

Surveyor-General to have been Rs. 9,19,955, of which details are given in the following statement :—

Statement showing the cost of cadastral survey in Orissa.

DISTRICT.	Season of Survey	COST, IN RUPEES, OF —					Total.	Remarks.
		Traver- sing.	Demar- cation	Cadastral survey.	Record writing.	Badar correction.		
1	2	3	4	5	6	7	8	9
Puri	1889-95	64,904	....	1,26,315	33,158	.....	2,24,377	Exclusive of Rs. 2,507 expended on standard maps and Rs. 4,862 expended on 2-inch topographical survey.
Cuttack	1889-95	94,843	1,220	2,11,936	1,01,326	.....	4,09,325	Exclusive of Rs. 2,304 expended on standard maps and Rs. 18,662 expended on 2-inch topographical survey.
Balasore	1890-95	64,164	2,027	1,53,515	54,787	.....	2,74,493	Exclusive of Rs. 5,603 expended on 2-inch topographical survey.
Orissa and Khurda....	1896-1900	.....	.....	.....	.....	11,760	11,760	
Total ...	.....	2,23,911	3,247	4,91,766	1,89,271	11,760	9,19,955	

N. B.—The figures in this statement are exclusive of the cost of revision of Cuttack Irrigation Survey of 1878-79 (Rs. 23,146) and of 4 per cent. for the cost of instruments.

Deducting Rs. 35,355, the cost of survey in the Ekhradjats, Aul, Darpan, and Madhupur, and adding Rs. 23,146 for revision survey in Cuttack, the cost of survey of the temporarily-settled and revenue-free lands in Cuttack, Balasore, and Puri *sadar* is Rs. 9,07,746.

The area surveyed for this sum is about, 4,797 square miles, giving an average cost of Rs. 181 per square mile for the cadastrally-surveyed area.

624. The total expenditure from the beginning of the operations up to date is shown in the returns as Rs. 23,45,426. This includes all actual disbursements, but there still remain to be added certain charges on account of supervision, pension charges, cost of tents, forms and stationery, that cannot at present be calculated. Some deductions, too, may be hereafter made on account of process and other fees received and paid into the treasury, for the proceeds of sales of old stationery and furniture, and for court-fee stamps. With this proviso I proceeded to show on what account the expenditure has been incurred; and first as to the division by local areas.

Besides the settlement of the temporarily-settled Parganas, the above figures includes the cost of settlement of the Khurda *khas mahal* which has formed the subject of a separate report; of the temple or *ekhrajat* lands in Puri, which has been made at the cost of the Superintendent of the Temple; of Aul and Darpan, which have been made partly at the expense of Government and partly at that of the proprietors, the question of the ultimate division of the cost being still under consideration; of the small Village of Uparabast, paid for by the proprietor; and of Jamuna Jharpara, which is to be paid for by the landlord or tenants; and also of the Ward's estate of Madhupur, paid for by the Court of Wards; as well as of the revenue-free and *khandaiti* villages within the sub-division of Khurda.

These items are, however, shown separately, and I have calculated the cost of settlement in the Puri and Balasore Districts, basing my estimates on the figures supplied by Mr. H. Mc. Pherson and Mr. Kingsford. These figures were really too low, for they did not include the proportionate share of the expenditure

of the head office in Cuttack, for which about half a lakh has been added to either district, a corresponding deducting being made from the Cuttack figures :—

YEAR	Cuttack.	Puri.	Khurda	Balasore	Ekhraraj	Ant and Darpan	Madhu-pur.	Uparbast and Jamuna Jharpara.	Bhubanes-war and revenue-free and Khandait tenures of Puri.	Total.
1	2	3	4	5	6	7	8	9	10	11
Up to 31st Sep-tember, 1891 ..	Rs. 11,367	Rs. 33,902	Rs.	Rs. 330	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. 45,599
1891-92 ..	46,420	1,54,931	....	2,707	....	3,974	....	....	....	2,08,032
1892-93 ..	1,42,967	7,564	....	27,481	....	7,749	1,848	....	....	1,87,609
1893-94 ..	1,26,738	145	....	37,022	....	2,372	5,726	....	....	1,72,003
1894-95 ..	1,06,395	....	....	83,207	....	1,687	2,103	....	....	1,93,392
895-96 ..	1,40,739	54,965	18,576	90,099	5,233	....	....	....	....	3,09,962
1896-97 ..	2,20,976	98,115	86,000	1,21,487	812	....	....	....	....	5,28,190
897-98 ..	1,87,210	50,000	33,655	1,06,505	....	....	9,576	....	....	3,86,946
1898-99 ..	1,63,095	15,578	1,775	66,583	13,120	5,191	....	864	3,926	2,76,132
1899-1900 January ..	27,810	890	....	3,145	3,732	1,984	....	....	....	37,561
Total ..	11,73,767	4,10,890	1,40,366	5,38,566	30,584	21,270	19,253	864	3,926	23,45,423
Adjusting cost of supervision.	10,73,767	4,60,890	1,40,306	5,88,566	30,584	21,270	19,253	864	3,926	23,45,426

625. The total cost may approximately, as regards the stages of the work in the temporarily-settled areas, be divided as follows over the three districts :—

	Cuttack Rs.	Puri Rs.	Balasore Rs.	Total Rs.
Inspection of <i>Khanapuri</i>	75,000	40,000	33,000	1,48,000
Attestation	4,80,000	2,05,000	1,80,000	8,65,000
Settlement of rents	1,86,000	58,000	1,01,000	3,45,000
Case-work, etc.	61,000	15,000	50,000	1,26,000
Assessment of Revenue	1,90,000	38,000	67,000	2,95,000
Miscellaneous Total	1,82,000	60,000	1,08,000	3,50,000
Total	11,74,000	4,16,000	5,39,000	21,29,000

The first item is a comparatively small one, and includes only the share of the *khanapuri* expenditure met from the settlement budget, and consists chiefly of the pay of the head office and of the *khanapuri* officers.

Under attestation I have included both the expenditure on the original attestation and that incurred in re-attesting and preparing the records for settlement of rents. The expenditure is lightest in Balasore, where very little work had to be re-done, while in Cuttack it is swelled by the inclusion of about 1½ lakhs on account of the pay of the Settlement Officer and his office. Settlement of rents explains itself; the cost is lower in Puri than in the other districts, partly because a larger share of the expenditure of 1896-1898 has been debited to re-attestation, and partly because the officers employed in Puri were on the whole lower paid. Most of the pay of the head office and of the Assistant Settlement Officers in charge during 1896 and 1897, *i. e.*, about one lakh, is debited to this head.

Case-work covers all the expenditure incurred during the period of draft publication on the disposal of objections and the trial of suits under section 106. It was lowest in Puri because draft publication followed very promptly on re-attestation, and the people appear, moreover, to have been backward in filing objections. It was highest in Balasore owing to the large crop of cases, especially in the neighbourhood of Balasore town.

Settlement of Revenue includes the expenditure incurred in writing completion reports for over 6,000 estates, for disposing of the proprietors' objections and taking *kabuliyats*, and includes most of the pay of the Settlement Officer and the Assistant Settlement Officers in charge for 1897-98 and 1898-99. Under "Miscellaneous," come the cost of copying the record-of-rights (about 1½ lakhs), of revising the proofs of the new survey maps and of re-numbering villages (about Rs. 10,000), of preparing *milan khasras* and other statistical statements, of miscellaneous enquiries such as those into the effects of irrigation and protection, of the handing over and destruction of records and of the writing of the final report; including a share of the expenditure of the head office and a large part of my own and Mr. Webster and Mr. Kingsford's pay during the last year.

626. Taking the area as before at 4,797 square miles, the average cost of the principal stages of the work is as follows :—

Incidence of cost.

Stage		Per square mile (in rupees)	Per acre (in annas)
<i>Khanapuri</i>	....	30.8	.77
Attestation	....	180.3	4.51
Settlement of rents	....	71.9	1.80
Case-work	....	26.3	.66
Assessment of Revenue.*	....	71.1	1.77
Others	....	72.9	1.82
Total cost of Settlement	....	453.3	11.33

* Calculated on the temporarily-settled area of 4,150 square miles, i.e., excluding revenue free areas, Chilka Lake, Government lands, etc.

The expenditure on survey has already been estimated at Rs. 181 per square mile, or 2.96 annas per acre. Thus the total cost of the operations in the temporarily-settled area works out to 14.29 annas per acre.

S. L. Maddox.
Settlement Officer.

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, BENGAL.

No. 1549S.

From

P. C. Lyon, Esq. I. C. S., *Director of the Department of Land Records and Agriculture, Bengal.*

To

The Secretary to the Board of Revenue, L. P.

Dated Calcutta, the 24th July, 1900.

Sir,

I have the honour to submit herewith, for the orders of the Board and of Government, the Final Report of the Settlement of the Province of Orissa by Mr. S. L. Maddox, I. C. S., together with the volume of appendices attached to it, and the maps which have been prepared to illustrate it. The report, which has not as yet been finally printed off, was submitted to me by Mr. Maddox just before he left India on furlough in March last, but will not be ready for publication in its finally corrected form for some few weeks to come.

2. The report is voluminous and is complete in every respect, such information as could not be included in the body of the report being given in full in the appendices.

Introductory.
Unlike most other temporarily-settled areas in India, the Province of Orissa had not known settlement operations for sixty years, and this circumstance alone, while adding greatly to the difficulty and the cost of the present proceedings, has rendered it necessary to summarise, as far as possible, in the Final Report the considerable changes that have taken place during the currency of the expiring settlement, and to present to Government a complete and exhaustive review of the economic condition of the Province. It is true that the late Sir William Hunter and Mr. George Toynbee have in recent years written at length on the history and circumstances of Orissa, but the present settlement proceedings have in themselves contributed so much new material for the illustration of the subject, that the existence of their works has not absolved Mr. Maddox from the duty of dealing very fully with the subject before him. The Final Report now submitted is a veritable Encyclopaedia of the Province, dealing with its history, its peoples, its agriculture and its material prosperity, while detailing at the same time the fiscal history of the temporarily-settled areas under settlement, the proceeding undertaken for their resettlement, and the results of those proceedings, both as they have affected Government and the people.

3. The following is the general arrangement of the report, which is divided into six parts. The first of these contains physical and statistical accounts of each of the three districts of Cuttack, Balasore and Puri; the second deals with agriculture, irrigation and the material condition of the people; the third is mainly historical, but combines with the fiscal history of the Province an exhaustive account of the various tenures upon which land is held within it; the fourth deals with the procedure adopted in the course of the various stages of the recent settlement proceedings; the fifth summarises the results of those proceedings, and the sixth gives an account of the revenue-free and other areas excluded from the present settlement, concluding with a brief chapter on the cost of the operations. The appendices to the report consist of a reprint of the most important correspondence connected with the settlement, a collection of the various rules under which the operations were conducted, some thirty-eight statistical and descriptive statements illustrating the report, and the detailed reports on the districts of Puri and Balasore, written by Mr. H. McPherson, I. C. S., and Mr. D. H. Kingsford, I. C. S., respectively. While it was not, perhaps, wholly necessary that these two latter reports should be reproduced, they are of considerable value in themselves, and

Arrangement of
the report.

it would have been a matter for regret had they been left unpublished. A perusal of the report will also show that Mr. Maddox has not been able to avoid some repetition, the subjects allotted to different sections of the report being in some cases so nearly allied as to render this inevitable; but such repetition as there is has served to make each separate part of the report complete in itself, and is for that reason the less to be deprecated.

4. It is unnecessary for me to deal at any length with the subjects treated in the earlier chapters of the report. The interesting paragraphs, in the Chapters containing physical accounts of Cuttack and Puri, which deal with the question of embankments, especially those which relate to the districts of Puri will be doubtless commended by Government to the special attention of the Public Works Department, and the effect that the escape of flood water through certain breaches in those embankments has had on the material prosperity and revenues of some of the eastern parganas of that district is already the subject of a reference to Government. The chapter on irrigation (paragraphs 103 to 118) contains a full report on the subject of the imposition of an owner's rate on lands irrigated or irrigable from Government canals, which will be dealt with in a separate communication, in answer to the call made by Government for a special report on this subject. The agricultural chapter (paragraphs 119 to 159) contains much information of interest which will serve to supplement Mr. N. N. Banerjee's valuable report on the agriculture of Cuttack, and deals in special detail with the great rice crop and with *pan*, the latter a crop which is likely to prove of increasing value to the cultivators as the Province is opened out. The Chapter on the History of Prices deals with the fluctuations in the price of common rice, which is by far the most important crop in Orissa, and contains a most instructive diagram showing those fluctuations during the past sixty years, a picture of the varying circumstances of the people during that period which could not well be improved upon. There is much in the chapter on the material condition of the people that affords food for reflection and comment, notably, in the description given of the character of the people, which appears to bear in many respects as a likeness to that of the Assamese, though the Uriyas are differentiated from the Assamese in that they are always ready to emigrate and travel in search of work. This readiness to emigrate on the part of the male population—for the emigrants are never accompanied by their families—is a marked characteristic of the Uriya, and is in pleasing contrast to the immobility of the Biharis and the northern races of India. It proved an undoubted safeguard to the population of Orissa at the time of the great famine, and contributes greatly in the present day to the prosperity of this corner of the Empire. On the subject of stocks of grain, with which Mr. Maddox deals in paragraphs 178 and 197, I fear we have little or no information at present. In the year 1897, after careful local enquiry, the Commissioner of the Division estimated that the stocks of rice in hand would not last beyond August in that year, whereas there was a brisk export throughout the year, without any importation to supplement the local stocks.

Mr. F. E. Pargiter, I. C. S., has been kind enough to scrutinise the Chapter on the early geography and history of Orissa, and in the interesting paragraphs which have been devoted to the peoples and religions of the Province, Mr. Maddox has drawn freely from many acknowledged authorities, such as Mr. H. H. Risley, I.C.S., C. I. E., Dr. Rajendra Lala Mitra, Dr. Stevenson, Mr. Stirling and Captain S. C. Macpherson.

5. The area of the Province of Orissa amounts to over 24,000 square miles, and may be roughly divided into the hills (17,000 square miles), in which are included the Tributary States, the district of Angul, and the Government Estate of Khurda in Puri, and the alluvial plains (7,000 square miles), lying between these hills and the sea. Some account of the Tributary States is given in Chapter XXIV of the Report.

The District of Angul, a resumed State, was surveyed and settled some years back, and the Government Estate of Khurda has recently been settled under Mr. Maddox's supervision, and a separate report of the settlement

submitted. The following statement shows roughly the various areas that go to make up the plains portion of the Province :—

	Square miles.
Temporarily-settled areas	4,200
Revenue-free areas	524
Permanently-settled areas cadastrally surveyed	546
Permanently-settled areas topographically surveyed.	1,420
The Chilka Lake.	310
Total	7,000

The present report deals in detail with the survey and settlement of the first two of these classes only, but a brief account is given also in Chapter XXIV of the circumstances in which some of the permanently-settled estates came to be cadastrally surveyed. A special chapter (Chapter XXIII) is devoted to the revenue-free areas included in the 524 square miles noted above, but they are also included in the general sections of the report. On the other hand, the statistics of cultivation which are given in Appendices E and F include not only the Khurda Government Estate, but also about 150 square miles of the permanently-settled and cadastrally-surveyed area, or 5,897 square miles in all.

6. These figures of cultivation and crops show that out of an area of 5,897 square miles, comprised in 13 589 villages, 3,903 square miles (or 66 per cent.) are cultivated, 544 (or 9 per cent) are culturable but not cultivated, while 1,450 (or 25 per cent.) are unculturable. Out of the uncultivated area, 177 square miles or 3 per cent. of the total area, have been formally reserved as grazing or cremation grounds, as detailed in Appendix L, and encroachment on these reserves has been strictly forbidden. It is unnecessary to dilate at any length on the crop areas shown in Appendix F. It is sufficient to note that 3,439 out of a net cropped area of 3,903 square miles bear a rice crop; that 178 square miles are homestead lands, and 307 square miles (including some of the rice-lands) are twice cropped.

7. Within the same area as that for which cultivation has been shown, I find that the figures entered in the following table represent generally the average size of a village in Cuttack, the extent of each tenant's holding, and the size of each field, district by district :—

	Cuttack Acres.	Balasore Acres.	Puri Acres.
Size of each village	301	304	324
Size of each holding (excluding waste lands)	1.26	1.86	1.82
Size of each field			
(1) Including waste plots	.34	.48	.29
(2) Excluding waste	.23	.34	.20

The average actual area of land held by each individual raiyat would of course be considerably in excess of the size of the average holding, as many raiyats hold more than one holding, and from figures given elsewhere in the report, it may be gathered that the average holding of an agriculturist (as distinguished from labours holding only homestead lands something over three acres for the Province generally.

8. As to the classes of people who occupy the three districts of Cuttack, Balasore and Puri, the greater portion of which is included in the above statistics of area, it is sufficient to say that out of a total of 4,200,000 inhabitants, no fewer than 4,093,000 are said to be Hindus, while of the rest, 98,000 are Mahomedans, 4,000 Christians, and 8,000 belong to other religions. In paragraph 219 is given an interesting table of the various castes to which the members of the Hindu population belong, and in paragraph 170 a division of the population by occupations is given, from which it appears that over 2½ millions are returned as agriculturists.

9. Turning now to the area of 4,750 square miles with which the report is chiefly concerned, it will be well to make some reference to its fiscal history before dealing with its present circumstances. Mr. Maddox treats of the early settlements of the Province, before the commencement of British rule, in paragraphs 233 to 241 of the report, which should be read with paragraph 547, in which an attempt is made to discover what revenue was obtained from Orissa by the Moghuls and the Mahrattas. All that can be definitely said of these settlements would appear to be that while the Moghuls made some attempt to proportion the revenue to the assets of the country, the Mahrattas wrung out of it all they could, irregularly and ruthlessly, with the result that when we first approached the question of its settlement in 1803, the Province was found much impoverished and in a state of anarchy. In paragraphs 242 to 249, Mr. Maddox details the history of the earlier settlements made by us from 1803 up to 1830, an unfortunate record of assessment on insufficient enquiry, and of the enforcement of inelastic rules for the realisation of inequitable revenues, and he shows incidentally how many an old Uriya family was ruined, and how the proprietorship of the land fell, in many cases, into the hands of Bengali speculators. Between 1805 and 1820 the revenue rose fitfully from about 11 lakhs to 13½ lakhs, with but little justification for the increase in either the spread of cultivation or the circumstances of the people. From 1820 to 1830 but little change appears to have been made in the revenue demand.

10. The foundations of the present prosperity of the Province rest on the great settlement of 1835 to 1845, preparations for which were commenced as early as 1830, and which was held to run from 1837, although the proceedings were not finally completed before 1845. In paragraphs 250 to 353 Mr. Maddox has fully described the procedure adopted at this settlement, and draws attention to the knowledge, experience and sympathy exhibited by all the officers connected with it, and by Sir Henry Ricketts and Mr. Wilkinson in particular. Taught by the sad mistakes of their predecessors, these officers toiled with marked industry and ability to master every difficulty that stood in the way of a fair assessment, and to store up and tabulate the detailed information as to the material condition and economic circumstances of the country, without which no successful settlement can be made. Their efforts were cordially supported by the authorities in Calcutta, and their reward has been the unquestionable success of the settlement, the implicit confidence of the people in the records prepared by them, and the endurance of their names as household words throughout the districts in which they laboured.

11. As regards the zamindars with whom Government made this settlement, Mr. Maddox has traced with great care and in considerable detail the origin of the proprietary rights which were then confirmed. The majority of the real zamindars who held proprietary rights under the Moghuls or Mahrattas had been recognised as Rajas of Killas, or had received permanent settlements of their lands, before the commencement of the last settlement proceedings, and the present zamindars of Orissa would appear to be descended from all the *talukdars*, rent-collectors, village headmen, holders of resumed *jagirs* and the like, who were found at the time of the British conquest, to be paying their revenue direct into the Mahratta treasuries, as well as from the holders of the larger revenue-free properties that were resumed and assessed to revenue by us during the early years of the present century. Under these zamindars again a class of subordinate proprietors, or proprietary tenure-holders, was recognised at the last settlement, composed for the chief part of village headmen, such as *muqadams*, *sarbarahkars* and *pursethis*, or the purchasers or recipients of proprietary rights in small plots of land from the zamindars or *muqadams*, such as *kharidadars* or *shikmi zamindars*.

The above formed the proprietary classes, the zamindars paying their revenue direct to the treasury, and the sub-proprietors, or proprietary tenure-holders, paying their revenue through the zamindars of the estates within which their lands lay; with them also may be included the *lakhraj bahaldars* or holders of confirmed revenue-free lands, who possess a permanent right to hold their lands free of land revenue, and are independent of the zamindars of whose estates their lands originally formed a part, except in so far as they are bound under Act IX (B. C.) of 1880 to pay certain cesses through those zamindars.

The tenantry who hold beneath the proprietors or proprietary tenure-holders mentioned above may be divided roughly into seven classes: (1) the *Tankidars*, or holders of small areas permanently assessed at a quit-rent; (2) The *Nisfi-bazyafidars*, or holders of resumed rent-free lands assessed for the term of the last settlement at half rates; (3) the *Kamil bazyafidars*, or holders of resumed rent-free lands assessed at the last settlement at full rates; (4) the *Thani raiyats*, or resident cultivators, whose rents were fixed for the term of the settlement, (5) the *Chandina raiyats*, or holders of homestead lands, whose rents were also fixed for the term of the settlement, (6) the *Pahi raiyats*, or non-resident raiyats, who were practically, in most cases, tenants-at-will, and (7) the holders of service and other *Jagirs* who held their lands rent-free, either in consideration of services to be rendered, or as rewards for services in the past. The above list is not exhaustive, but includes all but a few small classes of the tenants of the Province.

12. The statistical results of the settlement as it affected both Government, the proprietors and the various classes of the tenantry, may be briefly summarised. The temporarily-settled areas were settled with about 8,000 proprietors in 3,571 estates, and the following table shows how the area of the temporarily-settled lands was dealt with, and how revenue was assessed on the estates comprised within them—

DISTRICT.	Total area.	Cultivated area.	Assessed area.	Mufasaal jama or assets.	Sadar jama, or revenue.	
					Percentage.	Amount.
1	2	3	4	5	6	7
	Acres.	Acres.	Acres.	Rs.		Rs.
Cuttack	1,174,900	697,000	621,000	11,21,000	64	7,14,100
Balasore	943,993	554,000	493,200	5,75,600	65	3,77,290
Puri	499,100	377,000	302,400	4,41,600	66	2,92,800
Total	2,617,993	1,628,000	1,416,600	21,38,200	65	13,84,190

The above figures further show that the incidence of revenue was Rs. 1-2-5 per assessed acre in Cuttack, As. 12-3 per acre in Balasore and As. 15-6 in Puri, or As. 15-7 for the whole Province, and that the balance of the assets left to the zamindars amounted to Rs. 4,06,940 in Cuttack, Rs. 1,98,310 in Balasore, Rs. 1,48,860 in Puri and Rs. 7,51,010 in the Province as a whole. I have been unable to find any statement of the areas recorded at the last settlement as held by those proprietary tenure holders who have been treated as such at both the past and the present settlements, that is, the *muqadams sarbarahkars, pursethis* and the like; but I gather from the figures in appendices G.A, G.B., and G.C., and elsewhere in the report, that some 3,000 such tenures were settled with about 6,000 tenure-holders. The asset of these tenures and the revenue payable for them to the zamindars are shown in the following table :—

DISTRICT.	Assets.	REVENUE.		Balance.
		Percentage.	Amount.	
1	2	3	4	5
	Rs.		Rs.	Rs.
Cuttack	1,28,609	80	1,02,741	25,868
Balasore	65,114	83	54,060	11,054
Puri	2,11,617	81	1,70,856	40,761
Total	4,05,340	81	3,27,657	77,683

As a general rule, the proprietor retained 20 per cent. of the gross assets, and paid the balance to Government, *i. e.*, 60 per cent. of the gross assets. The revenue thus paid has been included in the statement of revenue assessed on the proprietors.

The *kharidadars* differ from the above in that, whereas they were treated as subordinate proprietors at the last settlement, and their rents calculated at a certain percentage of the assets they received, they have been treated in the present settlement as tenure-holders under the Bengal Tenancy Act, and their rents settled accordingly. The following table shows the area held by them and the rents assessed upon them at the last settlement. I am unable to give figures for the assets of their tenures :—

DISTRICT.		Area	Rent	Incidence per acre.		
1		2	3	4		
		Acres.	Rs.	Rs.	A.	P.
Cuttack	....	26,900	28,600	1	1	0
Balasore	....	14,800	11,200	0	12	1
Puri	....	3,700	4,000	1	1	3
Total	....	45,400	43,800	0	15	5

The revenue-free lands at the last settlement amounted to 134,442 acres, or 11.4 per cent. of the total area dealt with in Cuttack, 106,015 acres, or 11 per cent. in Balasore, and 90,635 acres, or 18.1 per cent. in Puri, giving a total of 331,093 acres, or 12.6 per cent. for the whole Province. This is a large area, but it must be remembered that Orissa is one of the holy lands of the Hindus, and supports a very large population of Brahmin priests in attendance at an infinite number of Hindu shrines.

13. The following figures show how subordinate tenancies were treated at the last settlement, and are worthy of notice, as some marked changes will be found in the figures when we come to deal with the existing statistics which have formed the basis of the present settlement operations :—

CLASS.	CUTTACK.				BALASORE.				PURI.				TOTAL.			
	Area in acres.	Percentage of assessed area.	Rent.	Incidence per acre.	Area in acres.	Percentage of assessed area.	Rent.	Incidence per acre.	Area in acres.	Percentage of assessed area.	Rent.	Incidence per acre.	Area in acres.	Percentage of assessed area.	Rent.	Incidence per acre.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
			Rs.	Rs. A. P.			Rs.	Rs. A. P.			Rs.	Rs. A. P.			Rs.	Rs. A. P.
Tankidars.	500	...	100	0 3 2	...	...	...	...	23,100	9.2	13,600	0 7 9	28,600	2.0	13,700	0
Nisfi baziafti	87,200	14.0	35,200	0 6 5	70,800	15.5	24,200	0 5 1	57,300	18.9	35,200	0 9 10	221,300	15.6	94,800	0 6 10
Kamil	37,700	6.0	34,000	0 14 5	37,100	7.5	28,100	0 12 1	5,800	1.9	6,700	1 2 6	80,600	5.7	68,800	0 13
Thani	133,700	21.5	378,700	2 13 3	107,100	21.7	1,85,000	1 11 8	96,900	32.2	2,01,500	2 1 4	337,700	23.8	7,65,300	2 4
Chandina	10,100	1.6	40,300	3 15 10	15,500	3.1	30,800	1 15 9	1,300	.4	6,900	5 4 11	26,900	1.8	78,000	2 14 4
Pahi	268,900	43.3	5,13,500	1 14 3	219,100	44.4	259,300	1 2 11	82,900	27.4	1,22,900	1 7 8	570,000	40.3	8,95,700	1 9
Jagir	22,780	3.6	...	.. ..	15,280	3.0	...	.. ..	8,850	2.9	...	...	46,910	3.3	.. ..	.. ..

With reference to the above table, it may be observed that Balasore was assessed lightly, the population being scanty, the soil poor, and the lands liable to flood, and interspersed with considerable tracts of jungle. In Puri also great damage was done almost annually by floods, and the lands of many parts of the district were no better than those of Balasore. On the other hand, it was more highly assessed, the district being more closely cultivated and a larger proportion of the area being held by privileged tenants, from whom comparatively high rents were settled. Cuttack was then, as it is now, by far the most prosperous district, being less liable to flood, having a more fertile soil, and being in a more advanced stage of civilisation. It will be noticed that the rents of *pahi* raiyats, which have always been more or less competition rents in Orissa, reflect with much accuracy the general conditions obtaining in each district, the incidence of such rents standing at Re. 1-14-6 for Cuttack, Re. 1-7-8 for Puri and Re. 1-2-11 for Balasore. As will be seen from the history of the *thani* holdings during currency of the settlement, there was small justification for the settlement of their rents at rates so far above those of the *pahi* holdings, and had these lands been assessed to lower rents it is probable that a smaller proportion of them would have been abandoned.

14. The settlement thus concluded was to have run to the year 1867
 Extension of the term of the last Settlement, only, but the great Orissa famine of the years 1865-66 rendered it inadvisable to undertake re-settlement operations during the years when the former settlement was drawing to a close, and that settlement was accordingly prolonged for another thirty years. The history of the rapid recovery of the Province from the horrors of the great famine has subsequently shown that this extreme leniency was scarcely needed, and that a re-settlement might well have been made some twenty years ago, to the advantage of Government and without undue harassment of the people. The result of the excessive prolongation of the former settlement has undoubtedly been the exclusion of Government for a lengthy period from its fair share of the produce of the soil, and the retention by the landlord classes in Orissa during the same period of profits to which they had no equitable right.

15. During the sixty years of the currency of the settlement of 1837,
 Changes during the currency of the past settlement, the Province has developed in every direction in spite of the disaster of 1866, the population has increased by over 80 per cent., cultivation has extended by 30 per cent., communications have been largely improved, bringing an increase in the volume of trade, and the prices of staple food-crops have trebled, securing largely increased profits to the cultivators. This development has naturally been accompanied by an increase in the rents of the *pahi* raiyats, the only class for whom rents were not fixed for the term of the settlement, and the figures given by Mr. Maddox show that the incidence of their rents advanced from Re. 1-14-6 to Rs. 2-11-6 in Cuttack, from Re. 1-2-11 to Re. 1-11-1 in Balasore, and from Re. 1-7-8 to Re. 1-13-8 in Puri, the over-assessment of the last named district being to some extent responsible for the comparatively small enhancement there. It is a significant fact, however, as showing at what high rates the rents of *thani* raiyats were fixed at the last settlement that the general incidence of the rents of *pahi* raiyats did not even in the course of 60 years, rise to that shown by the *thani* rents fixed in 1837. This evidence would not in itself be conclusive as to the over-assessment of *thani* lands at the last settlement, as it is to some extent true that these privileged tenancies frequently included the best lands in the village, but it is borne out by the figures which show how materially the area held by *thani* raiyats, and the rents paid by them, diminished during the term of settlement, in spite of the valuable privileges conferred by the *thani* status. The following table compiled from the figures given by Mr. Maddox in paragraphs 322 and 462 of his report, will show the difference between the

areas and rents of *thani* raiyats as fixed in the settlement of 1837 and as found by us to be existing at the time of the present settlement :—

DISTRICT.	LAST SETTLEMENT, 1835 to 1845		EXISTING* 1890 to 1900.	
	Area.	Rent.	Area.	Rent.
1	2	3	4	5
	Acres.	Rs.	Acres.	Rs.
Cuttack ...	133,700	3,78,700	83,800	2,20,900
Balasore ...	107,100	1,85,000	45,900	82,100 +
Puri ...	96,900	2,01,600	66,700	1,23,600
Total ...	337,700	7,65,300	196,400	4,26,600

Among other changes which took place in the course of the settlement was the multiplication of estate and of landlords, the number of estate rising from 3,571 to 6,377, and the number of individual landlord from 8,000 to 42,400. As might have been expected, the lands in the direct possession of the landlords increased proportionately, and the following figures shown the increased in these lands, and in the valuation made of them in the sixty years :—

DISTRICT.	LAST SETTLEMENT.		EXISTING.	
	Area	Valuation.	Area.	Valuation.
1	2	3	4	5
	Acres.	Rs.	Acres.	Rs.
Cuttack ...	42,300	75,400	85,800	2,23,200
Balasore ...	20,400	25,100	46,600	81,100
Puri ...	26,000	46,800	40,100	80,200
Total ...	88,700	1,47,300	172,500	3,84,500

This very marked increase in the area and value of the lands held by the proprietors was by no means the only benefit derived by them during the course of the settlement, as may be inferred from the account which has been given above of the rise in the incidence of *pahi* rents. In order to show clearly to how considerable an extent the landlords were able to absorb the increasing profits of cultivation during the term of the settlement, I submit the following table, compiled in the main from Mr. Maddox's Appendices A-A to C-N and G- A. to G- C., showing the financial position of the proprietors and proprietary tenure

* NOTE :—*Thani* areas and rents included in *thani pahi* holdings have been amalgamated with the figures in columns 4 and 5.

See Appendix U to Mr. Kingsford's Report on Balasore,

holders at the commencement of the last settlement and at the time that the present re-settlement operations were initiated :—

	INCOME AT COMMENCEMENT OF LAST SETTLEMENT <i>VIDE</i> FIGURES IN PARAGRAPH 12 <i>SUPRA</i>		INCOME EXISTING BEFORE PRESENT RE-SETTLEMENT.			
	Amount	Percentage of assets,	Assets.	Revenue	Balance	Percentage of existing assets actually retained.
1	2	3	4	5	6	7
<i>Proprietors.</i>	Rs.	Rs.	Rs.	Rs.	Rs.	
Cuttack ...	4,06,900	36	18,47,400	7,14,100	11,33,300	61
Balasore ...	1,98,310	35	9,88,800	3,77,290	6,11,510	62
Puri ...	1,48,800	34	5,73,700	2,92,800	2,80,900	49
Total ...	7,54,010	35	34,09,900	13,84,190	20,25,710	59
<i>Proprietary tenure-holders.</i>						
Cuttack ...	25,868	20	2,04,434	1,02,741	1,01,693	49
Balasore ...	11,054	17	1,03,732	54,060	49,672	48
Puri ...	40,761	19	2,67,188	1,70,856	96,332	36
Total ...	77,683	19	5,75,354	3,27,657	2,47,697	43

There was no great change in the areas held revenue and rent free between the settlements, nor in the areas and rents of the other privileged tenants, with the exception of the *kamil bazyafidars*, whose lands decreased, their privileges being less valuable than those of the *nisfi bazyafidars*, and consequently less carefully maintained.

16. I have thought it advisable to deal at some length with the figures of the settlement of 1837, and the changes that occurred during the sixty years that had elapsed since it was made, in order that task that lay before the officers who conducted the recent settlement might be made the more clear, and that the results that will be shown to have accrued from the present proceedings might be the more easily intelligible. I will now summarise briefly the proceedings undertaken for the re-settlement of the temporarily-settled lands of the Province, and the circumstances in which those results were attained.

17. The only portions of the area to be dealt with that had been professionally surveyed previous to the commencement of the recent settlement operations were an area of 364 square miles of irrigated and irrigable lands in the district of Cuttack, and an area of 105 square miles, comprised in the *ekhrajat mahals*, or temple lands, in the district of Puri. In these areas a cadastral survey on the scale of 32" to the mile had been carried out in the years from 1876 to 1879, and the maps then prepared were utilised in the present operations, being revised in the course of them so as to bring them up to date. With the exception of these areas and certain permanently settled areas that had been previously dealt with, and were consequently excluded from the scope of the operations, the whole of the districts of Cuttack, Balasore and Puri were traversed, the permanently-settled areas being subsequently topographically surveyed on the scale of 2" to the mile and the remaining temporarily-settled areas, with a few isolated permanently-settled estates taken up with them for special reason,

being cadastrally surveyed on the scale of 16" to the mile. The actual area covered by the traverse survey appears to have been 5,513 square miles, while 4,797 square miles were cadastrally surveyed, 1,013 square miles were dealt with by the topographical party, and the maps for an area of 469 square miles previously surveyed were revised. Owing to the absence of any completion report of the work done by the Survey of India in Orissa during the recent operations, it is difficult to obtain accurate figures for either the extent or the cost of their work, and those that have been supplied by Mr. Maddox have been compiled by him from annual reports and other similar sources of information.

18. The traverse survey operations were commenced by a single party under Mr. Paterson in the field season of 1889-90, two parties were employed in the field seasons from 1890 to 1893, and a single party completed the work by September 30th, 1894. There were some difficulties encountered in connection with the determination of the unit of survey, but ultimately the existing village, as pointed out by the villagers, was adopted, and has subsequently proved the most reasonable basis for our work, as well as the one most acceptable to all parties. There was little obstruction on the part of raiyats or zamindars, and the work was done efficiently and inexpensively, the cost averaging Rs. 39 per square mile.

19. The cadastral survey was carried out, as noted above, on the scale of 16" to the mile, the only exceptions made being in the case of large towns, which were surveyed on the 32" or 64" scales, and where it was not found possible to show all the details of village sites on the 16" maps. In such cases these sites were separately surveyed on the 32" or 64" scale, and entered on the margin of the village maps. The work was mainly performed by trained up-country amins from the North-West Provinces; the attempt to utilise the services of local *patwaris* and other Uriyas proving a failure, owing to the very slow progress achieved by them and the consequent increase in the cost of coolie labour. The rate paid to these amins was Rs. 3 per 100 acres, and the cost of coolies averaged 9 pies per acre. The rules under which the cadastral work was done have not been reproduced by Mr. Maddox. In fact, they varied somewhat in details from season to season, though following generally the instructions contained in the Board's Survey Manual.

The following figures of progress are taken from Mr. Maddox's statement in paragraph 413 of his report :—

Survey year		Number of Survey Parties.	Area dealt with. Square mile.
1889-90	....	1	358
1890-91	....	2	695
1891-92	....	3	1,196
1892-93	....	3	1,569
1893-94	....	1	649
1894-95	....	1	5
Total....			4,672

The above does not include the revision area of 469 square miles, which was dealt with in the years 1892-93 and 1893-94 by small detachments from the main survey parties.

The total cost of these operations amounted to Rs. 4,40,786, the cost rate averaging nearly Rs. 100 per square mile for cadastral survey and Rs. 53 for the revision area.

20. In addition to the work of cadastral survey, the amins of the Survey of India Department were also entrusted with the work of writing up the settlement records for each village on the field (or *khanapuri*), being controlled and supervised at this stage both by their own officers and by officers of the settlement Department deputed for the purpose. The records thus prepared were four in number, (1) the *khewat*, in which were entered the names, *tauzi* number, areas and proprietors of each estate of which any lands were situated in the village; (2) the *hasra*, or field index to the map, containing one entry for

Record-writing.
Early stages.

each field or separate plot belong to one cultivator, specifying the names of the owner and the occupier, its area, the crop borne on it and a description of the nature of the soil; (3) the *khatian*, or abstract record, containing a list of the tenants of the village, with details of the lands held by each, the rent payable for them, and the class of tenancy to which the holding belonged; and (4) an abbreviated *khatian* known as the *parcha*, which was prepared simultaneously with the *khatian* and handed over to the tenant, to enable him to understand what was being entered in the record, and to check its accuracy. The difficult work of filling up these forms was greatly complicated in Orissa in the early stages of the proceedings by the fact that it was entered upon without sufficient preliminary enquiry, and before adequate preparations had been made for it by the determination of suitable forms, the compilation of instructions for record writing, and the training of amins for the work. The consequence was that the *khanapuri* was done during the first two seasons by untrained men, who were frequently insufficiently acquainted with the language of the country and who had to work on unsuitable forms and with inadequate instructions as to how to deal with them, and it was until well on into the field season of 1891-92 that the officers appointed to supervise the work had hammered out rough rules for the guidance of their subordinates, and until the Autumn of 1892 that these rules were consolidated, approved by the responsible authorities and prescribed for general use. Thus for two seasons, during which the record-writing was completed for an area of over 1,000 square miles, there were practically no rules for its conduct, while in the season of 1891-92, during which nearly 1,500 square miles were dealt with, the various survey parties were dependent on local rules, hurriedly drawn up by the supervising officers, and in many cases not wholly suitable. At the same time the forms in which the records were to be prepared were constantly being changed, and the Uriya amins, to whom the work of *khanapuri* was eventually entrusted, proved indolent and difficult to teach. In these circumstances it is not to be wondered that the Survey Department complained of the difficulties of the work, or that the energetic and capable supervision exercised by Colonel Sandeman and his assistant, Lieutenant (now Captain) Crichton, was insufficient at once to secure efficient work and accurate record-writing. I was myself one of the Assistant Settlement Officers deputed to supervise *khanapuri* during 1891-92, and can speak with experience of the difficulties of the work and of the impossibility of excepting good records in the circumstances that then obtained.

21. A marked change came over the conduct of the proceedings, however, in the year 1892, when the *khanapuri* rules referred to above were brought into general use, when Mr. Maude was appointed Settlement Officer, and when the admirable system of co-operation and joint control evolved by Colonel Sandeman took the place of the confusion that had reigned in the previous seasons. The rules, as revised during the season 1891-92, were finally printed in March, 1893, and are substantially the same as those which were followed up to the end of the work, and which are reproduced as Appendix B-2 of Mr. Maddox's report. From this time forward the work of the amins steadily improved, and the quality of the records prepared in the district of Balasore, which was taken up last, is in marked contrast to the quality of those in Puri and in those tracts in Cuttack which had been dealt with in the years from 1889 to 1892. It is unnecessary here to repeat the figures showing the progress of the work, as they approximate closely to the figures given above, in paragraph 19 for the progress of cadastral survey. The figures for the cost of this stage of the work given by Mr. Maddox in paragraphs 414 and 415 of his report, and again in paragraph 623, are somewhat inconsistent, owing to the want of sufficient information, but I gather from the figures shown in paragraph 415 that while the indifferent *khanapuri* of the earlier years was done at a somewhat lower rate, the more accurate records prepared in the later years cost from Rs. 50 to Rs. 60 per square mile.

22. The various important questions that were dealt with at this stage of the work are enumerated and fully dealt with in paragraphs 397 to 411 of the report. The action taken to collect statements of tenancies with their areas and rents from the landlords, previous to *khanapuri* was a mistake which occasioned some

Important question dealt with at the record-writing stage.

misrepresentation of facts and a good deal of corruption, while the attempt made to collect *parchas* from the raiyats, with a view to their completion in office, and their subsequent redistribution, was soon abandoned on account of the evils to which it gave rise. While the employment of some of the Collectorate *kanungos* on settlement work was a partial success, the attempt to utilise the services of *patwaris* as *amins* ended in complete failure. There is always some difficulty found in all districts in Bengal in persuading the subordinate police officers that it is their duty not only to countenance but to assist the Settlement Department, and they began in Orissa, as elsewhere, by forbidding the *chaukidars* to render us any assistance. This difficulty was soon overcome by an appeal to the higher police authorities, and the *chaukidars* were found willing enough, as soon as the prohibition was removed, to give such help as was required of them. Mr. Maddox has given, in his paragraph 410, a full account of the discussions on the question as to what area was to constitute the unit of survey, but I do not find any statistics as to the number of disputes concerning village boundaries that were decided in the course of the work. It is probable that the confusion that obtained in the earlier years of the work rendered the compilation of accurate figures for these cases impossible. I may mention here that Mr. W. C. Macpherson, as Director of the Department of Land Records and Agriculture, was closely associated with Mr. Maude in the determination of the various questions dealt with at this stage.

23. After the records had been prepared in the field by the Survey Department, they were compared with one another and checked in the office of each camp, areas were entered in them, and they were abstracted in certain tabular statements. The papers were then all handed over to the Settlement Department, in order that rents and status might be entered after due enquiry by a responsible Revenue Officer, preliminary disputes decided and the records published in draft in accordance with the provisions of the Bengal Tenancy Act. Mr. Maddox points out in paragraph 417 of his report how many difficulties be set this stage of the work in Orissa, due to the same causes that had rendered the *khanapuri* of the earlier stages of the work so inefficient.

The work of attestation was further complicated by want of experience, and by divided councils as to how this work should be done, as to the manner in which the *khaticns*, which form the units of the record-of-rights in each village, should be prepared, and as to the amount of comparison with the records of the last settlement that was necessary for the proper verification of the record. For the first three years during which the work proceeded, also, there was much doubt as to how far the *muharrirs* conducting the clerical part of the work required supervision, and as to the powers to be entrusted to them in the matter of entry of disputes, correction of mistakes and the like.

In consequence of these difficulties, this work, which was begun in the season of 1890-91 was very inefficiently carried out during that and the two subsequent seasons, in spite of some valuable pronouncements by Mr. Finucane, Director of Land Records and Agriculture, as to the principles which should guide this stage of the work, and it was not until Mr. Maude had had time to deal thoroughly with the question, after his appointment at the close of 1892, that any wholly satisfactory attestation work was done. The rules that were drawn up by Mr. Maude in 1893 were based on the various sets of rules which had been prescribed in different circles by different Assistant Settlement Officers during the previous season. They were comprehensive and complete, and although there was a good deal of further discussion in 1894 concerning important points, the right decision of which was essential to good attestation, the main principles and the great mass of the details of Mr. Maude's rules were adhered to, and appeared in the rules as finally revised, and as now reprinted in Appendix B to the report. It may also be noted here that the amendment of the rules under the Bengal Tenancy Act, which was made in 1894, mainly at the instance of Mr. W. C. Macpherson, Director of Land Records & Agriculture, contributed in no small degree to the simplification and proper organisation of the work of attestation. Unfortunately, by the time that proper rules had been introduced for the regulation of this work, a very large proportion of the records in Puri and Cuttack had already

been dealt with, and it was subsequently found that they had been attested under such inconsistent rules, and with such varying degrees of care and supervision, that they had all to be reattested in the years 1895 to 1898.

24. In paragraph 423 of his report Mr. Maddox has summarised the chief principles of attestation work which were determined by Mr. Maude in his rules of 1893, and in the following paragraphs he enumerates some of the more important matters which were either dealt with finally in those rules, or subsequently determined in the course of the conferences and discussions of 1894. The final decisions come to in respect of the chief of these points may be thus briefly summarised.

(1) Attestation work was to be conducted either in each village or within three miles of it.

(2) The Revenue officer was to be present throughout the proceedings, supervising the work of the muharrirs, dealing with objections and disputes, and finally interrogating each individual tenant as to the accuracy of the entries made in the records concerning his lands, his rent and his status.

(3) The unit of the record was to be a *khatian*, containing all the lands held by one tenant on the same conditions in each village, lands held by one individual on differing conditions being entered in separate *Khatians*. Thus revenue-free, *jagir*, *thani* and *pahi* lands were all to be entered in separate *Khatians*.

(4) The muharrirs were to have nothing to do with the determination of disputes, which was to remain in the hands of the Revenue officer alone.

From May, 1892, almost to the end of the re-attestation proceedings, Mr. Macpherson, as Director of Land Records & Agriculture, took a prominent part in all the discussions and correspondence which led to the determination of the above principles and to the removal of the difficulties which were encountered.

25. The progress made in attestation is referred to in paragraphs 424 and 436 of the report, and need not be reproduced here. In the earlier days of the work many officers, in ignorance of the nature of the duties they had to perform, returned extravagant figures as representing their monthly outturn, and on the other hand, when the reaction set in, and the responsible character and the difficulties of the work were more fully appreciated, a tendency to over refinement reduced the rate of progress too low. Eventually, when experience had led to the amendment of the rules and to the proper organization of the attestation camps, it was found that an Assistant Settlement Officer could attest about 20,000 plots in a month, and I think that this was a reasonable average rate of progress for the work, looking to the special circumstances that surrounded the operations in Orissa. The expenditure incurred upon attestation was very heavy, as might be expected from the above account of the proceedings. In paragraph 625 of his report, Mr. Maddox estimates that it amounted to Rs. 4,80,000 in Cuttack, Rs. 1,80,000 in Balasore, and Rs. 2,05,000 in Puri, or Rs. 8,65,000 in all. In Cuttack, the total is swelled by the inclusion of the whole cost of the pay and establishment of the Settlement Officer, and the disproportionate cost in Puri is due to the fact that almost the whole of the work in that district had to be done twice over. The above figures give cost rates of Rs. 233 per square mile for Cuttack, Rs. 105 for Balasore, Rs. 200 for Puri, and Rs. 183 for the Province as a whole.

26. I now come to the important question of the settlement of rents, the Stage in the proceedings which followed next after the attestation of the records, and was preliminary to the final one, that of the assessment of the revenue. From the circumstances of the case it was obvious that the rents of a very large number of privileged tenants, which had remained untouched for sixty years, must be enhanced at the present settlement, while it was known that cultivation had largely extended during the same period, and that there were considerable areas in the possession of both landlords and tenants that had never been assessed to revenue or rent. At the time of the initiation of the proceedings very little appears to have been said on the subject, and the first pronouncement that is quoted by Mr. Maddox is

that contained in a note written by Mr. Finucane in February, 1891. This note foreshadows so accurately the lines upon which rents were actually settled five years later throughout the area under settlement, that I need make no apology for quoting it also here. Mr. Finucane wrote :—

“It will probably be found that the rents of *pahi* raiyats are as high as the land can afford to bear, and that they may be left undisturbed.

“The rents of *thani* raiyats, which, under the terms of the last settlement, ought to have remained unaltered for the past sixty years, will as a matter of course, have to be now enhanced, if they have not in fact been enhanced during the currency of the existing settlement.

“It is not easy to lay down *a priori* the principles on which such enhancements should be made. The full enhancement that may be demandable on the ground of rise in prices cannot, it is probable, be taken, because the rent fixed for *thani* raiyats at the last settlement were higher than the competition rents demanded from *pahi* raiyats.

“Neither can the rents of *thani* raiyats be fixed on the principle of raising them to those now paid by *pahi* raiyats. A middle course will have to be followed. The question is one regarding which the Settlement Officer should ascertain facts and ask for orders, before finally adopting any principle of assessment.”

The above were, broadly speaking, the principles upon which rents were ultimately settled in Orissa for the important classes of tenants mentioned, although before they were finally adopted many experiments were made with the object of utilising the “prevailing rate” section of the Bengal Tenancy Act, in order to level up inadequate rents and to secure uniformity in the rents to be settled during our proceedings.

27. It is unnecessary to review at any length the immense amount of valuable work done in Orissa by Messrs, Maude, Nathan, Walsh and Taylor, under the guidance of Mr. Macpherson as Director of Land Records and Agriculture, during the years from 1892 to 1895, while working out rules for the settlement of rents, and investigating the various problems that accompanied the determination of the best method of dealing with *baziaftidars* and *kharidadars*, with lands held by proprietors, with *jagirs* and other lands held from proprietors rent free or on quit-rents, and with the *jagirs* of *chaukidars*, village servants, *khandaits* and *paiks* or while devising methods by which rents could be settled expeditiously and inexpensively, and yet in accordance with the provisions of the Bengal Tenancy Act. The real position held by the various classes of tenants in Orissa was determined during this period, and the difficulties inherent in the procedure prescribed by the Bengal Tenancy Act for the settlement of rents were to some extent met by the publication of revised rules under that Act in 1894, while at the same time evidence was accumulated as to the rise in prices since the rents of privileged tenants had been settled at the last settlement, and the law under which it was held by the legal advisers of Government that no rents could be settled before the expiration of the old settlement was amended by the passing of Act V of 1894. While these and many other important matters were dealt with, however, no practicable scheme for the settlement of rents was devised, and at the close of the year 1895 it seemed as if nothing satisfactory could be done without some radical alteration of the law. The reason for this appears to be that during the whole of the earlier enquiries and experiments made with a view to the settlement of rents, the simpler plan advocated by Mr. Finucane was set aside in favour of the settlement of a rent for each field by means of a rate or a crop-map (erroneously called a soil map). A great deal of valuable time was spent in efforts to divide villages up into homogeneous blocks, each of which could be said to contain lands assessed to rent at the same rates, or which could be assessed by the Assistant Settlement Officer, in virtue of his knowledge of rates and rents generally, at some one rate which would be fair and equitable. The first and the most prominent result of these proceedings was the able report prepared by Mr. Nathan on the subject of the assessment of the Kotdes pargana in Puri, which was written by him in close communication with Mr. Maude, and submitted in July 1893. This report contained, besides a very large amount of valuable information, and many sound suggestions as to the status of various classes of tenants and the treatment to be accorded to particular classes of lands, an elaborate scheme for the settlement of rents within the pargana by means of these rate or crop maps, from which the prevailing rates payable in a village for lands growing certain crops were to be

ascertained, and, after check with certain guiding rates obtained from a comparison of similar rates in neighbouring villages, were to form the basis for the enhancement of all inadequate rents in that village. A criticism of this report was written by Mr. Finucane in December, 1893, (reproduced in the appendices to Mr. Maddox's report) in which it was shown that the cost of the settlement of rents under this scheme would be prohibitive, and that the procedure advocated was of doubtful legality. In my opinion the adoption of this scheme would, in all probability, have occasioned a far larger expenditure than was anticipated at the time, and the proposals appear to me to suffer from the fatal defects that they relied far too much upon information to be supplied by landlords and their agents, that they were too complicated to be understood by or to meet with the acceptance of, the people, and that they lent themselves to indifferent work in the hands of any less capable and conscientious officers than their authors. As an alternative to Mr. Nathan's plan, Mr. Finucane suggested a procedure based upon the principles enunciated in the note from which I have quoted in paragraph 26 above, but at the same time advised, with a view to the legal difficulty subsequently removed by Act V of 1894, that the duties of the settlement staff should be confined during the following two years to attestation and recording of status and existing rents. Seeing that the legal disability was almost immediately removed by legislation, it seems to me unfortunate that this advice was followed, and had the question of rent settlement been dealt with more completely in 1894 and the early part of 1895. I think that some delay in the realisation of the new revenue of the Province might have been avoided. Mr. Finucane's note was only partially approved by the Lieutenant-Governor (Sir Charles Elliott), who expressed his opinion at the same time that the lands of the Province should be assessed to rent with some reference to their agricultural value, and that soil rates were necessary to any such assessment. It was in accordance with these views that Mr. Taylor's subsequent experiment was made in the Bakhrabad pargana of Cuttack.

28. In September 1895 Mr. Maddox, then Settlement Officer of Balasore, after various experiments with soil maps, and after the consideration of several elaborate rate reports that had been prepared by his Assistants, commenced to settle rents on the system suggested in Mr. Finucane's note of 1893, and in January 1896 he submitted for the approval of the Director and the Board a set of rules for the settlement of rents based on his proceedings of the previous months. While these rules carried out the orders which had already been passed as to the treatment to be accorded to particular classes of tenants, and in the matter of certain classes of land, they differed materially from all previous rules in their reversion to a simpler plan of settlement, and in their rejection of the whole system of rate maps, and crop or soil rates, and of the assessment of rents by the application of ascertained rates to the areas of the different classes of land contained in each tenancy. These rules were forwarded to Government by Mr. Macpherson in February 1896, with a letter which indicated that he was of opinion that no satisfactory system for the settlement of rents could be devised in the existing state of the law, and which was closely followed by a letter in which he proposed the withdrawal of the Province of Orissa from the operation of sections 104 to 108 of the Bengal Tenancy Act, and the settlement of rents under the provisions of Act VIII (B. C.) of 1879, to be re-enacted with amendments for the purpose. Mr. Macpherson left during the same month on nine months' furlough, during which period I officiated for him, while Mr. Maude also left on furlough and did not return to his appointment of Settlement Officer of Cuttack and Puri, Mr. Maddox succeeding him as Settlement Officer of the Province of Orissa with three other members of the Imperial Civil Service in subordinate charge of the three districts under Settlement.

29. As soon as Mr. Maddox's rules had been submitted to the Board, he was summoned to Calcutta to discuss them with the Director, and a conference was held by the Lieutenant Governor (Sir Alexander Mackenzie) at Belvedere to consider settlement matters in general, and the settlement of Orissa in particular. At this conference it was arranged that Mr. Maddox should bring his system of settlement of rents into force generally in all three districts, and that the senior member of the Ecard, Mr. (now Sir) C. C. Stevens, accompanied by the Director, should visit Orissa at an early date, to inspect the work in the field and determine the

Development of the rules for
settlement of rents.

rules under which the settlement of rents should proceed. This visit was paid in March 1896, the rules drafted by Mr. Maddox were thoroughly examined and largely amended on the spot, after inspection of the work then in progress in all three districts, and the revised rules were submitted by the Board for the approval of Government in May of the same year. It is unnecessary to enter here into the lengthy correspondence that ensued with the Government of India, or to go into the details of the various modifications that were made in the rules as the work progressed. It will be sufficient to note that in January 1897 the Lieutenant Governor paid a visit to Orissa, and dealt with all pending subjects connected with the settlement in a conference held at Cuttack, on the 25th and 26th of that month, and that alterations were then made in the rules to ensure that unduly low rents should not escape enhancement. This had already been provided for in a rule that dealt with collusive or beneficiary rents, but the amendment caused special attention to be drawn to the subject and undoubtedly did good, although it did not materially affect the amount by which the rents of raiyats were ultimately enhanced. The rules, as finally approved, have been reproduced as Appendix C attached to the final report. Under them the rents of the whole body of tenants in Orissa were successfully settled during the years 1896 to 1899, the basis of the proceedings being the proposal of a fair rent by the Settlement Officer, whether the existing or an enhanced rent, for the acceptance of the tenant, the immediate settlement of that rent if accepted by him, and the formal settlement of a fair rent under the provisions of the Bengal Tenancy Act in all cases in which the tenant proved unwilling to accept.

30. I will now proceed to explain how the more important classes of tenants were dealt with under these rules, and for the sake of simplicity, I will take in order the same classes, including the *jamabandi kharidadars* and revenue and rent-free holders, that I have referred to in paragraphs 12 and 13 above.

Revenue and rent-free holders holding on confirmed titles were of course left in possession of their lands free of rent, but all lands found in their possession in excess of those thus granted to them were assessed to rent and settled with them as raiyati holdings, after an allowance of 10 per cent. had been made to cover any excess due to the greater strictness of our system of measurement, and with the proviso that small excess areas up to one quarter of an acre were not ordinarily to be assessed to additional rent. Correct figures are not available to show the excess area, or *taufir*, thus assessed to rent, but it is estimated by Mr. Maddox at 2,728 acres, now held at a rental of Rs. 6,500.

Jamabandi kharidadars were treated as tenure-holders under the Bengal Tenancy Act, and rents settled for them by deducting from the gross assets of each tenure a percentage equal to the percentage granted to them at the last settlement. The maximum limit of enhancement was fixed at 200 per cent, or two-thirds of the full assessment of the cultivated area, whichever gave the lower figure. The following are the results of this assessment :—

DISTRICT,	Number of holdings.	Area.	Existing rent.	Settled rent.	Enhance- ment (per cent).	Incidence of settled rent per acre,
1	2	3	4	5	6	7
		Acres.	Rs.	Rs.		Rs. A. P.
Cuttack	22,600	30,100	28,000	45,300	62	1 8 0
Balasore	3,380	14,900	10,700	16,900	48	1 2 2
Puri	1,000	2,400	2,700	3,600	33	1 8 0
Total	26,980	47,400	41,400	65,800	59	1 6 2

The new rents were fixed for the term of Settlement.

Tankidars.—The rents of these privileged tenants were not disturbed, but excess areas held by them were treated in the same way as those found in the possession of revenue and rent-free holders. I can find no figures to show what area was thus treated or how much rent was assessed upon it. Both figures are probably very small.

Nisfi baziافتidars and kamil baziافتidars—Mr. Maddox gives a full account of the treatment accorded to these tenants in paragraph 42^o of his report. They were dealt with as raiyats whose special privilege had expired with the last settlement, but in consideration of the very low rents at which they were found to be holding, and to prevent the hardship that would have been caused by too sudden an enhancement of those rents, a strict limit was imposed on that enhancement, and they were eventually assessed to rents much below those paid by *thani* or *pahi* raiyats. The following table shows the results of the settlement of rents for these tenancies :—

DISTRICT.	Number of holdings.	Area.	Existing rent.	Settled rent.	Enhancement (per cent).	Incidence of settled rent per acre.		
1	2	3	4	5	6	7		
<i>Nisfi Baziافتi</i>		Acres.	Rs.	Rs.		Rs.	A.	P.
Cuttack	98,800	94,800	35,700	1,03,200	189	1	1	5
Balasore	48,300	78,200	22,900	68,000	197	0	13	11
Puri	36,400	59,400	33,100	67,300	103	1	1	1
Total	183,500	232,400	91,700	2,38,500	160	1	0	5
<i>Kamil Baziافتi</i>								
Cuttack	28,600	22,500	19,400	30,000	55	1	5	4
Balasore	15,700	25,200	14,800	23,300	57	0	14	10
Puri	5,400	6,500	6,100	8,200	34	1	4	2
Total	49,700	54,200	40,300	61,500	53	1	2	2
GRAND TOTAL	233,200	286,600	132,000	3,00,000	127	1	0	9

These rents were all settled for the term of the settlement.

Thani raiyats.—Under this head the settlement staff had to deal both with whole *thani* holdings that had descended entire from the last settlement, and also with the *thani pahi* or mixed holdings, in which the *thani* lands were not easily to be distinguished from the *pahi*. For the purposes of paragraph 15 above the area and existing rents of the *thani* lands included in the mixed holdings have been adjusted, but it is not possible to separate all the figures for rents and incidence. The *thani* holdings having been held at the same rents since the date of the last settlement, they were enhanced generally wherever they were found to be lower than the *pahi* rents, which as being competition rents, were accepted as the standard of the limit to which rents should ordinarily be enhanced. Owing to the over-assessment of *thani* lands which had been made in several tracts at the last

settlement, it was frequently found that competition rents had not risen above them during the currency of the settlement. In these tracts no general enhancement was made, but excess area was every-where assessed to rent at the village rate, after making an allowance of 10 per cent. for strictness of measurement the whole area being dealt with as *thani*. All *thani* rents were settled for the term of the settlement.

The result of the working of these rules is shown below :—

DISTRICT.	Number of holdings.	Area.	Existing rent.	Settled rent.	Enhancement (Per cent).	Incidence of settled rent per acre.
1	2	3	4	5	6	7
<i>Thani.</i>		Acres.	Rs.	Rs.		Rs. A. P.
Cuttack	25,800	41,700	1,14,000	1,20,900	6	2 14 5
Balasore	6,700	11,700	19,800	21,700	9.6	1 13 8
Puri	22,400	35,200	64,600	68,800	6.5	1 15 3
Total	54,900	88,600	1,98,400	2,11,400	6.5	2 6 2
<i>Thani Pahi.</i>						
Cuttack	20,200	84,200	2,13,800	2,25,300	5.4	2 10 10
Balasore	24,500	111,800	1,79,100	1,91,600	6.9	1 11 5
Puri	16,200	63,000	1,18,000	1,22,800	4	1 15 2
Total	60,900	259,000	5,10,900	5,39,700	5.7	2 1 4
GRAND TOTAL	115,800	347,600	7,09,300	7,51,100	5.9	2 2 6

Chandina tenancies :—No general enhancement was made of the rents of these tenancies, either in villages or towns but, excess areas were assessed to rents at special rates. The result was a nominal enhancement, and at the conclusion of the settlement the assessment of these holdings for the whole Province stood thus :—

Number of holdings.	Area.	Rent.	Incidence per acre.
	Acres.	Rs.	Rs. A. P.
41,800	9,100	41,700	4 9 4

These rents were also settled for the term of the settlement.

Pahi raiyats :—These include all the tenants classed under the Bengal Tenancy Act as settled, occupancy or non-occupancy raiyats, the holdings of *thani* raiyats and all mixed (*thani-pahi*) holdings being excluded. The rents of these raiyats were considerably enhanced by the zamindars during the currency of the last settlement, and have been held throughout our proceedings to be competition rents, and consequently not liable to any general enhancement. They have, however, been enhanced on the ground of excess area, or where any particular rents were found to be unreasonably low, either through collusion or fraud, or because they were specially granted as beneficial rents by the zamindar.

The working of the rules for the treatment of these rents produced the following results; I include non-occupancy raiyats :—

DISTRICT.	Number of holdings.	Area.	Existing rent.	Settled rent.	Percentage of enhancement.	Incidence of settled rent per acre.
1	2	3	4	5	6	7
		Acres.	Rs.	Rs.		Rs. A. P.
Cuttack	374,800	427,300	11,58,100	12,16,600	5	2 13 7
Balasore	231,200	370,300	6,18,400	6,81,300	10.1	1 13 5
Puri	94,600	130,200	2,40,200	2,54,800	6.1	1 15 4
Total	700,600	927,800	20,16,700	21,52,700	6.7	2 5 1

The greater enhancement in Balasore is due to the larger quantity of excess area found in that district.

These rents were settled under the Bengal Tenancy Act for fifteen years in the case of settled and occupancy raiyats, and for five years in the case of non-occupancy raiyats.

Jagirs and minha lands.—Mr. Maddox has dealt fully with the various subdivisions of these lands in paragraphs 466 to 473 of the report and I need not reproduce his account of them here. It will be sufficient to note that home steads and other lands confirmed as tenable without payment of rent at the last settlement were left unassessed; that rent-free grants made by the zamindars during the currency of the settlement were assessed to revenue but not to rent, and that the *jagirs* of village servants were regranted to them, while those of *chaukidars*, *patwaris*, *khandaits* and *paiks* were resumed and assessed to rent.

The existing rents of *under-raiyats* of all kinds were settled as fair rents, unless the landlord applied for an enhancement, in which case his application was dealt with under the law. Very few such applications were received.

Produce rents were not disturbed, unless either the landlords or the tenants applied for their commutation under section 40 of the Bengal Tenancy Act. It was only in a very limited number of cases that the Settlement staff were called upon to take action under this section.

Lands held in *khas* possession by the proprietors were assessed to revenue at their letting value, and the amount thus assessed was included in the assets of the estate. The area and the valuation of these lands have been shown in paragraph 15 above.

31. The aggregate effect of the working of the rules that have been briefly described in the two last preceding paragraphs may be summarised in the following statement showing the enhancement of the assets effected by the Settlement staff in the course of the proceedings. Further figures will be given in a later paragraph, in which

General results of the settlement of rents.

the general results of the Settlement operations will be summarised, to show how these assets compare with those ascertained and recorded at the last settlement :—

DISTRICT.	Number of holdings.	Area.	Existing assets.	Settled assets.	Percentage of enhancement.	Incidence of settled assets per acre,
1	2	3	4	5	6	7
		Acres.	Rs.	Rs.		Rs. A. P.
Cuttack	650,600	822,500	18,47,400	20,72,900	12	2 8 3
Balasore	370,290	692,200	9,88,800	11,51,400	16	1 10 7
Puri	204,400	373,300	5,73,700	6,43,300	12	1 11 7
Total	1,225,290	1,888,000	34,09,900	38,67,600	13	2 1 0

Of the total number of rents settled, Mr. Maddox estimates that in 54 per cent, the existing rents were retained; in 13 per cent. an enhancement was made on the ground of excess area; in 24 per cent. an enhancement was made on other grounds; while 3 per cent were reduced for loss of area and 6 per cent. were tenancies newly assessed.

I believe that the assets of the area dealt with during our proceedings have been adequately enhanced, with a due regard both to the rights of Government and the prosperity of the people. It is a noticeable fact that the zamindars, who would have benefited largely by a general enhancement of rents, have throughout deprecated any such proceeding, on the ground that they would find much difficulty in realising rents thus raised, and at the same time the general incidence of the assets does not compare unfavourably with that in neighbouring permanently settled tracts and in adjoining district. It may be that the opening of the East Coast Railway will greatly increase the prosperity of the Province and enhance the value of these lands, but for the present I see no reason to suppose that the rents that have been settled for them are other than fair and equitable.

32. I am unable to find in the report any statement of the annual progress made in the settlement of rents, but I gather from the annual reports of the years 1895 to 1899 that the following represents roughly the progress in each of those years :—

Survey year (from October 1st to September 30th).	Number of holdings for which rents were settled.
1894-95	13,950
1895-96	163,238
1896-97	858,040
1897-98	430,446
1898-99	45,760

It was undoubtedly owing in great part to the docility of the people, and the readiness with which they accepted the rents proposed to them, that the above progress was attained. Had any considerable numbers of them refused to attend, or declined to accept the proposals made, and had the strict provisions of the unamended Tenancy Act thus compelled us to settle a large proportion of the rents with all the formalities of the Civil Procedure Code, there can be little doubt that we should have experienced all the difficulties foreseen by Messrs. Macpherson, Maude, and Nathan, and should have found the task set before us an almost impossible one. The proceedings were not on the whole expensive, and in paragraph 625 of his report Mr. Maddox estimates that the settlement of rents cost Rs. 1,86,000 in Cuttack, Rs. 1,01,000 in Balasore, and Rs. 58,000 in Puri, or Rs. 3,45,000 in all, giving a rate of Rs. 71-9 per square mile, or As. 1-10 per acre.

33. The correspondence that led to the final orders of the Secretary of State on the subject of the percentage of the assets that was to be taken as revenue by Government, and the term for which the settlement was to be made with the zamindars, will be found in appendix A to the report, and it is sufficient to state here that the Secretary of State approved the proposal made by the Government of Bengal, and supported by the Government of India, that from 50 to 55 per cent. of the assets should be taken as revenue, adding at the same time a warning that the limit of 55 per cent. should be very sparingly exceeded. In the matter of the term of the settlement, the Secretary of State differed from both Governments in their recommendation of a 20-year settlement, and directed that the new settlement should be concluded for a term of thirty years. Mr. Maddox prefaces his Chapter on the subject of the work of Assessment to Revenue with a note to the effect that this task comprised the settlement of the revenue of nearly 6,400 estates situated in 11,000 villages; that some villages contained portions of more than 60 estates, while some estates were situated in more than 100 villages. I may add to this that the settlement of revenue was made for every individual estate by Mr. Maddox himself, and that, at the present time, the proprietors of only five estates have refused to accept the assessment that has been made. The rules under which this considerable work was carried out, and the forms in which the necessary statistics were compiled, are given at length in Appendix C, and the essential parts of them have been also reproduced by Mr. Maddox in paragraphs 478 to 481 of his report. In cases in which the settled revenue did not exceed Rs. 100, the settlement was made by Mr. Maddox, and in all other cases the settlement was submitted for the approval of the Commissioner of the Division. When, however, the Commissioner differed from the Settlement Officer, or when it was proposed to take more than 55 or less than 50 per cent of the assets, the proceedings were subject to the final confirmation of the Board. The rules worked smoothly and have produced an adequate increase of revenue. The zamindars have been convinced of the leniency of the Government proposals, which have been carried out with great care and tact by Mr. Maddox, and the result has been a Settlement fair to all parties, with an increased revenue that the Collectors should find no difficulty in realising.

34. The following is a brief *resume* of the principal results of the settlement of revenue, which occupied a large proportion of the Settlement staff from 1897 up to 1899. The figures given take no account of the comparatively insignificant deductions to be made during the first few years on account of *rasadi* allowances; they are the final figures of the revenue that will be ultimately realised from the year 1907. Including some Rs. 40,000 assessed on Government Estates, in which, of course, 100 per cent. of the assets is taken by Government, the following figures show the general results of the present settlement, as compared with the existing state of affairs found by the Settlement Department :—

DISTRICT.	Existing assets.	EXISTING REVENUE		Settled assets.	SETTLED REVENUE	
		Percentage of existing assets.	Amount.		Percentage.	Amount.
1	2	3	4	5	6	7
	Rs.		Rs.	Rs.		Rs.
Cuttack	18,47,400	38	7,14,100	20,72,900	53	10,99,300
Balasore	9,88,800	38	3,77,290	11,51,400	55	6,29,073
Puri	5,73,700	51	2,92,800	6,43,300	58	3,76,700
Total	34,09,900	41	13,84,190	38,6,600	54	21,05,073

The actual percentage of the assets taken as revenue thus works out to 54 per cent., and Mr. Maddox explains in paragraph 555 the circumstances in which the percentage varies in different districts.

The increase in revenue as shown in the above table amounts to 54 per cent. in Cuttack. 67 per cent. in Balasore, and 28 per cent. in Puri, or 52 per cent. for the Province as a whole. The incidence of the new revenue is compared with the incidence of revenue at the last settlement in the table below :—

DISTRICT.	ASSESSED AREA.		REVENUE.		INCIDENCE.		
	Last settlement.	Present settlement.	Last settlement.	Present settlement.	Last settlement.	Present settlement.	
1	2	3	4	5	6	7	
	Acres.	Acres.	Rs.	Rs.	Rs. A. P.	Rs.	A. P.
Cuttack	621,000	822,500	7,14,100	10,99,300	1 2 5	1	5 5
Balasore	493,200	692,200	3,77,290	6,29,073	0 12 3	0	14 6
Puri	302,400	373,300	2,92,800	3,76,700	0 15 6	1	0 2
Total	1,416,600	1,888,000	13,84,190	21,05,073	0 15 7	1	1 10

The effect of the present settlement on the incomes of the zamindars as they existed before it was undertaken can be obtained from the first table in this paragraph. The following are the resultant figures :—

DISTRICT.	Income before settlement.	Income after settlement.	Percentage of reduction.
1	2	3	4
	Rs.	Rs.	
Cuttack	11,33,300	9,73,600	14
Balasore	6,11,510	5,22,327	14
Puri	2,80,900	2,66,600	5
Total	20,25,710	17,62,584	13

It is noticeable that in Puri, where Government has taken 53 per cent. as revenue, the reduction in the income of the zamindars is only 5 per cent.

The figures for the income of the zamindars at the time of the last settlement, which have been given in paragraph 15 above, show that whereas they then received an income of Rs. 7,54,010 they will now receive an income of Rs. 17,62,000 so that while the revenue has been enhanced by Rs. 7,08,200 since the last settlement, or by 52 per cent., the income of the zamindars has increased by Rs. 10,08,000 or by 133 per cent.

The following statement shows the results of the settlement of revenue upon the incomes of the proprietary tenure-holders, the class that was bound to suffer most on the occasion of the re-settlement of the revenue. The enhancements have been softened in almost all cases by *rasadi* allowances :—

DISTRICT.	Existing income as shown in paragraph 15	SETTLED.			Percentage of reduction of income
		Assets.	Revenue.	Balance.	
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	
Cuttack	1,01,693	2,38,902	1,62,284	76,618	25
Balasore	49,672	1,19,435	85,804	33,631	32
Puri	96,332	2,92,530	2,23,981	68,549	29
Total	2,47,697	6,50,867	4,72,069	1,78,798	28

35. I am unable in this review to do justice to the great mass of office work, in the compilation of statistics, the correction of the records, the preparation of fair copies, and the classification of papers, that was done at head-quarters and at specially selected centres during the course of the operations. The fact that some 12,000 village records had to be dealt with, in addition to the completion reports and similar assessment papers for 6,400 estates, will serve to give some indication of the formidable programme that had to be got through, and the figures in paragraph 488 of the report show that some 21 million entries for separate fields were made in the course of the copying work alone, at a cost of over one and a quarter lakhs of rupees. The work connected with the publication of the records in each village both in draft and finally, was also severe, and the final arrangement of all papers for deposit in the Collectorate record-room was the subject of much careful consideration, and occupied a large establishment for an appreciable time. This and some details concerning the case-work under the Bengal Tenancy Act are dealt with in paragraphs 482 to 500 of the report. The following are the case-work figures, fortunately small, and it is a subject for sincere congratulation that the people of Orissa shewed so little inclination to take advantage of the opportunities for litigation afforded them by the Act under which the operations were conducted :—

District.	Objections under section 103 (Section 103 A of the amended Act).	Disputes under section 106.
Cuttack	32,120	5,751
Balasore	19,651	4,756
Puri	11,747	764
Total	<u>63,518</u>	<u>11,271</u>

The disputes raised in the district of Balasore were mostly connected with lands in the neighbourhood of the town of Balasore itself, and were undoubtedly to a great extent the work of touts and petty legal practitioners. The cost of the miscellaneous work described in this paragraph, and of the disposal of the cases entered in the above statement, is given by Mr. Maddox in paragraph 625 of his report, as follows :—

District.	Miscellaneous work. Rs.	Case work. Rs.
Cuttack.	61,000	1,82,000
Balasore.	50,000	1,08,000
Puri.	15,000	60,000
Total	<u>1,26,000</u>	<u>3,50,000</u>

36. I have included so many scattered figures in the course of the present review that it may be as well to briefly summarise the principal results of the settlement proceedings in tabular form for purposes of ready reference. I consequently give below some of the more important figures relating to (1) Extension of cultivation (2) Settlement of rents, (3) Assessment of revenue, and (4) the cost of the proceedings.

(1) *Areas* :— The following table shows the increase in areas cultivated, and in those liable to assessment, during the currency of the past settlement :—

DISTRICT.	CULTIVATED.			ASSESSED.		
	Last settlement.	Present settlement.	Percentage of increase.	Last settlement.	Present settlement.	Percentage of increase.
1	2	3	4	5	6	7
	Acres.	Acres.		Acres.	Acres.	
Cuttack ...	697,000	920,000	32	621,000	822,500	32
Balasore ...	554,000	776,000	40	493,200	692,200	40
Puri ...	377,000	464,000	23	302,400	373,200	23
Total ...	<u>1,628,000</u>	<u>2,160,000</u>	<u>33</u>	<u>1,416,600</u>	<u>1,888,000</u>	<u>33</u>

(2) *Rents*:—The statements below give comparative figures for the rents of the most important classes of tenants and for the total assets at various periods :—

(a) *Rents*:— Totals for the Province :—

CLASS OF TENANCY.	LAST SETTLEMENT.			EXISTING			PRESENT SETTLEMENT				
	Area.	Rent.	Incidence per acre.	Area.	Rent.	Incidence per acre.	Number.	Area.	Rent.	Incidence per acre	Enhancement per cent. over existing rents.
1	2	3	4	5	6	7	8	9	10	11	12
	Acres	Rs.	Rs. A. P.	Acres.	Rs.	Rs. A. P.		Acres	Rs.	Rs. A. P.	
Baziaftidars....	301,900	1,63,400	0 8 7	286,600	1,32,000	0 7 4	233,200	236,600	3,00,000	1 0 9	127
Thani	337,700	7,65,300	2 4 3	88,600	1,98,400	2 3 9	54,500	88,600	2,11,400	2 6 2	6.5
Thani Pahi ....	.....	.....	.....	259,000	5,10,900	1 15 6	60,900	259,000	5,39,700	2 1 4	5.6
Pahi	570,900	8,95,700	1 9 1	927,800	20,16,700	2 2 9	700,600	927,800	2152,700	2 5 1	6.7

(b) *Assets* :—District by district :—

District.											
Cuttack	621,000	11,21,000	1 12 10	822,500	18,47,400	2 4 0	650,600	822,500	20,72,900	2 8 4	12
Balasore ..	493,500	5,75,600	1 2 8	692,200	9,88,800	1 6 10	370,209	692,200	11,51,400	1 10 7	16
Puri	302,400	4,41,600	1 7 4	373,360	5,73,700	1 8 7	204,400	373,300	6,43,300	1 11 7	1
Total....	1,416,600	21,38,200	1 8 0	1,888,000	34,09,500	1 12 10	1,225,290	1,888,000	38,67,600	2 1 0	13

(3) *Revenue*:—The following table summarises the results of the settlement of Government revenue :—

DISTRICT.	REVENUE AT THE LAST SETTLEMENT.			EXISTING REVENUE AT THE TIME OF SETTLEMENT			SETTLED REVENUE.			
	Percentage of assets.	Amount.	Incidence	Percentage of assets.	Amount.	Incidence	Percentage of assets.	Amount.	Incidence	Enhancement per cent.
1	2	3	4	5	6	7	8	9	10	11
		Rs.	Rs. A. P.		Rs.	Rs. A. P.		Rs.	Rs. A. P.	
Cuttack....	64	7,14,100	1 2 5	38	7,14,100	0 13 11	53	10,99,300	1 5 5	54
Balasore	65	3,77,290	0 12 3	38	3,77,290	0 8 8	55	6,29,073	0 14 6	67
Puri	66	2,92,800	0 15 6	51	2,92,800	0 12 6	58	3,70,700	1 0 2	28
Total....	64	13,84,190	0 15 7	41	13,84,190	0 11 9	54	21,05,073	1 1 10	52

(4) *Cost* :—The cost of the proceedings may be thus summarised. The figures are taken from Chapter XXV of the Final Report, with some necessary adjustments of the survey expenditure. The total area dealt with was 4,797

square miles excluding Khurda, the Ekhrajats, and Killas Aul, Darpan and madhupur:—

DISTRICT.	Survey and Khanapuri	Khanapuri inspection by the Settlement Department.	Attestation	Rent Settlement.	Revenue assessment.	Miscellaneous.	Total
1	2	3	4	5	6	7	8
(a) Expenditure....	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Cuttack....	4,32,500	75,000	4,80,000	1,86,000	1,90,000	2,43,000	16,06,500
Balasore....	2,74,500	33,000	1,80,000	1,01,000	67,000	1,58,000	8,13,500
Puri....	2,24,400	40,000	2,05,000	58,000	38,000	75,000	6,40,400
Total ...	9,31,400	1,48,000	8,05,000	3,45,000	2,95,000	4,76,000	30,60,400
(b) Rate per square mile							
Cuttack....	203	36	233	90	92	113	779
Balasore....	160	19	105	49	39	92	474
Puri....	219	39	250	56	37	74	625
Total....	194	31	180	72	61	99	637

37. Mr. Maddox touches upon the question of the maintenance of the records in paragraph 501, and quotes in full in that paragraph certain views on the subject that I have recently had the honour of submitting for the consideration of the Board and Government. The history of the question as it affects Orissa is to be found in paragraphs 9 to 11 of Mr. Finucane's letter No. 233T. R., dated 12th May 1897, printed as Appendix A-11 to this report and the full discussion of the principles involved in it is recorded in the minutes of the proceedings of a conference in Cuttack, contained in Appendix A-10. The present position of the question is that a draft Bill for the imposition of a patwari cess, and for the maintenance of the record by means of a local establishment of patwaris, with draft rules to be published under it, has been drawn up by the Settlement Department and submitted to the Board and to Government, but opportunity has been taken at the same time, with the permission of His Honour the Lieutenant-Governor, to represent again the very strong objections that are felt by the local officers and myself to the introduction of the proposed scheme, and the extremely heavy expenditure which will be involved in carrying it out. This representation is now before His Honour the Lieutenant-Governor, who is, I understand, awaiting the receipt of some further information as to the experience obtained in other provinces before dealing finally with it. In order to obtain this information it has been found necessary to make a reference to the Settlement Department of the North-Western Provinces and the Central Provinces. Their replies have recently been received, and the required report has now been, submitted to the Board.

38. In various paragraphs throughout the Final Report Mr. Maddox has made recommendations affecting the general administration of the Province and other Departments of Government, which are worthy of special attention, and which will in most cases doubtless form the subject of separate correspondence. I need do no more than indicate the more important of these recommendations, in order that they may not be inadvertently overlooked.

In paragraphs 23 to 27, 47, and 87 to 90 some valuable suggestions are made on the subject of canals and embankments, which will doubtless receive the attention of the Public Works Department. A separate representation is being

submitted to the Board on the subject of the devastation caused by the floods which pour through the Adlabad breach in Puri.

In paragraphs 103 to 118 the subject of irrigation and the imposition of an owner's rate on lands irrigable from or protected by, canals is dealt with. The question of an owner's rate will be specially reported upon by me, under the orders of Government, at an early date.

In paragraph 305 some recommendations are made, with which I do not wholly agree, on the subject of the recovery of rents from proprietary tenure holders by the zamindars.

There are some noticeable remarks contained in paragraph 309 on the creation of middlemen by the State in *khas mahals*.

In paragraph 344, Mr. Maddox makes certain recommendations on the subject of rent *kists*. The question of *kists* for the payment of revenue is dealt with in paragraph 565.

The question of the further extension of the provisions of the Bengal Tenancy Act is treated of in paragraphs 353 to 361.

Some suggestions as to the settlement procedure to be adopted on the occasion of the next settlement of Orissa, which have also an important bearing on the conduct of all large settlements in Bengal, are contained in paragraph 376.

In paragraph 456, Mr. Maddox expresses the regret-shared with him by most Settlement Officers in Bengal—that the power of reducing as well as of enhancing rents is not commonly entrusted to them.

The important proposals made in paragraph 474 for the inspection and preservation of the lands reserved as grazing and cremation grounds will not, I hope, be overlooked by the local officers or by Government.

Some suggestions as to the treatment of *jalpahi* lands in Balasore are made in paragraph 611.

39. In conclusion, I would venture to invite the attention of the Board and of Government to the services rendered by those officers who have been mainly instrumental in carrying through the extensive operations that have been reviewed above.

Of the subordinate officers of the Survey Department I am unable to speak with knowledge. I believe that Messrs. R. C. Ewing and A. W. Smart are worthy of the commendation expressed by Mr. Maddox. The Board are, however, well aware of the great value of the services which were rendered by Colonel Sandeman and Captain Crichton throughout the survey operations in Orissa. Colonel Sandeman brought an extensive experience of work in other parts of India to bear upon those operations when they were entering their most important stage, and completely reorganised the system under which the Survey and Settlement Departments jointly controlled the work. Captain Crichton equally identified himself with the interests of good survey and *khanapuri*, and rendered capable assistance to the Director of Bengal Surveys in every detail of the proceedings.

Mr. Finucane, I. C. S., C. S. I., as Director of Land Records and Agriculture, issued the first instructions for the guidance of Assistant Settlement Officers, and subsequently indicated the broad principles and lines of procedure upon which rents were eventually settled throughout the province.

From May 1892 up to November 1897, with one brief interval, Mr. W. C. Macpherson, I. C. S., directed and supervised every detail of the operations of the Settlement Department. During that period he constantly visited Orissa and conferred with the officers of his Department on the spot while in a large number of valuable reports he brought together the information collected by them on multifarious subjects connected with the work, and either determined the principles upon which most of the important questions connected with the conduct of the operations should proceed, or presented those questions in a complete form for the determination of Government. During the stages of record-writing and attestation, in the experiments undertaken for the determination of the principles and methods to be adopted in the settlement of rents, in all the operations connected with the assessment of revenue, and in almost every detail of the office work involved in these operations, Mr. Macpherson's assistance and

advice were never wanting, and the recommendations made by him to the Board and to Government were in almost all cases accepted and approved.

Mr. W. Maude, I. C. S., came to Orissa as Settlement Officer in November 1892, and left after his health had failed in February 1896. He took up the work at a most critical time, when it was suffering from want of organisation and much ignorance of the essential principles upon which it should be conducted. Mr. Maude rapidly evolved rules for record-writing and attestation, thoroughly organised these stages of the work, and by unremitting inspection raised the standard and the quality of the work done by a large staff of subordinates. He was also intimately associated with the successful labours of Mr. Macpherson during the three and a half years of his stay in Orissa, and on several occasions received the special thanks of Government for the services he rendered.

Mr. E. H. C. Walsh, I. C. S., was connected with the proceedings for a short period, in the years 1891 to 1892, and distinguished himself by sound work at a time that it was sadly needed.

Mr. Ambika Charan Sen of the Statutory Civil Service worked for some four years as an Assistant Settlement Officer in Orissa, and acquired a considerable knowledge of the Province, which has been utilised by Mr. Maddox, with cordial acknowledgments, in his report.

The services of Mr. R. Nathan, I. C. S., as an Assistant Settlement Officer during the period from November 1891 to February 1894, were of great value to the proceedings. Mr. Nathan contributed largely to the right determination of the principles which should govern record-writing and attestation, and in his report on the Kotdes pargana, which was based on experimental assessment work of an elaborate nature in no fewer than four hundred villages, he indicated the lines upon which some of the chief difficulties attending the work should be dealt with. Mr. Nathan's energy and devotion to his duties resulted in the breakdown of his health. His departure on sick leave in 1894 was a serious loss to the Department.

Messrs. J. G. Cumming and C. A. Radice of the Imperial Civil Service both rendered great assistance in the earlier stages of the work, in the inspection of *khanapuri*, and in the conduct of attestation.

Mr. Hugh McPherson, I. C. S., did much valuable work in Puri from 1896 to 1898, his capacity for organisation being of great service in copying with the difficulties met with in the final completion of the work in that district. His excellent report on the operations in Puri is printed as an appendix to Mr. Maddox's report.

Mr. Maddox very cordially acknowledges the services of Mr. J. E. Webster, I. C. S., who was his right-hand man for four years, both as Assistant Settlement Officer in charge of Cuttack and as superintendent of the large amount of office work done in the head-quarters office. Mr. Webster has rendered excellent service in the preparation of rules and forms, in the energetic and tactful inspection of a considerable staff of subordinates, and in the compilation of the Final Report.

Mr. H. D. deM. Carey, I. C. S., was a member of the settlement staff for two years, and Mr. Maddox testifies to the value of the services rendered by him in the drafting of rules and instructions, and in the preparation of the forms for the completion reports.

Mr. W. B. Thomson, I. C. S., rendered much assistance to the work, for over two years, from 1894 to 1897, when his health unfortunately failed him, and he had to revert to the general line.

The services of Mr. Douglas H. Kingsford, the most junior of the members of the Imperial Civil Service who have been connected with the settlement of Orissa, have been by no means the least conspicuous. Mr. Kingsford joined the Department in 1895, and in 1897 was placed in subordinate charge of the operations in the district of Balasore, a responsible and onerous post. Mr. Kingsford has performed his duties with much ability and energy, and his capable report on the work in Balasore, which is published as an appendix to the Final Report, displayed considerable knowledge of the people among whom he laboured.

Among the Deputy and Sub-Deputy Collectors appointed from time to time as Assistant Settlement Officers there were many who did good work, some who succeeded only fairly, and a few who proved definite failures. A considerable proportion were unable to bear the strain of work and exposure involved in the conduct of their duties, and were consequently unable, to do their abilities justice or to bring their labours to a wholly successful termination. The casualty list has indeed been a heavy one throughout the operations, and the comparatively short list of officers in these grades that I now submit for the favourable consideration of Government would have been much lengthened had several officers of promise been physically strong enough to remain at their posts for a longer period.

I can myself certify to the admirable work done by the officers named below, whom I now recommend to the favourable notice of the Board and Government for able and loyal service in the settlement of Orissa :—

Babu Jamini Mohan Das,	Deputy Magistrate and Deputy Collector.
Babu Govinda Chandra Das Gupta,	„ „
Babu Sri Gopal Bhattacharya,	„ „
Babu Sriram Chandra Bose,	„ „
Babu Jotindra Mohan Sinha,	„ „
Mr. James Taylor,	„ „
Babu Prasanna Kumar Banerji,	„ „
Babu Akshoy Kumar Sen,	„ „
Babu Giris Chandra Dutt,	„ „
Babu Jogendra Narain Mitra, formerly Personal Assistant to the Settlement Officer of Orissa, now Deputy Magistrate and Deputy Collector.	„ „
Babu Abhoy Persadh Das, Sub-Deputy Magistrate and Sub-Deputy Collector.	„ „
Babu Hara Krishna Mahanti	„ „
Maulavi Mahomed Chainuddin,	„ „
Babu Jagannath Datta	Sadar Kanungo, Balasore.

I have reserved to the last my notice of the exceptional services which have been rendered by Mr. S. L. Maddox, I.C.S., in the course of this settlement.

Mr. Maddox joined as an Assistant Settlement Officer in Balasore in October, 1892, and was almost continuously employed on settlement duty in the Province up to December 1899. In October 1894, he was placed in independent charge of the operations in Balasore, and from March 1896 he has held the very responsible post of Settlement Officer of the whole Province. For seven years he has given his whole abilities and energies to the efficient conduct of these proceedings, working with an unceasing devotion to his duties that has seriously affected his eye-sight and his health. He has impressed with the mark of his ability every stage of the work, and is directly responsible for the organisation and completion of the settlement of rents for one and a half million tenants, and for the assessment to revenue of nearly six thousand four hundred estates. The final success of the settlement is due in no small degree to the loyalty, energy and resource displayed by him, to his consideration for, and sympathy with, the people of Orissa and to his tactful control of a staff which sometimes numbered over forty officers.

I have the honour to be,
Sir,
Your most obedient servant,
P. C. Lyon,
*Director of the Dept. of Land
Records and Agriculture, Bengal.*

BOARD OF REVENUE, L. P.
LAND REVENUE DEPARTMENT.
S. & S. BRANCH.

No. 1304 A.

From

R. W. CARLYLE, Esq., C. I. E.,
Offg. Secretary to the Board of Revenue, L. P.,

To

THE SECRETARY TO THE GOVERNMENT OF BENGAL,
REVENUE DEPARTMENT.

Dated Calcutta, the 7th November 1900.

Land Revenue Dept.
Survey and Settlement Branch

Member in charge,
G. Toynbee, Esq.

Sir,

I AM directed to forward herewith, for the orders of Government, under Part III, Chapter 13, Rule 4 (v), page 102 of the Survey and Settlement Manual, 1895, the Final Report on the Settlement of Orissa (exclusive of Khurda) by the Settlement Officer, Mr. S. L. Maddox, I. C. S. together with very complete reviews thereof by Mr. P. C. Lyon, I. C. S., the Director of Land Records & Agriculture, Bengal, and by the Officiating Commissioner, Mr. E. B. Harris. The Final Report on the Revision of the Khurda Settlement was forwarded to Government with the Board's letter No. 597A, dated 5th May 1900, and the submission of the present Report completes the history of the re-settlement of the whole Province.

2. As the Director's review deals exhaustively with the main features of the settlement operations and their results, the Board will not go over the same ground again, but will content themselves with making such general observations as appear to them to be called for, or to be of interest.

3. *General arrangement of the Report.*—The Board are of opinion that the arrangement of the various Chapter of the Report might have been improved upon, and that a considerable amount of the information given in the body thereof need not have been repeated in the Appendices. For instance, Chapter IX comes more naturally after Chapter I; Chapter XI after Chapter V; Chapter X after Chapter XII, and so on; and a good deal of the information in Chapters II, III, and IV—the statistical accounts of the three districts of Cuttack, Balasore, and Puri—is repeated almost *verbatim* in the Appendices. The Board, however, agree with the Director that such minor defects as the above are of no practical consequence in a report which, with its Appendices, extends over a total number of more than eleven hundred pages, and which is not only a monumental work of patient research and conscientious record of facts, but is also a work of reference so complete in itself that officers who serve in Orissa in future will hardly have to turn to any other for any possible information they may require for administrative purposes. Its value is further enhanced by the table of contents, the glossary of native terms, and the index and maps which accompany it.

4. Although, as indicated in the preceding paragraph, the Board have criticised Mr. Maddox's sequence and arrangement of subjects, they have, in making the observations which follow, dealt with them, for the sake of facility of reference, in the order in which they occur in the Final Report.

5. *Magnitude of the Operations.*—The magnitude of the survey and settlement operations and the onerous nature of the work done may be gauged

by the figures given in Paragraph 3 of the Report, where it is stated that the operations extended over a period of ten years and over an area of 5,000 square miles; that rents have been settled for a million and a-half of tenants; and that the Government revenue of over 6,000 estates has been raised from about 14 lakhs to over 21 lakhs of rupees—an increase of over 52 per cent. The Commissioner in paragraph 4 of his review has given a just appreciation of the work done by the officers engaged in the settlement operations.

6. Chapters II, III, and IV.—The Board have no criticisms or other remarks to offer on these Chapters of the Report, which contain statistical and Physical accounts of the three districts of Cuttack, Balasore, and Puri. The information therein given regarding irrigation and embankments has been dealt with by the Board in their remarks on Chapter V, which follow.

7. *Irrigation* :—In Chapter V, and in various other paragraphs of his Report, Mr. Maddox has discussed the question of irrigation as affecting rents and revenue. It is, in the Board's opinion, clearly demonstrated that irrigation in Orissa, where the annual rainfall averages 62.02 (*see page 79*), is of the nature of an insurance against drought rather than a necessity (as in the country watered by the Godavari canals), or as a means of increasing the area of cultivation or the yield of crops grown on irrigated lands. The exhausting effect which the raiyats believe canal irrigation to have on the soil has to be set off, in the latter case, against an increased yield. It must also, the Board think, be admitted that the experiments as to the yield of rice on irrigated and unirrigated areas have not yet been made on a sufficiently extensive scale to warrant any certain or reliable conclusions being based upon them. The opinion expressed by the Settlement Officer, viz., that in ordinary years the average outturn is not very much less on unirrigated than on irrigated lands (*pages 82 and 83*), is borne out by the fact that rents are not markedly higher in the latter than in the former (*page 89*). The greatest benefit of irrigation is shown to be its effect on the collection of rents and of revenue. It does not, however, appear possible at present to tax this benefit in a direct manner by the imposition of a special rate on irrigated lands. The indirect benefits to the State are enormous, though they cannot be calculated; but it may be safely asserted that the saving of expenditure on famine relief and the absence of the necessity of making remissions for loss of crops on irrigated areas are of immense value to the State. Mr. Maddox has explained in paragraph 115 (*page 91*) of his Report why the State has not been able to take its full share of the direct advantages which the irrigation works confer on both raiyats and zamindars in the temporarily-settled tracts. The reasons are—(i) the orders of the Secretary of State limiting the percentage of assets to be taken by Government to 55 per cent. save in very exceptional cases; (ii) the strict interpretation put on those orders by the Board of Revenue; and (iii) the necessity of not running the proprietors by a too sudden and large deduction of their incomes. For the strict interpretation placed by the Board on the Secretary of State's orders (which are reproduced in full on *page 122*, Appendix A of the volume of Appendices) Mr. Toynbee accepts the full responsibility. If any justification of his action be required, it is to be found in the third of the reasons given above. Wherever it has been possible, without hardship or injustice, to raise the percentage above 55 per cent., it has been done; but the cases in which such an increase has been due solely to irrigation or to protection, are very few and far between. Many other complicated and intricate reasons have had to be considered. At the next settlement, however, with the conditions of the Province radically changed by the opening of the East Coast Railway, and with increased knowledge of its material and agricultural circumstances, it will, in Mr. Toynbee's opinion, be possible for Government to take a higher percentage of the assets of temporarily-settled irrigated lands (estimated by Mr. A. W. Inglis at *page 45* of his "Narrative" to extend over 300,000 acres), and so to recoup themselves to some extent for the capital expenditure of over 2½ crores of rupees—to say nothing of the annual charge for interest of over ten lakhs of rupees—which has been sunk up to the 31st March 1899 in the construction of the canals (Mr. Inglis, "Narrative", *page 55*).

8. *Owner's Rate*—As regards the question of the imposition of an "owner's rate" on irrigated and protected areas in the permanently-settled estates of Orissa, the Board are of opinion that its consideration should be

postponed during the currency of the new settlement. If at the next settlement it be determined to take for Government a higher percentage of the assets of irrigated and protected areas in the temporarily-settled area, it may not be considered impossible or inequitable to impose an owner's rate on similar lands in the permanently-settled tracts. In face of the facts and figures set out in Chapter V of the Report, Mr. Toynbee does not think that the question is any nearer to a practical solution than it was in 1877, when he was placed on special duty to collect information in support of the Bill for the imposition of an owner's rate. This Bill was introduced into the Bengal Council on the 31st March 1877 but was dropped in the following December. If, however, as is stated in paragraph 481 on page 323 of the Final Report only 50 per cent. of the assets was generally taken as revenue in temporarily-settled estates specially exposed to flood and liable to drought, the Board see no reason whatever why at the next settlement at least 60 per cent should not be taken from such estates as are found, after an enquiry such as that indicated in the next paragraph, to be fully protected from such calamities by embankments and canals constructed and maintained at the sole cost of Government. On this subject the remarks made by the Commissioner in paragraphs 12 to 14 of his review may be referred to ; but as the question will be dealt with separately (like the Patwari cess question), the Board will not here enter into further details.

9. *Embankments* :—If it was found impossible during the settlement operations to definitely fix and assess the benefits derived from irrigation, it was found a still more hopeless task to do so in regard to lands protected by the canal or other embankments constructed and repaired by Government. The Settlement Officer has shown in paragraph 90 (*page 61*), paragraph 544 (*page 368*), paragraph 545, Block VIII (*pages 376 and 377*), and in other parts of his Report, *e g.*, paragraph 481 (*page 323*), the disastrous effects of flood damages on rents and revenue. With his letter No. 1741S., dated 24th August 1900, the Director of Land Records submitted a report of the effect on the agricultural conditions and the land revenue of certain villages in parganas Purbaduai, Oldhar, Athaisi, Matkatpatna and Rahang in the district of Puri, of the policy adopted by Government of leaving open the breach at Adlabad in the Bhargavi left embankment, and has in conjunction with the local officers (Collector, Commissioner and Settlement Officer), recommended a reconsideration of the above policy. It is represented that if the breach is kept open, it will cause a loss to Government of revenue of over Rs. 3,200 per annum for five years, or of nearly a lakh of rupees for the whole term of the 30 years' settlement. A copy of the Director's letter with all its enclosures has been separately submitted to Government for order. (*Vide* Board's No. 1305A, dated 7th November 1900). The Board think that the whole question of the Orissa protective embankments has hitherto been too exclusively considered from an *engineering* rather than from a *revenue* point of view. The publication of Mr. A. W. Inglis' "Narrative" of Irrigation and Embankments in Orissa" and of the Settlement Report now under review renders it desirable, in the Board's opinion, that the whole question of embankments in Orissa should be reconsidered by a Commission in view of the probable effects of the existing state of affairs on the revenue of the next settlement. The question of the abandonment of the coast canal, which is raised in paragraph 48 (*page 30*) might also be considered at the same time. The figures given on page 175 of the Report are instructive in this connection as showing that during 36 years of the previous settlement, a sum of no less than 45½ lakhs of rupees was remitted, of which Rs. 19,74,339 was on account of inundation and Rs. 25,79,402 on account of drought.

10. *Agriculture* — Chapter VI of the Report is a mine of information on agricultural subjects, but, as remarked in paragraph 3, a good deal of the subject-matter has been repeated *verbatim* in the Appendices. The account given, on page 100, of the Uriya system of measurement is specially interesting, and not one of the least useful results of the settlement operations is the introduction of a uniform system of land measurement in acres and decimals, which is already fully understood in the Khurda Government estate. In paragraph 126 it is stated that rice is grown in nearly 88 per cent. of the cultivated area. The Province is, therefore, practically dependent for its food-supply and prosperity on this one crop. It was this fact which caused the unusual severity of the great Orissa