

REPORT

ON THE

LAND REVENUE SETTLEMENT

OF THE

SAMBALPUR DISTRICT

1906.

BY

F. DEWAR, I.C.S.,

Settlement Officer, Sambalpur.



PAINA :

SUPERINTENDENT, GOVERNMENT PRINTING, BIHAR AND ORIS.

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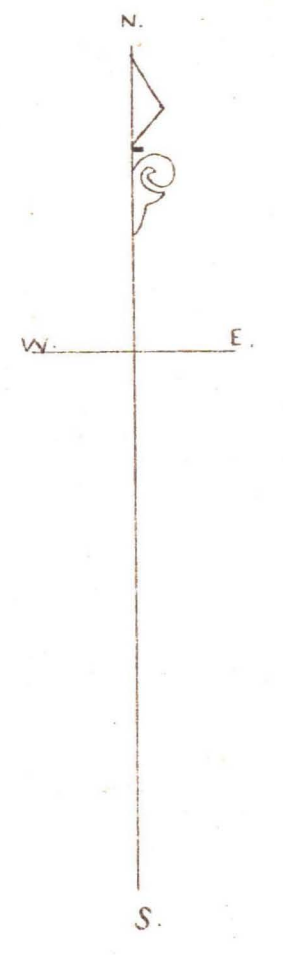
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SKETCH MAP OF SAMBALPUR DISTRICT

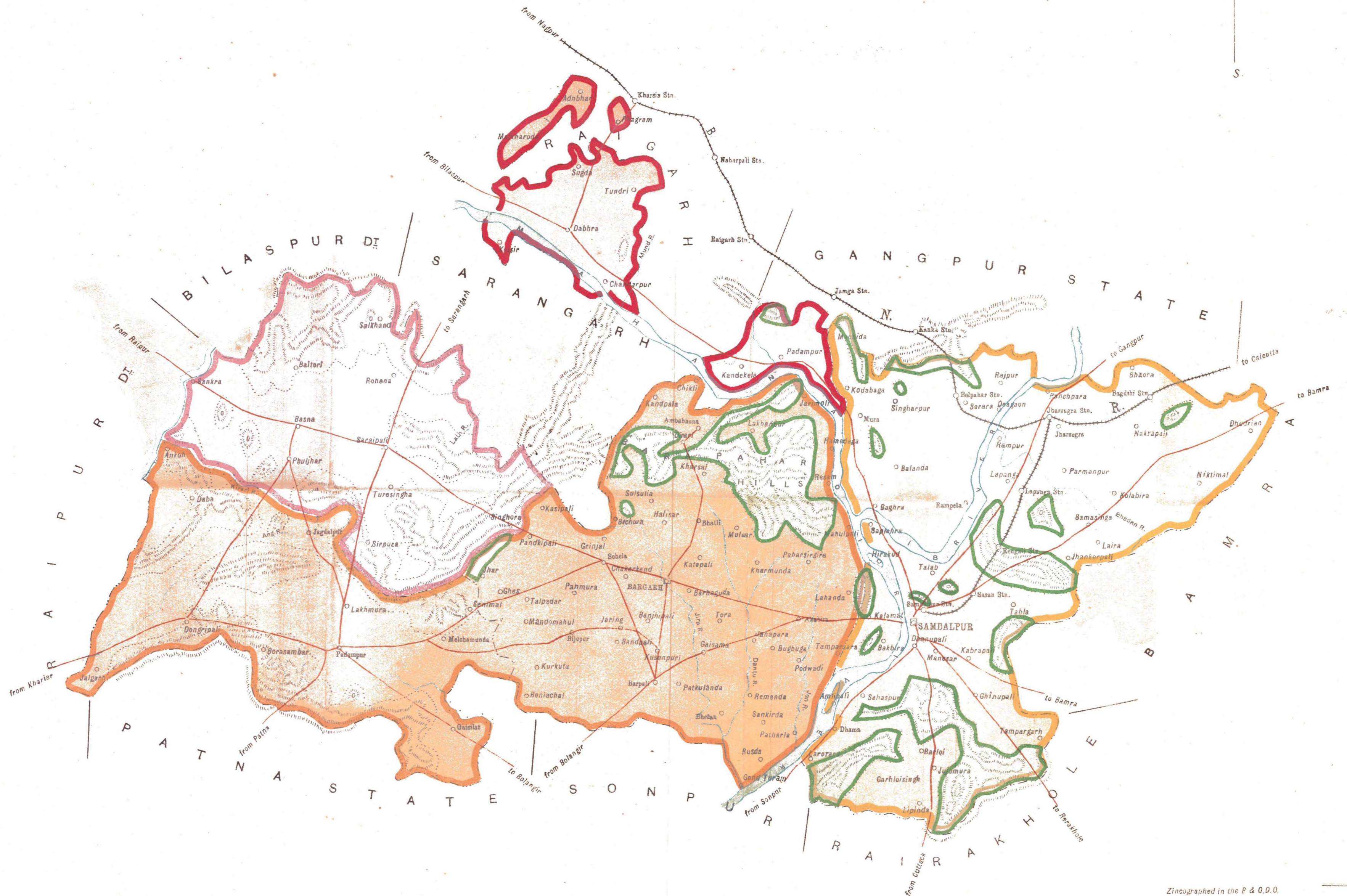
EXPLANATION

- Boundary of Sambalpur Tahsil.....
- do of Bargarh do.....
- Government Reserve Forest.....
- Boundary of Chandarpur, Padampur & Malkharoda transferred to Bilaspur District.....
- do of Phuljhar Zamindari transferred to Raipur District.....
- Zamindari Forest.....
- E. N. Railway Line with Stations.....
- Roads.....
- River &c.....

Scale 8 Miles = 1 Inch



	Population	Area in Square Miles.
Bengal District	638, 922	3, 824.
Bilaspur District Chandarpur &	88, 641	349.
Raipur District Phuljhar.....	102, 105	787.



REPORT
ON THE
LAND REVENUE SETTLEMENT
OF THE
SAMBALPUR DISTRICT.

PART I.
THE DISTRICT.

CHAPTER I.

ITS GEOGRAPHY.

1. At the time when the resettlement which is now to be reported on was undertaken, Sambalpur was the most easterly district of the Central Provinces. But on the 16th October 1905 the greater part of it was transferred to the Province of Bengal and became a district of the Orissa Division. Certain estates in the extreme north and north-west were retained in the Central Provinces and incorporated in the districts of Bilaspur and Raipur. It will be understood that in the present report, except where it is otherwise stated, all references to Sambalpur district apply to the new district of Bengal.

The new boundaries are on the west Raipur district, and on the north-west Bilaspur district and the Feudatory States of Sarangarh and Raigarh, all belonging to the Central Provinces. To the north and north-east lies the Gangpur State of Bengal, and to the south-east and south the Bamra, Rairakhol, Sonpur, and Patna States, which were transferred with the district to Bengal.

2. The total area of the old district was first given by the Survey Department as being 4,948 square miles. At last settlement, in 1888-89, after a village survey had been completed for all the more open part of the district, Mr. Fuller reduced this figure to 4,919 square miles. A detailed survey has now been completed for all parts except the remoter forest tracts in zamindari estates, and the correct area of the old district would appear to be 4,960 square miles.

The following are the areas of the Bengal district:—

Khalsa—	Square miles.
Pargarh Tahsil	827
Sambalpur „	743
Sixteen zamindaris (surveyed village lands)	1,416
Unsurveyed zamindari forests	375
Government Forest Reserves	396
Bed of the Mahanadi river	67
Total area of the Bengal district	3,824

The Chandarpur, Padampur, and Malkharoda estates, nine khalsa villages of Sambalpur tahsil which lie detached in these estates, and part of the bed of the Mahanadi, a total area of 349 square miles, now belong to Bilaspur district. Phuljhar zamindari, covering 787 square miles, has been attached to Raipur.

3. The two tahsils into which the district is divided are now called the Sambalpur and Bargarh tahsils. They may be said to lie east and west of the Mahanadi River. But this does not run directly from north to south. It enters the district in the north-west describes a wide semicircle, and passes out in a south-easterly

direction towards Cuttack. The old names of the tahsils or subdivisions, still most commonly used by the people, are the Uttartir and the Dakkantir, the northern and southern. These embody history. When they were first used the important part of the present Sambalpur tahsil lay north of Sambalpur town beside Rampaluga, Padampur, and Chandarpur in the Mahanadi valley, and beside Talab, Kämpela, and Lapanga in the valley of the Ib river, its tributary. There was then little or no cultivation in the south among the forest-clad hills of Tampargarh and Garhloisingh. To the west in Bargarh tahsil agricultural and political interest centred in Rusra, Remenda, and Bargarh, towns of the southern plain. The western zamindaris of Borasambar and Phuljhar were regarded as being Feudatory States, not part of the district proper, and it is only of late years that the uplands in the north have been fully cleared and settled. Few matters in the district are more striking than the antiquity of certain villages and the recent pioneer cultivation of others not far distant.

4. Sambalpur tahsil is the smaller of the two subdivisions and, now that the distant Chandarpur tract has been detached, it is very compact. Its total area is 1,599 square miles, and it contains 773 revenue villages. Across its extreme north runs the main line of the Bengal-Nagpur Railway, and a branch line comes down to its centre. These render all the northern part fairly accessible. But the country is traversed by the Ib river, nowhere bridged for cart traffic, and is intersected by hill ranges.

5. The western subdivision, which covers 2,225 square miles and contains 1,175 revenue villages, is of a very unwieldy size, being over a hundred miles in length. It has no railway communication, but the principal road of the district, the main Sambalpur-Raipur road, passes through it from east to west. This crosses the Mahanadi at Sambalpur by a pontoon-bridge, replaced by ferry-boats in the rainy season. It has few bridges over other rivers and streams and is not an expeditious route even in the open season. Its feeder-roads are little better than surface-tracks, and communication with the more backward and remote hill tracts of the north and south-west is not easy.

6. After the Mahanadi river the most striking natural feature of the district is the great range of hills which runs along its northern border. This goes eastward from the Sarangarh State along the north of Bargarh tahsil where it is known as the Bara Pahars. A narrow range at first, it widens as it goes eastward to the point where the Mahanadi, striking south, cuts it in two. Beyond the river it is continued in a lessening chain of hills turning north-east into the Gangpur State. In the west of the district, at a right angle to this range, another line of hills comes south from Sarangarh and divides the large Phuljhar zamindari from the Bargarh plain. The country south and east of these lines is the Sambalpur district proper, fairly homogeneous in soil, climate, and people. Behind these ranges at one time the waters of the Mahanadi must have been held back in a vast lake whose bed now forms the main portion of the Chhattisgarh plain, with its deposits of black alluvial soil. The escaping waters, cutting their way south in a deep bed through the Sambalpur country, were not blocked seriously by the southern hills, and so formed no lake of any size and left but little alluvium. The basis of the chief ranges is a metamorphic formation, mixed and disordered, in many places capped or intersected by purple sandstone and limestone deposits. The shallow soil of the main part of the district consists merely of the detritus of these rocks.

7. The lesser natural features can best be described within each of the five natural divisions of the old district, which I take to be :—

Natural Divisions.

- | | | |
|---------------------------|--|--------------------------------------|
| The Bargarh Plain ; | \| | Ambalbona and the Lakhanpur Valley ; |
| Phuljhar and Borasambar ; | | Sambalpur Tahsil ; |
| | | Chandarpur, Padampur. |

8. The Bargarh plain is not a flat alluvial tract but an expanse of undulating country trending down from the Bara Pahar range in the north to the borders of Sonpur and Patna Feudatory States in the south. It is drained chiefly by the Dantra

The Bargarh Plain.

and Jira rivers and their nala-tributaries. These rise in the north-western corner and flow obliquely across the tahsil, falling into the Mahanadi at the south-eastern corner of the plain. They and their tributaries are mere drains, deeply cut in the sandy soil. Even in their lower courses they deposit very little silt on their banks, and as for seven months of the year they carry mere threads of water they are not of very great service either for household use or for irrigation. During the rainy season they are formidable because they come down in very sudden floods and impede or endanger traffic, and during September and October they suck away through the light subsoil the water that is needed in the rice fields on their banks.

So recently as thirty years ago good forests covered wide areas in the west of the plain and patches of jungle occupied all the higher ridges. These have now entirely disappeared. Much of the old forest-land has been brought under cultivation, but most of it lies too high and is too rough and indented in surface to furnish good tilth. Great areas now lie idle, covered with small and all but useless scrub. This deforestation must in time tell against the natural fertility of the soil. It already inconveniences the cultivators by forcing them to make long and expensive journeys to the Government reserves for timber, bamboos and other fencing material, and even for firewood. The loss of adjacent bamboo forests has injuriously affected the cultivation of sugarcane by making its fencing expensive. The loss of firewood has driven the poorer classes to the use of cow-dung for fuel, with the result that there is now no manure to spare for the light-soiled uplands which formerly grew cotton. That crop is now relegated to Borasambar and Lakhampur where the lower slopes of forest-clad hills are still rich in vegetable silt. A third result of the deforestation is that the southern villages, which have the deepest soil and are most closely cultivated, now experience a shorter rainfall than they used to have.

These are the worst points in this large and fertile tract which contains 618 villages, holds one-third of the cultivated land of the district, and pays a full half of the district revenue. Its chief advantage is the undulating character of its surface which affords excellent drainage areas and sites for irrigation reservoirs. This advantage has been fully developed. There are hundreds of big tanks commanding all the deeper rice-land, and thousands of smaller tanks above the numerous dips and dells. The soil is a mixture from above of sand and gravel and from below of clay brought up by the plough. It is a good light rice-soil and, unlike the more fertile "black-cotton", it grows few weeds and does not harbour dangerous insect-pests. In all the drainage bottoms and especially in those of the more ancient and closely cultivated villages it is very productive. The sub-soil water is within easy reach, and cheap irrigation-wells not deeper than twenty feet hold water throughout the hot weather. No attempt has yet been made to plant timber-trees in the denuded tracts, but the planting of fruit-trees is an approved habit. The country is nowhere bare of vegetation, and the villages are deeply embowered in palm and mango groves.

9. The two big western zamindaris made one-third of the area of the original district. Phuljhar, an area of 787 square miles, is cut off from the district proper by a wide belt of hills. It is indeed completely surrounded by hills, but consists chiefly of a central flat plain which has black alluvial soil. This exceptional feature has caused the lower land to be very fully occupied and closely cultivated. As the main road to Raipur passes through the estate the trade-facilities are good and cultivation has of late years extended considerably into the hills. Its chief disadvantages are that it loses from its flatness the irrigation-facilities which are so fully used in Bargarh tahsil, and that it shares the uncertain rainfall of Raipur district with which it has now been incorporated.

Borasambar is slightly larger than Phuljhar. It is bounded by high hills on the north and south, and its western portion is a mass of hills and glens. These are inhabited chiefly by aboriginals, and the state of cultivation is backward. The scenery is not worthy even in a district of fine landscapes. The shrine at Narsingnath, where a strong spring of clear water rises on a high plateau and falls in cascades down a steep hillside, is a very beautiful spot. Besides the hills the chief natural feature of Borasambar is the Ang river which rises in the south-east corner, cuts a great semicircle to the north,

and runs eastward in a widening valley. This eastern portion is the best agricultural part of the estate. Its soil contains some river silt and is enriched by hill-drainage.

10. In the north of Bargarh tahsil, between the Bara Pahar range and the Mahanadi river, lie the 123 villages of Ambabhona and Lakhapur. The former is a fairly level tract, sloping down from the hills to the river, with shallow soil and outcropping sandstone rock. Its soil does not differ much from that of the southern plain, its cultivation is equally close, and it has several good irrigation-tanks. The Lakhapur villages lie among the hills in glens and valleys and on the river bank. Several are mere forest-clearings. In the wider valleys the soil is rich and has of late years been developed by Hindu cultivators who are gradually ousting the aboriginals.

11. Sambalpur tahsil, except for the 39 villages of Kalamat which lie on rough ground opposite Sambalpur town, is confined to the left or eastern bank of the Mahanadi. Its villages lie along this bank, in the valley of the Ib river, and in the valleys and glens of the Tampargarh hills. Most of the Mahanadi villages, especially those which lie south of Sambalpur, appear to have benefited by ancient affluvia. The silt deposited is not unlike "black-cotton" soil. In the lower course of the Ib the same silt is found. Otherwise, in all the more open tracts, the soil is very much the same as that of Bargarh plain, except that it here contains more gravel and less sand. Its usual colour, produced by the mixture of purple sandstone, crystalline grit, and bluish lime, is known to the people as "dove's-back-colour". But one important difference between Sambalpur and Bargarh is in the distribution of hills and forests. In the western plain these all lie together in the north. Here they are scattered over the north, east, and south, and the amount of vegetable silt washed down annually into the fields of the nearer villages is so great as to change the prevailing colour of the soil. Many of the inland villages, which only of late years are being fully developed, have a fine brown loam that is uncommonly fertile. The irrigation-tanks are as numerous and good as those of Bargarh but are less needed because the rainfall of this more easterly tract is comparatively heavy and regular.

No part of the district has made more progress than this since Settlement. Rice-cultivation in India usually begins on the low land and extends upward. In Sambalpur, because the Mahanadi was formerly the highway of the district and the only export-route, all the more ancient villages are on the river-bank. But the completion in 1894 of the Jharsogra-Sambalpur Branch line changed the run of the trade and doubled the price of rice. The immediate result has been an extension of rice-cropping and an invasion by Hindu cultivators into the hill and forest villages.

12. North of the Mahanadi lies the estate of Chandarpur-Padampur, and in it the Malkharoda and Jogni villages. These, geographically and otherwise, do not form part of the district proper and have now been transferred to Bilaspur. Chandarpur and Malkharoda are typical of the Chhattisgarh plain and much of their soil is black *kanhar* and reddish *matasi*. The former is a rich silt, able to bear double crops. The latter is the best of rice-soils. The land is comparatively flat and is closely cultivated. In years of normal rainfall its crops are heavier even than those of rich irrigated villages in the district proper. But with the Chhattisgarh soil goes the doubtful Chhattisgarh rainfall and the flat terrain does not provide many sites for irrigation tanks of a useful size. The subsoil water too is deep and cannot profitably be used for irrigation.

Chandarpur is a treeless land. It has never within historical times had forests and, with subsoil water deep and surface water jealously conserved in high-banked rice-fields, fruit-trees do not flourish even when nursed with some care. No greater contrast can well be imagined than between a Chandarpur and an ordinary Sambalpur village. The former boasts tiled roofs and bricks or even stone walls. But there is nothing to be seen, after the crops which redeem the landscape are cut, except dry fields and the bare red embankment of a shallow tank. The whole is embellished with a constant dust. The Sambalpur village has not more than one or two tiled roofs, and many

walls of mud. But it is screened by garden-creepers, shaded by palm, mango, and fig trees, and surrounded by tanks of deep water.

The Madampur tract, lying east of Chandarpur, meets on its eastern border Sambalpur tahsil proper, and its land differs less than that of Chandarpur from the district standard. It slopes towards the river, is undulating in surface, and has not much alluvial soil.

13. The district is still well wooded, but of late years cultivation has greatly extended, and in the more level tracts

there are now no patches of timber-forest among the villages. Over the whole of the khalsa area outside the Government reserves there are about 124 square miles of "big-tree-jungle" and 333 square miles of scrub. But the latter area is all but useless, and the former is confined to parts of the eastern tahsil. At last settlement certain fuel and fodder reserves were excised from villages in the more open tracts. But their area was very small, their surface consisted almost entirely of bare rock, and they now grow no timber and but little fodder.

The needs of the cultivator are met almost entirely from the Government reserves, which cover 396 square miles, and from the zamindari forests which, excluding those of Phuljhar, cover 375 square miles. East of the Mahanadi the villagers deal chiefly with the zamindari forests or with those of neighbouring States because the prices exacted are usually lower than those of Government, and the conditions of sale are much more free and elastic and give less scope to the delays and exactions of underlings. In the Bargarh plain all except the western villages get their supplies from the Government reserve in the Bara-Pahar range. The chief requirement is the bamboo, for the wattling of house-walls and roofs, for screens, baskets, and mats, and for the fencing of vegetable gardens and cane fields. It is abundant in all forests. So too is the class of small second-rate timber, such as the *karla*, *dhaura*, and *sena*, which are used for house-timber and carts. The *saj* is also plentiful, and the *kusum*, which is used for ploughs, cane-mills, and other implements of hard wood. There is at present no large supply of big timber for export. The Government forests consist largely of steep and rocky hills, and have not been long under careful conservation. Most of the zamindars with estates near the railway have in past years acted on the principle that "timber is an excrescence of the earth provided by God for the payment of debts". Their forests are now thin. There is no teak, the most valuable timber-trees being the *sal* or *rengal* and the *bija*. Of these there is a good stock of saplings in the forests east of the Mahanadi, but it will be some years before their growth will permit of sleeper-cutting on a large scale. The big estate of Borasambar has fair timber-forests which have of late been opened up, but their distance from a railway prevents full exploitation. Of miscellaneous forest-produce, such as lac and myrabolams, there is but little export.

14. The scenery of the open country is redeemed from bareness by an abundance of fruit-trees. Of these by far the most numerous and important is the *mahua*. Its

flowers, falling in March and April, fatten the cattle and provide all the alcohol used in the district. I should estimate that about one-fourth goes to distilleries. To the people at large, but especially to the aboriginal, they are of great importance as a food material. They are for this purpose dried in the sun and stored throughout the year. From the fruit of *mahua* a thick oil is pressed and used by the poorer folk as a lamp oil and for the adulteration of *ghi*.

The mango comes next in importance and needs no eulogy. Fine groves are to be seen in every part of the district.

Of palms, usually grown on the banks of drinking-tanks, the most common are the *tal* and the *khajur*, or date-palm. The big fruit of the *tal* is allowed to ripen and its kernel is used with rice-flour for the making of cakes. The date-palm is grown almost entirely for its fruit. Sugar is not made from the sap, and toddy only in some villages east of the Mahanadi. The guava is cultivated on the banks of nalas in many villages of the Bargarh plain, and the tamarind and jujube are fairly common.

Other village-trees are *nim*, grown for the medicinal quality of its leaves, the *pipal*, whose stem is usually much baked for bird-lime, the *banyan*, and the *siris*. The *babul* is not to be found. Its hard wood is not needed for the light plough of the district.

15. Sambalpur is reputedly a good big-game district, and in past years has been one of the happiest hunting-grounds in the Central Provinces. But the cutting out of the forests and the spread of rice and cane cultivation into all the valleys and up all the streams have of late years curtailed the grazing grounds of wild animals and cut off their water-supplies. The available watering-places are few and are easily watched by the poacher, who does much killing by night in the hot months. The abuse it is very difficult to stop so long as the profitable trade in hides and horns is not restricted. Except in forests adjoining the Mahanadi, where water is easily reached at many points, there are few cheetal deer and fewer sambhar. Only one small herd of buffalo survives, and bison are rare. The blue-bull is more common. That there are no black-buck is probably due to the fact that no spring crop is grown. The few deer and antelope that survive do very little damage to crops.

Tigers are still fairly numerous. Most of these range in the hills which border the district. If disturbed by forest-cutting in Sambalpur they move into the neighbouring State, and come back again when sleeper-cutting is undertaken in State forests. One pair, known as the Ambabhona man-eaters during three years killed a large number of men and cattle in Sambalpur and Sarangarh State. They were the more difficult to deal with because their beat was wide. The number of cattle annually killed by tiger is, as reported, only 250, but is certainly much larger. Panthers are more numerous than tigers, though more rarely seen by the sportsman, and they kill many cattle. Wolves, hyenas, and wild-dog also do some damage and occasionally kill children, but besides tiger the only animal ordinarily dangerous to man is bear. He is very common in every forest in the district, and his surly temper makes him more dangerous to the wayfarer than the tiger is. Maulings by bear are frequent, most of his victims being women going down jungle-paths with head-loads to market or gathering *mahua* flowers in the early morning on the skirts of the forest. The bear does annually a considerable amount of damage in the cane-fields, but the great crop-destroyers of the district are jackal and pig. The former infests the Bargarh plain and does much damage to the softer and finer varieties of sugarcane. He is nowhere trapped. Pig abound in all tracts, except the open plain, and damage both rice and cane, destroying in either case much more than they eat. They are rarely fired on by the village-shikaris, who confine their attentions to deer, but when very troublesome they are sometimes trapped in pits.

Of game birds the most common is the green pigeon. Partridge, jungle fowl, and peafowl are to be found in the deep forests. Quail and sand-grouse are rare. The palsa-scrub jungle of the open country yields to the sportsman only an occasional hare. But in the cold weather duck and teal are usually to be found in large numbers and in great variety on every considerable irrigation-tank. Few of the tanks are large, and the snipe-grounds below them are seldom more than a hundred acres in extent, so big bags cannot easily be made. But the officer on tour is sure of an hour's sport at most of his camping grounds.

CHAPTER II.

HISTORY.

16. I cannot give a better summary of the history of Sambalpur than that written by Mr. Fuller in his report on the 1888-89 Settlement:—"The earliest authentic records available show Sambalpur to have formed one of a cluster of States held by Chauhan Rajputs, who are supposed to have come from Mainpuri in the North-West Provinces. In 1797 the district was conquered and annexed by the Mahrattas, but owing to British influence the Raja was restored in 1817, and held under the control of the Bengal Government. On the death of a successor without heir in 1849, the district was annexed as an escheat, and was administered by the Bengal Government till 1862, when it was transferred to the Central Provinces. During the year of the Mutiny and the five years,

which followed it the condition of the district was exceedingly unsatisfactory owing to disturbances led by Surendra Sai, a pretender to the Raj, who had been imprisoned in the Ranchi jail for murder but was set free by the mutineers. He returned to Sambalpur and instigated a revolt against the British Government which he prosecuted by harassing the people with dacoities. He was joined by many of the zamindars, and it is not too much to say that for five years the district was in a state of anarchy. In 1862 he was induced to come in, when he was assigned a very liberal maintenance allowance, and was permitted to live at Sambalpur. Many of his lieutenants, however, preferred to remain in outlawry, and with bands of adherents infested the hills and defied all attempt at capture. In 1864 it was discovered that Surendra Sai had all along been in league with those men, while protesting fidelity to the British Government. He was at once deported from the district, when the rebels were soon hunted down and captured. The district rapidly quieted down, and since then such discontent as may have existed has manifested itself in nothing more substantial than petitions and appeals. The Surendra Sai disturbances had, however, a most important effect on the history of the district. It was owing to them that the re-settlement of the district was not rapidly carried to completion with those of other districts in these Provinces, in which case under the policy of Sir R. Temple the village headmen would, as elsewhere, have certainly been made proprietors of their villages. Settlement operations were, however, allowed to drag till a time when the expediency of conferring proprietary rights was laid open to doubt, and the result has been that Sambalpur was settled on an entirely different system to that followed in other districts."

17. This result of the disturbed history of Sambalpur in the middle of last century is undoubtedly a most important one. The system actually imposed on the district was a curious compromise between the proprietary and the raiyatwari principles. It has hitherto worked well and smoothly. But there is one other result of history which is much less satisfactory. From 1817 to 1849 the throne was held by three Rajas and a Rani. Throughout this period, although British influence prevented Mahratta aggression, there was constant internecine strife between the recognized rulers and pretenders to the Raj. These disturbances were at their worst under the Rani Mohan Kumari Dei, who succeeded in 1827. To quell rebellion and to reward her adherents she alienated much of the land to revenue of the State, and in excessive piety also parted with much land to priests and temples. Religious grants had been common enough before her accession, but they were never before so lavish. Under the last Raja, Narain Singh, disturbances continued and with them continued the alienation of estates. Later still, after the Surendra Sai rebellion, the British Government dealt very leniently with the aboriginal chiefs who had taken arms and restored them to their estates. Further alienations were necessary to reward its own adherents. These grants have very greatly complicated land tenures and have reduced the revenue of Government. At present a full fourth of the Government land revenue of the old district is intercepted by zamindars, talukdars, and other assignees.

18. One other interesting aspect of the recent history of Sambalpur is the gradual breaking of the power of the aboriginal owners of the soil. The part played by the district, then a portion of the South-western Frontier, in the operations against the Khonds and in the Kol rebellions was not an important one. But in the internal struggles for the throne under Rani Mohan Kumari the chief supporters of discontented pretenders were always Gond and Binjhal zamindars who found their privileges threatened and their lands encroached on by Hindu favourites of the queen. Later, the Gonds of Bargarh rose against Narain Singh, led by a Gond zamindar who had been ousted in 1821 in favour of a Kulta. From 1857 to 1864 the chiefs of the insurrection were Gonds and Binjhals, who feared further losses under the British settlement. Since that date the most important rising of the aboriginal against the encroaching Hindu was a massacre of immigrant Kultas by Khonds in 1882 in Kalahandi Feudatory State. So recently as 1900 under stress of famine the Binjhals of Patna

State carried out a series of organized dacoities in Patna and Sambalpur, their operations being directed against immigrant Hindus who had ousted them from their villages. The aggression of the Hindu is continuous and successful. The aboriginal, bought, mortgaged, and sometimes cheated, out of the land cleared by his forefathers, is exported to Assam or moves to the still uncleared forests.

CHAPTER III.

THE PEOPLE.

19. Sambalpur, with most of the Feudatory States that surround it, is ethnologically part of Orissa, and three-fourths of the people speak Oriya. The Brahmans, Kultas, Rajputs, and indeed all the higher castes claim to be and doubtless are immigrants from other parts of India. But it is probable that they have mixed their blood considerably with the Dravidian races whom they found in possession. The aboriginal element is a very large one. Its principal tribes are the Binjhals, Gandas, Gonds, Kandhs, Panikas, Bhuiyas, and Bhainas, and, of those who speak Munda dialects, the Kisans, Kuras, Kols, Kharias, Mundas, and Urans. At the census of 1891 they numbered 35 per cent. of the total population. But they are in many parts being pressed out by the Hindus, and between 1891 and 1901, while the population of the district rose by 4 per cent., their numbers rose by only 3 per cent. and now amount to only 33 per cent. of the population. The Binjhals and the Kandhs show most decline. They inhabit chiefly the south-western part of the district which suffered most in the 1899-1900 famine. The Munda tribes, who occupy the eastern part of the district, have greatly increased in numbers. These too have usually resisted Hindu proselytism and still speak their own dialects and worship their own gods. But most of the Dravidians have become, at least nominally, Hindus in religion and now speak only Uriya and Hindi. At last census only 5 per cent. of the total population were returned as speaking Dravidian or Munda dialects, and only 8 per cent. were shown as being followers of primitive religions.

Outside of what I have termed the district proper, which is now the Bengal district, and more especially in Chandarpur and Phuljhar, there is a large non-Uriya population, numbering 157,425 or 19 per cent. of the district total. These speak the Chhattisgarh dialect of Hindi. Many of them are Gonds, Binjhals, and other aboriginals, and few are distinctively Hindu. But with the exception of the Satnami Chamars and the Agharias of the Kabirpanth sect most of them are of Hindu religion.

20. The population of Sambalpur at the census of 1901 was 829,698
Increase in population. souls. This may be distributed :—

Bengal district	...	...	638,922
Part transferred to Bilaspur	...	...	88,641
Part transferred to Raipur	...	...	102,135

The population has three times been ascertained by census. It was in :—

1881	...	...	693,499
1891	...	...	796,413
1901	...	...	829,698

Between 1881 and 1891 it increased by 15 per cent., but between 1891 and 1901 by only 4 per cent. It is true that in the latter decennial period Sambalpur was one of the only three districts of the Central Provinces which showed any increase at all, but its conditions have usually been so prosperous in the past that this great drop in the rate of increase is remarkable.

The birth and death-rates for the district since 1891 are :—

Year.	Births per mille.	Deaths per mille.
1891	41.74	28.39
1892	39.19	40.84
1893	40.29	22.98
1894	39.45	29.01
1895	37.78	22.78
1896	36.79	30.39
1897	39.24	30.23
1898	45.01	22.98
1899	55.18	29.17
1900	42.51	108.18
1901	30.16	19.56
1902	46.65	20.97
1903	41.52	20.02
1904	47.35	22.33

On these rates the census population of 796,413 in 1891 should by the beginning of 1901 have become 839,000 instead of 829,698. The difference of 9,302 may be accounted for as being the excess of emigrants over immigrants. But if, instead of the extraordinary death-rate of 1900, there had been an average death-rate, there would have been a 1901 population of 907,144, less the 9,302 excess of emigrants. That is, the 1901 population would have amounted to 897,842 and there would have been a decennial increase of 13 per cent. which is not much less than the increase that occurred between 1881 and 1891. These calculations are crude and allowance must be made for inaccuracies in both census and annual figures. But the check given by the famine of 1899-1900 to the rise in population is undeniable.

21. The famine of 1899-1900 was due to a short rainfall and consequent damage to the rice crop. The whole of the district was not seriously affected. Sambalpur tahsil and the eastern and northern villages of the Bargarh plain reaped at least half crops. But the south-western part of Bargarh, especially the zamindaris of Phuljhar and Borasambar, and the northern estate of Chandarpur, were severely stricken. The following table shows the difference between the conditions of the khalsa and zamindari areas :—

YEAR.	FOR KHALSA.		FOR ZAMINDARIS.	
	Births.	Deaths.	Births.	Deaths.
1899	52.91	30.57	57.64	27.67
1900	37.62	89.23	44.49	114.77
1901	26.36	18.98	37.93	22.66
1902	38.93	18.61	64.32	24.06
1903	33.14	20.02	48.75	20.01
1904	43.00	20.71	56.70	25.83

The extraordinary death-rate was inflated chiefly by a great epidemic of cholera and by the weakness of the crowds of wanderers who came into the district from the surrounding Feudatory States and from the other two districts of Chhattisgarh. These expected to find Sambalpur in 1899 the same district of cheap food that they had found it in previous seasons of scarcity. It had been the custom to look upon the district as being immune from famine. It has been referred to officially as a "Garden of Eden" and a "Land of Promise". But it is incorrect to presume that before 1899 it had not suffered rainfalls as bad and crop failures as serious as those which occurred in that year. From a previous steady rate of 54 seers of rice for a rupee, the price rose, owing to two bad rainfalls, to 26 seers in 1864-65 and to 16 seers in 1865-66. Again from rates of 43 and 33 seers the price rose to 27 in 1876-77 and to 16 seers in 1877-78. Then followed six years of prosperity during which the price of rice fell to 54 seers. But again came bad rainfalls and

the price rose to 23 seers in 1885-86 and to 19 seers in 1886-87. These were three excellent opportunities for famine-conditions to occur. That they did not appears to be due chiefly to the fact that the district was landlocked. The only export route of any importance was the Mahanadi river. But this is open to heavy traffic only for two months in the year, and the supply of boats was limited. The rice stayed in the district because it could not get out. Circumstances were altered by the completion of the main Bengal-Nagpur Railway line in 1890 and of the branch line to Sambalpur in 1894. The price of rice at once began to rise towards its level in outside districts. For many years the opening of the country brought with it nothing but progress and increased prosperity. There were fair or good harvests, the small cultivator stored grain or sold it at high rates, the labourer found work and was paid in grain. The large landowners and tenants made big profits and were able to build tanks, extend their cultivation, and still save. But it was another matter when in 1899 the rice crop failed over all the western and south-western part of the district. The smaller cultivators had lost all their crop even in villages where the richer men, using the irrigation-tanks, saved half a harvest. The small cultivator soon had to buy. The farm-hand thrown out of employment, the day-labourer, and the artisan, had to buy. But a price of 16 seers, formerly considered a scarcity-price, had now become the normal rate, and when that rose to 12 and 10 seers famine conditions were well established. Meanwhile the richer men, attracted by the previously unequalled price, had sold for export much too early and most of the surplus grain had left the district. Later, there were still large stocks, even in the stricken tracts, but the gaontias and tenants who held them, conscious of their first mistake and remembering also that in the past bad seasons had run in pairs, held back and lost their second opportunity. The climax was reached in August 1900 when no faith could be put in the coming harvest because weather conditions seemed to threaten a second failure. Matters were at their worst in the remote western zamindaris. Here, only fifteen years before, a normal price after an ordinary harvest had been 70 to 80 seers. It went to 6 seers in August 1900. Rice had been rushed out on the railway in October, November, December, and January. Ton for ton an exactly equal amount had from April to August to be railed and carted back, inferior grain at a doubled price. The financial loss fell upon the labouring classes, on the small cultivators, who were chiefly aboriginals, and on Government. The richer cultivators missed most of the profit which they might have made had they understood the new conditions that the railway had brought with it. The only grainers were a dozen traders, the Railway Company, and the agents who exported labour to Assam. One most noteworthy feature of famine work in the later months was the difficulty of redistributing grain throughout the districts to tracts where local supplies were exhausted or were being held back. To drain the rice out of the district had been easy. It had been brought to trading-centres in head-loads over village-paths. It could not be redistributed in the same way, partly because private trade was paralysed, and partly because the people who carried it were, when it came back, in famine-kitchens or on works. Even had they been available they could not have bought it and they could no longer have been trusted as hired carriers. It had to be carted over a district which had but few cart-roads. After the rains broke in June even the main road to Raipur was frequently blocked by recurrent floods, and the village-tracks were impassable. The best of rice does not travel well in rainy weather on open carts and much of the reimported grain fermented and became unfit for consumption.

That short rainfalls will again occur and produce crop-failures in at least the western half of the district is quite certain. It may be confidently hoped that in future the richer agriculturists will understand better the altered range of prices and will benefit both themselves and the district by holding back stocks for local sale. It is also to be hoped that there will not again be a large influx of starving wanderers from the States and from other British districts. But in any case road-improvement is a necessity and it would be advisable also to extend the railway so that it will be able to feed the district as well as to drain it.

22. It is not possible from census returns to ascertain exactly the movements of population in a decade, but the general tendency of migration can be clearly detected. The following table shows the number of outsiders found in Sambalpur at the three periods :—

Birth-place.	1881.	1891.	1901.
British districts of the Central Provinces.	12,217	17,172	20,313
Feudatory States of the Central Provinces.	5,819	22,186	29,580
Total ...	18,066	39,358	49,893

The numbers of Sambalpur-born persons found elsewhere in the Central Provinces were :—

Place of residence.	1881.	1891.	1901.
British districts of the Central Provinces.	12,803	12,237	6,174
Feudatory States of the Central Provinces.	83,107	87,943	62,153
Total ...	95,910	100,180	68,327

The excess of emigrants to neighbouring tracts over immigrants from neighbouring tracts was in—

1881	...	...	...	...	77,844
1891	...	...	...	...	60,822
1901	...	...	...	...	18,437

The stoppage of emigration and increase of immigration are well-marked tendencies.

Regarding movements from or to more distant tracts, we learn from census tables only that residents from other parts of India numbered in—

1881	...	...	...	...	13,888
1891	...	...	...	...	15,551
1901	...	...	...	...	12,267

The large number in 1891 was due chiefly to the presence of a railway construction staff and of gangs of up-country coolies. This figure otherwise represents the foreign trading community. The reduction since 1901, if correct, would seem to show that the introduction of railway communication has reduced the migratory character of the mercantile classes.

In paragraph 20 it was noted that the net excess of emigrants over immigrants was about 9,000 between 1891 and 1901. Yet emigration into neighbouring tracts has dwindled and immigration has increased. The discrepancy is due to that exploitation of the district for Assam tea-garden labour which began immediately on the completion of the Bengal Nagpur Railway. It is unfortunate that separate district statistics are not available for the labourers and their dependants exported since 1891. And even if these were available they would not clearly show the proportion of the people who

emigrated through Sambalpur from the neighbouring States. But the numbers were certainly large. In the famine year of 1899-1900 5,507 labourers and dependants were registered in Sambalpur, and of these about 40 per cent. belonged to the district. Large numbers also were taken away without registration. In the three years from 1902 to 1904, for which figures are available, the number of registered emigrants and their dependants was 13,317, although in these years the work of recruitment was becoming more and more profitless. I think it a fair estimate that between 1891 and 1901 about 30,000 Sambalpur-born persons emigrated to Assam. This great movement has now almost died out and is not likely to revive in the absence of local famine or of more enticing prospects for labour than the tea-growing industry can at present offer.

The general tendency of these movements is favourable to the district. The Assam emigrants are chiefly thriftless aboriginals, and, especially of late years, many of them belong to the criminal classes. The emigrants to the States are also aboriginals, unable or unwilling to compete in cultivation with Hindus. On the other hand, the immigrants, both from Feudatory States and from British districts, are usually steady cultivators who have been attracted by the light rents of the district and by the opportunities for exploiting forest-land. It is true that many of the immigrants date from famine years, but of the crowds who then came in many died, many returned to their homes, and only the fittest labourers survived and settled.

23. The only town of importance in the district is Sambalpur itself. Its population in 1891 was 14,571, but at that time several villages outside the municipal limits were included in the returns. In 1901 the population of the town itself was 12,870. Since the census its limits have been widened and the trading population has increased.

There are 2,692 inhabited villages with an average population of 300. Of these 1,929 are now in the Sambalpur district of Bengal, 254 in Bilaspur, and 509 in Raipur. In 1891 only eight villages had a population of more than 2,000. In 1901 there were thirteen of that size, all of them in the Bengal district:—

Tahsil.	Town.	Population.
Sambalpur	Rampela	4,659
	Jharsogora	4,306
	Katarbaga	2,279
	Arhapara	2,233
	Laira	2,229
Bargarh	Barpali	4,414
	Bargarh	3,609
	Kumbhari	2,668
	Remenda	2,565
	Tora	2,185
	Padampur	2,133
	Tamparsara	2,091
	Katapali	2,082

Rampela is an agricultural village with a large community of weavers and is the centre of some trade. The size of Jharsogora is due to its position at the junction of the Sambalpur branch railway with the main line and to a large settlement of grain-dealers established on land acquired by Government for the purpose. Barpali, the residence of the principal zamindar of the district, is an ancient town with a large community of silk-weavers and a considerable amount of trade. Bargarh, the head-quarters of the western tahsil, has an important market which collects and forwards to Sambalpur most of the surplus grain of the Bargarh plain.

These figures show but little tendency on the part of the rural population to flock into towns. Rather has movement been governed by a dispersing force and the population has most greatly increased in those parts of the district where most culturable waste land was available. Thus the population of Phuljhar has risen by 17 per cent. largely by immigration, and that of

Sulsulia and Kharsal, in the foot-hills of the Bara Pahars, by 20 per cent. For the same reason the increase is greater in Sambalpur tahsil than in Bargharh, and is particularly large in the zamindari estates.

24. Judged by the standard of the Central Provinces the density of population is considerable. Leaving out of account the areas of Government reserved forests, of zamindari reserves, and of the Mahanadi river, there is a population of 215 souls per square mile, and for the area under regular cultivation there are 373 per square mile. Each mouth is to be fed from one and three-quarter acres of cultivated land. Of this a little over one acre is under rice and yields a daily ration of about 2½ pounds of husked grain. With the miscellaneous crops of the remaining land this gives a very full average maintenance. The density has not greatly increased since last settlement because there has been an increase of cultivation along with the increase in population. The following table is framed to allow comparison with the figures of Mr. Fuller's report :—

TRACT.	Total population.		POPULATION PER SQUARE MILE OF —			
			Total area.		Cultivated area.	
	1891.	1901.	1891.	1901.	1891.	1901.
Khalsa Bargarh ...	107,933	112,511	319	257	384	423
Khalsa Sambalpur (including Malkharoda).	157,090	201,520	241	239	508	489
Total ...	395,023	414,031	245	258	434	453
Chandarpur-Padampur. seventeen zamindaris (including Phuljhar).	65,951	79,949	315	272	393	367
	315,473	335,718	117	170	...	307

The decrease in population per square-mile of cultivation in Sambalpur tahsil, where the extension of population has been largest, is due to the still greater extension of cultivation. The decrease in Chandarpur-Padampur is due to the fact that the shiftless Chamar population of a portion of Chandarpur suffered considerably in the famine of 1899-1900. The following table will more clearly show the distribution of population in 1901 according to the areas ascertained at this resettlement :—

TRACT.	Increase per cent. in population from 1891 to 1901.	POPULATION PER SQUARE MILE OF —	
		Total area.	Cultivated area.
Chandarpur-Padampur Malkharoda and Jogni, of Bilaspur.	-1	274	363
Phuljhar, of Raipur ...	+17	154	282
Khalsa Bargarh ...	+2	256	492
Khalsa Sambalpur ...	+7	260	501
Khalsa Total ...	+5	258	456
Zamindaris Bargarh ...	-3	174	297
Zamindaris Sambalpur ...	+9	151	373
Zamindaris Total ...	+1	165	319
Total Bengal district ...	+3	214	394

The open part of Sambalpur tahsil, even excluding the population of the town itself, is closely peopled and so too is the southern part of the Bargarh plain, beside Tamparasara, Bargarh, Remenda, and Rusra. The most scantily populated tracts are the Lakhanpur and Borasambar hills in Bargarh and the Tampargarh and Loisingh hills in Sambalpur tahsil.

25. The agricultural population of the old district as returned at last census was—

Proprietors and tenants	457,283
Farm-servants	74,455
Field labourers	99,038
Cattle-breeders and herd men	11,909
Growers of fruit, vegetables, etc.	1,171
Total	643,926

This is 75 per cent. of the total population. Out of the remaining fourth, only 2,478 have been noted as depending on agriculture as well as on a trade or profession, but the actual number of such persons, especially among weavers, is certainly larger.

Practically all castes in the district have some connection with the land. The following figures, though they apply to the old district, will sufficiently illustrate the distribution of the castes of agriculturists.

Of the seventeen zamindari estates, including Phuljhar, thirteen, comprising 1,276 villages, are held by Gond and Binjhals, and only four, containing 238 villages, by three Rajputs and a Kulta. The aboriginal element is naturally strong among the old families which hold on a feudal tenure.

But most of the managers of individual villages, both in khalsa and in these zamindaris, are now Hindus—

	No. of villages.
Kultes	691
Brahmans	575
Agharias	241
Telis	156
Malis	69
Binjhals	275
Gonds	386
Gandat	12
Other castes	313
Total	2,723

The Binjhals, Gonds, Gandas, and other aboriginals are usually not proprietors but lessees holding from zamindars in the more backward tracts. Out of the 950 gaontias of the khalsa tracts, 775 are Hindus.

Among tenants the chief castes are—

Kultas	14,043
Bawats	8,559
Brahmans	5,683
Sawaras	5,918
Gonds	4,933
Telis	4,079
Kewats	3,754
Gandas	3,366
Malis	2,416
Binjhals	2,282
Dumals	1,848
Agharias	1,724
Kisans	1,365
Other castes	19,306
Total	79,311

Approved members of the Hindu social scale, such as Kultas, Brahmans, Telis, and Malis, form a full half of the tenantry but hold much more than half the land. Of the others, at least half may be called semi-aboriginals, Sawaras, Rawats and others, who have settled down to steady agriculture. Most of the Binjhals, Kandhs, Gonds, Gandas, Kisans, and others still exhibit aboriginal propensities.

26. Between 1891 and 1901 the Brahmans increased in numbers from 25,154 to 27,551 or by nine per cent. They form a very small part of the population, but their education, social status, and wealth combine with the strong religious sentiment of the district to give them importance. The Brahmans of Sambalpur proper are of two classes, the Jharua and the Uriya. The former were the original settlers among the aboriginals, and their class-name is usually understood to mean "jungly". They are looked down upon by the Uriya Brahmans who, being later immigrants, adhere more closely to Brahmanical rules. There is no love to lose between the two classes. The Uriyas are less numerous than the Jharuas, but under native rule many of their families obtained great influence and acquired considerable grants of land. They have multiplied exceedingly and have subdivided their holdings without adding to them. Many have now no land and live on charity or on the temples. The pioneer Jharuas, on the other hand, are again rising in influence. They are careful cultivators, add to their estates, and moving with the times, have entered largely into mercantile pursuits and money lending. The Lariyas are a third class of Brahmans, still later immigrants from Chhattisgarh into the northern parts of the district. Their numbers are small, but they hold several good villages and are usually enterprising and prosperous. I have already noted that Brahmans hold 575 villages, and that they are the third most numerous caste amongst the raiyats. As village-managers they are usually good, and as tenants prosperous. But when a Brahman cultivator is poor he is very poor. He is much handicapped by his caste and more especially by the rule which forbids him to touch a plough. This reduces him to the necessity of employing paid labour always, while his neighbours may work their farms from their own families. Several of the rhyming proverbs of the district ridicule with rustic wit the poor but dignified Brahman raiyat.—

"A buffalo, a Brahman, and a boar, these cannot stand the sun."

"A field is spoiled by weeds and a village by a Brahman."

His litigious and argumentative character also tells against him.

"Two dogs, two horses, two Brahmans, cannot meet without a quarrel."

The Land Record staff of the district and the ministerial staff of the offices are almost entirely filled by members of the less wealthy Brahman families.

27. Mohantis, who correspond to Kayasths, are not numerous but hold several villages and are of good social standing. Most of them are clerks or police officers. Village wit asserts that they are ostentatious, and that "a Mohanti will buy an elephant, if he can borrow the money".

28. Five of the large land-owners and some few gaontias are Rajputs. They are all either descendants of the late ruling house or descendants of its adherents and opponents. Most of them are heavily indebted, and few take an intelligent interest in their estates.

29. The Kulta caste is the most numerous and most important agricultural caste in the district. Between 1891 and 1901 its numbers increased from 77,499 to 87,689, or by 13 per cent., and they now form 11 per cent. to the total population. I estimate that one-fifth of the rice land is worked by Kultas. They are industrious, thrifty, and usually honest in their dealings, but their special virtues are enterprise and skill in rice cultivation. The Kulta's boast is that, given water, he will grow good crops on even the poorest soil. He appreciates good soil when it is available, but will have nothing to do with land so flat as to give no surface-drainage. In undulating country he appears to have an instinctive knowledge of water-level. Almost all the fine irrigation reservoirs which so greatly contribute to the security of crops in the district have been

engineered by Kulta gaontias. Few of this caste are poor. They hold as gaontias more villages than any other one caste in the district, and Kulta tenants are usually well-to-do, with large holdings, good stock, and ample savings. Many men of this class have so profited of late years by the rise in the price of rice as to be able to buy up villages from less thrifty and industrious aborigines. It is the Kulta rather than the Brahman who now leads the aggression against the lower races, and it seems not improbable that in time the industry and intelligence of this caste may give it a social standing equal to that of the less practical Brahman. Whether this will be altogether an unmixed advantage is more doubtful. Of late years the richer Kultas have aped Brahman customs even to the extent of setting up for themselves a new caste-rule forbidding them to touch the plough that made their fortunes.

Many of the village proverbs, inspired no doubt by Kulta patrons, applaud their virtues. "A jungle-man's plough gives dry fields and grass; the Brahman sits on his doorstep and his labourers idle; but a Kulta's plough supports a thousand." Or again, "Kulta ahaukari, Brahmano bhikari," "A Kulta is a proud man, the Brahman a beggar." But "Kuliya Kulta," "the black-hearted Kulta," and the rhyme which says that the Kulta is a good giver if you beat him, point also at his close-fistedness.

30. The Rawat or Gaur, who is the cattleman of the district, is a typical small cultivator. Since 1801 the numbers of this caste have not largely increased, but in 1901 they were 92,964, or 11 per cent. of the population. Except in the more jungly tracts few Rawats hold villages, and, though many are well-to-do, most of them are ordinary cultivators with good stock, small holdings, and small debts. Each village has a Gaur servant, known as the Nariha, who is responsible for the village-herd and for the provision of water to all officials and strangers halting at the village. His connection with the cow and his duty as a water-bearer give him a fair social position; but he is neither enterprising nor very industrious. "An idle Gaur has far to run," because his cattle stray while he sleeps.

31. The Sawara, a reclaimed aboriginal, is another typical small cultivator. The numbers of the caste increased very slightly between 1891 and 1901, but were returned in the latter year as being 76,841 or 9 per cent. of the population. Being stupid, honest and hard-working, the Sawara is the best of farm-hands. His women, less stupid and even more hard-working, do most of the rice-husking and of the huckstering at the village markets. Perhaps half of the Sawaras have small holdings of their own. The others are labourers, many of whom are allowed by their masters to cultivate small plots in lieu of part of their wages. It is not unusual to find an industrious farm-hand who has with his savings and a loan been able to rise to the rank of raiyat.

32. Between 1891 and 1901 the number of Agharias increased, partly from immigration, by 20 per cent. They number only 13,198, but form a notable part of the population. Most of them belong to the Chandarpur tract, but there are several also in the north of the Bengal district. The Agharia is not an Uriya, and he has settled only in the flatter riparian tracts of the north. In industry, enterprise, and agricultural skill he is the equal of the Kulta, but the two do not compete. The Agharia works only on rich soil, and this he finds in the level tracts which the Kulta avoids. The latter, as I have said, depends almost entirely on his wafer-supply, and likes rolling country with surface-drainage and a shallow subsoil water. The Agharia is a poor tank-builder, and constructs only the shallow square tank commonly used in Raipur and Bilaspur which gathers no surface-drainage, depends altogether on direct rainfall, and fails in a year of short rainfall. One glance at a stretch of rice-fields suffices to distinguish Kulta from Agharia cultivation. The former builds only low and narrow banks between his fields, seldom more than two feet high, because he requires frequently to cut them in order to pass his irrigation water from plot to plot. The Agharia builds high field-boundaries, making a tank of each field, because each must catch and keep its rainfall. The two systems suit the tracts to which they are applied. In any ordinarily favourable year the Agharia reaps the heavier crop, but in a bad year he loses more than the Kulta

does. In character the Agharia is perhaps inferior. He is quarrelsome, a grabber of land, and a hard landlord. But as many of his tenants are Chamars severity is not always misplaced.

33. The Telis and Malis may be taken to represent the smaller castes who, not originally farmers, now cultivate with success. At last census their numbers were 30,714 and 19,901 respectively. Many Telis still are oil-pressers! They do not ordinarily grow sesamum but buy it in and combine their caste-trade with rice cultivation. The Haldia-Telis, who formerly worked in turmeric, have less to do with their original trade. Both are usually prosperous, and many hold rich villages. The Mali, here as elsewhere, is a gardener. He cultivates sugarcane largely, and tobacco, a crop not formerly important. He is a small but successful cultivator, and his example has of late years been widely followed in the use of irrigation-wells. No Mali can be procured in the Civil Station as a house-gardener, this work being done chiefly by Kols, Kharias, and Gandas.

34. The aboriginal races, as I have already noted, form one-third of the population. Most of them live and hold as raiyats small patches of land in the wilder parts of the district. But they do little rice-cultivation. Their principal food crop is the *kuiki* millet, locally known as *gulji*, and for sale they grow sesamum. Many of them live as much upon forest produce as upon their cultivation. A few Binjhals and Gandas still rear the tasar-worm in the rainy season, but this is a declining industry. In the open tracts of Bargarh the tribes are represented chiefly by the Gond and the Ganda. The former has shown himself able to exist apart from his tribe and has survived Hindu competition well. The "Jhankar" or principal watchman is in most villages a Gond. His post is an honourable one, he being a subordinate village priest, and one of his duties is to propitiate the local earth-gods and so secure the harvest. The Ganda, less independent, lives in small tribes. In his original jungles he appears to be not below others of the aboriginals in character, but when stranded in the open country he becomes a nuisance to the community. Most of the Ganda tribe are, at least incidentally, weavers. That they should now be known chiefly as drunkards and as expert thieves, burglars, and cattle-killers, is no doubt due in part to the loss their trade has suffered by competition with machine-made cloth. But their inherited character is not high, and by ancient custom the subordinate watchman or "chaukidar" of every village is a member of this tribe, retained in his emoluments as a thief set to catch other thieves. That the presence of these communities and the imposition of this watchman should be so easily tolerated is partly explained by the fact that the Ganda is the village musician and humourist.

The Munda tribes are to be found only in the tract east of the Mahanadi. They have hitherto held their own well. They are hard-working and fairly thrifty and, though regular drinkers of rice-beer, do not often become drunkards. Kols, Mundas, and Urans hold in small plots almost all the land of villages closely adjoining Sambalpur, and their families provide all the day labour used by contractors on roads and buildings. The Kuras are people of importance because they are expert diggers. The projector of a tank usually secures the services of a party of these people, who camp beside their work throughout the spring and hot weather and return to their own villages for the rainy season. They work always on contract and make good earnings.

35. Except for cloth-weavers and workers in metals, the artisan classes of the district are not numerous or important. The shoemaker or leather-worker is very rare, because the sandiness of the soil obviates the need the shoes, those worn by the ostentatious or by the town-dweller being imported, and because religious sentiment is strong and the uses to which leather may be put by the agriculturist are consequently few. Practically all hides are exported in a raw state. Again the carpenter is not a recognized village artisan. The modest joinery that is needed for house-building, for the making of sleeping-cots, ploughs, cane-mills, and carts, is accomplished by the experienced farm-labourer. Even in Sambalpur town there are not more than a dozen carpenters, most of them Kols, who have little skill or training.

36. The Koshta works in tasar-silk and the cloths of the Sambalpur weavers, usually ornamented with tasteful borders and fringes, have been considered the best work of this kind in the Central Provinces. But the local supply of tasar cocoons has of late years greatly decreased in quantity, degenerated in quality, and risen in price. The closer conservation of Government forests, the clearing of village-forests, which were most convenient to the rearers, unfavourable seasons, and lack of care and capital on the part of the breeders, have all contributed to this result. At last census there was a population of 1,867, Koshtas, but only 786 were returned as having any connection with the weaving industry. Many have given up weaving altogether, many now weave partly in cotton, and many cultivate land. Those who still follow the industry turn out good cloths and make very fair profits. Their largest colonies are in Sambalpur town and Barpali.

37. The Bhuliyas, a numerous and important caste, weave fine cotton cloths with coloured borders. The Bhuliya population of 1901 was 12,241. Practically all families still weave and many of them also have land. I cannot find that the competition of imported machine-made cloths has as yet seriously affected this industry, and for this immunity there are probably two reasons. The Bhuliya works for the well-to-do. His customers appreciate the lower price and lighter texture of the machine-made stuff, but they buy the better and dearer article because it wears much longer, keeps its colour, and is in the end cheaper. The second reason is that imported cloths are not usually of the correct width or length for women's wear and the borders cannot compare in appearance with the work of the Bhuliya. The caste is very well-to-do, but is more interested in money lending than in direct agriculture. A large Bhuliya colony is to be found in Rampela.

38. The Ganda has already been described. In the open tracts he is a weaver of coarse cotton cloths of the cheapest quality. He has suffered greatly from the competition of the machine-loom because his customers are the poorer classes who buy what is cheapest whether it wears well or not. Many Gandas still own looms, though they are not able to keep them regularly at work, and in the famine of 1899-1900 all the coarse cloths which were bought with the Charitable Fund for distribution in the rainy season were woven in the villages by Gandas.

39. The Lohars or Loharas numbered only 7,230 at last census. The hills of the district have numerous outcrops of iron ore but the Lohara is to be found chiefly in zamindari villages, more especially in Borasambar, Paharsirgira, and Rampur, near forests which he may cut freely for charcoal. A few smiths are still able to manufacture in fairly tempered metal the finely curved hatchet which was once the battle-axe of this country. But owing to the faultiness of the surface-ore extracted and to the primitive methods of smelting followed the implements usually made are apt to be soft and brittle. Twenty years ago iron "coppers" or boiling-pans for sugarcane were locally manufactured, but they were found to flake readily on the fire and their use has long been discontinued. The articles now most commonly made are the *kuro* or hoe and the spoons and strainers used in rice-cooking. In villages where the Lohar is still a public servant he makes axle-pins and the coulters of ploughs. But the cart-tyres used are imported and for plough-coulters those happy cultivators who live near a railway prefer the sleeper-keys or wedges which they find shaken out on the embankment.

40. The Kharras and Kasars work in bell-metal. Their methods are moulding and filing, for by caste-rule they are forbidden to use a hammer. Neither their metal nor their workmanship is so good as that of Mandla district. The articles most commonly turned out are lotahs, bowls, basins, plates, saucers, drinking-mugs, water-cans, lamp-stands, and pipes. The curious boat-shaped anklet worn by many women is locally made. But the bright brass water-pots or *khalsis* to be seen in use in every village are all imported. I am told that in the famine year some brass-workers from the south settled in Kultatukra, &

village of Bargarh tahsil. These make the *khatsi* and the local workmen are trying to acquire the craft. The old brass-work of the district is often curious and is much superior to anything now attempted, but it is melted down without regard to its artistic superiority. In the famine of 1900 cart-loads of curios were thus unhandsonely disposed of.

41. The Sunar or Sunari works in both gold and silver. The ornament most commonly made, which is to be seen on the necks even of cooly-women, is the *kogla*, a band of silver lying flat on the bosom and encircling the neck as a thick round wire. Other common articles of silver are the bangles, armlets, and anklets worn by women, the round ring worn on their wrists by men, and broad flexible silver-wire waist-belts. The usual gold ornaments are amulets, necklets, nose-buttons, earrings for the lobe and the tip of the ear, and finger-rings. Apart from articles of bodily ornament the goldsmiths have not much to do, but I have seen fancy articles of silver, such as imitations of the royal canopy or umbrella, and figures of beasts, which are not much inferior in finish to the silver-work of Cuttack. There has in recent years been a considerable import of gold to be worked up into ornaments which will represent the stored capital of agriculturists.

42. The Kewats are boatmen and fishermen. They do not, as a rule, fish in tanks, and they do not grow water-nut because all tanks except those reserved for drinking purposes are liable to be drained for irrigation. The Kewat works only on the rivers and chiefly on the Mahanadi, a fact which by itself explains the superiority of his social standing to that of the Dhimar fishermen of the Central Provinces. When the Mahanadi was the only great export-route the Kewat was an important person as the Canadian-voyageur in the early days of the Hudson Bay Company. He still works all the ferries, the most important of which is the Bengal-Nagpur Railway ferry at Sambalpur. He also supplies the town and the river-bank villages with fish, of which the best are notable prawns. Some of this caste hold river-bank villages, but they are not the best of cultivators and, now that the railway has cut out the river as a trade route, the Kewats are losing the land. Kewat women often do business as confectioners, of a kind, in preparing the fried or "popped" rice which, flavoured savoury or sweet, is used as a subsidiary meal or nooning. It is bought and eaten by men on a journey who have no time to cook food, and it is regularly given to children as an extra morning meal in the hot weather to prevent them courting fever by drinking water on an empty stomach.

43. The women are the retail merchants of the district. I have already noted that it is the women, wives and relatives of farm-labourers and small cultivators, who do the rice-husking, buying up grain in small quantities, husking it at home, and selling it at the weekly village-markets. At these the trade is in grain, cloths, vegetables, sweets, firewood, salt, spices, tobacco, oil, trinkets, and cattle, and almost all the trading is done by vociferous women, young and old, the few men who are in evidence having usually been fetched merely as carriers. On the evening of a market-day it is common to meet a line of perhaps two hundred women swinging down a path in Indian file, all except the richest and the oldest carrying their purchases in baskets on their heads.

The wholesale grain-dealers are local Brahmans, who also are growers. Kutchi Mahomedans, and Marwari Banias. They buy grain and sell imported cotton thread, salt, tobacco, kerosene oil, and cloth. The Kutchi trader is usually a migrant, coming in at harvest-time to buy grain on a small capital, with quick returns and small profits, and leaving the district in the spring. He is a pioneer in trade and penetrates to the remotest tracts, but though he is much in evidence at the village-markets he does not now command the bulk of the grain trade. Of late years the number of settled Marwari traders in Sambalpur town, Jharsogra, and all the larger villages, has greatly increased. Between 1891 and 1901 their numbers rose from 1,223 to 2,867. These do business wholesale, buying from Brahman traders or from their regular clients in the villages, and they avoid the cheating to which the Kutchi is subjected by giving out grain to be hulled by women who are in their regular employment.

A trade which has greatly extended since the coming of the railway is that of the export of hides. This is carried on by Mahomedan dealers who

work through Chamar and Ganda agents in the villages. Another Mahomedar enterprise is the export of dried beef.

44. The present state of agricultural prosperity is undeniably good. The famine of 1899-1900 stopped progress in the western tracts for about two years, but even in these the better class of cultivator escaped with but little loss. The vital statistics recorded since 1900 show very prompt recovery, equally well marked by the quick re-extension of cropping. The land revenue of the district is a very light one and the argument that the people are evidently prosperous because they pay their rents promptly is not strong. But it may be noted that in the past fifteen years the necessity for coercive processes has been very slight. Arrests have been ordered in 185 cases, but it has rarely been necessary to effect them, and, though orders for the attachment of moveable property have been fairly numerous, in only five cases has property been actually sold. Loans by Government to agriculturists for the purchase of seed grain and bullocks and for land improvements have never been taken in large amount except in 1900, when the sum distributed was Rs. 1,19,754. By the end of 1904 the outstanding balance of principal debt was only Rs. 221, and only about Rs. 300 had been written off as irrecoverable.

The general history of the currency of settlement is a history of progress. Descriptions given by Mr. Nethersole represent the Sambalpur cultivator as an indolent person living with much simple comfort in patriarchal village communities. No man was rich except in grain, and no man was distressingly poor because the food-supply was cheap and abundant. The opening of railway communication has changed these conditions. The increased cost of food has enforced greater industry on the labourer and the poorer cultivator, and the opportunity of trade and profit has tempted the richer and more industrious to greater effort. The demand for land has become keener, and its cultivation closer and better. With this progress there has come some gradual breaking up of the communal life and, in a few cases, an undesirable accumulation of land and of capital in the hands of money-lenders. But the essential purposes of village-life are still well served, and even the money-lenders are still agriculturists. The main result hitherto of the stirring up of individual competition has been the establishment of a very large class of substantial cultivators, by habit thrifty and industrious, with adequate holdings, good stock, and savings sufficient to allow of independent improvement and extension. The distinction between such men and the lower class of semi-aboriginals with debts and small holdings is much more clearly marked than formerly. At last settlement Mr. Nethersole noted the gulf fixed between the gaontias and the raiyats. But there are now three distinct classes above the rank of labourer, and the upper class of the raiyats is not far below the landlords in prosperity.

The standard of comfort has not conspicuously altered. The food, furniture, and clothing of the average villagers is very much the same now as it was in 1888. There has been no increase of outlay on religious or domestic festivals. But when substantial comfort has been attained the refusal of luxury is not to be deplored. The people themselves, when asked to point out their changes, have usually explained that the old living has not changed but is shared now by more families. Thus, though all still eat rice and vegetables only, more people now grow and eat fine rice. All still wear the old simple clothing, but more now wear "Bhuliyā" cloths of fine quality. There are more tiled roofs and brick walls in the villages, and bigger gardens, and more women are able to wear silver and gold ornaments. To this I may add that the old comfortable standard has been extended over considerable tracts formerly held by aboriginals living poorly in leaf huts, and that hundreds of villages have substantially added to their health and comfort by building special drinking-tanks.

45. There were in the old district seventeen feudal zamindars, a talukdar, and a jagirdar. The estates of the two last have been added to Bilaspur district, and Phulihar, the most important of the zamindaris, to Raipur. Of the zamindari estates in the Bengal district, nine are much too small to support a landlord in any dignity, and their Gond zamindars are of much less importance than mang gaontias in the khalsa. Of the seven larger estates two are, owing to the indebtedness of their owners, under Court of Wards' management. The Rajput and Gond or Binjhal chiefs of fighting and free-booting lineage have been slow to turn to the pursuits of peace. They are handicapped by the

necessity, real or supposed, of maintaining the remnants of an ancient dignity. In the past their management has usually been careless and often short-sighted, and it has of late years been the policy of Government to resume from them on payment of compensation as many as possible of their powers of internal management. They no longer control their own Police, Excise, or cattle-pounds. In village management also Government interposed to prevent a constant changing of lessees which tended to prevent extension or improvement of cultivation. This measure will be found discussed at length in Chapter VI. One of its results has been to reduce the resources of the zamindars. But the example of a few among them and the result of Court of Wards' management show that at least in the larger estates they still have functions useful to the people and profitable to themselves.

46. The gaontias of the khalsa are the most important class in the district. They are proprietors only of their own home-farms, but as these usually consist of the best land in each village and are held free of revenue in return for the service of village-management, the gaontia is in wealth and status nearly the equal of the full village-proprietor.

Most gaontias in Bargarh tahsil are Kultas and in Sambalpur tahsil, Brahmans. Their families have in the past risen, or are at present rising, from the ranks of the more industrious tenants. The following table will show the changes which have taken place among them since last settlement and the condition of the present holders. Its figures refer only to khas villages of the new district.

CASTE OF GAONTIA.	NUMBER OF VILLAGES HELD—		NUMBER OF GAONTIAS—			
	At last Settlement.	Now.	Heavily indebted.	Lightly indebted.	Without debt.	Rich.
Brahman	359	373	22	33	35	283
Ku'ta	229	236	3	23	40	170
Rejput	47	40	11	6	1	22
Gond	34	28	6	7	10	3
Gaur	33	33	1	10	7	15
Agharia	32	34	...	1	2	31
Teli	29	30	1	7	6	16
Mohanti	27	27	2	...	2	23
Sawara	25	16	1	5	6	4
Telanga	19	20	1	...	1	18
Mali	18	17	1	2	7	7
Mahomedan	17	20	...	3	...	17
Mahant	11	11	...	...	5	6
Thanapati	10	10	...	...	4	6
Binjhal	10	10	...	7	2	1
Kandh	12	4	...	3	...	1
Bhuliya	7	8	...	1	2	5
Dumal	6	5	...	...	...	5
Kewat	3	6	...	1	1	4
Sundhi	3	4	...	1	...	3
Pandra	3	3	...	...	1	2
Sud	2	2	...	1	1	...
Sunar	2	2	1	...	...	2
Lohar	2	1	...	...	...	...
Sanyasi	2	2	...	...	...	2
Marwari	1	3	...	...	...	3
Jhara	1	...	...	...	...	...
Bhat	1	1	...	...	...	1
Karigar	1	1	...	...	1	...
Kasari	1	2	...	...	1	...
Kalanga	1	1	...	1	...	...
Bhandari	1	1	...	1	...	...
Sikh	...	1	...	...	1	...
Total	949	950	950	113	173	650

Of the total holding only 5 per cent. has changed hands in fifteen years, a fact which shows a stability all the more satisfactory in face of the keen competition for land which sprang up immediately on the opening of the railway. The proportion is only 3 per cent. in Sambalpur tahsil but 7½ per cent. in Bargarh where in the Lakhanpur, Sohela, and Kurkuta Groups many aboriginal gaontias still remained in possession at last settlement and have since been ousted by Kultas and Brahmans.

That 83 per cent. of the present holders of villages should be either rich or entirely free from debt is a guarantee of future stability. Among the few who are heavily indebted many are Brahmans who, originally settled in colonies, have multiplied in numbers and subdivided their original grant without adding to it.

47. Under section 170 of the Settlement Code of the Central Provinces it is usual from local enquiries to divide tenants into the following five classes :—

- Condition of raiyats,
- (a) Well-to-do, lending money or grain or owning land as malguzar (i.e., as proprietor).
 - (b) In substantial cultivating circumstances: free from debt, or with debt inconsiderable in proportion to assets.
 - (c) In average circumstances, with ordinary debt, but free from mortgage or special risk of losing the holding.
 - (d) In reduced circumstances, having fallen in the world, and become deeply indebted, or having mortgaged.
 - (e) Living from hand to mouth, such as Gonds or raiyats without bullocks, and of the status of day labourers.

I have already remarked that the recent course of individual competition has resulted in a differentiation of classes in the tenantry. But the above classification is still rather too elaborate. Only four classes have been used. In the A-class come the gaontias, who almost invariably hold some tenancy land in their own or other villages; and the richest of the raiyats. In B-class are all the substantial tenants, many of whom have recently extended their holdings, and all of whom have good stock and either no debts at all or very light ones. Into C-class come all the semi-aboriginals who have failed to extend their holdings since 1889, but are content to carry on with small stock and moderate debts. D-class includes most of the real aboriginals, men whose holdings are insufficient to provide a full livelihood and who eke out cultivation by collecting forest produce. The land of these men is continually liable to absorption in the larger holdings. Into this class come also the men who have fallen in the world, but these are not numerous. The distinction most observable is not between the risen and the fallen but between those who have risen and those who have failed to rise. The actual classification is :—

	In Khalsa.		In zamindaris.	
	No.	per cent.	No.	per cent.
A-class tenants	4,913	12	1,562	5½
B-class "	16,905	41	10,510	37½
C-class "	15,006	37	12,784	45½
D-class "	4,082	10	3,223	11½
	40,906		28,084	

The number of rich and substantial tenants is naturally much larger in the open khalsa tract than in the zamindaris. Over the whole district the proportions of the classes are 9, 40, 40, and 11. The better classes are filled chiefly by Hindu cultivators, of whom only 5 per cent. have been noted as belonging to D-class.

Size of holding.—A marked result of the recent rise in prices is the tendency shown among tenants to subdivide holdings within the family. Where formerly brothers were content to remain conjoint they now almost invariably partition their land. The number of tenancy holdings in the khalsa area has since 1889 risen by 40 per cent., chiefly from this cause. In Sambalpur tahsil the tendency has been met by a very great extension of cultivation. In the Bargarh plain it has reduced the size of holdings.

Exclusive of small plots held as gardens, the average tenancy holding is now about 13 acres in extent, but in the zamindaris, where land is less closely cultivated and joint families more common, the average area is 19 acres. The average rent paid is about Rs. 3-8.

Stock and debt.—The circumstances of the A-class and D-class men call for little comment. The former are rich and have very large holdings even when they are not also proprietors. The latter are distinctly poor, seldom cultivate more than 5 acres of land, and usually have no cattle of their own. The average B-class raiyat of khalsa has in Bargarh tahsil about 19 acres and in Sambalpur 15½. His usual number of plough cattle is five, two yokes and one odd animal, and he has also four or five cows and young bullocks. The average debt of this class, in which freedom from debt is the rule, is only Rs. 13.

The holding of a C-class raiyat averages 9½ acres in Bargarh and 7 acres in Sambalpur tahsil. This he works with a single yoke of oxen, and he has usually one other animal only, a cow or a young bullock. His money-debt averages Rs. 17 and his grain-debt 2½ *purugs*, worth about Rs. 13. As the market-value of his land alone is seldom less than a hundred rupees he is sufficiently solvent, but he has little margin for the accidents of famine, cattle-disease, or deaths in his family.

Transfers of Tenancy land.—Registration statistics of the transfers of occupancy land are not of service, partly because registration of these has not in ordinary cases been permitted since the passing of the Tenancy Act of 1898, and partly because in most cases tenants have parted at one time with only small plots whose individual value was less than a hundred rupees. In the course of attestation, however, figures have been compiled for all cash sales of occupancy land since 1896. These in the khalsa area cover 12,052 acres or more than two per cent. of the total occupancy holding. Cash sales are very infrequent as compared with debt and mortgage-transactions, and it may be estimated that since 1889 not less than 10 per cent. of the land, and probably much more, has changed hands. It would indeed have been surprising if, in a district where the Hindu cultivator was already in open competition with the aboriginal, a sudden doubling of the price of produce had not been accompanied by much transfer of land.

Usufructuary mortgages.—Cash-sales are infrequent and usually concern only small plots. Foreclosure mortgages over tenancy land are now of no value in the Civil Courts. Consequently the well-to-do cultivator who wishes to establish a hold upon the land of another, usually has recourse to a possessory mortgage. At present in the khalsa area no less than 9,663 acres, nearly 2 per cent., of the tenancy land, is so held. The usual mode of the mortgages is that at the end of the term his debtor will be unable to repay the principal debt and will consent to receive an additional sum and give up his rights in the land. This is now by far the most usual form of transfer. It is the more noteworthy because it is conducted by the people themselves, independently of the Courts and in defiance of law. But it would be incorrect to suppose that every cultivator who mortgages does so from pressing need. I have noted a surprisingly large number of cases in which the usufructuary mortgagee has been paid off and turned out. And cases are not wanting in which tenants, using the form of mortgagee as a sub-lease, turn out one mortgagee on the offer of better terms from another. My general conclusion is that the average tenant has a very fair comprehension of his borrowing power and how to use it profitably, and that the number of transfer cases disputed in the Civil Courts is a very trifling part of the land-transactions of the district.

Tenancy legislation.—Under section 46 (3) of the amended Tenancy Act of 1898 the transfer of occupancy land, except by way of annual sub-lease, to any person other than a sharer or a natural successor was prohibited. The intention of the legislature was to prevent the accumulation of rent-paying land in the hands of non-agriculturist speculators. This danger did not threaten Sambalpur, and the Act has been inoperative to prevent the passing of land from the poor man into the hands of richer and more industrious agriculturists. All sales and mortgages may under section 47 be set aside within two years by summary procedure in a Revenue Court in favour of the

landlord or of a near relative of the seller or mortgagor. The applications under that section have been few :—

NUMBER OF APPLICATIONS MADE—				CASES DECIDED—	
By landlords,		By relatives.	Successful.	Unsuccessful.	
1898-99	...	...	...	...	...
1899-1900	...	2	...	...	...
1900-01	...	11	6	2	15
1 01-02	...	8	8	1	12
1902-03	...	19	14	4	20

Yet the number of actual transfers has not decreased. In 125 villages between 1889 and 1896, 266 cash-sales, of 2,110 acres, took place, and between 1897 and 1902, 346 cash-sales, of 1,915 acres. It is comparatively simple to evade the prohibition by means of a present to the landlord, whose interest it is to prefer a well-to-do to an indebted raiyat. His help being enlisted it is seldom that the relatives of the transferor can profitably dispute the transfer. It has been stated by critics in the district that the Act of 1898 has resulted in decreasing the borrowing-power of the raiyat. That it has that tendency is true, since it increases the power of the landlord. But the change does not seem to have actually occurred. Before the district was opened up and while land was still cheap it was usual for gaontias, on a transfer between tenants, to receive a small present. This *nazarana* or consent-fee has of late years greatly increased, and now usually amounts to fifteen per cent. of the purchase money. But the increase began in 1895, not in 1899, and was due rather to the rise in the value of land caused by the opening of the railway than to any change in the law of tenancy.

48. The patriarchal relation of the gaontia or headman towards his raiyats is in its essentials still maintained, and there is little direct opposition between landlords and tenants as such, except in the comparatively rare cases where a rich man has acquired several villages and attempts to manage them all without the intervention of resident inferior gaontias. From the preceding paragraph it may be observed that gaontias in general has shown great moderation in the use of their power under section 46 of the revised Tenancy Act. In the great majority of cases they have been willing to accept a comparatively small percentage of the purchase-money when transfers occur between raiyats and have been restrained by public opinion and traditional custom from attempting to enforce their claim in full to the land transferred. They have indeed of late years joined to some extent in the movement by which the lower classes of tenants have lost their holdings or part of their holdings. No statistics were given at last settlement of the area of occupancy land held by gaontias in addition to their proprietary home-farms, but from an examination of village records I have found it large only in a few tracts. They now hold in the khalsa area 46,521 acres or 9 per cent. of the total raiyati land. Much of this, however, has not been acquired from tenants but has been newly broken from waste. In any case the extension is not a large one and the land is almost invariably cultivated directly and not sublet. I am inclined to attribute these satisfactory relations to the balance maintained between the powers of the gaontias and those of the raiyati body. In almost every case the former have home-farms large enough to support large families and yet provide ample savings. But in rice-country it is difficult to cultivate large areas directly, unless a cheap and ample supply of labour is forthcoming at critical seasons. In rural tracts there is no such supply and the landlords have to depend on the free labour provided by raiyats. If the latter have grievances in common they can withhold or at least delay their help, and the commutation-money which the gaontias can afterwards recover by expensive litigation is poor compensation for the loss of a harvest.

That it is lack of power rather than of will which restrains landlords from encroaching on the tenancy area is proved by the zeal they have shown in re-extending direct hold over their home-farms. These, as I have noted, are large. In the last generation it was not unusual for a gaontia with a small family and no ready access to profitable markets to give out plots of his home-farm on perpetual leases. For these he took large lump sums and fixed very light annual rents. Since the rise of prices every such case has been scrutinised, most of them have been brought before the Civil Courts, and by means not always scrupulous possession of much of the alienated land has been resumed.

The chief subjects of village disputes have for some years been water-rights and rights in the common-land which formerly grew sugarcane. These are closely related. It is owing to the rise in rice-profits that irrigation-tanks are not now habitually reserved for sugarcane irrigation on common-land during the hot weather. In this respect tenants as a body have, I think, suffered by the change of custom. They get for their rice crop much less water than goes to the nearer land of the gaontia and they now have to irrigate their cane-fields expensively from wells. The former grievance is loudly voiced in years of short rainfall. But it is a fact that the burden of maintaining the public tanks in repair has fallen more on the gaontia and that the old custom of subscription is shirked by the raiyats.

Land suits. 49. The following table shows the course of land litigation for fourteen years :—

YEAR.	SUITS UNDER RENT LAW—			LAND SUITS—		
	For arrears of rent, with or without ejectment.	For ejectment or recovery of possession.	Total.	For immoveable property.	Under mortgages.	TOTAL.
1891	212	235	447	359	73	437
1892	291	185	476	455	65	510
1893	175	188	363	456	77	533
1894	185	191	326	379	140	519
1895	246	168	414	361	188	549
1896	218	141	359	352	291	643
1897	274	369	643	565	421	986
1898	194	295	489	722	437	1,209
1899	191	342	533	527	176	703
1900	188	51	189	549	67	616
1901	179	156	335	517	549	1,066
1902	126	131	257	373	611	987
1903	101	109	210	658	439	1,127
1904	74	99	173	465	226	691

The suits for arrears of rent are fewer than in any other district of the Central Provinces. For this no other reason than the lightness of the Sambalpur rents need be given. All other forms of suit are more numerous than in any other Central Provinces district except Nagpur. Most of those for ejectment and for recovery of possession are suits brought by gaontias to recover from sub-tenants possession of their home-farm land. The rapid increase in the total number of suits immediately after 1894 is evidently due to the coming of the railway and to the desire of everyone with claims on land to get it at once into his own possession. The recent decrease is due, I think, chiefly to the fact that an equilibrium had been reached, but partly also to the conclusion of settlement operations. Men with claims on land usually attempted to obtain possession before the final announcement of the record, and this began in the khalsa area in 1904.

50. At last census 18,019 men and 60,129 women were returned as being field-labourers, and 45,061 men and 1,875 women as being farm servants. The former are known

Condition of Agricultural Labourers.

butis and the latter as *gutis*. That the main supply of day-labour is drawn from the ranks of the small cultivator is shown by the large proportion of female workers.

The Agricultural day-labourer is invariably paid in kind. The unit of work is the *bel* or spell or half-day, a low unit necessitated by the poor condition of the plough-cattle, which in at least the hot weather ploughings cannot work for more than one spell of five hours. Thus the ploughman also usually works for one spell only. At harvest-time and at all work for which oxen are not used he works both morning and afternoon. Women, employed chiefly on transplanting and weeding, do only a long morning's spell in order to have freedom to carry water and cook supper. The rate of pay previous to last settlement was two *buti tambis* of paddy for a spell. It has since been reduced to one and-a-half *tambis*. This small measure is equal to one and-a-quarter seer. The labourer used to receive for a full day's work about 2 seers of husked rice, which represented, at the rates then ruling in rural areas, less than one anna. He now receives in husked rice about one and-a-half seers but its value in cash is 16 pies. The utmost he can make by constant work is Rs. 2-8-0 per mensem. This income is largely added to by his women who, besides being in constant demand at the seasons of transplanting, weeding, and harvesting, are able to make good earnings in the mahua-season, and also to dry a stock of mahua-flowers for household use. At other seasons, in years of good harvest, they have practically continuous work at rice-husking. The income of the ordinary labourer's family, even at slack seasons, cannot be less than Rs. 3-3-0, which is sufficient for food, clothing and the usual comforts. But any saving is impossible, and in a year of crop-failure the labouring class, supported for a few months by scanty harvest-earnings and by the rice-husking of the women falls into destitution by January. They get but little work to do in the cane harvest, but profit by the fall of the mahua-flowers in February and March.

The Farm-servant.—The *guti* or farm-servant is hired by the year, and has a much better standing than the *buti*. His regular monthly wage is three *khandis* of paddy, or about 75 seers, and he also receives a bonus at harvest of three *purugs* of paddy, about 600 seers. Thus his annual income is about 1,500 seers of paddy or, deducting the cost of husking, about 600 seers of rice. This in cash is not less than Rs. 30. He has also other emoluments. If sugarcane, pulses, or oil seeds are grown he is allowed a small quantity from each crop in addition to his rice-land bonus. For his threshing work in moonlight nights at harvest he is given an overtime of five *tambis* a night. At the end of the harvest the last load, a specially heavy one, is his if he can stagger with it to his own threshold without falling. In the hot weather his master presents him with a cloth to protect his head from the sun. And, finally, on the occasion of any expense such as a birth, death, or marriage, he is entitled to receive a cash loan of from Rs. 5 to Rs. 10, which is free of interest and is deducted from his harvest bonus. The earnings of a farm-servant are never less than Rs. 36 per annum, and these are largely added to, as in the case of the day-labourer, by the earnings of his women. The average earnings are about Rs. 4, and the family income about Rs. 6 per mensem.

It is usual in the case of an old and trusted farm-servant for the master to allow him, in place of the harvest bonus, the cultivation of two plots of land, of about an acre in extent, in the upland and bottom land. As he uses his master's cattle this privilege adds considerably to his annual earnings.

The wages of day labourers have not risen in proportion with the rise in prices, and their lot is certainly harder than it was before the district was opened up. But the farm-servant is an invaluable person, and he has been able to secure his share in the increased profits. It is true that in the autumn of 1899 meetings between masters and men in the villages of the stricken tracts usually resulted in the reduction of the harvest-bonus, a step never before taken, from the three to two *purugs*, and it is also true that in that year many of the regular farm-hands were thrown out of employment. But the rate of the bonus was again raised in 1900, and the earnings of this class are frequently sufficient to allow them to acquire small plots of tenancy land in their own right.

Professional Diggers.—The Kurus, or earthwork labourers, a Munda tribe, do practically all the tank-digging of the district. They engage on piece-work only, and being industrious and expert they make good earnings. Hitherto they have usually been paid in grain, but of late years in villages near the railway they insist on cash payments and they earn very much the same wage, of 2½ annas per diem, which is paid to the road-coolies working in Sambalpur town and its vicinity. This gives a rate of Rs. 4-11-0 per mensem. It is, in Sambalpur, much above the living rate. In the recent famine Kurus invaded Government tank-works where these were conducted on the piece-work system, and they invariably earned almost twice as much as the labourers of other castes.

CHAPTER IV.

AGRICULTURE.

51. The total area of the new Sambalpur district of Bengal is 3,824 square miles, but the following areas have not been available for cultivation:—

	Square miles
Government forests	396
Zamindari Reserved forests	375
Bed of the Mahanadi	67
Total	838

The village-areas available for agriculture are 1,570 square miles in khalsa and 1,416 square miles in the zamindaris. At last settlement only the khalsa villages were surveyed in detail, between 1885 and 1889. The survey of the zamindaris was not begun until 1891 and was not completed until 1898. Village-areas have now between 1902 and 1905 been completely re-checked for the whole of the new district, but it is obvious that the variety of dates prevents a full and direct comparison which could show agricultural progress over a long period.

52. The agricultural area is distributed under the following headings:—

	BARGAH TAHSIL.		SAMBALPUR TAHSIL.		Whole district.
	Khalsa.	Zamindaris.	Khalsa.	Zamindaris.	
<i>Occupied.</i>	Acre.	Acre.	Acre.	Acre.	Acre.
Cropped	265,472	276,071	315,848	117,353	374,644
Fallow of three years and under	56,059	52,735	30,827	23,119	122,740
Total area in cultivation	321,531	328,806	346,675	140,472	1,097,384
Area out of cultivation, i.e., fallow of more than three years.	64,473	44,950	22,320	3,131	139,775
Total occupied area	386,004	373,757	368,995	143,603	1,177,159
<i>Unoccupied.</i>					
Groves	920	267	1,560	675	3,433
Tree-forest	17,847	37,735	59,258	86,096	198,937
Scrub-jungle or grass	81,950	113,364	105,781	85,568	385,253
Under water, hills and rocks, or covered by roads and buildings.	42,243	56,663	40,186	25,630	144,653
Total unoccupied area	142,960	186,029	206,365	197,969	733,264
GRAND TOTAL	528,964	559,786	475,360	341,572	1,910,423

In the khalsa tracts, which are the most fully developed, 60 per cent. of the village area is occupied for cultivation, and in the zamindaris, 58 per cent.

53. The progress of agriculture for the whole of the new district over one exact period cannot be stated, but the following table abstracts all the statistics that are available:—

		Cropped area.	Cultivated area.	Occupied area.
		Acres.	Acres.	Acres.
Bargarh Tahsil Khalsa	At Settlement ...	292,998	845,039	360,511
	At Attestation ...	265,473	321,531	336,005
	Increase per cent. ...	—9	—7	7
Sambalpur Tahsil Khalsa.	At Settlement ...	159,305	219,048	232,731
	At Attestation ...	215,848	246,875	268,865
	Increase per cent. ...	14	12	11
Total Khalsa area ...	At Settlement ...	452,303	564,087	593,242
	At Attestation ...	481,320	568,406	604,870
	Increase per cent. ...	Nil	1	10
Bargarh Tahsil Zamindaris.	At Survey ...	249,216	310,664	331,267
	At Attestation ...	276,071	328,803	373,757
	Increase per cent. ...	11	6	13
Sambalpur Tahsil Zamindaris.	At Survey ...	103,987	117,956	123,157
	At Attestation ...	117,238	140,372	148,503
	Increase per cent. ...	13	20	21
Total Zamindari area	At Survey ...	353,203	427,956	454,424
	At Attestation ...	393,324	469,178	522,259
	Increase per cent. ...	11	9½	15
Total Bargarh Tahsil...	At Settlement and Survey ...	542,214	655,703	691,778
	At Attestation ...	541,543	650,337	759,762
	Increase per cent. ...	Nil	—1	10
Total Sambalpur Tahsil.	At Settlement and Survey ...	292,292	336,310	355,888
	At Attestation ...	333,101	387,047	417,398
	Increase per cent. ...	13½	15	17
Total District (Bengal)	At Settlement and Survey ...	835,506	992,043	1,047,656
	At Attestation ...	874,614	1,037,384	1,177,160
	Increase per cent. ...	4½	4½	12

54. The ascertained increase in the area occupied for agriculture is one of only 12 per cent. for the Bengal District. But as it is known that great progress was made in the zamindaris after last settlement and before the survey statistics were completed in 1898, it may very safely be assumed that the increase since 1889 for the district has been not less than 16 per cent. The open Bargarh plain, long closely settled, shows least extension, and the largest increases have occurred in the zamindaris where great areas of culturable waste land were available. The extraordinary progress of the eastern tahsil has been due to its better rainfall and its consequent immunity from crop-failure in 1899. Over all the western part of Bargarh agricultural extension was appreciably checked by that season. But it is clear also that Sambalpur tahsil owes much of its progress to the proximity of the new railways.

55. The area in regular cultivation has probably extended since last settlement by at least 7 per cent. That it has not risen in exact proportion with the occupied area is a usual occurrence, due to the fact that the best land had everywhere been first occupied. The discrepancy is most marked in Bargarh. Between 1880 and 1892 large areas of upland in the open plain, left bare by the deforestation that ensued on close settlement, were cultivated for cotton, pulses, and oil-seeds. But lack of natural vegetation speedily exhausted the shallow soil, and when the rise in the price of rice followed on the opening of the railway, the tendency to concentrate upon rice-land and to neglect the uplands grew

strong and was finally confirmed by the short rainfall of 1899. In the zamindaris of Bargarh the uplands are still fertile, but at the time of attestation aboriginal raiyats had not brought again into cultivation all the area abandoned at the famine. On the other hand the land that is now in regular cultivation is much more closely worked than in past years. All the rice-land is cropped annually and the best uplands are cropped at least every second year. The change is partly due to natural causes, but has been hastened by the advent of railway communication. It no longer pays the cultivator to distribute his capital and labour over both rice and miscellaneous crops. Formerly he grew as chance crops the oil-seeds, pulses, and cotton needed in his own household. But with rice cultivation paying over 100 per cent. on outlay he concentrates upon that and buys his other necessities more cheaply than he can grow them. The only exception to the rule that new fallows have decreased is in certain of the eastern zamindaris where forest land close to the railway has been opened up. These tracts are peopled chiefly by aboriginals whose tendency is to clear new land frequently rather than to develop the fields already retrieved from jungle.

56. Waste areas in the Sambalpur land records include only land which has never, since an accurate record began, been brought under occupation. Land once cultivated remains on the record no matter how long it is disused. The waste land at settlement and survey covered about 1,400 square miles and has now been reduced to 1,146 square miles. The only part actually unculturable is that which is under the water of irrigation tanks and nalas, under the curious bare rock outcrops that occur in every tract, and under buildings and roads. The following table shows how the waste is distributed :—

TRACT.	PERCENTAGE ON TOTAL AREA OF—			
	Occupied area.	Groves and tree forest.	Scrub jungle.	Unculturable area.
Bargarh Tahsil Khalsa	73	3	16	8
Sambalpur Tahsil "	57	13	22	8
Total khalsa area	65	8	19	8
Bargarh zamindari	67	6	20	7
Sambalpur "	43	25	25	7
Total zamindari area	58	14	21	7
Total Bargarh Tahsil	70	5	18	7
Total Sambalpur Tahsil	51	18	23	8
Total district	61	11	20	8

Groves cover a very small area, most of the fruit-trees being planted separately within the holdings of proprietors and tenants. Tree forest is a trifling area in the Bargarh plain, but east of the Mahanadi there are good village forests still uncut and in many of them there is excellent young timber. These, however, are to be found chiefly in the backward tracts which adjoin Government or zamindari reserves. The area under scrub is very large, but in the Bargarh plain this now yields little either of fuel or fodder, and in Sambalpur it is not much better. The soil consists chiefly of sand and gravel which will not grow fodder-grass except where it is shaded and enriched by timber trees.

57. In the past 13 or 14 years the occupied area has increased by about 250 square miles. Tree forest cannot under the existing rules for village management be encroached on by the cultivator. It would be well if in khalsa tracts this prohibition were kept active. In the eastern zamindaris, surrounded as they are by reserves, there is less need for strictness. But at the most the area available for agricultural expansion is one-fifth of the tree forest, or about 60 square miles, and 603 square miles of scrub jungle.

Much of the latter is practically uncultivable. That the present rapid subjugation of waste land in the Sambalpur tahsil will continue for several years is certain. West of the Mahanadi there is not much more land to occupy except in Borasambar zamindari. The present tendency of cultivators is to concentrate upon the lower land, growing rice and sugarcane. It is improbable that the sandy and gravelly uplands will be reoccupied until a hardy crop is introduced which will grow little or no manure on poor soil and which will not call for much ploughing to disturb the soil and allow its particles to be washed down by the rain. Two important experiments in Sisal hemp (*agave sisalana*) are at present giving good prospects.

58. The changes in cropping that have occurred can, as I have previously explained, be shown in zamindaris only from the dates between 1890 and 1896 when areas were first ascertained. With this limitation the following table shows these changes for the whole district.—

	At Settlement or Survey.	At present.	Increase per cent.
Rice { Broadcasted	589,659	545,289	6
{ Transplanted	2,107	31,244	
Sugarcane	6,473	3,693	43
Til	69,473	99,456	30
Cotton	31,157	7,593	75
Urad and mung	103,290	64,336	38
Kulthi	15,052	35,862	135
Wheat	102	123	27
Kodon and Kutki	3,670	34,300	843
Others	14,690	18,086	23
Total	835,672	880,937	5½
Double cropped ... ..	...	6,344	...
Net cropped	835,672	874,643	5

The increase between 1889 and 1905 may be safely taken to have been not less over the district as a whole than 7 per cent. for rice and 6 or 7 per cent. for all crops. The very large increases in transplanted rice and in the double-cropped area illustrate the tendency which I have remarked on towards closer cultivation of the better classes of land.

Rice.—Rice being the staple crop of the district and the most valuable one grown on large areas, its proportion to the total cropping shows the degree of close cultivation that has been attained.

	PERCENTAGE OF RICE ON TOTAL CROPPED AREA	
	At settlement or survey.	At present.
Khalsa-Bargarh	71	82
Sambalpur	80	81
Zamindaris-Bargarh	64	66
Sambalpur	73	71
District	71	71

The advance in the open tracts is well marked. In the Bargarh zamindaris the lessening of the proportion is largely due to the famine of 1899-1900. Since that year aboriginal cultivators have shown a tendency to sow *kutki*, locally known as *gulji*, in place of rice. It ripens at the end of August and it is not so dependent on the rainfall as rice is. In the eastern zamindaris the decline in the proportion of rice is due chiefly to the expansion of unsettled cultivation by aboriginals driven out of the lower land. They sow *til* largely in addition to their food-crops. Over the whole district only 4 per cent. of the rice is transplanted, but in the Bargarh plain the proportion is 8 per cent., and in many groups it is much larger.

Sugarcane.—Sugarcane is the most valuable crop in the district, and at last settlement it ranked second in general importance to rice. But its area has fallen from 6,473 acres to 3,693 acres. From 1890 it steadily declined till 1897-98, but since that year it has again increased, and at present is rapidly extending. The causes of this change are curious and illustrate the general changes that have been taking place in the district.

Before the railway came the cultivation of cane ranked second only to that of rice, which it supplemented by providing work for farm-labourers throughout the spring and hot weather. There was then little export of grain, but *gur* being a less bulky commodity, was one of the principal articles of trade. Each village grew all its cane in common on land provided by the headman in the proximity of the principal tank. The cost and labour of fencing were shared by all, and the crop was cheaply produced. But as soon as the railway was opened outside competition checked the trade in *gur* and at the same time doubled the profits of rice. It had been customary even in years of comparatively short rainfall to conserve half of the water of the principal village tank for cane irrigation in the hot months. It now became more profitable to use all the available water on the rice crop. One other cause at work was the increasing scarcity of fencing material in the open tracts. Mud walls proved an inefficient protection against jackals, and even where cultivation continued an inferior hard cane took the place of finer varieties. In the zamindari villages, though these are exposed to damage by pig and bear, fencing material is abundant, and the decline of the area under good cane has been less marked. After 1899-1900 the first rush for rice profits was over, and the price of rice, much inflated by bad seasons in the Central Provinces since 1895, became more steady. In some villages the cultivation of cane on the common land has been resumed, but in most cases the old custom has died out, and cultivators dig wells on their own holdings and work independent plots. Its expenses are heavy, but the crop provides for the consumption of the district, and in recent years the export of *gur* has recommenced on a small scale. It is not likely to develop rapidly unless there is some improvement in the present primitive methods of crushing the cane and of boiling down the juice.

Til or Sesamum.—Sesamum oil-seed is the second heaviest export of the district. Its cultivation has decreased in the Bargarh plain where the uplands are exhausted, but has greatly increased in every other part of the district. It is a crop that grows well with very light cultivation on newly cleared land.

Cotton.—The decline in the cotton area of zamindaris is very slight. The crop still pays when grown on uplands rich in vegetable silt. But in the exhausted uplands of the open tracts it has gone out. It will not grow well without manure, and all the manure available, after providing fuel, is used on the rice fields and cane gardens.

Pulses.—The total area under pulses and *kulthi* has decreased slightly, a decline in the open tracts being met by an extension in the zamindaris.

Wheat.—The wheat land of the district is a very small area. The crop is more common in Chandarpur taluk and in Phuljhar zamindari, and it was anticipated by Mr. Nethersole at last settlement that it would soon be largely extended in those tracts and would also be introduced into the alluvial tracts of the district proper. In Chandarpur the area has actually decreased, it being found that though the soil is excellent the rainfall, dangerously light in some seasons for rice, is too heavy in ordinary years for wheat.

Other Crops.—The 18,086 acres under miscellaneous crops are almost equally divided between fields and gardens. The field crops are:—

Sunn hemp.	Bit-grass.	Mustard.
Castor.	Gram.	Tur.
Peas.	Linseed.	Masur.

The hemp is a comparatively recent innovation, *butis* grown more commonly in Chandarpur than in any part of the new district.

The peas are the only second crop commonly grown in Sambalpur, these being sown in the wet bottom lands before the rice is cut.

The garden crops are—

Vegetables.	Juar.	Tobacco.
Maize.	Spices.	Mandua.

Maize of good quality is grown in Borasambar. The juar grown is largely the produce of a small quantity of seed distributed four years ago in the hope that it would become popular as a fodder crop. Tobacco of late years has become a very important garden crop, and its cultivation is likely to spread. Since 1894 its area has nearly doubled.

59. *Soils*.—The soil of the district has already been generally described, and its varieties will be found discussed in detail in Part II. But a short explanation is here necessary to the understanding of local methods. Of flat land with alluvial soil there is little in the Bengal district. The country, except on the banks of the larger rivers, is undulating, and the cultivated land consists of ridges, slopes, dells and bottoms. These the cultivator, regarding with an eye to the water-run, has named by the streams and pools of the Mahanadi. The uplands which receive only direct rainfall are known as *at* land; the slopes are terraced to catch surface drainage in its direct line from the uplands and are known as *mal*; dells are formed where the slopes meet as they trend to the bottom, and these, getting drainage not only down their own direct line but also from the slopes on either side, are known as *bernas*; the *mal* slopes and *berna* runlets fall into the bottoms or *bahal*, which in turn usually end in a *naḷa*. It is only necessary to add that gently sloping *at* may be terraced into *mal*, that the lower terraces of *mal* are wider and deeper than the upper, and that the chief distinction between a *berna* and a *bahal* is that the former is narrow and steep and the latter wide and all but level. The wash of rain tends to concentrate fertile silt in the lower terraces, dells, and bottoms.

60. A short description of the methods of agriculture employed on rice and sugarcane will illustrate the conditions of husbandry and explain the calculations on which land valuation has been based.

61. The two broad facts about rice cultivation are that a great variety of seed is used and that there are several different ways of working the land.

Seed varieties.—I have been informed by intelligent landowners and agriculturists that over three hundred different varieties of seed are in actual use. I do not think that this is necessarily an overstatement, but it is rare to find in any one village more than thirty. I have myself been unable to identify clearly more than a hundred in all, and I have found a few cases in which enquiry failed to elicit any clear difference between two seeds known by different names in different tracts. The varieties are most simply classed by the position of the fields on which they grow most successfully. Thus, there are *bahal*, *berna*, *mal* and *at* rices. A *bahal* variety will fail on upper *mal* terraces, and, on the other hand, *mal* varieties will rot in the wet *bahal*. Of these main classes there are subdivisions. Among *bahal* rices "Jhillipyragi" and "chinnamal" need deep, well-cultivated, well-manured, and very wet land, while "motiya," a very sturdy plant, and "kankriabijia" will produce well on any bottom, and are commonly sown in the newly-cleared land of jungle villages. Similarly, among *berna* rices "buulkera" will grow only in the lower fields of a dell, while "tumria" and "mugdhi" will do well on any *berna* field. The lower terraces of *mal* will grow some of the sturdier *berna* varieties, but the favourite seeds are "banko" and a large family of striped or barred seeds. The uplands and the upper terraces grow coarse grains, usually black husked. The colour distinction is indeed a good one, so far as it goes, because most of the best varieties are white husked, the *mal* rices, which form the bulk of the crop, are reddish, and the coarse upland varieties black. But some of the *bahal* varieties have faint black tips, a few of the upland seeds are pure white, and there is a curious family of special rices, grown chiefly on disused sugarcane plots, which almost invariably have black or grey husks. These are of the finest quality and yield a sweet aromatic rice used for temple offerings and as the food of priests. Commercially only two classes are generally recognized. The finer varieties can be husked readily after sun-drying, while the coarser have to be first parboiled or steamed, and then dried. These are known as the *alua* and *usna* rices.

Preliminary Ploughing.—The amount of ploughing done before sowing time depends largely on the method of cultivation which is to be adopted, but

it is usual to plough up all fields at least once before the rains break in June. Harvesting finishes by the end of November, and as soon as threshing is over the cultivator ploughs up his *bahal* fields to turn in the stubble. But the *mal* terraces, reaped early in October, dry up and harden very quickly, and cannot be touched unless, as is often the case, heavy showers occur in January or February. The bulk of the work is left for the hot summer months when heavy storms of thunder and rain usually occur once a fortnight, and give the cultivator his chance to plough. It is then too that manure is spread and worked in.

Methods of sowing.—There are four well defined methods of sowing broadcasted rice.

Khardi.—The *khardi* necessitates much preliminary ploughing, and is applied chiefly to bottom lands which retain moisture long enough after harvest to admit of effective pulverisation. It can also be used on sandy upland soils which soak readily after summer showers. The seed is sown broadcast a fortnight before the rains break, or, usually, at the beginning of June. If the coming of the monsoon is delayed and mere showers fall, the seed germinates and dies. If the monsoon is ushered in with a heavy downpour, the seed is liable to be washed out, and this is one reason why the *khardi* method cannot be employed on steep terraces. Its great advantages are that, if successful, it gives an early ripening crop, and it leaves the cultivator free for the sowing of his other land by other methods after heavy rain begins.

Batri.—Of these the most popular is the *batri* method, because it is applicable to the *mal* fields which constitute about 60 per cent. of the rice land. These bake after harvest to a brick-like hardness, and can be but lightly scratched until the monsoon has set in. They are then given a deeper ploughing and the seed is sown at once, usually in the beginning of July.

Muka.—The *muka* method may be applied to any embanked field, but most suitably to the lower plots of a *berna* dell. These have been lightly ploughed beforehand; when the rain comes in earnest they are flooded deeply, the plough is put through water and mud, and the seed is sown on the thin slush thus worked up. After two days the water is gently drained off.

Achhra.—The *achhra* method is an elaboration of *muka* which can be applied to all fields with good embankments in a low and level position. Pre-monsoon ploughing is unnecessary. On the first full fall of rain the fields are flooded, and the plough is put twice through the water and mud. Four or five days later the water is drained or scooped off, care being taken to leave no pools. The soft sediment is ploughed once more to break the remaining clods, and is then levelled with a board. Meanwhile the seed has been germinated by being soaked in water for a day and a half, and then spread in baskets for another day. It is often put in by hand. If through carelessness any water has been left on the *achhra* field the seed sown in this advanced condition will rot. It is necessary for success with both *muka* and *achhra* that the monsoon should be ushered in with heavy rain.

Rupa or transplantation is a method which was formerly little practised, but is gradually coming into use for all low-lying land which can be trusted to hold enough moisture for a late crop. In the more closely cultivated tracts ten per cent. of the rice is transplanted. The seed is sown carefully by the *batri* or the *achhra* method in a well-manured plot, very often in a plot used in alternate years for sugarcane. The fields to be planted are not ploughed before the monsoon, but when the rains break they are at once filled with water, and at intervals are ploughed four times. After five or six weeks, when the plants are ready for use, the water is drained off and the fields levelled. The transplanting, which is done by women, usually occupies two mornings. On the first the shoots are plucked from the seed-bed, and on the second they are put into the fields, three or four in one bunch. The wisdom of this delay is held by the more intelligent farmers to be doubtful. My experiments show that transplantation yields at least ten per cent. more grain than any form of broadcast sowing, and this result is generally admitted by the people. But, although transplanted rice rarely requires weeding, the extra labour of the planting is said to counterbalance the extra profits. The chief benefit derived is considered to be the cleaning of the fields from weeds, these being rooted out by the long immersion in water.

The art of successful rice cultivation consists very largely in the proper allocation of fields among these different methods, the object held chiefly in view being an early start in order that the plants may be strong enough to withstand the almost inevitable droughts of August. To secure this every available hour must be well filled both before and after the first full burst of rain.

Rotation of crops—Rice land is used every year, and no rotation of crops in the ordinary sense is possible. For this is substituted a rotation of methods of agriculture and a rotation of seed-varieties. In every well cultivated village it will be found that individual fields or blocks of fields have a definite cycle of cultivation. Varieties are changed to prevent degeneration of seed, and sowing methods are alternately employed to prevent an overgrowth of weeds.

Thinning.—The thinning operation, locally known as *bihora*, necessary to broadcasted rice, should take place early in August when the plants are about a foot high. It consists simply in running a light plough up and down the field to uproot all weeds, and at least half of the rice plants, and aerate the roots of those left untouched. It is necessary to a successful thinning that there should be from four to six inches of water in the fields. If there is not, the cultivator must either irrigate or wait through the long droughts that occur in this month until sufficiently heavy showers fall. It is perhaps the most anxious of all seasons. A crop early thinned and then refreshed by light showers is secure. It will stand a long drought and yield a crop even if September be rainless. But if the first chance is missed and *bihora* is not accomplished until late in August, any shortage of the September and October rain will ruin the crop. The method is certainly primitive and wasteful, but seed has hitherto been cheap, and the operation is calculated to hasten growth on a light soil, and so obviate the standing danger of a failure in the later rains. A good ploughman using an old plough with well-worn flanges can secure with little waste a heavy strongly growing crop.

Weeding.—Weeds do not grow rankly on the high soil of the district, and it is usually unnecessary to clean fields which have been transplanted or sown by the *achhra* method. In others the labour of weeding at the end of August is fairly heavy. The work is done by women and children.

Harvesting.—No other operations, except irrigation in bad seasons, are necessary until the crop is ripe. Cutting begins early in September for the coarse rice of the uplands, and on the *mal* terraces it is usually finished in October. The heavier *berna* and *bahal* crops are reaped in November. The only implement used is a short sickle, and the straw is cut about eight inches from the ground. But in heavy wet land a longer stubble is left. The cut crop is rarely left in the field for more than a few hours. It is carried in at once by women in headloads and by men slung in two bundles, ears downwards, from a shoulder-pole. Carts are never employed. The crop is heaped on the threshing-ground, which is a round space of beaten clay usually lying close to the village. This remains open during the threshing season, and is then fenced with thorns or bamboo-wattle and used as a stackyard for straw.

Threshing, winnowing and cleaning.—The only method of threshing in vogue is the scriptural treading out by oxen, and these in Sambalpur are still unmuzzled. Six are usually roped abreast by the neck to the top of a central post round which the paddy is spread. For the sake of coolness, and also because the day is filled with the labour of harvest, most of the threshing is done at night, the farm-hands being given a bonus to induce them to stay awake and prevent the cattle eating too much of the grain.

Winnowing is done by men and the subsequent cleaning by women. The only implement used is a small basket shaped like a scoop or shovel. This the winnower fills and shakes above his head in the breeze of morning or evening. From the dropping grain the lighter particles of chaff and dust are blown aside. Gravel and the heavier seeds of weeds remain. These the cleaner eliminates by shaking the grain in a succession of jerks from the open front of the scoop. At each jerk outward a few grains of paddy are thrown forward, and the heavier foreign particles roll to the back of the basket.

Husking.—The large growers in the villages do not often have their grain husked before sale. It is bought up from them by women, the wives and relatives of labourers and small cultivators, who husk it in their own homes

and sell it in the weekly village markets to the dealers. In villages near Sambalpur town large growers and dealers give it out to women who are in their regular employment. These return eight seers of whole clean rice for every 20 seers (of capacity) of paddy given to them. They retain as wages about one seer of rice and the husks. In both cases various tricks are used to shorten labour and to increase profits. The best of husking is that done from day to day by the women of a household for household consumption. It is strongly held that for good cooking rice must not be stored long in a husked state, and the only exception to the rule of daily husking is the old custom by which the bride going to her husband is provided from her father's house with one or more large earthen pots, made only on this honeymoon occasion, filled with husked rice.

The finer classes of grain husk very readily after being dried for a few days in the sun. All the coarser *mal* and upland rices have first to be steamed to loosen the inner husk, and then sun-dried. For both the same primitive machine is used. This is a wooden beam working as a treadle on a horizontal pivot. It carries on its upper end a short wooden piston, iron tipped, which drops at each tread into a round cavity about eight inches in diameter, usually woodlined, in the floor of the room or verandah where the work is done. The usual proportion of whole rice in paddy is in weight 60 per cent. and in capacity 45 per cent. The finer qualities yield a higher percentage of whole rice both in weight and in bulk. In the coarser rices the parboiling process adds to the weight unless the rice is carefully dried, but it also adds considerably to the proportion of *khardi* or broken grain. The inner husk, or *khunda*, is eaten by the poorer classes mixed with broken rice, and the other husk, or *tasu*, is given to cattle.

Storing.—Rice is not stored in a husked condition, because of its liability to damage from damp. What is intended for the market or for immediate use is made up inside a curious barrel of straw-ropes known as a *puri*, which is usually intended to approximate in size to the standard *puru* measure. It is cunningly fashioned and travels without loss over bad roads in poor carts. The remainder of the grain is stored in huge bamboo baskets, coated with mud plaster, which are set up on trestles in the cultivator's barn.

62. I have already noted that the principal changes in cane cultivation have had a downward tendency. Formerly thick juicy varieties alone were grown on common land and were irrigated from large tanks. It is more usual now to find hard stringy varieties grown in separate plots and irrigated from shallow wells. But the crop is still important and is at the present time being re-extended.

Seed varieties.—The two main varieties grown are the *bangla*, or Bengal, and the *tandi*. The former is a thick juicy white cane, growing nine or ten feet high, and yielding compost of good quality and flavour. Until recent years it was grown everywhere. Lately it has, especially in the Bargarh plain, been supplanted by *tandi*, a much inferior cane, very thin and stringy. This grows to a height of 10 or 11 feet and has a coarse hard brown skin. Its juice is sour and its yield poor. But it is not eaten by jackals, and is cheaply grown. Among less popular varieties are the Bombay and the *kalia*. The former is thicker than *bangla* and grows somewhat higher, but is less juicy. Its skin is greenish brown and is fairly hard, but not hard enough to protect it fully. The *kalia* stands midway between *bangla* and *tandi* in thickness, hardness of skin, and juiciness. It is reddish black in colour. The Bombay and *kalia* canes are frequently grown together, the latter protecting the former from the attentions of jackal.

Planting and manuring.—Only one method of sowing or planting is followed, that of placing in shallow trenches bits of seed-cane about 10 inches long, each containing three buds. Ratooning is practically unknown, and a garden is used for cane not oftener than every second year. In some tracts it is the rule to grow cane on a plot only once in three years. The ground to be planted is first watered for a day and then ploughed repeatedly, levelled with a light wooden harrow, and gone over with wooden mallets to break up clods. It is then spread with farmyard manure and ashes, these are ploughed in, and the land is furrowed with the hoe. The usual pattern is a column of 20 short trenches or *gars* holding four or five seedbits laid end to end.

The trenches are one foot apart and the column or *patti* is surrounded by a trench to carry irrigation water to each *gar*. The seed-bits are very lightly covered with earth and ashes. A fortnight after planting, bits of oil-cakes are put beside the sprouting buds and, after another fortnight, cowdung and oil-cake are spread beside the shoots and the soil round them is lightly hoed up. These operations occupy the months of March and April. The hoeing is repeated once or twice before the breaking of the rains in June or July.

Irrigation.—Irrigation, whether from a tank or well, is effected by means of a lever-lift, a long pole poised between two uprights and weighted at its lower-end. Three days after planting the first watering is given, the second three days later, and the third after four or five days. From this time until the rains set in irrigation once a week is sufficient. For some months after the rains irrigation is unnecessary, but one or two waterings are always given in December or January before the crop is cut, to ensure fullness of juice in the canes at harvest time.

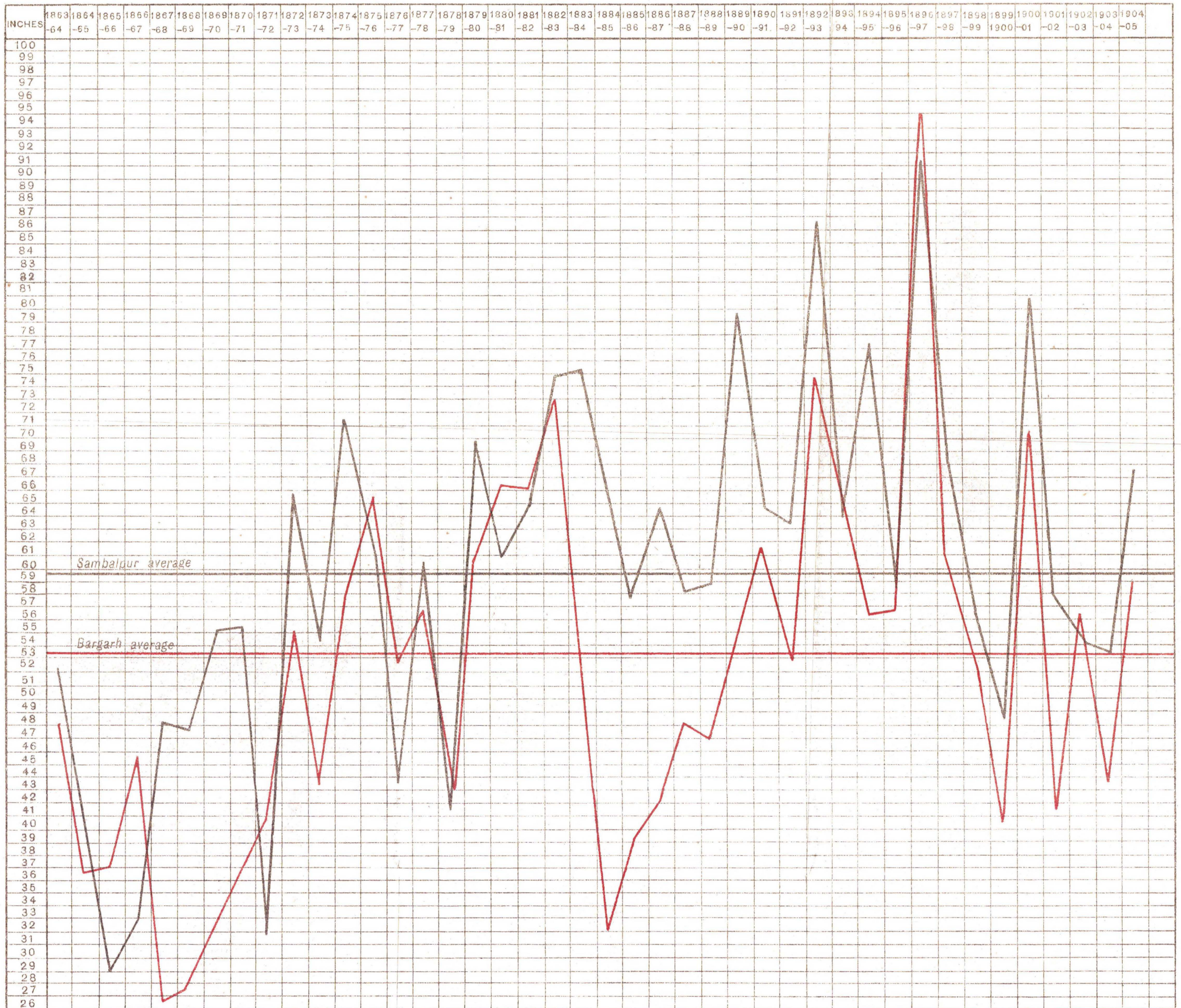
Lodging and weeding.—During the rains the plants are lodged. At first, while they are still short, two are tied together, later three or four, and, when near their full height, they are lodged in bunches of five or six and supported with a stick of wood or bamboo. As a rule each cane is also wrapped in its own dead lower leaves to protect it from jackals. The hoeing up of the soil in the hot weather prevents much growth of weeds, but in the rains at least one thorough weeding is necessary.

Harvesting, crushing, and boiling.—In January or February the crop is ripe. The crushing mill in use is a simple wooden structure of three upright rollers in which the outer ones revolve on the central one. The juice drips into a pan embedded below the mill and is transferred thence to the boilers, which are four deep clay pots set over a clay oven. The fire is started with brushwood and kept up with the refuse of the cane. In these deep pots the juice takes several hours to boil down. When sufficiently thick it is run into a shallow depression in the clay floor. The processes used are wasteful and slow. The wooden mill costs only Rs. 4 or Rs. 5 to make, but lasts only two years at most, and its pressure does not extract a high percentage of juice. Three years ago a large iron three-roller mill was imported from Poona and shown to the people. Its results were excellent. But it proved to be too heavy for the weakly cattle of the district. A small iron crusher, costing about a hundred rupees, such as is used in many rural parts of Bengal, should be popular if once introduced. At present the people themselves are more anxious to improve the boiling process. The earthen pots used are much too deep, and they frequently crack and spoil their contents. Some shallow iron pans have lately been imported from Poona.

63. The rains usually break in the second fortnight of June or in the first of July. The rain of July is almost invariably heavy. August and September are the critical months. The cultivator can to a certain extent meet weather conditions by the use of his tanks, but the area fully protected by these is small and the lack of two inches of rain, or its delay by two days, may work great damage. The October showers are seldom heavy, and are of importance only after a dry September to revive the rice of the bottom lands and to secure the pulses and oilseeds. From October to January no rain falls, but it is usual to have some showers at the end of January or in February. These and the periodic rainstorms of the hot months permit the cultivator to plough his land before sowing time.

The average rainfall is heavier and less capricious than that of the Central Provinces, but lighter and less steady than that of Bengal. The district appears to be situated on the edge of the Bengal monsoon current, which insures a steady supply to the eastern portion, but fails westwards of a line drawn from north and south through the centre of the district. Serious shortage of rain has not been known to occur in the eastern tahsil nor in that part of Bargarh which lies within twenty miles of the Mahanadi. The northern part of the Bargarh tahsil also, probably owing to the neighbourhood of high hills, is fairly secure. But the bare northern Chandarpur tract, all the south and west of the Bargarh plain, and the zamindaris of Borasambar and Phuljhar, have repeatedly suffered.

GRAPH SHOWING THE ANNUAL RAINFALLS OF SAMBALPUR TAHSIL (in black) & BARGARH TAHSIL (in red)



The following table gives the statistics that are available

YEAR.	RAINFALL OF THE YEAR.		RAINFALL OF AUGUST AND SEPTEMBER.		Price of rice in seers per rupee.
	Sambalpur.	Bargarh.	Sambalput.	Bargarh.	
1863-64	52.46	45.00	6.91	4.72	58
1864-65	40.83	36.54	17.93	13.85	26
1865-66	29.46	37.00	1.30	13.90	16
1866-67	23.17	45.45	29.44	26.70	23
1867-68	48.31	28.50	27.87	14.96	33
1868-69	46.56	28.70	12.19	7.15	17
1869-70	55.30	32.81	14.95	12.52	34
1870-71	55.46	26.69	18.65	20.66	30
1871-72	31.78	40.00	13.04	12.70	34
1872-73	65.66	55.40	26.61	14.50	43
1873-74	54.67	43.58	19.29	17.34	35
1874-75	71.98	57.49	31.85	20.23	32
1875-76	61.45	65.31	27.84	22.36	33
1876-77	43.91	52.83	26.94	20.61	27
1877-78	60.59	56.94	24.31	25.65	Doubtful 35 to 16.
1878-79	41.74	43.22	17.76	25.90	Doubtful 37 to 20.
1879-80	70.27	60.38	37.34	28.22	27.5
1880-81	61.22	66.24	31.30	27.42	32
1881-82	65.07	66.02	23.71	28.69	54
1882-83	75.01	72.91	23.58	36.74	51
1883-84	75.60	53.94	22.33	14.50	39
1884-85	66.88	32.05	39.18	16.55	31
1885-86	67.71	39.23	19.65	12.89	23.4
1886-87	65.23	42.18	28.55	17.65	22
1887-88	53.33	48.23	20.00	22.95	21
1888-89	68.86	46.91	46.59	31.22	25
1889-90	79.91	55.01	22.29	23.68	24
1890-91	64.66	61.25	21.53	27.14	25
1891-92	63.68	62.72	50.73	38.87	17
1892-93	54.70	74.26	17.00	18.31	17
1893-94	64.30	64.44	24.27	30.37	19
1894-95	77.44	56.10	4.71	29.41	21
1895-96	69.05	56.67	33.19	34.91	20
18.6.97	61.69	97.58	43.31	59.51	26
1897-98	67.64	60.53	38.99	33.27	20
1898-99	56.41	52.12	28.75	24.16	21
1899-1900	48.55	40.10	16.39	14.65	18
1900-01	47.00	70.58	48.23	41.54	15
1901-02	57.71	41.12	43.06	30.73	12
1902-03	54.47	56.13	26.17	20.63	17
1903-04	63.76	41.33	24.64	23.25	22
1904-05	67.10	59.34	21.39	23.58	19
Average	59.83	59.61	27.13	23.20	

The higher average rainfall of the eastern tahsil is also a more steady rainfall than that of Bargarh. The figures would seem to show that the fall has gradually become heavier within the past 40 years, but whether that is a real tendency is doubtful. The phenomenon is possibly due to the less accurate record of the early years.

I have attempted to ascertain whether the fluctuations are reducible to any rule, but my sources of information are imperfect. The rainfall statistics themselves are not wholly trustworthy; there are practically no records of crop failure earlier than 1885, because before the district was opened up even serious crop failure did not result in famine; and, finally, the records of ruling prices are unsatisfactory. But I may with diffidence suggest that there is some indication of a recurrence every seventh year of danger from short later rainfalls. There are certain obvious exceptions, but the distinctly bad seasons appear to have been:—

1864
1871

1873
1885

1895
1899

In each of these years the total rainfall has been markedly deficient, except in 1892, when very heavy showers fell in the hot weather; in each of these years the rainfalls of August and September have been below normal; and in each of these years a more or less considerable rise has occurred in the price of rice. The accompanying graphs show the fluctuations more clearly than a table of statistics can.

64. In no matter more than in irrigation has the district progressed since last settlement. In the khalsa area, excluding the Chanderpur tract, 73,105 acres were recorded in 1889 as being irrigable from tanks and wells. The irrigable area is now 112,545 acres, an increase of 54 per cent. Of this, 8,774 acres are vegetable and cane gardens, watered chiefly from wells, and 26½ per cent. of the rice is irrigable from tanks.

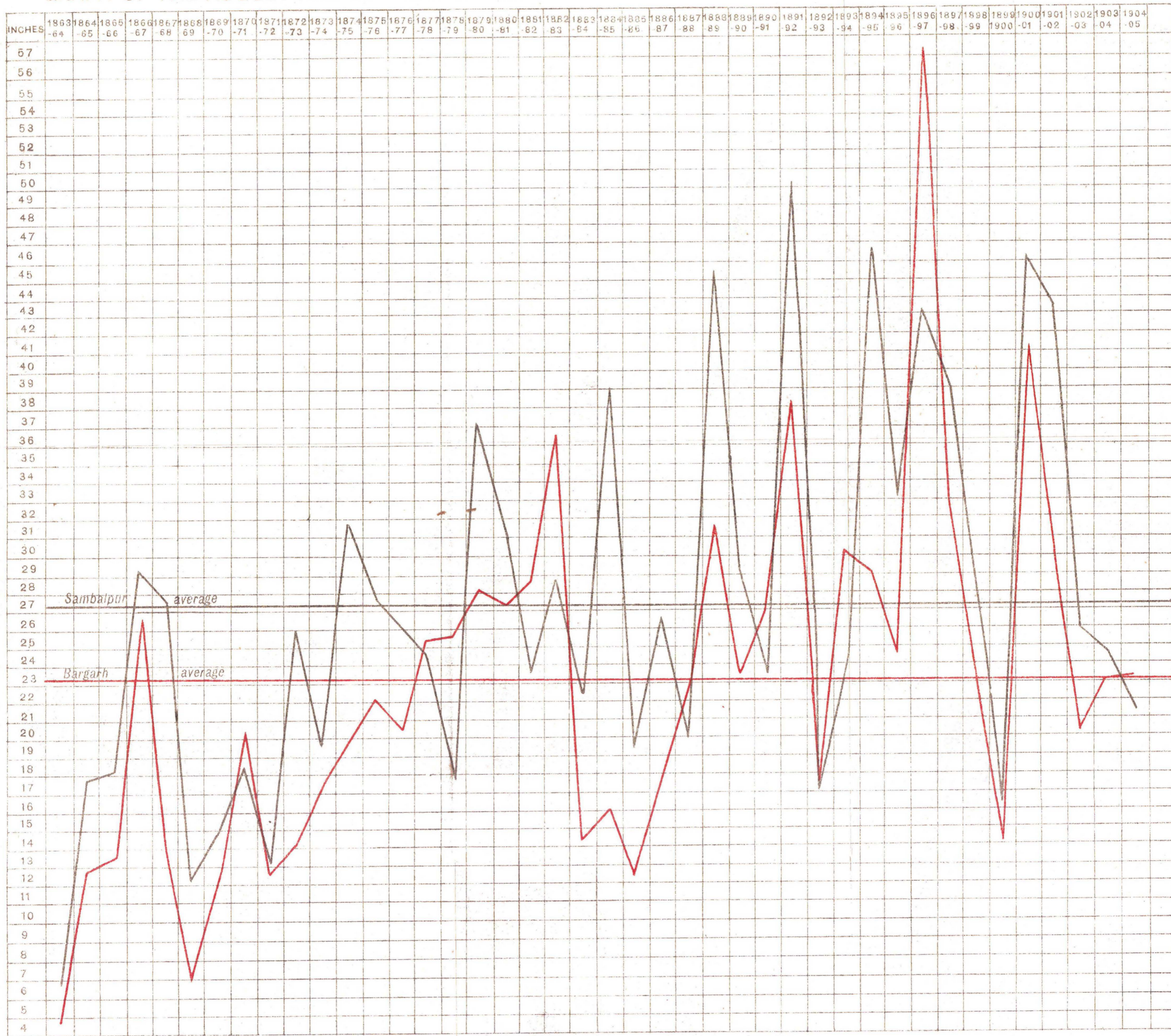
The increase in the number of tanks and wells in the khalsa tracts since 1889 has been very great:—

	In 1889.		Now.	
	Tanks.	Wells.	Tanks.	Wells.
Bargarh khalsa	1,697	264	2,965	6,034
Sambalpur "	1,919	635	2,607	2,032
Total	3,616	899	5,572	8,116

The increase is most considerable in Bargarh where the lighter rainfall necessitates careful attention to irrigation. The cause of the great extension of well irrigation, already remarked on, is the change in the irrigation of cane, necessitated by the closer cultivation of the rice crop. The mere numerical increase of the number of tanks is hardly a fair criterion of progress since it is true that most of the old tanks are big reservoirs and most of those newly built are comparatively small or are primarily intended for use as drinking tanks. In the course of village inspection the tanks have been divided into two classes, the bigger reservoirs which water securely at least five acres, and usually from 30 to 200 acres, and the small shallow pools and drinking tanks which irrigate less than five acres each. The last are often very large, but their embankments are never cut and they water by percolation only. Of large irrigation tanks there are in the khalsa area 2,872 and of the smaller sort 2,700.

The kata.—The typical irrigation tank, known as the *kata*, is formed by a northern embankment, slightly incurved at either end, which is thrown across a drainage area. The undulations of the country usually determine its shape as that of a long isosceles triangle of which the dam is the short base. It commands a valley, the bottom of which is the *bahal* land and the sides of which are the *mal* terraces. The water is at its deepest inside the middle of the dam and, as no sluices are used, direct flush irrigation from a cut in the middle of the dam is dangerous. It is also unnecessary except in years of very short rainfall when even the bottom lands need direct irrigation. As a rule there is a cutting high up the slope near one end of the embankment. From this the water is led either by a small channel or *tal* or from field to field along the terraces, and down these it drips into the lower land. In ordinary years irrigation may be entirely unnecessary, and in that case the superfluous water is passed along until it falls into the *nala* in which the small valley ends. But usually there is some need of the tank water, either to flood fields for transplantation, or, later, to allow the plants in the drought of August to be safely thinned by the plough. The real necessity comes in years of short rainfall towards the end of August when the plants of the early rice on the terraces are withering. These must be watered at least twice in September. Meanwhile, unless timely showers fall, the crops at the tail of the *bahal*, furthest from the tank, also suffer, and a conflict of interest is apt to arise, the holders of terraced plots clamouring for water at once and the holders of bottom lands being anxious to save it till October.

GRAPH OF THE AUGUST AND SEPTEMBER RAINFALL OF SAMBALPUR TAHSIL (in black) & BARGARH TAHSIL (in red)



The munda.—The *munda* is a small edition of the *kata*, catching the water of a smaller dip and commanding a narrow dell or part of a slope. This is the tank most usually built, at a cost of one or two hundred rupees, by raiyats for the watering of their own holdings. These men have perhaps a few fields commanded by the main village tank, but have built *mundas* to protect their outlying fields, (note recently acquired from others or broken from the waste. For its purpose the *munda* is useful. It is a distinct convenience for certain kinds of sowing and for thinning operations, and if a failure of rain is not very serious it may provide water enough in the later months of growth to save the crop. But it is necessarily shallow and cannot provide secure irrigation. In most villages, however, of the closely-settled tracts it is now impossible without swamping fields to secure sites for larger tanks.

The Bandh.—The *bandh* is a square tank almost invariably used for drinking purposes only and almost invariably attached below the irrigation dam through which the water filters into it. Many of these tanks have been built of late years. They are properly regarded as suitable monuments of piety or charity and are invariably consecrated or "married" to a god. Apart from their obvious sanitary advantages they add to the irrigated area by spreading percolation and by rendering it possible in years of drought to empty the irrigation tank completely without danger.

65. Agricultural improvements in a rice-growing country are the embanking of fields and the digging of tanks and wells. (The amount of field embankment effected in the khalsa area alone since 1889 is very large, as the following table will show :—

	In 1889.		Now	
	Acres.		Acres.	
Bahal area ...	79,259	...	78,006	...
Berna ...	92,526	...	97,862	...
Mal ...	192,173	...	230,650	...
Total embanked area...	363,958	...	406,518	...

The increase is one of more than 9 per cent. It may be noted that owing to greater strictness of classification, the area of bottom land has decreased. This cannot well be added to except where large stretches of new ground are cleared. The area of the *bernas* or dells has increased, because these can be dug back out of the ordinary waste land of a village. The greatest extension has occurred on the terraced slopes. For these fields, however, only light embankments are necessary, and as this form of improvement has been undertaken in practically every holding, no attempt has been made to value the work done. It is too cheap and too common to make detailed exemption from enhanced assessment necessary.

The same consideration applies to the new irrigation wells. Sub-soil water is to be found within 15 or 20 feet of the surface, and the wells used for cane irrigation seldom cost more than Rs. 40 or Rs. 50. But tanks are more expensive, and a close account has been kept, for the purpose of exempting improvements during the term of his settlement, of all sums expended and areas benefited.

	AMOUNT SPENT IN—		
	Improving and repairing old tanks.	Constructing new irrigation tanks.	Constructing drinking tanks watering small areas.
	Rs.	Rs.	Rs.
Khalsa ...	91,492	1,50,114	54,770
Zamindaris and taluks ...	1,10,330	1,78,672	32,805
Total ...	2,01,822	3,28,786	87,575

Of this about one lakh was spent by Government in 1900 and about one lakh belongs to the tracts which have been retained in the Central Provinces. But the remainder is over four lakhs, a large sum for a district which pays only one and a half lakhs in annual land revenue.

We have seen that the irrigated area of khalsa in the Bengal district has increased by 39,440 acres. Most of this extension is due to a fuller use of existing tanks, but out of the three lakhs spent more than two lakhs have gone into works which have definitely increased the irrigated area by 5,594 acres, at an average cost of Rs. 37 per acre.

66. The manner of using manure has already been touched upon in describing the cultivation of rice and cane. The value of farmyard manure is understood, but it cannot be said that all the available material is fully used. It is stored in heaps or at best in shallow pits either in the cultivator's courtyard or in some spot close to the village. No attempt is made to conserve and utilize cattle-urine, and the solid dung is apt to lose much of its properties before it is spread and ploughed in in the hot months. As there is little stall feeding done, except in the case of the more valuable stock, such as buffaloes and milch cows, much of the manure is dropped on the waste land, and most of this is quite lost to the cultivator from its being collected and made into cakes of fuel by women and children of the poorer classes. Besides cattle-dung, a manure in regular use is the *pank* or sediment of tanks. This contains a valuable proportion of decayed vegetable matter. It is dug in the hot weather and laid out in clods on the fields, to be melted down by seasonal showers. In villages adjoining forests it is also usual to spread dried boughs and set fire to them. I had supposed that the purpose of this operation was to destroy weeds and the eggs of insect pests, but I am assured by cultivators that its main object is to provide manure.

Artificial or chemical manures are unknown. I have for four years conducted experiments with saltpetre, used as a top-dressing towards the end of August, after the rice plants have been thinned. Its efficiency has been proved for all rich and level fields from which the water does not drip enough to carry away a large proportion of the melted saltpetre. The addition to the weight of both grain and straw is considerable, but the value of the added outturn per acre rarely is more than Rs. 5 which is the minimum cost of the maund that is expended on an acre. Cultivation is not yet close enough to induce the grower to add more than 50 per cent. to his outlay in order to secure an addition of 20 per cent. to his net profit.

Better than any laborious fertilisation is the automatic manuring received by land close to the village. This land is called *khari*. One part of the easement cannot well be allocated, but disputes are frequent about the distribution of the *khari* water which floods down the village lanes in the rainy season carrying with it the distilled refuse of house and cattle-shed. It is highly prized and is led by small channels to the fields of many holdings. The best arrangement, a rare one, is to turn it all into a tank that is set aside as a cess-poll and distribute it thence in the manner of irrigation water.

67. In fields of decent tilth weeds are rare. The light soil of the district, baked dry for many months and then deeply flooded, does not usually harbour dangerously spreading plants. The *kans* grass which plagues the cultivator in all the black soil country of the Central Provinces is here found only in a few riparian villages.

There are several insect pests which damage rice, but the same causes which check weeds check these also. The only pest that has in recent years threatened to become a dangerous nuisance is the *phapha* grass-hopper whose larvæ emerge at the beginning of the rains and are large enough by the time the tender shoots are above water-level to do considerable mischief. In the Chhattisgarh districts these became a pest almost as dangerous as locusts, and they penetrated into Sambalpur in large numbers. But their attentions were directed only to the crops on black or *khari* soil, and before the annual spoliation became serious, a season of exceptionally heavy rain washed out the eggs and larvæ from the soil. The most practicable plan for the destruction of the grasshoppers was found to be the organization of bands of men dragging

fishers' nets over the rice-fields, while these were still deep in water before the plants began to flower. Converging nets imprisoned large numbers. To be successful the operation must be carried on by all the villages of a large tract.

Pests and diseases of sugarcane are fairly common, but no general loss has been known to occur. The absence of water-logging in the cane gardens and the custom of never cropping them with cane for more than one year at a time probably tend to prevent the spread of disease.

68. The implements used by the cultivator are of the simplest description and almost all are made by himself of wood. The plough is a very light article that can be lifted with one hand; any with its coulter costs not more than Re. 1-8-0 to make. The *kampar* and the *kurra* are two wooden boards, used respectively for levelling and for shovelling earth. They are harnessed by ropes to a yoke of oxen. Their cost is from four to eight annas each. The *dhenki* or husking mill and the *ghana* or cane-press, both already described, cost Re. 1-8-0 and Rs. 4-0-0. And the irrigation lift or *tenda* costs, with its kerosine tin, about Re. 1-4-0. The smaller articles in use, besides shoulder-poles, ropes, etc., are:—

		Rs. a. p.
The <i>da</i> or sickle	... costing	0 4 0
<i>tanguri</i> or hatchet	... "	0 6 0
<i>kuri</i> or hoe	... "	0 12 0
<i>kurali</i> or rope-winder	... "	0 4 0
<i>tupa</i> , a carrying basket,	} about one anna each.	
<i>kuadli</i> , a sowing basket,		
<i>dala</i> , an earthwork		
ba-kt.		
<i>kula</i> , a winnowing		
basket,		

The entire outfit, the more substantial articles of which last from two to five years, can be got together for about Rs. 12. Carts are very little used for agriculture. In these the most costly part is the imported tyre, usually priced at Rs. 5 per pair. A serviceable light cart can be built for about Rs. 12.

69. Even in the khalsa area the plough-cattle were not invariably enumerated at last settlement, but, if we may judge from the tracts in which they were noted, there has been since 1889 an increase of 25 per cent. in their numbers. The stock of the whole district, including Phuljhar and Chandarpur, has now been thus classified.

Bullocks and male buffaloes—	No.
Working	290,999
Non-working	10,103
Cows	166,447
She-buffaloes	11,882
Calves	146,175
Sheep	16,735
Goats	41,914
Horses and ponies	2,304
Donkeys	64
Ploughs	141,689
Carts	21,753

There is one plough to every 8 acres of land in cultivation and to every six acres of the rice crop,—a sufficiently large allowance. In the new district the plough-cattle, bullocks and buffaloes, number 220,766.

There is annually some importation of buffaloes from the north, the chief markets being Talpatia in Sambalpur tahsil and Bhukta in Bargarh. But as the large proportion of calves shows most of the cattle-breeding is done within the district, and it is very carelessly done. Doubtless the cultivator finds that his undersized bullocks are strong enough for his light plough and light soil, but their starveling condition cannot be a gain. No fodder crop is grown, ensilage is unknown, and after the month of November the grazing grounds of the open tracts yield the minimum of fodder. In the hot months the cattle, getting as they do a bare subsistence from these and from the

remains of the stored rice-straw, present a pithy appearance and are saved from the actual starvation only by the *mahua* crop of March and April. It is not surprising that the hides of cattle form the third most important article of export. Government forests are not taken advantage of except by villages in their immediate neighbourhood, and these need help much less than open villages because they usually have some forest land within their own limits. To the buffaloes a fair amount of attention is paid, and they are stall-fed with rice-husks in the hot weather.

The price of cattle, such as they are, does not seem to have increased since 1889, probably because they are never imported by rail and because Hindu cultivators do not take part or profit in the trade of hides. Mr. Fuller noted then that "Rs. 15 would be locally considered as a good price for a plough bullock." For a yoke of good bullocks more than Rs. 30 is not now often paid. A fairly good working pair may be had for Rs. 20. A strong young buffalo will cost from Rs. 25 to Rs. 30.

70. The following is an estimate of the amount and value of the produce of the whole of the old district, including Chandarpur and Phuljhar: It is intended to be read with the statistics of trade given in Chapter V.

The standard outturn of rice-land, which will be found discussed in Part II, is 1,300 pounds of paddy. But as the cropped area of the district includes a considerable proportion of poorly cultivated land in zamindaris, I have here taken an average outturn of only 1,000 pounds. Most of the area under "other crops" is garden land, which grows two or three crops in the year and these valuable, e.g., tobacco, spices, vegetabales. The estimate of Rs. 30 per acre is certainly not too high:—

Crops,	Area in acres.	Outturn in pounds per acre.	Gross outturn in pounds.	Seed used.		Net-outturn in maunds.	Wholesale rate per maund.	Total value in rupees.
				Per acre.	Total.			
Paddy ...	853,971	1,000	853,971,000	78 lbs.	61,040,326	9,872,783	1 4	1,28,41,104
Sugarcane ...	4,607	4,000	18,028,000	6 per cent.		211,830	5 0	10,89,150
TU ...	118,828	150	17,829,200	2 lbs.	237,656	22,017	4 0	8,80,768
Cotton ...	16,269	150	2,440,350	10 "	152,590	18,260	6 0	1,17,840
Palms ...	138,484	33	4,561,852	30 "	4,154,800	346,210	8 0	10,76,850
Millets ...	80,414	800	64,351,200	60 "	3,615,890	106,346	1 8	3,94,517
Other crops...	32,734	.....	.....	.....	.....	.....	.....	3,98,020
Total ...	1,224,227	.....	941,977,070	.....	10,873,586	.....	.....	1,67,58,119

There is practically no import of food-stuff except salt. The sugar import merely supplies the wants of the foreign trading community in Sambalpur town, and practically all the sugar-compost locally produced is locally consumed. This allows only about one ounce a day per head of population. All the vegetables, the tobacco, and the millets, most of the pulses, and about one-third of the oil-seed, are also consumed within the district. This leaves available for export about two lakhs of maunds of oil-seeds, pulses and cotton, worth about 8½ lakhs of rupees.

The 9½ lakhs of maunds of paddy contain of whole husked rice about 58 lakhs of maunds. The cost of husking is about seven lakhs of maunds, but in this estimate that need not be deducted. The allowance for wastage must, however, be a very large one. The cattle snatch a good deal on the threshing floors and birds take their share. Rats and insects take theirs in the barn. But the chief loss is caused by damp. I should allow on these accounts not less than 20 per cent., and thus reduce the amount of available rice to 46½ lakhs of maunds. I make no allowance for cattle which, apart from the grain they pilfer, seldom get more than huskings. Human consumption, in addition to the sugar, millets, vegetables and pulses, probably does not exceed one pound per day for the individual. This for a population of 829,698 comes to 38 lakhs, but to allow for more than bare subsistence the amount may be stated at 42. There remain for export 4½ lakhs of maunds of husked rice valued at about 11 lakhs of rupees.

The total amount of agricultural produce available for export is, therefore, about six and a half lakhs of maunds, and this is fairly valued at about 19½ lakhs of rupees. The surplus is more than eight times the total rents of the district and ten times the revenue of Government.

CHAPTER V.
TRADE AND PRICES.

71. In the early part of the last century the overland mail from Calcutta to Bombay passed through Sambalpur, and the bridged mail road, of which few traces now survive was no doubt used for trade. But as early as 1874 Mr. Russell lamented that the district had no road worthy of the name. He enumerated five, all of which still exist, but are in no better condition now than in the seventies. The most important trade-routes then were two lines running south through Sonpur State to Ganjam. One of these went from Sambalpur town down the Mahanadi, and the other came south-east through the Bargarh plain from Sohela. The road running north-west to Bilaspur along the bank of the Mahanadi was also then important. But the river itself was the main highway. Much of the Chhattisgarh wheat, gram, and lac came down by road and river to Sambalpur, and this with the produce of the district was then floated down stream to Cuttack in the autumn months while the river ran deep. Mr. Russell mentions as imports from the coast only Birmingham goods, coconuts, and salt. These were brought up by road or on the river by the boats laboriously returning with light cargoes.

72. By 1881 a metre-gauge line had been extended into Chhattisgarh from Nagpur. In 1888 it was converted into a broad-gauge line, and in 1890 it was continued, skirting the north of Sambalpur, to Asansol. But at last Settlement the only effect of the railway on the district had been to deprive it of its old carrying trade down the river of Chhattisgarh produce. An important improvement had indeed been effected in the western road to Raipur, which is now the only good cart road in the district, but at that time it did not carry much traffic. In 1889 trade still went down the Mahanadi and the Ganjam road.

The exports registered in 1885-1886 were :—

Rice	...	Maunds.
Other commodities	...	149,953
	...	28,822
Total	...	178,775

And the imports were :—

	...	Maunds.
Metals	...	3,374
Salt	...	72,955
Coconuts	...	84,426
Other commodities	...	11,102
Total	...	121,857

73. The trade of the district now follows four lines :—

- (1) The Sambalpur-Jharsogra Branch Railway taps all the eastern tahsil and all the eastern and southern part of Bargarh tahsil. Into Sambalpur by way of the Bargarh market comes also a considerable part of the exports of the Patna and Sonpur States in cotton, hides, and hemp. East of the Mahanadi the States of Rairakhol, Bamra, and Gangpur send into Sambalpur and Jharsogra large quantities of these products and also timber and grain.
- (2) But the river trade and that of the Sonpur-Ganjam road still survive, and from the southern portion of these tracts some produce still goes south along with surplus railway imports.
- (3) The stations of Khursia and Raigarh on the Main line of the Rengal-Nagpur Railway drain the produce of the Chandarpur-Padampur tract and that of all the northern part of the Bargarh tahsil. It is worthy of note that a very considerable quantity of rice is carried in headloads out of the Bargarh plain for fifty miles over the Bara Pabar range and across the unbridged

Mahanadi to Raigarh. The mileage and the roadway are in favour of the Sambalpur terminus, but the fees and the delays at the pontoon bridge at Sambalpur tell against it, and trade is drawn north by the higher range of prices on the main line. These stations also ship the produce of the Sarangarh and Raigarh States.

- (4) The Bargarh zamindaris send most of their produce westward down the main road to Raipur. The distances range from 80 to over 120 miles, but three important factors determine the run of trade. The roadway in Raipur district is much better than in Sambalpur, and the crossing of the Mahanadi is easier than that to the north; Raipur offers main line prices; and oilseeds—a very important part of the produce of these estates—are in demand at Raipur where a successful oil-mill has been running for some years.

74. The exports and imports of the district are so scattered and commingled with those of the neighbouring States and of Raipur that it is impossible to state them statistically in full. But a few figures by way of illustration may not be out of place. The exports and imports of rice from and to the three principal stations which receive chiefly from Sambalpur itself, namely, Jharsuguda, Sambalpur, and Khursia, were in four years:—

YEAR.		Exports.	Imports.	Net exports.
		Maunds.	Maunds.	Maunds.
1898-99	...	327,273	6,601	321,672
1899-1900	...	111,818	110,825	993
1900-01	...	265,050	14,514	250,536
1901-02	...	316,781	...	316,781

These figures illustrate clearly the severity of the crop failure in 1899 and they also show how quick was the recovery from it.

The following table shows the exports and imports for 1901-02 from and to the stations of Sambalpur, Sason, Rengali, Lapanga, Jharsuguda, Bagdhi Belpahar, and Khursia. The export of raw cotton, largely contributed by the States, is excluded, and the export of sleeper timber, wholly contributed by the States. Much of the imported cotton-thread and salt does not remain in the district.

Exports.

COMMODITY.	Maunds.	Rate per maund.	Value.
		Rs. A. P.	Rs.
Rice ...	334,715	2 10 0	8,73,627
Pulses (chiefly mung) ...	7,812	4 3 0	32,893
Oil-seeds (til) ...	117,431	4 0 0	4,69,724
Hides ...	13,900	15 0 0	2,09,700
Total ...	473,858	.....	15,90,944

Imports.

		Rs. A. P.	Rs.
Cotton-thread	47,830	30 0 0	14,34,900
Salt	121,879	3 10 0	4,43,194
Sugar	16,820	10 0 0	1,68,300
Tobacco	1,280	13 5 4	26,400
Total	187,809		20,72,694

These figures probably represent only three-fourths of the actual export of the district, but they at least show that the body of trade has more than doubled since 1889.

The exports through Raigarh and Raipur and those down the river and the Ganjam road cannot be even approximately ascertained. But it may fairly be estimated that the total export in food-grains and oil-seeds is not less than 6 or 7 lakhs of maunds.

75. The construction of the Raipur-Vizianagram Railway will be of great importance to the district. It will strike a last blow at the road and river trade to Ganjam, and will provide the southern part of the Bargarh plain with an easier outlet than it has at present. But it may be doubted whether the Bolangir depôt will draw the trade that forces its way north at present with so much difficulty, or the trade which goes westward to Raipur. To effect this it would be necessary to improve greatly the existing road from Bargarh to Bolangir and those which join it from Soshela and from Padampur in Borasambar. It would also greatly facilitate trade were the Mahanadi bridged at Sambalpur. All these advantages might be effected by the continuation of the Jharsogra-Sambalpur Branch across the Mahanadi to Bolangir *via* Bargarh.

The link would also save a distance of about 200 miles to traffic bound from Vizianagram to Calcutta. Finally, in case of a recurrence of such a famine as befell in 1899-1900, the district would not suffer from dangerous half-finished communication, which can only drain grain out and cannot redistribute it.

In Sambalpur tahsil the projected construction of a railway from Sambalpur to Cuttack through Rairakhol and Angul will greatly benefit the hilly southern tract, but this is already making excellent progress. All the existing roads call for improvement, but perhaps the most necessary and most profitable scheme is that of providing at least one bridge for cart traffic over the Ib river. The most obvious position for it is that at Bagra, 16 miles north of Sambalpur on the old Bilaspur road. But this road, at present a mere track, runs across all the drainage into the Mahanadi, and it would be costly to maintain. It would probably be better, in order to tap the rich Rampela Group, to run a road across it from Mura to Rampela, bridge the Ib at Rampela, opposite which at Sapni there is already an important market, and join the Branch railway at Rengali Station.

76. So completely landlocked was the district before 1889 that although communications are still far from perfect, the prices of all agricultural produce have already doubled since the opening of the railway. It is hardly necessary, even to justify the large enhancement of rents effected at this revision, to do more than state the figures briefly.

The price of rice, the staple commodity, is freely admitted by the people to have doubled since the year preceding last settlement. The price of paddy used to be habitually quoted in the seventies as being two or at most four rupees per *purug* (or from 200 to 280 seers). The range of price is now from five to eight rupees. Twenty years ago the price of rice in Sambalpur town frequently fell to 40 and 50 seers over a year's average, and in outlying villages it could be had at 80 seers. In Sambalpur the price now never falls below 20 and the lowest rate in the villages is 25.

Mr. Neithersole's figures do not always exhibit the great change that has taken place. He frequently uses for purposes of calculation a rate of 20 seers, which prevailed, owing to two bad seasons, in the two years in which he wrote. But it may be noted that he commuted grain rents at a rate of two rupees per *purug* or at from 40 to 50 seers of rice per rupee.

The following table gives the price of rice at Sambalpur town for the ten years preceding last settlement and for the ten years preceding this revision. In the former case the class of rice is not noted. In the latter case I have taken coarse uncleaned rice sold wholesale :—

YEAR.			Price of rice in seers per rupee.
1878-79	...	...	20.47
1879-80	...	...	26.93
1880-81	...	...	31.83
1881-82	...	...	54.00
1882-83	...	...	51.00
1883-84	...	...	39.00
1885-86	...	...	31.00
1886-87	...	...	23.47
1887-88	...	...	21.83
	Average	...	33 seers.
1892-96	...	...	15.83
1893-94	...	...	16.88
1894-95	...	...	19.00
1895-96	...	...	18.00
1896-97	...	...	13.00
1897-98	...	...	25.00
1898-99	...	...	21.00
1899-1900	...	...	11.50
1900-01	...	...	14.00
1901-02	...	...	16.50
			17 seers.

The average price in the Bargarh market is usually two seers cheaper than in Sambalpur. In 1903 and 1904 the average price of rice has fallen to 19 seers, much to the disappointment of large growers and of dealers. But at the harvest of 1905 rates again rose owing to the pressure of outside demand.

The price of *til* before railway export became possible was seldom less than 20 seers. Mr. Nethersole, writing in 1887, quotes 17 seers as an average rate. Its price has since risen :—

1892-93	...	...	9.36 seers.
1893-94	...	...	8.67 "
1894-95	...	...	9.66 "
1895-96	...	...	12.00 "
1896-97	...	...	9.12 "
1897-98	...	...	11.22 "
1898-99	...	...	12.06 "
1899-1900	...	...	8.74 "
1900-01	...	...	8.90 "
1901-02	...	...	11.60 "
	Average	...	11 seers.

The wholesale price of pulses has risen from 24 to 12 seers, and the price of *gur* from 15 seers to 8 seers.

77. The rise in the value of land may best be illustrated by comparing sales at different dates of the same village or of the same share of a village. These, however, are infrequent, and statistics of transfers before 1889 are not available. But

the following table sufficiently well shows the change that has occurred since 1896, by which time the influence of the railway was fully recognized :—

NAME OF VILLAGE.	TRANSFERS BETWEEN 1889 AND THE END OF 1896.		TRANSFERS AFTER 1896.	
	Extent of share.	Price.	Extent of share.	Price.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Gandharpali	0 4 0	430 0 0	0 1 4	350 0 0
Samplabara	0 2 8	175 0 0	0 1 8	1,000 0 0
Jamra	0 11 0	811 0 0	0 8 0	1,154 0 0
Deogaon	0 12 0	1,375 0 0	0 4 0	2,200 0 0
Serapali	0 8 8	340 0 0	0 3 0	440 0 0
Tilaimal	0 10 0	400 0 0	0 4 0	270 0 0
Banjhupali	0 8 0	600 0 0	0 5 0	2,000 0 0
Iohhapur	0 2 8	340 0 0	0 2 8	500 0 0
Khandta	0 6 8	1,100 0 0	0 7 0	44,300 0 0
Loharapali	0 8 0	130 0 0	0 5 3	287 0 0
Total	4 9 0	5,201 0 0	3 12 11	12,501 0 0

These figures indicate that the selling-value of land has quadrupled. There has, I think, been something in the nature of a temporary "boom." But it is to be remembered that landowners with capital find it difficult to get any other than a land investment, and are therefore willing to pay very high prices, and that a doubling in the price of produce means more than a doubling of the profits of cultivation when the expenses do not also increase. Statistics have been collected for cash-sales of small plots of tenancy land in 125 villages of Sambalpur tahsil. Between 1889 and 1896 in 266 transfers 2,110 acres were sold for 17,848 paid to the outgoing tenants, and Rs. 2,944 were also paid to gaontias as consent-fees. Since 1896 there have been 346 transfers in which 1,915 acres have been brought for Rs. 26,591 paid to the outgoing tenants and Rs. 5,431 paid to the gaontias. The cash price per acre increased in a very few years from Rs. 9-13 to Rs. 16-11. In all the later sales the price paid has been at least fifty times the annual rent.

78. If other signs of increased trade and of the increased value of the land were needed they might be looked for in the miscellaneous receipts of Government and of the one Municipality. The gross Municipal income has gone up from Rs. 23,063 in 1890-91 to Rs. 50,394. This change, however, is recent and is largely due to energetic management. The excise receipts have increased from Rs. 1,05,279 to Rs. 1,57,647. Other revenues, though affected by legislation, have also increased :—

YEAR.	Income-tax.	Regis-tration fees.	SALES OF STAMPS.	
			Judicial.	Non-judicial.
	Rs.	Rs.	Rs.	Rs.
1890-91	2,260	927	24,074	7,174
1891-92	2,310	1,596	27,331	8,916
1892-93	2,450	1,345	22,789	9,329
1893-94	3,280	1,659	23,697	12,522
1894-95	2,846	1,926	25,493	13,048
1895-96	2,549	1,895	26,708	12,763
1896-97	2,792	2,744	33,323	16,071
1897-98	3,153	2,969	35,590	17,256
1898-99	2,791	2,523	35,972	18,161
1899-1900	3,606	1,791	23,999	12,861
1900-01	5,282	2,300	23,068	16,775
1901-02	5,766	2,539	33,895	16,590
1902-03	6,331	2,391	33,733	15,833
1903-04	5,762	2,240	36,937	15,368
1904-05	5,276	2,043	30,351	14,733

CHAPTER VI.

LAND TENURES.

79. I have already referred to the peculiar nature of the land tenures of the district. They are numerous, they are unusual, and they have in some cases only recently crystallised, or are still crystallising, into legal existence. They have not yet been the subject of detailed explanation. It is not too much to say that the land tenures of Sambalpur have in the past given as much trouble to the Administration of the Central Provinces as its exceptional language.

The definitions given in this chapter are based on executive orders which have been more or less tacitly accepted by the people, and on a very few judicial rulings, but they depend largely upon accepted custom.

80. Six proprietary tenures may be stated. It is possible that, in practice or in law, one or two merge into others, but at the present stage they appear each to carry at least a possibility of separate status. They are:—

Zamindari.	Malguzari.	Malik-mak-buza.
Goastiahi.	Bhogra-bhogi.	Proprietorship of a Brahmttar plot

81. The feudal zamindar of the Central Provinces is in a different stage of development from his namesake of Bengal. He stands halfway between the Feudatory Chiefs whose territory is not British and the ordinary proprietor of villages in British districts.

Legal tenure.—His tenure is not laid down in any Act but is expressed in the *Wajib-ul-arz* or administration-paper which is accepted by the zamindar at each settlement. This, where its terms are doubtful, is filled out by definite orders of Government. Briefly, the legal status of the feudal zamindars is that they are proprietors of estates which are impartible and non-transferable except to heirs, preferably the nearest legitimate male heirs, who are approved by Government. Each estate is held by the zamindar only on terms. He may be dispossessed in case of continued gross mismanagement. But no such dispossession has actually occurred in Sambalpur, even after many of the zamindars took arms against the British Government in 1857. On the other hand, the right of the executive Government to determine succession has been enforced and the impartibility of estates has been insisted upon. No person other than the zamindar has been recognized as a proprietor of land within a zamindari or has successfully contested his claim to proprietorship. The one exception necessary to this rule is that of the sub-zamindar of Garh-Loisingh, locally known as the zamindar of Jujumura. In this case a younger branch of the zamindar's family has established itself separately by clearing land and settling villages in formerly untouched tracts of the Loisingh hills. This branch was recognized at last settlement as having sub-proprietary rights. At last settlement, more especially in the Barpali estate, certain long established headmen of villages attempted in the Civil Courts to prove their rights to that proprietorship of the home-farm area which had been granted in the khalsa tracts by Government to the headmen of villages. They failed to obtain this grant. Besides ordinary headmen or lessees there are in the zamindari estates many muafidars or assignees, relatives or former servants of the zamindar, who have enjoyed long uninterrupted possession, but neither these nor the so-called Garhtias or "shikmi-zamindars" of the Phuljhar estate have been recognized as proprietors or have proved their claims to be proprietors.

Practical tenure.—In practice the zamindar is an ordinary proprietor who pays, instead of a *kamil jama* or full assessment, a feudal *takoli* or tribute, which ordinarily is much less than a full proprietary assessment. Until comparatively recent years the zamindars controlled their own Police and manged their own excise system and cattle-pounds. In the interests of uniform and consistent administration these powers have been taken from them, and they have received compensation for the consequent loss of income. On the abolition of the Pandhri tax, a form of income-tax, of which they formerly received a moiety, they were again compensated. They still manage their own public ferries and reserved forests.

Protection of village-lessees.—But, though nominally at liberty to manage their own villages as proprietors, they now enjoy this right only in a curtailed form. It was the former custom of a zamindar to receive in annual payment only the rents of the tenants. These were handed over in cash by the lessees. In some estates, besides cash rents, tenants paid also some grain which was given directly to the zamindar. But the grain-payments were usually commuted at last settlement and the tenants' rents were small traditional rents and formed a small party of the real assets of an estate. The lessee made his profit from the home-farm, always the best land in the village, which was largely cultivated for him by the free labour of tenants. His profits were, even before the doubling of prices, large out of proportion to the annual lease-payments. But at each renewal of his lease, every three, or five, or seven years, he paid a lump sum, usually considerable in amount, as a renewal-fee. This was known as a *nazarana*. These payments, being more or less competitive and not traditional, formed a very important part of the zamindars' incomes and served to convey to them part of the increment which accrued to the estate as forest-land was cleared and cultivated. Some indebted zamindars however betook themselves to excessive enhancement of the *nazaranas* and, instead of renewing leases on a fair payment, ousted aboriginal lessees freely in favour of rich Hindu bidders. The resulting lack of security and of continuity in village management hampered the development of villages. Government first struck at the system by ordering that renewal payments should not be taken in lump sums, but should be added proportionately to the annual payments. The mere order was not sufficient to stop an ancient custom, and in 1888 legislative action was taken. A status of protection was granted to all lessees who could prove long possession and fair improvement. The tenure was to be heritable and not transferable, and the annual payment was to be determinable by a revenue officer. The conditions of this tenure were repeated in the amended Land Revenue Act of 1898, and they had previously been inserted in the administration-paper of last settlement. This action has completely prevented zamindars from ousting the protected lessees and from unduly increasing their payments. But in two ways it appears to have been more effective than was originally intended. The revenue officers who worked out the scheme fixed on the home-farms held by the lessees assessments based on the extremely light rents paid by the occupancy tenants. The zamindars were indeed permitted to apply for one enhancement of the *jama* during the currency of a settlement, but they have not done so, the possible enhancements being too small to pay for the trouble. The revenue assets of the estates now remain stationary between settlements and all the increment goes to the lessees only.

The other result is more serious. Many of the protected lessees were aboriginals who, having brought their villages to a certain stage of development, stopped at that stage. Many of them, lacking the stimulating dread of being ousted, made no further improvements but fell into careless ways and into debt. Meanwhile the encroaching Hindu was bidding eagerly for their villages. The zamindar would willingly have dealt with him, but could not. In most cases the Hindu has dealt with the protected aboriginal. Transfer had indeed been prohibited, but it now appears that the wording of the conditions as interpreted by jurists, does not permit Government to cancel its protection on the ground of transfer effected since 1898, and it is also probable that cancellation for a transfer effected since 1898 would not be legally correct if the transferer retained to himself any portion of the income of the village. The consequence has been sub-infeudation of rights. Between the zamindar and his village there may be two, three, or even four lessees, only one of whom does actual village-management. This tendency, though not so ruinous as the former short-sighted greed of zamindars, does to some extent retard development. The purpose of the reform would have been adequately met by the grant of a protection to be cancelled or renewed at each settlement.

82. The rights of the headmen of villages in Sambalpur do not appear to have differed from those of headmen in other districts of the Central Provinces. But the wisdom of granting to the latter full proprietary rights was held in doubt by the time

that the first British Settlement was effected in Sambalpur and the headmen here were made proprietors only of their home-farms. The distinction drawn raised a storm of indignation which was renewed in full force at last settlement. But though the legal status of the gaontia of khalsa is entirely different from that of a malguzar, the practical differences are not very great. The rights of a gaontia in his village either than definitely granted or understood or since established by undisturbed exercise are :—

- Incidence of the status.
- (1) Proprietorship and free right of alienation of the home-farm ;
 - (2) The right of management over the whole village and of undisturbed possession of it so long as the Government revenue demand is fully and promptly paid ;
 - (3) As a consequence of the above two rights the right of alienation of the whole village or of a share in the village, if accompanied by a transfer of home-farm land.

These rights have been habitually exercised by gaontias and have been sanctioned by the ordinary practice of the Civil Courts. It is possible that Government might contest a transfer of a village unaccompanied by a transfer of home-farm, on the ground of public policy, but only one such case has occurred and its circumstances were peculiar.

In one way the malguzar necessarily has the better of the gaontia. The former, as proprietor of his waste land, may sell timber. The gaontia is only a trustee on behalf of Government, responsible that the village forests are used for village needs, and he may not sell. But the difference is of importance only in the few villages which still have forests.

Gaontiahi Assessment.—The assessment paid by the gaontia is heavier than that of the malguzar. The latter pays from 45 to 60 per cent. of the total valuation of his village. The gaontia receives, in revenue-free home-farm or in cash, only 25 per cent. of the rents paid by raiyats. The village service land is held free of revenue and the percentage actually paid by the gaontia on the total valuation of his village is usually about 76. This difference, owing to the lightness of assessments in Sambalpur, is not yet important, and in any case it is partly counterbalanced, by the facts that the gaontia has on assessment to pay on his miscellaneous receipts and that he pays only about half of the cess taken from the malguzar. The rates of the cesses do not differ, but the gaontia pays them on the valuation of his home-farm while the malguzar pays on his assessed revenue.

Inferior and superior gaontias.—Just as there are in proprietary villages superior and inferior proprietors, so there are superior and inferior gaontias. Their respective rights formed the subject of discussion both in 1864 and at last settlement, when it was finally determined that the rights of the inferior or *shakmi* gaontias are exactly the same as those of ordinary gaontias except that they pay their village assessment to the superior instead of to Government, and that usually they also pay to the superior a *malikana*, or a sum which represents a share in the cultivating profits of the home-farms.

83. Though the controversy carried on by the gaontias as a body to establish their right to malguzari terms broke down in 1888-89, a similar contention was carried on after the settlement by certain estate-holders who, for services rendered to native rules or to the British Government, enjoyed freedom from revenue or paid only nominal quit-rents. These were usually able to show grants, the wording of which was held to establish their claim to a full proprietary tenure. The orders of the Government of India were conveyed in letter No. 1551—6, dated the 23rd July 1892.

Gaontias holding under Malguzars.—Orders of detail were then passed under which the tenants of the new proprietary estates were relieved from the so-called "settlement" cesses which as Government raiyats they had been paying. In the recommendation of the Central Provinces Administration on which orders were passed, care had been taken to lay down that the recognition of the petitioners as malguzars should not be allowed to affect the rights

of such gaontias as held villages in their estates. With the intention of safeguarding these rights the gaontias were again recognized as being inferior proprietors of their home-farms and for the tenancy and other hands of their villages, as lessees with protected status under section 65A of the Land Revenue Act of 1889. The incidents of that status were added to the village-administration papers.

In these orders of detail two points appear to have been overlooked. The tenants were relieved of certain cesses. But the newly created malguzars were surprised to find that they were expected to pay the cesses of malguzars. They called on the gaontias to make up these sums, but the gaontias, already paying full cesses on their home-farm valuations, declined to do so. It was the grant of protected status which most affected the inferior holders. It involved them in a liability to have their annual payments enhanced once in the currency of a settlement, and it deprived them of the right of transfer. Fresh orders on this subject are to be found in letter No. 2920, dated the 18th May 1904. By these the objectionable protection is withdrawn and the gaontias restored to their original rights. It has also been determined that the gaontias shall pay, as before, the usual cesses on their home-farm valuations, and the malguzars shall make up the difference between this and the Government demand out of their own pockets.

Five years before these new orders were elicited, suits had been instituted by two gaontias against a malguzar on the vexed question of cess-payments. The peculiar circumstances of the parties appear to have been understood, dimly, and it is probable that the suits would still be before the Courts had not the malguzar's estate come under Court of Wards' management. This allowed the Deputy Commissioner to compromise the quarrel on the basis of the fresh executive orders.

The revised village administration-papers contain the necessary details. The orders of the Government of India in 1892 have had the effect of giving full proprietorship to the malguzars in villages held by them directly. In villages held under them by gaontias they have, so long as the gaontiahi-rights intervene, only a latent proprietary interest. If these proprietors were payers of revenue they might appreciate the advantages of the status which they petitioned for and obtained. They would then receive from their gaontias about 76 per cent. of the village assets and hand on only 60 per cent. But, as almost all hold free of revenue, they recognise only that the status once so loudly clamoured for brings nothing but a burden of cesses.

84. Of the proprietors of parcels of land which are not villages, the principal class is that of the bhogra-bhogis. The usual history of the tenure is that, at the private partition of a khalsa village among various branches of a gaontiahi family, the senior branches divided among themselves the principal part of the home-farm and took over all the management of the village. They allotted to junior or to illegitimate branches plots of home-farm land, the understanding being that these recipients relinquished all claim to share in village management, and that on the other side, the gaontias relinquished all right to interfere in the disposal of the bhogra-bhogi plot. The right of transfer has been frequently exercised. Up to last settlement these plot proprietors paid nothing at all towards the village assessment, but when Mr. Nethersole imposed excess assessments on the home-farms, gaontias usually endeavoured to exact a share of this from the bhogra-bhogis.

85. Although the histories of the two differ, the bhogra-bhogi tenure closely resembles the malik-makbuza tenure of other districts in the Central Provinces. When in 1892 malguzari rights were granted in certain villages, the *bhogra* became *sir*. No new title was then chosen for the existing bhogra-bhogis, but at this revision they have been recorded as malik-makbuzas. The two tenures agree in allowing the plot proprietor to sub-let without creating occupancy rights, and the malik-makbuza has the same independent right of transfer as the bhogra-bhogi. The assessment nominally leviable in other districts from the former, but not always enforced by the malguzar, is a proprietary assessment on the valuation, and the malguzar may take in addition twenty per cent. of this for the trouble of collection. The number of these holders is very small.

The Malik-makbuza tenure.

86. While the enquiry was proceeding which ended in the grant of proprietary rights in 1892 over certain villages, a similar enquiry was held to determine the rights of certain persons in khalsa villages who enjoyed plots free of revenue as against the Government. These were found to fall into two classes, the Brahmottar plots which had been originally granted to individual Brahmañs and others, and the Deottar plots which had been set aside under native rule for the support of temples. The latter had been given to no person, and were held to be non-proprietary. When their revenues are resumed, which usually occurs when the priests of a temple alienate the land, the transferee is assessed merely as an occupancy tenant, and his rent is included in the raiyati payments of the village. But the Brahmottar plots had been granted for ever to definite persons, and it was ruled by orders conveyed in letter No. 5167, dated 4th November 1893, that the tenure was a proprietary one, and that the holders were entitled, on the resumption of the revenue, to have a proprietary sub-settlement made with them. These cannot be treated as malik-makbuzas or bhogra-bhogis because, their land not being village home-farm, every tenant holding from them becomes by the payment of rent at once an occupancy tenant.

87. Tenancy rights in Sambalpur are not so obviously complicated as in many districts of the Central Provinces where absolute-occupancy, occupancy, and ordinary rights co-exist and mingle. Except for village service tenants and those servants of zamindars who hold tenancy land in return for service, all tenants, not being sub-tenants, of land which is not home-farm, have occupancy rights. But among occupancy tenants there are curious distinctions.

88. All land held by khalsa gaontias other than their *bhogra*, whether acquired from raiyats or newly broken from waste, has been recorded as "gaontiahi-raiyati." The gaontia is in this case presumably a Government raiyat, a holder of a survey-number, like other raiyats of the village, and is subject to the provisions of Revenue law governing such raiyats. But, if he is sole gaontia, he cannot well be his own tenant, and he is, therefore, not an occupancy tenant of the land. If he is one of a body of gaontias holding the village, he is presumably an occupancy tenant holding from that body.

89. There is also a legal distinction to be drawn between the raiyat of an ordinary gaontiahi khalsa village and the occupancy tenant in one of the zamindari or malgazari estates. The former is a raiyat of Government as well as an occupancy tenant of the landlord gaontia. The latter, even if he holds in a gaontiahi village, is merely an occupancy tenant. One practical distinction is that the tenant of a proprietary estate does not pay the Road, School and Post office cesses which fall on the Government raiyat. Another is that in the proprietary estate the proprietors and the lessees cannot sublet land other than old home-farm without at once creating an occupancy tenure in it, while the gaontia may sublet his raiyati land without this danger. A class of occupancy tenants may now spring up who pay, not the light rents fixed at settlement, but a competitive rent imposed by the proprietor at the granting of the lease. Few cases of the kind have yet occurred.

90. There are in the district 17 purely raiyatwari villages. Most of these are mere jungle clearings which have at various recent dates been settled with managers who are not gaontias. They are not proprietors of their holdings, although these at last settlement were given the general title of *bhogra*, and they get merely a drawback of the total village rental. The raiyats of these villages are Government raiyats only, not occupancy tenants of a landlord.

91. The village service tenants of the district have by administrative custom been dealt with in two classes. In one class there are the two watchmen; the *Shankar* and the *Ganda*, and into the other class come all the other village servants.

92. The two watchmen have from the first British Settlement been fully recognised as public servants. In all khalsa gaontiahi or raiyatwari villages it has been the rule that

where service land is held by these men, it is exempted by Government from assessment up to a maximum valuation of one-eighth of the raiyati rental paid by the village. If the valuation of the service land exceeds this generous limit, the example of excess assessment on home-farm land is followed and an excess assessment is exacted from the servants and added to the amount otherwise payable by the gaontia to Government. This rule was first introduced at last settlement, but it was not then recognised that, in case of the service land being deficient in value, it was the corresponding duty of Government to make up a sufficient remuneration in cash. The land held by the working Jhankar and Ganda is usually well below the limit fixed. But the office of the Jhankar has long been a hereditary one in certain families, and in the older villages much of the service land is held by branches of the working Jhankar's family. Most of these holders can prove very long undisturbed possession. It was open to Government to cut away these areas, which are no longer available for real service tenants, and to treat them as raiyati land. But it was determined to continue the compromise adopted at last settlement. The holders have been kept upon the record as sub-tenants of the working Jhankar, with sub-rents, which are payable to him, fixed at settlement.

Other village servants.

93. The other village servants are :—

The Negi	or	...	...	Clerk.
" Kumhar	"	...	...	Potter.
" Lohar	"	...	...	Smith.
" Nariha	"	...	...	Herl and water-carrier.
" Bhandari	"	...	...	Barber.
" Dhoba	"	...	...	Washerman.

The place of the Negi in village life has been taken by the patwari since the Land Record staff was organised at last settlement. There are now few *negti* holdings. The other servants are to be found in most of the larger and older villages. They were all brought upon the record by Mr. Russell, who divided them into two classes according to the proof of long service then produced. The holdings of all were freed from assessment, but only in the case of long established tenures was it noted that exemption should last beyond the term of that settlement. The procedure adopted in 1889 was not consistent throughout the district. In many cases the full valuation of the holdings was taken as an excess service land assessment even where under the one-eighth rule no such payment was leviable. In other cases part of the valuation was assessed, and in others, those previously noted as old tenures, the holdings were continued in full freedom from revenue. It cannot be held that Government is to the same extent responsible for the remuneration of these servants as it is in the case of the village watch, but it is held by the people that these servants work for the general public as much as for the villagers. Thus, on the unexpected arrival of a stranger, whether he be a pilgrim or an officer of Government, earthen pots for food and water many not be procurable for many hours unless a potter is settled in the village to provide them. Similarly, if a Gaur Nariha is not kept, there might be no one of clean hands to carry water. These and similar circumstances will be modified as communications are improved. It has been decided at this settlement, the areas in question being small, to continue ancient custom and to free the holdings of such servants from assessment. But the servants who have paid full rents since last settlement now claim occupancy rights, and these cannot be denied to them. Such cases are fortunately not very numerous, but they have given rise to some discontent among the villagers who have now again to provide service holdings. They complain that the assessments of last settlement, if their consequence had been understood, would have been willingly paid by village subscription.

94. The more peculiar forms of sub-tenancy have already been mentioned.

There is the undefined tenure of co-sharers in *jhankri* service land whose sub-rents are fixed at settlement, and the tenure of sub-tenants of *bhogra* who have, by agreement with their gaontia, secured what is practically an occupancy right. Their sub-rents cannot legally be fixed by a Settlement Officer, because the land is not Government land, but at last settlement most gaontias enhanced these only in

the proportion by which Government rents were raised, and I am informed that this procedure is now being repeated. The ordinary forms of sub-tenancy, in both raiyati and *bhogra* land are usufructuary mortgages, holdings for two or three years on *chirol*, that is, with the sub-rent paid in full in advance, holdings on *bhagel* terms, by which half of the gross produce is handed over to the lessor, service sub-tenancies, and some few cases of land given out on an annual cash sub-rent.

At present in the khalsa area 12,614 acres are sub-let on *chirol* or by annual sub-lease for payments which come to Rs. 18,780 per annum. The rate is Re. 1-8 per acre, or $4\frac{1}{2}$ times the average rate of Government rent. Nine thousand six hundred and sixty-three acres are held by usufructuary mortgagees in lieu of interest (at a usual rate of 25 per cent.) amounting to Rs. 28,950, or Rs. 4 per acre. The land sub-let for cash is usually of the poorest class, and it is not the best land that is mortgaged. But there is a considerable amount of competition in the latter case, and this rate of Rs. 4 per acre probably represents the full letting value of average land in the district.

PART II. THE SETTLEMENT.

CHAPTER VII.

OPERATIONS PREVIOUS TO THE SETTLEMENT.

95. No detailed record now exists of the amount of land revenue collections under native rule. But it is clear from the amounts of the quit-rents then fixed on certain privileged estates and of the tributes paid by feudal zamindars, and from the customary rents and revenues found payable in the khalsa, or Crown, villages in 1864, that the revenue annually realized in cash by the Raja of Sambalpur was small. It probably did not exceed one lakh of rupees.

The other resources of the State were much larger. The royal household received supplies of necessaries from its rich domain-lands in such villages as Talab, lying near the palace; but while the Raja remained in residence at his headquarters, the headmen of villages, both far and near, sent in requisitions of produce in addition to their customary money payments. When he toured through his State, further supplies were exacted, and all officers of Government lived free of charges and took their toll not only from the fields and gardens but from the looms and nets. At all times the villagers were liable to render unpaid labour on the roads and public buildings. These, the usual incidents of feudal rule, represented an amount of taxation large out of proportion with the fixed annual payments of cash. They were further added to on all exceptional or recurring occasions of expense by the levy of *nazardnas* on the headmen of villages. These, still familiar in the zamindaris of the district, may be taken to be the renewal fees of leases, more or less definite, on which the headmen held their villages, but their amounts were determinable only by the State, and they were liable to take the form of heavy "benevolences." The zamindars, besides their nominal tributes, and besides the cost of presents paid and produce consumed during a royal progress in time of peace, were in war time liable to be called out with men, arms, and supplies.

The total revenue, probably not less than five times the fixed annual cash collections, can never under this system have been a light one, even in prosperous and peaceful years. How heavily it pressed on the villages during the first half of the nineteenth century can still be recollected by old men. Progress in cultivation was then hopelessly handicapped by the internal disorders that prevailed. These were not of the dignity of regular warfare which, disastrous for a time, does not continuously harry the cultivator. To the leaders they were dynastic struggles, but to their followers and to the people at large they were episodes in a long inter-racial feud carried out bitterly in every village by means of raids, arson, torture, and murder. The condition of the cultivator was not unlike that of French and English settlers in North America during the eighteenth century when these had constantly to guard their homes and fields against aborigines led and armed by French and English captains. It is not surprising that even in the open parts of the country cultivation was limited to the immediate vicinity of fenced villages.

It was in these circumstances that the district came under British rule. One of their unfortunate results was the necessity of at once re-establishing, at whatever cost, the confidence of the people and a reasonable standard of prosperity. The cost was heavy. With the district there was taken over, not its revenue, but only its light annual cash revenue,—a very small part of the whole. The enhancements of subsequent Settlements, justifiable on other grounds, may be fairly looked upon as nothing more than attempts to get back towards an adequate taxation.

96. After 1864, "a year of dawning hopes and prosperity", the people were able to plough and reap in security, and between 1871 and 1877 Mr. Russell's settlement was carried through. At that time the minds of the people and of their new

Mr. Russell's settlement

rulers were chiefly occupied with the vexed question of land-tenure. From the permanent proprietary settlement of Bengal, Government had in 1874 advanced to the long-term proprietary settlement of the Central Provinces, but by 1871 this also had earned discredit, and after long enquiry and discussion the village managers of Sambalpur were given proprietary rights over their home-farms only. Meanwhile the necessity of some revenue arrangement, however summary, became pressing. Land measurement was postponed as being too lengthy and expensive. In its place was substituted a rough and ready method by which committees of villagers arrived at estimates of the seed-spread of each village, and from these were framed estimates of the cultivated area. The annual rental of the khalsa villages was found to be only Rs. 89,797. Mr. Russell raised it by 32 per cent. to Rs. 1,10,414, and stated an average rental pressure of 6 annas per acre. The estimates of area, largely controlled by the villagers themselves, were later found to be underestimates and the rent actually imposed cannot have been more than 5 annas per acre. The lightness of this assessment was evident at the time. But it is to be remembered that the people of this landlocked district, though accustomed to contribute to the State large amounts of grain and labour, were little accustomed to the use of cash, and found a rent of a few rupees, trifling as it may now appear, not always easy to raise. Further, cultivation then was only beginning to recover from an oppression much more serious and prolonged than that of a modern famine. Finally, as Mr. Russell pointed out, it was impossible without actual land measurement and valuation to impose high rates with any confidence that they would fall with reasonable fairness upon different villages and different holdings.

97. The terms of the first settlement expired on 30th June 1888. In April 1885 Mr. Nethersole was appointed to carry through a cadastral survey of the khalsa portion of the district, to organise a staff for the maintenance of the village-maps and records, and to reassess the open tracts. The survey and the revision of the record alone formed a heavy undertaking, the difficulty question of land-tenure still occupied a prominent place in the minds of the people and of the administration, and the reassessment was rapidly carried through at the end of the other operations. Detailed survey had disclosed the fact that the cultivated area of 1886-87 was 50 per cent. larger than that roughly ascertained by Mr. Russell. It was evident that his estimates had been too small, but it was also clear that peaceful government had permitted a great extension of cultivation. The Bengal-Nagpur Railway was then under construction, but it had not yet begun to tell definitely on the low prices of the district. Merely by assessing newly broken land at the lowest possible rates and by levelling up the more obvious inequalities of the previous settlement, Mr. Nethersole was able to raise the rents of the khalsa tracts to Rs. 1,52,406, or by 33 per cent. The assessment came to only 5 annas 5 pies per acre. It was received with a storm of opposition which was due largely to the discontent of the gaontias who had failed to obtain the proprietary status accorded to malguzars in other districts of the Central Provinces. They fomented some dissatisfaction felt by the raiyats about the assessment, which was alleged to fall with undue weight on the poorer classes of rice-land. It is also now clear that the people experienced a conservative aversion from the methods of survey and valuation because they understood them less well than the simpler and less accurate methods of earlier settlements.

98. Immediately on the close of Mr. Nethersole's settlement, steps were taken to extend to the villages of the 17 zamindari estates the detailed survey which had been effected for the khalsa tracts and for the estates of Chandrapur, Padampur, and Malkharoda. Between 1891 and 1897 maps of 1,514 villages were completed and a staff of Patwaris under Inspectors was appointed for their maintenance. Meanwhile the staff organized by Mr. Nethersole, gradually strengthened, had maintained his maps and records with fair correctness. But the survey had been very cheaply and very quickly executed, and it is not surprising that in a country subdivided by rice cultivation into the most minute plots several errors were presently detected and the existence of more suspected. Accordingly in 1899 an Assistant Settlement Officer was

Survey of the zamindaris and map correction.

appointed with a staff of ten extra Inspectors to check the maps of the khalsa area before resettlement. A few important errors and many small errors were discovered. It is to be hoped that, with a more experienced and numerous maintenance staff, special checking operations will not in future be necessary.

99. The settlement of 1885-89 was, owing to the smallness of the rents then imposed, sanctioned for a term of only 14 years. It expired in 1902-03. But partly owing to the famine of 1899-1900 and partly to the necessity for map correction proposals for resettlement were not submitted to the Government of India until December 1901. In these it was pointed out that, owing to the opening of the railway, the price of agricultural produce had risen by at least 50 per cent., and that the area occupied for cultivation had increased by about 12 per cent. Much of the newly-broken land had not been assessed to rent, and the rate paid per acre had fallen to 4 annas 5 pies from that of 5 annas 5 pies imposed at settlement. It was clear that there existed justification for a much larger enhancement of rents and revenues than it would be possible for Government to make at one revision. But the recent losses suffered by famine precluded any exceptional treatment. It was therefore proposed that an enhancement of thirty per cent., the highest rate ordinarily permissible, should be aimed at. This proposal was sanctioned by the Government of India in letter No. 78-395-2, dated 20th January 1902.

100. I joined the district as Settlement Officer in January 1902, and was provided with a staff by April of that year. The work of a few months was sufficient to show that there existed even better grounds for enhancement than those first set forth. In the previous Chapters of this report I have shown that, in spite of the serious famine lately experienced in the district, the population increased in ten years by 4 per cent. The famine seriously checked agricultural progress in the western tracts, yet in fifteen years the area occupied for cultivation has increased by 16 per cent., the area under all crops by 7 per cent., the area under rice by 7 per cent., and the irrigable area of khalsa by 54 per cent. Finally, the price of agricultural produce can be proved to have risen, not by 50 per cent. but by 100; and the market value of agricultural land to have more than doubled. It is evident that justification existed for a complete doubling of rents.

It also became evident that the share of the net profits of cultivation paid as rent did not, under the mildest computation of outturn and the most generous computation of expenses, even distantly approach any academic minimum as yet known to economic science. The average Sambalpur rent does not amount to 5 per cent. of the net profits of cultivation.

It is one of the inherent disadvantages of the system of assessment by terms of years that it is impossible in a district where agricultural profits have steadily increased during the currency of a settlement to secure to Government at the next revision a fair share of the increment without harshly at one step curtailing the incomes of cultivators which have gradually increased and to which they have already adjusted their outlay. If the rents paid by all holdings and the revenue paid by all villages were found to be equal in pressure, the weight of a large enhancement could then be distributed over the whole tax-paying body and its pressure on the individual modified. But an even pressure of rent, which may be approximately attained under competitive conditions, is not to be expected in a district where a hard and fast assessment, starting from an admittedly rough distribution, has been only once partially corrected and has been subject for thirty years to disturbing influences of both human and natural agency. Briefly, the weight of Mr. Russell's assessment was irregularly distributed from tract to tract, from village to village, from holding to holding. A rapid extension of cultivation to unrented land tended to further unevenness of pressure which could be only partially corrected by Mr. Nethersole's revision. Since that date the building of a railway through one half of the district has still further emphasised the general inequality.

Practical limit to enhancement.—These two factors, the inequality of rents and their stagnation between settlements, determined the practical limit of enhancement. Had the original distribution been more level, or had there

existed legal machinery by which the rents of the tracts close to the railway could have been gradually raised in answer to the rising demand for land, or even had the gaontias found it worth while to assess and collect the light settlement rent-rates on newly broken land, it might now have been possible, without transgressing the rule that domestic budgets must not be seriously disturbed, to have obtained a 40 or even a 50 per cent. general enhancement. But as matters stand, in order to produce at once a total enhancement of 30 (and an approximately fair level of rents) it was necessary in very many villages to impose enhancements above 50 and in some cases to double the rents.

General aim of operations.—The general aim of the revision was to perfect in detail the record of land rights founded at last settlement, to incorporate in it land tenures recognized since last settlement, to explain these to the people and better their understanding of the old tenures also, to regulate the gradually changing village customs, and, by means of a land-classification and land-valuation as elaborate as crop statistics and the information of the cultivators permitted, to remove the more obvious inequalities of rents and revenues while obtaining a substantial enhancement. Incidentally, it was necessary to familiarise the people, now reconciled to and appreciative of the detailed survey and record, with the system of classification and valuation which they actively resented at last settlement.

CHAPTER VIII.

WORK IN THE VILLAGES.

101. At the beginning of settlement operations, the organization of a staff to attest the record presented no difficulties other than those of detail. But almost the whole of the first field season was occupied in close enquiries into the relative values of land. On these, corrected from time to time by later enquiries, the whole success of a revision must depend, and they differed in Sambalpur in some respects from the preliminary enquiries necessary in districts of the Central Provinces.

102. The soil-unit system was to be employed. This is now so well known that detailed explanation here would be out of place. But it was first used in this district, and as this is the first re-settlement of a district originally treated by soil-units I may be permitted to explain its general function. It is, in the first place, not a system of assessment but an arithmetical aid to good assessment. Under the acre-unit system the Settlement Officer was able to examine the rents of villages, holdings, and classes of land, to compare them, and, by enquiries into their rent-paying capacities, to determine the real relative pressure of the rents paid. No more than this is done with the aid of the soil-unit system. But the acre-units suits only one kind of country. It is fully applicable and adequate in the canal-villages of Sind, where the rainfall is very slight, the land flat, the soil homogeneous, and the water-supply as equal as engineering science can make it. But in irregular country with varying soil surface and rainfall, where within one acre there may be, not only several different crops, but differences of soil and of drainage, the acre-unit system involves a mass of calculations, the labour and expense of which discourage attempts at accurate land-valuation. The use of the soil-unit sets the Settlement Officer free to choose that unit, arbitrary but not imaginary, which best suits his district and can be most easily and cheaply employed in calculations of comparison. To regard the soil unit system as complicated is to confuse issues. It is simple arithmetic. The complication lies in the detailed enquiries conducted in the field to ascertain the relative productiveness of different classes of land.

103. Mr. Craddock in his Report on the Settlement of Nagpur district has discussed theoretically the possible modes of arriving at fair revised individual rents, or rent-rates for land classes. Theoretically the only correct method of assessment is to estimate the value of the produce and the

Peculiarity of Sambalpur land valuation.

cost of cultivation for each holding, "a labour so vast that no human being could undertake it". Failing in pure theory, it is possible to "work out the average value of the crops produced on the various kinds of land in the district and after deducting the average cost of cultivation, to arrive at a figure which should represent the fair rent payable by that land". This compromise Mr. Craddock rejects on the ground that "when the time came to apply this standard to each man's holdings the difficulties encountered would be as great as ever".

If in Nagpur it was recognised as impossible, although there the existing rents were not so far below competitive rents as those of Sambalpur, to lay down any definite fraction of the produce as a standard towards which existing rents should be raised or lowered, it is certainly impossible to do so in Sambalpur, where rents have never been competitive and where they amount to an almost nominal fraction of the produce. As in all other re-assessments, the amounts of the new rents must be partly determined by the amounts of existing rents and by the additions which may be imposed without seriously affecting the customary outlay of cultivators on comforts and luxuries.

But it is obvious that, theoretically correct rents being set aside, the methods of arriving at practicable rents which from holding to holding and village to village shall impose an approximately equal pressure, must differ in Sambalpur from those used in more heavily rented districts. In the case of the latter, the Settlement Officer is debarred by the large amount of existing rents and the consequently large amounts of individual enhancements, from a free application of *relatively* correct rent-rates, no matter how laboriously arrived at and no matter how trustworthy. In Sambalpur the individual amounts are small and there is the less objection to free handling of proved discrepancies in their pressure. On the other hand, in districts where a certain amount of competition in land-letting has at one time or another been in vogue, the Settlement Officer is entitled to use existing rental pressures as his guides, and where his arithmetical results differ from the existing scale to give the latter the benefit of the doubt. In Sambalpur the lack of competition in the origin and growth of the rent-rates makes them useless as guides. Where they clash with the results of careful enquiry and computation the doubt is against them.

It is more easy to realize the difference by going still further into details. The relative values of land, or the soil-factors as they are called in the Central Provinces, have usually been determined by first arranging a scale of the amounts of gross outturns of the principal classes of land and then modifying these, first by the relative rates of existing rents for different classes of land, and then by the general opinions of the people. Now to assess according to relative values of gross outturns is obviously unsound in theory. In practice it is only saved from inequity by modifying the original scale freely, where it is found to differ from the existing scale of more or less competitive rents. This compromise is necessitated in all districts where a large variety of crops is grown and a large area is double-cropped. The difficulty quoted by Mr. Craddock as to fixing accurate outturns for a large variety of crops has been met to some extent by the institution of annual crop-cutting experiments. But to ascertain accurately the cost of cultivation for all classes of land is still a matter of great labour in a district where agricultural operations are both numerous and prolonged.

The condition of the Sambalpur rents rendered it necessary to go a step further and to base the scale of valuations upon calculations of net profits. The step that was necessary was also practicable in a district where 79 per cent. of the cropped land, including all the better classes of land, is under one crop. It has indeed been found advisable to use the checks supplied by the opinions of the people and by the very scanty statistics of competitive sub-rents that were available. But these were used to modify a scale of net, not of gross, profits.

104. *The classification of land.*—It is usual in the Central Provinces to differentiate classes of land according to the qualities of their soil, these being of special importance in wheat-growing areas. But as drainage also is of importance, except in flat tracts, and of special importance in rice areas, it has usually been necessary to frame a list of both soil-classes and position-classes, the result too often being cumbrous working in the field and stupendous calculation in office.

At last settlement the question of soils was set aside in Sambalpur.

Mr. Nethersole followed the procedure of the previous settlement in rejecting soil-classes altogether, and basing his valuations solely on differences in lie of the land, that is to say, in position with reference to drainage. There can be no question that for rice, which covers more than three-quarters of the area in this district, water is a far more important factor than soil, and when rents are as low as they are in Sambalpur, it is perhaps unnecessary to look beyond differences in the water-supply. But as rents are raised it will be probably desirable to go further in differentiation, and to class land by soil as well as by position. This was Mr. Fuller's opinion.

105. *Ordinary soils*.—The results of my enquiries in the different varieties of soils are contained in a report which I shall here summarise. In the district proper the people recognize the following soils:—

Barmatta.		Pandkapitia.
Kallia.		Rugri.
	Ballia.	

The first, *burmatta*, means merely "good soil," and none but a very few ancient villages are credited with its possession in their bottom lands. On examination it proved to be a mixture of clay and sand containing a large proportion of vegetable matter. Its excellence is due merely to long tilth. *Khallia* or clay was merely a soil in which the bluish clay subsoil of the district predominated. *Rugri* and *ballia* stood for gravel and sand. *Pandkapitia*, or "dove's-back colour", was the standard soil to be found in nine-tenths of the cultivated area. This is a made soil consisting of clay brought up by the plough and of sand and gravel brought down by surface drainage.

On the question of quality of soil cultivators exhibited a vagueness of information and opinion which betrayed the fact that they counted little on the differences. That *barmatta* was better than *khallia* or *pandkapitia*, and that both of these were better than sand or gravel, were obvious facts. But this amounted to no more than a recapitulation of the position classes.

In all the undulating country the quality of the soil varies from upland down the slopes to bottom-land, improving in the descent from sand or gravel to a rich clay loam. But between two uplands, two slopes, or two bottoms, there is practically no difference that is not caused by tilth.

It was decided that soil-classification from field to field was not practicable. Even were it a useful guide its elaboration would have been out of place in a district so lightly assessed as Sambalpur.

106. *Special soils*.—But, though it was both unnecessary and unprofitable to record the differences of soil from field to field, it was necessary to a level assessment that differences in the general average qualities of soil should be noted from tract to tract. One exceptional case is that of the flat Chandarpur tract, and this has been specially treated. Some black soil of fair quality is to be found in Phuljhar. The average soil of the eastern tahsil is better than that of Bargarh, because it contains more decayed vegetable matter brought down from wooded uplands, and within Sambalpur tahsil the richest soil occurs in the villages of Sambalpur Group which lie south of the town on the banks of the Mahanadi. The waters of the river appear to have been here at one time dammed back and there is a black alluvial deposit mixed with the staple clay and sand. This superiority of soil occurs in each position class throughout a village or tract and can best be allowed for in land-valuation when rates are fixed for individual groups or villages. Throughout the district there is more variation in the unembanked *at* land, growing light miscellaneous crops, than in the rice land. Its soil in a closely cultivated tract is often little better than exhausted sand or gravel. In hilly wooded country it is more fertile, but its crops suffer from the depredations of wild animals. On the banks of the larger rivers it is often similar to the good *kachar* silt of Chhattisgarh, but is subject to floods. The difference tends to correct itself. As land is exhausted it goes out of regular cultivation and so is free from assessment. And, as its rent-rate nowhere exceeds two annas per acre, the labour of a detailed classification of soil would be disproportionate with the results obtained.

107. *Position-classes of rice land*.—While it was clear that a simple classification of rice-fields by position was sufficient for land valuation, it was equally clear that an elaboration of Mr. Nethersole's three classes was necessary. These were:—

Bhal or bottom land.		Berna or dalt.
	Mal or terraced slope	

The complaints made at last settlement and the course of subsequent crop-experiments showed that the terraced slopes, forming as they do more than half of the rice land, could not be adequately valued for each holding if thrown into one class only. Cultivators clearly recognize the great difference in fertility and in security of cropping between the upper and the lower terraces, and even distinguish seed-varieties for *tikra mal* and *suman mal*. This subdivision was adopted.

It was also clear that there is a considerable difference between a wide *bahal*, lying between long slopes and receiving ample drainage from them, and a narrow *bahal* lying between short steep slopes. Further, the best *bahals* are necessarily subtended by the widest and largest irrigation reservoirs and so are absolutely secure from crop-failure. A subdivision of the *bahal* class also was determined upon.

Bernas vary considerably according to their steepness and the stage of their development. In newly broken land they are liable, runlets for water as they are, to have sand and gravel washed into their fields. In close cultivation the embankments of the terraced slopes prevent this. They also were subdivided.

109. Mr. Nethersole subdivided his position classes according to the irrigation or village-drainage received. The fact that irrigation from large deep tanks is easier, more plentiful, and more secure than irrigation from small shallow tanks, seemed to point towards a necessary differentiation. But this distinction was considered to have been allowed for by the subdivision of *bahal* fields, the chief irrigated area, into two classes. The upper *mal* terraces lie too high to be irrigated from tanks except by means of laborious lifts, an expedient not profitable for rice cultivation. It was therefore unnecessary to subclassify these for irrigation.

The rice-land classes arrived at were :-

Bahal I Khari Pani.	Berna II Khari Pani.
" I Khari.	" II Khari.
" I Pani.	" III Pani.
" I Ordinary.	" II Ordinary.
Bahal II Khari Pani	Mal Saman Khari Pani.
" II Khari.	" " Khari.
" II Pani.	" " Pani.
" II Ordinary.	" " Ordinary.
Berna I Khari Pani.	Mal Tikra Khari.
" I Khari.	" Ordinary.
" I Pani.	
" I Ordinary.	

These were thus 22 classes as against the 11 used at last settlement.

109. Mr. Nethersole divided the unembanked *at* land, which grows pulses, sesamum, coarse rice, and cotton, into only two classes, ordinary *at* and *khari at*. It is never irrigated for field crops. The general poorness of this class and the lowness of the rent paid for it appeared to obviate the necessity for a more elaborate subdivision than this.

110. Sugarcane in this district is grown not on special soils but on any rice-plot that can readily be irrigated. The old gardens in which cane was grown by whole villages in common lie close to the big public tanks and to the sites of villages. The plots laid out according to the more recent custom by individual tenants are out in the fields and are usually irrigated from shallow wells. It was originally proposed to differentiate between those watered by flush irrigation from tanks and those watered by lift irrigation from wells. But flush irrigation for cane is now extremely rare. The water is more freely used than formerly on the rice-crop in autumn, and in summer even from large tanks it is necessary to use lifts for the watering of the cane. It was considered that the necessary distinction could be sufficiently marked by providing one general class of *barchha*, without qualification since all cane-land is irrigated, and in special class of *khari barchha* to be used for plots lying

close to the village-site and profiting thereby in receiving street drainage and irrigation by easy lift from the principal tank.

Vegetable gardens are usually small house-gardens. Under section 43 of the Settlement Code of the Central Provinces no plots of less than one-twentieth of an acre need be surveyed and assessed. In this district of raiyatwari settlement cultivators are provided with house-sites free of assessment, and it is not always easy to distinguish between a house-court and a house-garden. It was determined to raise the limit of garden plots to one-tenth of an acre. The larger gardens were thrown into four classes:—

Bari khari pani.	Dari pani.
„ khari.	Bari.

Except for a few villages occupied by Malis this differentiation was perhaps over-elaborate. Much the largest class is that of *bari khari*, a small garden not specially irrigated but receiving damage from house or cattle-shed,

111. In order to reach a scale of net profits it was necessary to determine the gross outturns of the land classes. Before compiling the statistics of annual crop-experiments

I at first attempted to gather these from the people themselves. The statements made to me were similar to those made to Mr. Nethersole in 1887. They may be thus summarized:

Bahal land will produce for every *puri* of seed sown 10 *puris*; *berna* about 7 or 8 *puris*; and *mal* 4 *puris*. This gives in pounds of paddy per acre average outturns of 750, 550 and 300 pounds, while the official crop experiments show averages of 2,100, 1,500 and 1,000 pounds. Mr. Nethersole characterised these statements as *splendide mendax*. Cross-examination showed that they were not statements of gross produce at all but of net profits, or, in some cases, of net savings. The statements also were largely traditional and do not apply well to rice-land as now cropped.—But the rough mode of calculation followed is this. The rice-land, being the staple land of every holding, is called on to bear all the expenses of the holding. The seed sown is known to be so many *puris*, and the grain paid out over the year to farm labourers and tank-diggers, is known to be so many *puris*. These are deducted from the rice harvest and the balance is considered to be the outturn. This cannot be held to be a fair statement even of net profits, because the farm-hands thus paid also cultivate the sugarcane crop, the vegetable garden, and the miscellaneous crops of the holding; besides annually repairing dwelling-houses and sharing in the work of house-service. The variety of explanations made to me left it probable that the grain consumed in the year by the cultivator's household is also reckoned as an expense of cultivation. The statements of the people were valueless as regards gross outturns and indefinite about net profits of the various land classes.

112. I had before me in 1902 the crop experiments of Mr. Nethersole and the results of 170 crop-cuttings conducted by the district staff since last settlement. These have since been checked by further enquiry at three harvests. The following table of gross outturns in pounds of unhusked grain per acre can be put forward with confidence. Its final column shows the relative importance of each land-class in area.

MR. NETHERSOLE'S EXPERIMENTS.				EXPERIMENTS BETWEEN 1889 AND 1901.				PROPOSED STANDARD OUTTURN		
Land Class.	Average gross outturn.	Number of experiments.	Maximum outturn.	Land Class.	Average gross outturn.	Number of experiments.	Maximum outturn.	New land class.	Proposed standard outturn.	Per cent. of area.
Bahal Khari Pani ...	2,811	9	...	Bahal Khari Pani ...	2,220	1	...	Bahal I Khari Pani ...	2,800	...
Khari ...	...	...	...	Khari ...	2,510	1	...	Khari ...	2,900	...
Pani ...	1,735	...	5,19, 2,915 2,830, 2,612 2,500, 2,140 etc.	Pani ...	1,968	10	2,700, 2,650 2,560, 2,100, etc.	Pani ...	2,600	...
Ordinary ...	1,265	26	2,800, 1,840, etc.	Ordinary ...	1,630	19	2,240, 2,340, etc.	Ordinary ...	2,000	...
								Bahal II Khari Pani ...	2,370	...
								Khari ...	2,100	...
								Pani ...	2,000	...
								Ordinary ...	1,700	...

MR. NACHMUCKA'S EXPERIMENTS.				EXPERIMENTS BETWEEN 1889 AND 1901.				PROPOSED STANDARD OUTURNS.		
Land Class.	Average return per acre.	Number of experiments.	Maximum outturn.	Land Class.	Average return per acre.	Number of experiments.	Maximum outturn.	New-land class.	Proposed standard outturn.	Percentage of area in total rice-land area.
Berna Khari Padi	3,618	3	...	Berna Khari Padi	...	...	...	Berna I Khari Padi	3,000	3
" Khari	3,006	1	...	" Khari	...	...	...	" Khari	1,900	2
" Padi	3,330	3	...	" Padi	1,830	9	3,400, 3,050, 1,830, 1,900, etc.	" Padi	1,900	3.1
Berna Ordinary	3,350	24	3,780, 3,180, 1,820, 1,860, etc.	Berna Ordinary	1,629	23	1,620	" Ordinary	1,900	4.6
Mal Khari Padi	1,780	7	3,610, etc.	Mal Khari Padi	1,940	2	3,190	Berna II Khari Padi	1,900	3.1
" Khari	1,288	10	3,250, 1,620, etc.	" Khari	1,115	1	...	" Ordinary	1,900	4.6
" Padi	1,300	4	...	" Padi	1,530	13	4,300, 3,600, etc.	" Khari	1,700	2
" Ordinary	693	23	3,040, 1,570, 1,450, 1,790, 915, etc.	" Ordinary	1,106	41	1,200, 1,660, etc.	" Padi	1,900	3.4
Mal Tikra	777	8	...	Mal Tikra Khari	1,083	19	1,840, 1,820, etc.	" Ordinary	1,400	12.1
				Mal Tikra	740	18	1,800, 1,300, etc.	Mal Saman Khari Padi	1,700	...
								Mal Saman Khari	1,400	...
								" Padi	1,400	6.6
								" Ordinary	1,900	31.9
								Mal Tikra Khari	800	3
								" Ordinary	700	10.7

The average outturns of the three main classes are :—

Bahal	2,735 pounds of paddy.
Berna	1,647 " " "
Mal	973 " " "

and the general average outturn is 1,330 pounds.

113. The value of this produce may be calculated in two ways. The local measures are :—

20 tambis = 1 khandi.
8 khandis = 1 puri.

In Bargarh tahsil the *tambi* is equal to one and a quarter seer measures. The rates that have ruled in recent years in the villages are Rs. 5 for *bahal* or fine paddy, Rs. 4 for coarse *mal* grain, and Rs. 4-8 for such grain as is grown on *berna*. In Sambalpur tahsil the *tambi* in use measures from 1½ to 2 seers, and the price per *puri* is higher. A measured seer of paddy weighs only one and a half pounds. Thus the amounts and values of the gross outturns per acre are :—

	Pounds.	Seers.	Puris.	Value, Rs. A.
Bahal	2,100	1,400	7	35 0
Berna	1,500	1,000	5	22 8
Mal	1,000	870	5½	14 0

If the produce be stated as husked rice, it is to be noted that 61 per cent. of whole grain is usually hulled from a pound of paddy, and that the cost of husking is a customary payment of one-ninth of the husked rice. I take as village rates the low prices of 22 seers for coarse rice and 17 seers for fine rice :—

	Outturn in pounds of price per acre, less cost of husking.	Value, Rs. A.
Bahal	1,140	33 8
Berna	810	23 0
Mal	540	12 4

114. By far the most difficult part of my enquiry proved to be that relating to the costs of cultivation incurred by the practical agriculturist. I at first attempted to ascertain the annual expenditure of complete holdings on seed, stock,

implements, the manual labour. All district officers know how difficult it is to extract from bankers and shopkeepers an account of their net business profits. The statements made invariably include or attempt to include in business expenses items which have nothing to do with trade, such as the cost of living and charitable donations. Yet these people are accustomed to keep accounts. From the cultivator, who does not keep accounts on paper, it was perhaps more easy to get honesty of purpose, but far more difficult to secure accuracy of detail. My results were fairly satisfactory in cases where no sugarcane and no large amount of miscellaneous crops were grown. But such cases are exceptional and occur only because the raiyat is poor or lazy or, on account of an illness or death in his family, is not pursuing his usual routine. Further, as no holdings could be found consisting of only one class of land, the results were too general to be of real use. They appeared to prove that a raiyat with ten acres of rice-land ordinarily secures an annual profit of not less than Rs. 120, but the detail of these cases showed only that *bahal* profits were considerably better than those got from *mal* land.

This form of enquiry was dropped and in its place a double system was adopted. In conversing with gaontias and intelligent raiyats I collected statements in detail about the cost of cultivating an area sown with a *puri* of seed, which is about five acres. This was checked by taking statements in the field. A large bottom plot or a batch of terraced plots was selected and opinions were invited about the amount of seed used and the time necessary to plough, to thin, weed, and to reap it. The people, taken at a season when no agricultural operations were in progress, showed great alacrity in furnishing this information. Widely discrepant statements were not uncommon, but these, by confronting the deponents, could usually either be reduced to uniformity or referred to special differences which opened up new lines of enquiry. The records of agrarian civil suits are rich in statements of outturns and costs, and to these I had recourse. But the depositions, owing to lack of intelligent cross-examination, were usually too general to be of value. It was curious to find that men who had made certain statements before a Civil Court made quite different and more detailed statements when standing with their neighbours in the fields which had formed the subject of litigation. The raiyat removed for the moment from the restraint of village opinion is liable, even when not under distinct pressure from a litigant, to regard his examination as a formal matter and the Civil Court as a natural receptacle for misstatement.

Cost of seed.—Mr. Russell's enquiries led him to believe that a *puri-paran*, that is, the area sown with a *puri* based on a $1\frac{1}{2}$ seer *tambi*, stood for about 5 acres. This gave per acre 56 seers of capacity, not of weight, or about 84 pounds. Mr. Nethersole adopted this standard. Mr. Fuller mentions a seed-spread of 110 pounds per acre, but the largeness of this estimate is due to the error of taking a seer measure of paddy as being equal to two pounds in weight. My enquiries show an average seed-spread of 50 seers or 75 pounds per acre. Mr. Russell's examination was very careful and extended, and I infer that the increasing cost of seed has made the cultivator less lavish of it. This average applies only to broadcast sowing. For transplantation less than half this quantity is used. Among the land classes there is very little variation. *Khari* soil, well manured and well pulverised, requires only two-thirds of the usual allowance, and poor land takes rather more seed than good land, because it provides less certain germination, but this latter difference is more than met by the difference in the cost of seed. The average cost per acre varies from Re. 1-4 to Re. 1-8.

Cost of labour.—Enquiries into the amount of labour necessary for all operations were complicated by the fact that there are several different methods of ploughing and manuring. But, reduced to their simplest form, they aimed at comparing the labour expended on an acre of *bahal* sown by the *khari* method with that necessary for an acre of *mal* sown by the *batri* method. Further details may be found in an appendix to the preliminary report on the assessment of the Bargarh tahsil, but a few facts may be given here.

The manual labour needed for an acre of bahal is :—

Ploughing	...	...	11	bels or half-days.
Carrying and spreading manure	...	...	6	" "
Sowing	...	...	1	" "
Repairing embankments	...	...	4	" "
Thinning	...	...	2	" "
Weeding	...	...	22	" "
Harvesting	...	...	6	" "
Threshing	...	...	1½	nights.
Winnowing and cleaning	...	...	30	bels or half-days.

A man is paid 1½ small *tambis* for an ordinary *bel* or spell of labour, but 2 *tambis* for a spell of harvest labour and 5 *tambis* over time wage for a night's threshing. The total wage-bill is about 133 *tambis* and, as the paddy paid is of the coarser sort, this will cost about Rs. 3-6.

The cultivation of *mal* land differs slightly in several items. The ploughing of its lighter soil takes less time, less manure is spread, and the crop is lighter to harvest. But the embankments of the terraces require more care than those of the *bahal*, and thinning out is a more laborious process because of the large number of small plots into which an acre is divided. The total cost of labour was found to differ from that of *bahal* by only a few annas.

Cost of stock.—From the statement given above it will be seen that a yoke of oxen is used for only 13 spells. Cattle are never in the rural areas hired out by the day but, as a poor cultivator is always able to borrow a yoke from a neighbour in return for two or at most three spells of his own manual labour, it may be taken that their hire is about four *tambis* a spell and their total cost only Re. 1-4. We have seen that a pair of working bullocks cost only Rs. 20 to Rs. 30, and that one pair works about 6 acres of rice-land. They consume only straw and huskings, are given the minimum of tendance, and work for five or six years. On death, their hides are worth about Rs. 3, and though the riyat does not sell these, they are usually set off as his share in the expense of the village watch. A charge of Re. 1-4 per acre fully covers the interest of the cost of a yoke and allows for depreciation. A third calculation gives the same result. Single bullocks, to make up a pair, are occasionally hired out by the year, and the charge varies from Re. 1-8 to Rs. 4. A yoke hired at the outside rate of Rs. 8 will plough 6 acres of rice and be free for much other work.

Cost of Implements.—A complete set of agricultural implements can be procured for little more than Rs. 10, and the plough itself costs only Re. 1-8 and lasts for three years or more. Carts are more expensive, but only one in three cultivators owns a cart, and those who do use them chiefly during the slack season in the service of traders. Otherwise they are occasionally employed for carrying manure to outlying fields, for conveying grain to market, and for bringing fuel and timber from the forests. For the implements actually used in the rice-fields a charge of 12 annas per acre is probably ample. But the farm-buildings require annual repair, and on this account the estimate may be raised to Re. 1-4.

Summary of costs of rice cultivation.

115. I may compare with Mr. Nethersole's estimate of 1887 the original estimate framed by me in 1902 :—

	Mr. Nethersole's estimate.		My estimate.	
	Rs.	A.	Rs.	A.
Hire of bullocks	1	0	1	4
Wages of labour	2	8	3	6
Cost of seed	0	12	1	4
Cost of implements	.....	.....	0	12
Total	4	5	6	10

The details given in the preceding paragraph, however, give a total of Rs. 7-2. The cost of labour and of seed has certainly increased since 1887.

116. On the enquiry of 1902 the ratio of net profits was taken to be—

	Value of gross produce.	Cultivating expenses.	Net profits.
	Rs.	Rs.	Rs.
Bahal	34	7	27
Berna	23	7	16
Mal	13	7	6

The very striking differences brought out by these calculations were quite at variance with the rates of rent imposed at both Mr. Russell's and Mr. Nethersole's settlements, which were 20, 17, 14 and 20, 17, and 12, respectively. Cultivators fully agreed that these ratios at least were incorrect, and that the profits of *bahal* were certainly more than twice those of *mal*. They also corroborated my estimate by saying that they usually reckoned the costs of *mal* as being just half the outturn. But they were not prepared to allow that the net profits of *bahal* were more than three times those of *mal*. Statistics of sub-rents gave the following ratio:—

Bahal	48
Berna	20
Mal	16

These statistics, however, could not be strongly relied on. Cash sub-rents are rare and are not usually competitive, homogenous sublet plots are still more rare, and the *bahal* and *berna* leased are seldom of good quality. The figures for *berna* are indeed quite spoiled by the fact that no case of sublease of an irrigated plot of that class could then be discovered.

117. In the face of general opinion and of previous practice it was not advisable to adopt in full the ratio of values brought out by my calculations because these, through lack of time, omitted full consideration of the relative cost of irrigation, a not unimportant item. The general factors adopted were:—

Bahal	30
Berna	18
Mal	10

There were then distributed among the various sub-classes:

Land Class.	Factors sanctioned.	Factors of last settlement.	Land class of last settlement.
Bahal I Khari Pani ...	38		
" I Khari	34		
" I Pani	34	24	Bahal Khari Pani.
" I Ordinary	28	20	" Khari.
" II Khari Pani	32	20	" Pani.
" II Khari	28	18	" Ordinary.
" II Pani	28		
" II Ordinary	23		
Berna I Khari Pani ...	27		
" I Khari	24		
" I Pani	24		
" I Ordinary	19	18	Berna Khari Pani.
" II Khari Pani ...	25	18	" Khari.
" II Khari	21	18	" Pani.
" II Pani	21		" Ordinary.
" II Ordinary	18		
Mal Saman Khari Pani ...	20		
" Khari	17		
" Pani	17	18	Mal Khari Pani.
" Ordinary	10	16	" Khari.
" "		16	" Pani.
Mal Takra Khari	11	10	" Ordinary.
" Ordinary... ..	7		

The distribution of the general factors among the sub-classes presented many difficulties of detail. It was usually determined by a reference to the comparative gross outturn, and checked by the statements of the people. I may take one example. In other districts of the Central Provinces irrigated land has sometimes been provided with a factor 100 or even 250 per cent. higher than unirrigated land of the same class. My largest addition is one of 70 per cent. for *mal* and in *bahal* it is only 22. The fact is that very large additions are not permissible if the cost of irrigation is taken into account. As for the difference in treatment of the two classes, *mal* land is light and dry, and is very greatly improved and secured by irrigation, but *bahal*, owing to its low position, is nearly secure without irrigation, and its outturn and profits are not very greatly increased.

118. These factors, decided upon in 1902 for use in villages of the Bargarh plain, were in the course of ordinary field-work checked again and again in detail, and were adopted for all parts of the original district, except Chandarpur and the more backward zamindari tracts. Although modified from the scale indicated by my enquiries into the net profits, they are an advance upon the factors of last settlement which reckoned the best of rice-land as being worth not more than two and a half times the worst. In the revised factors it has been accounted five times better.

Later enquiries tended to modify the first scale of costs. In accounting for the expenses of calculation, I have stated that it costs nearly as much per acre to cultivate *mal* as to cultivate *bahal*. This was a conclusion drawn from a very large number of detailed statements, and it is true that there is little difference in expenses between an ordinary bottom plot and a terraced field of good soil lying well down a slope. But a considerable proportion of the higher *mal* fields, yielding light early crops, receive but little more attention than the chance crops of the unembanked uplands. The soil is light and is lightly ploughed, and the harvest is light to cut and thresh. This high-lying area is large enough to affect the average figure, and I would now cut down the cost of cultivation of an acre of *mal* from seven to six rupees. On the other hand, the cost of irrigation, which affects a fifth, and that the best fifth, of the rice-land was not fully taken into the first detailed account, although it was allowed for in the allocation of sub-class factors.

Average cost of irrigation.—As irrigation is not an annual operation, as its cost and productive value vary greatly from tank to tank, and as no cases occur in which the people themselves charge water rates, it is not possible to come at general figures which will be wholly reliable.

The charges for cutting the tank embankment and for leading water down shallow channels or through light field embankments are certainly very small. Even when lifts are used as a measure of desperation in a bad season, the height of the lift is not more than two or three feet. The cost of tank repair is more important, but this in the case of ancient well-built reservoirs is not large. Their embankments are usually allowed to lose height by the wash of rain for seven or eight years, and are then made up again with earthwork which seldom costs more than Rs. 500 even for a big tank watering two hundred acres. Most of the irrigated land lies below these big ancient reservoirs.

But we have seen that the improvements effected since last settlement work out to a cost of Rs. 37 for every acre added to the irrigation list. The largeness of this figure is of no concern for detailed assessment, because the builders have been exempted from wet rate during the currency of this settlement, but it appears to show that rice-land cannot be protected at a less cost per acre than the annual interest, at Rs. 25 per cent., of Rs. 37, and that is a comparatively high annual charge. New irrigation is certainly more expensive than old, because the old tanks from which irrigation is cheap and copious occupy all the best sites. But it is to be remembered that the benefits of the new tanks are not confined to the rice area actually registered as fully watered from them. Much of the cost should be credited against the sugarcane and vegetable gardens, and against the whole village area, because they are used for watering the cattle, for the washing of clothes, and for bathing. I conclude that the charges for even expensive irrigation do not exceed a maximum of six or seven rupees per acre on all accounts. The bottom-lands invariably get,

directly or indirectly, most of the water, and the provision of a good tank may be taken to double the cost of their cultivation. For *berna* and *mal* lands Rs. 6 and Rs. 5 may be added to the costs. If it be noted that 60 per cent. of the *bahal* is irrigated, 30 per cent. of the *berna* and 12 of the *mal*, the average net profits may be thus re-stated :—

	Value of Gross produce.	Cost of cultivation.	Cost of irrigation.	Net profits.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.
Bahal ...	34 0	7 0	4 0	23 0
Berna ...	23 0	7 0	2 0	14 0
Mal ...	13 0	6 0	1 8	5 8

Discussion of average profits.—The average cost of cultivation of the rice-land of the district is Rs. 8-8, and its average net profit about Rs. 12 per acre. How this compares with expenses and profits in other districts of the Central Provinces I cannot readily ascertain. Mr. Mukerji in his Handbook of Indian Agriculture states that *aman* paddy, properly cultivated, should yield a net profit of from ten to fifteen rupees. This is a surprisingly small estimate for the Bengal range of prices, but it is to be read with his account of *aus* paddy. For this, including the value of straw, he gives a total produce-value of Rs. 23, and exhibits costs of cultivation as being Rs. 20. The net profit of Rs. 3 is extraordinarily small, and it is probable that the ordinary cultivator, omitting for this cheap crop the cost of expensive chemical manure, does not in reality make less than Rs. 8 or 10 per acre from it. Mr. Kerr in his Report on Darbhanga gives very detailed costs of cultivation which amount to from Rs. 13 to Rs. 15-8 per acre, and average net profits ranging from Rs. 13 to Rs. 21-4. In the richer soil of Bengal and Behar districts the average outturn of rice is about one-third heavier than that of Sambalpur, and the price of produce is higher.

119. The upland-croppers in all parts of the district are much less carefully cultivated than the rice-land. In newly broken ground good crops are obtained for several years with very little labour and no manure, but the soil is speedily exhausted and chance cropping is the rule over all the more closely settled tracts. Cultivators, when speaking of a holding and its general seed-capacity, take no account at all of the up-lands. It has been suggested to me by Mr. Cobden-Ramsay that under native rule these may have been habitually left unrented by the State in return for free labour exacted. This is a probable theory, and though traces of the old custom cannot now be found in Sambalpur, they may possibly survive in the neighbouring States. In any case cropping is notoriously light and uncertain, and the principal aim in fixing factors for the *at* must be to secure a relatively light assessment. Profits vary largely. A good season may in unexhausted land give crops of pulses and sesamum yielding a clear profit of from Rs. 10 to Rs. 15 per acre. But the average profit does not exceed three or four rupees. The factors adopted, two for ordinary uplands and four for land lying near a village site, are practically the same as those used at last settlement. They are much below the lowest rice factor, but, to double assurance that the doubtful area would be lightly treated, section 211(C) of the Central Provinces Settlement Code has been employed and a third of the *at* in cultivation has been exempted from assessment.

120. After the details which have been given for the rice-land it is unnecessary to do more than briefly summarise the results of enquiries into sugarcane cultivation.

Gross outturn.—The outturn of *gur* or compost from an acre of sugarcane varies greatly with the variety of cane grown and with the care expended on its cultivation. It may be as low as 2,000 pounds and as high as 6,000. But

a very fair average outturn is 4,000 pounds. An average price is now 8 seers for a rupee, and the value of the crop is, therefore, about Rs. 250.

Costs of cultivation.—The cost of cane cultivation is even more difficult to estimate correctly than that of rice, because its agricultural operations are more numerous and extend over the whole year. It is also a crop which may be cultivated with profit either closely or laxly. Many cultivators who have not ready access to bamboo forests now grow the hard-skinned *tandi* variety. It is not eaten by jackals, and so costs little to fence or guard. But its outturn is comparatively poor. Others who have gardens besides a spring or large tank and can readily procure bamboos, poles, and thorns, grow fine varieties very carefully. A recent enquiry into the cultivation of small cane gardens on rich soil close to Sambalpur town showed a gross outturn of 12,000 pounds of compost per acre, a result which could probably not be obtained over any considerable area. The value of the outturn was Rs. 750, but on the other hand the account of expenses given was Rs. 635. This was certainly an overstatement, chiefly in the amount of manual labour expended. The hire of bullocks and buffaloes was charged in full at high rates, while cattle-dung was also charged at Rs. 50 per acre. The actual expenses amounted to about Rs. 500.

This, however, is not a representative case. The most typical form of cultivation in the villages, where a *raivat* now ordinarily has a small separate plot of cane from a tenth to a fifth of an acre in area, was enquired into in 1902, and the items have been since frequently checked. The account of expenses is:

Wages of labour and hire of cattle	Rs. 100
Wages of watchman	5
Cost and freight of fencing material	15
Cost of reed-bits	15
Cost of oil-cake manure	41
Cost of mill, boiling-pots, etc.	9
Total	159

In this also the charges for cattle are unduly high, but the surplus is to be set off against the cost of the shallow well commonly used for irrigation. The total figure is much larger than that of Rs. 92 arrived at by Mr. Nethersole, but most of the items have become more expensive since 1887 when his enquiry was made.

Net profits.—The cultivator who spends about Rs. 160 on an acre of cane may count on a crop worth about Rs. 250. But sugarcane is grown on a plot only every alternate year, or occasionally every third year. It is well manured soil and in its resting seasons it is used for the best pulse and vegetables, or for fine rice, or very often as a seed-bed from which rice is transplanted to the fields. Under such crops, its profits may be taken to be about Rs. 25. Thus its average net profit is not less than Rs. 50, a figure considerably above the profits of the best rice-land.

In Sambalpur the land used for cane is not better in soil or position than rice-land, and the extra value of the crop is due only to the expenditure of extra labour and capital. Where competitive conditions prevail, it may be unwise to put high rents on valuable crops. But in this district rent is of the nature of a light land-tax, and the taxation of industry and enterprise within certain limits is an economic necessity. On the other hand, the doubtful progress of cane cultivation during the past fifteen years pointed to the advisability of lenient treatment. Mr. Nethersole used for land actually under sugarcane a factor of 70, and as cane was then grown every second year this gave an average factor of 35, which was nearly half as high again as his highest rice factor. At this revision, the factors chosen were 38, or the highest rice factor, for ordinary cane plots, and 50, or one-third more, for *khari barchha* lying close to village buildings and to the main tank. It is to be

hoped that this departure from the principle of assessment according to net profits may be justified by continued re-extension of the area under sugarcane.

121. The factors used for the valuation of vegetable gardens were :—

Factors for vegetable gardens.	
Ban. ordinary	10
khari	20
pani	20
khari pani	25

This area is very small and a large part of it, owing to the exemption of plots less in area than a tenth of an acre, is not taxed at all. The soil used, as in the case of cane, is ordinary high-lying soil, and a garden which is not close to the houses of a village is not better, except in cultivation, than ordinary unembanked *at*. But such plots are rare. Almost all the vegetable gardens receive village drainage and grow two or three valuable crops in a year. As most of the produce is consumed by the growers it is practically impossible to arrive at any estimate of net profits which can be trusted for general application. The factors used are intended to secure an assessment not heavier than that of the rice land and yet sufficiently high for application in the few villages where Malis work large gardens.

122. The whole of the cultivated land of the khalsa area has been put into thirty classes. To these eighteen different values have been attached, ranging from 2 to 50.

The practical unit used is the fertility of half an acre of unembanked upland. The best rice-land has been taken to be nineteen times as good as this and the best cane land twenty-five times. The scale of both classification and valuation is a much wider one than that of last settlement when only fourteen classes with eight different values were used, the values ranging from 2 to 35. The unit has not been changed. But the best rice-land was then accounted only twelve times as good as unembanked upland and the best cane-land as seventeen.

123. The work of settlement, requiring more intelligence and accuracy

than that of mere record-maintenance, is done not by the Patwari but by an Inspector, who uses the Patwari as a clerk. The Inspectors were arranged in parties of eight which worked over separate blocks of country, each under the charge of an Assistant Settlement Officer. Each Inspector did complete villages. In the course of checking the map and record he had to enter every plot of land in a village. As he moved he marked out on the map with coloured pencils the boundaries between plots or blocks of plots belonging to different land-classes. A green pencil was used to mark the ordinary classes; over this came a blue boundary for an irrigated area, and a red one for a *khari* area. At night he reduced this part of his work to the form of a statement, showing the numbers and areas of fields in each class. The Assistant Settlement Officers, using the statement and the coloured map, were able to give a very efficient check by first following some of the class boundaries and then taking lines which would cross most of them. I usually crossed them on one line only, chosen to cut the more important irrigation areas.

124. By the time that the classes of land had been fixed upon, many of the Inspectors had joined the district, and I and

my assistants were able to give them some instruction in villages near headquarters before the parties were sent out. Those who joined later remained with their Attesting Officer for a week before being set to independent work. But in the first season and for a part of the second we found it necessary to do very elaborate checking, and daily to issue written criticisms and instructions before fair uniformity of classification among the Inspectors was secured. Complete uniformity could not be hoped for and was never attained, but the Assistants became expert in remedying the idiosyncracies of their men while I marked those of my Assistants.

125. The classification of last settlement was necessarily a very rough

guide and could serve only to prevent the grosser forms of error. The irrigated area is shown in blue on the excellent maps then made and this, much handier for work in the

field than a list or statement could have been, was useful in providing a minimum limit. But the irrigating powers of the tanks have been so largely increased by the extended use of weirs for sugarcane that the new irrigation-line below a tank very seldom coincided with the old one. The best guides we had in classification were the people themselves. Throughout the proceedings they showed the strongest interest in this and in the record of tenure. In most villages, the Inspector was accompanied throughout the day by the gaontia and all the raiyats. When a difficulty arose their opinion was taken and was usually found to be in reason. The cultivator whose land was the subject of doubt did not care to risk immediate or postponed ridicule by too flagrant a departure from facts, and even about the land of gaontias the raiyats were prepared to criticise depreciatory statements. There were indeed many occasions when the people hindered more than they helped, not so much by understatement as by too prolonged discussion. This usually happened just before and just after the harvesting of sugarcane, when the villagers had no business in hand and were bent on recreation. When land-classification was completed in a village the gaontia and his committee of raiyats were invited to sign the statement in token of general agreement, and they invariably did so, reserving further discussion of doubtful points till the arrival of the Attesting Officer. When I arrived only the most technical differences were brought up. The method pursued was in fact a combination of Mr. Russell's and Mr. Nethersole's. In the first settlement the people had practically valued their own villages. The result was most inaccurate and irregular, as they now admit, but the memory of the settlement is still popular. The later revision was much more accurate in spite of its rapidity, but the people had no voice in it and were quick to observe its weaknesses.

The chief danger of the system was, naturally, the combination of self-interest with the general vagueness of knowledge displayed at times by even the most intelligent cultivators. But this could be counteracted. I can best illustrate by a particular example the methods followed. In writing the account of the agriculture of the district, I have explained that there are hundreds of different rice-varieties and that these are very clearly discriminated by the class of land on which they grow. I found in my own inspections that a knowledge of the appearance, names, and proper classes of the seeds was useful, not only as a practical check in land-classing, but as a proof to the cultivator that his assessment was being conducted with reasonable knowledge. The Inspectors were ordered to learn 30 or 40 varieties, and they found the knowledge useful. When a cultivator understated the class of a doubtful block of fields, a smart Inspector was frequently able, in the earlier part of the season, to pick up and identify seeds, to the confusion of the erring raiyat. After such an incident he had little difficulty in securing honest statements on more doubtful points. It was the more necessary to establish a prestige of this kind because, except in one season, we had to trust very largely to the statements of the people about irrigation, of which the land in ordinary years shows no clear signs. That this area was not usually understated is proved by the fact that it is 50 per cent. larger than that stated in 1889.

126. The classes used proved to be sufficiently elaborate to secure adequate differentiation between holdings and villages. But from tract to tract they called for careful handling, and for two kinds of fields it was in some cases necessary to force the nomenclature in order to fit the facts. In backward villages, where rice-cultivation is penetrating into waste and jungle, the first fields cut back are in the dells or *bernas*, because they carry water. But until the banks on either side are cleared and cropped these are liable to have sand and gravel poured into them by the rush of surface drainage. This reduces even the wider fields to the quality of second-rate *berna*, and the narrower dells do not grow real *berna* rice or give *berna* crops but only the sturdier varieties of *mal* rice with a limited outturn. In strict definition they are *berna*, and at first the people, hearing them so called, did not object although they themselves mark the inferiority by using the feminine form *berni*. This area, a small one, was christened "false *berna*" and was classed as *mal*.

The other apparent aberration was in exactly the opposite direction. From the first we classed as *berna* the lowest *māl* fields of a long slope. They closely adjoin the *bahal*, are only a few inches above its level, get excellent drainage, and grow *berna* varieties of rice. The people of the inland villages call them *pita māl*, and they quite appreciated the distinction made for a narrow strip near the foot of a slope. But in the riparian villages the slopes are so gentle and the terraced fields so good in comparison with those on the steeper slopes of inland villages, that it was necessary to take a wide belt of the lower terrace as *berna*, in order both to differentiate among holdings in these villages and to equalise the classification over the tract as a whole. This abuse of the nomenclature was not accepted by the people without much explanation, and it would have been simpler to use a third superior class of *māl*, as indeed was done in the flat riverine Chandarpur tract.

127. I have more minutely described the work of land classification because it has elements of novelty in its detail. But it certainly did not occupy more than half the time expended on field work. Interesting and important as improved land-classification and valuation may be, there remains the fact that in India rents are much below the competitive standard of European countries, and that the tenant is consequently much more interested in his title than in his assessment. In Sāmbalpur it certainly would have been a gross error to improve the incidence of the light assessment at the expense of the record.

128. The Inspector's chief business was to compare the map with the land, to verify tenure, possession, and cropping, and to correct all boundaries of villages, holdings, plots, roads, and tanks. These corrections were brought upon the *khasra* or field catalogue, and from this the rent-roll was corrected. The *khewat*, or list of proprietors, was separately checked. The other papers which he compiled in the course of this work were:—

A list of encroachments on tanks, roads, reserved village forests, and village sites;

An irrigation list showing for each tank or well all the fields watered by it;

A list of improvements, showing the cost of each work and the area affected by it;

A list of disputes, showing the reference numbers of the land in dispute, the names of the disputants, and a short statement of the evidence;

A list of sales of land, showing the area of transferred plots, dates of transfer, and the amounts of consideration in debt, grain, or cash;

A list of all cattle in the village;

A note of village customs governing the remuneration of village servants, the distribution of free labour, and similar matters;

Finally, in writing up the rent-roll he noted on it details as to the financial position of each tenant, showing the numbers of his ploughs and cattle, the amount of his grain or money debts, or the facts that he held land in another village, worked at a trade other than agriculture, or had money out in a mortgage.

129. The general business of the Assistant Settlement Officers was to check 20 per cent of the field entries, to class the tenants according to their condition of prosperity, to ascertain the financial position of the gaontia, to observe and note the more general advantages and disadvantages of the village, and to hear and decide all disputes. Of actual field-to-field checking much more than 20 per cent was done in the first season, and also later at the beginning of each new season's work, or in villages prepared by a raw Inspector. But when Attesting Officers had assured themselves of the intelligence and industry of their men they were able to pass villages with less detailed check and provide more

time for the numerous general enquiries which had to be undertaken. The results of their attestation were compiled in a printed statement which showed in small compass—

- Details about the gaontias ;
- Revenue demand ;
- Areas under each tenure and average rents paid ;
- Rates of sub-rents ;
- Classification of land at last settlement and as revised ;
- Areas under each crop, showing improvement or retrogression since settlement ;
- Details of the village area, showing increase or decrease in fallow areas, and in the number of tanks, wells, houses and population ;
- Details of tenants, showing their castes and the numbers of rich, well-to-do, averagely comfortable, and poor men.

To these figures the Attesting Officer added a note of one or two pages calling attention to such matters as a new tank, a peculiarity in soil or in drainage, a loss by floods, or explaining temporary causes for an increase in particular crops.

130. Like my Assistants, I found it necessary to do much detailed checking in the first season, in the first months of each new season, when a four months' recess in office had dulled the aptitude and memory of the Inspectors, and when fresh tracts of country were taken in hand. For such seasons I attempted to maintain as a standard a check of 5 per cent. of the detailed entries. But when work was in full swing the task proved to be unprofitable. The chief part of my work, after deciding disputes and checking the classification of tenants, lay in verifying the more important changes in each village and deciding its class. It was also necessary to continuously compare the circumstances of different tracts in order to prevent the detailed work of my subordinates from clouding their general standards.

131. The checking of crops was very simple in ordinary rice-land because this carries the same crop every year, and is very seldom left fallow. It was necessary only to differentiate areas which grew transplanted rice or had been double-cropped with peas, and the only real difficulty encountered was in noting the crops actually watered each year. This has never been well reported by the maintenance staff, and accuracy in annual returns cannot be hoped for unless special orders are forthcoming at the beginning of every season when it is known that, owing to lack of September rain, there has been recourse to the tanks. Sugarcane is such a conspicuous crop that it is very accurately recorded. The errors most often discovered were in the uplands where the cultivator himself, not being guided by any boundary or embankment, is apt if hastily questioned to misstate the crop grown. But such errors, however useful for estimating the work of an Inspector, are not general and are not of statistical importance.

132. By far the heaviest part of the routine work was the laborious field-to-field checking of the maps. There are one and a half millions of numbered fields in the district, and in these there are ten and a half millions of separate compartments, the boundaries of which, constantly changing, must all be shown on the map. It is to be remembered that the average size of a rice-field does not much exceed one-eighth of an acre. It was necessary, to ensure the correctness of the thick line which shows the boundary of a registered numbered field, to compare all the fine lines which mark its interior plots and to check their number.

133. In the great majority of cases the tenure and possession of fields were in no doubt. Many disputes were raised which were due to mere misunderstandings and could be settled without formal enquiry. In some cases mistaken entries of last settlement were found which had escaped the annual check of many years and the special map-correction operations. These concerned small plots only.

The main classes of dispute arose from a previous lack of clear definitions of tenure. Such were cases between malguzars and shikmi gaontias, between gaontias and old-established sub-tenants of *bhogra*, and between service-tenants or gaontias and sub-tenants of excess service land. These had to be collected and treated together, orders from the Administration being in some cases necessary.

There were also very many disputed family partitions, mortgages, and surrenders. It was usually not difficult to ascertain the actual possessor and in many villages time might have been saved by amending the record summarily according to possession, which is fully nine points of the law where the correctness of a settlement record is in question. But such summary treatment by no means suited the ideas of the people. I am not sure that the more simple among the villagers do not think of settlement as a scriptural year of Jubilee, when a man's land comes back to him in spite of all interim alienations. Most of them certainly conceive the Settlement Officer to be empowered after close enquiry on the spot to reverse mistaken decrees of the Civil Courts. Instances of these, due to misapprehension of the peculiar local tenures and customs, were not wanting, and in some cases the successful litigant has found that even a decree is of no avail against strong village opinion. It was thus sometimes necessary to hear again cases which had been decided. Often the result was that no change could be made, sometimes an appeal was practicable in some instances fresh decisions, backed by village opinion, were agreed to, and many cases were referred to arbitration. The time was not entirely thrown away because the villagers, besides being satisfied that no further controversy was possible, gained some instruction in their tenancy law, of which most were very ignorant, and officers gained a useful knowledge of the conditions and customs of village life.

134. The following table shows the work accomplished in each season for Progress of the field work. the whole of the original district:—

Season.	Number of villages attested by Inspectors.	INSPECTION WORK.	
		Number of villages.	Area in square miles.
1902	255	254	347
1902-03	699	561	1,007
1903-04	1,581	1,455	2,383
1904-05	181	453	723
Total	2,723	2,723	4,460

In the first season regular work could not be begun before the end of March, and when begun it was necessarily slow and cautious. But the second season was promptly started in November, and in it all the more important villages of the khalsa area were disposed of, work not ceasing till June. There are 1,209 khalsa villages, including those of the Chandarpur tract. In the third season a third Assistant joined the district and work was started in zamindari villages. Many of these are mere hamlets and forest clearings, and in 596 a "summary" settlement only was undertaken, and no classification of the tenancy area was done. These, and 615 which were treated in a less elaborate way than the khalsa villages, were inspected by an Assistant Settlement Officer. I merely toured over the tracts he dealt with and inspected a proportion of the villages. Of the 1,512 villages directly subject to my inspection, I saw all, except about a hundred small hamlets which did not differ sufficiently from their parent villages to call for separate examination.

My inspections were completed in December 1904, and before the end of that month the announcement of rents and revenue was begun in the khalsa tract attested in 1902.

	Population	Area in Square Miles
Bengal District	638,922	3,824
Bilaspur & Chandarpur &c.	88,641	349
Raipur & Phuljhar	102,135	787

SKETCH MAP OF SAMBALPUR DISTRICT

Scale 8 Miles = 1 Inch



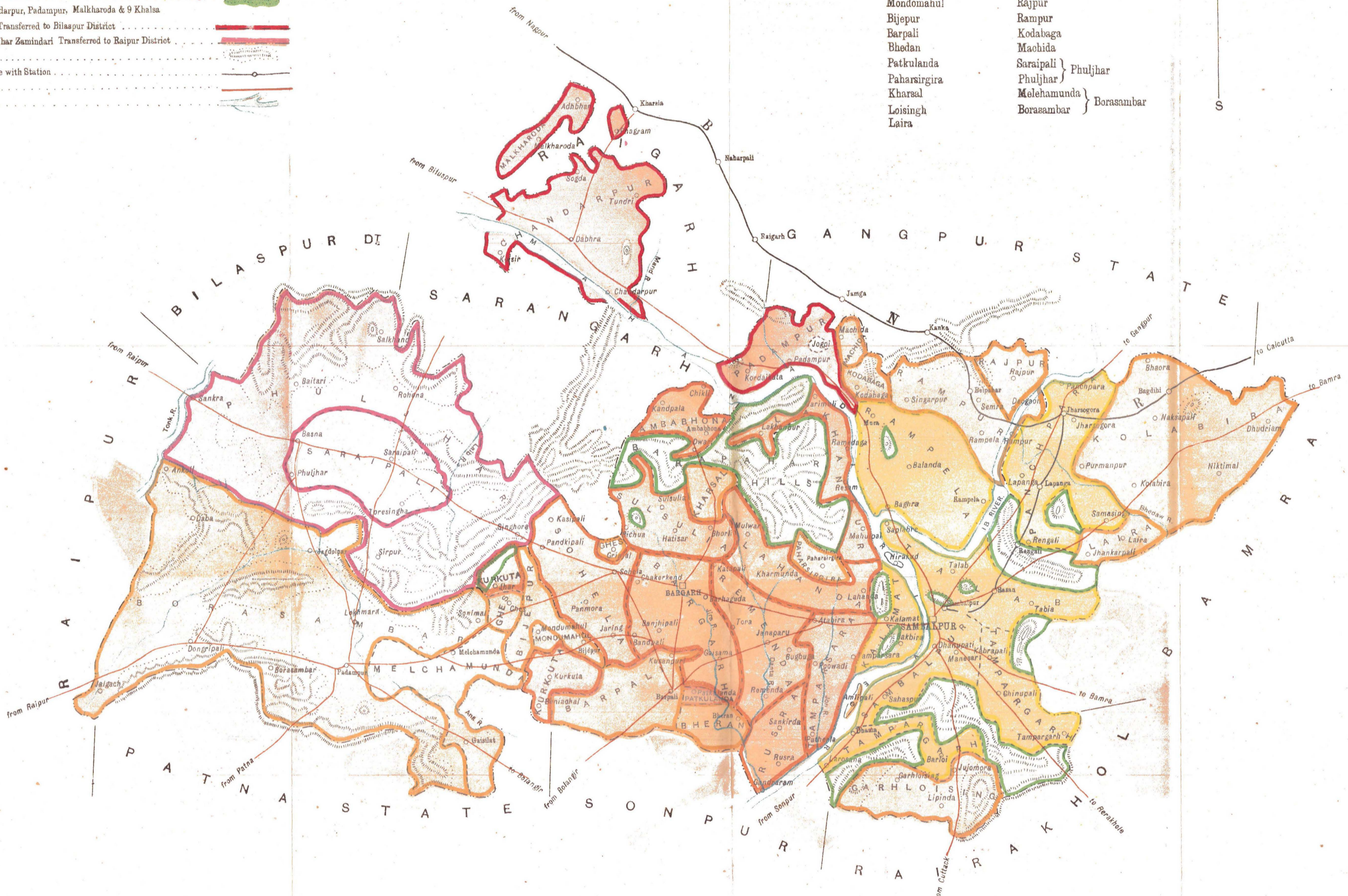
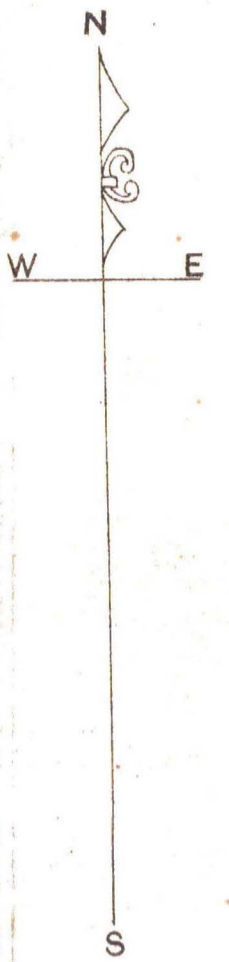
Area in Square Miles
Population

EXPLANATION

- Boundary of Sambalpur Tahsil
- Boundary of Bargarh Tahsil
- Zamindaris of Sambalpur & Bargarh
- Government Reserve Forest
- Boundary of Chandarpur, Padampur, Malkharoda & 9 Khalsa
- Villages of Jogni Transferred to Bilaspur District
- Boundary of Phuljhar Zamindari Transferred to Raipur District
- Zamindari Forest
- B. N. Railway line with Station
- Roads
- Rivers &c

Assessment	Groups
Ambabhona	Rampela
Sulsulia	Panchpara
Sohela	Talab
Kurkuta	Kalamat
Bargarh	Sambalpur
Remenda	Tampargarh
Rusra	Padampur
Tamparsara	Chandarpur
Lohanda	Jogni
Lakhanpur	

Zamindaris	
Ghes	Kolabira
Mondmahul	Rajpur
Bijepur	Rampur
Barpali	Kodabaga
Bhedan	Maohida
Patkulanda	Saraipali } Phuljhar
Paharsingra	Phuljhar } Phuljhar
Kharsal	Melehamunda } Borasambar
Loisingh	Borasambar } Borasambar
Laira	



CHAPTER IX.

WORK IN OFFICE

135. For purposes of assessment it is necessary to divide a district into groups of villages which in geographical position and trade facilities, in soil and rainfall caste and condition of the tenantry are fairly homogeneous. There are all shown on the accompanying map, and of these 34 are in the Bengal district. The zamindari estates are dealt with in the next chapter. The khalsa area was at last settlement divided into 18 groups. Of these 2 have now been amalgamated and a few changes have been made in others. They are:—

<i>Bargah Tahsil.</i>			
Ambalbona, containing	...	...	63 vill. ges.
Lakhanpur, "	...	...	58 "
Sulsulia, "	...	...	59 "
Sohela, "	...	...	82 "
Kurkuta, "	...	...	48 "
Bargarb, "	...	...	60 "
Remenda "	...	...	41 "
Lohanda, "	...	...	40 "
Tamparsara, "	...	...	67 "
Rusra, "	...	...	52 "
<i>Sambalpur Tahsil.</i>			
Kalamat, containing	...	...	89 villages.
Sambalpur, "	...	...	116 "
Tampargarh, "	...	...	78 "
Talab, "	...	...	70 "
Panohpara, "	...	...	74 "
Rampeta, "	...	...	63 "

There are also 9 villages of khalsa lying in the Chandarpur-Padampur tract which were reported on with those estates. They formed the Jogui group of last settlement, but do not now belong to the Sambalpur district.

There are considerable differences among villages within a group, but a certain amount of uniformity prevails. For example, almost all the Lakhanpur villages are forest villages in an early stage of development, those of Sulsulia are all more advanced but are still capable of much development, those of Remenda are very fully cultivated, and most of the Rusra villages have flat riparian land.

136. To secure an absolutely correct distribution of the general enhancement, the present pressure of rent in each of the groups should first have been ascertained and the general circumstances of each fully compared with those of all others. It was impossible to do this without greatly delaying the completion of settlement and endangering the correctness of the record. But the first rent-rate reports were not submitted until four groups had been closely examined and the general characteristics of most of the others were known.

Later, the ordinary routine followed was to ascertain the existing rental pressure over a group which perhaps amounted to 40 annas per unit of fertility. The general characteristics were compared, statistically and otherwise, with those of groups already reported on. The comparison showed it to be less favoured than others in which, the existing rental pressure being 38 annas, a general rate of 50 had been adopted, involving an enhancement of 32 per cent. This standard of 50 annas was chosen for the slightly inferior group also, where it involved an enhancement of only 25 per cent.

The following table shows the rental pressures found existing, the enhancements imposed, and the resulting incidence of rental pressure :—

Tahsil.	GROUP.	Pressure of rent before revision.	Enhancement imposed.	Pressure of rent after revision.
Bargarh	Amtabhona	88 annas	+29 per cent.	49 annas.
	Lakhanpur	83 "	+25 "	43 "
	Sulsulia	41 "	+36 "	56 "
	Sohela	41 "	+25 "	52 "
	Kurkuta	50 "	+23 "	62 "
	Bargarh	54 "	+50 "	70 "
	Remenda	57 "	+31 "	74 "
	Lohanda	49 "	+30 "	63 "
	Tamparsara	53 "	+33 "	70 "
	Rusra	53 "	+28 "	67 "
Sambalpur	Kalamat	34 "	+37 "	46 "
	Sambalpur	59 "	+31 "	77 "
	Tampargarh	39 "	+96 "	54 "
	Talab	49 "	+29 "	62 "
	Panchpara	38 "	+33 "	51 "
	Rampela	38 "	+37 "	47 "

137. It will be observed that there is no arithmetical uniformity. The same scale of land-factors has been used over the whole area, and that scale is founded on the *average* net profits of the whole of the khalsa tracts. But as the groups differ widely in their distances from the railway and from the big markets, and as road communications are nowhere good and in some groups very bad, the net profits of the cultivators and the value of land vary widely from the average. It is, therefore, correct to have the heaviest apparent pressure on such groups as Sambalpur, Talab, Tamparsara, Lohanda, Rusra, Bargarh, and Remenda, which all lie close to the terminus and the Sambalpur market or have good roadways to it. On the other hand, such groups as Lakhanpur, Amtabhona, Sohela and Sulsulia, lying far from the terminus, and Rampela, cut off from it by an unbridged river, have been given pressures below the average of 61 annas.

138. To the general correctness of this distribution there are four exceptions. Kurkuta, a very remote group in Bargarh has a pressure of 62 annas. The largeness of the figure is due to the fact that when attestation took place this group had not fully recovered from the failure of 1899, and considerable areas of old fallow land, which is not taken account of in the assessment, have since that time been again brought into cultivation. As the smallest enhancement of all was here taken, the real pressure of rent is probably not higher now than 52 annas, which is the rate of the neighbouring Sohela group. The other exceptions are Kalamat, Panchpara, and Tampargarh. These do not lie far from the rail, heavy enhancements have been imposed, and yet their rental pressures are below the average. They consist chiefly of rough country, formerly very lightly rented, in which the coming of the railway has caused a sudden extension of cultivation. The rental of several villages has actually been doubled, but it was not possible to carry the levelling process further at one revision.

139. There still exists a difference, also due to the railway, between the two tahsils. The rents of Sambalpur have been raised by 32 per cent. and those of Bargarh by only 29, and the rate of rent per acre is now 6 annas 7 pies in Sambalpur and only 6 annas 1 pie in Bargarh, but Sambalpur is still in reality the more lightly assessed. The pressure is only 57 annas per unit of fertility as against 63 annas in the western tahsil. The impending construction of the Raipur-Vizianagram Railway should reduce this difference, and the construction of a line through the Bargarh plain to join Sambalpur with Bolangir would remove it altogether.

140. In order that the standard rates of all groups should correctly represent relative rental pressure and, after a correct revision, should all be approximately equal, it would be necessary to arrange a separate scale of factors for each group. Theoretically, this would not seem to be difficult to do, once an average scale for the district had been arrived at. It would mean only that the calculation of net profits would be varied by the local outturn of crops, the local range of prices, and the local cost of labour. The practical objections are that the number of crop-cutting experiments as yet registered for each group is too small to give reliable averages, and that the prices of small local markets, not yet registered at all, could not be accurately ascertained over a term of years. Even were satisfactory averages obtainable, it is questionable whether the extra labour and cost involved in the enquiries, and the extra cost and additional risk of error in the already heavy statistical work which would be involved by the use of several different scales, would be compensated for by the satisfaction to be derived from the contemplation of a neat arithmetical statement.

141. The standard rate of a group having been fixed, the next step is to determine rates for its villages, which shall all approximate to the group rate as closely as possible and yet not fail to distribute the general enhancement equitably between the richer and the poorer villages. Counsels of perfection were here again impracticable because of the existing irregularity of rental pressure. This may be best illustrated by an example. The rental pressures in the 74 villages of Panchpara group were found to range from 19 annas to 54 annas, that is, certain villages were paying nearly three times the rent paid in others close to them, and many were paying twice as much as their neighbours. It was impossible to quite equalise matters even by freely doubling the rents of the lightly-rented villages, but they were brought within a closer range.

Group rate	Rate imposed.	No. of villages.
...	40 annas	19
...	45 "	6
...	50 "	18
...	55 "	14
...	60 "	14
...	65 "	3

Seventeen villages will pay half as much again as 19 neighbours, but the general balance has been amended. I need hardly explain that the choice of village-rates was chiefly guided, not by purely arithmetical rules, but by consideration of the special circumstances of each village. These, where memory failed, could be easily ascertained from the notes written at attestation and inspection, and from the classification made on the spot according to their general fertility and prosperity. The following table will show that the rates adopted worked out with considerable fairness:—

Class of village.	Number of villages.	Rental enhancement imposed.	Unit incidence of rent imposed.
A	96	31 per cent.	64 annas.
B	342	22 "	63 "
C	302	28 "	59 "
D	211	23 "	51 "

The differentiation effected was more clear in Bargarh tahsil. But in Sambalpur many of the poor villages contained a large area of newly-broken land hitherto unrented, and the enhancement of rent in these was due almost entirely to this circumstance. That the new land was lightly assessed is shown by the relatively low unit incidence of 51 annas.

142. The first step in the fixation of rents on tenants' holdings is purely automatic. The sanctioned rate of a village being 4-50 annas, the rent of a holding containing 600 fertility units is Rs. 18-12. In the great majority of cases this deduced rent has been imposed without alteration, except that the exemptions for improvements, of which a short account will be found in Chapter XI, have been worked out and deducted. But a close comparison of each deduced rent with the rent hitherto paid is necessary.

There are several causes owing to which an existing rent may be larger than the new rent. One is the overclassing of the land at one of the previous settlements, a rare phenomenon, and another is the occasional practice of selling part of a holding without transferring a share in the rent. But by far the most fruitful cause was found to be the partition of a holding among brothers. In this event among certain castes the eldest brother takes much the largest share of land but only an equal share of rent, and if later he adds to this the land set apart free of rent for the maintenance of father and mother, he may possess half of the original holding while paying only a third or a fourth of the rent. Consequently at revision it is on him alone that the enhancement falls. The other brothers divide equally, and it was one of the smaller proofs of the general correctness of the land-classification and valuation that the deduced rents of these equal shares almost invariably worked out equal. But they were often lower than the relatively unfair rents which were being paid. The amounts of difference in these cases were usually so small that the original rent was left untouched.

Revised rents sometimes too large to be imposed in full.—It was much more usual to find that the deduced rent was so much higher than the old rent that it could not without harshness be imposed in full. It was necessary to allow a margin, the amount of which varied according to the circumstances of the raiyat, being generous if he were not well-to-do and very limited if he were a rich man. The Settlement Code of the Central Provinces contains rules for the allocation of these margins, but they usually call for individual consideration, and in Sambalpur the comparative smallness of rental amounts has permitted free handling. One peculiarity was strongly marked. The deduced rents of the C and D, the poorer classes of raiyats very seldom so much exceeded their old rents as to render the grant of margins necessary. But the richer cultivators, paying larger amounts, received most of the benefit. This unsatisfactory tendency is a repetition of the tendency of margins at last settlement and is largely due to the roughness of the previous allocation. I can best explain this by means of an example.

At last settlement three raiyats' rents were thus enhanced :—

			Present rent.	Full deduced rent.	Rent imposed.
			Rs. A.	Rs.	Rs.
B	...	...	5 0	12	9
C	...	...	3 0	5	5
D	...	...	2 8	3	3

It was rightly considered somewhat harsh to raise B's rent from five to more than nine rupees, and he was allowed to enjoy for the term of settlement a rate equal to only three-fourths of that paid by his poorer neighbours. At this revision the figures are :—

			Present rent.	Full deduced rent.	Rent imposed.
			Rs.	Rs.	Rs.
B	...	...	9	19	17
C	...	...	5	7	7
D	...	...	3	4	4

It is too sudden an enhancement to proceed from nine to nineteen, although it would have been possible to impose Rs. 19 and the full rent of Rs. 12 been imposed at last settlement. In the absence of free competition the only remedy would seem to be the adoption of a rent rising by short terms of years, but this is not in accordance with existing law. It may be claimed for this revision that the margin which the richer raiyat enjoys has been reduced in its proportion.

Incidence of Rental enhancement on the classes of tenants.—But the cases in which margins are necessary are exceptions amounting to not more than 10 per cent. of the total number of enhanced rents; and although many well-to-do men have ever since 1877 been paying a considerably lower real rent than their poorer neighbours and will still until 1925 continue to enjoy a somewhat lower rate, the extension of the scale of land-factors has been successful, as the following table will show, in throwing the weight of enhancement automatically on the richer land, hitherto under-assessed, and on the richer classes who hold it.

Class of raiyats.	Number of holdings.	Present rents.		Revised rents.		Percentage of rents not raised.	Percentage of rents not raised.	Average present rents.		Average revised rents.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.					
A	4,918	30,074 3 30	46,985 1 0	+46	339	17	6 11 1	8 5 2		
B	16,306	79,630 9 4	1,04,873 4 0	+32	2,948	18	4 12 4	6 4 4		
C	12,600	37,746 7 0	47,565 5 0	+27	3,624	26	2 7 10	3 3 8		
D	4,882	7,718 8 8	5,884 8 0	+16	1,417	36	1 14 6	2 3 2		
Garden holding ...	2,301	63 12 8	465 0 0	...	128	6	0 0 6	0 3 1		
Total	42,397	1,54,761 4 1	2,02,573 15 0	...	9,215	21	3 9 6	4 11 3		

143. Over the whole of the khalsa the average acre rate of rent imposed at last settlement was 5 annas and 5 pies. Previous to this revision, the rate had fallen, owing to the addition of new unrented land, to 4 annas 10 pies. It has now been raised to 6 annas 4 pies. In Sambalpur tahsil it is 6 annas 7 pies and in Bargarh 6 annas 1 pie. The lowest rates imposed over whole groups are 2 annas 0 pies in Dakhanpur, which is a remote tract of hills and forests, and 4 annas in Kurkuta, a remote group which was severely affected in the famine of 1899-1900. The highest rates are 8 annas 5 pies and 8 annas 3 pies in Remenda and Tamparsara, the richest and more closely cultivated parts of Bargarh tahsil, and 10 annas 5 pies and 7 annas 8 pies in Sambalpur and Talab groups which most closely adjoin the head-quarters town and the railway terminus. The following table shows how the general average rate of 5 annas and 4 pies has fallen on the various classes of land :—

RICE LAND.			LAND OTHER THAN RICE LAND.		
Land class.	Average rate of rent imposed per acre over khalsa area.	Maximum acre rate imposed over Sambalpur group.	Land class.	Average rate of rent imposed per acre over khalsa area.	Maximum acre rate imposed over Sambalpur group.
Bahal I Khari Pani	1 7 2	1 13 3	Barooha Khari Pani	1 14 6	2 6 6
" I Khari ...	1 4 9	1 10 3	" Pani ...	1 7 2	1 13 3
" I Pani ...	1 4 9	1 10 3	Bari Khari Pani ...	1 2 4	1 3 3
" I Ordinary	1 1 1	1 5 7	" Khari ...	0 12 2	0 15 5
Bahal II Khari Pani	1 6	1 8 8	" Pani ...	0 12 2	0 15 5
" II Khari ...	1 1 1	1 5 7	" Ordinary ...	0 1 1	0 7 8
" II Pani ...	1 1 1	1 5 7	At Khari ...	0 2 5	0 3 1
" II Ordinary	0 14 0	1 1 9	" Ordinary ...	0 1 3	0 1 6
Borna I Khari Pani	1 1 1	1 5 7			
" I Khari ...	0 14 8	1 2 6			
" I Pani ...	0 14 8	1 2 6			
" I Ordinary	0 11 7	0 14 3			
Borna II Khari Pani	0 15 3	1 3 3			
" II Khari ...	0 13 10	1 0 2			
" II Pani ...	0 13 10	1 0 2			
" II Ordinary	0 9 9	0 13 4			
Mal Saman Khari Pani.	0 12 3	0 15 5			
Mal Saman Khari ...	0 10 4	0 13 1			
" Pani ...	0 10 4	0 13 1			
" Ordinary	0 6 1	0 7 8			
Mal Tikra Khari ...	0 6 9	0 3 6			
" Ordinary	0 4 3	0 5 5			

For a comparison of these with the rates imposed at the two previous settlements it is necessary to revert to the simplest form of classification. It will be remembered that all Mr. Russell's rates are overstatements due to his underestimates of area. Of last settlement Mr. Fuller wrote: "The direction in which assessments most commonly err is in the relative overvaluation of the poorer classes of land, a mistake which originates in having regard to the gross instead of to the net produce, and it is right that I should put on record for the guidance of future Settlement Officers that Mr. Nethersole's factors were open to criticism in this respect".

I do not consider that even now sufficient relative weight has been laid on the richer classes of land, but that a distinct improvement has been effected the following table will show:—

				ACRE RATES IMPOSED AT—								
				Mr Russell's settlement.			Mr. Nethersole's settlement.			The present settlement.		
				Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bahal	...	...	...	0	10	0	0	9	8	1	1	4
Berna	...	...	...	0	8	0	0	8	8	0	11	4
Mal	...	...	...	0	7	0	0	6	1	0	6	3
At	...	...	...	0	2	6	0	1	7	0	1	4
Barchha	...	...	...	.....			1	2	0	1	8	4
Bari	...	...	...	.....			.....			0	13	6

144. The assessment of a gaontiahi village is fixed very simply by taking a fourth of the raiyats' rents and balancing this against the valuation of the gaontia's *bhogra* or home-farm land. If this valuation is less than the fourth, the difference is made on to the gaontia by a *puraskar* or cash drawback, and if it exceeds one-fourth of the rents the gaontia pays the difference as a *zabti* or excess assessment. The village service land is held free of revenue up to a limit of valuation equal to one-eighth of the raiyats' rents. If there is an excess it is added to the village assessment and the gaontia gets no drawback on this. Its amount causes variations in the proportions of assessments to village assets, but the gaontia ordinarily pays about 76 per cent. of the total valuation, a proportion considerably heavier than the 50 or 60 per cent. paid by malguzars.

Inelasticity of the system of gaontiahi assessment.—An objection to the system is that it is not elastic. In a malguzari assessment it is possible and usual to vary the proportion of assets taken as revenue from 45 to 60 per cent., according to the circumstances of the village and of the malguzar. In Sambalpur the assessment even after an enhancement of 30 per cent. is a light one, and as the gaontias have profited largely by the great recent increase in the cultivating profits of their home-farms leniency of individual assessment is not perhaps an immediate necessity. At an early stage in the operations I obtained permission, if inelasticity of assessment should become apparent, to vary the system by allowing a drawback from rents up to 30 per cent. both to gaontias in struggling or remote villages with small home-farms, and also to gaontias in open tracts who, by especially good management, had improved their villages.

High valuation of home-farms at last Settlement.—That this power of discretion has been exercised in only a few cases is due to the fact, which became apparent only at a later stage, that the home-farms had relatively to the raiyati area been artificially overassessed at last settlement. Their revaluation now has proved profitable to the gaontias and has usually obviated the need for special treatment. The methods by which the previous over-valuation was brought about were numerous. In several villages, it was due merely to the fact that reduction in the raiyats' rents were granted at the time of announcement while no alteration was made in the home-farm valuation. It was also then considered fair, on the analogy of the malguzari valuation of

other districts in the Central Provinces, to substitute for a deduced valuation of the home-farm the sub-rent habitually received for it, even though this might amount to four or five times the strict valuation. To such a system there may be little objection in a malguzari assessment where the object is to take as the share of Government about half of the sum which the proprietor can make out of his village, and it is a fair system where rents and valuations closely approximate to competitive figures. But these conditions do not obtain in Sambalpur. The object of the assessment here is to take all the rent of raiyats holding Government land, but to fairly remunerate the gaontia, who is a cheap revenue-collector, for his trouble and responsibility. The calculation of the drawback or excess assessment, to be equitable, must be based on a valuation of *bhogra* land conducted on lines exactly similar to that of the raiyati land, and in the case of raiyats sub-rents cannot be accepted as a guide to valuation, partly because they are rare, chiefly because where they occur they are so much larger than the usual light Government rents that their acceptance would cause extreme irregularity of assessment. A practical objection to the valuation of home-farms by their sub-rents at this revision is that it was strongly resented at last settlement and that gaontias have now resumed many of the sub-leased plots.

Another cause which operated to enhance the home-farm valuation was the cultivation of sugarcane in common which then prevailed. This common land, valued by the high sugarcane factor, was a part of the home-farm. Soon after settlement the cultivation of cane diminished, and when it recommenced the common land was neglected and raiyats prepared gardens in their own holdings. This left the gaontia assessed on cane land which had ceased to grow cane.

Finally, if it be remembered that the raiyati area can be indefinitely increased and has considerably increased since settlement while the home-farms are fixed areas, it will be understood why, in spite of the revised land-factors which impose on the rich *bhogra* land a rate of 7 annas 8 pies per acre as against 6 annas 4 pies on raiyati land, the valuation of the home-farms has risen by only 24 per cent., while rents are enhanced by 31 per cent. It follows that Government revenue has not increased in the proportion of the rents, and that the gaontias profit considerably by the revision, their cash drawbacks increased and their excess assessment being in some cases reduced, and in no case heavily enhanced.

145. Since last settlement proprietary rights in place of gaontiahi rights have been granted by Government over 118 villages. Their assessments were revised in 1892, and 65 per cent. of the total valuations was taken as Government revenue. The proportion of the revised assets now taken is 60. Few variations from this fixed standard were necessary, because most of the proprietary villages are still held free of revenue. Seventeen villages are purely raiyatwari. Their *karpardars* or managers are not proprietors of home-farms. They have been allowed a fourth of the total rental of their villages.

146. The gross revenue assessed on the khalsa area at last settlement
Increase in gross revenue. WAS :—

	On excess bhogra.	ON RAIYATI LAND.				On excess service land.	On resumed musaf plots.	TOTAL.
		Revised payment.	Drawbacks allowed to gaontias.	Net sum payable.				
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Bargarh Bahall ..	6,108 11 0	52,430 7 0	2,283 8 0	54,347 5 0	794 14 0	336 2 0	51,478 0 0	
Sambalpur ..	6,084 1 0	54,176 1 0	4,018 6 0	60,166 11 0	1,196 2 0	91 8 0	67,668 7 0	
Total ...	12,192 12 0	1,06,606 8 0	7,302 8 0	1,44,504 0 0	1,990 1 0	427 10 0	1,52,934 7 0	

The reassessment since settlement of the 118 malguzari villages reduced this figure to Rs. 1,53,183. The malguzari item now complicates the account, but it can be stated with fair simplicity if the balances allowed out of the

assets to malguzars be looked upon as similar to the net cash drawbacks which are allowed to gaontias.

	Estates* and tenants' rents.	Net deductions to grants and malguzars.	Net deductions to village servants.	Revenue of proprietary plots.	Total Revenue.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Bargah Tahsil	1,15,998 0 0	(-) 7,492 1 0	(-) 122 12. 0	168 0 0	1,08,383 8 0
Sambalpur Tahsil	52,800 0 0	(-) 1,465 2 0	(-) 20 4 0	263 0 0	51,108 0 0
District Total	2,01,968 11 0	(-) 8,957 13 0	(-) 142 0 0	431 0 0	1,92,900 14 0

This table shows the revenue now assessed on the khalsa portion of the Bengal District. But for direct comparison with the figures of last settlement, we must note also the new revenue of the nine khalsa villages recently transferred to Bilaspur District. This amounts to Rs. 574. Thus the gross khalsa revenue has been raised from Rs. 1,58,934-7 to Rs. 1,98,415-14 or by 25 per cent. and the new assessment is 26 per cent. higher than that in force immediately before this revision.

147. The assignments of revenue in khalsa at last settlement amounted to Rs. 23,154. But certain grants had been given in Assignments of Revenue. 1863 for a term of 40 years only, and these, with certain others wrongfully alienated, have recently been resumed. Immediately before this revision the remaining assignments amounted to Rs. 21,489. Their revised valuation, including the assignments of the nine Bilaspur villages, is now Rs. 26,998.

The net realisable sums are—

	Rs.
As fixed at last settlement	1,30,796
As collected before revision	1,34,891
As revised	1,71,992

The actual increment to Government is one of 31 per cent. over the demand of last settlement and of 23 per cent. over the collections preceding this revision.

The net revenue now realisable in the khalsa portion of the Bengal District is Rs. 1,71,843. During the currency of the new settlement this may possibly be increased by over Rs. 26,000 if all existing assignments fall in.

148. The bulk of the office work was done in the rainy season when, perforce, work in the villages ceased and all the Patwaris were brought into Head-quarters, but after the first season it was necessary to keep a staff in office throughout the year to work up the material sent in by the field parties.

The tracing of 2,723 village maps corrected in the field for then and a half millions of separately marked plots was necessarily lengthy and laborious, the more so as two copies of each map were needed, one for the Record-room of the District Office and one for reference in the villages, to be kept in the hands of the Patwari. The first trace was made by draftsmen, more or less expert, working on contract, and the second, usually the better, was taken from this by the Patwaris themselves.

The double copying of the vernacular records was no less lengthy and laborious. This was effected entirely by the Copying of records. Patwaris. Most tedious of all was the checking, word by word and figure by figure, of the first copy against the much corrected field copy, of the second copy against the first copy, and of both

copies against the faired map traces. The checking by Inspectors and Superintendents was the more difficult because the record was in a language and character strange to them.

A third branch of the work lay with the English-writing contractors and clerks who prepared the abstracts which show for each tenant's holding the details of area and soil in every numbered field. The routine calculations, numbering several millions, which are necessary to bring out individual incidences of rent and to apply village rates to every holding, were done on contract under supervision, and the numerous abstracts of statistics needed for rent rate and assessment reports were prepared by the supervising and checking staff.

149. The following table shows how the work in office progressed. The figures represent the villages dealt with in both the khalsa area and zamindaris for the old district :—

YEAR.	Mans.		Records completed.	Rent rate reports submitted.	Assessment reports submitted.
	First trace.	Second trace.			
1902 ...	244	244	244	162	...
1902-03 ...	583	482	572	357	104
1903-04 ...	1,475	1,355	1,220	247	363
1904-05 ...	441	639	687	1,561	2,256
Total ...	2,723	2,723	2,723	2,127	2,723

The first was only half a season; the second disposed of all the large villages of the open tracts; in the third the bulk of the zamindari work was done; in the fourth, while Assistant Settlement Officers were engaged upon announcements, my work consisted almost entirely of report-writing. For 596 villages dealt with summarily rent rate reports were not necessary.

CHAPTER X.

THE SETTLEMENT OF ZAMINDARIS AND TALUKS.

150. The 17 zamindaris, 2 taluks, and 1 jagir, of the original district of Sambalpur, cover 2,925 square miles, or nearly 60 per cent. of the total area. At last settlement survey and land-valuation were accomplished only in the Chandarpur-Padampur taluks and in the Malkharoda jagir. In the zamindaris no regular enhancement of tenants' rents was undertaken, but the existing rents were accurately ascertained, miscellaneous payments were included in them, and in most cases where grain payments existed they were commuted into cash. This partial revision but slightly increased the actual receipts of the zamindars, but it provided a fairly accurate statement of their assets which served as a basis for calculating their payments to Government. These had in the past been all but nominal, and they were considerably increased. The rents of tenants and the revenues of

villages have now been fully revised, but the estates are far from being homogeneous, and their land-valuation has been dealt with in three different ways.

The smaller zamindaris of Bargarh tahsil. 151. The areas of the eight zamindaris which lie in the Bargarh plain are :—

	Square miles.
Barpali	98
Bijepur	83
Ghes	40
Bheran	33
Kharsal	28
Paharsirgira	17
Mardomahul	7
Patkulanda	6
Total	312

All of this except some nine square miles of wooded hills in Ghes has been surveyed and brought upon the village-maps. As the estates lie in or close to the open plain and are almost as closely cultivated as the neighbouring khalsa tracts, it was possible to apply to them the khalsa system of land-valuation. The details of this and of the assessment are exactly similar to those which have been given and they need not be repeated. But the following table will show the general result :—

	Rs.
At Survey—	
Tenants' payments	74,381
Valuation of home-farm and service-land	9,062
Total	33,443
Before revision—	
Tenants' payments	23,953
Valuation of home-farm and service-land	9,062
Total	33,015
Revised—	
Tenants' payments	31,085
Valuation of home-farms	9,285
Valuation of service-land	3,292
Total	43,662

The enhancement of the tenants' rents is one of 30 per cent. and that of the total land-valuation is 32. Most of the eight estates lie in that south-western corner of the Bargarh plain which has the most erratic rainfall and which suffered more than the northern and western villages in the recent famine. But it is to be remembered that zamindari rents were not enhanced at last settlement as were those of khalsa villages. The rate paid per acre has now been raised only from 3 annas 10 pies to 5 pies, the average rent imposed on the khalsa part of Bargarh being 6 annas 1 pie.

152. The circumstances of the Borasambar estate called for special treatment. In its total area of 841 square miles there are 434 villages covering 572 square miles. The eastern portion, lying in the widening valley of the Ang river, is now well occupied and cultivated. But all the western part consists of hills and glens scantily cultivated by aboriginal headmen and their tenants.

Summary settlement.—In 277 of the more backward and remote villages and hamlets it was decided that no elaborate classification of the land of tenants should be undertaken, that existing rents for old land should be accurately ascertained but not enhanced, and that only on land newly broken since the completion of the survey should new rents be imposed. These were calculated at the average acre-rate already being paid in each

village, a procedure which imposed an enhancement easy to calculate and so small in amount as not to affect the circumstances of the aboriginal rayats.

Valuation of the home-farms.—This summary system presented one difficulty. The home-farms held by the village-lessees invariably consist of the best land; and in villages which are in a very early stage of development, of the only good land. It was evident that to lay upon these the average rate paid for poor tenancy land would be to understate their relative value. The device adopted was to classify the home-farms only and then to apply to them the average unit rate found to be paid before revision of rents in the eastern and more open half of Borasambar, where 157 villages were regularly settled. By this means, although the village-lessees received, on account of the remoteness and backwardness of their villages, a consideration equal to that given to their tenants, it was also possible to attain fairly accurate differentiation from village to village and between home-farms and tenancy land.

Regular Settlement.—In the open tract lay 157 villages in which the stage of cultivation fully justified general rental enhancement by means of land-classification.

Special Land Classification.—But a method differing slightly from that of the khalsa assessment was adopted. As Borasambar is the most remote part of the district and the most backward in cultivation, its prices are cheap and its rents low. It appeared to be unnecessary to apply to its land the elaborate sub-classification used in the khalsa villages, and to be unfair to make the same wide distinctions in the relative values of the land-classes. Accordingly, the following scale of factors was adopted, which combines the simplicity of last settlement's system of valuation with the greater accuracy of the revised factors:—

Land Class.	New Borasambar factor.	Khalsa factor of last settlement.	Khalsa factor of present Settlement.
Bahal Pani	30	20	28 to 34
Bahal	24	18	23 to 28
Berna Pani	21	18	21 to 24
Berna	16	16	16 to 19
Mal Pani	15	16	17
Mal	9	10	7 to 10
At	3	2	2
Barohha	30	35	38 to 50
Bari	20	...	10 to 30

Enhancement of land assets.—The result of the valuation of the two tracts is shown below:—

	AT SURVEY.			BEFORE REVISION.			AFTER REVISION.			
	Tenants' payments.	Valuation of home-farms, and service-land.	Total.	Tenants' payments.	Valuation of home-farms and service-land.	Total.	Tenants' payments.	Valuation of home-farms.	Valuation of service-land.	Total.
157 villages under regular settlement.	Rs. 7,842	Rs. 3,993	Rs. 11,835	Rs. 8,367	Rs. 3,993	Rs. 12,360	Rs. 12,366	Rs. 5,618	Rs. 1,374	Rs. 19,042
277 villages under summary settlement.	6,193	3,129	9,322	6,892	3,129	10,021	7,902	4,485	616	13,003
Total	14,035	7,122	21,157	15,159	7,122	22,281	20,158	10,003	1,990	33,501

In this estate over a thousand rupees had been added to the rents after survey and before revision by the assessment of new land. They have now been enhanced by 48 per cent. in the open tract; by 16 per cent. in the remoter villages; and by 34 per cent. over the whole estate. But the leniency of the assessment needs no proof beyond a statement of the fact that the average acre-rate imposed on the tenancy area is only two annas and on the good land of the home-farms only 2 annas 7 pies.

153. The areas of the seven zamindari estates of Sambalpur tahsil are:—

	Surveyed village area in square miles.	Unsurveyed forest area in square miles.	Total area in square miles.
Kolabira	238	40	278
Rampur	126	23	149
Rajpur	30	6	36
Kudabaga	29	...	29
Machida...	8	2	10
Laria	40	1	41
Loisingh...	70	25	95
Total	541	97	638

Most of these estates contain much rough country and although some parts are adjacent to the railway the intervening ranges of hills and the lack of roads tell against ease of communication. In many of them also the grain rents, usually prohibited at last settlement, still continued to be paid. As the amounts of these remained undiminished and the price of the grain had risen there had been an automatic rise in the rents of tenants. On these grounds it was at first proposed that only a summary revision of rents should be undertaken. It was, however, decided that the great progress made in recent years by these estates both in the extent and in the quality of their cultivation, and the certainty that this advance would continue, more than justified a regular enhancement of the light rents. The enhancements aimed at in different estates in order to level up the rental incidences varied from 10 to 35 per cent. But it was clear that the land-classification of the khalsa villages was over-elaborate for this tract, as it had been for Borasambar, and the simple scale of classes and values adopted for the open part of Borasambar was applied here also.

The results of the revaluation were:—

	R.
At Survey—	
Tenants' payments ...	15,940
Valuation of home-farms and service land ...	7,723
Total	23,663
Before revision—	
Tenants' payments ...	18,552
Valuation of home-farms and service land ...	7,723
Total	26,275
Revised—	
Tenants' payments ...	24,511
Valuation of home-farms ...	9,314
Do. of service land ...	2,538
Total	36,443

The increase of rents by Rs. 2,600 between 1896 and 1904, owing to the rise in value of the grain-rents, is an exception to the rule of the district, where

rents remain almost stationary from settlement to settlement. These grain-rents have now been commuted at a rate of Rs. 6 per *pirug*, and the total rental payments have been raised by 32 per cent. But the average rate of rent imposed is still only 3 annas 9 pies per acre as against the rate of 6 annas 7 pies imposed on the neighbouring khalsa groups, a difference which makes sufficient allowance for the comparative backwardness of the zamindaris.

154. The sanction of Government is not necessary for the fixing of assessments on individual villages of zamindaris because these are held from the zamindar not by inferior proprietors but by lessees or assignees of revenue.

Lease payments.—But most of the lease-holders have been given the status of "protection" under section 65A of the Central Provinces Land Revenue Act. This has so greatly increased their power against the zamindars that the latter have invariably called upon the Settlement Officer to fix the amount of the annual lease-payments. Even in the case of ordinary lessees the zamindars have found it expedient to evade future friction and litigation by accepting *theka jama*s fixed in the same way as those of the "protected" lessees. The result is that all thekadar of zamindari villages have been assessed on the same principle, and their annual payments will very slightly exceed, in proportion to the valuation of a village, the annual revenue paid to Government by gaontias of the khalsa.

Assessment of assignees.—In most of the estates many villages are held free of revenue by persons who are either relations of the zamindar or former servants. Usually no occasion now exists for rendering that class of service in return for which enjoyment of the villages was originally granted. The zamindars naturally desire to resume the grants, and probably they have a legal right to do so, but the question has not been tested in the Courts. Amicable arrangements were sometimes possible, the compromise most usually effected being that the assignees should continue to hold free of revenue as against the zamindar in so far as his own income was concerned, but should pay a proportionate share of the payment made by the zamindar to Government.

155. The *kamil-jama* of a zamindari is the full assessment which the zamindar would pay if he had no feudal status, but held as an ordinary proprietor. It is to him only of importance because on it are calculated the cesses due from the estate. These assessments of land revenue were made in the usual way by taking from 55 to 60 per cent. of the valuation of each village. But at this settlement one innovation has been made.

Assessments on Forests.—It has been usual to deal separately with the forest income of zamindaris. At last settlement its amount was roughly ascertained and a small assessment fixed upon it independently of the land assessment. The object of this procedure was to enable the administration to revise triennially the assessment on a source of income which promised rapid development. That policy has now been abandoned and the procedure followed is to ascertain as closely as possible the average gross income of the forests, to deduct from this the cost of the forest establishment maintained, to treat the remaining net income as assets and to fix on it a proprietary *kamil-jama*.

Of the sixteen zamindari estates of the Bengal district, only nine now possess forests which yield an annual income. The amounts of the net forest assets ascertained are :—

	Rs.
Borasambar	6,400
Ghes	180
Rampur	350
Rajpur	170
Kudabaga	150
Machida	30
Kolbira	1,500
Laira	150
Loisingh	800
Total	9,700

The land and net forest assets of the sixteen estates amount to Rs. 1,22,104 and on this full proprietary assessments amounting to Rs. 70,973, or 58 per cent. of the total valuation, have been fixed.

156. The zamindars stand half-way between Chiefs of States who pay tribute to the British Government and the ordinary proprietor of khalsa villages who pays half of his assets as land revenue. So long as the zamindars exercised semi-independent powers within their estates, controlled their own police, and saved Government part of the expense of administration, their *takoli* payments were merely nominal. In the larger and more remote estates, although since last settlement many of the deputed powers have been resumed, zamindars who act as magistrates and superintend the maintenance of schools, roads, and ferries, still have important functions. But they have not now so strong a ground for claiming exceptionally light assessment. In 1889 the administration aimed at imposing on them actual *takoli* payments of from 33 to 50 per cent. of their *kamil-jama*, but that aim was not closely reached. At this revision I have endeavoured, while dealing separately with the circumstances of each zamindar and of each estate, to impose ordinarily an actual payment of not less than 40 per cent. of the full *kamil-jama* or proprietary assessment. In the following table it will be noted that the direct *takoli* payments of Rs. 12,560 fixed at settlement have since been raised by adjustment of the expenses of police management to Rs. 18,563. They have now again been raised by 37 per cent. The increase in the cess payments on a doubled *kamil-jama* is also large. On the other hand, the net revenues of the zamindars after meeting these payments are increased by this revision and its first systematic valuation of the land from Rs. 53,309 to Rs. 76,711. These incomes it will now be possible for the zamindars to add only slightly to during the term of settlement, and out of these they will have to maintain revenue establishments, but the amounts are sufficient to maintain them in adequate dignity, and they are, of course, very largely supplemented by the profits of direct agriculture of home-farms:—

Zamindari.	AT SETTLEMENT		BEFORE REVISION.		AS REVISED.		
	Kamil-jama.	Takoli.	Takoli.	Net income.	Kamil-jama.	Takoli.	Net income.
BARGAH TAHSIL.							
Barasambhar	10,890	8,650	7,861	16,491	22,845	8,500	24,000
Mandomalul	198	105	85	48	275	120	231
Patkulanda	268	300	250	189	445	300	351
Paharsingra	281	132	132	364	500	200	563
Gher	1,692	950	950	1,578	2,600	1,300	3,439
Kharsal	1,111	660	584	1,379	2,020	850	1,795
Bheran	2,544	1,300	1,300	2,304	3,700	1,700	3,406
Bijepur	2,710	350	698	3,668	5,020	1,600	5,448
Barpali	7,168	1,000	2,207	9,173	11,700	2,800	13,004
Total	26,777	8,437	14,064	35,533	49,105	17,170	61,235
SAMBALPUR TAHSIL.							
Lara	516	5	255	1,544	1,985	700	1,628
Machida	850	85	109	290	370	150	339
Kudabaga	1,280	330	543	1,908	1,590	800	1,593
Rajpur	779	380	380	1,371	1,685	600	2,008
Rampur	1,491	1,050	1,000	1,729	4,664	2,000	4,631
Kolabira	3,583	1,700	1,952	9,524	9,940	3,500	13,074
Loisingh	243	273	260	2,116	1,934	800	2,321
Tahsil Total	8,241	4,128	4,499	17,776	21,968	8,550	25,476
DISTRICT TOTAL	35,018	12,560	18,563	53,309	70,963	25,720	76,711

CHAPTER XI.

THE MISCELLANEOUS WORK OF SETTLEMENT.

157. Among the numerous subsidiary matters dealt with at a revision of settlement are the sub-settlements effected with inferior proprietors, the protection of deserving lessees, and the re-arrangement of the cess payments. A special piece of work, which occupied much time, was the selection and description of a tank-work in each village for inclusion in the Famine programme. But the most important sub-settlement, that between gaontias and the malguzars from whom they hold, has already been dealt with in the course of explaining land tenures and Government assessments. The protection of lessees under section 65A of the Land Revenue Act has not been a heavy duty at this revision, because most of the possible claimants were dealt with at last settlement. Cess payments among the different classes of proprietors and tenants vary considerably, and they occasioned a very vexatious amount of office work most of which was rendered abortive by the abolition of the Additional Rate and Patwari cess. In this chapter I propose only to detail the *malikana* payments which pass from inferior to superior proprietors, to show the amount and value of the rental exemptions given on account of irrigation improvements, to explain the more important sections of the Administration Paper which regulates village customs, and to state the arrangements made for the annual maintenance of the records.

158. Dual rights in the gaontia-ship of a khalsa village are not uncommon and the inferior gaontia, holding either from a superior gaontia or from one of the malguzars recognized in 1892, usually pays to the latter in addition to the Government assessment a *malikana*, that is, a share in the proprietary profits of the home-farm. A clear account of the various shades of relationship between the inferiors and superiors and a set of rules for regulating the payments of the former will be found on page 41 of Mr. Fuller's report. These rules have been closely followed at this re-settlement except in the case of sub-tenures which have come into existence since 1889. These invariably depend on a clearly worded deed and payments are regulated by the conditions of the deeds. At last settlement the double tenure existed in 243 villages of khalsa, but since that date 41 inferiors have bought up their superiors' rights and as only 27 new inferior tenures have been created there are now 229 cases. In 38 of these no *malikanas* are paid. In the remaining villages the total payments have been raised from Rs. 2,152 to Rs. 2,601. The latter sum amounts to 25 per cent. of the remuneration for village management received by the inferior gaontias in revenue-free home-farm and in cash drawbacks, but it is an insignificant fraction of the real cultivating profits. The superiors recognize this and many of them now bitterly regret their own or their fathers' action in permitting the inferior rights to develop. On the other hand, as in most cases it is the inferior who has improved the village, and as in all cases it is he who now does the work of management and bears the real responsibility of rent-collection, it has been my endeavour to persuade the superiors to accept now a smaller proportion of the remuneration than was allotted at last settlement. In many cases their privilege of drawing free labour from raiyats of subordinate villages has now been withdrawn, and this fact together with the proportionate reduction of the cash dues of *malikana* should tend to encourage the gradual abolition of the double tenure by inducing the superior to accept more readily the terms offered by inferior gaontias who wish to buy up their rights and to pay revenue directly to Government.

159. The large amounts of money spent since settlement on irrigation tanks have already been commented on in paragraph 65 of Part I. In all the regularly settled parts of the district, except the zamindaris of Sambalpur tahsil where less elaborate methods were followed, a detailed account of each improvement has been kept and the builders of tanks have been

assessed to pay only dry rate for the term of this settlement on land newly made irrigable :—

Tract.	Number of tank improvement.	Area improved.	Deducted exemption i.e., bare difference between wet and dry rates.	Exemption actually given.	Total amount of exemption over 20 years of the settlement.	COST OF IMPROVEMENT.	
						Total cost.	Cost per acre.
		Acre.	Rs.	R.	Rs.	Rs.	Rs.
Bargarh Tahsil Khalsa ...	632	4,182	887	1,346	26,920	1,51,494	36
Sambalpur Tahsil Khalsa ...	278	1,412	258	890	17,800	65,597	39
Bargarh smaller zamindari ...	265	3,311	537	885	16,710	1,12,042	34
Barasambur (Part regularly settled.)	60	380	62	103	2,160	19,300	51
Total ...	1,225	19,285	1,744	3,178	63,590	3,38,433	36

It will be observed that in Bargarh tahsil, which suffered by famine in 1899-1900, far more irrigation works have been carried out than in Sambalpur tahsil. But perhaps the most striking fact exhibited by these figures is that, although exemptions have been very generously allowed and are nearly double the amount which could strictly be claimed, yet the total exemption which the builders will enjoy over twenty years amounts to less than one-fifth of the sum spent. It is true that for accounts of cost it was often necessary to depend chiefly on the statements of the builders, and it is also true that some of the builders have already for several years enjoyed freedom from wet-rate assessment. But most of the tanks have been very recently built, and as the statements of cost were carefully compiled and as considerable deductions were made from all the larger statements, I am of opinion that the figures are practically correct. Even if a large part of the cost be set off against the advantages other than those of irrigation which the builders derive from their tanks, the discrepancy between the cost and the exemption is striking. It is indeed a proof, if proof were needed, of the lightness of the Government rents that, while it pays a man to borrow money at 25 per cent. interest to irrigate his land at an initial cost of not less than Rs. 20 to Rs. 30 per acre, the difference between the wet and dry rent-rates of his land is less than three annas per acre, and that twenty years of rental exemption recoup him to the extent of only six rupees. In all cases those who had earned exemption were anxious to point out their improvements and were gratified to hear of the exemptions granted, but the individual sums of these were usually nominal, and the real aim of the claimants was to secure a clear record of their rights in the tanks.

160. The *Wajib-ul-arz*, or village administration paper, is necessary because the Land Revenue and Tenancy Acts and the rules framed under them cannot be made sufficiently detailed to cover all the recognized customs, rights, and dues of individual villages. So long as these are not obsolete but are actually in force in village life it is desirable to have a clear record of them in order to prevent their abuse. It is also desirable that customs or rights for the first time recognized or regulated should in this form be clearly presented to the people and to their administrators before being incorporated in the Acts or in rules framed under the Acts. At this revision it has been necessary to raise questions about several village customs for the orders of the administration in order to amend or limit them in their development.

At last settlement three distinct administration papers were framed for khalsi villages, for zamindari villages, and for the estate of Chandarpur-Padampur. The orders of 1892 conferring malguzari rights on certain estate-holders have necessitated the addition of two more papers, one for villages held directly by malguzars, and one for villages held under them by gaontias. There are thus four general forms of paper for the Bengal district, and the details of these differ in each village.

161. In the revised paper nothing has been entered about the remuneration of the lambardar because rules for calculating this are to be found under section 137 of the Land Revenue Act as amended in 1898. These rules, first framed at last settlement, which allot to the lambardar one-fifth of the gaontiahi remuneration received by co-sharers, appear to be clearly worded but, although excess *bhogra* assessments are mentioned, the fact of cash drawbacks being received on account of short *bhogra* is not specifically allowed for. Lambardars and co-sharers found them extremely difficult to work out arithmetically, and it was necessary to issue lists showing the amounts of excess assessment or of cash drawback to be paid or received by each co-sharer, together with the amounts of cash remuneration to be paid by each to the lambardar. It would probably be advisable to revise the wording of the rules under the Land Revenue Act, which are not inaccurate but are not full.

But the arithmetical difficulty was not the practical one. The rule of the Central Provinces is that a lambardar-malguzar shall receive from each co-sharer 5 per cent. of the revenue assessed on the latter's share of the village. Where assessments are relatively high the remuneration is not inconsiderable. In Sambalpur at last settlement the rule adopted was intended to conform to that of other districts, but owing to the lightness of the assessment the cash remuneration allowed came to only a few rupees. It is obvious that where the assessment is light, the lambardar is responsible to Government for only a small revenue. But though monetary responsibility is small the duties of management may be heavy.

The old rule of the district was that the lambardar should receive, not a fifth of a light Government valuation of the home-farm, but a tenth of its actual cultivating profits,—a very different matter. The former sum may amount to ten or fifteen rupees, but the latter to Rs. 200 or Rs. 300. Before and at the time of Mr. Russell's settlement the co-sharers of most villages commuted the old tax by setting aside a portion of the *bhogra* land for the lambardar in addition to his proper share. This, however, in time became merged with the lambardar's own land and its boundaries were forgotten. In several cases it occurred that the lambardar, selling his share, transferred with it his lambardari land. The transferee then claimed to have bought the right of management,—a right conferable only by Government. In such cases the Deputy Commissioner usually selected for the post, one of the remaining co-sharers of the original gaontiahi family. And so matters came to a deadlock. The new sharer refused to give up what was in reality service land, and he could not well be sued since the boundaries of the land were not clearly known. The co-sharers, having once already commuted the tax, not unreasonably refused to pay the new lambardar his cash remuneration under the revised rule. And finally the new lambardar, even if he succeeded in obtaining the cash remuneration, was not satisfied, because he received only some ten rupees while neighbouring lambardars, holding ancient service land, received hundreds of rupees. A second change of rule was proposed but was not considered advisable, because with an enhanced assessment the amount of the remuneration is increased. But in all villages where the boundaries of the old lambardari land could still be identified these have now been brought upon the record. In future a newly appointed lambardar who feels a grievance will be able to use the record in a Civil Court, and it is possible that if one or two suits for the recovery of lambardari land are successful its improper alienation will cease.

162. Some points regarding the land of village watchmen have already been explained in Chapter VI, but the most pressing one dealt with was the total amount of remuneration received by village watchmen. Of these there are two, the jhankar and the ganda. The former is almost invariably well remunerated in land held free of revenue under the one-eighth rule. But the ganda or chankidar usually holds very little land, what he holds is of poor quality, and he has little leisure for its cultivation. In addition to their incomes from service holdings both watchmen are entitled to a grain subscription levied at harvest from raiyats and gaontias, and the ganda has hitherto lived chiefly on the sale

of the hides and horns of the cattle that die in his village. But various causes of late years combined to make his income inadequate. In small remote hamlets there is usually only one watchman, his work is light, and he has at least as good an income as the aboriginal raiyats. But in the large villages which have expanded, and especially in growing hamlets thrown off from a parent village, some reform was found to be necessary. In the latter case each hamlet has a ganda chaukidar only, who is under the general superintendence of the jhankar of the principal village.

Remuneration in land.—Remuneration in land is perhaps the best possible form of payment except where the work of the village watch is heavy. In most cases it was found that the jhankar's holding was larger than was necessary for his maintenance and more than was due to his present position and share of work. It is possible when a jhankar dies or is dismissed for his post to redistribute the service holdings and enlarge that of the chaukidar and it would be well if this were considered at all future appointments. But it is questionable whether a general redistribution at settlement would be legal. One alternative is that the villagers should subscribe a service holding or an addition to the service holding, for the chaukidar. In some cases this has been done and the land subscribed has been brought upon the record as service land. But, even where this is a good form of remuneration, it is difficult to effect a subscription of land at once fair to the contributors and suitable to the chaukidar, and this is not a solution of the difficulty which can be enforced by law. The grant by gaontias of a rent-free sub-lease of home farm land is so far objectionable that it tends to make the chaukidar a servant of the gaontia rather than of the village.

Various other solutions have been offered since last settlement. In one case a chaukidar who had a small occupancy holding was relieved, much against his will, of the small rent paid, and the land was added to his service holding. It was proposed to give to gandas land lying fallow or plots of uncultivated waste. But these proposals overlook the fact that it takes time and capital to bring old fallow or waste into cultivation and that the ganda chaukidar has neither time nor capital.

Remuneration in grain.—The payment of a grain cess at harvest time, an old institution which has been maintained with fair punctuality in most villages, and it is of some little assistance to chaukidars who find difficulty in cultivating their own plots. The amount of this cess, formerly very small, has now been increased, but it still comes rarely to more than two or three rupees in total value, and it is a tax which is difficult to collect in bad seasons when the chaukidars need it most.

Remuneration in hides and horns.—The rule of the village administration paper at Mr. Russell's settlement was that the hides and horns of a cattle dying within village limits should go to the ganda chaukidar. But at last settlement this was modified. In other districts of the Central Province it had been found that the watchmen were tempted to commit or abet cattle poisoning in order to add to their incomes. This is a crime, exceedingly difficult of detection. As a check upon nefarious practices it was ruled that the hides and horns of all dead animals were the property of the owners, and could be taken by the watchmen only if not claimed by the owners. In Sambalpur there was then and there is now very little cattle-poisoning, though cattle-killing, a much easier crime to deal with, is common, but the provision which I have quoted was unnecessarily extended to this district also.

The result so far has been unsatisfactory. The Hindu owners cannot deal directly with the hides, and they prefer the old system. But the gaontias and zamindars, interpreting the new rule in their own favour against the chaukidars, have been tempted by the recent great rise in the price of hides to add to their own incomes. It is now usual to find that the contract for a hides is given annually to a Chamar, who has nothing to do with the village service but is an agent for a large dealer. The gaontia grudgingly pays the despoiled chaukidar five or ten per cent. of his profits. At this revision it was considered reactionary to restore the old rule, and the incomes of the chaukidars from this source must continue to diminish.

Remuneration in cash from Government.—Matters being in this unsatisfactory condition, only one other expedient promised good results. The gaontiahi system of settlement is a form of raiyatwari settlement under which

Government has usually held itself responsible for the remuneration of village watchmen. But in Sambalpur the working of the rule of remuneration has hitherto been one-sided, for where there is service land valued in excess for one-eighth of the raiyati rental an assessment has been levied, but where the service land is short no compensating drawback has been given. This anomaly has now been removed. Seventy-eight chaukidars in the more populous villages of khalsa have been allowed cash drawbacks amounting to Rs. 495 per annum.

163. The ill effects of deforestation in the Bargarh plain pointed to the necessity for checking very carefully the boundaries of the village forests. In very many cases these were found to have been encroached upon for cultivation without competent permission. It is unfortunate that the wording of the detailed rules framed under section 124A of the Central Provinces Land Revenue Act has hitherto prevented their application to the village forests of Sambalpur, which are held by gaontias not as proprietors but as trustees. At this revision the general rule of the trust has been clearly restated. It points out that the produce of the forest of a gaontiahi village cannot be exported but must be used only for domestic and agricultural needs within the village itself. It has been proposed by several gaontias living in one village to bring timber for domestic use from the forest of another village under their management. Brahman gaontias living in Sambalpur town wish to export wood from their villages to their houses. But as the trust is now frequently abused by the illegal sale of timber the extension of the rule has not been considered advisable.

164. At last settlement all the old tanks not constructed on the proprietary land of gaontias were regarded as public property and were recorded as the property of Government. This step, intended to prevent selfish or short-sighted misuse and encroachment, has probably been of real service. But encroachment on the beds of public tanks has been the rule rather than the exception, and a very considerable part of the field work of this settlement consisted in the checking of water-spread areas to ensure that no encroachment subsequent to last settlement should be overlooked and entered in the names of private persons. Many cases have come to light in which parts of the beds of the old tanks, temporarily cropped at last settlement, were then entered in private holdings. It has been found to be impossible to legally dispossess the encroachers and, as they can now claim damages if their crops are submerged, many gaontias who wish to restore old tanks to their former level are deterred from doing so. The abuse is a result of the imperfect system of repair adopted by the villagers. As they have pressing need for irrigation only once or twice in eight or ten years they do not annually repair embankments but allow them to lose a few inches every year by the wash of rain until the water-level has fallen two or three feet, when a subscription is called for and the earthwork made up. But in the intervening years the falling water exposes round the upper edge of the tank a strip of rich land into which the nearest cultivators are tempted to turn their ploughs, the gaontia himself being not infrequently a transgressor. This standing danger to the usefulness of the irrigation tanks cannot be fully guarded against unless the Land Record Staff reports all encroachments punctually on their first occurrence, and each report is investigated promptly. Hitherto the difficulties of legal procedure have checked effective action.

The other rules regarding tanks contained in the administration paper call for little comment. It is impossible to state definitely for every year what blocks of fields should first be irrigated from the public tanks. This is a question which depends largely on the various conditions of each year's rainfall, on the state of each tank, and on the state of the crops. The distribution of water has hitherto been left in the hands of the village committee, and though this gives rise to much contention in a year of drought no more impartial and expert agency is available.

165. The continued existence of the institution of free labour is due to the fact that profitable rice cultivation on a large scale is impossible unless the grower can at the critical seasons of seed-time and harvest command a large supply of labour. One day's delay in sowing due to lack of hands may result in a week's delay,

owing to unsuitable weather conditions, and that in turn may delay later operations and result in a partial or total loss of the crop if, as frequently happens, the later rain fails. For a large farm such as is necessary to the status of a gaontia many regular farm-servants are kept who, in the seven months of the year when rice is not in the ground do the preparatory ploughing and manuring and work in the cane-field. But to keep on yearly hire a sufficient number of men to sow promptly all the rice land would be to lose a very large part of the present profits; because most of these men would have to be paid a year's wages for a month's work. On the other hand, there are in the Sambalpur villages very few labourers who do not themselves hold land, and those who do cannot be tempted by high wages at the sowing season. At last census the great majority of agricultural day labourers were found to be women, and these cannot work the plough. The result of this *impasse* is the custom by which each raiyat in a village provides a ploughman and a yoke of oxen for two days at sowing time and a sickleman for two days at harvest time to help the gaontia with his farm. It has been the official habit to consider this custom objectionable. But it is in fact *free* labour, not forced labour, and corresponds with friendly customs which to this day are in vogue among farmers in England and Scotland.

No serious attempt was made to regulate the institution until last settlement, when it was decided that the custom might be maintained. The commutation rates, previously fixed to provide a means of alleviation for possible abuse, were revised. It was ordered that the free labour should be used only on the agriculture of home-farm lands; and the gaontias were warned that the institution was not intended to be permanent. In the administration paper of each village the number of ploughs to be contributed by a raiyat was noted, usually two in khalsa villages and from two to four in zamindaris.

The question has now again been fully considered. It was found that in no case had the raiyats willingly commuted their labour, though, curiously enough, this option had been improperly applied by a few gaontias in special circumstances who had no use for the free labour itself. In these cases the raiyats resented the commutation, but in no village did they complain, even under an unpopular gaontia, that the custom itself was oppressive. Indeed, the more intelligent men perceived that the dependence of the gaontias upon the raiyats gave the latter a suitable weapon with which to fight for the redress of grievances. But two clear points were raised. In spite of the general orders issued at settlement, entries were made in the papers of some villages permitting the use of free labour for such purposes as the carriage of grain to the market town, the carriage of fuel thither from the village forest, and the repairing of temples and houses. These anomalies have now been removed, and the *begar* is confined to agricultural labour.

The second matter which called for regulation was the total amount of free labour which a gaontia might enjoy. The rates fixed at last settlement were fixed on the raiyats' holdings as they then stood. In many cases new raiyats have settled in a village, and most of the old families have fractioned their holdings. The result is that where at settlement a gaontia received two ploughs from each of 30 raiyats, he was found at this revision to be levying two ploughs from each of 50 raiyats. Where he had no proper use for the surplus ploughs he was tempted either to use them on his raiyati land or to abuse the commutation rule and collect the surplus in cash.

Steps were taken to prevent this exploitation and to decrease the average pressure of the *begar* system. Each village had its arrangements fixed in detail. The number of ploughs leviable at last settlement was first ascertained and that total number was used as a limit not now to be exceeded. The area of the home-farm was then taken into account and a standard of one free plough to every five acres was fixed, which provided a second maximum. Finally, it was ordered that no raiyat possessing one plough only should be called upon to supply more than one plough for one day. In many cases it was found possible to arrange that even the richer raiyats should not contribute more than one plough annually, and that the poorer men should contribute one only every alternate year. The other details of the arrangement need not here be explained, but the general result of these measures is that the pressure on the raiyats has been very considerably lightened. The

gaontias, although they will now have to maintain more regular farm-servants than formerly, and so will lose part of their profits, are still provided with the means of cultivating large farms profitably in villages where hired daily labour and hired oxen cannot be procured.

166. If the work of a settlement is to supply a basis of assured title-deeds to the proprietors and tenants of a district, that of the Land Record staff, scarcely less important, is to continuously register all changes in title and possession. The object and result of the record is to obviate expensive litigation, and, where litigation is inevitable, to supply cheaply to the litigants and clearly and accurately to the Civil Courts a statement of ascertained facts. Parties to a suit, although they can check copies of settlement records received from their patwaris against the original copies kept in the District Record-room, are indeed liable to be given copies of the annual records which are carelessly or purposely incorrect. But if the work allotted to a patwari is such that he can overtake it without undue exertion, and if he is adequately supervised in his preparation of the annual record, the risk of error in the papers placed before the Courts can be reduced to small proportions. A secondary but important duty of the staff is the correct forecasting and reporting of cropped areas. For this nothing more than ordinary industry and intelligence is required.

The Land Record Staff of Sambalpur has been much later in its organization than that of any other district of the Central Provinces. At last settlement for the surveyed khalsa area 147 patwaris were appointed to maintain the maps and records. For the zamindaris at first only 86 men were appointed, but as the survey proceeded it was recognized that this staff was quite inadequate, and between 1895 and 1899 the arrangements were revised. The number of khalsa circles was reduced by two, and that of the zamindari circles was increased by 25. This made up a staff of 256 patwaris, and with these the present resettlement has been carried through.

Revision of the Patwari staff.—The maintenance staff had not, as we have seen, been sufficiently strong to both maintain and improve the settlement record of khalsa, and in the zamindaris the extension of cultivation has been so great as to make many of the circles unmanageably large. A complete revision of the arrangements was necessary. The original standard of 5,000 cultivated acres for one man's annual work was not perhaps too large in the days before the numerous periodical returns were instituted, but by 1904 the standard was greatly exceeded in most of the circles except in the Bargah plain, and there the closeness of rice cultivation and the constant changing of the boundaries of plots make the checking of even a small area no easy task. The scheme of circles was fully revised and villages redistributed, with the result that the number of circles has now been increased to 282, of which 216 are in the Bengal district.

Pay of Patwaris.—In the staff as first constituted 201 men were paid Rs. 8 per mensem and 32 received Rs. 9. These rates were sufficient to attract the services of workers of a very good class, usually the brothers and sons of well-to-do proprietors and cultivators. But the increased cost of living and the growing attraction of agricultural profits have combined with the gradually increasing bulk of work and rigour of discipline to render the service unpopular. The older men had been accustomed to complete their annual work in the hot weather and then get leave before the rains to return to their own villages to carry on their cultivation. The multiplication of statistical returns, the enforcement of the rule that a patwari must reside within his official circle, and the constant calls upon him to appear as a witness in the Civil Courts, caused friction and discontent, and in the six years between 1898 and 1904 no fewer than 66 men out of 256 resigned or were dismissed. The rule forbidding cultivation of land by a patwari has recently been relaxed, but the amount of work expected from him is larger than ever. The course of instruction in records and maps recently adopted for village schools by the Education Department, though it is still imperfect, cannot fail to increase the number of young men eligible for these posts, but the

former rates of pay will not attract men of adequate skill, energy and character. The revised rates are:—

	Patwaris on	Rs.	per mensem.
150	...	8	"
90	...	10	"
42	...	11	"

and there are also 30 allowances of Re. 1 per mensem. These may prove adequate for a few years.

The Inspecting staff.—Before this revision the inspecting staff consisted of a Superintendent of Land Records, an Assistant Superintendent, and 1 Inspectors. The last had very large charges, they were unable to maintain close supervision over the work of all their men and their number has now been raised to 14. Of these there are 10 in the Bengal district.

CHAPTER XII.

CONCLUSION.

167. The staff at its full strength numbered close upon four hundred men

Conduct of the staff.

This extra population severely taxed the housing accommodation of the small head-quarters town and men of all grades suffered much inconvenience in the earlier years. The office accommodation of the first eighteen months was also very cramped and unhealthy, and this seriously hampered the progress of work. Fortunately on the withdrawal of the garrison, the spacious and airy Military Hospital building became available for use as a settlement office, and after its occupation the health of the staff during the rainy seasons greatly improved.

Of the Patwaris I have already written. The conditions of their service during these operations were attractive. Men of small means, they were absent from their homes most of the year either in villages outside their circles or in head-quarters, where they found it difficult to make ends meet. It is not surprising that in the first year many breaches of strict discipline occurred and punishments were not infrequent. But matters steadily improved as younger men took the place of those who had been accustomed to laxer conditions. The amount of work done by all has been large, the skill of many in map-tracing excellent, and complaints against individuals by proprietors and tenants on account of former or recent misconduct have been surprisingly rare.

Practically all the clerks and Inspectors were at first men from other districts of the Central Provinces. They experienced much difficulty in accommodating themselves with house-room and in reconciling themselves to the food and water of the district. At the end of the first season, after many records had been made out in Hindi, orders were received that all the work was to be done in Uriya. It is, I think, greatly to the credit of the staff that they set to work at once to learn the language. They appointed one of the older patwaris as their school-master, paid him out of their own pockets, and, after a course of one or two hours a day for three months, at a time when their work occupied eight or nine hours a day, they were able to pass the examination which I set. In the course of the third and fourth years most of these men were transferred on promotion to other districts and their places were filled by the best of the local patwaris who had profited by previous training. These worked very well, and most of them have now been provided with permanent posts as Inspectors on the Land Record staff of the district.

The Assistant Settlement Officers who have been my chief helpers are Mr. Parmanand Tiwari, Mr. Ramkrishna Indurkar, and Mr. Kaluram Pachoray. Mr. Parmanand Tiwari, a veteran of many settlements, joined me soon after the beginning of the operations. He was a relentless worker, and his natural tact and rich experience made his work invaluable. It was his strong desire to have seen the completion of this settlement, and he refused to admit the progress of a disease, which showed few traces in his work, until in August 1905 he broke down suddenly, was invalided, and died in October of advanced phthisis.

Mr. Ramkrishna Indurkar, also an officer of varied experience, joined the settlement at the end of 1903. His chief work lay in the zamindari estates, and continuous touring in the remoter and less healthy tracts told at times upon his health. After the death of Mr. Parmanand Tiwari he joined in the work of announcement in khalsa and remained in charge of the concluding operations when I left the district. His former experience of zamindari settlement helped him to accomplish a great bulk of work with accuracy and celerity.

On my most junior assistant, Mr. Kahrām Pachoray, who but for one short break was with me throughout the settlement, most of the heavy work fell both in the field and in office. It was invariably undertaken with zest and carried through with ability.

Bihari Lal Nema was Superintendent of Land Records during the settlement. For most of the time his work was that of an Assistant Settlement Officer, and he was promoted to that post towards the end of 1905. He is chiefly responsible for the workmanship of the maps.

168. The following table shows the increase obtained in the gross and net land revenue of the Bengal district :—

	GROSS REVENUE.			NET REVENUE.		
	At settle- ment.	Before re- settlement.	As resettled.	At settle- ment.	Before re- settlement	As resettled.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Khalsa ...	1,58,446	1,55,763	1,98,476	1,29,998	1,31,388	1,71,993
Zamindaris ...	12,560	18,563	25,720	12,560	18,563	25,720
Total ...	1,71,006	1,74,326	2,24,196	1,42,558	1,52,951	1,97,712

The gross revenue, including that retained by assignees, has been increased by over half a lakh, or by 31 per cent. over the account as it stood after last settlement. The realisable revenue has been increased by 29 per cent. over the amount realised before this revision. At last settlement the assigned amounts came to 17 per cent. of the gross revenue of khalsa. Owing to *interim* resurreptions they now come to only 12½ per cent. of the gross revenue.

The following is a statement of the expenditure which has been incurred since last settlement in survey and resettlement for the whole of the old district of Sambalpur up to the time when operations closed in the Bengal district at the end of 1906.

Nature of operation.	Years of work.	Number of square miles dealt with.	Total expenditure.	Cost per square mile.
			Rs.	Rs. & P.
Survey of zamindari villages ...	1891-98	1,930	61,501	33 6 2
Map correction ...	1898-1902	2,262	31,463	13 14 6
Settlement ...	1892-1906	3,867	2,22,196	59 4 4
Total ...	1891-1906	3,867	3,25,163	81 5 5

The cost per acre has been 2 annas 1 pie.

It is impossible to state accurately how much of this sum has been expended on the present district of Bengal, but it probably was not more than Rs. 2,75,000. The net realisable revenue has been increased by Rs. 44,761 for a term of 20 years. So the expenditure of 2½ lakhs on survey and resettlement has, besides improving the record of tenure and cropping, yielded a net financial profit of Rs. 6,20,220. A considerable increase in the amounts of Road, School, and Post Office cesses has also been effected.

The following were the principal items of expenditure from 1902-1906 while I was in charge of the settlement :—

	Rs.
Pay of Settlement Officer	47,329
Pay of Assistant Settlement Officer	48,782
Pay of Inspectors	43,053
Pay of clerks	18,807
Cost of contract-writing	23,587
Cost of forms	7,592
Cost of binding	5,284
Total	<u>1,94,434</u>

F. DEWAR,

Settlement Officer.

APPENDICES.

APPENDIX I.

THE FORMER REVENUE DEMAND.

A.—Former Revenue Demand of Khasia.

NAME OF GROUP.	REVENUE FIXED AT SETTLEMENT.					
	On tenancy land.	On home farm land.	On service land.	Total.	Revenue assigned.	Revenue realisable.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Ambabhora	4,307 20 0	708 0 0	30 14 0	5,045 0 0	178 0 0	4,967 0 0
Lakhanpur	3,368 7 0	108 15 0	31 0 0	3,507 0 0	47 0 0	3,460 0 0
Salsilla	5,008 10 0	318 10 0	63 12 0	5,389 0 0	388 0 0	5,001 0 0
Sohela	11,509 10 0	1,064 14 0	34 0 0	12,607 0 0	548 0 0	12,111 0 0
Kurkuta	3,088 4 0	283 10 0	30 00 0	3,401 0 0	...	4,107 0 0
Bargah	16,890 9 0	643 13 0	21 10 0	17,554 0 0	3,307 0 0	14,390 0 0
Lohanda	7,983 10 0	323 0 0	0 0 0	8,306 0 0	280 0 0	7,329 0 0
Bemanga	15,228 7 0	244 15 0	27 10 0	15,500 0 0	1,706 0 0	14,494 0 0
Tamparsara	7,891 10 0	163 0 0	5 0 0	7,779 0 0	146 0 0	7,633 0 0
Ruara	11,810 7 0	1,066 0 0	9 0 0	12,885 0 0	3,741 0 0	9,144 0 0
Total of Bargah Tahsil	64,309 14 0	4,071 2 0	839 0 0	69,220 0 0	10,033 0 0	51,368 0 0
Kalamet	4,630 2 0	315 0 0	10 0 0	4,955 0 0	1,046 0 0	3,909 0 0
Bampela	10,877 10 0	1,383 0 0	71 1 0	12,331 14 0	112 0 0	12,219 14 0
Panelpara	11,439 0 0	1,400 14 0	264 2 0	13,064 0 0	3,560 14 0	9,503 0 0
Talab	8,335 12 0	1,107 1 0	48 0 0	9,490 0 0	3,308 12 0	7,181 0 0
Tampargah	3,325 14 0	314 11 0	203 7 6 0	3,843 0 0	2,170 0 0	1,673 0 0
Sambalpur	17,815 18 0	223 0 0	70 0 0	18,108 0 0	7,638 0 0	10,764 7 4
Total of Sambalpur Tahsil	60,434 5 0	5,017 5 0	685 12 0	66,136 0 0	18,416 0 0	47,720 0 0
TOTAL OF KHASIA	1,45,334 2 0	12,088 7 0	1,628 2 0	1,58,050 12 0	28,448 2 0	1,29,602 0 0

NAME OF GROUP.	REVENUE FIXED AT SETTLEMENT.					
	On tenancy land.	On home farm land.	On service land.	Total.	Revenue assigned.	Revenue realisable.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Ambabhora	4,307 20 0	708 0 0	30 14 0	5,045 0 0	178 0 0	4,967 0 0
Lakhanpur	3,368 7 0	108 15 0	31 0 0	3,507 0 0	47 0 0	3,460 0 0
Salsilla	5,008 10 0	313 0 0	63 12 0	5,383 0 0	336 0 0	5,047 0 0
Sohela	11,509 10 0	1,044 0 0	34 0 0	12,587 0 0	439 10 0	12,147 0 0
Kurkuta	3,088 4 0	304 14 0	30 0 0	3,422 0 0	...	4,120 0 0
Bargah	16,890 9 0	643 13 0	17 3 0	17,550 0 0	3,48 15 0	14,061 0 0
Lohanda	7,983 10 0	300 20 0	2 0 0	8,285 0 0	323 0 0	7,362 0 0
Bemanga	15,228 7 0	230 3 0	27 10 0	15,488 0 0	1,351 0 0	14,400 0 0
Tamparsara	7,891 10 0	160 0 0	5 0 0	7,776 0 0	146 0 0	7,630 0 0
Ruara	11,810 7 0	963 11 0	9 10 0	12,783 0 0	3,306 0 0	9,477 0 0
Total of Bargah Tahsil	64,189 0 0	4,935 0 0	334 14 0	69,458 0 0	7,123 0 0	62,335 0 0
Kalamet	4,630 2 0	327 0 0	10 0 0	4,967 0 0	1,021 0 0	3,946 0 0
Bampela	10,877 10 0	1,383 0 0	71 1 0	12,331 0 0	...	12,331 0 0
Panelpara	11,439 0 0	1,390 4 1	264 2 0	13,095 0 0	3,560 14 0	9,534 0 0
Talab	8,335 12 0	1,107 1 0	48 0 0	9,490 0 0	3,311 0 0	6,179 0 0
Tampargah	3,325 14 0	320 10 0	197 24 0	3,843 0 0	2,170 0 0	1,673 0 0
Sambalpur	16,814 18 4	221 13 10	70 0 0	17,106 0 0	7,638 0 0	9,468 0 0
Total of Sambalpur Tahsil	50,204 2 4	5,217 4 11	678 0 0	56,799 10 5	14,101 12 0	42,698 0 0
TOTAL OF KHASIA	1,45,448 2 0	11,928 0 0	1,614 2 0	1,58,990 12 0	21,375 1 0	1,37,615 0 0

APPENDIX B.

Former Takoli Payments of Zamindars.

Name of Zamindari.	AT SETTLEMENT.				Combined takoli paid before revision.
	Kamil- jama.	Takoli			
		On land.	On forest.	Total.	
	Rs.	Rs.	Rs.	Rs.	Rs.
Barpali	7,168	1,000	...	1,000	2,207
Bijepur	2,710	350	...	350	699
Ghes	1,892	900	50	950	950
Kharsal	1,111	650	...	650	590
Bheran	2,544	1,300	...	1,300	1,300
Paharsingra	261	132	...	132	132
Patkulanda	268	300	...	300	250
Mandomahul	133	105	...	105	85
Borasambar	10,890	3,000	650	3,650	7,861
Total for Zamindaris of Bargarh Tahsil.	26,777	7,737	700	8,437	14,064
Kolabira	3,592	1,600	100	1,700	1,952
Rajpur	779	350	30	380	380
Rampur	1,491	900	150	1,050	1,000
Garh-Loising	243	173	100	273	260
Laira	516	310	5	315	255
Kodabaga	1,280	280	40	320	543
Machida	850	75	10	85	109
Total for Zamindaris of Sambalpur Tahsil.	8,241	3,688	435	4,123	4,499
Total for Zamindaris of the Bengal District.	35,018	11,425	1,135	12,560	18,563

APPENDIX III.

The cultivated area classed according to crops, in acres.

NAME OF GAUVR.	Rice.		Sugarcane.	Til.	Cot'on.	Urad and mung.	Kulthi.	Wheat.	Kodan and gujji.	Other crops.	Total.	Double cropped area.
	Broad-casted.	Transplanted.										
Ambahona	18,304.69	118.17	176.03	264.38	166.18	690.48	806.78	07	1,887.21	304.28	22,403.33	9.48
Lakhanpur	10,184.74	94.02	65.93	8.90	30.18	769.18	19.88		744.54	67.83	18,531.43	18.21
Salsila	18,647.80	378.74	173.53	823.90	125.28	785.17	796.14		675.63	364.46	19,593.34	6.99
Sotria	81,344.05	582.23	383.06	1,004.34	267.88	2,807.43	1,100.08	3.43	1,027.03	613.03	38,078.00	33.05
Kerkata	5,834.05	181.05	41.91	623.28	276.08	1,235.33	544.53	0.75	418.40	189.13	11,693.77	30.61
Bargah	33,009.23	3,233.7	477.0	948.08	0.17	3,455.08	1,750.11	7.14	1,639.14	493.81	41,235.78	44.65
Lohanda	19,238.33	1,420.23	127.18	1,208.28	19.88	1,304.10	670.30	13.45	559.24	232.76	25,509.39	71.83
Ramsuda	27,859.69	3,560.08	811.14	1,189.28	53.81	1,369.77	1,189.08	18.10	1,008.60	631.77	37,104.93	51.83
Rampartara	18,487.26	2,000.15	80.03	370.08	4.00	443.05	414.66	.16	373.88	197.00	19,779.61	16.86
Esam	30,980.72	4,983.97	118.45	1,461.0	19.06	1,490.14	700.29	8.29	728.23	366.54	39,745.99	47.46
Total of Bargah Tahsil Khaima.	260,979.25	16,417.07	1,964.48	9,710.38	864.11	14,017.81	9,154.73	63.99	6,818.75	5,718.40	266,795.80	528.94
Kalamat	14,600.19	670.80	40.88	1,100.21	3.17	690.91	304.05	.16	253.49	161.47	17,543.84	23.18
Rampolla	37,624.15	874.80	220.87	1,198.26	6.88	3,008.58	1,880.72	3.35	493.81	510.00	45,280.06	180.39
Panchyara	34,187.00	1,103.29	208.99	4,280.08	18.38	3,679.86	1,889.87	1.46	3,336.93	1,869.99	49,117.86	167.74
Talab	26,300.63	536.73	89.45	1,637.24	0.13	1,124.33	1,118.10		387.63	381.95	31,550.78	61.61
Tampargah	1,481.91	631.21	43.75	4,060.04	10.91	1,477.94	1,368.97	.92	433.45	389.24	30,534.67	88.93
Sambalpur	34,141.15	3,108.93	37.22	3,269.80	3.20	1,806.03	5.02	18.38	1,302	389.61	41,889.73	68.09
Total for Sambalpur Tahsil Khaima.	168,008.35	6,417.48	683.05	15,374.26	84.43	10,678.21	7,308.99	21.91	6,041.28	3,734.98	216,415.61	667.81
Barpall	83,073.16	2,588.41	207.87	3,817.19	10.31	6,168.05	1,877.11	6.98	1,100.89	910.90	38,940.28	691.23
Bijapur	18,420.21	858.83	80.00	2,817.00	713.91	3,445.03	1,669.17	8.88	770.54	493.38	25,948.10	631.91
Ghes	6,388.90	178.74	41.80	9,238.63	368.68	1,349.01	653.28		388.7	207.05	10,933.17	204.88
Kharal	6,384.06	180.12	49.22	359.78	10.98	487.97	438.67		101.01	89.24	5,030.77	22.37
Bhoran	7,208.18	1,886.87	70.28	780.84	3.20	1,481.68		3.34	201.01	773.42	11,802.83	90.72
Paharngira	1,961.84	78.40	1.26	1,983.0	3.44	190.18	91.61		80.78	29.17	3,209.04	18.73
Pakulanda	1,324.60	187.83	10.94	100.78		141.55	78.75		51.21	25.12	1,776.08	3.08
Mandomahul	1,288.49	36.83	4.90	159.33	0.6	288.18	244.84		64.06	37.76	3,243.93	49.90
Borsambar	65,104.36	1,481.43	253.05	4,748.23	4,674.74	19,819.83	7,385.81	33.48	11,963.87	4,644.34	181,848.08	2,443.78
Total for Bargah Tahsil Khamdaria.	146,099.17	6,549.80	7.944	55,327.61	5,701.87	23,186.37	13,431.79	48.08	14,977.22	7,023.97	200,939.00	4,867.33
Kolabra	41,809.33	911.30	116.33	4,928.21	679.40	7,054.01	3,708.78	1.16	3,904.69	2,281.17	97,341.39	240.34
Rajpur	4,868.08	68.87	44.93	348.00	80.28	348.77	319.76		278.28	318.99	6,075.71	40.08
Rampur	13,103.78	161.13	108.00	3,834.21	17.87	30,006.92	1,637.88	0.83	7,547.17	734.69	34,987.88	389.90
Gadh Lakshigh	6,581.29	374.91	18.90	1,323.41	4.87	1,171.32	798.23		363.81	186.94	9,069.06	36.88
La'ra	7,477.49	79.19	38.38	674.25	22.97	670.80	616.13		337.03	361.21	11,141.47	23.15
Kashyaga	4,368.44	318.88	43.95	304.28	0.90	208.61	819.23		181.46	8.71	6,749.19	12.93
Machida	1,161.98	37.08	34.93	76.00		88.85	68.18		89.44	27.85	2,589.27	10.84
Total of Sambalpur Tahsil Khamdaria.	80,227.80	1,883.31	386.24	18,169.36	713.36	7,386.76	6,871.84	3.99	6,063.12	3,512.19	112,619.29	382.99
TOTAL FOR THE BENGAL DIVISION.	698,368.87	31,344.28	3,689.19	80,889.44	7,583.97	91,338.77	53,872.83	136.44	34,369.20	16,668.62	893,897.81	4,344.95

NAME OF GROUP.	OCCUPIED AREA.							UNOCCUPIED		
	Area under cultivation.					Fallow for more than three years.	Total area occupied.	Percentage on total area.	Groves.	Tree forest.
	Under crop.	Fallow of three years or under.	Total.	Percentage on total area.	Compare area of former settlement.					
Amalbhosa	22,463 74	2,811 02	25,304 76	74	24,779 33	1,617 6	26,922 38	79	37 03	897 69
Lakhanpur	13,610 27	3,120 83	16,937 11	46	16,926 33	4,093 17	21,630 23	69	10 33	5,283 58
Sulania	19,559 25	4,155 36	23,744 61	51	23,302 01	5,281 02	29,023 63	62	52 07	3,712 06
Sohela	39,946 00	9,850 91	48,801 97	57	55,935 62	12,533 07	62,355 64	71	60 62	655 13
Kurkuta	11,832 94	5 219 20	17,063 14	69	20,573 40	6,30 48	22,440 62	76	12 54	236 70
Bargah	45,191 13	9,765 36	54,949 48	67	66,686 67	10,168 11	65,114 69	79	81 23	153 37
Lohanda	25,429 06	4,656 54	30,138 60	48	32,355 23	6,965 15	39,098 75	63	20 63	5,799 23
Remonda	37,653 01	7,424 58	41,819 10	67	47,500 65	7,369 48	51,807 67	76	230 12	60 02
Tampasara	19,769 05	2,061 18	22,624 20	73	22,631 21	3,159 55	25,076 06	81	101 80	118 14
Rusa	30,098 55	5,5 1 5	35,238 10	70	36,778 00	4,069 04	41,239 04	79	141 64	396 18
Total for Bargarah, Tahsil Khaisa	295,471 66	66,059 50	321,531 16	61	315,068 95	64,473 49	3,99,004 05	73	910 82	17,857 00
Khalsmat	17,517 59	3,041 76	20,559 15	54	19,064 83	2,873 39	23,532 45	62	107 69	718 37
Banjara	45,711 07	4,445 61	50,157 28	52	45,432 62	3,793 30	53,950 58	56	233 69	7,430 74
Paohpara	49,859 12	10,285 76	59,230 88	47	59,964 48	6,213 53	65,546 41	52	507 94	17,023 23
Talab	31,429 27	2,738 41	34,217 69	46	31,180 61	2,079 43	37,197 10	50	143 55	6,697 00
Tampargah	30,439 04	6,546 26	36,976 29	45	38,723 70	4,214 14	41,300 43	50	134 24	23,247 19
Sambalpur	41,8 3 64	3,725 06	45,523 70	78	48,191 40	1,817 49	47,278 10	79	313 06	252 60
Total for Sambalpur, Tahsil Khaisa	216,919 13	30,326 85	244,574 06	53	219,947 88	23,229 09	2,68,806 07	57	1,559 86	59,258 17
Bargali	28,789 94	4,106 00	32,354 51	68	48,600 15	11,429 34	53,600 88	65	62 71	2 69
Bljapur	22,511 19	3,556 71	26,367 30	50	29,347 73	7,163 35	33,533 55	63	39 94	174 25
Ghns	10,727 25	1,396 38	12,113 73	60	11,913 50	2,111 46	14,226 32	71	19 23	279 99
Khatal	6,009 40	1,047 47	8,055 87	50	9,446 65	2,203 54	11,259 41	63	10 16	1,430 32
Bhenu	11,811 08	1,73 01	13,541 49	64	14,106 67	1,942 93	15,454 03	73	7 68	473 09
Paharngira	2,269 31	6 3 02	2,931 34	27	3,604 83	1,420 88	4,353 23	40	4 35	3,294 19
Paikulanda	1,772 96	180 55	1,929 64	50	2,065 60	691 18	2,510 72	66	0 32	.....
Mundomhat	2,194 99	195 74	2,390 73	58	2,464 08	442 00	2,332 82	66	.....	.....
Dorasambar	173,562 21	39,619 97	218,122 18	60	190,100 31	17,836 43	2,35,967 89	64	123 50	30,077 48
Total for Bargarah, Tahsil Zamin- daris.	270,079 77	52,735 45	328,806 22	58	310,991 41	44,660 32	3,73,756 54	67	267 03	36,736 05
Kotahica	10,100 95	12,824 50	72,985 45	48	52,041 64	4,222 05	77,147 60	51	401 37	22,051 40
Bajpur	6,636 68	818 59	6,954 27	37	5,879 62	470 63	7,424 80	59	33 64	4,515 58
Rampur	21,718 86	3,754 23	29,472 86	36	24,318 23	1,584 18	31,027 04	38	108 62	22,708 10
Gurh-Loisingh	4,032 14	2,265 82	10,311 96	23	6,981 73	607 60	10,920 60	24	12 90	27,954 00
Laira	10,099 32	1,669 79	11,799 02	46	10,197 07	569 39	12,366 32	49	33 25	4,002 95
Kodabaga	6,729 23	457 43	7,183 68	39	6,961 09	509 69	7,962 28	42	79 51	3,693 53
Maohida	1,549 29	206 82	1,746 91	35	1,862 00	147 62	1,899 42	39	5 29	927 73
Total for Sambalpur, Tahsil Zaminaris.	117,253 00	23,118 86	140,372 16	41	117,291 81	8,131 01	146,403 17	3	674 68	66,096 22
TOTAL FOR THE BENGAL DISTRICT.	874,643 86	162,744 06	1,037,384 52	51	992,030 8	1,39,774 91	1,177,169 43	62	3,421 59	186,930 53

X IV.

lage area in acres.

Scrub acres and grass.	Under water, hills and rocks, roads and buildings.	Total area, unoccupied.	Total area of the group.	Compare area of former settlement.	AREA IRRIGATED.*				Number of wells.	Number of artificial tanks.	Number of ploughs.	Number of plow cattle.
					From tanks.	From other sources.	Total.	Percentage on area occupied for agriculture.				
8,800'61	8,844'71	7,069'04	33,081'43	34,861'63	2,777'28	66'94	3,844'22	11	65	219	3,350	8,081
7,820'90	7,700'18	16,008'95	36,038'23	37,801'16	1,008'68	48'50	1,057'18	5	187	184	1,700	3,286
10,678'98	8,09'08	17,634'79	46,560'43	46,621'67	1,455'84	125'01	1,580'85	5	310	179	2,47	4,93
17,161'45	7,692'70	24,965'80	67,210'14	67,353'02	7,827'88	516'85	8,043'64	13	920	631	5,799	10,728
4,075'68	2,144'13	7,000'25	20,515'67	20,638'15	1,237'33	120'18	1,357'51	6	301	190	1,413	2,84
9,328'63	7,680'49	17,316'51	38,381'70	38,533'18	4,200'28	650'25	4,940'53	8	1,083	667	5,700	11,714
13,488'05	2,808'63	23,169'03	62,357'33	62,708'74	3,467'31	275'70	3,733'01	10	494	304	3,258	6,511
7,820'12	6,890'75	14,945'11	36,250'73	36,353'66	6,453'81	93'31	7,289'35	14	1,139	393	5,119	11,667
9,308'95	2,806'90	5,983'79	31,008'84	31,084'20	3,029'43	218'49	3,148'92	13	320	230	2,543	5,971
6,815'59	4,432'17	10,774'68	33,003'93	33,919'90	4,559'51	370'40	4,940'04	12	1,355	303	4,276	8,161
81,919'35	42,244'44	1,288'90	523,964'55	523,040'33	35,703'07	3,221'53	38,924'60	10	6,094	2,965	31,613	70,971
11,007'68	2,70'28	14,023'90	39,315'84	38,463'01	3,620'41	92'30	4,051'71	17	135	228	3,207	4,977
22,316'88	8,797'53	41,768'74	95,719'23	95,704'79	13,913'10	314'44	14,227'54	20	358	684	6,058	13,800
31,975'37	9,188'70	59,003'39	125,150'70	124,901'27	6,478'68	511'91	6,990'59	11	851	418	6,911	13,900
31,149'11	8,325'60	37,305'31	74,502'41	73,401'38	8,610'25	7'69	8,423'94	23	19	613	4,077	9,844
10,849'37	6,391'07	40,610'87	91,901'90	92,911'66	3,423'30	99'26	3,521'76	9	360	251	4,048	8,177
6,063'85	6,764'61	12,291'93	59,771'03	59,633'17	10,930'90	175'13	11,075'07	23	480	604	6,982	13,065
105,331'34	40,168'70	806,268'08	475,260'09	475,166'03	47,031'34	1,203'73	48,235'07	18	2,023	2,107	37,413	64,75
9,844'14	7,228'03	9,138'61	32,739'49	33,039'04	621'28	450'29	1,271'55	3	1,644	334	4,691	6,29
16,049'87	3,100'13	19,754'10	32,387'14	43,507'45	2,116'88	142'48	2,259'36	7	480	313	3,377	4,80
4,009'31	1,480'83	5,844'76	20,070'68	19,264'81	1,823'73	75'01	1,908'73	13	269	130	1,293	2,66
4,169'77	1,067'63	6,663'23	17,043'23	17,021'75	89'77	45'91	104'68	1	136	103	1,100	2,10
3,149'30	1,068'18	5,616'08	21,690'67	21,094'73	101'50	144'03	225'53	5	456	117	2,043	3,27
2,705'25	409'28	6,563'07	16,158'29	10,864'10	1'64	21'90	13'74	1	33	43	180	1,56
916'30	401'88	1,318'80	3,323'23	3,301'63	19'83	21'20	35'03	1	68	23	200	28
1,348'35	333'67	1,488'03	4,309'74	4,198'41	27'67	6'41	24'28	1	28	26	234	47
77,397'58	23,016'47	130,01'90	386,038'40	381,643'48	11,347'91	728'64	12,076'55	6	1,767	777	16,735	33,26
113,303'74	36,663'80	186,129'21	550,786'86	537,061'86	13,414'80	1,632'77	15,047'57	5	4,786	2,054	28,602	56,94
45,113'88	7,870'61	78,610'16	183,387'68	187,109'80	790'90	203'15	993'15	1	623	600	6,323	13,79
6,832'99	1,171'79	11,620'00	19,944'10	18,823'28	18'54	27'63	53'36	1	25	60	767	1,54
16,980'60	11,410'06	30,208'06	61,263'10	64,917'10	127'03	73'94	210'98	1	128	264	3,931	6,70
4,876'33	1,144'70	23,633'03	41,613'03	44,129'23	63'74	36'25	94'99	1	108	79	839	1,72
7,614'23	1,637'97	13,188'38	35,646'67	25,246'46	309'15	67'66	386'80	3	171	83	7,327	3,26
4,908'19	1,673'47	10,185'03	18,248'11	18,346'37	41'39	41'23	81'61	1	73	60	1,022	2,00
1,431'13	595'69	3,009'74	4,909'17	5,023'38	20'08	31'64	51'63	3	7	18	259	364
86,547'78	28,430'47	197,908'36	316,413'53	318,588'91	1,316'13	500'39	1,864'41	1	1,168	673	14,975	28,20
398,353'23	144,653'10	733,273'00	1,910,423'03	1,887,887'88	300,521'93	6,528'61	307,080'24	9	14,087	6,380	100,633	237,70

*cell only had actually irrigated in years of attention.

NAME OF GROUP.	HOME-FARM L.S.D.								Held by Owners	
	In Gaontahi villages.		In Proprietary villages.		Total.	Percentage of total occupied area.	Sublet area.	Home-farm area of last settlement.	Number of holdings.	Area.
	Bhogra.	Bhogra Bhogi.	Sir.	Khodkacht.						
Ambabhoua	6,081'70	303'50	.....	.....	6,385'20	23	453'08	6,189'23	196	3,617'81
Lakhanpur	8,033'50	80'19	.....	.....	8,033'69	14	813'49	3,107'48	63	2,764'46
Suisolia	3,971'61	320'18	.....	.....	4,297'79	15	544'68	4,398'43	120	3,810'88
Sobela	10,194'91	723'81	168'75	64'45	11,117'92	19	1,346'23	11,866'65	193	3,306'68
Kgrikuta	5,898'97	80'34	.....	.....	6,047'31	26	641'90	6,078'84	101	2,069'28
Bargah	6,233'08	1,543'30	1,051'08	127'40	11,038'40	17	1,817'16	11,053'23	137	3,229'71
Lohanda	5,103'78	158'63	285'63	149'68	5,898'5	15	1,261'81	5,779'08	95	2,050'45
Bemenda	6,000'37	348'74	367'61	18'35	6,739'07	13	687'40	6,723'09	77	2,102'23
Tamparara	3,473'70	188'69	51'72	60'38	3,794'43	15	684'63	3,769'64	120	1,942'31
Rusa	7,440'77	75'27	533'50	60'44	8,138'98	20	1,313'80	8,006'70	331	3,317'13
Total for Bargah tahsil khalsa.	59,418'27	3,661'45	2,603'33	541'85	69,644'60	17	8,006'18	66,388'24	1,453	28,037'60
Kalamat	3,777'14	62'20	372'58	86'61	3,178'53	15	266'28	3,181'59	97	2,377'48
Bempala	11,059'37	188'89	311'96	73'69	11,611'11	21	2,333'62	11,709'83	231	3,598'23
Panchpara	5,605'16	238'38	300'25	236'60	10,398'38	16	2,036'29	10,396'41	194	3,948'64
Talab	5,767'93	102'56	322'33	340'03	6,502'73	17	1,811'00	6,229'06	176	1,943'00
Tampargah	3,907'48	18'44	113'43	638'74	4,678'07	11	513'68	4,163'03	66	1,330'98
Sambalpur	5,434'54	73'80	766'65	824'93	7,089'43	15	721'48	6,439'68	200	4,670'48
Total for Sambalpur tahsil khalsa.	37,460'56	629'77	3,038'09	2,250'78	43,379'23	16	9,016'16	42,011'64	1,119	18,666'77
Barpali	.....	.....	9,080'63	1,313'35	10,394'8	19	633'67	9,888'80	.....	.....
Bijapur	.....	.....	6,597'08	1,253'81	7,850'89	22	368'91	7,063'73	.....	.....
Ghes	.....	.....	2,159'23	455'63	3,013'74	16	131'03	2,709'13	.....	.....
Kharwal	.....	.....	1,677'34	88'18	1,960'73	17	180'13	1,907'40	.....	.....
Bheran	.....	.....	2,397'40	463'19	3,940'59	16	99'98	3,083'88	.....	.....
Paharadgira	.....	.....	739'83	40'47	780'36	18	170'95	701'17	.....	.....
Patkolanda	.....	.....	329'32	3'33	332'65	13	4'98	328'67	.....	.....
Mandomahal	.....	.....	417'41	117'38	534'79	19	14'06	463'96	.....	.....
Borsambar	.....	.....	46,390'29	14,548'61	60,940'01	26	1,760'65	60,114'68	.....	.....
Total for Bargah zamindari.	.....	.....	69,877'80	16,189'74	86,047'64	24	3,323'29	75,522'44	.....	.....
Kolabira	.....	.....	11,638'86	3,749'27	16,688'13	20	466'44	13,973'77	.....	.....
Rajpara	.....	.....	1,607'08	554'14	3,161'16	19	66'99	1,913'06	.....	.....
Rampur	.....	.....	4,891'78	2,361'89	7,154'08	23	207'66	5,987'16	.....	.....
Garh-Lolsingh.	.....	.....	1,948'27	1,567'12	3,606'99	22	83'96	2,223'96	.....	.....
Lajra	.....	.....	1,865'79	744'66	3,010'45	21	80'67	3,071'17	.....	.....
Kudabaga	.....	.....	1,662'61	403'96	2,091'57	27	173'26	1,908'08	.....	.....
Machida	.....	.....	470'55	194'88	666'50	25	1'47	660'19	.....	.....
Total for Sambalpur tahsil zamindari.	.....	.....	24,303'73	9,479'69	33,774'43	23	1,100'74	29,478'27	.....	.....
Total for the Bengal District	96,968'86	4,311'22	99,810'83	30,430'03	1,31,433'89	29	23,604'37	1,13,804'99	1,573	66,704'37

In the home farm area of khalsa 256'08 acres are held by 11 ferlor. Pro-rietors in the occupancy area shown as held by Gaontias there are 182'35 acres of 1

Figure in acres.

OCCUPANCY LAND.				SERVICE LAND.				REVENUE-FREE GRANTS.				Total occupied area.	Tot occu area in Settlement.	
Hold by occupancy tenants.			Total occupancy area.	Total occupancy area of last Settlement.	Number of holdings.	Area.	Percentage on total occupied area.	Area of last Settlement.	REVENUE-FREE GRANTS.					
Number of holdings.	Area.	Percentage of total occupied area.							Number of holdings.	Area.	Percentage on total occupied area.	Area of last Settlement.	Total occupied area.	Tot occu area in Settlement.
1,416	16,173.08	80	20,019.83	16,430.80	104	668.68	3	912.61	1	29.20	...	29.25	20,021.28	25.8
1,323	15,425.81	70	16,160.79	14,726.50	110	719.90	3	823.10	...	...	...	8.24	21,080.28	16.6
1,593	20,845.81	73	28,656.47	20,146.56	98	1,071.37	4	1,246.54	...	...	...	40.19	26,026.63	23.1
3,058	45,118.98	72	48,219.58	41,600.19	106	2,859.14	5	2,777.70	...	...	...	101.92	48,218.61	53.7
910	12,327.81	60	15,866.47	14,019.90	102	1,168.72	5	1,688.08	3	10.21	...	11.63	22,448.61	21.2
1,356	44,139.20	74	57,068.91	46,909.71	124	2,685.63	4	2,742.01	23	28.42	...	281.29	65,114.20	62.3
2,050	29,404.88	78	31,254.70	27,119.78	205	1,717.21	4	1,653.08	4	143.01	...	3.848	29,009.74	24.8
1,979	40,355.07	76	42,468.26	30,401.71	129	2,628.87	5	2,644.22	20	278.67	...	3.3.81	41,007.67	49.0
1,267	19,128.25	74	21,028.06	10,425.21	91	1,008.40	4	976.61	14	118.16	...	221.20	25,073.04	24.4
3,026	27,906.27	68	21,423.45	29,776.00	180	1,539.74	4	1,428.20	7	140.87	...	261.26	41,228.04	39.4
31,128	274,714.87	71	228,763.47	270,049.55	1,246	14,015.50	4	16,422.23	77	692.28	...	1,651.67	268,004.55	200.5
1,456	16,944.55	71	19,222.07	16,221.65	89	1,072.20	6	1,072.70	3	56.55	...	165.63	22,222.45	27.6
4,789	25,846.01	66	29,441.22	22,027.61	228	2,281.78	5	2,519.78	14	173.46	...	267.25	33,020.28	44.7
4,937	41,986.46	72	50,227.16	40,941.66	246	4,008.26	6	3,979.54	17	204.63	...	224.45	65,518.41	64.4
4,010	26,864.00	52	28,627.50	24,244.59	152	1,942.47	5	1,921.12	19	148.01	...	220.22	27,107.10	22.7
3,716	22,450.26	72	24,281.27	22,705.02	125	2,200.26	6	2,224.00	8	22.23	...	183.06	41,220.12	20.2
4,423	29,287.46	70	28,027.98	25,720.44	229	2,145.62	5	2,141.90	17	104.09	...	442.08	47,373.10	21.7
23,291	191,922.02	71	210,220.29	174,894.45	1,174	14,208.00	5	14,122.84	68	704.06	...	1,675.55	205,266.07	222.7
3,722	29,215.21	72	26,842.21	27,973.22	126	1,862.11	4	2,764.22	295	2,579.22	5	1,822.27	42,879.22	42.2
1,202	22,721.24	62	22,724.24	21,052.07	1.4	1,250.22	4	1,454.21	126	1,628.22	6	1,269.21	22,722.22	20.2
722	10,722.22	70	10,722.22	10,111.22	56	267.22	3	479.21	61	479.21	3	879.22	14,222.22	12.2
622	6,222.22	77	6,222.22	7,222.22	22	460.44	4	461.22	17	217.22	2	2.22	11,222.22	10.2
942	11,222.22	72	11,222.22	11,222.22	22	49.22	3	69.22	14	80.22	6	212.22	15,222.22	14.2
247	2,222.22	70	2,222.22	2,022.22	12	177.22	2	277.22	9	102.22	2	4.22	4,222.22	4.2
172	2,022.22	61	2,022.22	1,872.22	14	72.22	2	79.22	12	74.22	2	71.22	2,222.22	2.2
147	2,142.22	62	2,142.22	1,920.22	12	119.22	4	129.22	5	20.22	1	12.22	2,222.22	2.2
9,227	161,222.22	68	161,222.22	126,222.22	461	2,202.22	5	12,202.22	212	1,622.22	1	772.22	222,222.22	202.2
16,227	241,222.22	70	261,222.22	221,222.22	670	12,222.22	5	12,702.22	1,122	2,742.22	2	4,022.22	272,222.22	222.2
4,774	56,222.22	74	60,222.22	47,222.22	246	2,774.22	4	2,671.22	106	1,622.22	2	1,622.22	77,222.22	67.2
608	4,522.22	61	4,522.22	3,022.22	70	221.22	4	222.22	76	222.22	5	222.22	7,222.22	6.2
2,007	21,222.22	62	21,222.22	12,022.22	151	1,822.22	1	1,722.22	22	222.22	1	611.22	21,222.22	22.2
202	2,022.22	62	2,022.22	2,022.22	22	4.22	4	212.22	22	122.22	2	122.22	2,022.22	2.2
660	2,112.22	74	2,112.22	2,022.22	60	467.22	4	467.22	27	127.22	1	127.22	2,222.22	20.2
621	2,102.22	66	2,102.22	1,222.22	42	262.22	5	222.22	22	222.22	2	671.22	2,022.22	6.2
160	1,111.79	60	1,111.79	1,000.22	27	91.22	5	91.22	5	24.22	1	22.22	1,222.22	1.2
8,227	105,012.22	71	105,012.22	82,122.22	272	2,122.22	4	2,122.22	272	2,572.22	9	2,272.22	1.222.22	122.2
62,46	222,222.22	71	272,222.22	222,222.22	2,222	22,222.22	5	22,222.22	1,222	12,222.22	1	11,722.22	127,222.22	1,022.2

hasht and in the occupancy 271.02 acres are held by occupancy tenants under Interior Proclamation. Malabar tenures.

APPENDIX VI-A.

Valuation of land of Occupancy Tenants.

NAME OF GROUV.	Tenants' rents	Incidence	Revised	Incidence	Unit	Full rents	Area	Cash sub-rents.	Incidence	Part of 1 in.
	before revision.	per acre.	tenants' rents.	per acre.	incidence.	deducted from village rates.	sublet.	per acre.	per acre.	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	As.	Rs. A. P.	Acres.	Rs. A. P.	Rs. A. P.	
mbabhong	4,469 7 0	0 3 7	5,998 1 0	0 4 7	40	5,998 5 0	321 79	542 9 8	1 11 0	
akhanpur	2,502 4 6	0 2 2	3,130 0 0	0 2 1	43	3,128 1 0	300 87	699 10 0	1 2 7	
ulsolia	5,323 13 7	0 3 7	7,256 6 0	0 4 11	56	7,459 5 0	535 05	978 11 6	1 14 2	
obela	12,011 7 7	0 4 0	15,970 2 0	0 5 0	59	15,329 19 0	1,524 06	2,832 10 2	1 15 0	
tarkuta	3,116 0 0	0 3 3	3,818 10 0	0 4 0	61	3,820 12 0	447 05	492 10 4	1 1 8	
argarh	16,857 14 1	0 5 3	21,564 14 0	0 6 9	70	22,095 5 0	1,026 56	1,745 9 3	1 11 2	
obande	8,310 14 1	0 4 3	10,791 2 0	0 5 5	63	11,105 10 0	623 01	1,011 2 7	1 2 9	
omenda	17,131 8 0	0 5 5	22,407 10 0	0 6 5	74	23,074 8 0	591 06	1,182 6 5	1 15 2	
amparara	8,174 14 7	0 5 2	10,845 10 0	0 6 3	67	11,196 10 0	439 25	1,557 10 6	2 10 5	
uarg	11,829 15 5	0 5 1	15,242 12 0	0 7 9	67	15,618 6 0	612 29	1,483 15 1	1 12 1	
Total of Bargarh Tahsil Khaiss	89,447 12 10	0 4 9	115,619 9 0	0 6 1	68	119,835 9 0	7,436 51	13,116 0 6	1 11 7	
alamat	5,041 5 1	0 4 2	6,912 12 0	0 5 9	46	7,172 12 0	523 51	667 7 7	0 12 11	
ampela	10,951 8 2	0 4 5	15,023 2 0	0 6 1	47	15,207 9 0	810 29	633 8 6	0 12 6	
suchpara	11,903 4 0	0 3 9	15,844 10 0	0 5 0	51	16,030 2 0	1,191 71	964 5 6	0 12 11	
alab	10,540 10 3	0 5 11	13,746 6 0	0 7 9	69	13,539 5 0	502 01	619 12 4	1 0 6	
ampargarh	7,947 12 2	0 3 9	10,876 2 0	0 5 1	54	10,991 6 6	636 76	781 2 8	0 10 5	
ambalpur	18 918 14 9	0 6 0	24,356 0 0	0 10 3	78	25,241 9 0	543 92	664 7 11	1 12 0	
Total of Sambalpur Tahsil Khaiss	65,309 8 6	0 5 0	86,757 0 0	0 6 7	47	89,273 14 0	4,470 20	5,141 12 6	0 14 10	
arpall	11,285 4 0	0 4 9	14,168 6 0	0 5 10	59	14,097 11 9	1,008 90	1,424 12 11	1 6 7	
ijepar	4,042 4 2	0 2 10	5,356 0 0	0 3 9	52	5,470 11 0	571 79	696 5 8	1 2 6	
bas	2,258 0 3	0 3 4	3,064 0 0	0 4 7	49	3,181 1 0	400 37	495 10 9	1 2 10	
haral	1,640 15 11	0 3 5	2,535 6 0	0 4 2	43	2,526 4 0	62 69	215 5 8	2 4 10	
heran	3,503 12 2	0 4 11	4,378 14 0	0 5 2	67	4,391 12 0	444 39	701 2 2	1 9 2	
sharsingra	421 2 7	0 2 1	633 10 0	0 3 0	39	616 9 0	120 51	126 11 4	0 10 11	
atkhula-da	391 2 9	0 3 1	596 5 0	0 4 9	44	658 8 0	23 72	63 0 0	2 10 6	
landmahal	321 6 0	0 1 9	323 4 0	0 2 6	31	342 9 0	33 90	45 9 4	1 5 8	
Regular	8,267 8 11	0 1 10	12,256 0 0	0 1 10	39	12,642 12 0	1,061 15	718 4 11	0 10 10	
Summary	6,692 0 6	0 1 3	7,901 16 0	0 1 2	...	...	42 85	25 8 0	0 9 9
Total	15,159 3 5	0 1 6	20,157 16 0	0 2 0	...	15,043 12 0	1,104 00	744 7 11	0 10 9	
Total of Bargarh Tahsil Zamindars	29,142 6 1	0 2 5	51,216 12 0	0 3 2	...	...	3,808 96	6,528 1 9	1 2 0
alabira	9,145 15 6 1/2	0 2 7	11,054 4 0	0 3 4	42	11,978 9 0	543 55	627 10 2	0 12 7	
ajpur	1,489 11 10	0 2 3	1,846 2 0	0 2 4	58	1,727 12 0	43 13	69 9 2	1 7 2	
ampur	3,785 15 4	0 2 10	5,511 0 0	0 3 10	49	5,330 11 0	188 77	907 14 1	1 1 7	
ari-Lolsingh	1,709 15 0	0 2 7	1,463 12 0	0 2 6	69	1,654 2 0	16 96	24 8 8	1 5 0	
ara	1,549 6 0	0 2 9	2,102 8 0	0 3 8	42	2,097 5 0	126 17	179 12 2	1 6 8	
odabaga	1,247 5 10	0 2 11	1,690 4 0	0 2 2	53	1,720 12 0	51 30	71 12 10	1 5 1	
achida	253 7 0	0 2 8	372 2 0	0 2 5	42	369 11 0	2 87	3 0 0	1 2 0	
Total of Sambalpur Tahsil Zamindars	16,551 2 2 1/2	0 2 10	24,621 0 0	0 3 9	46	24,620 12 0	977 55	976 4 1	1 6 0	
TOTAL FOR THE BARGARH DISTRICT	8,12,415 6 5 1/2	0 2 10	2,78,368 5 0	0 5 1	...	...	16,692 08	22,797 2 10	1 5 7

(a) Includes Rs. 616-10, being the valuation of land held by occupancy tenants under inferior proprietors and Rs. 191-4 on account of malk-makhsuz payments.
 Note.—An average unit-incidence for the district cannot be given as part of Borsambar was not dealt with by the soil-unit system.

APPENDIX VI-B.

Valuation of Home-farm Land:

NAME OF GROUP.	Valuation of last settlement.	Incidence per acre.	Revised valuation.	Incidence per acre.	Alt. incidence.	Full valuation deduced from village mass.	Area subject.	Cash sub-subs.	Incidence per acre.	Percentage of increase in valuation.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	As.	Rs. A. P.	Acres.	Rs. A. P.	Rs. A. P.	
na	1,816 3 0	0 4 8	2,285 16 0	0 5 9	63	2,207 16 0	623-86	5-6 7 9	1 1 10	+39
nr	721 6 0	0 3 9	777 6 0	0 4 1	57	750 3 0	833-40	335 7 6	0 34 10	+8
	1,475 0 0	0 5 3	1,814 14 0	0 5 9	57	1,894 14 0	644-50	649 3 0	1 2 1	+22
	2,065 2 0	0 5 3	4,289 10 0	0 6 3	53	4,388 12 0	1,246-23	222 16 2	6 11 0	+12
	1,767 0 0	0 4 8	1,643 4 0	0 5 3	63	1,928 7 0	644-90	520 9 6	0 23 11	+10
	4,741 12 0	0 6 0	5,156 2 0	0 7 3	71	5,108 1 0	1,547-16	1,943 2 3	1 4 1	+24
	1,061 6 0	0 5 8	2,616 8 0	0 7 1	76	2,572 4 0	1,251-61	960 12 9	0 12 3	+27
	2,276 14 0	0 6 0	4,283 8 0	0 7 3	76	4,262 14 0	627-40	749 9 6	0 12 16	+27
ara	1,716 14 0	0 7 4	4,210 13 0	0 9 9	73	2,205 1 0	664-38	646 11-3	1 6 2	+25
	2,465 10 0	0 7 0	2,678 4 0	0 9 0	71	5 619 0 0	1,213-20	669 6 6	0 12 2	+21
of Bargarh, Tahsil Khalm	24,824 2 0	0 6 16	(a) 30,024 2 0	0 7 3	69	30,021 0 0	9,009-75	6,227 4 10	0 16 2	+26
	1,233 4 0	0 4 3	1,315 10 0	0 7 3	60	1,577 4 0	368-20	205 2 0	0 12 2	+10
	4,416 16 0	0 6 0	5,274 0 0	0 7 7	60	5,186 0 0	2,263-23	1,923 14 0	0 11 0	+24
ira	4,000 0 0	0 5 3	4,283 4 0	0 7 0	54	4,288 10 0	2,266-70	1,223 5 11	0 10 2	+12
	1,576 4 0	0 7 3	3,630 8 6	0 8 10	61	2,476 11 0	1,061-60	1,233 2 11	0 11 9	+24
gub	1,604 2 0	0 6 2	2,090 0 0	0 7 3	59	2,078 4 0	613-66	264 4 1	0 9 10	+22
nr	2,001 6 0	0 5 3	5,207 8 0	0 13 3	63	5,146 16 0	721-18	730 7 1	1 9 3	+29
of Sambalpur, Tahsil Khalm	14,072 11 0	0 6 11	(a) 22,620 4 0	0 8 4	50	21,983 7 0	9,018-16	3,227 2 2	0 11 2	+26
	2,401 8 0	0 4 3	2,228 8 0	0 6 11	65	2,771 11 0	653-67	645 0 10	0 15 30	+45
	1,209 15 2	0 3 11	2,201 10 0	0 4 10	53	2,290 2 0	265-91	261 6 7	0 12 4	+72
	517 1 11	0 3 9	567 6 0	0 5 4	50	623 4 0	121-98	205 1 0	2 3 9	+72
	487 10 0	0 3 10	525 14 0	0 5 3	49	658 0 0	167-18	251 2 1	1 15 2	+26
	661 10 11	0 5 11	1,211 12 0	0 7 4	56	1,260 5 0	90-98	78 0 0	0 12 6	+24
grira	111 5 4	0 3 4	164 12 0	0 3 5	43	164 16 0	170-96	146 2 7	0 12 6	+28
toda	23 12 7	0 2 5	27 2 0	0 4 8	40	24 2 0	4-28	1 2 0	0 3 8	+61
malal	22 14 2	0 2 0	217 16 0	0 2 5	23	119 5 0	14-95	21 2 2	1 6 7	+67
	2,169 0 0	0 2 0	2,518 0 0	0 2 3	41	2,621 1 0	1,053-60	769 2 1	0 11 2	+72
mbar	2,643 11 8	0 1 9	4,264 8 0	0 2 2	---	---	627-25	265 4 0	0 12 0	+76
	2,243 2 3	0 1 10	10,002 14 0	0 2 8	---	2,521 1 0	1,781-95	1,025 7 1	0 9 4	+74
of Bargarh, Tahsil Kamindar	11,974 2 1	0 2 6	16,261 8 0	0 3 6	58	---	2,264-20	2,046 7 2	0 12 5	+2
	2,264 1 11	0 2 8	2,508 4 0	0 3 7	41	2,231 16 0	667-64	264 2 9	0 11 8	+20
	676 1 4	0 2 5	980 10 0	0 3 3	53	662 10 0	60-20	260 0 0	0 16 6	+22
ar	1,247 14 9	0 2 7	2,169 2 2	0 5 1	52	2,266 8 0	267-25	128 15 16	0 12 1	+70
loistigh	542 16 10	0 4 0	980 10 0	0 3 11	40	980 9 0	52-25	64 12 0	0 12 4	+20
	323 11 11	0 2 6	644 8 0	0 4 0	40	644 9 0	60-67	78 2 3	0 12 1	+20
aga	478 11 8	0 2 6	908 4 0	0 3 10	55	906 5 0	172-20	107 14 9	0 10 0	+122
Ja	124 2 9	0 2 10	224 8 0	0 5 7	47	222 8 0	2-67	1 9 0	0 9 9	+75
of Sambalpur, Tahsil Kamindar	2,767 12 2	0 2 2	9,219 16 0	0 6 5	57	9,220 0 0	1,160-74	621 6 11	0 11 11	+41
TOTAL FOR THE BRIGAD DISTRICT	60,908 12 3	0 4 6	91,277 12 0	0 6 2	51	---	21,204-27	12,486 7 2	0 12 2	+26

(a) Includes Rs. 200, being the valuation of Abud-Jand land held by inferior proprietors.

APPENDIX VI-C.

Total revised land valuation.

NAME OF GROUP.	Valuation of occupancy area.	Valuation of home farm area.	Valuation of service area.	Valuation of mound area.	Total valuation.	Compare total valuation of last settlement.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Ambaluhons	5,903 1 0	2,235 14 0	237 14 0	0 14 0	8,167 11 0	6,974 6 0
Lakhsapur	3,180 0 0	777 8 0	163 0 0	.....	4,020 8 0	3,357 3 0
Soleulia	7,355 8 0	1,914 14 0	373 0 0	.....	9,643 4 0	7,118 11 0
Sohela	15,070 8 0	4,288 10 0	823 8 0	11 0 0	20,183 8 0	16,408 0 0
Kurkuta	3,818 10 0	1,043 4 0	316 10 0	.....	5,077 8 0	5,177 0 0
Bargarb	21,544 14 0	5,155 2 0	1,019 4 0	190 12 0	27,930 0 0	21,824 11 0
Lohade	10,791 2 0	2,616 8 0	676 12 0	53 4 0	14,038 10 0	10,389 2 0
Hemenda	12,407 10 0	4,282 8 0	1,143 4 0	137 8 0	17,970 14 0	21,574 5 0
Tempansare	10,646 10 0	2,310 13 0	479 4 0	99 0 0	13,704 10 0	10,291 8 0
Eura	15,343 12 0	4,678 4 0	740 6 0	78 12 0	20,840 2 0	16,090 2 0
Total of Bargarb, Tahsil Kha'sa.	1,15,819 2 0	30,008 2 0	5,870 12 0	541 2 0	1,52,334 9 0	1,19,188 0 0
Kalamat	6,912 12 0	1,518 10 0	397 6 0	24 8 0	8,840 4 0	6,491 7 0
Panapala	15,023 2 0	5,424 6 0	1,148 10 0	88 4 0	21,727 6 0	16,117 2 9
Panohpara	15,646 10 0	4,632 4 0	1,538 2 0	93 2 0	21,908 2 0	17,384 10 0
Talab	17,745 8 0	3,530 8 0	913 0 0	80 4 0	22,309 2 0	14,321 10 0
Tempa-garb	10,678 2 0	2,269 0 0	890 6 0	19 12 0	13,865 4 0	9,934 8 0
Sambalpur	24,355 0 0	5,407 8 0	1,640 12 0	74 2 0	31,486 8 0	24,459 15 0
Total of Sambalpur, Tahsil Kha'sa.	88,767 0 0	22,699 4 0	6,481 4 0	379 0 0	1,16,216 8 0	89,868 15 0
Banpati	14,123 6 0	3,728 8 0	1,643 14 0	.....	19,557 12 0	16,754 7 4
Dijapur	5,358 0 0	2,391 10 0	640 10 0	.....	8,390 4 0	6,304 15 6
Ghes	3,064 0 0	987 6 0	233 14 0	.....	4,185 4 0	3,221 4 2
Kharwal	2,535 6 0	138 14 0	195 0 0	.....	3,364 4 0	2,447 4 2
Mheran	4,378 14 0	1,311 12 0	479 0 0	.....	6,169 10 0	4,755 2 2
Paharisingra	633 10 0	164 12 0	51 12 0	.....	860 2 0	503 0 8
Fatkulanda	698 6 0	97 2 0	43 8 0	.....	738 14 0	477 9 2
Mandomahul	339 4 0	117 10 0	16 8 0	.....	466 8 0	318 11 0
Horasambar (Regular)	12,256 0 0	5,618 6 0	1,274 8 0	.....	19,048 14 0	11,734 13 11
Horasambar (Summary)	7,901 14 0	4,484 8 0	615 12 0	.....	13,000 2 0	9,221 15 2
Total	30,157 14 0	10,002 14 0	1,900 4 0	.....	39,061 0 0	21,156 13 1
Total of Bargarb, Tahsil Zamindari.	51,916 12 0	19,361 8 0	5,193 4 0	.....	76,473 8 0	54,199 4 4
Kol-bira	11,954 4 0	3,509 4 0	1,108 10 0	.....	16,573 2 0	11,056 11 5
Rajpur	1,896 2 0	890 10 0	179 14 0	.....	2,966 10 0	2,119 0 2
Kanpur	5,151 0 0	2,289 2 0	880 12 0	.....	8,120 14 0	5,173 12 10
Garb-Lalsingh	1,493 12 0	669 0 0	172 0 0	.....	2,235 4 0	1,566 0 8
Lakra	2,102 8 0	614 8 0	184 0 0	.....	2,901 0 0	1,564 1 3
Kodabaga	1,600 4 0	905 4 0	167 14 0	.....	2,734 8 0	1,675 0 5
Mashida	373 2 0	234 5 0	35 10 0	.....	643 4 0	410 4 4
Total of Sambalpur, Tahsil Zamindari.	24,691 0 0	9,313 14 0	2,637 12 0	.....	36,641 10 0	26,002 15 2
TOTAL FOR THE BRUGAL DISTRICT.	2,76,386 5 0	81,277 12 0	20,088 0 0	920 2 0	3,60,667 2 0	2,69,113 2 6

(.) Includes Rs. 516-10-0 being the valuation of land held by occupancy tenants under inferior proprietors and Rs. 101-4-0 on account of musli-makbuz, etc.

(1) Includes Rs. 209, being the valuation of Kaml-har land held by inferior proprietors.

APPENDIX VII-A.

Revised Revenue Demand.

NAME OF GROUP.	ON BROGRA LAND.			ON RAJWAT LAND.						ON SERVICE LAND.			Total o column 2, 8, 11 to 14.	
	Percentage of annual revenue from revised assessment for Rajwats.	Assess-ment on excess bhogra.	Assessment as revised.	DRAWBACKS ALLOWED TO:		Total drawbacks.	Net sum-payable to Govern-ment.	Per-centage of drawback on revised assess-ment.	Assess-ment on excess.	On land hitherto held revenue-free.	Inferior pro-rietor plot.	Malk-ak-baza.		
				Gaonthas.	Chaukidars.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Rs. A.	Rs. A.	Rs. A.	Rs.	Rs. A.	Rs. A.			Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs.
babhona	29	800 9	1,603 1	70 14	5	75 14	8,017 3	1	3	...	...	...	...	6,417
hanpur	28	125 8	3,130 5	178 0	5	178 0	2,052 0	6	5	7 2	...	...	...	3,081
ulia	26	838 5	7,155 6	309 11	20	309 11	6,865 31	4	5	...	...	...	...	7,305
ola	28	887 8	10,870 8	873 14	25	908 11	14,441 10	4	5	31 0	...	...	...	16,360
kuta	51	930 10	3,828 10	6 4	...	6 4	3,812 6	NIL	8	69 0	...	...	...	4,812
parh	24	584 8	21,472 2	1,679 8	25	1,704 3	10,767 10	9	5	4 0	...	...	75 8	20,441
snda	24	359 6	10,791 2	575 10	25	610 10	10,180 8	6	5	...	...	...	...	10,659
snda	19	165 4	22,407 10	2,463 0	25	2,618 0	19,889 10	11	7	6 2	...	...	...	20,098
patnara	21	818 5	10,277 2	685 4	25	730 4	10,548 14	7	4	...	...	...	...	10,328
w	20	1,003 2	15,242 12	1,168 14	75	1,200 14	12,021 14	8	5	...	...	...	...	15,075
J of Bargah Tahsil	26	3,220 14	1,16,558 6	7,723 15	269	7,973 15	1,07,635 6	7	5	117 4	...	89 8	75 8	1,13,359
mak	25	195 8	8,901 4	707 12	45	752 12	615 1 8	11	6	1 0	...	5 8	7 0	6,380
pela	26	1,975 12	15,022 2	410 4	20	440 4	14,591 14	3	3	17 8	...	...	...	16,075
bhpara	23	1,155 10	15,829 6	757 4	45	803 4	15,027 2	2	10	108 8	...	10 2	...	16,201
b	26	1,121 10	19,499 8	1,478 12	60	1,518 12	11,200 6	11	7	5 0	...	149 0	...	13,255
pargah	20	805 0	10,820 12	1,205 14	40	1,245 14	10,474 14	12	6	54 12	...	38 0	...	9,879
salpur	21	718 6	24,224 12	2,270 10	45	2,315 10	21,908 8	10	6	19 0	...	149 6	...	22,786
J of Sambalpur tal.	26	5,654 12	29,320 8	8,620 8	245	7,175 8	79,124 14	8	7	215 12	...	245 0	7 0	85,157
J of Khalsa	26	10,765 10	2,01,639 11	14,623 7	686	15,168 7	1,85,810 4	8	8	339 0	...	200 8	23 8	1,98,412

APPENDIX VII-B.

REVISED REVENUE DEMAND.

Name of Zamindari.	Revised valuation of Estate (including forest income).	Revised kamil-jama.	Proportion of kamil-jama on full assets.	Revised takoli.	Proportion of takoli on the kamil-jama.
1	2	3	4	5	6
	Rs. A.	Rs.		Rs.	Rs.
Barpali	19,557 12	11,700	60	2,600	22
Bijepur	8,895 14	5,020	60	1,600	32
Ghes	4,360 4	2,600	60	1,800	50
Kharwal	3,366 4	2,020	60	850	42
Bheran	6,169 10	3,700	60	1,700	46
Paharsingra	850 2	500	59	200	40
Patkulanda	736 14	445	60	300	67
Mandomahul	466 6	275	59	120	44
Borasambar	33,408 8	22,845	59	8,500	37
Total of Bargarh Tahsil Zamindari.	82,311 10	49,105	60	17,170	35
Kolabira	18,072 2	9,940	55	3,500	35
Rajpur	3,076 10	1,685	55	600	36
Rampur	8,479 14	4,664	55	2,000	43
Garh-Loisingh	3,525 6	1,934	55	800	41
Laira	3,081 0	1,685	55	700	42
Kodabaga	2,884 6	1,590	55	500	50
Maehida	673 4	370	55	150	41
Total of Sambalpur Tahsil Zamindaris.	39,792 10	21,868	55	8,550	39
Total of Zamindaris of the Bengal District.	1,22,104 4	70,973	58	25,720	36

APPENDIX VIII.

Justification of sanctioned Assessment.

NAME OF GROUP.	Enhancement per cent. of revised on present revenue.	COMPARE PERCENTAGE OF INCREASE (+) OR DECREASE (-) SINCE LAST SETTLEMENT IS—			COMPARE INCIDENCE PER ACRE OF NET ASSESSMENT PAYABLE—		PERCENTAGE OF NET REVENUE OF TOTAL VALUATION OF THE VILLAGE—	
		Area in cultivation.	Riayati payments as now revised.	Total valuation of village.	At last settlement on area then cultivated.	As now revised on area now cultivated.	At last settlement.	As now revised.
1	2	3	4	5	6	7	8	9
Ambabhosu ...	+ 22	+ 2	+ 29	+ 26	3 4	4 1	80	79
Lakhanpur ...	+ 20	Nil	+ 28	+ 22	2 5	3 11	77	70
Balsolia ...	+ 32	- 6	+ 40	+ 33	3 5	4 10	77	76
Schois ...	+ 23	- 11	+ 26	+ 23	3 7	4 11	77	76
Karkute ...	+ 17	- 17	+ 24	+ 17	3 3	4 6	80	79
Bargarb ...	+ 23	- 6	+ 30	+ 23	4 7	5 11	77	73
Lohande ...	+ 27	- 8	+ 31	+ 30	4 0	5 7	76	75
Remoda ...	+ 27	- 6	+ 32	+ 30	5 6	7 2	75	72
Tamparsa ...	+ 33	- 3	+ 35	+ 33	5 3	7 3	76	70
Bura ...	+ 36	- 7	+ 28	+ 28	5 1	6 8	78	73
Total of Bargarb Tahsil ...	+ 26	- 7	+ 30	+ 23	4 3	5 8	77	75
Kalamat ...	+ 31	+ 5	+ 43	+ 37	4 0	4 11	76	73
Empale ...	+ 34	+ 16	+ 41	+ 35	4 4	5 3	77	77
Panohpara ...	+ 26	+ 13	+ 35	+ 27	4 1	4 5	76	75
Taleb ...	+ 26	+ 10	+ 29	+ 21	5 7	6 3	76	71
Tampargarh ...	+ 32	+ 29	+ 45	+ 41	4 3	4 3	75	71
Sambalpur ...	+ 26	+ 5	+ 29	+ 29	6 10	8 0	76	73
Total of Sambalpur Tahsil ...	+ 29	+ 13	+ 35	+ 33	4 11	5 6	76	74
TOTAL OF KHALSA ...	+ 27	+ 12	+ 33	+ 29	4 6	5 7	77	74

APPENDIX IX.

WAZIB-UL-AMR FOR THE KHALSA GAONTIAS VILLAGES OF THE SAMBALPUR DISTRICT.

I.—Village management.

1. The lambardar-gaontia is appointed by the Deputy Commissioner in accordance with local custom.
2. He shall be responsible for the management of the village or palti and shall be the "landlord" within the meaning of section 2(6) of the Tenancy Act. A riayat of a village in which sharers have made a private partition among themselves can always claim to pay his revenue direct to the lambardar-gaontia instead of to the co-sharer.
3. He shall be assisted in the village management by a *panchayat*, to consist of four riayats of the village, elect by the riayats.

II.—Village servants.

1. In this village the following jhankars and gandas have been sanctioned :—

Name of village or hamlet.	Class of servant's.	Area of service-holdings.	Rent lev'able from persons holding portion of service land.	Other income leviable.

2. The jhankar and ganda are entitled to levy a grain cess from raiyats. The cess is fixed at—*tambis* for a raiyat with one plough and double this quantity for a raiyat with more than one plough of land in the village. The same cess is payable by the gaontia and all co-sharers holding bhogra or gaontia-raiyati separately. In addition to other remuneration the ganda shall receive as his perquisite the hides and horns of all dead cattle not claimed by the owners. A drawback of Rs. ——— has been allowed on the land revenue to provide additional remuneration for the ganda. This sum shall be paid to him annually by the gaontia in addition to his other remuneration.

3. Besides jhankars and gandas there are the following village servants :—

Name of village or hamlet.	Class of servant.	Area of service holding.	Other income leviable.

4. These may be dismissed and deprived of their service land by the gaontia and *panches* for failure to render due service.

III.—Village expenses.

1. Village expenses may be recovered by the lambardar from the sharers and raiyats in proportion to the revenue value of their holdings, he himself bearing a proportionate share.

2. By village expenses are meant only such expenses as are incurred for the benefit or on account of the whole village, such as expenses for road-mending, for the repair of public tanks, etc.

3. In this village these are the following special village expenses :—

IV.—Waste Land and Forests.

1. All waste land not in occupation for cultivation is the property of Government.

2. The following khasra Nos. ——— are reserved as grazing and forest land. They may not be occupied by any one without the special permission of the Deputy Commissioner. All the co-sharers and raiyats of the village may graze their cattle on them and may take in reasonable quantities for their own use within the village, firewood, leaves fencing thorns, and timber for houses and agricultural implements. But they may not sell any of the produce. The lambardar and *panches* are responsible for their management and if they fail in this the Deputy Commissioner may arrange for the management himself.

3. All other waste lands are at the disposal of the lambardar and co-sharers for cultivation, for granting to raiyats for cultivation, or for the location of new raiyats. The rates referred to in section 50 (3) (b) of the Central Provinces Tenancy Act are :—

Bahal Berna Mal Af.

But no *nazarana* in cash or kind may be levied for the occupation of waste land.

V.—Tanks.—A. Government tanks.

The Government tanks of this village are recorded as khasra numbers ———.

2. The distribution of water from Government tanks is effected by the village *panchayat*. Water is to be justly distributed according to the custom of the village, to land recorded as irrigated from such tanks.

3. Government tanks must be kept in repair by the village community according to local custom.

4. All cultivation within the beds of Government tanks is prohibited without the special permission of the Deputy Commissioner. The mukaddam is responsible for reporting to the Deputy Commissioner all encroachments.

B. Private tanks.

5. Sub-clauses (2), (3) and (4) above apply equally to all private tanks recorded as such at the last settlement of 1888. Such tanks are recorded as khasara numbers

6. All tanks built since the settlement of 1888 have been recorded in the name of the builder or his representative. The distribution of water from these tanks is effected at the will of the builder or his representative.

7. The beds of all private tanks have been freed from assessment. All cultivation within their beds is prohibited, except with the special permission of the Deputy Commissioner.

8. Raiyats can make tanks in their own holdings without permission, and gaontias can make tanks in their bhogra without permission. Any gaontia or raiyat wishing to make a tank on land forming part of the village waste must first obtain the permission of the Deputy Commissioner.

VI.—Bhet Begar.

1. The *bhet-begar* of this village is to be employed only on the bhogra land of the gaontia in Mauza.

[Alternative clause for villages containing no bhogra.]

There is no bhogra in this village, but raiyats are liable to render *bhet-begar* for the cultivation of bhogra belonging to the gaontia situated in any other village not more than three miles distant. Under this clause the raiyats are now liable to render *bhet-begar* for the cultivation of bhogra in Mauza.

2. Raiyats with more than one plough are to render each—plough (s) for one "bel" each, and —sickle (s) for a day of two "bels."

Raiyats with one plough only will render only one plough and one sickle every alternate year.*

3. *Bhet-begar* is commutable at the option of the raiyats at the rate of 4 annas for a plough with ploughman and oxen for a day of one "bel" and 2 annas for a labourer with sickle for a day of two "bels."

4. The gaontia will at harvest time provide a midday meal free of cost to the *begar* labourers.

VII.—Fruit-trees and groves.

1. Groves which have been recorded as Government property are not to be encroached on for cultivation. Their fruit will continue to be enjoyed by the village community according to custom.

2. The fruit of mahua and other fruit trees in the village waste is to be enjoyed by all the village community according to custom, but the wood of such trees when they die is to be taken by the gaontias.

3. The fruit of trees planted in the village waste by raiyats is taken by the person who planted them or his descendants so long as they remain in the village. But if they leave the village and cease to have land therein they have no further claim, and the fruit reverts to the village community. The wood of such trees when they die is to be taken by the gaontia.

4. The fruit of trees planted by persons in their holdings and the wood of the trees when they die are to be taken by the persons who planted them so long as they retain their holdings. But on transfer of the land the right in the trees is transferred also.

VIII.—Roads and thoroughfares.

The ordinary cart-roads, foot-paths, and thoroughfares are to be kept open and passable throughout the year. The raiyats will repair them annually.

IX.—Sugarcane Reserves.

The bhogra-barchha for the use of raiyats is Nos. The gaontia shall make a proper allotment of the land to the raiyats and shall be at liberty to cultivate the land himself in years when sugarcane is not grown on it.

X.—The Village-site and Deraghar.

1. The village-site consists of the Nos.

2. Every cultivator is entitled to a site for his house free of rent. But if a raiyat abandons his holding and leaves the village, he loses his right to any house-site he may have held. He is entitled to dispose as he pleases of any structures he may have erected on the site or of their materials, provided he does so within one month and provided he does not thereby interfere with the allocation of house-sites by the *lambardar-gaontia* and his *panches*. The rights of non-agriculturists in sites occupied and buildings constructed by them are regulated by agreement with the *lambardar-gaontia* and *panches*.

3. A *deraghar* or guest-house is to be maintained and kept in good repair.

* To be omitted where maximum of two ploughs and two sickles is permitted.

† To be omitted where the custom does not exist.

APPENDIX (X.)

WAJIB-UL-AZ FOR THE MALGUZARI VILLAGES OF THE SAMBALPUR DISTRICT

I.—Village management.

1. The lambaradar is appointed by the Deputy Commissioner in accordance with local custom.
2. He shall be responsible for the management of the village, or patti and shall be the "landlord" within the meaning of section 2(6) of the Tenancy Act. A raiyat of a village in which sharers have made a private partition among themselves can always claim to pay his revenue direct to the lambaradar instead of to the co-sharer.
3. He shall be assisted in the village management by a *panchayat*, to consist of four tenants of the village elected by the tenants.

II.—Village servants.

1. In this village the following jhankars and gandas have been sanctioned:—

Name of village or hamlet.	Class of servants.	Area of service holding.	Rent leviable from persons holding portions of service land.	Other income leviable.

2. In addition to other remuneration the ganda shall receive as his perquisite the hides and horns of all dead cattle not claimed by the owners.

3. Besides jhankars and gandas there are the following village servants:—

Name of village or hamlet.	Class of servants.	Area of service holding.	Other income leviable.

III.—Village expenses.

1. Village expenses may be recovered by the lambaradar from the sharers and raiyat in proportion to the rental value or rent of their holdings, he himself bearing a proportional share.
2. By village expenses are meant only such expenses as are incurred for the benefit or on account of the whole village, such as expenses for road-mending, for the repair of public tanks, etc.
3. In this village there are the following special village expenses:—

IV.—Waste Land and Forests.

1. All waste land not in occupation for cultivation is the property of the malguzar.
2. He shall permit all agriculturists residing in the village to graze agricultural cattle on this land free of charge and to take in reasonable quantities free of charge, for their own use in the village, thatching-grass, firewood and leaves, fencing thorns and timber for agricultural implements or for their houses.
3. Forest land included in the mahal is managed by the malguzar in accordance with the rules laid down from time to time by the Chief Commissioner. (Any rights which tenants may possess over mahua and achar trees grown on the village waste will also be entered here).

V.—Tanks.

1. All old tanks existing before last settlement have been entered in the name of the Malguzar: but he is bound to distribute their water justly with the assistance of the

panchayat and in accordance with village custom to fields recorded as irrigated from them. He may not levy in addition to the rent any charge on account of water from these tanks.

2. These tanks will be kept in good repair by the *malguzar* and by the tenants whose lands are irrigated from them.

The beds of these tanks have not been assessed, and cultivation within their limits is prohibited except with the special permission of the Deputy Commissioner.

3. The *mukaddam* is responsible for reporting to the Deputy Commissioner all encroachments.

4. All tanks built since settlement by co-sharers and tenants have been recorded as the property of the builder or his representative. The distribution of water from these tanks is effected at the will of the builder or his representative.

5. The beds of these private tanks have been freed from assessment. All cultivation within their beds is prohibited except with the special permission of the Deputy Commissioner.

6. Occupancy tenants can make tanks in their own holdings without permission, but for the building of a tank in the village waste the consent of the *malguzar* is necessary.

VI.—*Bhet Begar.*

1. The *bhet-begar* of this village is to be employed only on the *sir* land of the

[Alternative clause for villages containing no *sir*.]

malguzar in mauza _____

There is no *sir* in this village, but raiyats are liable to render *bhet-begar* for the cultivation of *sir* belonging to the *malguzar* situated in other villages not more than three miles distant. Under this clause the raiyats are now liable to render *bhet-begar* for the cultivation of *sir* in mauza.

2. Tenants with more than one plough are to render each _____ plough (s) for one "bel" and _____ sickle (s) for a day of two "bets."

Tenants with one plough only will render only one plough and one sickle every alternate year.

3. *Bhet-begar* is commutable at the option of the tenant at the rate of 4 annas for a plough with ploughman and oxen for a day of one "bel" and two annas for a labourer with sickle, for a day of two "bets."

4. The *malguzar* will at harvest-time provide a midday meal free of cost to the *begar* labourers.

VII.—*Groves and fruit-trees.*

1. Groves now existing shall remain the property of their present possessors, but the *malguzar* shall be the proprietor of such groves should their owners relinquish the land on which they stand, or be ejected for arrears, or die without heirs, provided that trees planted on abandoned *malik-makbuza* plots escheat with the land to Government.

2. When land is transferred the right to trees in the land passes with it. *Malik-makbuzas* and occupancy tenants may plant groves on their land without permission. Fruit-bearing trees within holdings may not be cut without the permission of the Deputy Commissioner.

VIII.—*Roads and thoroughfares.*

The existing paths and roads are to be kept open, and the *malguzars* and tenants shall repair them annually. They are not to be encroached on for cultivation without the special permission of the Deputy Commissioner.

IX.—*The Sir-Bar e ha.*

For the use of tenants is Nos. _____. The *malguzar* shall make a proper allotment of the land to the tenants and shall be at liberty to cultivate it himself in years when sugarcane is not grown.

X.—*The Village-site and Deraghar.*

1. The village-site consists of Nos. _____.

2. Every cultivator is entitled to a site for his house free of rent. But if a raiyat abandons his holding and leaves the village he loses his right to any house-site he may have held. He is entitled to dispose as he pleases of any structures he may have erected on the site or of their materials, provided he does so within one month and provided he does not thereby interfere with the exercise by the *malguzar* of his right to dispose of the site. The rights of non-agriculturists in sites occupied and buildings constructed by them are regulated by agreement with the *lambardar* and *panches*.

3. A *deraghar* or guest-house is to be maintained and kept in good repair.

APPENDIX XI.

WASTE-LANDS FOR THE MALGUZARI VILLAGES HELD BY SHIKMI-GAONTIAS IN THE SAMBALPUR DISTRICT.

I.—Village management.

1. The *lambardar* and the *shikmi-gaontia* sub-*lambardar* are appointed by the Deputy Commissioner in accordance with local custom.
2. The sub-*lambardar* shall be responsible for the management of the village or *patil* and shall be the landlord within the meaning of section 2(6) of the Tenancy Act. He is responsible for payment of the revenue and cess demand to the *lambardar*.
3. The sub-*lambardar* shall be assisted in the village management by a *panchayat* to consist of four *raiya*s of the village elected by the *raiya*s.

II.—Village servants.

1. In this village the following *jhankars* and *ganda* have been sanctioned —

Name of village or hamlet.	Class of servants.	Area of service holding.	Rent leviable from persons holding portion of service land.	Other income leviable.

2. The *jhankar* and *ganda* are entitled to levy a grain cess from *raiya*s. The cess is fixed at *tambis* for a *raiya* with one plough, or double this quantity for a *raiya* with more than one plough of land in the village. The same cess is payable by the *shikmi-gaontia* and all co-sharers holding *bhogra* or *gaontiahi* *raiya* separately. In addition to other remuneration, the *ganda* shall receive as his perquisite the hides and horns of all dead cattle not claimed by the owners. A drawback of Rs. _____ has been allowed on the land revenue to provide additional remuneration for the *ganda*. This sum shall be paid to him annually by the *shikmi-gaontia* in addition to his other remuneration.

3. Besides *jhankars* and *gandas* there are the following *servants* —

Name of village or hamlet.	Class of servants.	Area of service holding.	Other income leviable.

4. These may be dismissed and deprived of their service-land by the *shikmi-gaontia* and *panches* for failure to render due service.

III.—Village expenses.

1. Village expenses may be recovered by the sub-*lambardar* from the sharers and *raiya*s in proportion to the revenue value of their holdings, he himself bearing a proportional share.
2. By village expenses are meant only such expenses as are incurred for the benefit or on account of the whole village, such as expenses for road mending, for the repair of public tanks, etc.

IV.—Waste Lands and Forests.

1. All waste land not in occupation for cultivation is the property of the *malguzar*.
2. The following *khaara* numbers () are reserved as grazing and forest land. They may not be occupied by any one without the special permission of the Deputy Commissioner. All the co-sharers and *raiya*s of the village may graze their cattle on them, and may take in reasonable quantities for their own use within the village, firewood, leaves fencing thorns, and timber for houses and agricultural implements. But they may not sell any of the produce. The sub-*lambardar* and *panches* are responsible for their management, and if they fail in this the Deputy Commissioner may arrange for the management himself.

All other waste lands are at the disposal of the sub-lambardar and co-sharers for cultivation, for granting to raiyats for cultivation, or for the location of new raiyats. The rates referred to in section 50 (3) (b) of the Central Provinces Tenancy Act are—

Bahal. *Berna.* *Mal.* *At.*

But no *nazarana* in cash or kind may be levied for the occupation of waste land.

V.—Tanks.

1. All old tanks existing before last settlement have been entered in the name of the malguzar. The *shikmi-gaontia* shall distribute their water justly with the assistance of the *panchayat* and in accordance with village custom to fields recorded as irrigated from them. He may not levy, in addition to the rent, any charge on account of water from these tanks.

2. These tanks will be kept in good repair by the *shikmi-gaontia* and by the tenants whose lands are irrigated from them.

The beds of these tanks have not been assessed, and cultivation within their limits is prohibited, except with the special permission of the Deputy Commissioner.

3. The mukaddam is responsible for reporting to the Deputy Commissioner all encroachments.

4. All tanks built since settlement by co-sharers and tenants have been recorded as the property of the builder or his representative. The distribution of water from these tanks is effected at the will of the builder or his representative.

5. The beds of these private tanks have been freed from assessment. All cultivation within their beds is prohibited, except with the special permission of the Deputy-Commissioner.

6. Occupancy tenants can make tanks in their own holdings without permission, but for the building of a tank in the village waste the consent of the *shikmi-gaontia* is necessary.

VI.—Bhet Begar.

1. The *bhet-begar* of this village is to be employed only on the bhogra land of the *shikmi-gaontia* in mauza

[Alternative clause for villages containing no bhogra.]

There is no bhogra in this village, but raiyats are liable to render *bhet-begar* for the cultivation of bhogra belonging to the *shikmi-gaontia* situated in any other village not more than three miles distant. Under this clause the raiyats are now liable to render *bhet-begar* for the cultivation of bhogra in mauza

2. Raiyats with more than one plough are to render each plough (s) for one "bel" each, and sickle (s) for a day of two "bels."

Raiyats with one plough only will render only one plough and one sickle* every alternate year.*

3. *Bhet-begar* is commutable at the option of the raiyats at the rate of 4 annas for a plough with ploughman and oxen for a day of one "bel" and 2 annas for a labourer with sickle for a day of two "bels."

† 4. The *shikmi-gaontia* will at harvest-time provide a midday-meal free of cost to the *begar* labourers.

VII.—Fruit-trees and groves.

1. Groves which have been recorded as the property of the malguzar are not to be encroached on for cultivation. Their fruit will continue to be enjoyed by the village community according to custom.

2. The fruit of mahua and other fruit-trees in the village waste is to be enjoyed by all the village community according to custom, but the wood of such trees, when they die, is to be taken by the *shikmi-gaontia*.

3. The fruit of trees planted in the village-waste by raiyats is taken by the person who planted them or his descendants so long as they remain in the village. But if they leave the village and cease to have land therein, they have no further claim, and the fruit reverts to the village and cease to have land therein, they have no further claim and fruits reverts to the village community. The wood of such trees, when they die, is to be taken by the *shikmi-gaontia*.

4. The fruit of trees planted by persons in their holdings and the wood of the trees, when they die, are to be taken by the persons who planted them so long as they retain their holdings. But on transfer of the land the right in the trees is transferred to their holders.

VIII.—Roads and thoroughfares

The ordinary cart-roads, foot-paths, and thoroughfares are to be kept open and passable throughout the year. The raiyats will repair them annually.

IX.—Sugarcane Reserves.

The *bhogra-barchha* for the use of raiyats is Nos. . . . The *shikmi-gaontia* shall make a proper allotment of the land to the raiyats and shall be at liberty to cultivate the land himself in years when sugarcane is not grown on it.

* To be omitted
if the maximum of
ploughs and two
sickles is permitted.

† To be omitted
if the custom does
not exist.

The village-site and Deraghar.

1. The village-site consists of the Nos.
2. Every cultivator is entitled to a site for his house free of rent. But if a rajyat abandons his holding and leaves the village, he loses his right to any house-site he may have held. He is entitled to dispose as he pleases of any structures he may have erected on the site or of their materials, provided he does so within one month and provided he does not thereby interfere with the allocation of house-sites by the *shikmi-gaontia* and his *panches*. The rights of non-agriculturists in sites occupied and buildings constructed by them are regulated by agreement with the *shikmi-gaontia* and *panches*.
3. A *deraghar* or guest-house is to be maintained and kept in good repair.

APPENDIX XII.

ZAMINDARI WAJIB-UL-ARZ FOR SAMBALPUR DISTRICT.

PART I.—OF THE RIGHTS AND LIABILITIES OF THE ZAMINDAR AS AGAINST GOVERNMENT.

I.—Tenure.

1. The tenure of the zamindari is impartible and non-transferable save to the nearest heir, and each such transfer shall be subject to the approval of the Local Government. The zamindari is held by one person, the zamindar or zamindarin for the time being, and is held on condition of loyalty, proper management, and the improvement and cultivation of the estate.

2. The privileges of the zamindar are personal and should at any time the estate be transferred otherwise than in accordance with this clause, the Government will be at liberty to impose a full land revenue and forest assessment, and to resume all special zamindari privileges.

II.—Succession.

1. On the death of the zamindar the estate devolves upon his eldest legitimate son. In default of a son either born to him or adopted, the estate devolves upon the nearest legitimate heir of the zamindar according to Hindu Law and the custom of the family. In the event of any dispute arising as to the legitimacy of any claimant to the succession, the case shall be decided according to the custom of the family.

2. In the event of the first in order being in the opinion of the Local Government unfit to carry out the conditions of clause I, the zamindari devolves upon the nearest heir who possesses the requisite qualifications.

III.—Removal of zamindar and forfeiture of privileges.

The zamindar in the case of gross misconduct or mal-administration is liable to removal by the Local Government.

IV.—Maintenance of relations.

The members of the zamindar's family have a right to suitable maintenance from the zamindar, but no member of the zamindar's family or any other person is entitled to hold or enjoy any portion of the zamindari in proprietary right from reason of such portion of the zamindari having at any time been made over to, or continued in the possession of, such person for his maintenance or any other purpose.

V.—Village management.

The villages of the zamindari are managed according to the conditions of Part II of this *Wajib-ul-arz* and in accordance with such provisions as may from time to time be laid down by law, or by order having the force of law.

VI.—Ferries.

The zamindar shall continue as at present to manage the ferries in accordance with the laws and rules prevailing in the khalsa and shall take care that the interests of the khalsa do not suffer from his arrangements. If at any time it is considered expedient for Government to assume the management of this source of revenue, the zamindar shall receive reasonable compensation in respect of any loss of income, resulting from such transfer.

VII.—Forests.

The forests or forest lands of the estate shall be managed in accordance with rules prescribed by the Board of Revenue.

VIII.—Dues on traders.

No transit dues are levied by the zamindar, but the zamindar, with the sanction of the Board of Revenue, may levy bazar-dues in selected towns at such rates and under such rules as may be approved, provided that the income from such dues be in every case spent on the improvement of the town in which they are levied.

IX.—Miscellaneous dues.

No dues not authorised by this *Wajib-ul-arz* shall be leviable by the zamindar without the sanction of the Board of Revenue.

X.—Minerals.

All minerals are the property of Government which has a right of free access and egress thereto and therefrom.

PART II.—OF THE RELATIONS OF THE ZAMINDAR WITH HIS THEKADARS, MUAFFIDARS AND TENANTS.

I.—Village management.

1. In villages *behl khām* the zamindar and in other villages the muaffidar or thekadar nominated as manager by the zamindar is responsible for the management of the village and shall be the landlord within the meaning of section 2(c) of the Central Provinces Tenancy Act.

2. No co-sharer in a muafi or thekadari village can claim to have a share partitioned and separated. A tenant of a village in which sharers have made a private partition amongst themselves can always claim to pay his rent to the manager nominated by the zamindar under clause (1).

3. The zamindar in his home villages and the manager in the other villages will be assisted in the village management by a panchayat to consist of four tenants of the village elected by the tenants.

II.—Village servants.

In this village the following jhankars and gandas have been sanctioned :—

Name of village or hamlet.	Class of servants.	Area of service holding.	Rent leviable from persons holding portions of service land.	Other income leviable.

2. In addition to other remuneration the ganda shall receive as his perquisite the hides and horns of all dead cattle not claimed by the owners.

3. Besides jhankars and gandas there are the following village servants :—

Name of village or hamlet.	Class of servants.	Area of service holding.	Other income leviable.

4. These may be dismissed and deprived of their service land by the manager and *panches* for failure to render due service.

III.—Village expenses.

1. Village expenses may be recovered by the manager from the sharer and tenants in proportion to the rental value of their holdings, he himself bearing a proportional share.

2. By village expenses are meant only such expenses as are incurred for the benefit or on account of the whole village, such as expenses for road mending, for the repair of public tanks, etc.,

3. In this village there are the following special village expenses—

IV.—Waste Lands and Forests.

1. All waste land not in occupation for cultivation is the property of the zamindar.
2. But the manager of each village shall set apart with the approval of the zamindar an adequate portion of the unoccupied lands for the formation of village forest-reserve and grazing lands and these shall not be brought under cultivation.
3. All other waste or forest land included within the village limits may be occupied for cultivation by the manager or given out by him to co-sharers and tenants.
4. All cultivators shall be entitled to graze their cattle in the village forest and to take in reasonable quantities for their own use in the village firewood, leaves, fencing-thorns, and timber for houses and agricultural implements.

V.—Tanks.

1. The water of all public village tanks shall be distributed justly and in accordance with village custom to fields recorded as irrigated from them. This distribution shall be effected by the zamindar or, in thekadari and musafi villages, by the manager and the village panchayat.
2. These tanks shall be kept in good repair by the manager and by the tenants whose fields are irrigated from them.
3. The beds of these tanks have not been assessed and cultivation within their limits is prohibited except with the special permission of the Deputy Commissioner.
4. All tanks built since last settlement by thekadars, musafidars, or tenants, within their holdings have been recorded as part of their holdings. The distribution of water from these tanks is effected at the will of the builder or his representative.
5. The beds of these tanks also have been freed from assessment. All cultivation within their limits is prohibited except with the special permission of the Deputy Commissioner.
6. Occupancy tenants can make tanks on their own holdings without permission, but for the building of a tank in the village waste the consent of the zamindar is necessary.

VI.—Bhet-begar.

1. The bhet-begar of this village is to be employed only on the *sir* land of this village. But if the zamindar has *sir* cultivation in any village within three miles he may receive in that village half of the permissible bhet-begar.
2. Tenants with more than one plough are to render each—plough (s) for one "bel" each, and sickle (s) for a day of two "bels."
Tenants with one plough only will render only half of this, giving bhet-begar every alternate year if the two plough tenants render only one plough and one sickle annually.
3. Bhet-begar is commutable at the option of the tenant at the rate of four annas for a plough with ploughman and oxen for a day of one "bel" and two annas for a labourer with sickle for a day of two "bels."
4. The zamindar, musafidar or thekadar who receives bhet-begar at harvest time provides a mid-day meal free of cost to the begar labourers.

VII.—Groves and fruit-trees.

1. Groves now existing shall remain the property of their present possessors, but the zamindar shall be the proprietor of such groves should the owners relinquish the land or which they stand, or be ejected for arrears or die without heirs.
2. When land is transferred the right to trees on the land passes with it.—Occupancy tenants may plant groves on their land without permission. Fruit-bearing trees within holdings may not be cut without the permission of the Deputy Commissioner.
3. The fruit of trees planted in the village waste by tenants may be taken by the persons who planted them so long as they retain their holdings in the village, but if they leave the village they have no further claim.

VIII.—Roads and thoroughfares

The existing paths and roads are to be kept open, and the zamindar, his managers, and tenants, shall repair them annually. They are not to be encroached upon for cultivation without the special permission of the Deputy Commissioner.

IX.—The *Sir-barchha*

The *sir-barchha* for the use of the tenants is Nos. ————. The zamindar or his manager shall make a proper allotment of the land to the tenants and shall be at liberty to cultivate it himself in years when sugarcane is not grown.

X.—The Village-site and *Deraghar*.

1. The village site consists of Nos. ————.
2. Every cultivator is entitled to a site for his house free of rent. But if a tenant abandons his holding and leaves the village he loses his right to any house site he may

have held. He is entitled to dispose as he pleases of any structures he may have erected in the site or of their materials, provided he does so within one month and provided he does not thereby interfere with the exercise by the zamindar or his manager of his right to dispose of the site. The rights of non-agriculturists in sites occupied and buildings constructed by them are regulated by agreement with the zamindar or his manager.

3. A *deraghar* or guest-house is to be maintained and kept in good order.

XI.—*Nazarana*.

The zamindar will not levy premia (*nazarana*) when granting or renewing leases, but will receive in lieu thereof an annual payment.

XII.—*Cesses*

No cesses other than *patwari cess*,* the *dasehra-tika* and *pushpuni* or *rakhi*, may be levied by the zamindar except with the sanction of the Board of Revenue.

XIII.—

When the village lands adjoin blocks of Government or zamindari Forests, the managers and tenants will contribute towards the maintenance of the boundary by annually clearing a line to the width of 20 feet on their side of the boundary line.

* The *Patwari Cess* has since been abolished.

DEPARTMENT OF LAND RECORDS, BENGAL.

No. 205-T

FROM H. McPHERSON, Esq., I.C.S.,

Director of the Department of Land Records, Bengal.

TO THE SECRETARY TO THE BOARD OF REVENUE, L. P.,

LAND REVENUE DEPARTMENT.

Dated Darjeeling, the 3rd June 1908.

SIR,

I HAVE the honour to submit for the information and orders of the Board and Government, the Final Report on the Land Revenue Settlement of the Sambalpur District prepared by Mr. F. Dewar, I.C.S., who was Settlement Officer in charge of the operations from their inception in 1902 till their conclusion in 1906. The general excellence of the Report is enhanced by the many features of special interest which it possesses for Bengal Officers unfamiliar with the conditions and details of Central Provinces administration. It comes to us most opportunely two years after the transfer of the Sambalpur District to the Province of Bengal and not only supplies us with a full account of the settlement operations which were fortunately completed before the transfer, but is also a storehouse of information regarding the physical features of the district, its history, its population, and its general well being. Part I of the Report, which is the larger part is devoted to the district, and Part II to the settlement operations.

2. The total area of Sambalpur while it remained in the Central Provinces was 4,960 square miles. Certain estates in the extreme north and north-west were transferred to the districts of Bilaspur and Raipur. The area constituting the district of Sambalpur as transferred to Bengal in October 1905, is 3,824 square miles in extent. The district is divided into two portions called the Sambalpur and Bargarh tahsils lying east and west of the Mahanadi river which traverses the district from the north-west to the south-east. The Sambalpur tahsil has an area of 1,599 square miles and includes 773 villages. The Bargarh tahsil has an area of 2,225 square miles and includes 1,175 villages. The former is traversed by the main line of the Bengal-Nagpur Railway with a branch line from Jharsogra to Sambalpur. The latter is crossed by the Sambalpur-Raipur road which is its main line of communication and practically its only one. The district is hemmed in on the north and west by great ranges of hills. East of the western range lies the Bargarh plain, an undulating tract of country drained by the Dantra and Jira tributaries of the Mahanadi. Between the northern range and the Mahanadi is situated the Ambabhona and Lakhanpur valley containing 123 villages which belong to the Bargarh tahsil. The Sambalpur tahsil on the left of the river comprises the valley of the Ib river and the undulating country to the east. There is good forest in the hilly country to the north of the Bargarh tahsil but none of any value in its undulating valleys. Hills and forest are distributed more evenly over the surface of the Sambalpur tahsil. On the whole the district is still well-wooded. Government reserves cover 396 square miles and zamindari forests 375 square miles. The cultivators in the open valleys, having cleared off wastefully their village forests, have now to resort to

these two sources of supply for their domestic and agricultural needs, but the open country is redeemed from bareness by the abundance of its fruit trees. Of these the most important are the mahua, the mango and the various varieties of palm. Sambalpur is still a well-known tiger district. Bears and panthers are also numerous. While these take their annual toll of human life and cattle, the chief crop-destroyers are jackal, pig and deer. Such are briefly the physical conditions under which the Sambalpur cultivator tills the soil and earns his livelihood.

3. Mr. Dewar gives a brief account of the early history of Sambalpur in Chapter II of Part I. It was one of a cluster of states held by Chauhan Rajputs from Mainpuri in the North-Western Provinces. The Maharattas conquered it in 1797. The Rajput Raja was restored by the British in 1817. From 1849, when the Raj family died out, till 1862 when it was transferred to the Central Provinces, it was administered by the Government of Bengal. During the year of the Mutiny and the five subsequent years, it was overrun by dacoits and freebooters and was in a condition of anarchy. After these pests had been hunted down and deported, the district quieted down. The disturbances of 1857-62 delayed the revenue settlement of the district, with the result that it was eventually made on lines different from other districts of the Central Provinces. Elsewhere proprietary rights were conferred on village headmen. In Sambalpur the first settlement was a compromise between proprietary and raiyatwari principles and the system then introduced, which has worked on the whole well, has continued to the present day.

During the period 1817 to 1849 when the district was held by the old Raj family, an enormous number of religious and service grants were made to their priests and adherents. Service grants were also made by the British Government after the troubles of the Mutiny. These alienations have reduced the land revenue of the district by more than one-fourth. Mr. Dewar notices the important part played by Gond and Binjhal aborigines in the internecine struggles and political disorders of the district. Their resentment is now directed against the immigrant Hindus who have ousted them from their villages. "The aggression of the Hindu", says Mr. Dewar "is continuous and successful. The aboriginal, bought, mortgaged, and sometimes cheated out of the land cleared by his forefathers, is exported to Assam or moves to the still uncleared forests".

4. The population of Sambalpur in 1901 was 638,922. The population of the old district was 829,698. The increase found at the 1891 census was 13 per cent. and at the 1901 census 4 per cent. only. Mr. Dewar ascribes this falling off to the effects of the famine which came upon the district with sudden and unexpected severity in 1899-1900. The district had hitherto been regarded as immune from famine. The failure of crops which occurred in 1899 was primarily due to short rainfall, but the disturbance of prices caused by the opening of the new railway was a contributory cause which intensified famine conditions in 1900. Agriculturists tempted by rising prices, sold out their stocks when they should have held them back for local consumption. The strain of the famine fell on the labouring classes and smaller cultivators unaccustomed to the resultant high prices. Difficulty of communications made the task of famine relief a hard problem for Government. For many years prior to 1899, the opening of the railway had only brought increasing prosperity to the district. It may be hoped that the check of 1899-1900 was only temporary and that the lesson learnt then by the holders of grain stocks will prevent a repetition of the fatal mistakes made in those years.

5. The average density of the population is 215 per square mile, leaving out of account the uninhabited tracts of reserve forest and the Mahanadi river bed. The average taken over the cultivated area is 373 per square mile. These averages are said by Mr. Dewar to be high as compared with other districts of the Central Provinces. They are very low as compared with the averages of Bihar or Lower Bengal. Khalsa Sambalpur with an average of 489 per square mile of cultivated area is the most thickly populated portion of the district.

There are in all 1929 inhabited villages with an average population of 300. Of these 13 only have a population exceeding 2,000. Sambalpur town in 1901 returned a population of 12,870. Its limits have since increased.

6. Uriya was the language of three-fourths of the inhabitants of old Sambalpur. The non-Uriya areas where Hindi was spoken, are the areas that have been excluded from the Bengal district. At the last census only 5 per cent. of the population was returned as speaking Dravidian or Munda dialects, although the aboriginal tribes numbered 33 per cent. of the total population. The principal Dravidian tribes are the Binjhals, Gandas, Gonds, Kandhs, Panikas, Bhuiyas, Bhainas and Uraons. The Munda tribes are the Kisans, Kuras, Kols, Kharias and Mundas. While the former are declining in numbers and adopting Hinduism, the latter show a steady increase and have generally resisted the encroachments of Hinduism both in speech and religion. The strong communal spirit of the Munda races is accountable for the difference. Amongst Hindus the most important castes are Brahmans whose influence and importance are disproportionate to their numbers, Kultas who are the most numerous cultivators and are distinguished by their thrift and enterprise, Rawats or Gauris, who are the cattlemen of Sambalpur, Sawaras—Hinduised aborigines who are farm labourers and small cultivators, Agharias, Telis and Malis. In paragraphs 26 to 43 of the report, Mr. Dewar has given much interesting information regarding these and other castes, including the artizan and industrial classes.

7. The agricultural caste absorb at least 75 per cent. of the total population, but practically all castes have some connection with land, direct or indirect. Many of the zamindari estates are still held by aboriginal families, Gonds and Binjhals, but most of the gaontias or village headmen are Hindus. Out of 950 gaontias in the Khalsa tracts, 775 are Hindus. The aboriginal element is stronger in the more backward tracts. The general average of agricultural prosperity is high, and the material condition of the people is steadily improving. Mr. Dewar specially notes the improvement that has occurred of recent years in food, dress, housing, and the supply of good drinking water. The zamindars, mostly aboriginals are a thrifless lot and many of their estates are under Court of Wards' management. The gaontias or village managers are a prosperous class. Out of 950, 650 are classed as rich, 137 as free from debt, 113 as lightly indebted and 50 as heavily indebted. Only 5 per cent. of their holdings have changed hands in 15 years, a fact which argues stability of welfare. A curious feature of settlement work in the Central Provinces, is the attempt that is made to classify tenantry according to their material condition. Mr. Dewar adopted a four-fold classification, viz., A—the gaontias and richer raiyats, B—the substantial tenants who have enlarged their holdings and have a fair supply of live-stock, C—the semi-aborigines who have made no advance since the previous settlement but have sufficiently large holdings to keep them in comfort and D—the aborigines who have small holdings and eke out their cultivation by the collection of jungle produce. He deduced the following percentages for the Khalsa and Zamindari areas :—

		Khalsa.	Zamindari.
A class tenants	...	12 per cent.	5½ per cent.
B	...	41 "	37½ "
C	...	57 "	45½ "
D	...	10 "	11½ "

The average holding of the B class khalsa tenants is in the Bargarh tahsil 19 acres and in the Sambalpur tahsil 15½ acres, and the average debt Rs. 13 only.

The average holding of the C class raiyat is 9½ acres in Bargarh and 7 acres in Sambalpur and his average debt Rs. 30. The market value of his holding is seldom less than Rs. 100.

The figures testify to the ample prosperity of the great majority of the cultivating classes of Sambalpur.

8. Under section 46(3) of the Central Provinces Tenancy Act of 1898 the transfer of occupancy land, except in the shape of annual sub-lease is prohibited, and all transfers made in contravention of the Act can be set aside on application made within two years by the landlord or relatives of the transferring raiyat. It does not appear from a comparison of the number of applications with the number of transfers, that these provisions of the law have been effectual in stopping the transfer of land from the hands of poor and

thrifless raiyats into the hands of the richer and more enterprising cultivators. Cash sales are not common, but possessory mortgages are numerous, and the Deputy Commissioner has brought to my notice that transiers are most often effected through the medium of the gaontias in the shape of relinquishment and resettlement. Mr. Dewar estimated that not less than 10 per cent. of the land had changed hands since 1889.

9. The relations of the village headmen with their raiyats are on the whole satisfactory and they do not appear to have abused the power which Section 46 gives them, by exacting excessive consent fees on transactions of transfer. The necessity that is upon them of obtaining the assistance of the raiyats in the cultivation of their home-farm lands is probably accountable for their graciousness. The very small number of suits that have to be brought in Sambalpur for arrears of rent is remarkable, and testifies to the lightness of the rent demand. On the other hand, there has been a considerable increase in suits for the possession of land since the railway opened. Many of these were brought by gaontias seeking to recover possession of home-farm lands sublet to raiyats. There have also been numerous disputes about irrigation rights. Formerly the raiyats used to grow sugarcane jointly on common land near the village tanks. The tanks are less and less reserved for this purpose as rice cultivation has grown more profitable and the raiyats complain of the practical monopoly of water-rights enjoyed by the headmen.

10. Chapter IV of the first Part is devoted to agriculture. The area available for cultivation is 2,986 square miles, of which 1,570 square miles is in the khalsa and 1,416 in zamindari tracts. Sixty-five per cent. of the former is occupied for cultivation and 58 per cent. of the latter, the district average being 62 per cent. Of the occupied area, 74 per cent. was cropped in the settlement year, 14 per cent. was current fallow, and 12 per cent. old fallow. Of the unoccupied area, 27 per cent. was covered by tree-forest, 53 per cent. by scrub jungle or grass and 20 per cent. by water, hills, rocks, roads and buildings. Mr. Dewar estimates that the increase in occupied area since 1889 has been not less than 16 per cent. It is least in the Bargarh tahsil where cultivation received a severe check in the famine of 1899-1900, and greatest in the Sambalpur tahsil where the rainfall is more certain and the opening of the railway has stimulated progress.

Mr. Dewar anticipates a continued increase of cultivation in the Sambalpur tahsil. There is little scope for extension in the western tahsil.

11. The crop statement shows that there has been since last settlement a marked increase in the cultivation of transplanted rice, of *til*, of *kulthi*, and of *kodon* and *kutki*. There has been an equally marked decline in the cultivation of sugarcane, cotton, *urad* and *mung*. These changes point to closer cultivation of the better classes of land. *Kutki* has taken the place of rice amongst the aboriginals of the Bargarh tahsil, because it is less dependent than rice on the rainfall. *Til* is another crop that the aboriginals take to when driven from their rice lands by immigrant Hindus. Sugarcane has already been referred to in paragraph 9 above. The decline in its acreage is due to the change of custom that has occurred. Cotton has declined because the uplands suitable to its cultivation have become exhausted. Mr. Dewar has given us descriptions of rice and sugarcane cultivation which will be of special interest to the Department of Agriculture.

12. There has been a marked increase in the irrigational resources of the district since 1889. In the khalsa tracts, the irrigated area has increased by 54 per cent. The number of tanks has increased from 3,616 to 5,572 and of wells from 839 to 8,116. The advance is most striking in the Bargarh tahsil where tanks have increased from 1,697 to 2,965 and wells from 204 to 6,034. The Bargarh tahsil has an average rainfall of 53.61 inches as against 59.83 in the Sambalpur tahsil, and it is consequently more important in the former than in the latter to pay attention to the subject of irrigation. Irrigation wells seldom cost more than Rs. 50 as subsoil water is usually found within 15 or 20 feet of the surface. Tanks are more expensive and an account was kept of their cost, as raiyats' improvements were exempted from assessment for the period of the present settlement. It appeared that about 5 lakhs of rupees had been expended on tanks since the previous settlement, of which 1 lakh was spent by Government in the 1900 famine and the rest was the private expenditure of raiyats and others.

13. Mr. Dewar estimates the value of the total agricultural produce of the district, after deducting the amount used for seed, at 168 lakhs of rupees, of which 123½ lakhs represent rice, 10½ lakhs sugarcane, 9 lakhs *til*, 1½ lakhs cotton, 10½ lakhs pulses, 3 lakhs millets and 10 lakhs other crops. Of the rice he estimates that 4½ lakhs of maunds valued at about 11½ lakhs of rupees and of the other crops about 2 lakhs of maunds valued at 3½ lakhs of rupees, are available for export. With this exportable asset of 1½ lakhs of rupees, he contrasts the total rental of the district, about 2½ lakhs of rupees, and the total Government revenue, which is less than 2 lakhs. Of the total value of the produce, Government revenue absorbs less than one-eightieth part. For this district at any rate, there is a complete answer to the critics who rave about the oppressive burden of the land revenue demand.

14. The extent to which the prices of produce and land values have been affected by the opening of the railway and the improvement of communications, has been set forth in Chapter V. Up to 1889 all the trade of the district went down the Mahanadi river and the Ganjam Road. Most of it is now drained off by the Bengal-Nagpur Railway and the effect on prices has been remarkable. The average price of rice from 1878 to 1888 was 33 seers per rupee. The average price from 1892 to 1902 was 17 seers per rupee. The price of *til* which in 1887 averaged 17 seers, has averaged between 1892 and 1902, 11 seers to the rupee. Figures are given to show that since 1896 the value of land has quadrupled. But the road and railway communications of the district are still far from perfect. The construction of a railway from Raipur to Vizianagram is under contemplation, and when completed will afford an easier outlet to the produce of south Bargarh. Mr. Dewar advocates the bridging of the Mahanadi and the extension of the Jharsogra-Sambalpur Branch to Bolangir on the projected line, through Bargarh. Another railway is proposed from Sambalpur to Cuttack through Rairakhol and Angul. This would benefit the eastern portion of the Sambalpur tahsil. Mr. Dewar suggests the bridging of the Ib river at Bagra or Rampela as an improvement in the road communications of the eastern tahsil. When these improvements are effected, a still further rise of prices and increase of agricultural prosperity may be expected. The district will also be rendered immune from the dangers which threatened it in the famine of 1899-1900.

15. One of the most interesting chapters of the report is that which deals with the land tenures of the district. Their very names are for the most part unfamiliar to us. Mr. Dewar distinguishes six tenures of a proprietary nature, called (1) Zamindari, (2) Gaontiahi, (3) Malguzari, (4) Bhogra-bhogi, (5) Malik-makbuza, (6) Brahmottardari. Each of these calls for a few words of explanation.

16. The zamindar of the Central Provinces is a feudal proprietor whose rights are impartible and not transferable except to his nearest male heir approved by Government. No subordinate proprietary rights can be acquired under Sambalpur zamindars. There is one exception to this rule in the sub-zamindari of Garh Loisingh. The zamindar pays a tribute which is ordinarily much less than full proprietary assessment. Formerly zamindars managed their own police, excise, and cattle pounds. They have been divested of these powers and have received compensation for the loss of income involved. Most of their villages are in the hands of headmen whose leases were originally renewed on payment of *nazarana*. When the renewal fee tended to become extortionate, Government stepped in and protected the headmen by ruling that its amount should be determined by Revenue Officers and that it should be levied in the shape of an annual rent increase. The increment of new cultivation between settlements now goes to the village lessees, and a certain amount of sub-feudation has grown up, as the lessees have been allowed to grant sub-leases to persons intervening between them and the raiwats.

17. The gaontia is the village headman of the Central Provinces. In other districts full proprietary rights were conferred on him, but Sambalpur was saved from this mistake by the lateness of its settlement. In Sambalpur the gaontiahi tenure carries the following rights:—(1) Proprietorship and free right of alienation of the home-farm, (2) the right of village management so long as Government revenue is paid, and (3) the right of alienation of the whole village or of a share of it, if accompanied by a transfer

of the home-farm land. Unlike a malguzar, the gaontia may not sell timber of the village forest. The gaontia receives in the valuation of his home-farm or in cash, 25 per cent. of the raiyati rental of the village.

18. The malguzars were estate-holders to whom were conceded full proprietary rights. They nearly all hold their estates revenue-free. The gaontias holding villages under them are protected and one result of the various orders passed by Government is that while the gaontias pay cesses on their home-farms only, the malguzar has to pay cesses for the whole village.

19. Bhogra-bhogi tenures consist of parcels of the original home-farm lands of headmen made over to younger branches of the gaontiahi families, which in return gave up their claim to a share in village management.

20. Malik-makbuza tenures are very similar to the last. They occur in villages where malguzari rights were accorded and portions of the former "bhogra" now called "sir" have been given to younger branches of the malguzari families.

21. The brahmottadari rights are found in khalsa villages where specific plots of land have been granted to Brahmans and others and the grants have been recognized as proprietary.

22. The Central Provinces Code draws a distinction between absolute-occupancy rights, occupancy rights, ordinary raiyati rights and sub-tenancies. In Sambalpur all tenants except of service land and of home-farm land, have occupancy rights unless they are sub-tenants. Where a headman holds land that is not 'bhogra' or home-farm, the land has been recorded as 'gaontiahi-raiyati.' The same difficulty that has arisen over the interpretation of section 22(2) of the Bengal Tenancy Act, is likely to arise where the gaontia holding such land is one of a body of co-sharers and sublets to a third party. The raiyats of gaontiahi khalsa villages are liable to pay cesses like raiyats holding direct from Government. The raiyat of a zamindari or malguzari village escapes this liability. There are only 17 purely raiyatwari villages. Mr. Dewar's notes on the occupancy right show that although no serious difficulties have yet occurred, complicated problems of status and rent may arise in the future as the competition for land increases.

23. Service lands are of two kinds (a) public and (b) village. In the former class are the holdings of the village watchmen called Jhankar and Ganda. They are exempted from assessment up to one-eighth of the total village assessment. In the latter class are the holdings of the village clerk, potter, smith, herd, barber, and washerman. These have been continued free of assessment as in the previous settlement.

24. Sub-tenancies are usually mere usufructuary mortgages executed by raiyats for a short term of years. There are two special varieties:—

- (1) those on public service lands, enjoyed by members or branches of the family of the public servant, holding as co-sharers;
- (2) those on bhogra or home-farm land where some fixity of tenure has been secured by agreement.

Rents were fixed for the former variety at the settlement, but the gaontias have been left to deal with their own sub-tenants.

The sub-letting value of raiyati land appears to be about Rs. 4 per acre, as against an average raiyati assessment of 6 annas 4 pies.

25. Part II of the Report is devoted to the settlement operations proper. In Chapter VII, Mr. Dewar has given an account of the early fiscal history of the district, of the previous settlements under British rule and of the circumstances under which the present operations were initiated. He estimates that prior to 1864 the Raja of Sambalpur realised from the estate about one lakh of rupees in cash, and about five times this amount in the shape of produce requisitions, forced labour, military service and "benevolences" of various sorts. A perusal of paragraph 96 may be commended to those who are fond of contrasting the golden age of native rule with the grinding tyranny of British administration. The first regular settlement was carried through by Mr. Russell between 1871 and 1877. It was made without survey on the basis of estimates of the seed-spread capacity of each village. The khalsa assessment amounted to Rs. 1,10,414 and cannot have averaged more than five annas per acre. The next settlement was made in 1885-87 by Mr. Nether-so'e who carried out a detailed survey of the khalsa tracts. The area proved to be 50 per cent. in excess of Mr. Russell's estimates and an enhanced revenue

of Rs. 1,52,406 was imposed. Its incidence averaged 5 annas 5 pies per acre. In spite of its lightness, it was received with great dissatisfaction, fomented by the gaontias who resented the non-bestowal of proprietary rights upon them. Between 1891 and 1897 the survey was extended to the zamindari tracts, and in 1899 a special staff was appointed to bring the khalsa maps up to date, in preparation for the next revision of settlement which fell due in 1902-03. The extension of cultivation that had occurred since 1885-89, as well as the rise in prices that had followed the opening of the railway had given Government good grounds for expecting a considerable revenue enhancement at the close of Mr. Nethersole's settlement. Mr. Dewar was appointed Settlement Officer in January 1902 and placed in charge of the present operations. His task was not only to impose the new enhancement in a manner that would avoid hardship to individuals but also to equalise the burden of assessment which from the roughness of its first distribution, the subsequent extension of cultivation, and the opening of the railway, no longer pressed evenly on the various agricultural interests of the district. At the same time he had to bring the record-of-rights into more perfect accord with the altered facts of possession and the changes that had occurred in the customs and usages of the district.

26. To a Settlement Officer, the most important feature of these operations will be the application of the soil-unit system by which Mr. Dewar strove to equalize the incidence of assessment. The system is fully described in Chapter VIII of the Report. All lands are first divided into classes, which in an undulating district like Sambalpur depend upon level and position rather than upon soil. Sub-classes are determined by proximity to the village site, facility of irrigation and other factors. To each class of land an arithmetical figure is then attached which indicates its relative productivity. This relative productivity is ascertained by the most elaborate enquiry and is based upon a comparison of the net profits of cultivation. Gross outturns of produce were first estimated on the basis of numerous crop experiments. The net profits were ascertained by deducting from the values of the gross outturns, the cost of seed, labour, stock, implements, and special irrigation. We need not follow Mr. Dewar into the elaborate calculations that were involved in the process as described by him in the Report. The arithmetical results may be summed up by saying that if the figure 2 be taken to represent the productivity of unembanked upland removed from the village site, the other classes and sub-classes are represented by the following units:—

Rice land—	Unit.
Bahal I Khari Pani	38
" Khari	34
" Pani	34
" Ordinary	28
Bahal II Khari Pani	32
" Khari	28
" Pani	28
" Ordinary	23
Berna I Khari Pani	27
" Khari	24
" Pani	24
" Ordinary	19
Berna II Khari Pani	25
" Khari	21
" Pani	21
" Ordinary	16
Mal Saman Khari Pani	20
" Khari	17
" Pani	17
" Ordinary	10
Mal Tikra Khari	11
" Ordinary	7

Non-rice land—				Unit.
Ordinary upland or At	...	...	...	2
Upland lying close to village site	...	...	...	4
Sugarcane land or barchha	...	...	...	38
Ditto	when lying close to village site or the			
main tank	...	...	...	50
Garden land or bari, ordinary	...	...	...	10
Bari Kharri	...	...	...	20
„ Pani	...	...	...	20
„ Khari Pani	...	...	...	25

27. Altogether there are 30 classes, and 18 different soil units have been employed to express their value. The four main classes of rice land are familiar to us in Bengal as they occur in the Chota Nagpur plateau and adjoining districts like the Sonthal Parganas. The *bahal* lands are the lands of the more open valleys which are practically free from all danger of drought as they are either impregnated with springs or protected by irrigation embankments thrown across the heads of the valleys. In Sambalpur they have been subdivided into *bahal I* and *bahal II* according as the valley is comparatively broad or narrow. The *berna* lands are the rice lands of the smaller valleys or dells, which are immune from drought in all ordinary years but are liable to injury from sand deposit and to breach of their field embankments by sudden flood in heavy rain. The *mal saman* and *mal tikra* lands are the terraced rice lands of the slopes, divided into a lower and upper variety. The former get some help from the latter. The upper terraces are most liable to drought as they depend entirely on the rainfall and are rarely irrigable. Mr. Dewar's average factors for the three main classes, *bahal*, *berna* and *mal* were 30, 18 and 10. In Mr. Russell's settlement the corresponding factors were 20, 17, 14 and in Mr. Nethersole's settlement 20, 17 and 12. It will be seen that Mr. Dewar's factors are much more favourable to the inferior qualities of rice land than were those of his predecessors. In other words, the burden of assessment is reduced for the raiyat whose holding is composed mainly of inferior land. As such raiyats are usually the poorer raiyats, the change is in the right direction. Mr. Dewar's factors are of course based, not on this consideration; but on his estimates of net produce values. He gets for *bahal* land an average net profit of Rs. 23 as opposed to Rs. 14 for *berna* land and Rs. 5-8 for *mal* land. These more than justify the reduced factor adopted for the last class. The profits of sugarcane cultivation would have justified a higher factor than has been taken for sugarcane land, but as sugarcane is usually grown on the best rice land, and as Mr. Dewar was anxious to see its cultivation re-extended, he confined himself to the highest factor that was taken for rice land. An addition of one-third was made in the case of sugarcane plots favourably situated near the village site or irrigation tank.

28. The work of field classification was done by the Revenue Inspectors supervised by eight Assistant Settlement Officers and by the Settlement Officer himself. The different classes were marked on the map by coloured pencils, green being used to block out the ordinary classes, blue to indicate irrigated areas and red to indicate *khari* areas. The business of the superior staff was to make sure by field inspection that the blocking of classes on the map had been done correctly. The process is very much like the soil mapping that is frequently done as a preliminary to assessment in Government estates of Bengal, particularly in diara estates. The raiyats and gaontias were consulted freely regarding the classification and took a great interest in it. They were usually to be trusted in the information they supplied. As Mr. Dewar says, "the best guides we had in classification were the people themselves." This free resort to public opinion did much to establish confidence and is no doubt one of the main causes of the popularity of the new settlement.

29. Besides marking classification on the map, the Inspectors had to correct the map and khasra in accordance with the facts of possession, to compile the khewat or list of proprietors, to prepare lists of encroachments, of irrigation works, of improvements, of disputes, of sales, of livestock and to write up a note of certain village customs. From the corrected khasras they had to write up corrected rent-rolls on which certain information was noted regarding each raiyat.

30. The standard of check prescribed for Assistant Settlement Officers was 20 per cent. of the total field entries, but this percentage was often exceeded. In the course of their work they had to decide all disputes and to compile information about the gaontias, the status of tenants, the classification of lands, the prosperity of the raiyats and other subjects. Mr. Dewar has given some description of the nature of the disputes that arose for decision in the course of field check, but he has given no figures regarding their number from which we can say how the volume of the dispute work of Sambalpur compares with that met with in other settlements of Bengal. The field work was begun in March 1902 and completed by December 1904. The bulk of the khalsa work was done in 1902-03 and of the zamindari area in 1903-04. In 596 zamindari villages, only a summary settlement was undertaken and in 615 others the process was less elaborate than in the khalsa tracts.

31. Mr. Dewar calls the process of field check "attestation," a word which conveys quite a different meaning to the Settlement Officer of Bengal. The fact is that the work of settlement in Sambalpur has practically nothing in common with settlement work as we at present know it in the rest of the Province. The Settlement Officer of the Central Provinces has, to begin upon, a record and map which have been more or less efficiently maintained. He has to see that they are brought quite up to date and that all errors are corrected before they are made the basis of a new land revenue settlement. His main business is the work of rent assessment. The ordinary Settlement Officer of Bengal steps into a chaos out of which he has to evolve order, and his work is more a work of creation than of mere record. He has to begin by making a map and his first draft record is a collection of the facts of possession so far as they can be ascertained in the first field season. All complicated questions of status and rent have to be left for decision to a second season. When the draft record has been completed in recess and the Settlement Officer is able to appreciate the light which it throws on the relations of landlord and tenant he goes over it with the raiyats, re-hearing disputes, ascertaining rents, and determining status. The work is done at a central camp, and it is this process which is called attestation. Attestation is followed by publication and publication by the resurrection and redecision of disputes. Save in Government estates, the ordinary Settlement Officer of Bengal has little to do with rent settlement. All this is very different from the work of a Central Provinces settlement as portrayed in Mr. Dewar's Report.

32. The next step towards rent assessment in Sambalpur was the fixing of standard rates for the different groups of villages into which the district was divided, according to general differences of rent capacity. Such differences were determined by geographical position, trade facilities, soil, rainfall and other conditions. There were 10 groups for the khalsa area of Bargarh tahsil and 6 for the khalsa area of Sambalpur tahsil. In each group the existing rental pressure was estimated in annas as the quotient of the aggregate rental of the group divided by the number of soil-units it contained. The number of soil-units in a group is found by adding together the results of the multiplication of the class acreages by their index figures referred to in paragraph 26 above. Taking into consideration the existing rent pressure as thus ascertained, and the general conditions of the group, an enhancement was proposed which would bring out a new rent pressure more or less proportioned to the rent capacity of the group. It was found that existing rent pressure varied from 33 annas per unit of fertility to 57 annas. The enhancements that were imposed varied from 25 to 37 per cent. and the resultant rent pressure of the settled rents varied from 43 annas to 77 annas per unit. The average enhancement in the Sambalpur tahsil was 32 per cent. and in the Bargarh tahsil 29 per cent. The average rate of rent per acre in the former is now 6 annas 7 pies and in the latter 6 annas 1 pie.

33. The standard rate of a group having been fixed, the next step was to determine rates for the villages included in it. The variation of existing rent pressure from village to village in a group was much greater than the variation from group to group, as different degrees of extension of cultivation had intensified the village variations that existed at the previous settlement. A wider range of enhancement within the group was obviously necessary to equalise the burden of assessment. In fixing the village rate the special

circumstances of each village were taken into account as well as the existing rent pressure. The villagerate having been fixed, the rent of each raiyat is as a general rule the result of multiplying the number of soil units in his holding by the village rate. But special consideration had to be given to special cases. Occasionally the revised rent would be less than the existing rent, because there had been a partition of a holding and the rents of the partitioned holdings had not been properly distributed. Where the amounts of difference were small, the existing rents were usually left untouched. The more common case was that in which the whole of the revised rent could not be imposed because the sudden enhancement would have involved hardship. The Settlement Code of the Central Provinces contains rules for the grant of abatements of rent in such cases. The existing law of the Central Provinces has no provision for the settlement of progressive rents and this expedient which is common in Bengal could not be adopted.

34. A satisfactory feature of the new settlement is that the enhancement of rent has fallen mainly on those who are best able to bear it. Reference has been made in paragraph 7 above to the four classes into which the tenantry of Sambalpur has been divided according to material condition. Mr. Dewar has collected figures which show the enhancement of existing rent by classes. A class tenants have been enhanced 36 per cent., B class tenants 32 per cent., C class tenants 27 per cent., and D class tenants only 16 per cent.

35. How very little the new assessment is may be gathered from the average rates of rent of the main classes of land. These are:—

	Re.	Annas	Pies	per acre.
Bahal or 1st class rice land	1	1	4	
Berna or 2nd	0	11	4	
Mal or 3rd	0	8	3	
At or upland	0	1	4	
Barclha or sug cane land	1	8	4	
Bari or garden	0	13	6	

These rates would be considered ridiculously low in the ordinary Bihar or Bengal district. The average assessment works out to only 6 annas 4 pies per acre. With it may be compared Rs. 4-5-4 per acre in Saran, Re. 1-14-7 per acre in Champaran, Rs. 3-12-4 per acre in Darbhanga, Rs. 3-13-5 per acre in Muzaffarpur, and Rs. 2-15-0 in North Monghyr.

36. The gaontias are allowed 25 per cent. of the village rental as remuneration for their services. This 25 per cent. is balanced against the valuation of their home farms. When the valuation exceeds 25 per cent. the difference is added to the rental. When it is less, the gaontias get a drawback. In certain special cases, the Settlement Officer was allowed to increase the 25 per cent. to 30 per cent. In 118 villages which were gaontiahi at last settlement, proprietary rights were afterwards conceded and the malguzars have been allowed 40 per cent. of the total rental. The gross khalsa revenue as a result of settlement has been raised from Rs. 1,58,934 to Rs. 1,98,416, but assignments of revenue have to be deducted in order to ascertain the net Government revenue. Some of these have fallen in since last settlement. The net realisable revenue at last settlement was Rs. 1,30,796. It has risen to Rs. 1,34,694 before the revision. The net revenue as now fixed is Rs. 1,71,992, and Mr. Dewar anticipates that before the close of the settlement this will be increased by Rs. 26,000 as existing assignments fall in.

37. The principles which were applied in the assessment of the khalsa area were followed in a modified form in the zamindari tracts. These cover 2,925 square miles or 60 per cent. of the total area under assessment.

In 8 zamindaris covering 312 square miles of the Bargarh plain, the rents of the raiyats were revised according to the khalsa procedure, the new rent and valuations being 32 per cent. higher than before revision. The new average incidence in this area is 5 annas per acre as against 6 annas 1 pie in the khalsa area of Bargarh. The Barasambar estate with 434 villages covering 572 square miles was specially dealt with. In 277 of the backward villages a summary settlement was made, without land classification. One hundred and fifty-seven villages were classified, but the classification was made on a simpler plan than in the khalsa tracts, the number of classes being reduced

to 9 and the factors varied accordingly. The revaluation of Barasambar increased the assets from Rs. 22,281 to Rs. 32,051. The incidence of raiyati rental as revised was only 2 annas per acre. The same simplified classification was adopted for the 7 zamindaris of Sambalpur tahsil which cover 638 square miles of somewhat backward country. The revaluation here increased the assets from Rs. 26,275 to Rs. 36,443, and the average rental incidence became 3 annas 9 pies per acre as against 6 annas 7 pies in the khalsa tracts. In most of the zamindari villages, the amounts payable on the settlement revision to the zamindars by the village lessees, both 'protected' and unprotected, were at the request of the zamindars fixed by the Settlement Officer. Nine of the 16 zamindari estates possess forests on which an assessment of Rs. 9,710 was laid. The aggregate land and forest valuation of the zamindari area as now assessed amounts to Rs. 1,22,164.

38. The assessment payable by the zamindars to Government is made in a way that sounds peculiar to us in Bengal. First the full proprietary assessment or *kamil-jama*, as it is called, was fixed, varying from 55 to 60 per cent. of the assets. This amounted to Rs. 70,973 or 58 per cent. of the total valuation and is what would have been payable to Government, if the estates had been held by ordinary proprietors or malguzars. But the zamindars of Sambalpur or feudal proprietors from whom the full proprietary assessment is not exacted. They pay merely what is called a *tikoli* or tribute. The *tikoli* taken at the 1859 settlement varied from 33 to 50 per cent. of the *kamil-jama*. Mr. Dewar has settled a tribute which is ordinarily not less than 40 per cent. of the full proprietary assessment. The aggregate zamindari revenue was at last settlement Rs. 12,560. As the zamindars were relieved of police and other charges, this amount was in the course of the last settlement increased to Rs. 18,563. It has now been enhanced to Rs. 25,720. The new assessment is attended with no hardship to the zamindars. On the contrary they gain considerably from the enhancement of village rents and their income is increased from Rs. 53,309 to Rs. 76,711 as a result of the resettlement.

39. In Chapter XI of the Report Mr. Dewar has discussed the following subjects that are of great interest in the administration of the district—the regulation of relations between superior and inferior gaontias, the reduction of assessment that was made for the term of settlement in favour of raiyats who had executed works of improvement, the remuneration of lambardars, the remuneration of village watchmen, the preservation of existing village forest, the maintenance of village irrigation tanks, and the regulation of the free labour that is renderable by the raiyats to the gaontias for the cultivation of their home farms. Most of these subjects are dealt with in the village administration paper called "Wajib-ul-arz" the nearest analogue to which in Bengal is the Record-of-Rights-and-Duties of the Sonthal Parganas. The four forms of "Wajib-ul-arz", (1) for gaontia villages of the khalsa, (2) for malguzari villages of the khalsa, (3) for malguzari villages held by Sikmi-gaontias and (4) for zamindari villages, as given in Appendices IX to XII. They contain provisions regulating the whole economy of village life.

40. The staff for the maintenance of land records was reorganized in the course of the settlement operations. The total number of patwaris in the old district was before the revision of settlement 256, and the rate of pay allowed to them was usually Rs. 8 a month. A small proportion received Rs. 9. Circles were revised and villages redistributed by Mr. Dewar. The number of patwaris was increased from 256 to 282, of whom 216 were assigned to the Bengal district. Of the 282 patwaris, 150 are paid at the rate of Rs. 9, 90 at the rate of Rs. 10 and 42 at the rate of Rs. 11 and special allowances of Re. 1 per month are allowed to 30. The spread of education has increased the available source of supply and Mr. Dewar hopes that the new rates of pay will be adequate for a time. The number of Revenue Inspectors was at the same time increased from 6 to 14, of whom 10 were assigned to the Bengal district. Their remuneration including allowances varies from Rs. 35 to Rs. 40. There are two superior supervising officers, one called the Superintendent of Land Records and the other called Assistant Superintendent. The former has the status of a Sub-Deputy Collector in Bengal.

41. The net increase of revenue obtained by the resettlement operations is Rs. 44,761, which is 29 per cent. in advance of the revenue as it stood

before revision. The gross revenue inclusive of assignments has been increased from Rs. 1,71,006 as it stood at last settlement and Rs. 1,74,326 as it stood before revision, to Rs. 2,24,136.

The total expenditure on settlement from 1902 onwards has been Rs. 2,29,196. The expenditure of 1891-1898 on the survey of zamindari villages was Rs. 64,504 and of 1898-1902 on map correction was Rs. 31,468. The total cost of settlement, in which Mr. Dewar has included these two items as the work was preparatory, is Rs. 3,25,136 which gives an average cost-rate of 2 anhas 1 pie per acre. Of the total expenditure, about Rs. 2,75,000 is the estimated share expended on the Bengal district.

For reasons that have been alluded to in paragraph 31 above, it would be worse than useless to draw comparisons between the cost-rate of the Sambalpur settlement and the cost-rates of ordinary Bengal settlements.

42. Mr. Dewar has acknowledged in paragraph 167 of his Report the excellent work of the late Mr. Parmanand Tiwari who died in harness, of Mr. Ram Krishna Indarkar, of Mr. Kaluram Pachory, and of Babu Bihari Lal Nema, who were all Assistant Settlement Officers and performed their duties to his entire satisfaction.

Of Mr. Dewar's own services I cannot do better than repeat the encomium passed by Mr. Standen, Commissioner of Settlements, Central Provinces, in 1906.

"The contentment with which the large enhancements imposed have been received by the people is due mainly to Mr. Dewar's judicious valuation of the various classes of soil, to the efficient manner in which he controlled his subordinates and to the feeling of confidence which he inspired in the people".

The Government of Bengal has, in addition, to thank him for his extremely able and interesting Report which will be of invaluable assistance to the Bengal Officers who may be charged with the administration of the new district.

I have the honour to be,

SIR,

Your most obedient servant,

H. MCPHERSON,

Director of the Department of Land Records, Bengal.

REVENUE DEPARTMENT

LAND REVENUE

DARJEELING, THE 22ND OCTOBER 1908.

RESOLUTION No. 2175T—R.

READ—

The Final Report of the Land Revenue Settlement of the Sambalpur District by
F. DEWAR, Esq., I.C.S., Settlement Officer, Sambalpur.

Read also—

The Director of Land Records' letter No. 205T, dated 3rd June 1908, to the
Board of Revenue, reviewing the above report.

The report on the Settlement of Sambalpur has been compiled by the Settlement Officer, Mr. F. Dewar, I.C.S. It has been fully and carefully reviewed by the Director of Land Records, who has duly emphasised the difference in character of the operations comprised under the term "Settlement" as understood in the Central Provinces from that with which the Bengal officer is familiar. This difference makes impossible the customary comparative estimates of technical matters such as the cost of survey or the duration of the work; nor in the present case is any estimate required, inasmuch as the operations were conducted under the control of the Government of the Central Provinces.

2. Sambalpur appears to resemble very closely in physical conditions the districts of the Chota Nagpur Division. In particular there is the same fundamental distinction between rice lands and uplands which renders useless all statistics in which it is not recognised. Average rents per acre, or average selling price per acre, are merely misleading expressions when an acre of first class rice land may be nineteen times more productive than an acre of upland. It cannot however be held that these distinctions have not been given due prominence in the recent settlement operations. In rice lands the three fundamental divisions of winter, late autumn, and early autumn rice were further subdivided into eight, eight and six sub-classes, respectively, of which the proper identification by the staff must have been a work of very considerable difficulty; and the establishment of uniform standards among so many different officers must have imposed a great strain on the activity of the Settlement Officer. The estimates (paragraph 113) of the relative fertility of these classes, which have been made on the basis of extensive crop-cutting experiments, are of great interest, and should prove of much use to the officers of the Chota Nagpur Division, to whom the duty of settling fair rents is about to be entrusted.

3. In paragraph 143 of the report are enumerated the rates of rent now imposed, varying per acre in the case of rice land from five annas five pies to one rupee thirteen annas three pies. Ordinary upland pays from one and a-half to three annas per acre. There is no doubt that these rents are not excessive, and that where the existence of competition is disclosed by sub-letting very much higher rates could be obtained; and it would almost appear that in view of this fact a somewhat simpler classification would have sufficed.

4. The effect of the settlement on the land revenue is an increase of 29 per cent. over nett collections immediately preceding the settlement. The opening of the railway prior to the settlement had resulted in such an enormous increase in the selling price of rice as to revolutionise agriculture in the district; and cultivation had not only extended in area but had been greatly improved in intensity. It follows that the increase in revenue can only be regarded as extremely moderate. The cost of the settlement operations was about Rs. 2,75,000, and the nett increase of revenue Rs. 44,761 a year for 20 years.

5. Inasmuch as Government has contented itself with so very small a share of the increment in value of the land which has accrued during the last 15 years, it becomes a question of great interest to know what classes of the community are reaping the advantage of this moderation; and in this matter there are somewhat disquieting phenomena. The original owners of the land are being rapidly expelled. As *gaontias* (village headmen) or as occupancy raiyats their places are being taken by immigrant Hindus. The Settlement Officer estimates that since 1889 not less than ten per cent. of the land, and probably much more, has changed hands. "The aggression of the Hindu is continuous and successful. The aboriginal, bought, mortgaged, and sometimes cheated, out of the land cleared by his forefathers, is exported to Assam or moved to the still uncleared forests." The experience of Sambalpur is by no means unique. In this province it has been found necessary to protect aboriginal races by special legislation in the Sonthal Parganas and Chota Nagpur; and in the Burdwan Division the existence of considerable agrarian discontent among the Sonthals has been brought to the notice of Government and is at present the subject of special inquiries. From the absence of emphasis in the final report it would seem that discontent in Sambalpur has not yet become acute; but the Lieutenant-Governor considers that the time has come in that district for closely observing the precise causes which are working to the detriment of the aboriginal races and for introducing adequate remedies, as the existing safeguards have been found defective. Though the State may be willing to abandon its claim to the enormous increment in the value of land in this district, it is entitled at least to ensure that the increment shall be enjoyed by the people of the district and not by alien immigrants.

6. From the statistics of transfers of landlords' interests the Settlement Officer concludes that the selling price of that interest has on the average quadrupled between 1889 and 1900. The statistics of sub-lease and mortgage indicate that the competition rent value of a raiyat's holding is $4\frac{1}{2}$ times the rate of Government rent. It may therefore be taken that of the present letting value of the land only about 25 per cent. comes to Government. The remaining 75 per cent. is enjoyed in the case of the *bhogra* lands (home-farm lands of village headmen), by the *gaontia*, and, in the case of occupancy lands, by the occupancy raiyat. So long as the old tenant of occupancy lands (or his heirs) continue to hold the land, this arrangement may be regarded with complacency, for it must in the majority of cases result in a high standard of comfort for the cultivating classes. But in the case of the reckless and improvident the possession of this valuable property is a temptation to extravagance, and in the case of the weak it excites the cupidity of the unscrupulous. It was found necessary to prohibit the alienation of occupancy rights in Sambalpur along with the remaining districts of the Central Provinces, and this has been effected by the provisions of sections 46 and 47 of the Central Provinces Tenancy Act of 1898. The first section forbids the transfer and the second section entitles both the heir and, in default, the landlord, to apply within two years to be put in possession of the land transferred. It is regrettable that these sections have been found in practice ineffective. The Settlement Officer reports that they can be easily evaded with the collusion of the landlord, who takes as much as 15 per cent. of the sale-price in return for his complaisance in refraining from prosecuting his rights under section 47, and will probably take a still higher percentage in the future, and that the only effect of the legislation has been not a reduction in the number of such transfers, but the addition of this substantial revenue to the assets of the landlord. There is every reason to expect that with the improvement of communications and the increase in population the difference between the Government rent and the competitive rent will be still further augmented and that the inducements to the transfers of holdings in consequence become more powerful. The time has, therefore, come to consider what steps are practicable to render the prohibition effective, or in the alternative to secure to the State a fair share of the increased value of the holding.

7. Closely connected with this problem is the question of the resettlement of occupancy lands the owner of which has died without heirs. Such cases would ordinarily be rare, but the experience of Bengal suggests that the landlords will be tempted by the great value of the occupancy right to resume lands

improperly when the heir is feeble or remote. Again the settlement of waste lands is proceeding apace, and in many cases the new conditions must have rendered valuable the privilege of cultivating such lands. The *wajib-ul-arz* is silent about the first case, and as regards waste-lands confers no superior rights on residents of the village to which the lands belong. The Lieutenant-Governor, therefore, proposes in the first place to address the Chief Commissioner of the Central Provinces of these matters, in order to ascertain whether the necessity for amended legislation has been felt in his districts, and what form has been taken by the proposed remedies. It is desirable to assert the rights of the State and of the villagers before the lapse of time has created vested interests inimical to them.

8. The *gaontias* in most villages enjoy a very large area of *bhogra* or *zirat* lands, the total rent value of which is in the *khalsa* 20 per cent. of the whole. But in addition they have managed to get hold of 9 per cent. of the "occupancy" land also. It is reported that they do not sublet this land; but it will be contrary to experience in other districts if such subletting does not arise. In that case there will be no natural restriction to the acquisition of "occupancy" land by the *gaontia*. At present he is entitled to a fixed amount of *begari* from the raiyats, the rules for the limitation of which appear to be very stringent. Whether they are being faithfully observed is a matter on which, in the absence of local experience, it is impossible to feel certain. In Chota Nagpur it has been found that whilst demands for *begari* are nominally fixed, in practice the only limit to their exaction is the resisting strength of the raiyats. The Lieutenant-Governor therefore directs that continued and systematic enquiries be made by the Deputy Commissioner and his subordinates in this matter in both the *khalsa* and the *zamindari* areas. It may be that if the *gaontia* become sufficiently strong to compel *begari* in his "occupancy" land, the only remedy will consist in depriving him and his family and dependants of the right to hold such lands.

9. In paragraph 75 of his report the Settlement Officer has suggested the desirability of continuing the Jharsogra-Sambalpur Branch of the Bengal-Nagpur Railway across the Mahanadi to Bélangir *via* Bargarh. He also strongly recommends that at least one bridge for cart traffic be made over the Ib river. The Lieutenant-Governor recognises that the Settlement Officer in the course of his work in the district acquired a unique knowledge of its requirements in respect of communications, and that his recommendations cannot be lightly set aside. Early action appears to be necessary; for it should be made impossible for the district to undergo a repetition of the experience of 1900, when out of every thousand people no less than one hundred and eight died. He accordingly directs the consideration of these and subsidiary projects by the Public Works Department.

10. The report of the Settlement Officer is of extreme interest and well illustrates the different points of view which result from the existence of a temporary and of a permanent settlement of land revenue. It is inevitable that to an officer of the permanently-settled area in Bengal the classification of land should appear at first sight over-elaborate, and equally inevitable that the disputes and the rival interests of landlord and tenant should appear to have received insufficient attention. The merits of these operations as a land settlement have been duly estimated by the authorities of the Central Provinces. As regards the report, the Lieutenant-Governor considers that it is of much more than local interest, and he directs its distribution to all the officers of the Revenue and Settlement Courts in Orissa, the Burdwan Division and Chota Nagpur, not only for their information, but in many respects for their guidance also. He also proposes with the consent of the Hon'ble High Court to send copies to officers of the Civil Court employed in those Divisions. Mr. Dewar has placed the Government of Bengal under a great obligation of the preparation of this admirable report, and the Lieutenant-Governor desires to record his sense of obligation for the assistance Mr. Dewar has given on all occasions to the officers of this Government.

By order of the Lieutenant-Governor of Bengal,

F. W. DUKE,

Offg. Chief Secy. to the Govt. of Bengal.