dwelling of himself, wife and children; and another hut, to serve both as a cook-house and as the dwelling of his mother. A verandah is set aside, or sometimes a separate hut is built, for the purpose of receiving visitors and friends. The dwelling of an ordinary peasant, with the same sized household, would consist of a hut to dwell in, another small one for cooking in, and a cowshed.”

At the present day, the general standard of comfort has decidedly risen. Some of the richer merchants and zamindars have large country houses, of which many may be seen along the first eight miles of the Grand Trunk Road; they are usually two-storied, and situated in the centre of extensive gardens. Similar houses have been built, here and there, by rich zamindars on their country estates. But setting aside these houses, which are, of course, exceptional, there has been a considerable increase in the number of brick houses occupied by the well-to-do, such as traders, members of the official and professional classes, etc., as opposed to the really wealthy. To go a step lower, the small trader or fairly well-to-do ryot usually possesses a homestead, enclosed by a mud wall or bamboo fence, and containing several huts, which serve as a dwelling house, cookshed, cowshed, granary or gold; the word hut, it may be explained, does not necessarily imply poverty or squalor, and is simply used in contradistinction to a brick house. They are usually built on a mud plinth, from one to three feet in height, and have wooden doors, set in a wooden frame-work, and often one or more windows. The walls are generally either formed of mud, pure and simple, which, when six inches or more in thickness, sets into a fairly solid and weatherproof wall, or of a bamboo framework, plastered with mud to keep it wind and water-tight. The roof is supported by wooden posts, and is thatched either with san grass, or with golpata, i.e. the leaves of the hernai or wild date palm. Sometimes the roofs are tiled, and of late years the use of sheets of corrugated iron for roofing has greatly increased. The dwellings of the poorer classes show every degree of difference from a comfortable homestead of this type down to the miserable huts described by Major Smyth. The well-to-do ryot or trader
THE PEOPLE.

usually has a small patch of land attached to his house, on which vegetables grow, and an orchard of plantains, date, cocoanuts and betelnut palms, mangoes, jack trees, etc.

In the suburbs of Calcutta, Cossipur-Chitpur, Māuktala, etc., large portions are completely urban, and insanitary overcrowded bastsis may be found rivalling those of Calcutta itself. All along the banks of the Hooghly, during the last 30 years, great mills and factories have sprung up, and the presence of a large population, drawn to their vicinity by the attraction of high wages, has brought the question of overcrowding to notice in places where, but for their existence, it would not have been thought of. These mills employ from a few hundred up to eight thousand hands, and so far as the labour force is recruited locally, the existing villages would suffice for their accommodation. The local population, however, is quite inadequate to supply the quantity of labour required, and a large number of the employés are immigrants from Bihār and the United Provinces. Most factories, therefore, have "lines" for a part of their labour force, and such "lines" are usually well built and drained, with a filtered water supply laid on and distributed by pipes and stands, and with decent latrine arrangements.

From the marginal table, showing the numerical strength of the different religions found in the district, it will be seen that Hindus predominate, representing 63 per cent. of the total population, while the Musalmāns account for 36 per cent. The latter are relatively most numerous in the Baraṣet subdivision, where they outnumber the Hindus, and in the Basirhat subdivision, where there are ten followers of Islam to every eleven Hindus. The Animists consist almost entirely of aboriginal emigrants from Chota Nāgpur, who are mostly employed in reclamation of land in the Sundarbans. They include 5,538 Orāons and 5,896 Mundās; in addition to these, 6,517 Orāons and 7,296 Mundās were returned as Hindus. The group entitled "Others" includes several minor religions, professed for the most part by immigrants from outside the district, viz., 391 Sikhs, 207 Buddhists, 97 Jainas, 88 Brāhmos, 26 Pārsis, 16 Confucians and 8 Jews.

The Vaishnava sect has a number of adherents in the Vaish rivalry.

of its centres. The following account of it is extracted from Risley's Tribes and Castes of Bengal (Vol. II, pp. 343-44).
“Tradition has it that when Chaitanya died, his most zealous disciples formed a society consisting of six Gosains, eight Kabiraj, and sixty-four Mahants to organize the new teaching and to make proselytes throughout Bengal. In course of time there arose three great centres of the faith—Kharidah, between Calcutta and Barrackpore, the home of the Gosains, or religious mendicants who traced their descent from Nityananda, a devoted disciple of Chaitanya; Santipur, on the river Bhagirathi in Nadia, where Adwaitananda or Adwaita, another zealous disciple, had settled; and Saidabad, in Murshidabad, the residence of Birbhadra, the son of Nityananda. The Gosains or ‘Gentoo Bishops,’ as they were called by Mr. Holwell, have now become the hereditary leaders of the sect. Most of them are prosperous traders and money-lenders, enriched by the gifts of the laity and by the inheritance of all property left by Baidis. They marry the daughters of Srotiya and Bansa Brahman, and give their daughters to Kulins, who, however, deem it a dishonour to marry one of their girls to a Gosain. As a rule, they are tall and well-made men, of light complexion, fair specimens of the Aryan type as found in Bengal. The Adwaitananda Gosains admit to the Vaishnava community only Brahman, Baidya, and members of those castes from whose hands a Brahman may take water. The Nityananda, on the other hand, maintain that any such limitation is opposed to the teaching of Chaitanya, and open the door of fellowship to all sorts and conditions of men, be they Brahman or Chandals, high caste widows or common prostitutes. The Nityananda are very popular among the lower castes, and hold a leading position among Vaishnavas. A paangha, or silver band, is the badge of the family. The Gosains themselves worship Durga, but their disciples do not follow them in this. They observe the birthday of Chaitanya on the 13th Falgun, the Govardhan Puja on the first day of the new moon in Kartic, and the Diwali on the night of the Kali Puja. The Adwaitananda Gosains are highly esteemed by the upper classes of Bengal, and it is very unusual for a Brahman or Baidya to enrol himself in the ranks of the other branch. They are said to be more sincere and more open to religious motives than the Nityananda, and they avoid much scandal by refusing to initiate women.

‘For the purpose of making proselytes and governing the Vaishnava church, Bengal is divided into circles, each circle having its own Gosain, with whose jurisdiction no other Gosain is supposed to interfere. Under the Gosain is the adhikari, or Superintendent, who acts as deputy, initiates disciples within a
certain area, and collects fees. Under him again is the faujdār, called also khānqār, or uncle (the Gosain being the father), whose business it is to lead up proselytes, and whose activity is stimulated by a percentage of the fees. Lastly, comes the chhuridār, or usher of the rod, who is merely the messenger of the faujdār. Persons who join the Vaisānuva communion pay a fee of twenty annas, sixteen of which go to the Gosain and four to the faujdār."

The name Vaisānuva, or, as it appears in the census returns, The Baishnab, is also the designation of a distinct group or caste, which, however, differs from the ordinary caste in that it is not exclusive, but receives fresh accessions from outside. In this sense the name has a restricted meaning and does not connote a member of a religious sect only. Admission to the caste is easily gained, for the aspirant merely engages the services of a Gosain, to whom he pays a fee, and with his help arranges to give the usual feast (mabhatsab) to other Baishnabs. He eats with them, and is then a Baishnab. A large number of prostitutes are Baishnabs. It is frequently the case, however, that a woman of this class does not become a Baishnab until the near approach of death, or at least until she finds herself seriously ill. She sends for the Gosain, pays her fee, and arranges with him about the mabhatsab. She is then easy in mind as to her decent burial after death.

The caste, as a rule, receives recruits only from the lower orders, and members of the higher castes do not join their ranks unless they have been, or are in danger of being, expelled from their own caste. Unlike the main body of Hindus, they bury their dead, do not observe periods of mourning, and do not acknowledge the supremacy of Brāhmans. The Gosains, whom they reverence as their spiritual leaders, are, it is true, Brāhmans, but the respect and honour which they enjoy are apparently due to their descent and not to their status as Brāhmans. Their position is, in fact, somewhat peculiar, for, as Brāhmans, they do not eat food cooked by the ordinary Baishnab

Mention may be made here of some popular beliefs, such as the worship of godlings of disease, local saints, etc., which do not conform to either Hindu or Musalmān orthodoxy, and in which both Hindus and Musalmāns join. Musalmāns may be seen bowing before the shrine of Keshabeswar (see the subsequent paragraph on pilgrimage) and do not fail to make offerings to Sitala, the goddess of small-pox, to Manasa, the goddess of snakes, and to Dakhin Dwar, the god of tigers. The elasticity of Hinduism similarly permits its votaries to adore Satya Pir, (whom they Hinduize under the name of Satya Narāyan)
Mānik Pir, the god of cows, and Ola Bibi, the deity presiding over cholera—all godlings or saints of their lower class Musalmān neighbours.

In addition to Manasa, there is a snake goddess called Jagat Gauri, who is said to be the sister of Manasa, and, like her, is credited with power over cobras and other snakes. She is represented as seated on a throne, with a child on her lap, and her shrine is at Nārikeldāngā. There a Barma Brāhmaṇ officiates at her worship, except in the case of Doms and Hāris, who sacrifice pigs to her. From the fact that the Hindus do not object to their doing so, provided the animal is slaughtered behind the altar, and not in front of it, it may, as Mr. Gait points out, be surmised that the control of the shrine has only recently been usurped by the Brāhmaṇs. A fair is held to honour of this goddess on the fifth day of the moon in the month of Jyaiṣhta.*

A curious form of survival of tree worship, which is still practised in the district, under the name of Dhalāi Chandi, was discovered a few years ago by Mahāmahopādhyāya Hara Prasād Sāstrī, who gives the following account of it in the Journal of the Asiatic Society of Bengal, Part III, 1902:—

"About twelve years ago, while taking a stroll in the fields to the east of Naihāti in the district of 24-Parganas, I was struck by seeing people picking up clods of earth and throwing them at a date tree close to the road on the left. In the course of half an hour I noticed four or five persons doing that. Being curious to know why they did so, I asked one of them, and he told me that a Chandi, a female deity—a form of Durgā, Śiva’s consort—resided in the tree, and is propitiated by offerings of those lumps of clay. I use the word ‘offering’, but he used the word naibedya, that is, an offering of uncooked eatables; so the Chandi is supposed to eat the lumps of clay. Unlike the propitiation of other deities, who grant boons enjoyable only in the world to come, the propitiation of this deity is followed immediately by a great relief, and the relief is that children crying at home are at once pacified. I had then a child about a year old whose cries often vexed the whole family, so I took a clod and threw it at the date tree. On approaching the tree, I marked two things—that the lumps of earth had covered several square yards of the ground to a height of eight or ten feet all round the tree, and that the tree was never tapped, so that it appeared like a giant among the often-tapped, indented, moribund date trees. What the consequences of my offering to the date tree were, I do not

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remember, but I told the thing to several of my friends; and, one of them informed me of the existence of a similar tree about half a mile north of Naibhāti on the road leading from the Gauripur Mills to Mājīpāra. Curiosity led me to pay a visit to that tree also, and I found the same thing there too.

"Ten years later, when I resolved to write on the subject of this curious worship, I thought it proper to pay visits to my old friends again. The new kutchā road from Naibhāti to Amdāunga had been made, and the dēthān, or seat of the deity, had fallen to the right and a few yards away from it. I had no difficulty in recognising the mound of earth. The old tree at the centre of the mound was dead, and its dried stump only occupied the old position, but by its side another tree had grown up to the height of the old one, and was enjoying the offerings of the passers by. On asking a rustic, whose house was situated in the next village, I learnt that, instead of lumps of earth, sweets are often offered,—sweets such as sāndes and ṇātāsā,—and that the propitiation of the deity is followed, not only by the pacifying of the crying child, but also by other boons such as the birth of a child, the obtaining of a situation, success in litigation, etc. I asked him if any mantras were used with the offerings, and was answered in the negative. I also asked him whether there was any priest of the deity, and received a similar answer. Then I asked him what becomes of the sweets that are offered, and he said they are picked up by cow-herd boys. The old man gradually became communicative, and told me of many miracles displayed by the presiding deity of the tree. He said that a neighbour of his once ventured to tap the old date tree (and he pointed out to me the mark of the tapping on its dry stump), but the man who ventured to commit such a sacrilege died in the course of a month by vomiting blood. He also told me of a hooded serpent which often came to the tree and which is really the Chanḍi. Thus in the course of ten years I found there were great changes in this very simple worship. The offerings had improved, the sphere of usefulness of the deity had expanded, a myth had grown up, and it only remained for a priest to appear in order to raise the worship to the dignity of a cult. When I visited the other date tree, I found the same improvements there too.

"Since my attention was directed to this form of newly growing tree worship, I have been informed of several other date trees in the same neighbourhood enjoying the same consideration and worship. There are two near the Kānchrapāra station, one to its north-east on the khet which is an old bed of the Jamuna,
at a place named, Kāntāgauj, and the other to the south-west of
the station and to the west of the locomotive workshops, near the
Shāh-dighi, an old tank with huge banian trees, said to have
been excavated by Malik Sahib about two hundred years ago when
he founded the old mosque at Bāg. There is a third tree near
Mājipāra on the road which runs from the Gauripur mills to that
village. There are a fourth at Chāndigarh on the Amdāngā
road, a fifth on the old road leading to Nārāyanpur (now very
little used because of the construction of a pucca road from the
Kānkīnāra station to that village), and a sixth at Mandalpāra."

The adoration of Pirs or Muhammadan saints is common
among the lower class Musalmuins, and is not confined to them, for
it is shared in by the more ignorant and superstitious among the
Hindus. The Pirs are credited with supernatural powers, and
their tombs, or dargahs, are places of pilgrimage to which people
resort for the cure of disease or the exorcism of evil spirits, or to
obtain the fulfilment of some cherished wish. Vows are regist-
tered before them and offerings made, usually consisting of
sweetmeats, which become the perquisite of the mnaa or
custodian of the tomb.

One local Pir of some local repute is Machandālī Saif, whose
tomb is near Ganga Sagar. Legend relates that the saint
suddenly disappeared one day when he was being shaved by a
barber, and returned shortly afterwards dripping with perspira-
tion. On being questioned, he explained that a ship had run
aground and that, having been invoked by the crew, he had
pulled it back into deep water. The barber received the story
with derision, and as a punishment for his disbelief, he and his
family immediately died.

The most famous of the Pirs of the district is Ghāzi Sāheb,
whose thaumaturgic powers are celebrated in the following
legend. The country in the Maidanmal or Mednimall pargana
(south of Tolly’s Nullah and containing Bāruipur), was formerly
a dense jungle, overrun with wild beasts. A fakir, by name
Mobrah Ghāzi, took up his residence at a place of this jungle
called Bāsa; he overawed the wild beasts to such an extent,
that he always rode about the jungle on a tiger. The zamīndār
being unable one year to pay his revenue, the Emperor ordered
him to be arrested and brought to Delhi; on which his mother
sought the fakir’s assistance in getting her son released. The
fakir promised to help her, and caused the Emperor to dream as
follows: Mobrah Ghāzi, surrounded by wild beasts, appeared to
him, saying that he was the proprietor of the Maidanmal jungle,
and that the revenue due by the zamīndār would be paid from
his treasures buried in the jungle. So saying, he asked the Emperor to release the zamindar, threatening him with every misfortune if he disobeyed. The Emperor awoke and had the dream written down, but paid no attention to it. The next morning he ascended his throne, but instead of his usual attendants and courtiers, he found himself surrounded by wild beasts. This brought the subject of the dream to his mind, and in great fear he at once ordered the release of the zamindar and sent him back to Maidanmal with an escort, instructing him at the same time to ascertain the spot where Mobrah Ghâzi's treasures were hidden, to dig them up, and to remit his revenue to the treasury at Delhi. On reaching home, the zamindar informed his mother of all that had happened, and especially of the instructions regarding the treasure. She went immediately to Mobrah Ghâzi, who at her request pointed out the place where the treasures were buried, and ordered her to dig them up and take them away. He then mysteriously vanished. The mother and son dug them up next day, sent the Emperor his revenue, and transferred the remainder to the zamindari coffers.

In gratitude to Mobrah Ghâzi, he wished to erect a mosque in the jungle of Bâjra for his residence; but he was prevented in a dream, in which the fakir appeared to him, saying that he preferred living in the jungles, receiving offerings from all who came to cut wood, and that he required neither mosque nor house of any kind. The zamindar then ordered that every village should have an altar dedicated to Mobrah Ghâzi, the king of the forests and wild beasts; and warned his tenants that if they neglected to make offerings before proceeding into the jungles, they would certainly be devoured. These altars to Mobrah Ghâzi are common in villages in the vicinity of the the Sundarbans; and woodcutters never go into the jungle without invoking Mobrah Ghâzi's protection.

A number of fâirs, who call themselves descendants of Exorcism Mobrah Ghâzi, gain their livelihood by the offerings made by woodcutters and boatmen in return for their services in protecting them from the attacks of tigers. The custom is for the fakir to go with the woodcutters to the spot where they have to work, and clear a bit of jungle, on which he marks out a circle, repeating charms and incantations. Within the circle he builds seven small huts with stakes and leaves. Beginning on the right, the first hut is dedicated to Jagabandhu, the friend of the world, the second to Mahâdeva, the destroyer, and the third to Manasa, the goddess of snakes. Next to it a small platform is erected in honour of Rûpâpari, a spirit of the jungle, and beyond this is a
but divided into two compartments—one for Kāli, the other for her daughter Kālmāya. Then there is another small platform, on which offerings are made to Orpari, a winged spirit of the jungle; after this is a hut with two compartments, one being for Kumāswari and the other for Burhi Thākurāi, and then a tree, called Rakṣhāya Chandi (another name for Kāli), the trunk of which is smeared with vermilion: no offerings are made to it. Then come two more huts, with two compartments in each and flags flying over them. The first hut is reserved for Ghāzi Saheb and his brother Kālu, and the next is for his son Cawal Pir and his nephew Rām Ghāzi. The last deity propitiated is Bāstu Devata (the earth), who has no hut or platform, but receives offerings placed on plantain leaves on the ground. The offerings to the different deities are simple enough, consisting of rice, plantains, coconuts, sugar, sweetmeats, etc.; chīrāghs or small earthen lamps are lit; pots of water covered with mango leaves, and decorated with an image of the deity in vermilion, are put out; and flags are hung over the huts.

When everything is ready the fakir has a bath, and returns wearing a dhoti provided for him by the wood-cutters, with his hands, arms, and forehead smeared with vermilion. Then, with hands folded before his face, he goes on his knees, bows his head to the ground, and remains in this attitude for a few seconds before each of the deities in succession, offering up prayers to each of them. After finishing his prayers, the fakir proceeds to ascertain whether a tiger is present in the locality or not, by spanning his arm from the elbow to one of his fingers. If the span fails to meet a finger exactly, it is a sign that a tiger is present and the fakir has to drive it off by repeating an incantation.

The fakir then repeats charms for the protection of the wood-cutters and himself. After this, in order to close the eyes of the tiger, he repeats an incantation, beginning—"Dust I dust! The finest dust be on thy eyes, O tiger and tigress." Special charms are repeated if a tiger is seen in the jungle prowling anywhere near the wood-cutters, or is believed to be in their vicinity, or if the growl of a tiger is heard anywhere near the place where wood-cutting is going on. "That the fakir is thoroughly believed in by wood-cutters," writes Mr. Sunder, "there is no doubt, and it is equally certain that his charms and exorcisms give them courage to enter the forests and embolden them to work there, notwithstanding the variety of dangers by which they are surrounded. Without him they would be utterly helpless. That his exorcisms and incantation
have little effect has been proved, for it often happens that the fakir himself, instead of the wood-cutters, is carried off by the tiger.” It is believed that crocodiles, as well as tigers, can be commanded by the fakir, who can make them rise or sink at will and can shut their mouths and prevent them attacking human beings.

When a tiger carries off a mánjhi of a boat, the helm used by him is removed from the boat and planted with the blade upwards on the spot where the man was killed, and a piece of white cloth, with some rice tied in a corner of it, is attached to the helm. When a boatman is killed by a tiger, his car is planted, blade upwards, on the place where he was attacked, and a white flag, with some rice tied in a corner of it, is fixed to the car. If any person attempt to remove either the helm or the car and fail to draw it out of the ground by a single pull, it is believed that he will be killed by a tiger; but nobody ever interferes with the simple memorials to the dead, which are seen on the banks of streams and in the jungles throughout the Sundarbans.*

Gházi Sáheb and his brother Kalu are venerated both by Muhammadans and Hindus, and whenever any person desires to enter any jungle, he first bends to the ground, with hands folded before his face, and says: “In the name of Gházi Sáheb.” Having done this, he goes into the jungle, believing that Gházi Sáheb will keep him perfectly safe.

The most celebrated place of pilgrimage in the district is Púrnam Kalighát, which is situated on the bank of the old bed of the Ganges, two miles south of the southern boundary of Calcutta. The place derives sanctity from the legend that when the corpse of Siva’s wife, Sati, was cut in pieces by order of the gods, and chopped up by the disc (sudarshan chakra) of Vishnu, one of her fingers fell on this spot. The temple is supposed to have been built about three centuries ago by a member of the Sábarma Chaudhri family of Barisa, who allotted 194 acres of land for its maintenance. A man of the name of Chandíbar was the first priest appointed to manage the affairs of the temple, and his descendants, who have taken the title of Háládárr, are the present proprietors of the building. They have given up their priestly avocation and have amassed wealth, not so much from the proceeds of the temple lands as from the daily offerings made by pilgrims to the shrine. The principal religious festival of the year is on the second day of the Durga-púja, when the temple is visited by crowds of pilgrims.

The greatest bathing festival of the year is that known as Ganga Sagar, which is held at the southern end of Sagar Island at the period of Makara Sankranti in January. It attracts an immense number of pilgrims, who believe that by bathing at this sacred spot they wash away their sins. The sanctity of the place is explained by the legend mentioned in the article on Sagar Island in Chapter XV, and is due to the fact that Sagar Island marks the place where the waters of the Ganges mingle with the sea.

The temple of Keshabeswar, a form of Siva, at Mandira Basar, or Banchapra, is visited by pilgrims on Monday and Fridays, but the largest gathering takes place on the day of the Sivaratri festival. The votaries, of course, are mainly Hindus, but many a Musalmán may be seen visiting the shrine in the hope of being cured of disease.

Naihati. Naihati is visited by pilgrims from Eastern Bengal and elsewhere who are unable to meet the expense of a pilgrimage to Kālighat or who, for other reasons, prefer to make their way to Naihati to have a bath in the Bhāgirathi or Hooghly branch of the Ganges and there offer śrāddha for the spirits of their ancestors.

Khardah. Khardah is a favourite place of pilgrimage for Vaishnavas, as it was the home of Nityānanda, one of the chief disciples of Chaitanya. They visit it more especially during the Pāsha and Phul Dol festivals in the months of Kartik and Baisakh, respectively; the pilgrims include many prostitutes and other members of the lower classes of Calcutta.

Paibhāri Jaynagar. The shrine of Rādhā-Allāhā at Jaynagar is visited by a large number of pilgrims during the Dol festival in the month of Phalgun. Close to the temple is a kadamba tree which during the festival is said to yield one flower in honour of the god Krishna, whose favourite flower it is; this is looked upon as a supernatural phenomenon, for the rainy months of July and August are the season in which the plant flowers.

Ghāzi Sāheb's Mela. The melā of Ghāzi Sāheb is a religious gathering held in the latter part of May or in the early part of June at Bāsra, close to the station of that name on the Canning branch of the Eastern Bengal State Railway. On this occasion the votaries, both Hindu and Musalmān, visit the shrine of Ghāzi Sāheb (whose legend has already been given), and make offerings of sweetmeats, goats (in the case of Hindus) and fowl (in the case of Musalmāns) in order to obtain immunity from the attacks of tigers, or relief from sickness and disease.

Mānik Pir's Mela. A similar religious gathering takes place at Jādabpur, close to the station of the same name, in honour of Mānik Pir. This
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attracts few but Musalmans, who offer fowls, which they cook, and eat on the spot.

Of the 16,027 Christians in the district, 2,348 are Europeans, or members of allied races, such as Australians or Americans. 571 are Anglo-Indians (the designation prescribed by the Government of India for the community generally known as Eurasians), and 13,108 are Indians. There are more Indian Christians than in any other district of Bengal, while the number of Europeans is exceeded only in Darjeeling. Of the former, 4,774 are members of the Anglican Communion, 2,785 are Baptists, 1,815 are Congregationalists, 565 are Methodists and 2,962 are Roman Catholics. Missionary effort dates back to the early part of the nineteenth century and has met with most success among the lower castes in the south of the district. The following is an account of the chief missions at work.

The Society for the Propagation of the Gospel, which is a Society Church of England mission, started work in the district in 1823, when the Rev. W. Morton took over charge of seven schools, which had been opened three years before by the Society for Promoting Christian Knowledge at Tollygunge, Ballygunge, Bhawanipur, Kāligāhāt, Puturi, Garia, and Birel. About the same time a school at Bānīpur, which had been started in 1820 by Mr. Plowden, the Salt Agent, was transferred to the charge of the Society. In 1833 Bānīpur was made the headquarters of a separate branch of the mission, with a European missionary in charge; and in 1837 a temple of Siva was presented to the mission by two converts of the village of Satinabaria and converted into a chapel. In the latter year all the villagers of Bereali in Magra Hāṭ renounced caste and sought Christian instruction. A fierce persecution was raised against them by a Musalmān zamīndār, and, to prevent their eviction, the Society purchased the hamlet and so secured the foundation of a station at Magra Hāṭ. Piùccà churches were built and consecrated at Jhānjra in 1844 and at Bānīpur and Magra Hāṭ in 1846. At this time there were 1,443 converts and catechumens in the Bānīpur-Magra Hāṭ district, extending for 40 miles in a direct line from Altibāría in the north to Khāri in the south and containing 54 villages; native readers were stationed in all the principal villages. In 1853 the baptized converts numbered 1,031 and the catechumens 609, in the Tollygunge-Jhānjra district, where 20 years previously there had been only 66 baptized converts. The rapid progress of Christianity aroused opposition, and even persecution. On one occasion two European missionaries were besieged for two
hours in the chapel at Andarmanik by a gang of Hindus armed with clubs, who were led on by an apostate Christian. On another occasion, when a Brāhman had been converted, the mission house was beset for two days by a mob of Hindus instigated by the local zamindār, and the huts of several converts were burnt down at night, attempts to set the mission house on fire having failed.

The two chief missionaries in the first half of the nineteenth century were the Rev. D. Jones, who worked first as catechist and then as priest from 1829 to 1853, and the Rev. C. E. Driberg (1832—71). The years that followed the death of Mr. Driberg were years of depression. The staff was undermanned; supervision was insufficient; there were many secessions to other Christian bodies. There was a marked improvement after 1878, when Miss Angelina Hoare came to the district and took up the education of women, opening girls’ schools, etc.; her work is now carried on by the Community of St. John the Baptist, commonly known as the Clewer Sisters. Another body which has done much for the spiritual life of the district is the Oxford Mission to Calcutta.

The work carried on by the Society is mainly pastoral, i.e., it works among those who are already Christians. Work is carried on in 5 districts, viz., Bāruipur, Magra Hāt, Tollygunge, Khāri and Canning, and from two centres, viz., Tollygunge and Magra Hāt, each of which is supervised by an Indian clergyman. In the Tollygunge centre there is a pucca church at Jhānjar and there are kuteha chapels at Jayadergot, Hāghabpur, Hōgalkānia, Sālpukur, Pānakua, Kharibāria, Kālīcharanpur, Bēthbāri, Balarāmpur, Cōeyāri, Tollygunge, Kārāpukur and Baddipur. In the Bāruipur centre there are two pucca churches, one at Bāruipur and the other at Magra Hāt, and 17 kuteha chapels situated at the following places:—Lakhikantapur, Dāhngāhāta, Khāri, Bāmanābād, Malayapur, Sālkia, Mākāltala, Ban Magra, Kālipur, Andarmanik, Canning, Basanti, Rāmkrishnapur, Kōla Hāzra, Tangrākhāli, Phulbāri and Bokultala. The Society maintains a number of primary day schools for boys, from which promising students are sent to the boarding house attached to the Oxford Mission Industrial School at Ballygunge. Promising pupils from girls’ schools are sent to the Diocesan High School for Girls at Pipalpati, in Bhawānipur, which is under the Clewer Sisters. For the training of readers there is a vernacular readers’ class at Jhānjar. Candidates for ordination are sent to Bishop’s College at Ballygunge.

The institution called the Community of St. John the Baptist, or popularly the Clewer Sisters, is attached to the
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Church of England. Its property is held in trust by the Bishop and Archdeacon of Calcutta, and the centre from which it works is the Dioecesan Mission House in Rallygunge. Its sphere is chiefly educational, village schools for girls being kept up and regularly visited. This work, as stated above, was begun by Miss Angelina Hoare, and on her resignation was transferred by the Bishop to the Clewer Sisters.

The Church Missionary Society maintains an orphanage at Agarpāra, which was founded in 1837 by Mrs. Wilson and handed over to the Society some 20 years later. At Bārnagore there is a small congregation, composed mainly of women converts of the Church of England Zenāna Mission. Another congregation at Kristapur near Dum-Dum is composed of Tīyar fishermen. The inception of the mission in this village is due to the fishermen hearing street preachers in Calcutta when they came to sell their fish, and it began in a small way about the year 1850. The village contains a church built in 1871 and small schools for boys and girls. Another station has been established at Thakurpukur with a small girls’ school, and pāṭhaśālaś for boys. There are also small communities of Indian Christians at Akra, where there is a chapel, and at Diamond Harbour.

A branch of the Church of England Zenāna Mission was started in 1892 in the Bārnagore thanā, where the ladies of the Mission teach some 400 children in village schools. The Mission also maintains an industrial school for women who have become converts to Christianity, so that they can earn a living by needlework and by making jams, chutnies, curry powders, etc.

The Church of Rome carries on missionary work in the Sundarbans and its neighbourhood. It established a Sundarbans mission in the year 1868, when the first mud chapel was erected in the village of Kaikhāli, 16 miles south of Calcutta. Five years later it extended its operations in a southerly direction to the country lying between the Hooghly and Māṭla rivers; and in 1876 it moved on further to the south-west. Eventually two central stations were established, viz., Morāpāi and Rāghabhāpur, to which some 24 villages were successively attached. In each of these two stations two priests reside. Those at Morāpāi visit 16 stations and out-stations, and there are central schools both at this place and at Rāghabhāpur. Rāghabhāpur possesses, in addition to two schools for boys and girls, a fine church, with seven mud chapels.

The Baptist Missionary Society began its labours in the Baptist 24-Parganas in 1827, in which year its first native church was established at the village of Narsīdāchāk; this was the outcome of its propaganda in Calcutta, to which the villagers came on
business. In a few months it extended its work to North and South Lakhikantapur, Basulmamud, Boalkhali and Makhkali. A sub-station was opened at Khari near the Sundarbans in 1829; in 1844, work was taken up at Vishnupur, on the Diamond Harbour Road, and in the neighbouring villages; in 1868 another station was started at Janjalia, and work was also opened up in the Matla district. Other village stations have been established as converts multiplied, more recent additions being those at Baghmari, Harbhungi, Basanti, Chordakhathi, and Tangra Khal. There are three chief centres from which the mission work is carried on, viz., Vishnupur, Lakhikantapur and Matla, which are situated some 20 miles from one another. Primary day schools have been maintained ever since the foundation of the mission, and a flourishing boarding school has been in existence at Vishnupur for 30 years.

The London Missionary Society is an undenominational body, founded by Episcopalians, Presbyterians and Independents, which is now practically the representative of the Independents. It was founded in London in 1795 and established its first Bengal station at Chinsura in 1798. Its work in the 24-Parganas began in 1819, when it set up stations at Kidderpore and Kalighat. The following stations were subsequently added:—at Bhawanipur in 1823, at Koraipukur and other villages to the south in 1826, at Beliahati and other Sundarbans villages in 1844 and at Nadura in 1875. The mission maintains two high schools and a first grade college at Bhawanipur, as well as elementary schools.

Missionary work is also carried on by the Church of Scotland, the Wesleyan Mission, the American Methodist Church and the Women’s Union Missionary Society. The Society last named was founded in 1860, and claims to be the oldest woman’s foreign missionary organization in America; it works among women and children and is undenominational.

The following statement shows the Hindu castes and Musalmán groups that have a numerical strength of 25,000 and over according to the census of 1911.

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Sheikh</td>
<td>675,082</td>
<td>Tiyar</td>
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<td>Pod</td>
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<td>119,384</td>
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<td>99,425</td>
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<td>91,003</td>
<td>Baishnab</td>
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<tr>
<td>Gaṅga</td>
<td>74,229</td>
<td>Namasudra</td>
<td>26,874</td>
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<tr>
<td>Kāora</td>
<td>64,483</td>
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</table>
The Sheikhs constitute by far the largest Mussalmān group, accounting for three-fourths of the total number of Mussalmāns in the district. There is an idea among the Mussalmāns that they must necessarily all belong to one or other of the four classes of Saiyad, Pathān, Mughal and Sheikh, and the designation Sheikh is accordingly adopted by members of the various functional groups, and also by new converts, who are desirous of hiding their real origin. As pointed out by Mr. Gait, in the Bengal Census Report of 1901, a well-to-do man of a functional group, say a Jolāha, will discard the designation of Jolāha, and call himself a Sheikh, assuming a more respectable name. Thus, Channa Miyān will become first Chainuddin, then Muhammad Chainuddin and finally Maulvi Muhammad Chainuddin Ahmad. This ascent of the social ladder is pitifully described and satirised in the proverb—“Last year I was a Jolāha; this year I am a Sheikh; next year, if prices rise, I shall be a Saiyad.” It is this tendency which is largely responsible for the addition of 101,000, or 17½ per cent., to the number of Sheikhs since 1901.

The term Ajlāf, which in Bengali is corrupted into Atrāp, means “the lower classes”, and is a generic designation applied to converts and various functional groups such as the Dhuniā, or cotton cleaner, the Kulu or oil-presser, the Hajjām or barber, the Kunjir or vegetable seller, the Darzi or tailor, etc. The Jolāhas are weavers by hereditary occupation, but a large proportion have abandoned their looms, and engage in manifold other callings, e.g., they are cultivators, butchers, mill-hands, shopkeepers, carpenters, etc. The name Jolāha is disliked by them because it is proverbially used as a synonym for a fool. They, therefore, call themselves Momin or Sheikh Momin, or even Sheikh, the two latter names being intended to substantiate their claim to recognition as Sheikhs.

It is not proposed to give an account of the numerous Hindu castes, for which the reader is referred to ethnological works, such as Risley’s Tribes and Castes of Bengal. A brief mention will, however, be made of the Pods and Kārās, castes which are more or less peculiar to the district. It may also be explained that Namasudra is the name now recognized for the caste formerly known as Chandāl, and that the Kaibarttas are divided into two main classes, viz., the Chāsi and Jaliya. The Chāsi Kaibarttas, who are beginning to discard the old nomenclature and call themselves Māhiṣaya, are cultivators and superior in status to the Jaliya Kaibarttas, who are fishermen. At the census of 1911 only 4,015 Kaibarttas returned themselves as Jaliya Kaibarttas.
while the number of those who stated that they were Chāsi Kṣatṛyas or Māhāyās was 240,487.

More than half the Pods of Bengal are residents of the 24-Parganas, practically all the remainder being found in adjoining districts, viz., Khulna, Midnapore, Howrah, Jessore and Hooghly. There are four main sub-castes, viz., Chāsi Pod, Mecho Pod, Tānti Pod and Bhāsa or Dhamna Pod. The differentiation between them appears to have had its origin in differences of occupation, as indeed may be gathered from the names. Each sub-caste has a separate panchāyat for the adjudication of cases concerned with offences against caste and social laws, but all have the same class of priest. The Chāsi Pods, who live by cultivation, are recognized as having a superior status, and claim to be of Kshatriya origin. They accordingly call themselves Brāhya Kshatriya or Padma Rāj and deny all connection with the Mecho Pods, who live by fishing; occasionally, however, they will marry Mecho Pod girls, though they will not allow their daughters to marry Mecho Pod men.*

The Bhāsa Pods appear to be a comparatively recent accretion from outside. The name Bhāsa means "floating," and tradition has it that the Bhāsas were washed over to the 24-Parganas from Hijjili and other places in Midnapore in the cyclones of 1824 and 1834. Originally the name seems to have been applied generally to such immigrants without special reference to any caste, and the application of it to a Pod sub-caste is apparently a modern innovation. The Bhāsas are found in considerable numbers in Sāgar Island, where the original immigrants settled. They allow widow marriage and are looked down upon on that account by the other sub-castes, who will not smoke from the same hookā as these lazier brethren.

More than half of the Kāoras in Bengal are found in the 24-Parganas, practically all the remainder being inhabitants of the adjoining districts of Hooghly, Howrah, Midnapore, Jessore and Khulna. They are an extremely low caste—so low indeed that they may not enter even the courtyard of a temple and may not take part in any religious ceremony, except as drummers. Their touch defiles Brāhmans and Kāyasthas, and the Dhoba and Nāpīt will not serve them. There are three sub-castes in this district, viz., Chhāhi, Dāi Kāora or Hāri Kāora and Bāburji. The Chhāhi work as cultivators, chaukidārs, labourers and drummers; they claim superiority to the other sub-castes and will not eat, drink or smoke with them. The Bāburji work as cocks in the

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houses of Europeans and the Dái or Hári Kaôra as palki-bearers and drummers. The latter also keep and sell pigs, while their women are employed as midwives. The priests of the Kaôra are generally degraded Brâhmins, who are not much better than themselves. These Brâhmins are called Pandit—a title also given to men of the caste who officiate as priests in remote places where Brâhmins are not available; the insignia of these Káora priests is a copper ring worn on the fore-arm.

The internal affairs of the castes and sub-castes are regulated by meetings of the more influential members, and among the lower castes there are recognized headmen to whom complaints are preferred and with whom information is laid of suspected offences against caste laws. These headmen are generally called Mandals or Samâjpatis, but the Pôd headmen are known as Sârdás. They hold office by hereditary right, but there is a tendency for their places to be taken by parvenus who have amassed wealth and consequently acquired influence among their neighbours. Their jurisdiction is usually limited to the community resident in the pâra or village, but in some cases extends to a group of villages. The meetings are held as a rule on the occasion of a marriage or funeral, when there will naturally be a gathering of the caste men, and the discussion is post-prandial. Heinous offences are visited with excommunication, which may be either temporary or permanent, and fines are inflicted for venial delinquencies. The fines when paid are generally credited to the tárâpri fund, which defrays the expense of village pûjas, or to the village Hári Sabha. Sometimes, however, the proceeds are spent on caste feasts or in feeding Brâhmins, and occasionally the culprit is made to undertake some work of public utility, such as the excavation of a tank, the repairs of a temple, etc.
CHAPTER IV.

PUBLIC HEALTH.

In the Bengal Census Report of 1901 the thanas of the district were grouped, according to their physical features, in five blocks, of which the following description was given:

"(1) Six riparian thanas lying along the bank of the Hooghly, viz., Naihati, Nawabganj, Barrackpore, Khardah, Barganore and Budge-Budge. These thanas, on the whole, are more healthy than those further inland, being higher, and enjoying a better supply of drinking water, which, in some cases, is filtered by the management of the mills.

"(2) The north and central thanas of Hazra, Dugana, Barrasat, Dum-Dum and Tollygunge. The drinking water is here very bad, being derived mainly from tanks polluted by surface drainage; the drainage channels are blocked and there are numerous swamps, and the homesteads are surrounded by dense jungle. Malaria is very prevalent.

"(3) The eastern thanas of Bardia and Basirhat. The inhabitants are, for the most part, sturdy Muhammadans; the country is now healthy, and the main crop is jute, which yields a handsome profit to the cultivators.

"(4) The southern thanas, viz., Haroar, Bhanger, Sonarpur, Bauripur, Vishnupur, Falta, Diamond Harbour and Magra Hat. These thanas are salubrious, owing to better drainage, the comparative absence of noxious undergrowth, and the sea-breeze that blows almost continuously during the south-west monsoon.

"(5) The Sundarbans thanas, viz., Hasinabad, Canning or Mathla, Jaynagar, Mathurapur and Kulpi. Cultivation is here spreading rapidly, and reclamation is extending southwards."

The relative healthiness of these five blocks was inquired into by the Bengal Drainage Committee in 1907, and the following conclusions were arrived at: "From the description given in the Census Report, the areas of most malaria might be looked for in the second division, and the remainder might be expected to be comparatively healthy, but, upon the basis of the vital statistics, it will be seen that it is the thanas of the first class which are the most feverish. The explanation possibly lies in the fact that the Census
Report had more in mind the municipal portions of these thanas, along the bank of the river; the statistics quoted are of rural areas, away from the river, the conditions of which approximate more to those of the country further east. The annual average statistics of mortality, from all causes and from fever, place the different thanas in approximately the same relative order, but Tollygunge and Basirhat are rather more favorish, and Diamond Harbour considerably less so, than the figure of total death-rates would show. Upon the basis of the district fever rate (18.3 per mille), we may, perhaps, class rates of 25 and over as unhealthy, and of 15 and under as the reverse. If so, the specially unhealthy thanas in the 24-Parganas are Dum-Dum, Khardah, Barrackpore, Naihati and Nawabganj, on the east bank of the Hooghly north of Calcutta, and Deganga and Habra, adjoining them further inland to the east. The healthy thanas are Bhanger, Matla, Diamond Harbour and Budge-Budge, all, as might be expected, to the south towards the sea. The conclusions to be drawn from the census fluctuations are obscured by the shifting of the population, due to the opening of new industrial centres, etc.

"In the matter of public opinion, we consider the tendency is to class the district as more unhealthy than it is. This is intelligible; grievances can be easily represented in Calcutta, and the standard of comparison is, perhaps, higher than in less advanced districts. Apart from individual villages, the District Magistrate names the thanas of Barrasat, Habra, Deganga, Dum-Dum, Barrackpore, Nawabganj, Khardah and Naihati as specially unhealthy, and the statistics bear out this view; but, in the case of Haroa, Falta, Jeynagar, Mathurapur and Magra Hati, which are also mentioned, this is scarcely the case for the area of the whole thana, but the reference is apparently to particular portions only.

"The only recent detailed local inquiry in this district was made in 1900, by Captain Rogers, when urban spleen rates of 55 (Gobardanga), 52 (Basirhat), 56 (South Barrackpore) and 68 (North Dum-Dum) were taken, among others, all pointing to the prevalence of malaria. To sum up the local conditions:—

(a) The district as a whole is not abnormally unhealthy, though some portions of it return high rates of mortality.

(b) Similarly, it is not, as a whole, specially malarious.

(c) The noticeably malarious thanas are those of Dum-Dum, Khardah, Barrackpore, Naihati, Nawabganj, Deganga and Habra.

(d) The least malarious areas are the Bhanger, Matla, Diamond Harbour and Budge-Budge thanas."
These conclusions are corroborated, to a large extent, by Major A. B. Fry, i.m.s., Special Deputy Sanitary Commissioner, Malaria Research, Bengal, who, in his First Report on Malaria in Bengal (1912), has published a chart showing the distribution of malarial intensity, as evidenced by mortality returns, from which it appears that the thanas may be classed in five blocks according to the incidence of malaria. They are, in order of intensity, (1) Naithal and Dum-Dum, (2) Barrackpore and Khardah, (3) Baduria and Habra, (4) Barasat, Basirhat, Budge-Budge, Noapara, Tollygunge and Vishnupur, and (5) Debipur, Diamond Harbour, Magra, Jaynagar, Baruipur, Sonarpur, Bhanga, Duganga, Haroa, Hassanabad, Alipore and Behala.

Both the birth-rate and the death-rate are low, compared with other Bengal districts, the average birth-rate for the ten years 1893-1902 being 27 per mille, while the average death-rate was only 24 per mille. The ratios have since risen, but are still comparatively low, the averages for the ten years ending in 1910 being 32 and 27 per mille, respectively. The explanation is that there is a preponderance of males, and a deficiency of females of the child-bearing age, the natural consequence of which is a low birth-rate; and a low death-rate is a corollary to a low birth-rate more especially as infantile mortality is responsible for a large proportion of the deaths.

As in other districts, the majority of the deaths are ascribed to the general head of fever; the average reported fever mortality since 1892 (when the present system of reporting and recording vital occurrences was introduced), is 17 per mille. Inquiries made by qualified medical officers elsewhere have shown that roughly one-third of the reported fever deaths are really due to malaria; and this conclusion is confirmed, so far as the 24-Parganas are concerned, by a series of observations made in the Dum-Dum thana during 1911-12 by Assistant Surgeon Babu Mithiles Chandra Ghosh. The report of that officer, who verified over 300 cases, is instructive, as showing the diseases which are most prevalent, and also the degree of accuracy attained in the classification of deaths by the agency responsible for the returns. "Of 32 cases returned as cholera, all were due to that disease. Of 31 cases returned as dysentery, 26 were correct. Of 219 cases returned as fever, 143, so far as I can make out, had no connection with malaria. Therefore, 34.7 per cent. of the deaths from fever are due to malaria. Many cases of dysentery, which terminate often with fever, were put down as fever. There were 29 cases which I have classed as enteric fever, as the history given showed that all had continued fever with diarrhoea and
complete prostration. There were 10 cases of very old people who
do not seem to have had any particular illness, but died of old age
and debility. Measles, septicemia, tuberculosis, phthisis and
pneumonia account for many deaths. Tetanus neonatorum is
described by the villagers as the possession of a child by a shc-devil,
which causes the convulsions. It is due to lack of cleanliness on
the part of the ignorant dhai, who is a very low caste woman.
The type of malaria present here is the chronic endemic form.
Of the 76 deaths which I have classed as malarial, 62 were
chronic cases of long duration. I have found eight cases of kala
azar amongst children. I diagnosed them on clinical grounds,
and in no case made spleen puncture, but in each case I took
several blood films on Major Donovan’s method, and in one case
I found a parasite. These cases seem to be sporadic, and no two
cases were in the same family.”

Cholera has a tendency to become epidemic twice a year, viz.,
at the beginning of the hot weather, and at the end of the rains.
This scourge, however, rarely assumes the proportions of virulent
intensity which it does in some districts. The worst epidemic in
recent years occurred in 1907, causing 14,500 deaths, or 7 per
mille of the population. Small-pox occurs on a small scale every
succeeding spring, but rarely assumes a seriously epidemic form:
the highest mortality due to it of late years was returned in
1909, when the total number of deaths was only 2,000. Epidemic
fever, similar to that raging in Burdwan and Hooghly, broke out
in the Bāraset subdivision in 1862, and continued for some years
committing great havoc, but no statistics are available showing
the proportion of the population affected or the rate of mortality.

The following account of the fevers found in the district was Types of
contributed a few years ago by Lieut.-Colonel Harold Brown, F.R.C.S., when Civil Surgeon of the 24-Parganas :

“ The fevers of the district may be roughly divided into two
classes, viz., the malarial and the non-malarial.

Malarial Fevers.—These are caused by the presence in the
blood of a minute amoeba, known as the plasmodium malariae,
and are introduced into the system by the agency of various
species of malaria-carrying mosquitoes, the anopheles. Malárial
fevers are divided into three classes, each having its own special
form of parasite: these are the benign tertian, the benign
quartan, and the malignant infection.

The Benign Tertian.—The parasites in this form have a cycle
of 48 hours, and hence cause a fever that recurs every second day
(tertian ague). This is the mildest of all the forms of malarial
fever, as well as the commonest, and occurs from July till March,
being commonest in the cold months. It is readily amenable to
treatment by quinine and, even if untreated, gradually wears
itself out, this form of fever seldom being directly fatal, though, if
neglected, it eventuates in enlargement of the spleen. There is
often a double infection by this parasite, quotidian ague resulting.

"The other benign parasite is that which has a cycle of 72
hours, causing quartan ague: this is a decidedly rare form of
fever, though one meets with a certain number of cases every year.
It is also intractable, unless carefully treated with quinine. As
usually met with, the fever produces a chart in which there is a rise
of temperature every third day, there being a fever-free interval of
48 hours, but if there is a double or treble infection, the typo will
vary accordingly, so that even a quotidian ague can be produced.

"Malignant Infection.—There are several varieties of this
form, including a malignant quotidian, tertian and the so-called
remittent, which is the result of repeated infection. These are
the most important, and the most severe forms of malarial fever,
producing the common type that was formerly known as
‘malarial remittent’, as distinguished from ‘intermittent’
fever. In these cases, the temperature seldom falls to the normal
point, but the chart is generally irregular. Untreated, they run
a course of three weeks or more, when, if not fatal, they tend to
develop an intermittent temperature and slowly decline, but are
very apt to relapse. It is to this form that the great mortality
from ‘fevers’ is due, and, even when taken in hand early, many
cases are very rebellious to treatment. Many of the cases
resemble ‘typhoid’ fever, but a careful examination of the blood
will prevent the occurrence of a mistake, as the parasites will be
found in the former, but not in the latter. Not many years ago
the name ‘typho-malarial’ was applied to certain cases of long
continued fever, with symptoms of depression like those seen in
typhoid: some of them were true malaria, others true typhoid,
and nowadays a hybrid form of the disease is not believed in.
There are also a quotidian and a tertian type of malignant
infection, which are far more serious than similar forms of fever,
due to infection by the benign tertian parasite.

"The vast majority of cases of ‘remittent’ fever, due to the
presence of the malarial parasites, can be cured by quinine. In
some cases, however, when the infection is very acute, and coma
is present, owing to an accumulation of the parasites in the vessels
of the brain, it is useless to administer the drug by the mouth,
and it should be administered hypodermically, in doses of 10—15
grains, either under the skin, or deep into the muscles of the
buttock. A great many cases are still lost by the practitioners
withholding quinine until an intermission or remission of the fever occurs. In the old days, it was taught that quinine was dangerous if given during the height of the fever, so the medical attendant waited for a decline of the temperature. Very often there was no decline, and the patient died from the bad expectant treatment, but nowadays we know that, the higher the temperature, the larger is the dose of quinine that is necessary, and the drug is injected without a moment's delay. In some forms, there is great irritability of the stomach, with sickness, so that it is impossible to give quinine by the mouth; here, again, the drug must be injected. Another form of remittent fever is that accompanied by great coldness of the surface of the body, with collapse, though the thermometer indicates a temperature of 104°, or higher, in the mouth or rectum. These cases cause great anxiety, and are often fatal. In other cases, again, the attack of fever is associated with dysentery, but here quinine, and not the treatment of ordinary dysentery, is indicated.

"Non-malarial Fevers.—Of the non-malarial fevers occurring in the district, the following are the most interesting. 'Cachectic fever,' formerly considered to be malarial and known as 'malarial cachexia,' but now regarded as due to an infection by the Leishman-Donovan body. This has recently been shown by Major Rogers to be a stage in the development of a trypanosome. This fever is very common, and is accompanied by great enlargement of the spleen, dropsy of the face, extremities and body, and profound anemia. It is certainly not malarial, and is responsible for a great many deaths annually. The parasite is found chiefly in the spleen, where it can be obtained in large numbers, but, as a rule, none can be found in the peripheral blood. Of recent years, a fever has been prevalent in Calcutta and the suburbs, which has been called the 'seven days' fever.' It is not malarial, and at first was considered to be a mild form of influenza. The opinion has been expressed that it is a mild form of dengue, but, in my opinion, this is not the case, as it is very feebly infectious, whereas dengue is one of the most infectious diseases known. The peculiarity of the fever is its regular course, lasting 6 to 7 days.

"Typhoid fever, which, at one time, was supposed not to be found in the natives of India, is really a very common disease in the suburbs of Calcutta, and is responsible for a considerable proportion of the mortality from fevers. It was formerly confused with malarial remittent, but, as the two can be differentiated with a little trouble, it is now evident that typhoid fever is much more prevalent than most people think. It attacks young adults and
children chiefly, is not controlled by quinine, and tends to run a course of three or four weeks or, if there are complications, longer. The diagnosis is arrived at by the failure to find malarial parasites in the blood, and by a positive reaction of the blood serum to a fresh culture of the bacillus typhosus, a reaction known as 'Vidal's.' Typhoid fever is less common in the mofussil than in the suburbs of Calcutta, but cases are frequently met with all over the district.

"Of late years cases of cerebro-spinal meningitis have been observed from time to time, and, in 1901, when investigating an epidemic in the Emigration Depôts at Garden Reach, I found that the disease was endemic in Calcutta and the suburbs, and was often mistaken for plague. It is one of the most fatal of fevers, the mortality varying, according to the type, from 30 to 100 per cent. The average mortality being over 60 per cent. Occurring among the general population, it is generally sporadic, but where human beings are collected in large numbers, as in the Alipore Central Jail and the Emigration Depôts, it sometimes occurs in epidemic form, and I have known 40 cases in a single Emigration Depot in two months. The disease is due to a specific bacillus, which can be obtained in the cerebro-spinal fluid in every case, and, as before mentioned, the mortality is very great."

Dysentery and diarrhoea account for a considerable number of deaths every year; they are most prevalent in May, June and July, and are least in evidence during November, December and January. Tuberculosis of the lungs is very common; in fact, it is one of the commonest affections for which patients seek relief at the hospitals. The causes of its prevalence are, briefly, poverty and consequent inability to procure adequate and suitable food, filthy and insanitary environments, insanitary occupations, neglect to appreciate the gravity of early symptoms, and, lastly, poor physique and diminished power of resistance to disease. Asthma is frequently seen, and is very rebellious to treatment. Glycosuria is common; it is met with not only among middle-aged men of the educated classes, but also among young adults of the lower orders. Venereal diseases are rife. Syphilis, gonorrhoea and soft chancre are seen daily and contribute a large proportion of the out-door patients at the hospitals and dispensaries. Elephantiasis is common, but large tumours due to this cause are not common nowadays, as the subjects seek relief by operation earlier than used to be the case. Goitre and stone are comparatively rare, and the number of operations for vesical calculus is insignificant. Bright's disease is not uncommon. Valvular
affections of the heart are frequently seen. Malignant tumours are not uncommon. Hydrocele and nakrā are of very frequent occurrence. Plague has been in evidence during the last decade, but outside the environs of Calcutta there have been only isolated cases, and there has not been an epidemic worthy of the name. Cases of cerebro-spinal meningitis, which, as already stated, is apt to break out at the emigration depots and in the suburbs of Calcutta, are sometimes mistaken for plague.

The suburbs of Calcutta receive their supply of drinking water from the Calcutta water-works; this is a good pure water, which is distributed as far south as Garden Reach. In the north of the suburban area Cossipur, Chitpur and Māniktals are supplied, and in the south and south-east Alipore, Ballygunge, Tollygunge, Behala and Barisa. Wherever there are mills, there is a plentiful supply of good filtered water, which is taken from the river, pumped up to reservoirs and distributed by means of pipes. In this way the people living near the mills, from Barnagore up to Naihatā, receive a supply of drinking water equal to that obtained in Calcutta. Elsewhere they are dependent on the rivers and tanks, which are only too often polluted by surface drainage. Well water is unpopular, and is very little used. From Garia to Sāmukpota, along Tolly's Nullah, the water is so brackish as to be unfit for drinking, and the people are obliged to walk miles to obtain a supply for their households. In the Sundarbans also it is often impossible to obtain sweet potable water, but the people appear to become inured to brackish water and drink it without any injury to themselves.

In the returns published by the Inspector-General of Civil Hospitals in the annual report on charitable dispensaries in Bengal, 38 charitable dispensaries and hospitals are shown in existence in the 24-Parganas. In addition to these, there are three large hospitals, which are grouped with the Calcutta medical institutions in the returns, as they are situated in the Added Area of Calcutta, but which come within the administrative limits of the district, viz., the Campbell Hospital at Sealdah, the Presidency General Hospital and the Sambhu Nath Pandit Hospital at Bhawanipur. The first two are purely Calcutta institutions and have no connection with the district of the 24-Parganas, except that the accident of their site brings them within its area. The Sambhu Nath Pandit Hospital is on a different footing, for it is directly under the Civil Surgeon of the district, who is ex-officio Superintendent of the hospital, and it is practically the head-quarters hospital of the district. It is, therefore, included in the scope of this chapter (whereas
<table>
<thead>
<tr>
<th>Hospital or Dispensary</th>
<th>No. of beds (1911)</th>
<th>No. of Patients (1911)</th>
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Three of the dispensaries entered in this table are not under the Civil Surgeon, viz., the Kidderpore Municipal Dispensary, which is under the Calcutta Corporation and its Health Officer, and the Cantonment Dispensaries at Barrackpore and Dum-Dum, which are under officers of the Royal Army Medical Corps, who act as Civil Medical Officers of those stations. There are also some dispensaries which are not strictly speaking charitable dispensaries, viz., the Alipore Police Case Hospital, the Royal
Indian Marine Dockyard Dispensary at Kidderpore and the Eastern Bengal State Railway dispensaries at Saaldah, Kanchrapara and Chittagong, which treat only policemen and dockyard and railway employees, respectively.

The following account of individual hospitals and dispensaries is furnished from notes, prepared for a medical history of the district, which were supplied by from the Civil Surgeon’s office:—

*The Sambhu Nath Pandit Hospital.*—The forerunner of the Sambhu Nath Pandit Hospital was the Bhawanipur Dispensary, which was opened in 1840. It was entirely maintained by Government up to 1871, when it received a grant of Rs. 21,445 from the Sambhu Nath Memorial fund, on condition that the dispensary should be named after Sambhu Nath Pandit. Of this sum, Rs. 15,645 was spent on the acquisition of a site on the east and near the north end of Russa Road and on building; the balance (Rs. 5,800) was invested in Government securities. This dispensary treated out-patients only, and was finally closed in 1896, on the opening of the new hospital.

In 1890-91 a special committee of the Calcutta Corporation recommended the building of a new hospital in Russa Road, for the benefit of the southern suburbs, and this proposal was supported by the Suburban Improvement Committee. At that time however, Government was not prepared to help, and the project fell through. It was revived by a committee which was appointed, by the Bengal Government in 1893 to consider the medical needs of Calcutta. One of the recommendations it made was that a hospital should be established in Bhawanipur, with 50 beds for ordinary in-patients, six beds for infectious cases and five for cholera cases. This proposal was taken up by the Calcutta Corporation, which in 1894 passed the following resolution:—

“That the Commissioners were prepared to give a site in Elgin Road, south of the water-works, for the new hospital; that they would merge the Sambhu Nath Pandit Dispensary in the new hospital, provided that the outdoor dispensary continued to bear that name; that they would hand over to Government the value of that dispensary, after sale, and the endowment of Rs. 5,800; that they would make an annual contribution of Rs. 5,000 to the new hospital; and that the property should be vested in a Board of Governors.” The new hospital was accordingly built on the north side of Elgin Road, Bhawanipur. The site given by the Corporation was valued at Rs. 64,366, and the cost of building the hospital (including some additions, a portico, a post mortem house, etc., made during the two years
subsequent to its opening) came to Rs. 1,41,963, which was paid by Government. Accordingly, a great deal more than half the cost of its erection, as well as more than half the cost of its maintenance, was borne by Government.

In 1898 the Corporation handed over to Government, for the extension of the hospital, a block of land situated on the north-east of the hospital grounds, on condition that the whole institution should be named the Sambhu Nath Pandit Hospital. This block was utilized for the erection of an out-patient department, the quarters of the Civil Hospital Assistant, a contagious ward and a cholera ward.

The Civil Surgeon of the 24-Parganas is ex-officio Superintendent of the hospital, and its affairs are regulated by a Board of Governors, of which the Commissioner of the Presidency Division is President. There are five other members of the Board, of whom three are appointed by Government and two by the Calcutta Corporation. Its income in 1911 was Rs. 63,856, including a cash balance of Rs. 26,085. It received Rs. 26,591 from Government and Rs. 9,398 from the Calcutta Corporation, while Rs. 1,136 were realized from interest on investments. Private subscriptions amounted to only Rs. 551.

**Alipore Police Case Hospital**—Situated at Alipore between the Central Jail and the Magistrate's cutcherries. It was opened in 1852, and for 30 years was the Sadar dispensary of the district. It was made a police-case hospital in 1883, and is maintained entirely by Government. It treats both in-patients and out-patients, but chiefly the former. It is under the immediate charge of the Assistant to the Civil Surgeon of the 24-Parganas (an appointment sanctioned in 1885); the Civil Surgeon is expected to “generally supervise” his work, and usually visits the hospital about once a week.

**Bāḍurīn.**—Opened in 1883. A kutch building on a pucca plinth, with a deep thatched roof. It is maintained by the Bāḍurīn Municipality with a contribution of Rs. 10 a month from the District Board; there are no private subscriptions. It treats out-patients only.

**Bāṛăsēt.**—Opened in 1854. It consists of two pucca buildings, one for in-patients and the other for out-patients, with a small contagious diseases ward and a cottage ward; there are 10 beds. It is maintained by the Bāṛăsēt Municipality, with a subvention of Rs. 10 a month from the District Board. It has an invested capital of Rs. 1,000, which in 1911 yielded Rs. 52. The dispensary is near the jail and three-quarters of a mile from the station (Eastern Bengal State Railway). Government keeps an Assistant
Surgeon at Barrasat, who is in medical charge of the subdivision, and receives Rs. 20 a month for the dispensary.

Batua.—Opened in 1872. It is maintained by the South Suburban Municipality and receives a grant of Rs. 300 a year from the District Board; there are no private subscriptions. The building, which was damaged in the earthquake of 1897, is ruinous, and has an upper storey which forms the quarters of the medical officer in charge; there are six beds for in-patients. It is situated on the west side of the Diamond Harbour Road just after the sixth milestone (from Government House) at the north end of Baduria village.

Barrackpore—Bhola Nath Bose’s Dispensary.—This dispensary owes its existence to the liberality of the late Dr. Bhola Nath Bose, for many years Civil Medical Officer of Faridpur, who died in 1883, leaving his property in trust to Government after the death of his widow. On her death, in 1888, the whole property came under the Trust. It consists of Rs. 1,53,700, of which Rs. 1,49,700 are invested in Government securities, Rs. 3,000 in Bank of Bengal shares and Rs. 1,000 in Municipal debentures. A certain sum is paid to relatives of the testator, a grant is made for the support of the Mandali Dispensary in the district of Hooghly, and the balance falls to the share of the Bhola Nath Dispensary. The amount derived from this source in 1911 was Rs. 2,080; Rs. 600 were contributed by the District Board, and Rs. 300 by the municipality, while Government made a grant of Rs. 1,574, and Rs. 3,408 were obtained from other sources.

The dispensary was opened in 1894, and, under orders issued by Government next year, was placed under the management of a committee composed of the Chairman of the District Board (as President), the Cantonment Magistrate, the Civil Surgeon of Barrackpore, and the Chairman of North and South Barrackpore Municipalities: the Chairman of the Titagarh Municipality was subsequently appointed a member of the committee. The Chairman of the District Board is ex-officio administrator of the fund, and the District Board practically manages the dispensary. The medical officer in immediate control is a Civil Assistant Surgeon. The buildings were erected by Government in 1894-95, at an estimated cost of Rs. 24,358, and were taken over by the District Engineer in 1895. They include (1) the main building, with three wards and 20 beds for in-patients, with an office, operation room and dispensary, (2) four small family quarters for patients, with separate cook-houses and latrines; and (3) a cholera ward, a pauper ward, a mortuary and quarters for the medical officer’s compounder and servants. The dispensary
stands on the east side of the Grand Trunk Road and is about one mile from the Barrackpore station.

The Barrackpore Cantonment Dispensary—Was originally opened in 1874, but was closed in 1880 on the cantonment subsidy being withdrawn. The present dispensary was opened in 1884; it is maintained chiefly by the cantonment funds. It is located in a detached building belonging to the Station Hospital, less than a mile from the railway station. This dispensary is not under the Civil Surgeon of the 24-Parganas, but sends in its returns through him to the Inspector-General of Civil Hospitals. It is directly under the Civil Medical Officer of Barrackpore, one of the officers of the Royal Army Medical Corps, who receives an allowance for performing the civil medical duties of the station.

Baruipur.—Opened in 1883. It is supported by the Baruipur Municipality, with a grant of Rs. 10 per month from the District Board and a few subscriptions. It is located in a pucca building erected in 1900-01, and treats out-patients only. It is situated on the Baruipur-Jaynagar Road, about one mile from the Baruipur station of the Eastern Bengal State Railway (Diamond Harbour branch), about 16 miles by road (pucca) from Alipore and about five miles from the Harinawi dispensary at Rajpur.

Basirhat.—Opened in 1867. It is maintained by the Basirhat Municipality, with a subvention of Rs. 10 per month from the District Board. It treats both in and out-patients, and contains six beds. The out-patient department is pucca, with quarters for the medical officer behind. The in-patient department has pucca walls and floor and a thatched roof. Government keeps a Civil Hospital Assistant at Basirhat, who is in medical charge of the subdivision, and receives an allowance of Rs. 10 a month from the dispensary funds.

Budge-Budge.—Opened in 1898. It is maintained by the municipality, and receives an annual grant from the Port Commissioners and subscriptions from some European firms.

Canning.—Opened in 1876. It is under the District Board, which took it over in 1899. In addition to the sums allotted for its support by the District Board, it receives annual grants from the Khâs Mahâl Fund, the Port Canning Company and the Eastern Bengal State Railway. The dispensary has no building of its own, but is accommodated in a room of the inspection bungalow—a pucca building on a high plinth. It is about a quarter of a mile from the railway station, and 100 yards from the landing stage on the Matla river. Canning is a
small village, and patients are mostly drawn from outlying villages in the Sundarbans. The attendance must, therefore, always be small, unless Canning develops into a port and centre of trade. The dispensary, however, is the only one in the district within the Sundarbans line, and, even with its small attendance, distinctly meets a want. Out-patients only are treated.

Chotta (Prince Ghulam Muhammad's).—Opened in 1892. It is managed by the same committee as Prince Ghulam Muhammad's dispensary at Russa. This committee consists of the Collector as Chairman, the Treasury Officer as Secretary, the District Judge, the District Engineer, and the Civil Surgeon, ex-officio, a representative of the donor's family and two members appointed by the Calcutta Corporation. The dispensary was started with the balance of the interest of the Prince Ghulam Muhammad Fund available after paying for the upkeep of the Russa dispensary, and is now mainly supported by a grant made by the Calcutta Corporation. Out-patients only are treated. The building is a hired house with a small upper storey, which serves as the Medical Officer's quarters. Chotta is on the west of Tolly's Nullah, nearly a quarter of a mile from the bank, nearly opposite to Kalighat and about 1½ mile from Alipore by a pucca road.

Chitpur.—Opened in 1893, and entirely maintained by the Cossipur-Chitpur Municipality. It treats out-patients only; there are no private subscribers. The building is an annexe to the Municipal office, which is situated on the west side of the Grand Trunk Road to Barrackpore, about half a mile north of the boundary of Calcutta City, and about six miles from Alipore.

Cossipur North Suburban Hospital.—Opened in 1896. It is managed by a committee, and is maintained partly by interest on investments, partly by contributions from various public bodies and partly by private subscriptions. It treats both in-patients and out-patients. The invested capital amounts to Rs. 33,500, of which Rs 9,500 is a special endowment for the maintenance of a female ward, given by Babu Binod Lal Ghose; the interest in 1911 was Rs. 2,160. The building is a two-storied one, containing four large wards, with ten beds in each. There are also male and female consulting rooms, a compounding room, an operation room and a store room. The medical officer has quarters in a two-storied house, behind (east of) the hospital. The hospital is situated on the east side of the Cossipur Road, about one and-a-half miles north of Calcutta and about seven miles by road from Alipore. The medical officer is a Government Assistant Surgeon.
Diamond Harbour.—Opened in 1873, and made over to the District Board in 1892, by which body it is still maintained. It receives a grant of Rs. 300 a year from the Khas Mahal Fund and of Rs. 180 from the Port Dues Fund. It treats both in-patients and out-patients and contains 18 beds. The building is pucca, with four rooms, one for female and two for male in-patients, the fourth being used as a consulting and compounding room. There is a bath-room with the usual furniture, so that one room can, if necessary, be used for the accommodation of Europeans. Occasionally sick Europeans are landed from ships lying at Diamond Harbour, but as a rule such cases would be transferred to a Calcutta hospital. The medical officer in charge is an Assistant Surgeon, who is in medical charge of the subdivision, and draws an allowance of Rs. 20 per month for the charge of the dispensary.

Dum-Dum Cantonment Hospital.—Opened in 1889 as a military hospital known as the Followers' Hospital. From 1889 to 1896 the Eastern Bengal State Railway contributed Rs. 25 a month to its support, but this grant was withdrawn at the end of 1896, after which the hospital, having no income or means of support, did practically no work until 1898, when the District Board came to the rescue with a grant of Rs. 10 (since increased to Rs. 20) a month. The dispensary is under the Civil Medical Officer of Dum-Dum, an officer of the Royal Army Medical Corps, who receives an allowance for performing the civil medical duties of the station.

Gurulia.—Opened by the North Barrackpore Municipality in 1889, and placed under the supervision of Government in 1891. In 1896 the Gurulia Municipality was formed from a portion of North Barrackpore, and took over the dispensary, which it entirely maintains. It treats in-patients and out-patients, and contains three beds. There are no private subscriptions.

A large proportion of the inhabitants of Gurulia are workers in the two large factories there, the Shām Nagar Jute Mill and the Dunbar Cotton Mill. Each of these factories keeps up a dispensary, under a competent officer, for the treatment of its hands.

Halishahar.—Opened in 1887. Its full title is the “Bayley Jubilee Charitable Dispensary, Halishahar.” It is entirely maintained by the Municipality, and treats out-patients only. There are no subscribers. It is accommodated in a good pucca building, built by Lieutenant-Colonel K. P. Gupta of the Indian Medical Service (whose home was at Halishahar), who presented it to the Naihati Municipality, on condition that it would maintain it. There is one large room used as a compounding and consulting
room, with two smaller ones used as a female waiting room and as a store room for medicines and instruments. It is almost on the bank of the Hooghly and is about two miles (by an indifferent road) from Halishahar station, on the main line of the Eastern Bengal State Railway (26 miles from Sealdah) but can more conveniently be reached by road from the much larger station of Nailhati, four miles off, by a good pucca road.

Harinâvi (Râipur).—Opened in March 1877. It is maintained by the Râipur municipality, with a subvention of Rs. 10 per month from the District Board. It treats out-patients only. The dispensary is held in the Municipal office and is situated about 12 miles from Calcutta by a good pucca road. Going on along this road, Bârniipur railway station is reached after four more miles, and Bârniipur Dispensary after another mile. The Harinâvi Dispensary is also about three miles, by a good pucca road, from Sonarpur station on the Diamond Harbour branch of the Eastern Bengal State Railway, ten miles from Sealdah.

Jaynagar.—Opened in 1899 under the title of the Allen Charitable Dispensary, being so named after the late Sir Charles Allen, who was then District Magistrate of the 24-Pargana. It is maintained by the Jaynagar Municipality, and receives grants from the Government Khâs Mahâl Fund and the District Board. There are no private subscribers. It treats out-patients only. The dispensary is accommodated in a pucca building belonging to the Jaynagar Municipality, which also accommodates the post-office and the municipal office. At first, the dispensary was held in a small enclosed verandah, but in 1899 a fair-sized room was allotted to it.

Jaynagar is the most inaccessible dispensary in the district. The usual way of reaching it is to go by rail from Sealdah to Magra Hat station on the Diamond Harbour branch of the Eastern Bengal State Railway, and thence along the Ganges Nullah to Jaynagar. Even at the height of the rains the nullah, though an old bed of the Ganges, will not float any boat of larger size than a donga, or dug-out, made from the trunk of a tree; and from February to April it has not enough water to carry even such humble craft. The distance is seven miles, and a dug-out, with two men poling, takes from 2 to 2½ hours to cover the distance. Jaynagar is about 17 miles by pucca road, from Bârniipur station, but this road is only passable for wheel traffic in the cold and hot weather. There is no direct road from Magra Hat, but only tracks across the fields and a round-about road, which, after 5 miles, strikes into the Bârniipur-Jaynagar Road, at Dakshin Bârâset, four miles from Jaynagar.
Kamārhāti.—This hospital, which is known as Sāgar Dutt's Hospital, was opened in 1899. It treats both in-patients and out-patients. It is maintained by endowments left by Dābu Sāgar Dutt, who left by will the following:—(1) a garden with an area of 110 bighas; (2) one lakh for building; and (3) property producing about Rs. 25,000 a year for the maintenance of a hospital and school, the former having the prior claim. The buildings (which are all excellent pucca buildings) are as follows:—

(1) An out-patient department for males, with a private examination room, rooms for medicines and compounder's quarters, close by the gate leading into the grounds from the Grand Trunk Road to Barrackpore. (2) A male hospital, in the centre of the grounds, which contains two large wards, medical and surgical, with 12 beds each, 5 smaller wards, with two to four beds each, an operation room, office, compounder's duty room and store-room. (3) A female hospital, towards the north-west of the grounds, having one ward with six beds, two smaller wards with two beds each and quarters for the female hospital assistant on an upper storey. (4) A female out-patient department, close to the female hospital. These two are approached by a separate entrance from a road on the north of the grounds. (5) Assistant Surgeon's quarters, post-mortem room, servants' quarters, etc., not far from the male hospital. A school building was put up in 1898 in the extreme north-west corner of the grounds, with a separate entrance. The grounds lie on the west of the Grand Trunk Road to Barrackpore, 8½ miles from Government House. They are about 1½ miles (by a pucca road) from Belgharia station, on the Eastern Bengal State Railway main line, which is seven miles from Sealdah. The hospital is centrally situated for a large population in Kamārhāti, Barnagore, North Dum-Dum and South Barrackpore. The medical officer is a Government Assistant Surgeon.

Kānchrāpāra.—This dispensary is maintained by the Eastern Bengal State Railway, and the Civil Surgeon of the 24-Parganas has nothing to do with it. It treats only out-patients, who are railway employees.

Khardah (South Barrackpore).—A dispensary was opened as Agarpāra (in South Barrackpore) in 1873, and was removed to Khardah, about two miles further north, in 1889. It is maintained by the South Barrackpore Municipality, and treats out-patients only. It is accommodated in a pucca house, with three rooms and a verandah, located in a garden which belonged to the late Māhārāja Nil Krishna Deb Bahādur. The house is not the property of the dispensary or municipality; they are only allowed the use of it by the estate. There is an upper storey, which is
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lot (by the estate) for use as a dwelling house. The building is on the east side of the Grand Trunk Road to Barrackpore, about 12 miles from Government House. It is about one-third of a mile from Khardah station, on the Eastern Bengal State Railway main line, 11 miles from Sealdah.

The Khardah Jute Mill keeps up a dispensary, about a mile from the municipal dispensary. The Titagarh Jute Mill, Titagarh Paper Mills and Standard Jute Mill, all situated in Titagarh Municipality, which is close to South Barrackpore, also maintain dispensaries for the use of their own hands. The Bhola Nath Bose Dispensary at Barrackpore is situated within the limits of the South Barrackpore Municipality.

Kidderpore Dockyard (Royal Indian Marine Dispensary).—Opened in 1878, and entirely maintained by the Royal Indian Marine Department. It treats out-patients only, and only employees of the dockyard; hence, the patients are all male adults. It occupies the upper storey of a small two-storeyed building, on the left of the gate of the Royal Indian Marine Dockyard, about 500 yards from Hastings Bridge over Tolly's Nullah.

Kidderpore Municipal Dispensary.—Opened in 1891. It is entirely maintained by the Corporation of Calcutta, and is under the supervision of the Health Officer and Assistant Health Officer of the city, not under the Civil Surgeon of the 24-Parganas. It treats out-patients only. Until 1899 this dispensary was held in a small building, up a court of Garden Reach Circular Road, on the west side, about half a mile from the Kidderpore Bridge over Tolly's Nullah. In 1899 it was transferred to a large two-storeyed house on the opposite side of the road.

Mániıkta (Nárkaldánga).—Opened in 1895, and brought under Government supervision in 1898. It is entirely maintained by the Mániíktala Municipality; there are no subscribers. It treats out-patients only. The dispensary was held in the municipal office, a hired building, in Bághmári Road, Mániíktala, up to August 1889, when the municipal offices were moved into a building, newly constructed for the purpose, on the north side of Nárkaldánga main road, about one-and-a-half miles from Sealdah. The dispensary occupies the east side of the ground floor of the building, and has separate rooms for use as a consulting room, compounding room, female waiting room and private examination room. In September 1899 the Mániíktala Municipality opened a branch dispensary at Últadánga (in the north of the town), the arrangement being that it should be opened in the afternoon only and be worked by the staff of the Mániíktala dispensary, which was to be closed in the afternoon.
Naihati.—Opened in 1874. It is entirely maintained by the Naihati Municipality. There are no private subscribers. It treats out-patients only. It is accommodated in a *puccha* building, with thatched roof, containing two rooms. A female waiting room is provided by a second *kutcha* building, a few yards to the east. These buildings stand in the municipal office compound about 1/4 mile north of Naihati railway station, on the west of the road to Kanchrapara.

North Dum-Dum (Birati).—Opened in 1883 at Nimtala, about 1½ miles from Bolghoria, but transferred about 10 years ago to Birati, where a new building was constructed for the purpose.

Russa (Prince Ghulam Muhammad's).—Opened in 1875; treats both in patients and out patients, and has 22 beds. It is entirely supported by an endowment (Prince Ghulam Muhammad's fund), in the hands of the Collector of the 24-Parganas. The original gift amounted to Rs. 1,50,000, out of which Rs. 25,000 was paid for the house and grounds. With the investment of some accumulated interest, the fund now amounts to Rs. 1,37,500, yielding Rs. 5,486 a year. Whatever balance is over, after paying for the maintenance of the Russa Dispensary, goes to the Chotla Dispensary. It is managed by a committee, consisting of the Judge, Magistrate, Civil Surgeon, District Engineer and Treasury Officer of the 24-Parganas, *ex-officio*, a representative of the original donor's family and two members of the Calcutta Corporation, appointed on account of their grant to the Chotla dispensary, which is managed by the same committee. The dispensary occupies a two-storeyed *puccha* building, with large grounds, at Tollygunge, on the east of the Russa Road, about three miles south of the Calcutta Cathedral.

Sealdah Railway Dispensary.—A private dispensary existed here when the railway was first constructed, in 1859. The railway then belonged to a company; and when Government took over the line in 1884, it continued to maintain the dispensary, which treats out-patients and railway employees only. It is under the Medical Officer of the Eastern Bengal State Railway, and the Civil Surgeon of the 24-Parganas has nothing to do with it.

South Dum-Dum Dispensary.—Was opened in 1885, but its existence was not formally sanctioned by Government until 1898. It is entirely maintained by the South Dum-Dum Municipality and treats out-patients only. It occupies two rooms in the municipal office, a *puccha* hired building, in Nagar Bazar, South
Dum-Dum, on the west side of the Jessore Road (a good puerāroad), about four miles from Sealdah. It is about a mile from Dum-Dum Junction, the first station on the Eastern Bengal State Railway main line, four miles from Sealdah.

Tāki (Tāra Sankar Chaudhuri’s).—Opened in 1865, according to the Surgeon-General’s annual report for that year. An inscription on the gate states that it was opened in 1867; probably the present building was first occupied in that year. It is accommodated in a one-storeyed house, with two rooms that are used for the dispensary, and two for the medical officer’s quarters, a verandah and female waiting room. The dispensary was founded by a zamindār of Tāki, Tāra Sankar Chaudhuri, who gave the building and a subscription of Rs. 40 per month towards its upkeep. After his death the management of the dispensary was in the hands of a committee, and his widow let her subscription, on which it relied chiefly for its maintenance, fall into arrears. The affairs of the dispensary went from bad to worse, the buildings fell into disrepair, the pay of the staff was months in arrear, and there was hardly any medicine in the dispensary. Such was the condition of affairs in 1898, when the District Board stepped in, and, with the consent of the founder’s widow, took over the dispensary to save it from collapse. It has an invested capital of Rs. 500, yielding interest of Rs. 23, and the balance of its cost is met by the Municipality and District Board, and by private subscriptions amounting to Rs. 500.

Other dispensaries.—The dispensaries at Belpukur, Garden Reach, Magra Hāt, and Tantulia were established during the quinquennium ending in 1904-05, and those at Bhātpāra, Ilābra and Kākdpīp in the quinquennium ending in 1909-10. The dispensary at Bhātpāra is for women only, and is in charge of a lady doctor. Those at Tantulia and Belpukur receive grants of Rs. 845 and Rs. 375 a year, respectively, from the Government Khās Mahāl Fund. Another recent addition is the Vishnu-pur Dispensary, which is called the Stevenson-Moore Charitable Dispensary after Mr. C. J. Stevenson-Moore, c.v.o., formerly District Magistrate of the 24-Parganas.

The following short notes give some account of dispensaries which have at one time or another been under Government supervision, but which, owing to transfer or closure, are no longer.

Agarpāra.—Some eight miles north of Calcutta, in what is now the South Barrackpore Municipality. It was a branch dispensary which treated out-patients only and was removed in 1889 to Khārdah, where the dispensary still exists.
Baliaghata.—In the Baliaghata Road, in Mankitala, about a mile east of Sealdah, was opened, without sanction, by the Mankitala Municipality, in 1885. When the Mankitala Dispensary was brought under Government supervision in 1898, that at Baliaghata was closed.

Bhawaniipur.—See the account of Sambhu Nath Pandit Hospital. It treated out-patients only, and was closed when Government aid was withdrawn in 1882.

Deganga.—At the head-quarters of the Deganga thana, about 12 miles from Barasat, on the road to Basirhat. It treated out-patients only. It was closed in 1869; the report on charitable dispensaries for that year says that the purpose for which it was opened had been fulfilled.

Dhankuria (Shama Sundari's)—Was opened in 1888, and placed under Government supervision in 1892. It was maintained by Musamat Shama Sundari Dasi, mother of Baba Upendra Nath Sahu, banker and zamindar of Dhankuria. This lady died in 1899, after which her son carried on the dispensary. Dhankuria is situated to the south-west, and just outside the limits, of the Baduria Municipality.

Garden Reach (Arrahun Apear's).—Established in 1871 by Mr. Thomas Apear, a wealthy merchant of Calcutta. It treated out-patients only, and was closed in 1880, when Government aid was withdrawn. The building, with inscription, may still be seen in the compound of No. 21, Garden Reach Road, now the Trinidad and Fiji Emigration Depot.

Gobardanga.—At the town of that name, a station on the Eastern Bengal State Railway, in the north-east of the district, 36 miles from Sealdah. It was founded in December 1869 by the Mukherji family, zamindars of Gobardanga, and was withdrawn from Government supervision in 1889.

Kulpi.—A village on the Hooghly, situated eight miles south of Diamond Harbour. An unqualified Indian doctor settled at Kulpi about 1880 and opened a druggist's shop. There was then a large estate at Kulpi, known as the Bhawanipur Ward's Estate, under the Court of Wards. This estate paid the doctor Rs. 5 per month to treat raiyats of the estate free of charge and give them medicines at half price. When Government issued orders, in 1884, that dispensaries wholly maintained by estates under the Court of Wards should be placed under supervision, this so-called dispensary was placed on the Government list, and its statistics (about one patient per day) were published among those of charitable dispensaries. It was inspected for the first time in 1898 by the Civil Surgeon, who
reported that no charitable dispensary existed at Kulpi, and recommended that it should be struck off the list. This was done in 1899, when the Bhownipur ward came of age, and the management of his estate was made over to him by the Court of Wards.

Rajarhat.—In Bhangar thana. It treated out-patients only and was closed in 1869 for want of funds.

Vishnupur.—At the head-quarters of the Vishnupur thana, on the Diamond Harbour Road, 18 miles south of Government House. It was opened in 1869. The report on charitable dispensaries for that years says it “took the place of Rajarhat.”

There were 63 licensed vaccinators in 1911-12, when 62,522 vaccinations were performed, of which 61,982 or 99 per cent. were successful. The average annual number of persons successfully vaccinated in the previous five years was 61,531 or 32.6 per mille of the population. There is very little opposition to vaccination, but there are difficulties in inspecting the work of the vaccinators owing to the distance and inaccessibility of some of the places in the interior.

The Civil Surgeon is ex-officio Medical Inspector of emigrants to the Colonies, and a Sub-Assistant Surgeon Assistant Superintendent of Emigration (inland) at Nallhati. A special officer certifying surgeon for factories in the Barrackpore subdivision, with the exception of Dum-Dum thana, where the duties of that officer are performed by the Station Staff Surgeon. The Civil Surgeon of the 24-Parganas is certifying Surgeon for the rest of the district, e.g., for the Budge-Budge jute mills, the Empress of India cotton mill, the bulk-oil depot at Budge-Budge, the Lower and Upper Hooghly jute mills, the Garden Reach cotton mills, the Clive jute mills and the oil factories of Messrs. Graham & Co., and Messrs. Shaw, Wallace & Co. at Budge-Budge. The Civil Surgeon is further ex-officio Consulting Physician to the Alipore Central Jail, and also for the purposes of Government life insurance business carried on by the postal department.
CHAPTER V.

AGRICULTURE.

The arable land in the 24-Parganas may be divided into three main classes, viz., (1) the comparatively high land along the banks of the rivers, (2) the low-lying depressions that stretch away below the river banks and (3) the lands adjoining the Sundarbans, which have been reclaimed in recent times. In the riparian tracts first mentioned the land is fairly well raised, and the drainage passes away easily to the basins below. It has been elevated by the deposit of silt from the rivers in past generations, and has attained a height which ensures it against inundations, but at the same time prevents it from receiving the fertilizing layer that the floods formerly left behind them. The low lands that constitute the greater portion of the cultivated area are mainly under rice and jute. Large areas are occupied by *bils*, which may be either large fresh-water lakes or waterlogged swamps. Some are natural drainage basins that never dry up, and cannot be drained owing to their level. Others are connected with the rivers by efficient water channels, which serve two useful purposes; they bring down rich river silt, and they drain away the surplus water from the *bil*. In many cases, however, the creeks or *khâls* have been silted up and have ceased to perform these functions. The cultivators are, therefore, forced to wait till the *bil* lands dry up, and, if there is a year of heavy rainfall, are precluded altogether from attempting their tillage. In the third tract, i.e., in the reclaimed lands adjoining the Sundarbans, cultivation is only rendered possible by means of embankments constructed to keep out the salt water. Dams (*bândás*) have also to be built across the *khâls*, so as to prevent the ingress of salt water from the rivers with which they communicate. The soil in this last tract being impregnated with salt, fairly heavy rainfall is necessary to wash it out before rice seedlings can be grown and transplanted.

In the district as a whole, cultivation suffers far more frequently from excessive, than from deficient, rainfall, for, with the exception of strips of high land along the banks of the
rivers, the country is low and swampy, and tends to become waterlogged whenever there is heavy rainfall. This is especially the case with the great basin shut in between the Diamond Harbour Railway and the Hooghly embankments, as well as a similar tract east of the Eastern Bengal Railway and the Balli Bil: in these and other cases the natural drainage channels are inadequate to remove the volume of water which accumulates after heavy precipitation of rain. It will readily be understood that, in these circumstances, there is little necessity for artificial irrigation. It is, in fact, only resorted to for the cultivation of sugarcane and garden crops, for which water is raised from tanks and ditches.

The soils of the district belong to four main classes, viz., soils. Mātiāl or clayey soil, dora or loamy soil, bāha or sandy soil and nora or saline soil. Mātiāl is further subdivided into three varieties called kāla mātiāl, rānga mātiāl and Ḷhājhra mātiāl. Kāla mātiāl is a stiff black clay of great natural fertility, on which all kinds of crops can be grown. Rānga mātiāl is of a reddish colour; it cracks in the dry season and sinks into holes in the rains. It is well suited for winter rice, and on higher levels can be used for the cultivation of jute and other bhadoi crops. Ḷhājhra mātiāl, which is inferior to the other two varieties, is blackish in colour and is easy to plough even when dry.

Dora is a mixture of clay and sand. It is used for bhadoi and rabi crops and also suitable for sugarcane. The dhi lands, or elevated lands surrounding village sites, come under this category. Being generally highly manured, they are devoted to sugarcane, tobacco, red pepper and vegetables. Bāla is a common name for all soils in which the proportion of sand exceeds that of clay. Such soils are used for tobacco, potato, and rice and mung (Phaseolus mungo). Nore is a wet saline soil, which in ordinary years does not dry up enough to permit of cultivation. It is only when the rains are late that it dries up sufficiently for cultivation to be possible.

The soils in the Sundarbans, where winter rice is practically the only crop, may be divided into the following four classes. Mātiāl, a clayey soil, whitish in colour, and loose and light in composition. This soil is very suitable for the "Patna" rice which is grown so largely in the Sundarbans. Next in quality comes a loamy soil called bāliāra or dora. It is reddish in colour and will retain moisture longer than any other soil. Coarse paddy is grown on it, but not very profitably. Dhāpa or durua is a soil of a whitish colour, which lies at higher levels than the other classes. Consequently, it is not covered with
water, and the salt is not washed out, unless there is heavy rain. In ordinary years therefore no crops can be grown on it, and it only bears nur grass, which is used for thatching. Paddy can be grown on it when the salt is washed out by heavy rain, but the yield is usually small. Dhāl is the lowest land of all and is consequently flooded earlier than the others. Like ranga mātal, it is reddish in colour, cracks when dry, and is full of holes in the rains. If there is moderate or scanty rainfall, coarse paddy can be raised on it with profit, but if the rain is early and heavy, it is impossible to bring it under cultivation.

Cultivation is spreading rapidly in the Sundarbans, and in other parts of the district swamps are being gradually drained and reclaimed. The system of reclamation in the Sundarbans has several peculiar features, which have been well described by Sir James Westland in his Report on the District of Jessore. After explaining how the forest trees have to be cleared away and the thick brushwood backed down, he goes on to say:

"Unless the greatest care is taken of the land so cleared it will spring back into jungle and become as bad as ever. So great is the evil fertility of the soil, that reclaimed land neglected for a single year will present to the next year's cultivator a forest of reeds (nal). He may cut it and burn it down, but it will spring up again almost as thick as ever; and it takes about three eradications to expel this reed when once it has grown. The soil, too, must be cultivated for ten or twelve years before it loses this tendency to cover itself with reed jungle. When a sufficient number of people are gathered on a new clearing, they tend, of course, to form a settlement, and to remain permanently where they are. But the furthest advanced parts of the cultivation, and some also of those which are not new or remote from old lands, are carried on upon a different principle. A large number of husbandmen, who live and cultivate lands in the regularly settled districts to the north, have also lands in the Sundarbans, which they hold under different landlords.

"The cultivating seasons in the Sundarbans are later than those further north. The plan which is followed by these double cultivators is as follows: The months of Chaitra, Baisakh and Jyaistha, corresponding roughly to the English months of April, May and June, are spent in cultivation at home. The husbandman then, having prepared his home cultivation, embarks with his ploughs, oxen, and food and proceeds to his abad or Sundarban clearing. July, August and September are spent in ploughing, sowing and preparing the crops there, the peasant building a little shed as a dwelling for himself. The water got
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High in August and September, but this is little impediment to cultivation. A considerable portion of the land under rice is situated below high-water mark; but the planting is easy, for rice shown on higher lands is transplanted into these low lands when it is strong enough to bear the waters. After having sown and transplanted his Sundarban crop, the husbandman returns home, and these outposts of civilization are absolutely abandoned—large extends of cultivated rice field without a trace of human habitation. By the middle of December, the home-cultivated rice has been cut and stored, and the peasant then returns to the Sundarbans, and reaps the crop on his clearing there. At this time of the year (January and February), reapers, or dawals, crowd to the Sundarbans and are extensively employed for the harvesting. When the rice is cut and prepared for sale, the begâris, or dealers, come round and buy it up, and the zamindar also sends his agents round to collect the rents from the cultivators. The peasant, having sold his grain, pays his rent, and brings the balance of his money back with him to his home.

"While a great deal of cultivation in the more remote parts of the Sundarbans follows this method, in the nearer tracts there are large settlements of husbandmen who dwell permanently near the land they have under cultivation. But it must be remembered that these tracts are, after all, sparsely inhabited, and that many of the cultivators who dwell in them, besides having a holding near their own houses, have also another, eight or ten miles away, which they visit only occasionally when they have work to do. The great fertility of the land renders it easy for a husbandman to keep large areas under cultivation; and thus, what with resident large cultivating husbandmen and non-resident husbandmen, the population in the Sundarban tracts is not at all equal to what the amount of land under cultivation would lead one to expect.

"Another feature in the reclamation and cultivation of these Sundarban lands is the embankment of water inlets. It is a characteristic of deltaic formations that the banks of the rivers are higher than the lands further removed from them; and the whole of the Sundarbans may be looked on as an aggregation of basins, where the higher level of the sides prevents the water coming in to overflow the interior. Many of these basins are so formed, that, left to themselves, they would remain under flood, as they communicate with the surrounding channels by means of khâis, or small water-courses, which penetrate the bank; and a great part of reclamation work consists in keeping out the water, and thus bringing under cultivation the marsh land inside.
"In employing this method, all the inlets from the surrounding channels are embanked, and smaller channels, called poyâns, are opened round their ends. The inlets themselves are too big to be kept under control, but these poyâns can easily be so kept. This embanking is usually done in November, after the rivers have gone down. When the tide is low, the channels are opened, and the water from the inside drains off; when it is high, the channels are closed. Much land can be rendered cultivable by this means, which would otherwise be marsh. But here also a single year's neglect may take away at one stroke all that has been gained by many years' labour. The effect of the rains and the freshets of each year is to partially destroy all the embankments that were used the previous year and to flood the lands. The rice that has been sown has, however, attained sufficient hardihood to remain uninjured; and when the waters again go down, the harvest may be reaped. But unless the embankments are again renewed in November, the floods will not have ceased to cover the low lands by sowing time, the land will remain unsown, and jungle and marshy reed will take the place of the paddy."

Owing to the large extent of waste land included in the Sundarbans, where the forests under the administration of the Forest Department alone cover 1,711 square miles, the proportion of cultivable land is small, being, in fact, less than half the district area. According to the returns for 1911-12, the net cultivated area amounts to 1,530 square miles, which represents 32 per cent. of the whole district, and 68 per cent. of the cultivable area. Current fallow occupies 183 square miles, cultivable waste (other than fallow) 527 square miles, and uncultivable waste (outside the forest area) 894 square miles.

The cultivation of rice predominates, almost to the exclusion of other crops, for it accounts for 88 per cent. of the cultivated area, and other food crops for only 4 per cent. Next to rice, the most important crop is jute, which, in 1911, was raised on 133 square miles. Although, however, its cultivation has expanded greatly in recent years, the land devoted to its growth is only 8 1/2 per cent. of the cultivated area, or one-tenth of that under rice.

The normal area under rice is 1,526 square miles, and about seven-eighths of this is aman or winter rice.

Aman rice is cultivated on low land, where water lies from one foot to three feet deep in the rains. The preparation of the land begins in the latter half of February or the beginning of March, the land being ploughed several times before sowing. In April
or May, after the first fall of rain, seed is scattered broadcast in a nursery. When the seedlings make their appearance, another field is prepared for transplanting. After the rainy season has thoroughly set in, the field is repeatedly ploughed until the water becomes worked into the soil, and the whole is reduced to thick mud. The young rice is then taken from the nursery, and transplanted in rows about nine inches apart. The crop is generally ready for harvesting in November or December.

Aman rice is also occasionally sown broadcast in marshy lands, e.g., in parts of the Sundarbans where land suitable for nurseries is not available. Sowing takes place in the early part of July, and the crop is ready for reaping in January, the soil easily retaining up till that time all the moisture necessary for the growth of the grain. When the crop is grown in deep water it is reaped by cutting off the heads, and the straw is subsequently burnt down when the land dries up.

The finest outturn of winter rice is obtained from the reclaimed portions of the Sundarbans, which are famous for the teeming harvests obtained from the rich virgin soil.

Aus rice is generally sown on high ground. The field is Aus ploughed when the early rains set in, ten or twelve times over, till the soil is nearly reduced to dust, and the seed is sown broadcast in April or May. As soon as the young plants reach six inches in height, the land is harrowed in order to thin the crop and clear it of weeds. The crop is harvested in August or September, and a second crop of pulse or oil-seeds is generally taken off the land in the cold weather.

Boro rice is a comparatively unimportant variety sown on Boro marshes which dry up in winter. The preparation of the land commences in the middle of November; sowing takes place ten days later; and reaping lasts from the middle of March till the middle of April. The land is hardly ploughed at all. The seed is scattered broadcast in the marshes or bils as they dry up, and the young shoots are transplanted when about a month old. There is another kind of boro paddy called aus boro, which is sown broadcast during the months of April and May, and reaped in August or September.

Another description of rice, known as uri dhān, is indigenous Uri dhān in the deep-water marshes, and is occasionally used as food by fishermen and boatmen. The plant looks like a confused mass of crop ears floating on the water, and shoots forth its ears of grain in every direction. A peculiarity of this rice is that the grain drops from the ear into the water when it attains maturity. To prevent this, the ears are bound together before
the paddy ripens. This rice grows plentifully in the marshes, but very little is collected, for the swamps are deep, and the crop hardly repays the labour of binding the ears and collecting the grain.

Except rice, there is no cereal of any great importance. Gram (chhola) is cultivated on high land, but in 1911-12 had an area of only 500 acres, while other cereals and pulses were grown on 29,900 acres. They are mainly cold weather crops, such as peas, masuri, khesari and kalai, sown in October and gathered in February or March, and are cultivated only on small patches of land.

The extensive cultivation of jute dates back only half a century. Its introduction is described as follows in the Statistical Account of Bengal, Volume I, published in 1875: "Jute was formerly very little cultivated in the district, and the small quantities that were produced only sufficed for local requirements, such as rope-making, etc. About fifteen years ago a great demand arose for gunny cloth, and almost every family that could get a little money to establish a jute loom did so. Nearly all the day-labourers took to weaving, and the women and children to spinning the thread, causing the rates of labour to suddenly rise. Jute cultivation accordingly received an impetus; and although the gunny-weaving was carried to excess, and ruined many families in the 24-Parganas, other outlets for the jute fibre sprang up, and its production has steadily increased. A large part of the high lands in the district, formerly devoted to dhus rice, is now entirely given up to jute cultivation."

The actual quantity of land given up to the crop varies considerably according to the prices which the produce commands in the market, but on the whole it shows a steady tendency to increase. In 1901-02 the normal acreage under jute was only 68,400 acres, the actual area under the crop in that year being 56,000 acres, whereas the corresponding figures for 1911-12 were 76,600 and 85,000 acres respectively.

The seasons for sowing and growth are the same as for dhus or early rice. After the usual ploughing, the seed is sown broadcast from the middle or end of March to the beginning of June, and the plant is generally cut from the middle of August to the middle of October, by which time it has attained a height of five to ten feet. The stalks, when cut, are made up into bundles and immersed in some pool, tank or stream, and left to steep; this process is called retting. While the bundles are under water, they are examined from time to time to see how far decomposition has proceeded. As soon as it is found that the fibre will peel off easily from the stem, the bundles are taken
out, and the stalks are beaten or shaken in the water till the glutinous substance in the bark is entirely washed away. The fibre is then dried in the sun, and, when dry, is made up into barks (gőnt) and sold to agents, who consign it to the jute presses and mills.

Sugarcane occupies a considerable area in the north-east of the district, where also the cultivation of sugar-yielding date palms (khejur) is carried on extensively. These trees are planted in regular rows, the plantations being generally laid out on land which is too high for the successful cultivation of rice. The regulation distance between the trees is about 12 feet, so that the number in a plantation of an acre will be about 300. The tree is tapped when it is "ripe," i.e., when it is seven or eight years old, and is carried on in the cold weather. When the rainy season is over, and there is no more fear of rain, the cultivator cuts off the leaves growing out of the trunk for one half of its circumference, and thus leaves bare a surface measuring about 10 or 12 inches each way. This surface is at first a brilliant white, but becomes by exposure quite brown, and has the appearance of coarse matting. The leaves are cut off by a man who climbs up the tree supporting himself by a strong rope, which he passes round the tree and his loins. He slides the rope up and down with his hands, setting his feet firmly against the tree, and throwing the weight of his body on the rope. In this manner, his hands are free, and he cuts the tree with a sharp knife like a billhook.

After a few days, the "tapping" is performed by making a cut in the exposed surface, in the shape of a broad V, and then cutting down the surface inside the angle thus formed. The sap exudes from this triangular surface, and runs down to the angle, where a thin bamboo is inserted in order to catch the sap as it drips down and carry it out, as by a spout. Below the end of the bamboo an earthenware pot is hung at sunset, and the juice of the tree runs down into it during the night. The pots are taken down in the morning, before sunrise, as the heat of the sun closes the pores of the wood and prevents exudation during the day. The juice is extracted three days in succession and then the tree is allowed to rest for three more days, after which the juice is again extracted.

The next process consists of boiling the juice, and this most ryots do for themselves, usually within the limits of the palm grove. Without boiling, the juice speedily ferments and becomes useless; but when once boiled down, it may be kept for long periods. The juice is therefore boiled at once in large pots placed on a
perforated dome, beneath which a strong fire is kept burning, the pared leaves of the trees being used with other fuel. The juice, which was at first brilliant and limpid, now becomes a dark brown half-viscid, half-solid, mass called *gur*, which is easily poured, when it is still warm, from the boiling pan into the earthenware pots in which it is ordinarily kept. It is then sold to refiners, and manufactured into sugar.

Tapping continues year after year, alternate sides of the palm trees being used in alternate seasons. Each season's cutting is above that of the previous season (but on the opposite side of the trunk), so that the trunk has a curious zigzag appearance. The age of a tree can at once be ascertained by counting the notches and adding six or seven for the number of years that pass before the tree is first tapped. Some trees have over 40 notches, showing that they have been tapped for as many years, but these are exceptional.

Tobacco. Tobacco is generally grown for domestic use only, but in the north of the Darasat subdivision it is largely grown for trade and export. Here it thrives on old indigo lands and may be seen planted up to the very edge of the ruined vats. The variety most grown is called Hingli, from a village of that name on the left bank of the Jamuna river. The leaf is said to sell for Rs. 5 to Rs. 7 or Rs. 8 per maund, but some special qualities fetch as much as Rs. 20 a maund.

Light soil is usually selected for the plant, and is well ploughed and manured. The seed is sown in nurseries in August and transplanted early in October, the plants being placed about 18 inches apart. They are topped when they have 12 or 13 leaves, and then suckering goes on regularly until January, when the plants are ready for cutting. This stage is reached when the leaves hang down, turn colour and have spots on them. They are cut up into pieces, each with two to five leaves on it, which are spread out in the sun to dry for a few days. They are then hung up on grass ropes or strings in the house or cowshed, and left for two months, until the south wind sets in and the leaves are 'in case.'

The next process is sweating or fermentation, which is effected in the following way. The tobacco is piled up in heaps covered with gunny sheets and resting on a layer of straw; the object of the latter is to protect them from damp. Fermentation sets in, and when the proper temperature is reached, the heap is broken up and rearranged to prevent overheating, i.e., the top and bottom leaves are placed in the centre, and the inside leaves are put on the outside, so that fermentation may proceed evenly.
The cultivation of garden crops, and especially of pān and bāigun, is of considerable importance in the 24-Parganas, from which Calcutta obtains a large portion of its supplies. There are numerous large market gardens in the neighbourhood of that city, where vegetables of all kinds are grown; and in many places trenching grounds are employed for the purpose with excellent results.

The betel leaf creeper called pān is grown in gardens, known as baraj, mainly by members of the Bārui caste, with whom its cultivation is an hereditary occupation. The garden is laid out on high land in the vicinity of a stream or tank. It is enclosed by a wall of bamboo and reed work, about five or six feet in height, and covered over with the same material, the roof being supported by uprights from within. This is done to protect the creeper from the sun, and to prevent cows, goats, etc., from destroying it. The enclosure thus prepared is divided off into parallel ridges about eighteen inches apart, in which are placed, about a span apart, uprights of thin bamboo, and across these a framework of other thin bamboos.

The land requires to be well dug up previous to planting. Cuttings are planted in February and March, and in four months, i.e., by June or July, have grown sufficiently for the leaves to be plucked. During the hot months of April and May, the plants must be watered morning and evening, and in June and July the land is well manured. Fresh earth has to be put round the roots at the same time. There are three crops during the twelve months, which are called by the names of the months in which they are plucked, viz., Kartik pān, Falgun pān and Ashar pān. The first is the best; the last is the heaviest crop, but inferior in quality. When plucking, it is a rule always to leave sixteen leaves on the creeper. The leaves are eaten in the green state with betel-nut (supari), lime and cardamoms; the first green leaves, especially those plucked in the early spring, are preferred. The cultivation of the plant requires constant care, but is highly remunerative. A garden lasts 5 to 20 years.

The brinjal or egg-plant (bāigun) is cultivated extensively, and is of considerable economic importance. The two main varieties are called dus and pānus, but each may be subdivided into a number of species, such as muklakoshi and ekakeshi, according to size and colour. A third variety, which is not so commonly grown, is known as duto or kuli bāigun; this is much smaller in size and grows in bunches. The plant grows in sandy loam and also in clay soils, but the land must be high and well
drained. It grows best in fields that have been left fallow for a year or two.

For the cultivation of āus baigün the land, if not a fallow, must be well manured, e.g., with mud taken from the beds of tanks, with which cow-dung may be mixed. Several ploughings are necessary, and the soil has to be levelled, weeded and pulverized. The seedlings are transplanted at the end of Chaitra or Baisākh, and placed about 3 feet apart. They take root in about 10 days, after which the space between the rows is hoed, and the plants are earthed up, the furrows being converted into ridges 3 or 4 inches high. After another fortnight, the field is weeded and the plants are again earthed up, so as to make the ridges 9 inches high. Three weeks later, after another weeding, the plants are earthed up for a third time to a height of 15 or 18 inches. They begin to bear fruit at the end of Ashār or the beginning of Srabān, and continue to do so till Phālgun.

The cultivation of paus baigün follows a different method. It grows best on a clay soil, and thrives in the Bārupur thana, the brinjals of which have a special repute. The seeds are sown in a nursery in Jyaistha or Ashār, the fields in which they are to be transplanted being prepared in the same way as for āus baigün. Transplantation is carried out in Srabān, the seedlings being placed in rows 3 feet apart. The land is hoed two or three times, and is weeded as occasion requires. The plants begin to bear fruit in Agrahāyan, and continue to do so till Chaitra.

Kuli baigün is sown in Aswin and Kārtik, and planted in Agrahāyan and Paus.

Four varieties of the kochu (yam) are grown as field crops, viz., man, mongiri, kachurmuki and solakochu, and two varieties of palal, viz., paikhali (or chakdayi) and deshi. The gourd called kumra, of which there are two kinds, viz., deshi and belati, is very common; its creepers may be found in nearly every house, either climbing on the thatched roof or trailing on bamboo stages made for the purpose. The following vegetables may also be seen in the ryot's vegetable garden, which is always in or near his homestead:—radishes (āus and paus muza), uchchi (karala and uchchi), jhinge (tota and paļa), tarmuz (deshi and tota), sweet potatoes, spinach, cabbages, cauliflowers, cucumbers, onions and garlic.

Fruits.

Cocoanut trees grow abundantly, especially in the south of the district; the fruit is collected in the rainy season. A fully ripe cocoanut is called a jhawd, and from its kernel several
kinds of sweetmeats are made, such as nārikol nāru, raskarā, chandrapuñi, etc. The nut is put to a variety of uses; rope and mats are made from the husk; oil is extracted from the kernel; the shell is made into the bowls of hookah, cups, etc.; and the tree itself, when past bearing, can be cut down, and the trunk hollowed into a canoe. Plantain trees are grown extensively: the variety known as champa has a deservedly high reputation for the delicious flavour of its fruit. Of other cultivated fruits the following may be mentioned: the mango, papaya, jack, guava, custard-apple, plum, bel, tamarind and pine-apple.

The cattle belong to the degenerate breeds common in Lower Bengal. They are said to be deteriorating owing to the cultivation of pasture lands and to the abandonment of the practice of dedicating bulls. Diminutive goats are numerous, but ponies, sheep and buffaloes are scarce. There is a Veterinary College at Belgachia; and the Mārwāris maintain a Pinjrapol or asylum for broken-down cattle at Sodepur, 10 miles north of Calcutta, where they have an annual gathering in November.
CHAPTER VI.

DRAINAGE AND EMBANKMENTS.

The drainage of low-lying areas is a question of considerable importance in the 24-Parganas, particularly in the country to the south of Tolly’s Nullah, where large tracts are so swampy and water-logged that artificial drainage is necessary to make them cultivable. Much has already been done for the drainage of land in this neighbourhood, 30 basins, as shown below, having been effectively drained:

<table>
<thead>
<tr>
<th>Basin</th>
<th>Area (in square miles)</th>
<th>Basin</th>
<th>Area (in square miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmadpur</td>
<td>... 5</td>
<td>Pânchpota</td>
<td>... 3</td>
</tr>
<tr>
<td>Birási</td>
<td>... 3</td>
<td>Patnighâta</td>
<td>... 4</td>
</tr>
<tr>
<td>Burul</td>
<td>... 5</td>
<td>Râypur</td>
<td>... 2</td>
</tr>
<tr>
<td>Châriâl</td>
<td>... 37</td>
<td>Sadiâl</td>
<td>... 4</td>
</tr>
<tr>
<td>Chitâmâri</td>
<td>... 1½</td>
<td>Sâgar</td>
<td>... ½</td>
</tr>
<tr>
<td>Dhosâ</td>
<td>... 1</td>
<td>Sâmukpota</td>
<td>... ½</td>
</tr>
<tr>
<td>Habkâ</td>
<td>... 50</td>
<td>Sâtpukur</td>
<td>... 43</td>
</tr>
<tr>
<td>Hârâ</td>
<td>... 5</td>
<td>Srikrishnapur</td>
<td>... 3½</td>
</tr>
<tr>
<td>Haral</td>
<td>... ½</td>
<td>Surjipur</td>
<td>... 25</td>
</tr>
<tr>
<td>Kalâbâria</td>
<td>... 1½</td>
<td>Tengrâbâria</td>
<td>... 5½</td>
</tr>
<tr>
<td>Kulpî</td>
<td>... 28</td>
<td>Tengrâbiehî</td>
<td>... 17</td>
</tr>
<tr>
<td>Kâorâpukur</td>
<td>... 2½</td>
<td>Telâri</td>
<td>... 5</td>
</tr>
<tr>
<td>Kholâkhâli</td>
<td>... 11</td>
<td>Tetulia</td>
<td>... 3½</td>
</tr>
<tr>
<td>Magrâ Hât</td>
<td>... 219</td>
<td>Tîpi</td>
<td>... 1</td>
</tr>
<tr>
<td>Nishântala</td>
<td>... 5</td>
<td>Uttarbhâg</td>
<td>... 5</td>
</tr>
</tbody>
</table>

The most important of these works are those designed for the drainage of the Magrâ Hât, Habkâ and Surjipur basins, of which a detailed account is given below. Of the others the following may be mentioned:

1) The Châriâl works, carried out in 1887, drain a large area (the Châriâl Bil) in the neighbourhood of Budge-Budge.
(2) The Balli Bil in the north-east of the district is drained by a channel with a sluice at Tentsila, the work being completed in 1882.

(3) The Satpukur, Kulpi and Tongabicho works drain an extensive area in the south of the Diamond Harbour subdivision.

By far the most important drainage scheme as yet instituted in the district is the Magra Hat scheme, which provides for the drainage of nearly 300 square miles of country in the vicinity of Diamond Harbour and Magra Hat by means of a system of channels, with controlling sluices, which are designed to serve both as drainage and navigation channels. The country benefited by the scheme forms part of a large area, which is surrounded by a continuous embankment, known as the 24-Parganas embankment and in part as the Hooghly left embankment. Starting just below Akrá on the left bank of the Hooghly river, it forms the left flanking embankment of that river for some 78 miles, as far south as Chitamari, where it turns towards the east and then to the north-east, forming a protection to the country from the large tidal creeks of the Sundarbans. A good deal of reclamation has been carried out here, and the main embankment is to a large extent marked by new bunds to the south of it. Reaching the Piáli river, the embankment turns northwards to the confluence of the Bidyadharí river, which it flanks, then bends westwards along Tolly's Nullah and ends at Garia, some 11 miles east of its starting point, after a course of about 212 miles. The whole enclosed area is about 717 square miles, of which the tract affected by the Magra Hat scheme occupies mainly the eastern and central portions. A striking feature of the enclosed tract is its uniformity of level. There is no general "trend" of the ground in any direction, except locally, so that the drainage as a rule follows the direction of what are, for the time being, the most efficient outfalls. The embankment is pierced by numerous open kháls, which serve as exit-channels for rain-water. Until the execution of the drainage scheme, only some of these channels had sluices; in the other channels protection was afforded by "returning" the embankment along their flanks.

The most important of the sluices in question are as follows:—

The 5-vent Charish Khál sluice at Budge-Budge drains an area of some 37 square miles in the north-west. From there down the west side the drainage was served by open kháls and small sluices (mostly built for irrigation purposes) as far as the 2-vent sluice at Bendál, built to drain an area of 11 square
miles into the Diamond Harbour Creek, but really carrying drainage from a larger area. The three sluices at Kulpi, Tongra-bichhi and Sātpukur, with an aggregate of 13 vents, were constructed to drain a combined area of 88 square miles in the southern tract; but as a matter of fact they received drainage from a far larger area owing to a network of small khaḷs. It is probable that, since the outfalls silted, a large portion of the area which is now served by the Magrā Hāṭ scheme found its way to these sluices. On the south-east there are the old sluices at Khāṛi and Pātnighāta, and on the east the important 5-vent Surjipur sluice. The Arāpanch sluice in the north-east, serving an area of 20 square miles, completes the list of the important sluices. These sluices, it should be noted, do not provide for the drainage of the central portion of the district, which contains a large area of swamp, besides cultivated land which is periodically flooded.

Starting at the north, the main waterway is the Kāorāpukur Khāḷ, which takes off from Tolly’s Nullah near Tollygunge; for 5 or 6 miles this khāḷ is tidal, and the drainage of this portion has to be led northwards. After this the khāḷ runs due south for some 10 miles to the village of Nainān, which is situated about the centre of a very extensive swamp. Here the khāḷ divides, the smaller branch taking a course westwards until, joining with the Śrīchandra Khāḷ from the north, it falls into the Diamond Harbour Creek at the village of Ustī. This portion of the khāḷ, which bears different names in the different villages it passes through, is now much silted, and in places hardly exists. The land along it is low in places, and there is a great swamp between Nainān and Chagdah Hāṭ, and another smaller swamp lying more to the west. From Nainān the main branch of the Kāorāpukur Khāḷ runs through swamps south-eastwards into Magrā Hāṭ. The Hotār Khāḷ joins a few miles north of Nainān, while Magrā Hāṭ is practically the centre of a branching system of khāḷs. Eastwards the swamps extend to Surjipur, and southwards again we come to the great Jaynagar swamp (surrounding the Jaynagar and Kāṭa Khāḷs): this is the lowest portion of the basin. South-westwards from Magrā Hāṭ lies the tract whose original drainage artery was the Sangrāmpur Khāḷ, much of which is a swamp. These are the main central swamps.

In addition, there is a tract drained by the Śrīchandra Khāḷ, north of the Diamond Harbour Creek; while to the east of the Jaynagar swamp, across the Jaynagar pucca road, lies a tract of some 50 square miles, which has been included in the project
under the name of the Habkā Section. The lowest part of this area is at the east corner, near Dhosā, where there are some swamps which, over a small area, are very deep and permanent, and, at a rather higher level, fairly extensive. The water, in fact, collects in a sort of pocket at this south-eastern corner of the district. This tract is intimately connected with the great Jaynagar swamp by khal.

As regards the drainage outfalls, the natural, and only practicable, main outlet for the Habkā section is into the Piāli river, near Dhosā. The Sreichandra Khāl discharges into the Diamond Harbour Creek, and the natural outfall of the Sangrāmpur Khāl is into the Nāzrā Khāl, which is simply a continuation of the same creek. The country between Magrā Hāt and Surjipur, together with the low-lying tract on the east of the Kāorāpukur Khāl as far north as Hotar, was formerly served by the Surjipur Khāl, discharging into the Piāli river. About 40 years ago this khal was sluiced, but the sluice was located at Surjipur, some 7 miles from the mouth of the khal, with the inevitable result that the khal silted up and ceased to be an efficient outlet. A considerable quantity of drainage must have gone towards this sluice, as there is continuous water-communication with the Jaynagar swamp, as well as from the Kāorāpukur Khāl. There is, however, an alternative exit from the Kāorāpukur Khāl, which is connected continuously, through Magrā Hāt, with the Sangrāmpur Khāl, which used to discharge into the creek; as well as the exit through the old khal on the north of the railway from Nainā to Usti.

Thus it will be seen that all the tracts drained by the Kāorāpukur Khāl, as well as the Jaynagar swamps, had their choice of exits sid Surjipur eastwards, or westwards into the Diamond Harbour Creek. Considering the number and (original) size of the channels communicating with the creek, there can be no doubt that it formed the outlet for by far the greater volume of drainage. Partly for this reason, but mainly because the permanency of the Hooghly as a drainage channel is assured, while the rivers towards the east show a marked tendency to silt up, it was decided, in the present scheme, to lead the drainage into the Diamond Harbour Creek, and to utilize the Surjipur outfall as a subsidiary exit, to relieve the main sluice in times of pressure.

The drainage scheme as now developed is the inevitable outcome of the silting up of the creeks which used to serve as drainage channels. The necessity of an efficient system of drainage had been apparent for a long time. In 1879 Mr. Whitfield, Executive Engineer, in a general report on
the defective drainage of the 24-Parganas district, wrote as follows:

"Besides the permanent pheels, there is, in the central part of that portion of the district around which public embankments are constructed, a large area little better than a permanent pheel comprising a tract of country extending over an area of about 20 square miles, having Bunkipore or Magrâ Hât as its centre. Into this area the tide flows from Diamond Harbour up the Diamond Harbour Creek and Ustî Khal, from Tolly's Nullah up the Kâorâpukur Khal, and from Budge-Budge up the Charî Khal. In the dry weather the tides overspread the low land with salt or brackish water, and the rains inundate and destroy the crop. From want of drainage and protection, the productiveness of the locality is only a fraction of what it should be, and the inhabitants, although they may be supposed to be innured to their semi-amphibious condition by a long course of preparation resulting in the survival of the fittest, are affected similarly to those living in the vicinity of the permanent bths. Fever is constantly present in every village, and other classes of sickness find a congenial home in the unwholesome atmosphere prevailing in this extensive locality."

The present scheme owes its inception to an extraordinary fall of rain which occurred in September 1900. On that occasion nearly 17 inches of rain fell in one day at Diamond Harbour, and 12 inches at Surjipur; while during the week from the 18th to the 25th September these gauges recorded no less than 38\(\frac{1}{2}\) and 30\(\frac{1}{2}\) inches respectively. Even with clear drainage outfalls, this downpour must have caused damage; but, falling as it did into a basin of nearly 200 square miles in extent, with deteriorated channels and silted outfalls, the result can only be described as disastrous. From Hotar to Nâzâ the railway passed through an inland sea; and the tracts at a distance from the railway were equally congested. After the top of the flood had run off, these lakes still remained, and the water in the low-lying tracts, finding no exit, stayed where it was for months, until it evaporated. The rice-crops were destroyed and rotted in the water. The loss of crops was roughly estimated by the Executive Engineer at nearly 86 lakhs of rupees; and the loss of houses and cattle must have been very large.

A report on the flood was submitted by Mr. Maconeby, then Executive Engineer, Northern Drainage and Embankment Division, which showed that for the whole area of 717 square miles the existing vantage aggregated only 1,873 square feet, or less than half of what was required. Subsequently, in March 1902, the Executive Engineer made a
thorough exploration of the great Jaynagar swamps and the country lying to the east of them. The need of drainage in this tract had been brought to notice in September 1899 by a petition for the construction of a sluice at Dhosā (near Habkā), but it had been treated as a drainage basin by itself, distinct from the great central tracts. The result of Mr. Macoehy's inquiries led him to make a strong recommendation that both the Habkā scheme and a scheme for reconstructing the Surjipur sluice at the mouth of the khal, on the bank of the Pišāli river, should be included in the large Magrā Hāt scheme, on the ground that the drainage systems of all these tracts were so intimately connected with that of the central tract that they could not properly be treated separately. The Collector laid both the Magrā Hāt and Habkā schemes before a meeting of the District Board held on the 21st July 1903, and it was unanimously resolved that the Habkā scheme be incorporated in the Magrā Hāt scheme, and that the Government be moved to issue orders for the appointment of Drainage Commissioners under section 3 of the Bengal Sanitary Drainage Act. These were appointed, detailed plans and estimates were prepared, and in 1905 the scheme was adopted by the District Board and sanctioned by Government. Work was actually commenced in November 1904.

The scheme has been undertaken under the Bengal Sanitary Act, by the provisions of which the initial expenditure, together with the capitalized cost of maintenance, may be recovered from the proprietors of the tract affected. The estimated cost was a little over 20 lakhs, towards which Government made a contribution of 5 lakhs; it also undertook to bear all maintenance charges in return for any income derivable from the scheme, which includes such tolls as may be levied under the Canals Act for the use of navigable channels. The remainder of the cost has been met from a loan granted by Government to the District Board bearing interest at the rate of 4 per cent. per annum and repayable in 30 years, this being the maximum period fixed by the Act. In order to relieve the District Board as much as possible, the loan has been treated as an advance, and the District Board has been allowed to defer payment of interest and repayment of capital until recovery is being made from the proprietors. The work is to be maintained by Government, which will receive any navigation tolls and fishery rents that may be realized.

The scheme consists of three sections, viz., the Magrā Hāt section with an area of 219 square miles, the Habkā or Dhosā section (30 square miles) and the Surjipur section (20 square
The following is a brief general description of the works:

The main sluice at Diamond Harbour is designed to discharge the drainage from an area of 215 square miles, including the whole of the areas drained by the Kāroāpur Khāl; the tracts lying around Hotar, Nainān, Magrā Hāt, and Surjipur, which used to find an outlet through the Surjipur Khāl; the whole of the tract connected with the silted-up Sangrāmpur Khāl, as well as the area lying to the north of the railway between Magrā Hāt and the Nākrā Khāl; the country to the north, which is drained by the Sricandra Khāl; and the great Jaynagar swamp. Besides these, the main sluice has to accommodate the drainage discharging into the creek below Usti. The new Surjipur sluice is merely an extra outlet to relieve the main sluice; while the whole of the Hābbā basin of 50 square miles discharges eastwards through the Hābbā sluice.

Two main outfall channels are provided to feed the main sluice, both discharging into the creek; one from Nainān to Usti and the other following approximately the line of the old Sangrāmpur Khāl. Provision is made for discharging the Jaynagar swamps through the latter channel, while the water from the Surjipur swamp will be led to Usti. The width of the channels varies from 220 feet for the main creek leading to Diamond Harbour to 10 feet for the smallest channels, the sizes of the larger channels being determined by the probable flood discharge of storm water, and of the smaller by the requirements of navigation.

In addition to the above, a sluice has been constructed in the 108th mile of the Sundarban's embankment at Dhuṭkhālī, which drains 8 square miles (the Dhuṭkhālī basin), and a small sluice at Phulbāgichā in the 131st mile drains one square mile of the Khāri basin. Drainage schemes have also been proposed for the Kāṭākhālī, Khāri, Mahāmāyā, Arāpanch and Faltā basins. These and other projects are referred to as follows in a note prepared by the Executive Engineer in 1906:

"A scheme for draining the Arāpanch basin of 30 square miles is under preparation, and work has been started in excavating the outer channel of the existing sluice... To the west of the Calcutta-Diamond Harbour road there are seven basins (shown in the margin), totalling 112 square miles, which require more sluice vantage. These basins are in urgent need of proper drainage facilities. At
present, drainage is effected through open khāls into the Hooghly, and these are very badly silted up. There are large inland swamps in which stagnant water remains till the beginning of the hot weather, when it evaporates. Instead of draining each basin separately, it might be possible to combine several basins together into one having one or perhaps two outfall sluices and a proper system of inland channels. The basins round Faltā might be combined in this way and a scheme carried out under the Sanitary Drainage Act... To the east and south of the Diamond Harbour road, and to the west of the Pāli river, matters will be much better when the present schemes being carried out are completed. The only basins not properly drained will be those shown in the margin: of these the Hāra, Jhinkrā, Khāri, Mahāmāya, Dīhi and Kārāpukur basins are in urgent need of extra sluices.

"Hāra is an inland basin with no means of drainage A sluice close to the existing one-vented sluice at Hāra is badly required, but the zamindārs do not appear inclined to come forward and pay the amount necessary for the scheme. Practically no crops have been grown in this basin for years.

"The Khāri and Mahāmāya basins might be combined. The total area is 36 square miles, and a sluice vantage of 180 square feet is required against 81 square feet existing. This basin is badly flooded by overflow from other basins, especially from the Jāynagar swamps now being drained by the Magrā Hāt scheme; the sluice is situated about 4 miles up the outfall khāl, which is badly silted. A main outfall sluice is required at the mouth and the khāl silt cleared.

"The original area of the Kārāpukur basin was 52 square miles; 24 square miles have been included in the Magrā Hāt scheme, leaving 28 square miles undrained. There is difficulty in draining this basin; the natural outfall is into Tolly’s Nallah near Russā nīrā the Kārāpukur Khāl. This khāl is badly silted by the tides entering Tolly’s Nallah... The drainage of the Jhinkrā basin does not seem urgent. The Dhutkhāl sluice has 80 square feet vantage for 8 square miles, or about twice as much as is required; this sluice will relieve the Sātpukur and Tāgnrābiuli sluices which should then be able to discharge the drainage of the Jhinkrā basin... In the south of the area near Sātpukur the country is at present provided with sufficient sluice vantage, but the efficiency of the sluices, especially the Sātpukur sluice, is being gradually diminished owing to the silting up of the

<table>
<thead>
<tr>
<th>Basin</th>
<th>Area in sq. miles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hāra</td>
<td>24</td>
</tr>
<tr>
<td>Jhinkrā</td>
<td>8</td>
</tr>
<tr>
<td>Khāri</td>
<td>3</td>
</tr>
<tr>
<td>Mahāmāya</td>
<td>5</td>
</tr>
<tr>
<td>Dīhi</td>
<td>2</td>
</tr>
<tr>
<td>Kārāpukur</td>
<td>28</td>
</tr>
</tbody>
</table>
outfalls and creeks. The Subdivisional Officer, who is experi-
enced in drainage schemes in this part of the division, reports
that the deterioration of these channels is due to the reclamation
of the Sundarbans. Areas are being reclaimed and the tidal spill reduced, diminishing the scour in the creeks and
causing rapid silting.

"There is one other case which requires early attention.
Between Gariá and Surjipur there is an old river bed known
as the Marāgāṅgā Channel or Gangā Nadi; the channel is of
practically no use for drainage purposes, and consists of large
pools of stagnant water which do not entirely dry up till the
very end of the hot weather. Many of the pools have been
formed by excavation for raising the land on either bank, and
others have been formed by cross-bunding the nullah. The
channel passes through the Rājāpur and Bāruipur Municipalities
and is used for depositing corpses and rubbish. Starting from
near Gariá it passes south-eastward and runs parallel with the
Gariá-Bāruipur road, crossing the Eastern Bengal State Railway
about a mile to the south of Bāruipur railway station. Continu-
ing in a south-easterly direction, more or less parallel to the
Bāruipur-Surjipur road, it ends at Surjipur, the total length
being about 15 or 16 miles. The channel at the northern end
for about 5 miles is outside the Magra area, and for the rest of
the way forms the north-eastern boundary of the area to be
drained by the scheme. The latter portion passes through com-
paratively high ground, and the general slope of the country is
to the south. For this reason, the area to the south of the
channel will be drained by the Hotar Khāl, which passes through
the heart of the main swamp in the portion of the area to be
drained. The Hotar Khāl falls into the Marāgāṅgā Channel,
about 2 miles to the north-west of Surjipur, and this portion
will be excavated under the scheme to form an outfall for the
Hotar Khāl."

The Public Works Department maintains over 200 miles of em-
bankments, of which all but a few miles were constructed, and are
kept in repair, at Government expense. The main embankment
runs southwards along the left bank of the Hooghly river from
Akāra a few miles below Calcutta to Rāngāfala near the head of
Sāgar Island; thence it branches east and north to Sāmukpotā,
and terminates at Gariā, 8 miles south of Calcutta. This embank-
ment has a total length of 212 miles and protects a tract of 717
square miles in the south-west of the district from inundation
by the Hooghly and Sundarbans rivers. Drainage is provided
for by numerous sluices, of which thirteen are on a large scale.
The following is a statement of the principal sections of embankments maintained by Government:

<table>
<thead>
<tr>
<th>Embankment</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Miles</td>
</tr>
<tr>
<td>Hoochly left embankment</td>
<td>77</td>
</tr>
<tr>
<td>Sundarbans id. id.</td>
<td>55</td>
</tr>
<tr>
<td>Srirampur Khal right embankment</td>
<td>6</td>
</tr>
<tr>
<td>id. id. left id.</td>
<td>3</td>
</tr>
<tr>
<td>Khari Khal right embankment</td>
<td>3</td>
</tr>
<tr>
<td>id. id. left id.</td>
<td>3</td>
</tr>
<tr>
<td>Surjipur right embankment</td>
<td>8</td>
</tr>
<tr>
<td>id. left id.</td>
<td>4</td>
</tr>
<tr>
<td>Piiali river right id.</td>
<td>12</td>
</tr>
<tr>
<td>id. id. left id.</td>
<td>11</td>
</tr>
<tr>
<td>Embankment at the mouth of the Bakhmiri</td>
<td></td>
</tr>
<tr>
<td>Khal.</td>
<td></td>
</tr>
<tr>
<td>Bidyadhari river right embankment</td>
<td>10</td>
</tr>
<tr>
<td>Tolly's Nullah south id.</td>
<td>10</td>
</tr>
<tr>
<td>id. id. north id.</td>
<td>2</td>
</tr>
<tr>
<td>id. id. south id. (laccavi)</td>
<td>2</td>
</tr>
<tr>
<td>Panchaunaugram embankment</td>
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