

CHAPTER III

PHYSICAL AND STATISTICAL ACCOUNT OF BALASORE

(This chapter is taken *verbatim* from Mr. Kingsford's report on Balasore.)

37. Sir William Hunter, in the statistical account contained in the second volume of his History of Orissa, has given so complete a description of the district that very little need here be said regarding its physical aspects. I shall therefore pass rapidly over those physical conditions in which the lapse of thirty years has brought about little change, and deal more fully with such subjects as canals, population, villages, markets and ports, upon which supplementary information is now available.

The district consists of an alluvial tract lying along the coast of the Bay of Bengal, about 90 miles in length, and varying in width from 30 miles at the north-eastern extremity to 10 at the narrowest, or central, portion and 40 in the south. The district of Midnapore bounds the north-east, the wooded hills of the Tributary States of Mohurbhanj, Nilgiri and Keonjhar lie along the northern, and western flank, and in the south the river Baitarni marks the boundary of Cuttack.

The following statement will show particulars of the area under settlement of rents:—

	Acres.
Area of <i>Lakhiraj bahal</i> lands	1,09,000
Area of temporarily-settled estates	9,59,100
Area of Government lands	13,600
Total	10,81,700
<i>Deduct</i> —lands of Balasore estates in Cuttack district	7,700
Balance	10,74,000
<i>Add</i> —lands of Cuttack estates in Balasore district.	20,900
Total area under settlement of rents in this district or 1,710 $\frac{1}{4}$ square miles	10,94,900

The total area compiled by villages amounts, however, to 10,95,800 acres, and the difference of 900 acres is due to the inclusion of a permanently-settled village in Nangleswar pargana.

Adding to the area above shown *viz.*, 10,95,800 the area of permanently-settled estates, 1,21,400 ; and of the Wards' Estates of Kanika within this district, 1,11,900, we have a total area of 13,29,100 acres or 2,076 $\frac{1}{4}$ square miles (See also paragraphs 503 and 504).

Cuttack estates, to the number of 295, have an area of 20,900 acres, situated in this district, while 7,700 acres, belonging to Balasore estates, are situated in Cuttack.

The area of Government lands includes 3,424 acres recorded as under the Collectorate. These are beds of certain navigable rivers and other miscellaneous items. Under the Public Works Department are 6,349 acres, including canals, embankments, roads, and bungalows. The District Board holds 2,400 and Local Boards 498, acres. The area of the Bengal-Nagpur Railway north of the river Burabalong is 570 acres. South of the Burabalong, with the exception of some lands in thana Soro, mutation was not made in favour of the railway, as the lands were not acquired till after final publication of the records. Smaller areas are held by the Municipality, Police, and other Departments.

38. I shall here note only the principal rivers of the district.

Proceeding from north to south, the first is the Subarnarekha, which rises in Chota Nagpur and pursues a winding course of some 60 miles in this district. It communicates with the Coast Canal at Jankunda Lock and is largely used by country boats from Calcutta. This river carried the earliest European trade in India to and from the ancient port of Pipli, originally occupied by the Portuguese and subsequently (in 1635) by the English and abandoned in the early

part of the next century owing to the silting up of the river. It is tidal up to a point above the ferry of Kalikorphur, 15 miles from the mouth, and 25 miles further up its course is spanned by the railway bridge at Rajghat near the ferry on the Grand Trunk Road. The floods, which are frequent, penetrate to a greatest distance of 12 miles and to an average distance of 4 miles from either bank, and those most destructive during the latter half of the century occurred in the years, 1868, 1883, 1888 and 1896.

The next river is the Haskura, a hill stream which rises in Mohurbhunj and, flowing across the Irish Bridge on the Grand Trunk Road, below Rajghat, passes south over the Basta-Baliapal Road to Tapabulang, where it communicates, through an inlet, with the Coast Canal.

This stream contains very little water during the hot season, but has been known to cause considerable damage in the rains, when it carries away a great portion of the Subarnarekha flood.

The river Sartha runs a parallel course a few miles to the south and, passing under the bridge on the Grand Trunk Road at Basta, runs into the sea at the mouth of the Panchpara. It is tidal upto the Coast Canal.

The Panchpara is formed by the confluence of several hill streams from Mohurbhunj, one of which is tidal so far as spot to the north of Haldipada on the Grand Trunk Road, to which country boats can penetrate during the rains.

The Burabalong, on which Balasore town is situated, at a distance from the mouth of 7 miles as the crow flies, but 15 by river, runs a course of 35 miles through the district. The name signifies "the old twister", and bears reference to the winding nature of the course.

The river has silted considerably, a process which had commenced before last century, and there is a difficult bar at the mouth. The India General Steam Navigation Company, however, runs a weekly service of steamers between Calcutta and Balasore. The area commanded by the floods of the Burabalong is not extensive, and lies to the north and north-west of the town.

39. Passing over the Pa'ga' and Nembu rivers, the next of consequence is the Southern rivers. Ka'nsba'ns, which is formed by the confluence of a number of small hill streams.

Rising in the Tributary States from Ambohata, north-east wards from a length of 20 miles, these drain a large area of country, and after heavy rainfall in the hills, rush down with great violence and in considerable volume. These sudden floods sometimes cover a considerable area, but seldom do much damage as the water quickly subsides.

The Ka'nsba'ns itself passes under the triple bridge in the Grand Trunk Road, below Soro, and is then joined by two confluent, eventually reaching the sea by two mouths, the lower of which is called the Gamai. Owing partially to the construction of the Coast Canal, the latter has rapidly silted up, and the passage to the sea is now almost closed.

On the Gamai, 3 miles from its mouth, is situated the old port of Churamon, once an important centre of the export trade in rice and salt, but now an insignificant village.

A great volume of the flood water of the Gamai runs south-westwards along the old Churamon, or Ricketts' Canal, into the Matai, which drains the country east of Bhadrak and has a course of 40 miles. This river attains considerable volume at Charbatia, where it is joined by the Coast Canal; it runs thence into the Dhamra, by which communication is made with the port of Chandbali. The Matai is tidal as far as Ruknadeipur, 8 miles east of Bhadrak, to which point it is navigated by numerous country boats which carry traffic to and from Chandbali.

The river Salandi, rising, as the name implies, in the *sal* forests of the Mohurbhunj hills, flows across the south of the district past the town of Bhadrak and into the Baitarni, a few miles above Chandbali. In the rains it is navigable along its entire course of 50 miles through the district. It brings down a considerable flood, which seldom causes damage. The Rebo, and its tributary, the Kapali, run a parallel course to the south, and, with the Ganguti, discharges into the Baitarni. Neither the Salandi nor the rivers subsequently noted carry any water in the hot season above their tidal reaches about the village of Kaumpura,

half-way between Bhadrak and Chandbali. Country boats ply between Kampura and Chandbali at every season of the year.

40. The last river to be mentioned is the Baitarni, which forms the southern boundary of the district. Though this carries very little water in the hot season, it passes an enormous volume in the rains. Down to Akhoyapada the left bank is protected by an embankment, but below this the whole country side is exposed, while the embankment on the right or Cuttack side prevents discharge of the water in that direction. The flood travels inland to a greatest distance of 8, and an average distance of 4 miles, and in the rains the country from Dhamnagar to Chandbali is one expanse of water. Owing to this and other causes, a great portion of the south of the district is subjected to almost annual flood, and the effects are much more disastrous than in the north, where serious floods are of less frequent occurrence. Both the Baitarni and Subarnarekha cause damage by deposit of sand, and the latter by erosion, since it frequently changes its course.

The Baitarni deposits very little silt and the Subarnarekha a great quantity. The Baitarni has few *pal* (silt-enriched) lands upon its banks while on the higher banks of the Subarnarekha there is a large area of such lands growing very valuable crops, though chiefly in permanently-settled tracts.

41. The ferries number eighteen, and they are under the control of the District Board, the leases being disposed of annually by auction.

The sale of the leases for the current year realised Rs. 6,458, and the value of those upon the Trunk Road at Phulwar and Rajghat, at the crossings of the Burabalong and Subarnarekha, respectively, was for a time some what depreciated owing to foot passengers making use of the neighbouring railway bridges. The practice was, however, discouraged by placing a chaukidar on guard; and since the line has opened for traffic, the use of the bridges for this purpose has been disallowed. The most important ferries are those first mentioned, the Rajghat lease realising Rs. 1,300 and the Phulwar, a few miles north of Balasore town, Rs. 1,190.

All the Grand Trunk Road traffic crosses at these ferries, and at the latter is the branching of the high road to Mohurbhunj.

The Subarnarekha at Rajghat is not fordable, and the fact that the Phulwar ferry, which is easily fordable for seven months in the year, realises almost as much is due to the greater traffic at the latter. Coolies, pack-bullocks, and an aboriginal type of Sonthali carts, with solid wheels, come down in great numbers from Mohurbhunj, bringing faggots, charcoal, *sal* timber and paddy for disposal in Balasore town. With the diminution of traffic upon the Trunk Road, following the opening of the railway, the receipts from Phulwar and Rajghat, as well as from the Salandi ferry at Bhadrak, which realised Rs. 380, will, to some extent, fall off. The latter plies only during the rains, the salandi bed being quite dry in the hot weather.

Other ferries of importance include that of South Baliapal over the Matai, which sold for Rs. 860, and that of Balighat over the Burabalong opposite Balasore town; the lease of the latter realised Rs. 722. At the former passes all the rice from the Ankura pargana and some of Killa Kanika on its way to Chandbali, and the passage being here fordable, at no time of the year the receipts are necessarily large. On the Subarnarekha, at the crossing of the Baliapal-Kamarda Road, is the ferry of Kalikapur, which is also unfordable, the river being tidal to beyond this point.

42. The Grand Trunk Road, which runs for a length of 95 miles from and to the end of the district, affords communication with Midnapore and Calcutta on the north, and with Cuttack, Puri and Ganjam on the south. It was built by Captain Sackville between 1812 and 1820, the portion in Balasore being opened in the latter year. Complaints regarding obstructions of drainage were common and were put forward by the zamindars, even as late as at last settlement. According to Mr. Toynbee, the raiyats in the neighbourhood of Bhadrak commonly indulged in the practice of cutting the road in order to allow escape to the water.*

* Toynbee's History of Orissa, Page No. 83.

No doubt there was considerable lodgment of flood water near the rivers Kapali and Rebo, and especially at Bhadrak itself where an Irish bridge now admits free passage to the overflow of the Salandi. The waterway generally allowed is certainly sufficient, and at such spots as the triple bridge over the Kansbans would seem excessive to one who had not seen this river in flood. In the north of the district, a few miles south of Rajghat, the road was breached in June last year by the flood of the Subarnarekha discharging along the line of the river Haskura, and breaches have occurred at the same spot on previous occasions. The waterway provided here must, therefore, have been insufficient, and damage has no doubt been caused on many occasions by lodgment of water. This has now been obviated by the construction of an Irish bridge.

The metalling of the road was not completed for forty years, and the soling appears to have been insufficient. Owing to this fact and the cutting down of the budget provision for maintenance of the road, it has rapidly fallen into disrepair, and between Balasore and Soro, where the traffic is heaviest, it is in places almost impassable for carts during the rains.

With the advent of the railway, which closely follows the course of the road, the latter will naturally fall into some disuse, and the policy of neglecting it may, therefore, be a wise one.

There existed originally along the side the road of a number of fine brick culverts, also apparently built by the Military Department, and leading over the roadside *nalas* to the neighbouring villages. These have all been allowed to fall into decay, scarcely any are now standing. The only route to Puri from Northern and North-Western India, this road, during the early and middle parts of the century, exhibited a constant stream of passenger traffic. Some of the pilgrims from the Central Provinces found their way down through the jungles of the Tributary States, as they had been accustomed to do before the road was built, but their number was comparatively by small. *Sarais* existed at Rajghat, Basta, Balasore, Bhadrak, and Akhoyapada along the line of the Trunk Road.

They were built in 1827 at the expense of a wealthy Bengali Hindu, who also provided for many of the bridges which bear inscription recording his name and munificence *. It is curious that these are almost the only works of public benefit, the outcome of private charity, to be found in this district, and it is significant that they are due to the generosity of a foreigner. It is not always, perhaps, that such generosity takes so useful a shape, for the construction of these *Sarais* and bridges must have done much to alleviate the distress and misery of the wayfarers from Jagannath, when all the evils of the rainy season, swollen and impassable rivers, cholera and starvation, combined to render desperate the position of wretched pilgrims, their Constitution exhausted, enfeebled by long months of travel and by the rancid "Mahaprasad" of the Holy City. The *Sarais* have long since been abandoned, and all have disappeared. At Basta only is still to be seen a row of dilapidated buildings surrounding a square court-yard overgrown with jungle.

With the inauguration of the steamer services between Calcutta and Cuttack in the sixties, the Trunk Road lost its importance as a pilgrim route, and of late years only a small number have travelled by it. Now that the railway is open, scarcely any are to be seen except an occasional *fakir* measuring his length along the road upon his toilsome journey southwards.

The chief traffic of the road lines between Soro and Balasore. The former place is the central market of the Banchas Oger parganas. Here the paddy is collected for transmission by cart to Balasore and thence come imports in the shape of oil and salt for distribution at the bazaar and in the neighbouring markets. Pack-bullocks and occasional carts on their way to Balasore from Ambohata and neighbourhood join the road a mile south of Soro. Upon the road, as a whole, however, the local traffic is inconsiderable. Each branch road and country footway supplies a small quota of carts, or more usually of pack-bullocks, on their way to Balasore or Bhadrak.

In the north of the district are to be seen many Sonthali carts and coolies from the Tributary States to Balasore with loads of timber, faggots, paddy,

* Toynbee's History of Orissa, Page No. 83.

charcoal, and bazaar commodities such as horn,* honey, fowls, and hides, and returning with oil, salt and cloths. But the more considerable body of traffic is to or from places at a distance. Thus from Bhadrak large herds of cattle start upon their way to the Calcutta market, and trains of carts carry hides to the same town as well as to Midnapore. From Midnapore the carts return to Bhadrak and Cuttack with mits manufactured in that neighbourhood.

43. Roads to the number of 38, with a total length of 309 miles, are maintained by the District Board.

With the exception of some 40 miles, these are unmetalled, and many of them are fair-weather roads impassable for cart traffic during the rains.

In the north of the district especially they are subject to damage by each high flood of the Subarnarekha, and in June of 1898 the Kamarda-Baliapal, Baliapal-Basta, Kamarda-Jaleswar and Singla-Nangleswar Roads, though constructed to allow great waterway, were breached in numerous places, many of the bridges being carried away and others so scoured out as to be render unsafe for traffic. The roads above mentioned are the most important in the north of the district, since they connect the local markets with the Trunk Road; they are chiefly used by pack-bullocks.

South of these may be mentioned the Panchpara-Haldipada Road; and, at Balasore, the road to Mitrapur in Nilgiri which passes through the important bazaar of Remna, the centre of a considerable trade in brass utensils. From this neighbourhood Balasore town draws its supply of vegetables. Further south there is a short branch road leading to Nilgiri, and at the 16th mile of the Trunk Road, below Balasore, branches the road to Talpada on the Coast Canal.

At Soro four roads converge. One from Gopinathpur on the borders of Nilgiri; another from Anantapur on the east; a third stretching to the south-west and passing through Ambohata to Bhadrak; and the fourth a short road running through Soro bazaar and joining the Trunk Road, 5 miles lower down.

From Jamjhari market, at the 29th mile below Balasore, branches the road to Basudebpur on the Coast Canal, meeting here the old salt road from Balasore now extended as far as Bhadrak.

It was by means of this road that Balasore used to derive its supply of the salt manufactured in the Arangs of the south-east. At a point midway between Jamjhari and Bhadrak a road runs westwards to Kopari market in Ambohata. At Bhadrak, in addition to those from Basudebpur and Ambohata two other roads converge, that from Keonjhar on the west and that from Chandbali on the east. A few miles south runs the road to Dhamnagar, and near the point where the Grand Trunk Road crosses the Canal a new road has just been constructed to Jajpur.

Perhaps the most important trade route is that between Bhadrak and Chandbali. The surplus produce of the south-east of the district finds its way to Bhadrak, whence most of it is sent for export to Chandbali, either *via* Ruknadeipur or the Basudebpur road, whence it is carried in boats down the Matai and up the Dhamra, or *via* Kanpura on the Chandbali road, whence it travels by the Salandi. The traffic is therefore, very heavy along these portions of Basudebpur and Chandbali road, and they should certainly be metalled, the former to Ruknadeipur and the latter to Tihiri *hat*, as they are extremely difficult for cart traffic after heavy rain.

The produce of the south-east goes direct to Chandbali along the country roads and tidal creeks, and the next collecting centre is Soro, whence, as already noted, the produce is carried to Balasore. In the north of the district there is no main centre, but produce gathers at the local markets and for export at the various parts subsequently noted.†

The necessity for the construction of feeder roads to the railway is now obvious, and two at least are already being built which will connect Khantapara and Markond stations with the Grand Trunk Road.

In addition to District Board roads there are 67 village roads, with a total length of 200 miles, under the Sadar and Bhadrak Local Boards. These are

* Horn of buffalo, bison and deer.

† Paragraph 68.

nearly all fair-weather roads, occasionally banked but generally consisting of mere cart tracts across the fields.

44. In 1830 the only public bungalows existing were those at Balasore and Baripada. The latter was a dak station and the half-way house for travellers between Cuttack and Balasore, being about 50 miles distant from each.

A portion of the Baripada bungalow survived until 1898, when it was condemned and destroyed, and another has now been erected in its place.

At the present day the district contains no less than 34 inspection bungalows, including the road and canal bungalows maintained by the Public Works Department and those under the District Board.

45. The first canal built in the district was that known as the Churamon or Ricketts' Canal, though why it received the latter appellation, I do not know, for, according to Mr. Toynbee's history,* it was apparently finished in 1826, the year before Mr. Ricketts' came to the district.

The canal connected Churamon with the Matai river and was intended for the transport of salt from the Arangs in the south to the port of Churamon, whence it was shipped by sloops to Calcutta. The route lay through the *jheel* lands of pargana Ankura, which the canal served in some measure to drain. It was, however, never entirely completed and soon fell into disrepair.

46. The Coast Canal, which connects the Hughli at Geankhali with the river Matai at Charbatia, has a length of 71 miles in this district, and runs along the sea face at a distance varying between 2 and 10 miles from the coast. It contains eight locks and it divided into four ranges, the first of which is fed from the Subarnarekha, the second from the Sartha, the third from the Panchpara, and the fourth or lowest from the Kansabans. The last three ranges have inlets and escapes to allow of the admission and exist of flood water, which thus passes across the canal to the sea.

The canal was partially opened on the 15th July, 1885 and entirely in September, 1887, the work having commenced in the year 1880. The cost was originally estimated at 36 lakhs, but this sum was considerably exceeded and by 1894 nearly 45 lakhs had been spent and minor works connected with the canals were still under construction.

47. Looking at the figures for the last three years, the cost of maintenance Revenue of the Coast Canal. Was —

In 1895-96, Rs. 70,000. In 1896-97—Rs. 88,000.
In 1897-98—Rs. 61,000.

Expensive protective works are now in hand near Nalkul Lock, and the cost of maintenance is likely to show a considerable increase this year. The total receipts or gross revenue amounted to Rs. 88,000 in 1895-96, giving a profit of Rs. 8,000; to Rs. 86,000 in 1896-97, showing a loss of Rs. 2,000; and to Rs. 85,000 in 1897-98, giving a profit of Rs. 24,000. The years 1895-96 and 1897-98 are, in fact, the only years which have ever shown a profit; in no other year did the gross revenue cover the working expenses. Up to close of 1898, the capital outlay reached a total of Rs. 45,17,000 exclusive of interest charges of which no account is kept, while the net revenue, obtained by deducting the working expenses from the gross receipts, showed a total deficit of Rs. 1,17,000, of the receipts of last year Rs. 66,000 were tolls paid almost entirely by country boats; Rs. 17,000 tollage of the steamer service of two companies; and Rs. 1,000 for hire of the Government steamer.

The number of passengers carried by the steamer service has decreased from 1,04,000 in 1893-94 to 41,000 in 1897-98 and the receipts in tollage from this source also show a steady decline. The reason given by one of the companies for the decrease in number of passengers who are mostly booked through between Calcutta and Cuttack, was that the sea service to Chandbali had been made more frequent and was also cheaper. With the opening of the railway in March of this year passengers ceased altogether to use this route to Cuttack and the service between Balasore and Chandbali has accordingly been stopped. The margin of profit of the companies has for some time scarcely sufficed to provide for repairs and depreciation, and there is little doubt but that the service will soon be altogether

* Paragraph 84.

closed. If this be the case, the receipts of the canal will so far decline as to render any margin of profit over expenditure or maintenance extremely problematical in future years. Regarded as a commercial enterprise it must, in fact, be pronounced a failure, and it is interesting to note in the early literature * dealing with the canal as projected, that almost the entire export and import trade of Orissa was expected to be carried upon it. The revenue anticipated was Rs. 2,60,000 whereas cost of maintenance and interest on capital were estimated at Rs. 2,11,000. It was supposed therefore that a profit would be yielded after payment of all charges whereas in fact so far from defraying interest on capital expenditure the canal has not even paid for working expenses.

I do not lose sight of the fact that its use as a famine protection scheme was one of the motives for its construction. This was strongly insisted on by the Government of Bengal †, but it was strongly urged the project would prove remunerative and the Lieutenant Governor was so satisfied on this point that he was "prepared to guarantee the interest on the outlay". The Commissioner of Orissa, Mr. John Beames, appears indeed to have been the only local official who entertained any doubts, through these were shared by the Government of India, which declined at first to sanction the scheme. In any case there is no longer any use for the canal as a famine protective work, and as it is likely to pay in future years even less towards the cost of maintenance than it does at present, the time appears to have come for considering whether it should not be abandoned.

48. The canal being fed by tidal waters, is of no use for purposes of irrigation, and was not constructed with that intention. It does not therefore benefit agriculture and indeed it is a common complaint of landlords and raiyats that its effect has been deleterious. It is difficult for one who is not a Civil Engineer to arrive at any conclusion upon this point, but I may at least state an opinion that the embankment of the Coast Canal prevents free egress of the Subarnarekha flood and thus raises its depth on the west side from pargana Kamardachour as far south as Sartha, and that a similar effect is produced in pargana Ankura. On the other hand it might be supposed that the canal bank would afford protection against cyclonic irruptions of the sea. But I find that this is not the case, for in 1887 the water passed over the embankment and approached to within two miles of Balasore town. If the zamindars are sincere in their objections on these points it is to be supposed that they would welcome the abandonment of the canal, which might then be cut at the points where it is alleged to cause damage.

49. This canal has a range of 19 miles in this district between Bhadrak and Akhoyapada, whence it runs to Cuttack. It is fed from the river Baitarani at Akhoyapada and it appears that at one time it was proposed to prolong the canal to Balasore, a project which had to be abandoned because it was found that there were no rivers of sufficient size to afford an adequate supply of water.

Range III, which is that contained in this district was constructed between 1871 and 1891 at a cost of Rs. 8,26,000 or Rs. 9,87,000 including the cost of distributaries.

The average annual cost of maintenance is under Rs. 5,000, and the gross receipts may be estimated for 1897-98 at Rs. 8,000 for transport service, Rs. 1,000 for tollage and Rs. 41,000 for irrigation, making a total of Rs. 50,000. The net revenue was accordingly Rs. 45,000, or 4 percent. on the capital expenditure, exclusive of interest charges. The interest charges on the Orissa Canals amount, however, at the present day to almost as much as the capital outlay, and adding a reduced interest charge of Rs. 9,00,000 to the capital expenditure, we should find that this range of the canal yielded in 1897-98 a profit of 2 percent. Circumstances were, however, particularly favourable last year, for traffic was large and the area under assessment for irrigation greater than it had ever been before.

The canal is available both for irrigation and traffic. It is little used by country boats, but there is a bi-weekly steamer transport service between Bhadrak

* Report of Mr. H. C. Levinge, Chief Engineer to Government of Bengal, dated 15th February, 1879. Miscellaneous correspondence consisting of enclosures to Government of Bengal No. 1069-I., dated the 22nd March, 1878, to the Government of India.

† Government of Bengal No. 1069-I., already referred to.

and Cuttack under the control of the Public Works Department. This was largely used by passengers until the railway opened and continues to carry a small quantity of goods. Turmeric, chillies, cocoanuts, and betel are imported from Cuttack; and rice, tobacco, tamarind, resin and mats, the latter from Midnapor, are sent in exchange. The transport service is carried on at a profit. The total receipts on the whole canal were Rs. 47,000 in 1897-98, while the working expenses were Rs. 18,000 and the net profit was, therefore, Rs. 29,000.

There was an increase in traffic due to the construction of the railway, some of the material for which was transported by canal. The tollage receipts from country boats on the portion of the canal within this district were something over Rs. 1,000 for the past year, and these included receipts for railway material, a source of profit which is now cut off.

On the whole, tollage revenue shows a considerable decline during the last five years. When the railway is finally opened through to Cuttack in the approaching cold season the transport service will probably be closed.

The passenger traffic which has hitherto been responsible for the greater portion of the receipts will desert the canal, and the quantity of goods traffic is not nearly sufficient to enable the service to be run at a profit. In that case it is likely that some of the goods traffic will be transferred to country boats, and the tollage revenue may therefore show some improvement, provided the cost of carriage remains cheaper than by rail.

50. This is the only irrigation system in the district. The area theoretically commanded by the canal and its seven distributaries is 57,509 acres, of which 44,000 acres are actually provided with means for irrigation. The distributaries have a total length of 50 miles; 20,350 acres were under irrigation in 1895-96, 26,556 acres in 1896-97, 29,193 in 1897-98, and 29,537 in 1898-99. The latter figure includes 28,856 acres assessed at Rs. 41,470 under long lease, 171 acres assessed at Rs. 255 under season lease, and 510 acres under sugarcane lease, assessed at Rs. 2,551. The total assessment is therefore Rs. 44,276 for the present year. The long leases are granted for a term of years, generally seven, for the supply of water from June till March and are charged at Re. 1-8, or 8 annas per acre, according to the height of the lands; the low-lying fields which do not ordinarily require irrigation being rated at the lower figure. Season leases are for cotton, *muga*, cucumber, pumpkin, and *dalua* rice, and the rate paid is Rs. 1-8 per acre. For sugarcane leases Rs. 5 per acre is charged, and the increase in the area irrigated for this crop during the last three years is remarkable. In 1895-96 there were only 282 acres; in 1896-97 about the same amount. In 1897-98 the acreage advanced to 435, and now stands at 510. This is to be ascribed to the fear that such crops would be specially assessed.

During the few years preceding settlement of rents the zamindars discouraged the growing of special crops like sugarcane, tobacco, cotton, and jute, and the raiyats were also disinclined to run the risk of imposition of addition rents.

After rents had been settled, however, a new impetus was given to this description of cultivation. Rents were settled in the neighbourhood of the canal by the early part of 1897, and the next year found a considerable increase in the sugarcane area. The new water rate rules lately introduced afford some facilities to raiyats for the execution of *dalua* leases. This crop is always largely grown after a failure of the winter rice, but the normal area under it is very small. In the present year no season leases appear to have been executed for *dalua* cultivation, although in 1896, after the short *sarad* crop of the preceding season, no less than 1,993 acres were under irrigation, chiefly in pargana Bayang.

The area irrigated for cotton remains stationery at 16 acres, while the average of *muga* is 130, of pumpkin 19, of cucumber 5, and of *brinjal* 1. For the four latter species of crop no leases appear to have been taken out in 1896.

51. Exhaustive enquiries on this subject were made in 1896, and a report was prepared by Babu Sri Gopal Bhattacharjee, Assistant Settlement Officer. The general conclusion was that rents were not higher in irrigated than in unirrigated areas.

There was no evidence tending to show that any enhancement of rent had been made on account of irrigation, or that rents were higher in irrigable than in

unirrigable villages. It may be safely said that collections are better in irrigated villages because the crop is more secure, and also that irrigation renders possible the cultivation of special crops which pay a higher rent, but this is the sum of the advantage derived by the zamindar. I am not disposed to think that the raiyat reaps a considerable profit after payment of the water-rate, except in the case of particular crops like sugarcane. Irrigation of rice lands is usually resorted to for the added security which it affords. It is a method of insurance which minimises the risk of loss.

If the crop experiments made by the Public Works Department be examined and some which are clearly inaccurate be excluded, it will be found that the difference in the yield of irrigated and unirrigated lands is seldom more than two or three maunds, which in itself is scarcely sufficient to compensate the raiyat for the expense and trouble of taking out a lease.

Railway. 52. This is a branch of the Bengal-Nagpur Railway and the construction was commenced in 1895. The line will connect Madras with Calcutta and *via* Sini, with the Central Provinces and the Punjab.

In February of 1899 the line was opened temporarily for traffic, through connection between Sini and Madras being made available. A portion of the line between Kola on the Roopnarain river and Calcutta being still under construction, the connection is made by steamer service.

A daily steamer service on the High Level Canal is, however, proposed to be maintained between these two places.

As regards the physical effect of the construction of this line, it is still early to form any estimate. The water way allowed appears to be sufficient and has in several cases been much increased since the original plans were formed. I believe if any lodgment of water is caused on the west of the bank, it will be in the neighbourhood of the river Kansbans, the flood of which is both high and sudden, but this stream rapidly subsides, and the water is not likely to stand sufficiently long to do damage to crops.

Individual fields must necessarily suffer here and there, while others will be correspondingly benefited, but no general effect is anticipated. Scarcely any complaints were made by raiyats on this score at the time of assessment and if any grievance had existed, it would assuredly have been brought forward. When the Grand Trunk Road was constructed zamindars and raiyats alike were up in arms and I believe their complaints were in some instances substantial. Moreover, very liberal compensation has been paid. *

53. Considering first the area lying between the Physical aspect summed up. Coast Canal and the sea, we have here, extending upwards from the river Gamai to the Burabalong, a great plain of grass lands, the grazing ground of herds of cattle and buffalo, with occasional sparse patches of cultivation and low scrub jungle upon the sand ridges and near the tidal streams. South of the Gamai between the protective embankment and the sea the aspect is the same. Between the Burabalong and Hanskura there is a little cultivation immediately on the east of the canal and beyond this a network of tidal creeks fringed with heavy jungle.

From the Hanskura to the Subarnarekha there is cultivation inside the wooded sand hills which run in parallel ridges along the coast. At the mouth of the latter river and along the tidal creeks spreads impenetrable jungle, and upon the north side the coast line is marked with sand ridges which protect the cultivated lands extending to the canal.

On the west of the district where the boundary approaches the hills and the lands are higher, the aspect is of a reddish rocky soil partially broken up to yield a scanty crop and exhibiting patches of jungle including a little *sâl* which rarely attains to any size. Yet in other places where the hills run precipitously to the arable lands these are often of considerable fertility taking in a supply of rain water which brings with it the vegetable sediments drained from the higher ridges.

The remainder of the district is a plain of arable lands varying in level from *pa'ts* or low lands, as the Talhati in Bayang, the Ankura *pa't* and Babaria *jheel* in Kamardachour to the stretch of higher lands in the centre running from pargana Balikband upwards, and widening towards the town of Balasore.

* Paragraph 218 of Mr. Kingsford's Report on Balasore.

54. The average temperature varies from 47° to 94° during the months of December, January, and February; from 62° to 109° in March to May; from 66° to 94° during the rains, and from 56° to 92° in October and November. 116° in the month of May is the highest temperature, and 44° in the month of December the lowest recorded in recent years.

Climate.

A sea-breeze, regarded as unhealthy by the native population, rises after mid-day and penetrates eight or ten miles inland during the cold and hot season. From March to August the general set of the wind, according to the matutinal readings, is from the south-west, and from September to February from the north-west.

The rainfall averages 60 inches, of which in normal years nearly 6 inches fall from November to April and 5 inches in May, propitious to the labour of ploughing; 9 inches fall in June, 12 in July, 11 in August, 11 in September and 5 in October. In April and May the district is visited by severe thunder-storms, which gather in the hills and descend upon the adjacent plains.

Of endemic diseases that known as *Elephantiasis arabum*, but more properly in the light of recent researches as "*Filaria sanguinis hominis*", is the most common and attacks nearly 30 percent- of the population. Fever and chill are common sickness in the cold weather, but the country is singularly free from malaria, saving only in Jaleswar thana where a severe type of this disease is prevalent and retards the growth of population. Of epidemics, cholera makes its appearances immediately before and after the rains, chiefly in the towns. It seldom spreads to any extent and causes no great mortality, though there were severe visitations in 1853 and during the famine year of 1866.

During the last sixty years, the district has not, comparatively speaking, suffered from the violent cyclonic storms and irruptions of the sea which caused so much loss of life and property during the early years of the century.

In 1831 a terrible cyclon swept over the entire district and storm waves devastated the sea face, covering the land to a depth of 3 to 30 feet and depopulating a third of the district. In July 1872 occurred the most violent storm of late years. It was accompanied with tidal irruption all along the sea coast, and some lives and great numbers of cattle were lost. Cyclones have occurred on several other occasions in 1849, 1858, 1863, 1866, 1882, 1886, and 1887, but do not appear to have been attended with loss of life. They generally cause inundations, however, and in 1887 the sea swept over the Coast Canal embankment and penetrated to within two miles of Balasore town.

Of floods the highest within living memory was that of 1868, which occurred after a fortnight of heavy rain. The month was June and therefore little damage was done to crops, though nearly every river in the district overflowed.

Of inferior height but more serious in results were the floods of 1892 and 1896 and in the latter year there was great loss of crops in the south of the district-other years of high floods are 1855, 1866 (5), 1872, 1883, 1886, 1888, 1894, 1897, and 1898.

No part of the district, except the irrigated area in the south-west is secure from drought in seasons of abnormally short rainfall. Drought, however, most commonly occurs, though not often in an aggravated form, on the upland stretching from Balikhand to Balasore town, at which point it widens across the district. Even here there is a good quantity of low-lying land so that the effect is not commonly severe.

The worst droughts since last settlement were those of 1852 in parganas Bayang and Dhamnagar, and of 1875 in Soro, both in the south; while in 1836, 1839, 1840, and 1865 the loss of crops was common to the greater part of the district and in the latter year culminated in the great famine.

55. There is no comprehensive system of protective embankments in this district. In 1853 it was stated * * that the embankments measured 91 miles. Many of these were small agricultural embankments erected sometime for irrigation purposes across the beds of streams and sometimes to guard against flood.

* Embankments.

* See map No. IV.

* * Sir Henry Ricketts' Report on the districts of Balasore.

In a few cases zamindars were, at last settlement, allowed expenses for maintenance, but the more important embankments were understood to be under the control of Government and Mr. Mills *** stated that in "estimating the assets, regard had been had to the continuance of the embankment". It was subsequently found by the Public Works Department that many of the old zamindari or agricultural embankments were either useless or actually harmful in their effects.

These are known as Class IV, and have for many years been neglected with the intention of abandoning them at this settlement. Accordingly there are now only three embankments of this nature which the Public Works Department proposes to maintain. The remainder have been surrendered to the zamindars on the understanding that Government have nothing further to do with them. The total existing mileage under control of this Department is 84, of which a length of 74 miles is under Class I and II, and situated on the river Subarnarekha and Suma on the north, the Baitarani, Salandi, and Ganguti, in the south, and along the sea face in pargana Ankura.

56. In considering the fiscal divisions of the district, it will be convenient to
 Parganas. notice the parganas first. These are old fiscal divisions, known as '*Bisi*' or '*Khand*' under the Hindu kings, and placed under the charge of revenue officials who were responsible for the collections. Under the Moguls these divisions were known as parganas, but the original designations still survive in some of the names, as in Nunkhand, Derabisi.

As the pargana became subdivided into an increasing number of taluks it still remained a centre of the collection system, and when, owing to alienations and combinations of the lands of various taluks, many estates became possessed of areas outside the border of their proper pargana, those areas were *de facto* included within that pargana. Hence the existence of those numerous *tahasilalahidas* which are such a perplexing feature of the present parganas. It has been the custom to regard any village the greater part of which belonged to an estate in another pargana as a *tahasilalahida* village of that pargana, and same confusion has been imported into the designation of small portions of villages which belonged to an estate holding a neighbouring village, those being regarded as *tahasilalahidas* of that village and named accordingly.

The pargana divisions bear little reference to physical or other facts, and considered as local divisions they are confusing and troublesome. As exhibiting, however, a combination of a number of neighbouring estates they have some use for statistical purposes. The number of parganas* now existing in this district, so far as the temporarily-settled portions is concerned, amounts to 67.

57. I may now turn to the subject of thanas, which will naturally lead to
 Thanas. that of villages, houses, and population.

I propose to deal with those figures in the appendix which include temporarily-settled and (*lakhiraj*) lands and exclude permanently-settled tracts and the Kanika Ward's estate. My remarks will therefore not have reference to the latter except when expressly included. The district contains two sub-divisions, of which the Sadar includes the five thanas-Basta, Jaleswar, Baliapal, Balasore, and Soro, with an area of 962 square miles, while the Bhadrak or southern sub-division includes four thanas-Bhadrak, Dhamnagar, Chandbali and Basudebpur, with an area of 750 square miles.

58. The thanas were constituted in 1806 as convenient local divisions for police administration, and the boundaries of parganas being known and familiar to the people, the thanas were as far as possible
 Origin of thana. constituted of whole parganas. From the date mentioned, the district was divided into four thanas-Basta containing 551 villages, Balasore 536, Soro 622, and Bhadrak 949. In 1853 the number was six, and it is now nine. That of Basudebpur, then known as Churamon, was subsequently separated from Soro, and those of Dhamnagar and Chandabali from Bhadrak.

The thanas of Baliapal and Jaleswar in the north were included at the revision of the district boundary in 1868. Basta and Baliapal thanas contain a considerable

*** Mr. Mill's Minute of 1851

* See appendix D. B. of the report.

number of permanently-settled estates and Jaleswar is almost entirely permanently settled, while Chandabali contains the Kanika Ward's Estate. Of other thanas, Soro, in the centre of the district, is far the largest, containing an area of 399 square miles, 834 villages and a population of 218,000. Thanas Chandbali, Bhadrak and Dhamnagar are the most thickly populated, the density in the former reaching the figure of 647 to the square mile.

59. The total number is 3,607, of which 3,044 are inhabited and 563 "*bechapari*"—literally—"without roof". On the average there are something over two villages to the square mile, and in the north

Villages.

of the district villages are smaller and more numerous, while in the south they are larger and fewer.

Bechapari villages are most common in thanas Balasore and Basta, and this is due not to the fact that there is less ground suitable for village sites, but apparently to some eccentricity of survey. The average size of a village is 304 acres and varies from 489 acres in thana Basudebpur, where the coast side *bechapari* villages are very large, to about 250 acres in the north of the district. The villages in Jaleswar are chiefly small "*Dian chaks*" or "*tahasilalahidas*" contained in permanently-settled villages. Villages generally are large and in consequence "*hechapari*" villages fewer in the south.

The average population of inhabited villages is 298, and varies from 383 in the south to 249 in the north. Inhabited villages in the south are generally half as large again as in the north.

60. The total number of houses, including cow-sheds, stores, and other such buildings is 182,450 and of these 134,534 are dwelling—houses. The latter figure excludes, however the dwelling houses in the towns of Balasore and Bhadrak, which may amount to about 6,000. This gives an

Houses.

average of between six and seven persons to each dwelling-house. The number may be seemed large, but it is to be remembered that a dwelling—house is often of considerable extent, containing two or even three joint families, and, further, that the well-to-do raiyats frequently keep a servant who resides on his master's premises and has got house of his own.

The number need not therefore affect the estimate of the average number of persons in a family, which, including resident servants, is generally taken as between five and six. The average number of dwelling-houses in inhabited villages in the south is 57, and in the north 37; it has already been said that these villages are large in the south and they are also more thickly populated. Throughout the temporarily-settled portion of the district each inhabited village contains an average of 44 dwelling—houses to a population of 298 souls.

61. According to a rough census made in 1840 at the time of survey, the population amounted to 651,000. In 1865, before the famine, the figure was 732,280 and after the famine it was estimated at 485,113. If the estimate of mortality was correct, the population certainly recovered with extreme rapidity during the subsequent six years, for in 1872 it had reached the figure of 770,232.

Population.

During the next nine years the increase was 22 percent, and in 1881 the, population numbered 945,280. By 1891 it was 994,625, an increase of 5 percent and adding 3 percent for the last eight years, the present population may be estimated at 1,024,463.

The fact that since the famine of 1965-66 the population of the district has increased from 485,000 to one million marks an extraordinary power of recuperation. Taking the increase between 1865 and 1872, from 1872 to 1881, and from 1881 to 1891, we find that the percentages are 59,22, and 5, respectively, and it is not unnatural to draw the conclusion that at the present day the population has almost reached the limit which the land is capable of supporting. The 59 percent, increase in six years, though a small portion of it is due to the return of emigrant raiyats, exhibits * the rate at which, under circumstances admitting of free expansion, population may be expected to develop, but if the rate of increase from 1881 to 1891 was only 5 percent; it becomes necessary to consider to what cause the decrease is due.

* It is also not improbable that the figures of the census of 1865 were wrong.

It is obvious, in the first place, that after a large mortality and abandonment of cultivation the facility in obtaining land, and the reduction in the size of families by rendering subsistence a matter of much greater ease, encourage corresponding increase in population. As circumstances change and subsistence becomes more difficult there is a natural check to population, so long as the standard of comfort is not abandoned. But these reasons in themselves appear insufficient to account for the lower rate of increase, and as methods improperly called Malthusian are never resorted to by any except the educated classes, undoubtedly the further explanation required is found in the habit of emigration largely prevailing in the district.

62. Some note as to composition of the population at the census of 1881
Composition of the population. may be of interest—

Total population of			Musalmans	
1891	....	994,625	number	 24,250
Males	....	481,638	percentage	 2
Females	....	512,087	Buddhist, Christian— and others—	
Hindus			number	 1,164
number	969,211		percentage	 1
percentage	97			

Of the first six castes, Brahman, Baidya, Karan, Kayastha, Kshatriya, Khandait, which rank as high, only three are numerous—

Brahmans		119,289		12	} per cent. of the total population.
Karans	....	24,773	....	2	
Khandaits	....	185,852	....	18	

Of the intervening castes, most of which rank as *Hatua* or manual labourers—the following are most numerous—

Goura	....	73,463	Tanti	....	56,767
Bhandari	....	17,087	Goala	....	33,820
Guria	....	13,190	Kamar	....	11,194
Raju	....	40,750	Kumhar	....	11,248
Chasa	....	20,672	Dhoba	....	22,625
Teli	....	46,890	Rarhi	....	24,848
			Keuta	....	26,110

Amongst the low castes may be mentioned—

Gokha	....	27,147
Pan	....	54,319
Kadma	....	33,593

According to the census report the agricultural population numbered 750,607, or 75 per cent. of the total, and of these 299,000 were set down as actual cultivators

63. The present population of the District is, according to Mr. Kingsford's estimate, 1,024,463,¹ of which 908,733 are resident in the 1,712 square miles now under settlement. The largest thana, Soro, contains the largest population, viz, 212,000, while the smallest, Jaleswar, including its permanently settled areas contains 55,000. The density varies, in thanas entirely temporarily settled, from 635 to the square mile in Bhadrak to 404 in Basudebpur. The average density in the south is 572, in the north 499, and throughout the entire District 531.

That the density of population should have attained in one thana to the figure of 635 to the square mile, or one to the acre, may seem alarming. It is clear that under such circumstances the subsistence limit has been nearly reached. In 1793 the density in well-peopled districts of Bengal, including Bengal, Bihar, and what was then called Orissa but is now Midnapore, was estimated at 200² and the total population at 25,000,000. This had risen by 1882 to 60,000,000, and the density throughout Bengal rose, therefore, to 480, which is little less than the average for this District.

1. This does not quite agree with the estimate in paragraph 170, where I take the population at 1,080,000.

2. Leslie Brooke's Husbandry of Bengal, written in 1794.

64. The only towns worthy of the name are Balasore and Bhadrak, the former with a population of 21,000 and the latter of 16,000.

Balasore³ though it includes an extensive bazar, is in effect a collection of hamlets, and the area included within municipal limits is no less than 3,404 acres, or 5 square miles surveyed in 28 villages.

The town lies upon the right bank of the river Burabalong, about 15 miles from the mouth, though only 6 miles in a direct line from the sea. This was one of the earliest European Settlements in India, and its history presents some features of considerable interest. Popular tradition ascribes the derivation of the name to the Mahadeb Baneswar whose temple still stands in Purana Balasore. It is said that in the Dwapara Yuga, or third of the Hindu ages, a demon king named Banasura dwelt in the portion of the town now known as Sunahat⁴.

He established and named after himself the shrine of Baneswar, and it was his custom every morning to repair to this and to four other temples—Gorgareswar at Remna, Khajureswar near Sergarh, Bakreswar in the village of Bankeswar, and Mani Nageswar in Bardhampur—and after performance of his devotion to return to his palace by midday. Incredible as the performance of this daily journey of some 40 miles or as the very existence of the demon may appear, the survival of two great tanks lying near the site of the supposed palace of Banasura and the remains of the moat round the dwelling of his daughter, Usa' whose name still survives in that of the village Usamerha⁵ may go some way to convince the modern antiquarian of the authenticity of this mythological legend. However this may be, Balasore remained an insignificant village inhabited by fishermen and milkmen until the year 1642, when the British factory was established.

As early as 1514 the Portuguese had effected a settlement at the ancient port of Pipli on the Subarnarekha, 30 miles north of Balasore. The site is now lost, and the only of European colonisation is found in the name of the pargana Sahabunder⁶. In the beginning of the seventeenth century the Portuguese settlement was deserted, and in 1635 the first British factory in Bengal was established on its ruins under a *firma'n* of the Mogul Emperor Shahjehan. Five years later the patriotism of Dr. Broughton secured permission for the erection of a factory at Balasore, and the location of Pipli having proved inconvenient owing to the silting of the Subarnarekha, the little colony removed its quarters to what is now known as the village Barbati on the right banks of the Burabalong, a mile below the site of the modern town of Balasore.

The factory was protected on one side by the river and upon the other three by a deep moat, and a native village inhabited by the artisans and weavers who worked for the company sprang up rapidly around it. The trade at this time was in "Satran" a kind of coarse longcloth, and in muslin for the manufacture of which Orissa had early been famous. Though surrounded by strife and dangers, the colony continued its peaceful existence for upwards of a hundred and thirty years, and the only occasion when its security appears to have been menaced was in 1688. In that year, on the outbreak of hostilities between the British and the Mogul Emperor, when the company's servants removed in a body from the Hooghly to Balasore, the Governor of the town seized two factors as hostages, whereupon Captain Heath burned and blundered the town. But as early as the year 1700, the Burabalong, like all Orissa rivers, had commenced to silt at the mouth, and the passage of the bar gradually became more difficult. From 1751 the decline of the factory set in and it appears to have been ultimately abandoned before 1786. It was found in ruins when the British entered Balasore in 1803. The only traces of it now existing are the graveyard and a house in Barbati said to occupy the site of the old factory building. This house is now the residence of one Baidyanath Kar and was at one time the Collector's cutcherry, built by Mr. W. Blunt as Commissioner. The cemetery contains 33 graves with dates from 1634-86 * Little remains to be said as to the town itself. The residents include

3. The information given regarding the town is compiled mainly from a report submitted by Babu Abhoy Prasad Das, Assistant Settlement Officer, a resident of the town.

4. Properly "Sonita" the bloody, so-called after the fight between Banasura's men and his daughter's lover Pradyumna, the son of Krishna.

5. More properly Usa' berh, or the dwelling-place of Usa'.

6. Sahab-bunder, the Sahib's port.

* See paragraph 30 of Mr. Kingsford's Report, page 396 of the Appendices. Sri Henry Ricketts was buried in England and his body was not brought over, as Mr. Kingsford was informed, for interment in Balasore.

some of the leading zamindars, such as Raja Baikuntha Nath De Bahadur, Babu Raj Narayan Das, the Mandal family, and a considerable trading community, the importance and wealth of which is rapidly on the increase. Some of the merchants are Uriyas and Bengalis, but the majority are Musalmans, Madrasis, and men of Bombay. The *Telis* in particular are acquiring considerable local influence as large money-lenders.

The town is the headquarters of the District, and the administration includes a District Magistrate and Collector with three or four Deputies, an Executive Engineer, a District Superintendent of Police, a Civil Surgeon, who is also Health Officer of the town, a Munsif, three benches of Honorary Magistrates, and a Sub-Registrar. A proof range under control of an officer of Royal Engineers has lately been established at Chandipur, near the mouth of the Burabalong, and an office and other buildings in connection with it are in process of erection in the town.

There is a jail, a general hospital, a charitable dispensary, Roman Catholic Mission with a school and orphanage, and a settlement of Free-will Baptists from New Hampshire, U. S. Just outside municipal limits, to the west, are the quarters of a District and Assistant Railway Engineer, together with the new station buildings which are now approaching completion.

The railway bridge over the Burabalong was opened on the 9th May of the current year, and though in regard to size it does not compare with those of the Brahmini and Mahanadi in Cuttack, yet it has an importance of its own as an imposing structure, as the only bridge in the Province constructed over tidal waters, and as the visible sign of the commencement of what may prove a new era in the trade and material circumstances of the District.

The climate of the town is healthy, and, with the exception of cholera outbreaks before and after the rains, there is little sickness. The rainfall is large and has averaged 70 inches during the last five years. Opium-eating is properly described as the curse of the town, which has earned for itself an unenviable reputation for the abnormal quantity of the drug consumed. The lower classes especially regard it as a preventive of chill and fever, and men, women, and children alike look upon it as an item of their daily food.

It remains to notice Balasore as a port. At the commencement of the century it was the only one of which Orissa could boast, and though after the abandonment of the old settlement trade stagnated until the British entered the Province in 1803, the circumstances of the port subsequently rapidly improved.

In 1853 the sloops numbered 167, although 44 had been lost in the gale of 1851, and the trade was rapidly increasing. Between 1848 and 1852 the annual value of the imports rose from Rs. 83,000 to Rs. 1,01,000 and of the exports from Rs. 12,600 to Rs. 1,99,000, nearly the whole of the latter being rice and paddy.

The highest export figure was reached in 1850 when the amount was Rs. 3,49,000, and the subsequent falling off was attributable to the loss of shipping in the town. The manufacture of salt gave the chief impetus to trade, and with its abandonment there was a considerable decline. It is not necessary to deal further with the present trade than to note that in 1897-98 the total value of the exports was Rs. 12,96,350 and of the imports Rs. 16,25,561, and that since 1850 a new and valuable export trade has arisen in stoneware of "Muguni" quarried chiefly in Nilgiri.

65. The British was not the only factory at Balasore, for the French, Dutch and Danes also possessed settlements. The two Foreign settlements at Balasore. The two latter, known as Ulan sahi and Dinamardanga, were ceded to us in 1846, and are now held as khas mahals and leased to Raja Baikuntha Nath De. The area of each is 7 acres. The moat round the Dutch factory known as Ulan *nala* and the graveyard, containing two old-fashioned monuments are still in existence.

The French settlement was never ceded and still remains the territory of that Nation. It is under the authority of the Administrator-General at Chandernagore. I can not ascertain whether this factory, known as Frasdanga, was ever captured by the British; but the French certainly ceased to occupy it, and under the treaty of 1783 it was restored to them with their other factories, the restoration being actually made in 1786. The area at this time appears to have been 64

acres, which, according to the map of last settlement, had diminished to 43 acres. At the present Settlement an area of 169 acres was claimed as French territory, and Mr. Maddox was directed to enquire into the matter. He held the claim to be untenable, and his recommendation that the area should be limited to 38 acres, of which the French were actually in possession, was accepted by Government. (A considerable portion of the old area has been washed away by the river).

The lease of this French territory is disposed of annually by auction and generally fetches a considerable sum, the profits to the lessee from the Abkari revenue alone being Rs. 250 per annum. The lease realised as much as Rs. 925 in 1878, when it was purchased by the Mandal family, who were anxious to control the Frasdanga blacksmith's trade so as to hold a monopoly of it in their neighbouring bazaar. In the following year again it realised Rs. 462, the purchaser being desirous of establishing a monopoly in the liquor business of the town. The former lessee Raghunath Mahapatra made the position of both his successors so uncomfortable that neither afterwards came forward, and he purchased the lease himself 1880 for Rs. 100. It has since passed into the hands of Raja Baikunth Nath De.

The existence of Frasdanga has been a fruitful source of trouble to the British authorities. Resort to it was at one time habitually made for the purpose of disposing of stolen goods, and for other criminal purposes, and in 1893 a criminal case which attracted some notoriety was brought by Raghunath Mahapatra against the lessee on the charge of kidnapping him out of British India. All three settlements were centres for this illicit traffic in opium during the early part of the century, and the drug was smuggled into British territory in large quantities.

66. This is the head-quarters of the southern sub-division, and lies on the bank of the Salandi at the 43rd mile of the Trunk Road below Balasore.

Bhadrak.*

It consists of a group of hamlets covering an area of some 3 square miles, and contains a population of 16,000, of which 75 per cent. are Musalmans. The town contains two quarters, the Naya bazaar on the right bank of the Salandi and the Purana bazaar on the left. The former is situated near the Trunk Road, and contains numerous lodging houses for travellers, for suitors in the courts, and for the clerks and muharrirs in Government employ.

Provisions are the chief commodities sold in this bazaar, though a short time ago some Bengali merchants opened shops for the sale of tobacco and piece-goods. The real centre of trade is, however, the Purana bazaar, where the Musalman element is strongest. The mahajans, zamindars and merchants reside here, and Messrs. Turner, Morrison and Co., have a store for the sale of Liverpool salt and petroleum. Another business for the sale of Madras salt has lately been opened up by a company for which Messrs. Macneil and Co. are the local agents.

In addition to the stores and shops there are two markets held weekly upon Wednesdays and Saturdays. Some description of these will be found under that heading, † but it may be noted here that the Wednesday market is the most important in the District, and that sales of cattle, timber and fuel take place there to a large extent.

The following are the principle articles of trade :—

Rice and paddy are purchased during the five months following the *sarad* harvest by Bombay Nacoda merchants either from the local rice dealers or through agents who visit the smaller market.

Salt—Imported by merchant to a small extent from Calcutta. The chief business is done by Messrs. Turner, Morrison and Co., who, in the year ending March 1899, sold 35,191 maunds, value one-and-a-quarter lakhs of rupees, at Rs. 3-10-6 per maund.

I believe the above firm is likely to be supplemented by the new agency already referred to, since the Madras salt can be put on the market at a cheaper rate than the Liverpool article.

Kerosine Oil—The sales of the smaller marchants amount to an annual total of Rs. 5,000. The largest importers are, however, Messrs. Turner, Morrison and Co., who sold last year 7,536 cases at Rs. 3-11 per case; total value Rs. 27,600.

* This paragraph is written from information supplied by Baleu Harakrishna Mahanti, Assistant Settlement Officer.

† Paragraph 67

Cotton—There are four merchants who import English cotton-piece goods from Calcutta to the total value of one-and-a-quarter lakhs of rupees annually.

Cattle—Sheik Iman and some five other Musalman merchants purchase cattle at the local markets of Bhadrak, Dhusuri Ramchandrapur, and Duhal to the number of about 9,000 annually. Taking Rs. 10 as average, the value of the trade amounts to Rs. 9,000. The cattle are sent by the Trunk Road to Midnapur, where some of them are purchased as plough oxen, but most go to Calcutta and further north where they supply the meat markets.

Hides—Golab Khan and half a dozen others control the trade, and the value of the export is about Rs. 72,000 per annum. The hides are sent to Calcutta, a few by Balasore; but most by Chandbali.

Yarns—English and Bengal twist for the manufacture of local cloth is imported to the annual value of Rs. 23,000. *Turmeric, chillies, sugar* and *cocoanuts* are imported by steamer from Cuttack by three Marwaris and by other local traders. The sugar is in the form of molasses, and *kanda*. The same merchants export resin and tamarind to Cuttack.

Betelnut, spices, wheaten flour, refined sugar, potatoes, and plantains are imported, to the annual value of Rs. 10,000, from Calcutta *via* Chandabali by Sankar Sahu and others. A small quantity of potatoes and betelnuts also comes from Cuttack.

Ghi is brought from the grazing grounds of pargana Ankura, and some is exported to Calcutta and Midnapore.

Though living in the town is dear and a proverbial saying runs that fuel costs a pice for half a seer, the towns people are prosperous, and even the beggars have lands*. There are very respectable resident Musalman families, and they are careful to maintain a position and social observances which distinguish them from the ordinary Mahomedan community in the mufassal. The climate is considered superior to that of Balasore but there are severe outbreak of cholera in the season preceding the rains.

67. The number of markets in the temporarily-settled portion of the District is 59, and particulars of area, position, assessment and of the commodities ordinarily sold at each will be found in the Appendix referred to.

Many of the markets are situated on *bahal*, and the most important of all, that of Bhadrak, on *bazyafiti* land. The total assessment imposed on the zamindar in whose estates markets lie amounts to Rs. 783, and it was fixed as a ground rent varying from Rs 1-3 to Re. 210 per acre.

Though, with a few exceptions, they are not of great size, they are well distributed for the supply of local wants and as centres where grain collects for export. It is likely that, in the course of the next few years, markets of considerable size will spring up in proximity to the railway stations, and some that now exist in less convenient situations will decline.

The commodities ordinarily exhibited for sale include cottons of local and English manufacture, brass and bell-metal utensils and ornaments, kerosine oil, provisions of all sorts, such as paddy, rice, salt, spices, molasses, dried fish, vegetables, *dal*, fruits, fresh fish, castor and mustard oil, grain, confectionery, fried rice, milk and *pa'n* for chewing, earthenware pottery, blacksmiths-ware, mats, brooms, fuel, cheap finery, hair oil, mirrors, combs, soap, needles, pins, tobacco, *sa'l* leaves, scrap-iron, cotton, thread, string, rope, and small utensils and lamps made of tin.

At markets of a larger size there is often a trade in special articles including cattle, timber, charcoal, yarn, tamarind, resin, druge (opium, *bhang* and *ganja*) medicines, *ghi, tari* and Uriya books and tracts sold by the missionaries.

In the cold season Kabuli pedlars sell warm cloths of various descriptions. The regular shop-keepers do a lucrative trade, and make a profit from 50 to 100 per cent.

From noon till 9 O' clock at night the Uriya market presents a busy scene. The traders set out their wares each in his appointed place. The drummer and

* One of these professional beggars on receiving a dole of rice from an Assistant Settlement Officer in the town proceeded to urge some grievance with reference to the assessment of his *thani* holding.

flute-blower make music at every shop in turn and receive a few pies or a small article exposed for sale. The sweeper collects a similar contribution. The village postman attends to deliver letters, and the zamindar's peons to press the raiyats for their rents. People, women predominating, flock in with rice or fish for sale and to make purchases for the weekly family wants. The *dandidar*, or weigher appointed to supervise the markets, goes round to receive his commission on the sales or to give his opinion in the rates to prevail for the day. The gomasta, of the zamindar, or of the the *ijardar* who has taken a lease of the market, collects his fees (*tola*) in kind or cash, or some times a stipulated annual rent from every shop. The money changer exhibits piles of small coins and cowries and a shop keeper may be seen bartering his good in exchange for some articles of domestic requirements.

In the north of the district the three markets of most importance are Singla in Nangleswar, Deula in Bhograi, and Shahaji in Remna near Balasore. The average attendance at these is probably seven or eight hundred, and people come to them from a distance of 10 or 12 miles.

The two daily markets of Balasore town are entitled to some notice. The more important is that in the centre of the town, belonging jointly to the zamindars of the Mandal family, Babu Rasik Charan De and Babu Dolgobinda Ghose.

The market contains some brick buildings erected by the Mandals, and these are occupied by the fish and vegetable sellers. The Mandals are proprietors of the fishery estate in the river Burabalong, and have shown some enterprise and business capacity in providing the fishermen with means for disposing of their catch.

Vegetables from Remna and the villages near the town, sea-fish from Chandipur on the coast, seasonable fruits, including pineapples, guavas, plantains and a species of orange from the *Garhjats*, are daily brought for sale, and at the bi-weekly market there is a trade in brass and bell metal ornaments and utensils, and in cloth which is largely, purchased by Santhali women from the *Garhjats*. At the approach of the rains *chamars* bring umbrellas, hats and *pakhias** of palm-leaf and bamboo.

The markets are let out to contractor, who collect fees generally half a pice per day, from the sellers. The shops are paid for at from Re. 1-8 to Rs. 2-8 a month. The lessee of the vegetable markets pays a rent of Rs. 25 per month, and Rs. 15 a month is paid by the *ijaradar* of the fish market. The market is capable of improvement and requires a supply of drinking water. It is under the control of the Municipality, which levies a quarterly tax of Rs. 35.

The other market is situated on the Trunk Road and was constituted as a *sarai* for travellers. The trade is in provisions only. It is let out annually by the Municipality by auction, and the rent now realised is Rs. 106. It contains lodgings for travellers and suitors in the Courts, but with the advent of the Railway its importance as a *sarai* for travellers is declining. The lodgings are now occupied by Railway contractors and coolies.

In the south may be mentioned Chandbali Jamjhari on the Trunk Road between Soro and Bhadrak and Turigaria in Mangalpur; but the most important of all is that of Bhadrak known as Esafpur.

This consists, in fact, of two markets, one of which is situated on *bazyafiti* land and the other on that of Babu Radhakanta Rai Mahasoy, Zamindar. The latter has been lately established and has attracted much of the trade of the older market.

The specialities of the old market are timber and cattle; the yearly sales of the latter averaging 6,500, value of Rs. 39,000, which gives a price of Rs. 6 per head. Each purchaser pays to the *ijaradar* a fee of 3 pies per rupee, while the sellers pay a similar amount per head of cattle and the total fees derived amount to Rs. 700. Various portions of the markets are let out annually to *ijaradars*, the leases being disposed of by auction.

The fee levied on the sale of timber varies from 1½ to 6 pies according to size, and the annual amount paid by the *ijaradars* of this portion was found to be Rs. 120/-. The income derived from shops is Rs. 700. The total annual sum realised by the *bazyafitidar* after deductions of the *ijaradars*' profits on cattle and miscellaneous shops, probably does not fall short of Rs. 1000. †

* A shade of palm-leaves to protect the head and back from sun and rain.

† Particulars obtained from an enquiry by Babu Prasanna Kumar Banerjee, Assistant Settlement Officer.

68. The tendency of Balasore rivers to silt at their mouths has been fatal to the stability of almost every port in the district. It was on this account that Pipli was abandoned in 1642, and the same cause led to the decay of Balasore during the last century.

In the Year 1871 there were said to be seven principal ports—Subarnarekha, Sartha, Chhauna, Balasore, Laichanpur, Churamon, and Dhamra (including Chandbali). Owing to the silting up of the river mouths and to the construction of the Coast Canal which facilitated the silting while it also provided a new waterway, and to the abandonment of the salt manufacture, some of these have ceased to exist, while the position of others has been changed. Thus Subarnarekha is now represented by Batanga and Mandhata on the coast Canal and Barbatia on the Gochida river. Panchpara has taken the place of Sartha; Chauna, Laichanpur and Churamon* have ceased to exist. A new port has formed at Baliapal on the Matai river, and Chandbali has absorbed the trade of the old port of Dhamra situated 15 miles lower down the river at the confluence of the Matai.

Some account may now be given of the seven existing ports, in the order of their importance, with the exception of Balasore which has been already treated of as a town.

The establishment of this port is due to the enterprise of Captain Macneil, who, thirty years ago, sailed up the Dhamra with Mr. Ravenshaw, Commissioner of Orissa, with the intention of discovering a suitable site. Chandbali, which was then a small village occupied by a few fishermen's huts, was found to combine the advantages of high position free from all risks of inundation, and sufficient depth of water in immediate proximity to the river bank. Captain Macneil immediately obtained a lease of a small area of land by arrangement with the zamindar.

Subsequently Government, recognising the advantages of the site, acquired an area of 179 acres, which now forms the Chandbali Khas Mahal and includes the lands leased by Captain Macneil. These eventually passed into the hands of the India General Steam Navigation Co. and Messrs. Macneil and Co., to whom the leases were first granted by Government in 1877.

The area held by the two companies now amounts to 12 acres and, besides offices and ware-houses, contains a flourishing bazar which occupies one-third of the area. The tenants of the companies pay rents amounting to Rs. 2,500, and the rents payable by the companies under the leases lately granted amount to Rs. 168.

Chandabali lies on the north bank of the Baitarani river some 8 miles west of its confluence with the Brahmani and 20 miles from the mouth. It is connected with the interior by the river Natai, the Bharak road, and various tidal creeks. The river frontage area is small and contains chiefly the companies' warehouses, bazar and lodging houses. At the divergence of the Bhadrak road there is a second bazar and a flourishing market.

Mandhatta is situated on the Coast Canal a short distance above the crossing of the river Haskura. This port has been in existence but a few years, and is of growing importance.

A bazar including a number of stores has been established, and rice and paddy together with a small quantity of *birhi* from Singla market are collected by the merchants for export to Calcutta in country boats by the canal. The total value of the exports amounts to about Rs. 90,000. The imports include the usual items—English cloths, English and Bengali yarn, betelnut, spices, kerosine oil, potatoes, and turmeric, and the total value amounts to Rs. 70,000.

Baliapal on the river Matia near Karanjaria bungalow affords a trade centre for pargana Ankura and part of *killi* Kanika. The chief export is rice which, to the annual value of a lakh of rupees, is despatched in sloops to Calcutta, Madras, and to the Laccadives and Maldives.

Barbatia on the Gochida river, a tributary of the Subarnarekha, exports rice paddy and mats to Calcutta in country boats by the canal, and also in small

* Once a centre of salt and rice export. The zamindars in 1832 levied a tax of Rs 578 on the export of rice alone.

sloops by sea. The value of the exports amount to less than a lakh and the imports include the customary articles, but are chiefly oil and cloths.

Batanga is situated on the Coast Canal some 6 miles north of Bhograi lock and not far from Deula market. Some Bombay merchants have established stores here and export rice, to the value of about half a lakh of rupees, *via* the Coast Canal to Calcutta whence it is sent to Bombay.

Other centres from which a small export trade is carried on, but which are hardly worthy of the name of ports, are Talpada, Inchuri, and other places along the Coast Canal, where, perhaps, a single trader has established himself. At Churakhai, on a tidal creek communicating with the Panchpara river and adjoining the Trunk road 12 miles north of Balasore, is a warehouse belonging to a Contai merchant, whence country boats laden with rice travel down into the Coast Canal and so to Calcutta, returning with oil and other commodities.

A similar centre in Panchrukhi on a tidal creek connecting with the Subarnarekha near Jamkunda. There are two stores here, and rice is exported to Calcutta.

Soil.

69. Lands are ordinarily of three classes—

- (1) *Jala* or rice lands.
- (2) *Pal* or riverside lands enriched with silt deposit. These grow tobacco, cotton, *rabi* crops, and best paddy.
- (3) *Kala*, the high lands of the homestead, which generally grow vegetables. These are constantly enriched by manure and refuse of all kinds, and are locally known as *bazefasal* or capable of growing every description of crop.

Soils are further distinguished as *Matial*, which includes a large proportion of clay and grows *biali*, *sarad*, sugarcane, *kulthi*, and other *rabi* crops.

Dorasa, a mixture of clay and sand; grows *biali* and *sarad*, rice, sugarcane, *kulthi*, and other *rabi* crops.

Baliara, sandy soil; grows *sarad* rice.

Chikta Matial, adhesive clay; grows *sarad* rice

Two further classifications under which all lands fall are—

Dangar, upland soil; grows *sarad*.

Gahir, low land soil; grows *sarad* and *dalua*.

Lands growing *sarad* are generally classed according to their situation. The first class or *aul* includes all soils which retain moisture up to the time when the ear is fully ripe. Homestead and alluvial lands also rank under this class on account of their special fertility.

The second class or *doem* includes the medium level soils which only retain moisture up to September. Inferior and sandy soils rank under the third class or *soem*. There also exists a fourth class, and sometimes a fifth and sixth.

70. Mr. N. N. Banerjee in his report on the Agriculture of Cuttack has given on this subject a quantity of information which is equally applicable to this district, and I shall therefore treat the subject as shortly as possible. Paddy is the principal crop and includes three distinct classes—*sarad*, *biali*, and *dalua*.

Of the 7,76,000 acres of cropped land in the area under settlement of rents no less than 7,08,000 or 91 per cent. are under *sarad* rice. Three descriptions are recognised—*asu* grown on high lands, *kanda* grown on land of mean level, and *garu* grown on low lands. On the higher level the crop is sown broadcast, but in the low lands, especially in parganas Ankura, Bhera, Kaima, and Bayang, it is transplanted because in such parts the water gathers more quickly, and would wash away the seeds or drown the early seedlings. But transplantation is also resorted to for a better crop, since only the strongest seedlings are planted and the better class of raiyats passes *talha is*, plots of good high land, generally within their homestead and specially reserved for growing the paddy for transplantation. A quarter of an acre of *talhati* suffices for the transplantation of four times that area. The transplanted crop is expected to yield from one to five maunds in excess of that sown broadcast.

The sowing is the work of May or June according as the rain is early or late. *Asu* is reaped in August or September, *kanda* is September and October, and

* See appendix F. The estimates in the paragraphs are Mr. Kingsford's and do not always agree with those in Chapter VI.

garu from November to January. The yield is from 10 maunds of paddy to the acre in the unfertile tracts, such as Ambohatta, to 30 maunds in the best reverside lands on the Burabalong below Balasore, on the virgin soil of the reclaimed lands by the Subarnarekha, and in some parts of Ankura. The greater part of the district yields an average of 18 maunds in fair seasons; but taking good and bad lands alike, and with due regard to the floods and drought to which the country is periodically subjected, the average outturn is estimated to be very little more than 15 maunds. Excluding experiments not worthy of credit on the jail lands in the Balasore town, and excluding also those of the Public Works Department which are taken on one twenty-fifth of an acre, and that the best portion of the best field, I found that experimental cuttings gave an average of 20 maunds of paddy and 22 maunds straw per acre.

Biali rice is grown in small quantities, but in almost every part of the district. The average area under this crop is 5,400 acres or not a hundredth part of that under *sarad*. It is sown upon high lands in the month of May, and reaped in August and September. Being thus an early crop, although the cost of raising it is high and 50 seers of seed are requisite for an acre, it is grown on a portion of his holding by the tenant who has no store of rice or who is being pressed by his landlord for payment of rent. The yield is 10 or 12 maunds of paddy to the acre.

Dahua—The area shown under this crop is only 8000 acres, but varies considerably from year to year. There is little ground suitable for its cultivation, for it requires a low level and facilities of irrigation. Sown, or more commonly transplanted, in December and January, it is harvested in April and May, and the field is from 8 to 12 maunds. The crop is scarcely grown except in Dhamnagar, Bayang, Senaut, and Bhera in the south of the district, and though the normal area under it is small, it is largely sown after a failure of the *sarad* rice. Thus after the drought of 1895, when the *sarad* crop was destroyed, no less than 2,000 acres were put under irrigation from the high level canal, and the area irrigated from other sources was probably as great.

Other food-grains grown include *mug*, *birhi*, *Kulthi*, *chana*, *arhar*, all of which are pulses, *make* (maize) and *barguri*, a description of bean, but which may rank as a pulse. The total area under these crops is only 8,000 acres; they are generally grown on twice-cropped lands, and are named in the order of their importance.

Mug is of three kinds—*dhala*, *kala*, and *jai*, the latter being in the greatest demand on account of its superior flavour. It is sown broadcast in August and September and reaped in December and January, the average outturn being from 2½ to 3½ maunds. It is eaten as *dal*.

Birhi is similar to *Mug*, and is sown broadcast during the rains.

Kulthi, grown chiefly in Senaut, Randia Orgora, and Dhamnagar is sown in November and cut in February. It is the cheapest of the *rabi* crops, and is commonly eaten as *dal* by the poorer classes.

Chana is sown in August and September and reaped in December. It is eaten as *dal*.

Arhar is sown in June on *kala* lands and reaped in December. The plants grow to a considerable height.

Maka is a crop grown in homesteads only. It is sown in July, and in September; the cobs are plucked and eaten fried. It is chiefly produced in Senaut, Kundi, and Sahabunder.

Barguri is very similar to *chana*. It is eaten as *dal* and is also used for the preparation of sweetmeats.

Oilseeds, include mustard (*sarisa*), castor oil (*gaba*) linseed (*tisi*), and sesamum (*til*), and the area covered by these crops is 600 acres. Mustard is sown broadcast on *pal* lands and in homesteads during October and November and reaped in February. It is grown chiefly in Senaut, Sahabunder, Bhograi, Kundi, Phulwar, and Sunhat. Generally a tenant puts only a few *gunths** under this crop, and the yield is about 10 seers per *gunth*. Mustard oil is used for cooking purposes and by the better classes for anointing the body after bathing. Four seers of seed yield one of oil.

* One twenty-fifth of an acre.

The castor oil plant is grown in similar fashion, it prefers a dry soil, and requires water only when the fruit is ripened. The yield is about 3 maunds per acre, and a maund of seed will yield seers of oil. The oil is cheaper than that of mustard, and is used by the poorer classes for the same purposes.

Spices, including coriander seed, (*dhania*, *Joani* * and aniseed *panamohure*) cover an area of about 100 acres and are grown on *pal* lands or in homesteads, being sown broadcast in November, and reaped in February.

Miscellaneous crops.

Sugarcane—The area is recorded as less than 500 acres, but this figure does not represent actual facts. The crop is chiefly grown in Dhamnagar under irrigation from the High Level Canal, and no less than 500 acres were irrigated this year in the pargana named. The acreage now under sugarcane may be estimated at 700 acres. The two varieties are *kantari* and *bansia*, the former of which gives a better yield. The crop needs careful attention and a plentiful supply of water. The cuttings are planted in rows during January and February, and the crop is reaped in October and November. The cane is crushed in wooden mills worked by oxen, and the process of extracting the *gur* is a wasteful one.

At Bhadrak there are also some fifteen or twenty mills of a more modern make, which are let out to the cultivators. The yield of *gur* is from 25 to 60 maunds per acre, value Rs. 125 to Rs. 300 at Rs. 5 per maund; but the cost of cultivation † is Rs. 60 or Rs. 70 per acre and the crop is, therefore, not to be grown except by well-to-do raiyats who can afford the expenditure of capital. Moreover, the crop is thought to exhaust the soil, and the same land is not put under cane for more than two consecutive years, after which it lies fallow another year.

Cotton and jute cover 200 acres. The latter is grown in small quantities throughout the district, and generally in homestead lands. In the north it is found most frequently on the bank of the Subarnarekha. Of cotton the two varieties are *bara* and *chota*. The former is grown on homestead land and attains a height of 7 or 8 feet, yielding a crop for several years. The latter is grown on riverside lands, the seeds being mixed with cowdung and sown broadcast during November. The harvest is taken during April, and the yield to the acre is about a maund of cleaned cotton which may sell from Rs. 20.

Tobacco is grown upon some 20 acres of riverside lands in Dhamnagar and Senaut, and the yield is said to be 8 maunds, which may be value at Rs. 160. The cost of cultivation does not exceed Rs. 60 per acre.

Pân, or betel leaf, is grown on 120 acres, chiefly in Bhograi, where, however, the area has decreased since last Settlement. One village, Kalyani produces the crop in the centre of the district, and some is grown in the neighbourhood of Bhadrak. The plant is a creeper grown on a raised garden, one or two *gunths* in size, carefully fenced in and covered with a thatched roof. About 6,000 plants grow on a garden of two *gunths* and the leaves are thrown out in pairs at regular intervals, about four being plucked from each stem every month.

The leaves sell at an average price of 1,500 per rupee and the value of the yearly out turn is Rs. 190; the expenditure is Rs. 50 † and the profit is therefore Rs. 140. The average life of a garden is eighteen years. The cultivation is in the hands of a special caste, the *Baraji* or *Bauri* of Bengal.

Inkar covers an area of 100 acres. This is a reed generally found growing on wet lands in the vicinity of *pân* gardens, and is used in thatching the outer fence and as a support for the plant.

Miscellaneous vegetables are largely grown on the homestead lands which cover an area of 41,700 acres. An area of 1,300 acres is shown under *Brinjal*, and other vegetables, include pumpkin (*boital*), cucumber (*phuti* and *Kakuri*) and melon (*tarbuj*).

These are grown most largely in Remna, Phulwar, and Kundi, for the supply of the Balasore market, and in Randia Orgara, Senaut and Dhamnagar, for that of Bhadrak.

* I do not know what the name is.

† Mr. Arnott makes it Rs. 218.

‡ See Paragraph 154.