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ASSESSMENT REPORT

Settlement
c

OF THE FOUR SOUTHERN TAHSILS,

RUPBAS, OUCHAIN, BIYANA AND BHUSAWAR
INCLUDING THE JAGIR OF BALLABGARH.

BHARATPUR STATE.

(1899-1900.)

BY

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ASSESSMENT REPORT

OF THE FOUR SOUTHERN TAHSILS, RUPBAS, OUCHAIN, BIYANA, AND BHUSAWAR INCLUDING THE JAGIR OF BALLABGARH.

BHARATPUR STATE.

CHAPTER I.

1. This report deals with the four southern tahsils of Bharatpur and will therefore complete the proposals for the re-assessment of the State. The four northern tahsils—Gopalgarh, Pahari, Kama and Dig—were reported on by me in September 1898, and the assessments having been sanctioned by the Government of India letter No. 677-I.A., dated 11th March 1899, were announced by me in August last and were willingly accepted by the 429 *khalsa* estates concerned, and by the zamindars and *mafidars* of all the assigned estates as well with the exception of three villages in which both parties agreed to maintain the old system of fixing the revenue by mutual consent.

A report on the four central tahsils—Kumher, Akhegarh, Bharatpur and Nagar—was submitted by me in July 1899, and sanction to the proposals having been accorded by the Government of India letter No. 2976-I.A., dated 13th October, the village assessments were announced by me in October last, and were at once accepted by the 360 *khalsa* estates in these tahsils. Moreover of the 45 assigned estates, in which the proprietary and *masi* rights are held by different persons, in all but six both parties agreed to abide by the Jama fixed by me, and these six decided to maintain the old system.

2. The assessments for the eight tahsils (now reduced to seven by the partition of Gopalgarh between Pahari and Nagar) took effect from last *khariif*, but as the harvests of the past year were—at least in those tahsils—the worst on record since the disastrous famine of 1877-78, considerable suspensions of the new demand were given according to the circumstances of each estate, and this combined with the liberality shown by the State in remitting all arrears prior to the settlement of 1890, on the occasion of the birth of a son and heir to His Highness the Maharaja, inspired confidence in the people to such an extent that not only were there no desertions of agriculturists as in past famines, but great numbers of deserters and absentees who had held aloof from the land till the revenue policy of the State in the new settlement had declared itself, returned and resumed possession of their abandoned holdings and estates.

3. The financial results of the re-assessment of the northern and central tahsils are summarised in the following table in which space has also been left to add in the figures for the four southern tahsils when complete:—

Tahsil.	Old khalsa demand	Sanctioned new demand.	TOTAL OF JAMA AS * ANNOUNCED.			INCREASE IN KHALSA.		ARREARS.				REMARKS.	
			KHALSA.		Mañ.	Initial.	Final.	Prior to 1890 remitted.	SINCE 1890.				
			Initial.	Final.					Total.	Remitted.	To be realised.		
Gopalgarh ...	2,43,040	2,80,000	2,82,925		3,627	39,885		4,79,611	5,840	213	5,627	(a) Exclusive of Man- dal Pahari kham.	
Pahari ...	1,23,717	1,38,000	1,38,605 (a)		2,725	14,888		1,15,345	11,381	4,691	6,090		
Kama ...	1,38,264	1,67,000	1,67,400		14,964	19,136		1,68,415	5,581	2,765	2,816	(b) Exclusive of Dahr- kho separately leased.	
Dig ...	1,35,304	1,53,000	1,56,168 (b)		64,787	20,829		5,32,751	14,575	5,375	9,200		
Total northern ...	6,40,325	7,28,000	7,35,093		86,100	94,768		10,96,122	37,377	13,044	24,333		
Nagar ...	60,668	1,05,000	1,04,492	1,06,785	2,775	14,824	17,117	3,51,071	1,569	989	580	(c) Excludes leases of Kumher town which is kham, income from which is Rs. 5,000 to Rs. 5,400.	
Akhegarh ...	1,35,574	1,39,000	1,40,483	1,42,783	21,646	4,998	7,209	263,002	70,340	42,747	27,593		(d) Excludes leases of two kham estates, Bharatpur and Sri- nagar income from which is about Rs. 9,000 to Rs. 9,500.
Kumher ...	1,35,743	1,50,000	1,47,509 (c)	1,51,559 (c)	41,090 to 41,185	11,766 (c)	15,816 (c)	3,96,290	41,448	20,427	21,021		
Bharatpur ...	1,47,431	1,60,000	1,55,268 (d)	1,53,593 (d)	34,663 to 34,810	7,837 (d)	16,162 (d)	13,69,463	1,40,720	1,12,058	28,662	(e) Excludes (c) and (d) about Rs.	
Total central ...	5,09,416	5,53,000	5,47,752 (e)	5,64,720 (e)	100,171 to 100,416	39,336	56,304	23,79,516	2,54,077	1,76,321	77,866		
Total northern and central ...	11,48,741	12,81,000	12,82,845	12,99,813	1,86,271 to 1,80,516	1,34,104	1,51,072	34,75,938	2,91,454	1,88,265	1,02,189		
Rupbas ...	1,05,555	...	...	...	...	...	...	...	...	...	...	(f) Of which Rs. 34,643 is for the temporarily resumed jagir of Ballabgarh.
Ochain ...	1,72,705	...	...	...	...	...	...	...	...	...	...
Biyana ...	2,05,972	...	...	...	...	...	...	...	...	...	...
Bhusawar (f) ...	2,71,123	...	...	...	...	...	...	...	...	...	...
Total southern ...	7,55,655	...	...	...	...	...	...	...	...	...	...
Grand total ...	19,04,396	...	...	...	...	...	...	...	...	...	...

Thus in the eight tahsils dealt with up to date the *khalsa* demand has been enhanced (omitting the demand for the four *kham* estates of Mandal, Kumher, Bharatpur and Srinagar) by Rs. 1,34,104 or 11·5 per cent. initially, and by Rs. 1,51,072 or over 13 per cent. finally, *i.e.*, from the sixth year of the new assessment. This moreover does not include the demand on account of excess waste—the property of the State or the villagers—separately leased for cultivation.

This may seem a serious enhancement in a State which cannot be called prosperous, but on the other hand (1) old arrears prior to 1890 amounting to nearly 35 lakhs have been remitted, and of the arrears since 1890—nearly 3 lakhs—about 2 lakhs have been struck off, and all instalments on account of these have been given up; (2) a number of extra cesses hitherto realised have been abolished; (3) the water rate on *sairaba* or flooded lands has been included in the new Jama except in Nagar and the few *kham* estates; (4) the new demand has been more justly apportioned between the estates and more carefully distributed over the holdings in each estate; (5) the damage caused by floods and by the ravages of wild cattle has practically ceased owing to improved administration; (6) the principle of giving suitable suspensions in bad years has been established. All these facts considerably discount the apparent great increase in the demand, and the readiness of the people to accept the new assessments not only in *khalsa* estates, but also in *mafi* villages where they were given the option of adhering to the old system, is, I think, a proof that they are reasonable and moderate. The present report deals with the four southern tahsils, which are the most favoured by nature and should be the most prosperous in the State.

4. The method of working is that explained in paragraph 2 of last year's report. M. Hira Singh, Deputy Collector, who has already carried through the

Method of working.

operations in four tahsils, is in direct charge of the Bhusawar tahsil, and Mr. A. H. Pyster holds charge of Rupbas, Biyana, and Oochain. Settlement operations were systematically undertaken in October 1898. Soils were classified, the maps were brought up to date, and the work of preparing an accurate record-of-rights representing the facts of the year 1898-99 was taken in hand. This was a work of considerable difficulty owing to the fact that no regular settlement had previously been made and such records as were available were incomplete and untrustworthy. Concurrently with the preparation and local attestation of the records, the circle officers inspected every village, recorded assessment notes, disposed of disputes and difficulties in the way of preparing the records. When the data for re-assessment were complete I made a village-to-village tour of each tahsil, viz., Bhusawar, Rupbas and Oochain in November and December 1899, Biyana in March 1900—during which I carefully inspected every village in Rupbas and Oochain and all but two in Bhusawar.

In Biyana I had to leave about 50 estates over till next *kharif* as owing to the drought the crops had been cut early in March and there were difficulties about camping. These however I intend to inspect before giving out their assessments. In the course of these tours I endeavoured to ascertain all the facts and circumstances bearing on the assessment of the tahsil as a whole and of each estate. All villages where the assessment had broken down and which owing to the desertions of the owners or their refusal to accept liability had come under direct management received special attention. In most cases by the remission of most of the arrears, by arranging for a just system of distributing the demand, and by the judicious grant of *takavi*, the old owners were encouraged to resettle and resume cultivation. This in a famine year and on the eve of a re-assessment was a most encouraging symptom, and the credit of its success in Bhusawar, where such cases were most numerous, is mainly due to the tact, sympathy and zeal with which the Deputy Collector M. Hira Singh approached the work, thereby inspiring confidence into the people.

5. A reference to the attached map will help to explain the position and boundaries of these tahsils. Each of them

Position and boundaries of the four southern tahsils.

except Oochain touches foreign territory, and all are influenced by the two great torrential streams—the Banganga and Gambhir and their tributaries. Rupbas the most eastern, is triangular in shape and juts into the Agra district which runs along the two sides, while the base or western side rests on the Oochain tahsil. A continuous range of hills, rising at the highest point to 817 feet above sea level, forms the southern boundary with Agra, and some scattered hills also penetrate from Biyana on the west side. The rest is a level plain of a stiffish black soil sloping gently from the hills on the south to the Gambhir which traverses the tahsil from west to east. On both banks of and to the north of the Gambhir the soil is light but fertile.

Oochain is a level plain (except for a few hills on the south-east boundary) surrounded on all sides by Bharatpur territory, irregular in shape, and largely influenced by the annual floods of the Banganga and Gambhir, which have their junction in this tahsil at the village of Karka. The soil except in the vicinity of these two streams where sandy deposits have not altered its natural character is stiff and fertile, especially on the south-east adjoining Rupbas, and with good floods or abundant rainfall yields excellent crops, but the well water in the northern villages adjoining Bharatpur and Akhegarh is often saline. As in Rupbas there is a gentle slope from south to north.

The Bhusawar tahsil on the west including the temporarily-forfeited *Jagir* of Ballabgarh touches Jaipur on the west and south. A broad but low range of hills on the south separates it from Biyana, and the land on this side is rocky, uneven, and much cut up by the hill drainage. There are also several scattered hills on the south-east round Weir. The northern portion is traversed from east to west by the Banganga and is all a level plain of fairly good loam sloping gently to the north. Well water is sweet and *chahi* cultivation excellent except in a few villages towards the north boundary, where the brackish or bitter water of the central tahsils reappears.

The large tahsil of Biyana occupies the extreme south of the State and from east to west marches successively with the Agra district and the States of Dholpur, Karaoli and Jaipur. The south-east is composed of low hills often covered by a dense growth of low jungle and sometimes enclosing fertile valleys in which the rough Gujar inhabitants keep many cattle, and carry on cultivation with very fair success from numerous wells. This tract is intersected by the Kakund stream from the south, which is joined by numerous deep *nalas* running down from the hills, and pursues a course due north to join the Gambhir.

The south-east known as the "Nahera" is also a wild and uneven tract made up of alternate bare sandstone hills and undulating sandy plains which the hill drainage has in many places scarred out into almost impassable ravines. At Damdama near Biyana town the hills rise to a height of 1,222 feet, and are crowned for a circumference of 7 miles by the forts and ramparts erected by the Lodi dynasty when they made their capital on the site of the renowned Rajput stronghold of Biyana. This tract is intersected by the Gambhir stream running south-west to north-east and its numerous affluents.

The centre and north of the tahsil known as the "Kather" consist of a level plain crossed from east to west by a single low and narrow ridge of hills. It is traversed by the Gambhir and Banganga, benefits much from their inundations, has a clean fertile soil, water plentiful and generally sweet, and in consequence has perhaps the best *chahi* cultivation in the whole State.

6. From the above remarks it will be seen that the natural features which have most influence on cultivation are the *General description of the chief streams.* Banganga, Gambhir, and Kakund streams, and their affluents. All of these are torrential streams which rise in adjoining States, are fed by the annual rains, and then bring down enormous silt-laden floods with great velocity often inundating the country on both sides for miles and completely cutting off communications for days. After the rains they dry up completely, but the land flooded by them unless injured by sand deposits, produces excellent spring crops; the wells for a considerable distance along their course permanently benefit by having the water level raised and the water made sweet and abundant; while their sandy beds are covered, especially in the case of the Gambhir, with a thin layer of ash manure and are sown with wheat, barley, melons or vegetables. These crops are irrigated from *chohas* or holes dug in the sand which rapidly fill with water by means of buckets worked with the hand, and the yield of grain on these highly-manured and well-watered little plots is often phenomenal.

7. The Banganga or Utangan stream is important not only because of its influence on cultivation in Bharatpur, but also because it has been the subject of long and vigorous controversy with the Jaipur State from which it comes, and the Agra district whither it goes. The Banganga rises among the Jaipur hills about 30 miles due north of Jaipur city.

It runs for a length of about 30 miles in a south-easterly direction to Ramgarh Jamwa 15 miles north-east of Jaipur, where it forces its way through a narrow passage between the hills into the eastern plains. The catchment area in Jaipur up to this point is 324 square miles. The Jaipur Darbar had long been desirous of constructing a great irrigation dam at Ramgarh which would utilise for irrigation all the supply up to this point, but the Bharatpur Darbar resisted the project on the ground that it would cut off a considerable portion of the Banganga floods. Finally in 1897 it was arranged that Jaipur be allowed to construct the reservoir on accepting the condition that the Bharatpur Darbar should be entitled to submit to the final arbitration of the Agent to the Governor-General its claims to compensation for damage (if any) actually caused by the work. The dam, I believe, is still under construction, and its influence on the Banganga supply in Bharatpur has not yet therefore made itself fully felt.

From Ramgarh the Banganga runs due east receiving the drainage of the central plains of Jaipur and of the hilly tracts in the south of Alwar.

The catchment area east of the Ramgarh dam is in Alwar 401 square miles and in Jaipur 1,065, or a total of 1,466 square miles. After a further course of 70 miles almost due east, it enters the Bhusawar tahsil of Bharatpur at Kamalpur and has a catchment area of 142 square miles among the hills in the south of Bhusawar. From this point it runs still almost due east for a distance of 30 miles through the Bhusawar, Biyana, and Oochain tahsils to Karka in Oochain where it was formerly joined by the Gambhir stream from the south. The combined streams which are now practically the Gambhir alone, as the Banganga exhausts itself by spills to the north before reaching the old junction, continue their course still due east for a distance of 25 miles through the Oochain and Rupbas tahsils, forming in places the boundary between Agra and Bharatpur, into the Karaoli tahsil of Agra, and after a further course of about 80 miles through the Karaoli, Khairagarh, and Fattehabad tahsils of Agra finally join the Jumna on the right bank 10 miles east of Fattehabad and about 235 miles from its source. It is said to derive the name of Banganga or "arrow-Ganges" from the legend that during the wanderings of the five Pandava brothers, water having failed them, Arjuna the famous archer drove an arrow into the ground and from the puncture sprang the fountain which is the source of the stream. From the difficulty in fording it when sudden freshets came down, it is also known as the *Ghora Pachar* or *overthrower of horses*. The course of the Banganga through these tahsils is about 30 miles to its junction with the Gambhir at Karka and 25 miles from the junction to Moroli where it leaves Bharatpur for Agra. It has for most of its course a broad, shallow, sandy bed. The banks especially on the north side are low and are covered often to a distance of two or three miles from the streams with dense growth of jungle grasses known as *sarkanda* or *kans*, or with the shrub known as *jau*, all of which grow freely in the deposits of sand left by the periodical inundations.

These inundations which when not controlled were often the cause of enormous damage not only to Bharatpur but to parts of the Agra district, but are now owing to the skilful measures for utilising them adopted by Mr. Devenish, the State Engineer, the mainstay of the prosperity of these tahsils, are thus explained in a note dated 28th February 1893 by Mr. Palmer, Executive Engineer, North-West Provinces, who was put on special duty to report on the measures to be taken to reduce the floods.

(b) Its inundations. "The catchment lies entirely among steep hills and gives rise to sudden floods; the river bed is remarkably steep and the very high velocity its floods thus obtain brings down great quantities of sand more or less in suspension during most of the journey. As soon as such a flood reaches flatter ground, the velocity is decreased and it begins to deposit silt; and if the decrease of velocity is sudden it deposits more silt than it can push on and thus chokes its channel. This is the real disease of the Banganga, and its condition now is such that it may burst through at Dharsoni, or at Thilchabi, or at Ghazipur or above Khanpur; and it may possibly burst through all these places in succession."

In another note dated 24th November 1892 Mr. Palmer gives the history of the more important breaches or spills.

"Some obstructions at the old mouth (where it joins the Gambhir)—perhaps a very high Gambhir flood—led to the first spills there; then the changes made there increased the evil and a spill channel was formed from Karka; then that began to fill up, and in 1885 a spill broke through near Farsu; now the Farsu-Oochain spill is silting up, and a new one has started between Barkhera and Kherli, and here there is a pause. This is the point we are now at. Just above Farsu there is a gap through the hills to the south and a great spill has formed itself to the south through Nagla Khushfaim. The slope of this spill is greater than that of the torrent, and it is therefore able to keep itself clear. It runs directly into the Gambhir; that more continuous river runs for four to five months after the Banganga has dried up, and it gradually removes the surplus silt brought down by the spill."

Mr. Palmer then notices the destructive effects of these floods, especially those of August 1885 and of September 1891, not only in Bharatpur but in the Karaoli tahsil of Agra where the *kharif* crops were swamped in nearly 100 villages and large suspensions and remissions of land revenue had to be given. He adds—

"The tract thus liable to flooding from the Banganga bears everywhere the marks of a decaying agriculture, the jungle is plainly increasing and the population decreasing, while

rents have so fallen off that it has become necessary to reduce the land-revenue charges on a great number of villages to preserve their zamindars from a more general ruin than has already befallen them, and the reduction has risen to over 80 per cent. of the revenue in several villages."

Apparently the chief danger to the Agra district lay in the possibility of the Banganga floods—all of which except the spill at Khushfaim to the south-break out on to the low ground to the north of the torrent—joining the Khara *nadi*, which carries the overflow from the swamps east of Bharatpur into the Karaoli tahsil of Agra, and thus completely swamping a large portion of that tahsil in seasons of heavy rainfall. To provide against this emergency it was proposed to deepen the spill channel to the south at Khushfaim so as to divert the Banganga back into its old junction with the Gambhir, by which a sufficient waterway is provided for the passage of the floods to the Jumna. The Bharatpur Darbar objected to this proposal on the ground that it would (1) reduce the annual Banganga floods which though occasionally disastrous to individual villages are on the whole beneficial to the State, (2) deteriorate the fertilising influences of the Gambhir silt by the admixture of the sterilising Banganga sand. In March 1894 the whole subject was threshed out by Colonel Harrison, Secretary, P.W.D., Irrigation Branch, of the North-West Provinces, and Mr. White, Secretary, P.W.D., of Rajputana and Central India, who made a joint tour of the affected area. The weight of the objections raised by Bharatpur was recognized, and as the Bharatpur Darbar had meantime appointed a qualified Engineer to control the floods in its boundaries, the Government of the North-West Provinces in a letter No. C. 5521, dated 6th August 1895, agreed to the Khushfaim project being dropped.

"on the understanding that measures are being taken by the Bharatpur Darbar towards diminishing the violence of excessive floods from the Banganga, and that this Government will be consulted as regards projects prepared by Engineers in the Bharatpur State."

It was added—

"that the prosecution of the scheme for storage of some of the waters of this river in the Jaipur State appears to be in the highest degree desirable."

The execution of this scheme, *viz.*, the Ramgarh reservoir, has been already alluded to.

Since 1895 there have been no further complaints of damage in Agra by Banganga floods, partly perhaps because the rainfall of recent years has been moderate, but chiefly because the irrigation works undertaken for the proper distribution of the floods by Mr. Devenish, Executive Engineer, have enabled the supply to be fully utilised in Bharatpur and converted them from a curse into a blessing. He writes—

"The conditions now are that we use nearly all, if not all of the floods of the Banganga river. It is possible that in an exceptionally heavy flood, a small proportion of the water finds its way beyond the Bharatpur borders. We use certainly all the water of moderate and light floods for irrigation. This use of the water has been effected by the restoration of old works and by the construction of new channels and banks."

(c) Chief irrigation works on the Banganga.

The principal works now fed, or to be fed, by the Banganga floods are—

(1) The Pathena canal—north bank—in course of construction, bed width 30 feet, to be enlarged subsequently to 50 feet. This is estimated to irrigate 10,000 *bighas* chiefly in Akhegarh tahsil.

(2) Ullupura canal, south bank, bed width 20 feet. This is an old work intended to fill the Attaripur *band* in Bhusawar, but it has a bad head and has not yet worked freely. A new head has now been selected further down the stream at Mala Hera, from which a channel 30 feet wide is being dug, and this is estimated to irrigate 2,000 *bighas*.

(3) Haleyna canal, north bank, bed width 50 feet. This takes out of the river at the site of the old spill at Thilchabi, now irrigates 4,000 *bighas* in Bhusawar and Ochain, and when completed is estimated to irrigate from 20,000 to 40,000 *bighas* in these tahsils, and also in Kumer.

(4) Lalpur canal, south bank, bed width 50 feet. This has a length of four miles and feeds the Lalpur *band* in Bhusawar and the following subsidiary *bands* through the sluices, Jiwad, Lohasa, Jatpura and Ajrond. Last year it is said to have irrigated 4,000 *bighas*. When fully utilised by the flooded land being brought under cultivation it will irrigate up to 10,000 *bighas*.

(5) Oochain canal, north bank, bed width 50 feet. This utilises the Sesar-Oochain road which has been raised and strengthened for a length of 7 miles to act as a training work, and had 8,000 *bighas* of cultivation last year, nearly all in Oochain, including the contents of several subsidiary reservoirs fed from the sluices under the road. This area can be raised to 10,000 *bighas*, and this canal also fills the fine Sesar *band* in Bharatpur which already has 3,000 *bighas* of cultivation.

(6) Similarly the natural spill from the Banganga around Farsu is being controlled and utilised by means of the Oochain-Biyana road now being restored and constructed as a training bank with flood-escape openings and regulators. This irrigated 4,800 *bighas* last year in Oochain, and when the works are completed will in good years irrigate 10,000 *bighas*.

(7) The Ajan *band* system in Bharatpur, which was fully described in para. 7 of last year's report, is also fed by the Banganga floods. The development of this is one of the most promising schemes in the State. The cultivated area in these villages—formerly the most depressed and miserable in the whole State—has risen from 5,000 *bighas* in 1896-97 to nearly 20,000 *bighas* last year, and when the enormous areas of waste now given out for cultivation on special terms (see paras. 65 and 66 of last year's report) are fully utilised, it is hoped that the area will rise to 50,000 *bighas*. Besides these main works which are dependent on artificial channels, there are several well defined spill channels, of which Mr. Devenish writes—

“The flow of these has also been tapped and utilised by the construction of embankments and cuttings. During the last 5 years we have been engaged in improving the storage and distributary system.”

The area so irrigated by natural spill from the Banganga is about 10,000 *bighas*, and when the large areas of waste along the Banganga have been cleared for cultivation under the special arrangements now being made, this, it is hoped, will be doubled.

Altogether about 60,000 *bighas* of cultivation were irrigated from the Banganga last year, viz., 25,000 *bighas* in Bharatpur tahsil and about 35,000 *bighas*

(f) Area irrigated at present. in Oochain and Bhusawar. When the projects now under construction are completed and arrangements for the cultivation of the flooded waste lands perfected, this area will probably be doubled, so that in five years if the present efficient management is maintained, sufficient funds allotted for the works, and the active co-operation of the Revenue authorities insisted on, the Banganga floods should irrigate from 100,000 to 125,000 *bighas* or 40,000 to 50,000 acres of excellent cultivation, and will become the most valuable asset the State possesses—more valuable even than the Ruparel. Hence any scheme to cut off or reduce the supply by the construction of dams or irrigation works higher up the stream, as in the case of the Ramgarh reservoir, should in the interests of Bharatpur be sternly resisted, for there is no doubt now that the floods can be fully utilised in Bharatpur.

8. Practically the whole volume of the Banganga is now tapped by means of the artificial channels or natural spills before its point of junction with the Gambhir at Karka, and the inundations east of that point are those of the Gambhir. The Gambhir differs from the Banganga in having a less licentious channel contained within wide, well-defined banks which it rarely breaks through, and in depositing very fertilising silt. It rises near Khera in Jaipur and runs almost due east for a distance of about 40 miles before it touches the south-east of the Biyana tahsil. For a few miles it forms the boundary between Bharatpur and Jaipur and then runs due east for a length of 10 miles as far as Secundra receiving the drainage of the Nahera tract on the north through

the Talra and Gaddi Khor *nalas* and of the Dang tract in the south through the Raseri *nala*. From Secundra it runs almost due north past the town of Biyana, where it is joined by the Maidani *nala* bringing down the drainage of the Biyana hills. At Naddigaon, 12 miles north of Secundra, it is joined by the Kakund stream, or rather by such portion of it as escapes through the Bareta dam. It then takes a curve to the north-east and after a further course of 8 miles joins the old bed of the Banganga at Karka in Oochain. Up to this point the inundations never extend beyond the well defined banks, within which however there is a large area of excellent *chahi*, *khatili* and *sairaba* land producing as fine crops as any in the State. From Karka it strikes due east, and as the channel, owing probably to the former sand-deposits of the Banganga, is shallower and the banks lower, the stream thenceforward begins to exhibit the capricious qualities of the Banganga, and breaks out into inundations which extend through Bhainsa in Oochain up to the Ajan *band*, and also through Chandauli, Khanwa and several villages of Rupbas on the north into the Agra district, while on the south side it is tapped by channels at Dahnagaon and Bokoli, which are carried through cuttings between the hills to fill the *bands* and irrigate the centre of the Rupbas tahsil. In its course east from Karka the stream deposits sand in profusion, but the soil though light in appearance is very productive and yields excellent crops of *bajra* and *til* in the *kharif*. About 12 miles east of Karka, at Undel Jat, the stream (which though now really the Gambhir still retains its old name of Banganga) begins to form in an intermittent way the boundary between Bharatpur and Agra. At Singholi further east it overflows into the Khari *nala* which entering Rupbas from Biyana on the south-west traverses its entire width till it joins the Banganga at Mehartha on the extreme east of the tahsil bringing the drainage of most of the Rupbas tahsil. The spill into this *nala* overflows and fertilises the eastern villages of Rupbas. The course of the stream after it leaves Rupbas for Agra has already been described.

It has a separate channel through Biyana and Oochain for a length of 35 miles before it joins the old bed of the Banganga at Karka, and a length of 25 miles from Karka before it finally leaves the Rupbas tahsil at Morori. This will explain what a far reaching influence the stream has in these tahsils and that influence is entirely beneficial, while the vagaries of the Banganga proper are often decidedly destructive. No great irrigation work has yet been constructed on the Gambhir, but the Executive Engineer is on the look-out for a favourable site.

9. Of the affluents already mentioned the largest is, or rather was before the Bareta *band* was constructed, the Kakund.

The Kakund stream. This rises in the temple of Kaila Devi among the Karaoli hills 30 miles to the south of the Biyana boundary which it enters at the village of Gordha among the hills of the Dang. Up to this point its course is over a rocky plateau from which it descends by a series of falls at Gordha, and pursues its way between the parallel chains of hills for a distance of 8 miles to the hamlet of Bareta where the hills close in, and are now united by a magnificent masonry dam which effectually holds up the stream, and by means of which over 10,000 *bighas* of *khalsa* and *masi* land were irrigated last year.

10. This work was begun by Lieutenant Home, the State Engineer, in 1863, but abandoned in 1869 on the accession of the late Maharaja after about

The Bareta *band*. Rs. 70,000 had been expended on it and the dam had been carried half-way across. The work was resumed by the present State Engineer, Mr. Devenish, in November 1895. The dam was not sufficiently advanced to hold up the flood of 1896, and suffered some damage from the high floods of that year. Work was speedily resumed, and the dam was completed in time to catch and successfully hold up the floods of 1897. Owing to the ducts or masonry channels not being ready in that year there was no irrigation through the sluices and little cultivation within the dam as in order to test and consolidate the latter little water was run off. Meantime the construction of the three ducts or irrigation channels running north from the sluices was being steadily pushed on, though the uneven and raviney country through which they pass rendered the work tedious and costly.

In the rains of 1898 the water impounded covered an area of 3 square miles in the rear of the *band* with a cubic content of 700 million cubic feet. About 2,000 *bighas* were irrigated. In 1899 the dam filled up to escape level—45 feet above the bed—and the area submerged was 5 square miles with a cubic content of 1,500 million cubic feet.

Two of the irrigation channels had meantime been wholly and the third partially completed. The drought of the past year caused a brisk demand for water for the irrigation of both *kharif* and *rabi* crops and every effort was made to meet this. The results were most satisfactory. A total area of 9,328 *bighas* was irrigated from the sluices, *viz.*, 6,192 *bighas* in 17 Biyana villages and 3,136 *bighas* in 4 Oochain villages. While an area of 1,017 *bighas* was cultivated within the *band*. Most of the land irrigated from the sluices received from 2 to 6 waterings and the *rabi* crops of wheat, barley, gram, when I saw them in March last were first-rate except in one or two villages at the tail of the irrigation channels. The dimensions of the dam are as follows—Length $\frac{3}{4}$ mile, maximum height 55 feet, maximum width at base 400 feet, capacity below escape level 1,500 million cubic feet. The dam has a catchment of over 70 square miles of rocky ground. The total expenditure since the work was taken in hand in 1895 has been about 2 lakhs, but I estimate that the value of the crops, over 10,000 *bighas*, grown in the first year of working would more than cover this capital cost. Even this year owing to two of the channels not having been ready till the season was rather advanced not more than half the supply was utilised for irrigation, and in future we can safely count on about 25,000 *bighas* being irrigated in an average year, of which about three-tenths would be in the Oochain villages around Rudawal and seven-tenths in Biyana. The limit of irrigation is the Gambhir on the west and north. Besides the direct benefits by sluice irrigation to villages in the rear of the *band*, many villages close to it benefit by the proximity of a large body of water which raises the water-level and makes the supply in the wells sweet and abundant. On the other hand there are four villages within the submerged area which have lost heavily as their village-sites have had to be shifted, their wells have collapsed or been choked with silt, and much of the area being under water all the year round has been rendered permanently unculturable. It is not creditable to the State administration that these sufferers for the general weal should so far have received no compensation. I am now enquiring into the losses they have sustained and propose to give them compensation by a proportionate reduction of the revenue or the water-rates for the term of settlement. I may here explain that all of the Bareta irrigation charges will be kept apart from the land-revenue and will be a fluctuating demand assessed year by year on the area irrigated and the crops grown. The rates provisionally adopted for the present year are.

<i>Kharif</i> crops	Sugarcane	...	Rs. 3 per <i>bigha</i> .
	Cotton and maize	...	" 2 "
	Other crops	...	Re. 1 "

Rabi crops Re. 1 to Rs. 2 per *bigha*, according to situation, quality of crops and number of waterings.

For future working rates will be fixed after consultation with the Executive Engineer and the Revenue Department with the sanction of the Political Agent and Council.

11. The Kakund, or such portion of it as leaks or is allowed to escape through the Bareta *band*, strikes north-east in a deep and well-defined channel which has water in creeks and pools all the year round. The villages along the bank irrigate from these by means of *dhers* and *jhalars*, and there is also some excellent *khatili* cultivation in the bed. The stream finally joins the Gambhir at Naddigaon about 10 miles north of the dam.

The Banganga, Gambhir, and Kakund are the streams which have a general influence on agriculture. There are other *nalas* or hill torrents which are more

or less utilised to fill the minor dams so common in this tract. These will be noticed in the description of each tahsil.

12. The following description of the mountains in this tract is borrowed from the Rajputana Gazetteer (Vol. I, page 134) :—

Mountains.

"The Sidgirpahar range runs on the south-east frontier between the *parganas* of Rupbas and Biyana of Bharatpur and Sarbendi of Agra. The general direction is from north-east to south-west and the length about 30 miles; the highest point is Usera, 817 feet. In it are situated the celebrated Bansi-Paharpur stone quarries. The range becomes broken in the southern part of Biyana into irregular branches which help to form the district called the Dang, a tract completely broken up with ravines, very difficult of access and covered with jungle, the highest portion forming a plateau. North-west and parallel to this is an interrupted range running through Rudawal to the south of Biyana which by its southern extremity helps also to form the Dang.

"The other hills in the south consist of two broken irregular ranges running generally in a parallel direction with several offshoots through the *parganas* of Weir and Biyana from north-west to south-east. The highest point is Damdama (near Biyana) 1,215 feet. These hills are separated from the Sidgirpahar range by the Gambhir river."

The hills though they cover a large area especially in Biyana and the south of Bhusawar are low, and except in the Dang rather bare of vegetation. One cause of this is that all the hillsides are the property of the villages. None belong to the State, and therefore nothing has been done to prevent deforestation.

13. As Bharatpur forms part of the alluvial basin of the Ganges and Jumna,

Geological formation of the hills.

the great majority of the exposed rocks are alluvial consisting of modern alluvial deposit with blown sand which the wind carries from the desert of Rajputana and occasionally forms into mounds to the leeward of some natural inequality in the surface. The main range already referred to consists almost entirely of sandstone of various texture and colour, varying from a very fine rock to almost conglomerate. The prevailing colour is brick red with white spots or streaks sometimes green and yellowish-white occurring in alternate beds of considerable thickness. It is in this that the most valuable quarries are found of the famous red and white Rupbas sandstone from which the finest palaces, mosques and temples of Dehli, Agra, Muthra, Dig and Fatehpur-Sikri have been constructed. Both varieties of stone are in considerable demand, and Bharatpur is in the happy position of having a monopoly of the best kinds. The rates of duty charged by the State on sales to outsiders are per 100 maunds, Rs. 8 for the red and Rs. 20 for the white sandstone which is rarer. The net income, which has risen considerably since the management was taken over by the Executive Engineer in recent years, has been—

1896	...	Rs. 17,072
1897	...	" 19,882
1898	...	" 17,522
1899	...	" 23,279

This leaves out of account the large quantities of stone supplied for State purposes.

The ridge running parallel with the main range through Rudawal consists generally of sandstone in massive strata and false bedded flags, usually hard and compact, occasionally vitrified, and reddish or yellowish in colour. In some places thick shaly beds, mostly of quartz or silex, but sometimes of clay are found. The hills west of Biyana and divided from the Sidgirpahar by the catchment basin of the Gambhir river are formed of quartzite, sandstone, with strata of trap and shale. Copper and iron are found, but not in quantities large enough to repay the cost of working. The stone too is less valuable for building or ornamental purposes.

Generally speaking the red sandstone is inferior for architectural purposes to the white owing to the irregularity of its colouring, also to the liability of some specimens to disintegration from the effects of time. The red variety is remarkable for perfect parallel lamination in consequence of which it can by means of wedges be readily split up into flags or slabs of any required thickness. Hence its suitability for roofs and floors.

The white or cream-coloured variety is uniform in colour and texture, and therefore suitable for the most delicate and elaborate effects in carving. Owing to the thickness of the beds it can be procured in slabs of great size. For these reasons it lends itself peculiarly to architectural effect, as the palaces of Dig, the cenotaphs of the Bharatpur Maharajas at Govardhan, and the temples of Muttra and Brindaban testify.

14. The leading features of each tahsil will now be separately described, but Summary of statistics of these these may be prefaced by a few leading tahsils and of the whole State. statistics of area, cultivation, population, and revenue as given in the table below. The standard of measurement throughout the State is the Raj *bigha*—the square of a chain 132 feet long—which is equal to $\frac{2}{5}$ of an acre, so that 1,600 *bighas* go to the square mile.

Tahsil.	Detail.	Number of estates.	Area.		Revenue.	Revenue with all cesses.	POPULATION.			INCIDENCE OF JAMA.	
			Total.	Cultivated.			Total.	PER SQUARE MILE.		Per head.	Per acre of population.
								Total area.	Cultivated area.		
Rupbas	Khalsa ...	72½	1,69,233	83,049	1,05,855	1,18,184	26,352	231	488	...	...
	Mafi ...	4½	5,719	3,543	...	...	...	...	...	...	...
	State property ...	1	7,300	...	...	...	...	...	...	...	...
	Total ...	78	1,82,341	86,592	...	...	...	...	...	...	...
Oochain	Khalsa ...	87	2,00,992	1,23,593	1,72,705	1,80,327	43,412	298	483	...	...
	Mafi ...	7	29,282	19,012	...	...	...	...	...	...	...
	State property ...	2	2,735	...	...	...	...	...	...	...	...
	Total ...	96	2,32,999	1,43,605	...	...	...	...	...	...	...
Biyana	Khalsa ...	151	4,67,741	1,42,060	2,05,972	2,25,959	62,919	201	623	...	...
	Mafi ...	16	90,661	10,606	...	...	...	...	...	...	...
	State property...	1	2,731	...	...	...	...	...	...	...	...
	Total ...	168	5,61,133	1,61,666	...	...	...	...	...	...	...
(1) Khas	Khalsa ...	123	3,03,810	1,65,119	2,36,489	2,59,989	62,153	295	536	...	...
	Istamrar ...	1	3,134	1,969	...	...	...	...	...	...	...
	Mafi ...	9	20,636	15,241	...	...	...	...	...	...	...
	State property...	3	10,014	3,290	...	...	...	...	...	...	...
	Total ...	136	3,37,594	1,85,619	...	...	...	...	...	...	...
(2) Ballabgarh...	Khalsa ...	13	34,399	20,809	34,643	37,817	7,550	328	539	...	...
	Mafi ...	...	2,010	1,126	...	...	...	...	...	...	...
	Total ...	13	36,409	22,025	...	...	...	...	...	...	...
Total	Khalsa ...	136	3,38,299	1,86,018	2,71,123	2,97,806	69,703	298	536	...	...
	Istamrar ...	1	3,134	1,969	...	...	...	...	...	...	...
	Mafi ...	9	22,646	16,367	...	...	...	...	...	...	...
	State property...	3	10,014	3,290	...	...	...	...	...	...	...
	Total ...	149	3,74,093	2,07,644	...	...	...	...	...	...	...

Tahsil.	Detail.	Number of estates.	AREA.		Revenue.	Revenue with all cesses.	POPULATION.			INCIDENCE OF JAMA.	
			Total.	Cultivated.			Total.	PER SQUARE MILE.		Per head.	Per acre of population.
								Total area.	Cultivated area.		
Total southern tahsils	Khalsa ...	446½	11,76,164	5,34,720	7,55,658	8,31,376	2,02,416	251	540	Rs. A. P.	Rs. A. P.
	Istamrar ...	1	3,134	1,960	...	...	...	...	...	...	...
	Mafi ...	36½	88,308	59,428	...	...	...	...	...	...	...
	State property...	7	22,870	3,290	...	...	...	...	...	...	...
	Total ...	491	12,90,476	5,98,407	...	...	...	...	...	...	...
Total central tahsils	Khalsa ...	358½	7,90,871	4,03,165	5,64,720	...	2,29,279	381	631	2 15 0	2 15 0
	Chauth ...	1	2,853	1,264	—	add Rs. 7-13-0 per cent.	...	...	...	...	...
	Mafi ...	62½	1,25,227	79,640	(1,00,416 nominal)	...	...	...	...	...	...
	State property...	14	44,350	...	...	...	...	...	...	...	...
	Total ...	436	9,63,301	5,74,069	...	...	...	...	...	...	...
Total northern tahsils.	Khalsa ...	403	7,69,089	5,40,238	7,35,093	add Rs. 7-13-0 per cent.	1,88,950	324	460	4 6 0	3 2 0
	Chauth ...	26	58,929	45,238	...	...	...	...	...	...	...
	Istamrar ...	4	15,600	11,114	...	...	...	...	...	...	...
	Mafi ...	25	79,506	64,391	(86,100 nominal)	...	...	...	...	...	...
	State property...	10	10,548	...	...	...	...	...	...	...	...
Total of State	...	1,395	31,87,449	18,34,487	12,90,813 7,55,655 20,55,468	re-assessed to be re-assessed.	6,20,645	312	541	...	...

The State has an area of 1,992 square miles, of which 1,147 or 60 per cent. are cultivated. It has a population according to the census made during settlement operations (which though not elaborate is probably more reliable than the 1891 census) of 6,20,645 or 312 per square mile of total and 541 per square mile of cultivated area. The total land revenue is at present Rs. 20,55,468 excluding the 4 *kham* estates mentioned in para. 3 giving an incidence of about Rs. 3-8-0 per head of population and 1,751 per square mile of cultivation or about 2-12-0 per cultivated acre on the present jama, but these figures will be raised by about 2 per cent. in each case when the four southern tahsils have been reassessed. There are in all 1,395 estates, of which 1,208½ estates are *khalsa*, 27 are *chauth* (i.e., pay one-fourth of the rental) 5 are *istamrar*, 31 are State property (*runds*, etc.) and 124 are held in *jagir* or *mafi* embracing about one-eleventh of the total, and one-ninth of the cultivated area. The total number of estates will now be increased owing to the formation of new estates in State or village waste allotted for cultivation.

The four tahsils now to be reassessed comprise about two-fifths of the total, and almost one-third of the cultivated area paying at present 37 per cent. of the total *khalsa* Jama, and contain 32.5 per cent. of the population. Owing to the prevalence of hills and the large areas of sand along the Banganga, Gambhir, etc., only 47 per cent. of the total area is under cultivation. The incidence of population varies from 200 per square mile in Biyana to 298 per square mile in Bhusawar, while on cultivated area it ranges from 483 per square mile in Oochain to 623 in Biyana, the average for the whole tract being 251 per square mile of total and 541 per square mile of cultivated area. The latter is practically the same as for the whole State, which considering the large amount of excellent waste land available for cultivation cannot be considered high. The special features of each tahsil, where they have not been already mentioned will now be discussed.

TAHSIL RUPBAS.

15. Rupbas is the eastern and smallest of the four tahsils, but its boundaries will be extended when the Oochain tahsil is partitioned. It has a present area

(a) General description and soils. of 114 square miles, of which only 54 or 74·5 per cent. are under cultivation. Of the *khalsa* area—106 square miles—49 per cent. is under cultivation, 34 per cent. is culturable, 3·5 per cent. new fallow, and 13·5 per cent. unculturable; so that although cultivation has expanded enormously since last settlement there is still an ample margin for further extension. Of the cultivated area 16 per cent. is *chahi*, 2 per cent. *chahi-sairaba*, 19 per cent. *sairaba*, 1 per cent. *khatili*, and 62 per cent. is dependent solely on the rainfall, *viz.*, 52 per cent. *barani* and 10 per cent. *bhur*. Owing to the deficient rains of late years, and the neglect of the numerous irrigation *bands*, the maintenance of which is essential to ensure a good water-supply in the wells, the *chahi* area has steadily contracted of late years and is now much less than it was at last settlement. 80 per cent. of the wells are sweet, and 20 per cent. bitter, brackish or oily, these being generally found in the villages of the central plain.

The tahsil slopes from the Sidgirpahar range on the south boundary due north to the Gambhir, and up to the Ajan *band* in Bharatpur. It falls into three well-defined natural divisions, *viz.*, (1) the *Wal* or south-western portion lying in the triangle between Rupbas town and the two ranges of hills with 28 villages; (2) the *Dher* or central and eastern portion intersected by the Khari *nadi* from the Singhani *band* in Biyana with 26 villages; and (3) the *Nadwas* or northern portion intersected by the Gambhir and the old channels of the Banganga with 24 villages.

The *Wal* as its name implies is the valley at the foot of or between the hills. These are low barren rocks with no vegetation. Hence no sand is washed down from their slopes by the rain, and there is hardly any light *bhur* in this tract. The soil generally is a stiff blackish clay locally known as *chahar*, usually fertile and productive with abundant rainfall, but in places it has an admixture of *kallar*, and hence is not suitable for *rabi-barani* crops—gram or *sarson*. *Jawar* does very well in good seasons, in the central plain around Rupbas. *Bajra* is grown with most success in the lighter soils under the hills. Well water is generally sweet, but the supply is now very low, and great numbers of wells have been temporarily abandoned. One reason for this is that a layer of stone is often met with at a depth of 10 to 30 feet from the surface, and this prevents the surface drainage from soaking into the soil and raising the spring level. Another cause is that nearly every village in this tract has its own *band*, which impounds the drainage from the hills on both sides and the large areas of waste, the filling of which is almost essential for the maintenance of the water-supply in the wells. These *bands* have gone out of repair or owing to the drought have not filled well in recent years, and this at once reacts on the wells. The spring level ranges from 37 to 60 feet, the average being for masonry wells 42 feet and for *kacna* wells 28 feet, while the average depth of water is 9 and 6 feet respectively. The restoration and improvement of these *bands* was taken in hand this year by the Executive Engineer, and most of them will have been completed in time to catch the monsoon rains.

The tract is also intersected by the Khor *nadi* from Biyana, which however flows between deep banks and does not inundate here. Dams have been thrown across it at Bansi and Kherli, where some excellent *sairaba* has been formed Dhana, Jatwansi, etc. The owners of the tract were originally Panwar Rajputs, who still hold 5 or 6 villages around Bansi Paharpur, but they have been dispossessed from the rest by Jats. The people have been severely hit by the drought of recent years, which is most felt in the stiff clay soils, but owing to the carelessness of the tahsil authorities have got into the habit of holding back the revenue even when they are in a position to pay it. If the restoration of the village *bands* is followed by a year or two of good rainfall, the tract will speedily recover its lost prosperity.

The *Nadwas* on the north of the tahsil with 24 villages is so named because it is affected by the action of the combined Banganga and Gambhir streams

(2) The *Nadwas*.

(*nadi*) which run right through it from west to east and benefit nearly all the villages directly or indirectly. A range of low hills starts from the river at Bokoli and runs close to it for some distance. Through openings in this channels have been cut as already stated at Bokoli and Dahnagaon, to convey the floods into the central plain around Rupbas. Hitherto these have not been very successful as the floods, owing possibly to the damming of the Kakund, have not of recent years risen high enough, but they are now being cleared and deepened.

The proportion of *sairaba* in these villages is considerable. The soil, owing to sand deposits, is light in texture but very productive even with a moderate rainfall. Even the land classed as *bhur* yields excellent crops of *bajra* and *til* in the *kharif*, and the rents are as high as for the best *barani*. One estate—Khera—on the road between Rupbas and Fatehpur-Sikri is isolated from the rest and forms an *enclave* in Agra. A few villages on the extreme north lie on both sides of the Ajan *band* (for which see report on the central tahsils) and are irrigated by means of it. Water is near the surface and fairly abundant, the average being 16 feet to the water-level and 14 feet of water in masonry wells, and 14 and 9 feet respectively in *kacha* wells. In Burana, Posonda and a few more villages on the north boundary adjoining Agra it is bitter; but elsewhere sweet. There is much excellent *khatili* cultivation in the bed of the Banganga, and on its banks a large area of sandy but culturable waste, which is being steadily brought under the plough. This tract is on the whole fairly prosperous even at the present time.

The *Dher* with 26 estates comprises the central and eastern portion of the tahsil projecting into the Agra district. The southern portion along the

(3) The *Dher*.

hills is similar in character to the *Wal*, while the northern portion along the banks of the Banganga is similar to the *Nadwas*. Between the two runs the Khar *nadi* which at Singholi approaches close to and receives the overflow from the Gambhir. Both before and after this point its inundations spread over a large portion of the tract and being regulated by a series of *bands*—almost every village has one or more—its action is most beneficial, and large areas of excellent *rabi* crops are grown on the inundated land. The soil varies from a light loam to a stiff clay and there is much culturable land. Stone is very near the surface in places, and this is a bar to the extension of well irrigation. Water is generally sweet and near the surface, the average being 22 feet to the water and 12 feet of water in masonry wells, and 18 and 9 feet respectively in *kacha* wells. The latter are very numerous. In some places, e.g., Singholi, the water collected in abandoned quarries is utilised for irrigation by means of *jhalars*. This tract though now rather depressed is better off than the *Wal*—the *bands* being in better order and the water-supply more abundant—and has many elements of prosperity.

The tahsil enjoys a fair rainfall, the average for the last 14 years being 23·68 inches, but of this only 1·45 inches

(c) Rainfall.

falls in the 6 months October to March, and even this is very uncertain; consequently *barani* crops are little grown in the *rabi*. In five years the rainfall has fallen short of 20 inches, while in two it has exceeded 30, the extremes being 33·18 in 1891-92 and 10·35 in 1896-97. Owing to the natural slopes of the country especially in the *Wal* the rainfall unless held up by *bands* or small field-embankments has a tendency to run off into the Banganga.

Rupbas, the centre and headquarters of the tahsil, is only 18 miles distant in a direct line from the railway at

(d) Communications.

Bharatpur, but there is no direct route and cart traffic has to go round by Fatehpur-Sikri, which increases the distance to 24 miles. Even this route is often impracticable in the rains, most of the way being through a low-lying swampy country. The nearest and most popular outlet for traffic is to Fatehpur-Sikri and thence by metalled road

to the railway station at Achnera in Agra, which is distant only 16 miles from Rupbas. A good fair-weather unmetalled road for the traffic from the Bansi-Paharpur stone-quarries to Bharatpur has recently been constructed by the Executive Engineer, but this is not practicable for heavy traffic during the rainy months. Another unmetalled road much used for cross-traffic is that from Fatehpur-Sikri to Biyana which passes through Khanwa in this tahsil.

Rajputs, Jats, Brahmins, Gujars and Musalmans are in order the largest land-owning tribes. The first named are here as elsewhere indifferent agriculturists and bad revenue-payers, but they hold about one-third of the area and cultivation. The other tribes are of average industry. The tahsil as a whole in spite of the extraordinary increase of cultivation since 1890 (nearly 60 per cent.), has been going down-hill since the drought which began in 1895-96, and has continued with one year's break ever since. The contraction of the water-supply in the wells and the failure of the *bands* are the chief causes of the deterioration, but these are only temporary influences which will be removed by one or two years' good rainfall.

OOCHAIN.

16. Oochain is the only tahsil in the State which does not touch foreign territory. It has a total area of 146 square miles, of which 90 square miles or 61·5 per cent. are under cultivation. Of the *khalsa* area 61 per cent. is under cultivation, 9 per cent. (including State property) is unculturable, 3·5 per cent. is fallow and 26·5 per cent. is culturable. Thus although cultivation has increased by 20 per cent. since last settlement, the margin of land still available for cultivation is 30 per cent. of the whole. A good deal of this is the dense jungle formed by the Banganga inundations, which will cost much labour and money to reclaim, but there is also a large area of clear level land which will be at once broken up on the advent of more favourable seasons. Of the cultivated area 20 per cent. is *chahi*, 6 per cent. *chahi-sairaba*, 38 per cent. *sairaba*—regularly or occasionally inundated, 34 per cent. ordinary *barani* and only 2 per cent. *bhur*. The latter is found in small quantities along the banks of the Banganga, but chiefly at the foot of the hills separating Rudawal from Rupbas.

The tahsil like Rupbas falls into 3 well-defined natural divisions—(1) the Jatmai with 32 estates in the broad plain on the north-west, (2) the Nadwas in the centre on both sides of the Banganga and Gambhir with 36 villages, and (3) the Rudawal *pargana* which was formerly a separate tahsil on the south and east with 28 villages.

The Jatmai, so called because the estates are owned chiefly by Jats, is the tract lying north of the Banganga and west of the Bharatpur-Oochain-Biyana road. The villages have a good clean level soil, but the well-water especially on the north towards the Bharatpur-Jaipur metalled road is often very bitter. Hence cotton is hardly grown at all on the wells, and though there is an ample water-supply the *rabi* crop too unless aided by rain is poor. Some improvement has, however, been effected on this side by the Haleyna canal from the Banganga, the spill from which fertilises the soil and aids the wells. The average depth of wells is 22 feet to water and 13 feet of water for masonry wells, and 18 and 10 feet for *kacha* wells. On the south several villages, *viz.*, Mai, Nangla Mai, Alipur, Atari, Jahangirpur, Atari, etc., are benefitted by the inundations from the old or present channels of the Banganga. These have a light soil like the Nadwas in which *bajra* and *til* thrive in the *kharif*, while gram, etc., is sown in the inundated lands. There are few *bands* in this tract, but it will be much benefitted by the extension of the Haleyna canal. This tract as might be expected has suffered severely from the recent drought, but the villages are generally strong communities and only want a few good seasons to recover.

The Nadwas is similar in character to the tract of the same name in

(2) The Nadwas.

Rupbas. Nearly all the villages are affected by the annual floods of the Banganga and Gambhir, either receiving the natural flow by inundation which in some places has sanded over the cultivation and choked the wells close to the river, or regularly irrigated by the canals along the Biyana-Oochain-Bharatpur road which distribute the floods by means of regulators into a series of retaining *bands*, of which the chief are the Nekpur-Kanwasi and the Churari-Mirki *bands*. The junction of the old Banganga channel and the Gambhir is at Karka in this tract. East of this point the annual floods are now much reduced as the Banganga is exhausted by the numerous natural or artificial channels to the west, and the Gambhir floods are less than they used to be before the Kakund was dammed. Hence Oochain villages east of Karka are now rarely inundated. The wells have in consequence suffered, and the revenue has fallen into arrears, as the *sairaba* land has now become high and dry *barani*. The soil close to the river is light and sandy, but very suitable for *kharif barani* crops. Further north towards Bharatpur it is stiff clay and the water is generally bitter, *e.g.*, in Churari Gujar, gotoli, Bara, Karka, etc. Water in this tract is very near the surface, the average depth being only 13 feet, while the depth of water is 20 feet. Where the inundations are regular the wells are little worked except in years of drought or when the winter rains fail, and then *kacha* wells are sunk in great numbers. The villages of this tract round Oochain have the best *sairaba* cultivation in the State, and even in this year's drought the *rabi* crops were excellent.

The Rudawal *pargana* on the south and east was formerly the most flourishing tract in the tahsil with a good clay soil—except for the *bhur* close to the

(3) Rudawal *pargana*.

hills on the south and east—wells numerous and sweet, and very advanced cultivation including a considerable area under sugarcane. The physical characteristics are similar to those of the adjoining Wal tract in Rupbas, and this tract has similarly suffered from the diminution of the water in the wells and the breaching of the *bands* at Khera, Rudawal, Sirond, Churari, etc. The prosperity of this tract is largely dependent on the village *bands* being kept in good repair and being regularly filled, and they are now being restored and improved. Four estates on the extreme south-west, *viz.*, Bhawanpura, Joreta, Dumariya, and Rudawal, have this year had over 3,000 *bighas* irrigated from one of the canals from the Bareta *band*, and this irrigation when fully developed will help to restore the prosperity of this tract. The water level is about 26 feet and the depth of water 10 to 12 feet.

The average annual rainfall is almost the same as at Rupbas, *viz.*, 24.15 inches, of which 2.02 inches falls in the six cold weather months. The highest fall since

(c) Rainfall.

1896 was 33.23 inches in 1892, the lowest 12.50 inches in 1895-96, and 11.02 in 1896-97. In three years out of the fourteen the amount has fallen short of 20 inches, while in two it has exceeded 30 inches. The deficient rains of 1895-96 and 1896-97 inaugurated a period of severe agricultural depression, and though the rainfall of the last three years has been normal in amount, that of the last two has been very badly distributed owing to the failure of the autumn and winter rains and the tahsil has therefore not had a chance of recovery. On the other hand the improvement of irrigation has been of immense benefit to a great number of villages.

The present Jama is now very uneven. While it falls lightly on several of the canal-irrigated villages, it has become

(d) General condition of the people.

oppressive in several villages on the east which no longer receive the Banganga inundations. Moreover this inequality has been accentuated by a very bad distribution of the revenue instalments. When the present assessment was fixed the *rabi* was the chief crop in these villages, and the *rabi* instalment was fixed proportionately high. These villages now grow chiefly *Kharif* crops and discharge the *kharif* demand in full, but when called on for the *rabi* demand point to the fact that they have little or no *rabi* crops. A proper revenue administration would have met the difficulty long ago.

by altering the instalments to agree with the relative importance of the harvest. But this simple remedy has been overlooked, and till last year the consequence was much larger arrears than were justified by the combined results of both harvests.

The tahsil is well served in the way of communications. An excellent metalled road connects the tahsil headquarters with Sewar and Bharatpur, 7 and 11 miles distant respectively. There is a good unmetalled road from Oochain to Biyana, but this is often rendered impassable in the rains by Banganga inundations. The Rudawal *pargana* is not so well off, as the Gambhir and Banganga come between it and the railway at Bharatpur; but the road recently constructed from the Paharpur quarries to the capital has improved things somewhat. Rudawal itself is only 20 miles from the railway.

The agricultural population consists mainly of Jats, 30 estates, Sinsinwar Jats 12, Gujars 18½, Brahmins 14 and Rajputs 6. So that the industrious classes predominate. The two estates shown as State property are the town of Oochain which has no *khalsa* land attached to it and the State Rund of Karka. Having regard to the extension of cultivation and the development of irrigation the present jama cannot be considered high. It is however very unequal. Some villages with a large *sairaba* area are very lightly assessed and have benefited enormously by the high prices of recent years, while others have given up struggling to pay an oppressive demand and were content to come under direct management or to accumulate arrears.

BIYANA.

17. Biyana is by far the largest tahsil in the State, having a total area of 313 square miles, of which only 101 or less than one-third are under cultivation. About 150 square miles or 48 per cent. of the area is unculturable, of which hills occupy 100 square miles. Of the *khalsa* area 30 per cent. is under cultivation, 52 per cent. unculturable, 2 per cent. recent fallow and 16 per cent. culturable. Much of the so-called culturable is however very inferior, uneven, stony or sandy land in the Dang or Nahera, and this is the reason why the expansion of cultivation has been much less than in other tahsils, being only 5.5 per cent. since last settlement. The unculturable land offers at certain seasons excellent grazing to sheep, goats and even big cattle, of which the Gujars of the Dang and Nahera keep very large herds.

Of the cultivated area 31 per cent. is *chahi*—a higher proportion than in any tahsil except Bharatpur—2 per cent. *chahi-sairaba*, 13 per cent. *sairaba*, 44 per cent. ordinary *barani* and 10 per cent. *bhur*. The area of *bhur* in the *barani* cultivation is rather under-estimated and much of even the *chahi* land in the Nahera belongs to this class. The *bhur* of the Nahera and Dang is generally of a very inferior kind and grows only the poorest *kharif* crops.

As already explained there are three great natural divisions in this tahsil—(1) the Kather or northern portion with 92 villages—the richest and most highly cultivated in the tahsil; (2) the Nahera or uneven sandy and rocky ground lying south-west of Biyana town up to the Bhusawar and Jaipur boundary and traversed by the Gambhir, with 45 villages; (3) the Dang embracing all the rocky hills and the intermediate valleys lying to the south of the Bareta band and running into the tracts of the same name in Dholpur and Karaoli. This has 31 villages, of which 8 on the high plateau to the south which slopes towards and drain into Agra are known as the Upper Dang, and the remaining 23 in the valley of the Kakund lying between the two chains of hills referred to in para. 12 are included in the Lower Dang.

Except for a low narrow ridge of hills which penetrates from Weir on the west and run due east almost parallel to the Banganga for a distance of 6 miles with an opening at Agaoli through which the Banganga spill formerly passed into the Gambhir (see para. 7), the Kather is all a level plain sloping gently to the north-east. It is traversed from west to east by the main

channel of the Banganga which enters this tahsil from Bhusawar at Barkhera and deserting the old channel due east past Farsu breaks out north towards Oochain. The Gambhir from the south runs almost due north dividing the tract almost equally, and then taking a sharp turn east joins the old channel of the Banganga at Karka in Oochain. To the influence of these two streams the tract owes its large area of excellent *sairaba* and *khatili* land, and indirectly its unequalled *chahi* cultivation. The action of the Banganga has however in the past been very capricious, the frequent changes in its channel having all but ruined several villages by sanding over the cultivation, choking up, or carrying away the wells, flooding the village sites and transforming rich expanses of cultivation into sandy wastes. The deterioration is found chiefly in villages close to the old channel, e.g., Farsu, Barkhera, Rundhera, while villages further to the north and south have benefitted enormously by the fertilising influence of the floods, which deposit the sterilising sand soon after they leave the channel. The *khatili* cultivation in the bed of the Banganga is poor owing to the excessive amount of sand, while that of the Gambhir is excellent. The Gambhir also remains in flow longer than the Banganga, and there is some irrigation from *jhalars* on its banks. The Kakund or such portion of it as escapes from the Bareta band traverses the eastern portion of the tract. Up to its junction with the Gambhir at Naddigaon it is in more or less intermittent flow throughout the year and has some very good crops in its bed, while the villages along the banks irrigate from it by means of *jhalars* and *dhenklis*. Almost parallel with the Banganga runs the Jogi Nadi from Bhusawar on the west. This receives the drainage of the hills on both sides, has a deep but narrow channel, and is a considerable torrent in the rains. Its overflow joined by the Banganga spill to the south forms a considerable swamp at Agaoli and Jhilka Bara on the Oochain-Biyana road and is very beneficial to the villages lying east of the road. It finally joins the Gambhir near Karka in Oochain. The large band at Khatnauli where it enters the tahsil on the west is now being renewed to hold up and distribute the waters of this torrent, and the Richoli band on the east has also been restored. The southern portion of the Kather is fringed by more or less continuous hills, the drainage from which runs into the Gambhir and to intercept this there is a considerable series of bands which play an important part in the local agriculture. Many of these have been restored and extended by the State in recent years, and the rest were vigorously taken in hand this year, and will be completed before the rains.

The soil of this tract in the northern villages adjoining the Banganga is often light though productive and on the south towards the hills is frequently sandy or stony and uneven as in the adjoining Dang and Nahera tracts. In the centre and especially in the villages lying west of the Biyana road it is a firm and level loam, suitable for the growth of all the ordinary crops. In some of these, however, e.g., Salabad, part of Naoli, Nangla-Purohit, etc., the water is bitter and in places too the soil shows traces of *kallar*. Seven-eighths of the wells are, however, sweet. Water is found at an average depth of 24 feet and except in the villages running west from Biyana under the hills towards Bhusawar—where the bands had fallen out of order, but are now being repaired—and is generally abundant. The average depth is 19 feet in masonry and 10 in *kacha* wells.

The owners in the Kather are generally Jats and Dhakars—who are first class, Gujars who are fair agriculturists, and Gaddis said to be the descendants of Punjabi Khattris converted to Islam in Aurangzeb's time—who are quarrelsome and slovenly and prefer to make a living by working in railway workshops, etc., than by tilling the soil. Though owing to the changes wrought by the Banganga some villages are still much depressed and rather over assessed, the tract as a whole is prosperous and steadily developing. Several villages on the east side are now irrigated from the Bareta band, and the irrigation will soon extend right up to the Gambhir. Some sugarcane and a good deal of maize is grown. Cotton is a favourite and successful crop and the *dofastli* area on the wells is considerable. In the present famine the tract showed hardly any signs of distress and the revenue was realised almost in full.

The Nahera with 45 estates is the tract lying south-west of Biyana, the south-eastern boundary being the range of hills which forms the western boundary of the Dang plateau, while the northern boundary is formed by the broad

(2) Nahera.

irregular range running west from Biyana town to Ballabgarh in Bhusawar. Between the two runs the Gambhir in a north-easterly direction and the drainage from the hills on both sides has cut up the soft sandy soil with a network of *nalas* or ravines, which formed an excellent ambush or hiding place in the past to the lawless and predatory Gujars, and still enable several outlaws to defy the law. All the best cultivation, *viz.*, most of the *chahi*, the *sairaba*, and *khatili*, is to be found in the bed or on the banks of the Gambhir, and of its three large tributaries, the Talra and Gaddi Khor *nalas* from the north and the Raseri *nala* from the south. The intervening tracts are generally high sandy uplands often covered with dense jungle and known as *bihor*. In this some precarious cultivation is carried on in the *kharij*, and wells are occasionally to be found, but the water-supply away from the streams is poor and bad.

The only exceptions to this are the three fine villages of Khareri, Bagrain and Khankhera under the hills on the west which have an excellent soil fertilised by the hill-drainage, numerous wells with good water, and grow large areas of betel-nut. These with the two large villages of Secundra (where opium is grown) and Shergarh close to Biyana are the most prosperous in the tract. The nature of the country is a bar to the construction of irrigation dams. There are only two—at Secundra and Bagrain—and these are of little use.

The water level varies enormously from the low lands to the uplands, but the average is 41 feet, while the average depth of water is 12 feet in *pakka* and 7 in *kacha* wells. The latter are very common all over the tract. The supply is now low owing to the drought, and in consequence a good deal of *zira* is sown in *chahi* lands in the *rabi*. Henna (*mehndi*) is also grown as a mixed crop in some villages near Biyana. The owners are chiefly Gujars, rather a wild and lawless lot, but amenable enough if treated with sympathy and consideration. They are fair cultivators, and as the area of pasture is very large make considerable profits from their large herds of cattle.

The Dang differs from the Nahera in the fact that it is a plateau among rocky hills, in which stone rather than sand predominates. These features (3) The Dang Upper and Lower. are most marked in the Upper Dang, a quadrilateral jutting out south and bounded on the west by Karaoli, on the south by Dholpur, and on the east by Agra into which it drains. It has 8 villages with enormous areas owned exclusively by Gujars. The surface is uneven and stony, and cultivation is limited to the low lands in the beds of the numerous *nalas* or ravines. Wells are very numerous and cost little as they are made of rough undressed stone without cement, but the water-supply is very poor and the area irrigated very small. In last year's drought many of the wells dried up completely and the population had to migrate in search of water. The evil has been aggravated by the neglect of the irrigation *bands* in the three villages of Kani, Ooncha, and Jaisra. Funds did not allow of their restoration being taken in hand this year, but the Executive Engineer hopes to undertake the work next cold weather. In ordinary years there is abundance of grazing, and the Gujars make large profits from the sale of *ghi*, wool, etc., the proceeds of which are generally set apart by their thrifty house-wives for payment of the State revenue.

The Lower Dang with 23 villages is the rocky plateau drained by the Kakund and extending from the Upper Dang to the Bareta *band* and the well-marked ridge of hills separating it from the Nahera. The soil is generally stony but in places sandy. The 11 villages on the western side benefit by the Bareta *band* which submerges much of the area in the *kharij*, but enables excellent *rabi* crops to be raised as the water dries up, and also raises the water-level in the wells. This is not however without its drawbacks, as *kacha* wells which formerly lasted 10 to 15 years now collapse after a year or two. Some of these villages have hitherto lost more than they have gained by the construction of the *band*, but the *nalas* and ravines are being filled up by the annual deposits, and if the water is run off in time to enable them to cultivate

a considerable portion of the area all will benefit in the long run. The 12 villages on the east and north remote from the influence of the *band* have large areas of *bihar* or uneven jungle and are much cut up by deep *nalas* running into the Kakund. These like the Upper Dang have suffered considerably from the drought as the wells have run dry and they are now much depressed. The average water-level is 3½ feet, the average depth of water 11 feet. Besides the Bareta dam there is only one dam in this tract, *viz.*, at Singhana on the extreme east through which the Khar *nadi* runs into Rupbas. This is under repair. There are other suitable sites, but they cannot be utilised without interfering with the supply of the Bareta work.

The Lower Dang too is owned almost exclusively by Gujars, a sturdy and manly lot, many of whom are in our native army. They have large herds of cattle, sheep, and goats, but in both the Dang and Nahera tigers and panthers often carry away the cattle, while other wild animals cause much injury to the crops.

The average annual rainfall at Biyana town since 1886 has been 26·83 inches, of which only 1·2 inches falls in the six cold weather months. The total is higher than for Oochain and Rupbas, and the head-quarters being surrounded by hills probably receives a heavier fall than the northern plains, I should be inclined to put the average for the whole tahsil at 25 inches. In two years of the fourteen the amount has exceeded 30 inches, while in four it has been less than 20. In 1896-97 and 1897-98 only 8·31 and 10·40 inches respectively were registered; but in the last three years the fall has been almost normal, though here as elsewhere the rainfall of the past two years has been very badly distributed as the September rains and the winter rains were practically *nil*.

Biyana town is 26 miles from the nearest railway station at Bharatpur *via* Oochain, with which it is connected by a good unmetalled fair-weather road. As the road crosses the valleys of the Gambhir and Banganga communications are often interrupted for days at a time in the rains. The Dang and Nahera tracts are even more remote, and from the nature of the country are very badly served in the way of communications and are almost impassable for carts. Pack animals are therefore chiefly used for heavy traffic.

The chief agricultural tribes have been already noticed. Over half the area and 90 out of 168 estates are held by Gujars, Brahmins with 18 estates, Jats with 12, and Sinsinwar Jats with 8 estates come next in order. Hindu Rajputs and Mahomedan Gaddis hold 8 estates each, Minas 6, Dhakars 5, Sheikh Saiyads, etc., 5, Mallis and Kachis 5, and other tribes 2. One estate is still *kham*, and one, *viz.*, Fort Secundra which contains the ancient fort and buildings and has no cultivation, is State property. On the whole therefore the tahsil has a strong and fairly numerous agricultural population. Aided by the flourishing well and *sairaba* cultivation and the irrigation from the Bareta *band* it has held its own during the recent years of strain and difficulty.

BHUSAWAR.

18. Bhusawar is one of the largest and after Gopalgarh, which has now been broken up, the highest revenue-paying tahsil in the State. The Jaipur State runs all along the west boundary. The tahsil comprises the *parganas* of (1) Bhusawar; (2) Weir formerly the appanage of the descendants of Raja Partab Singh, younger brother of Suraj Mal, but resumed by the State in the last century; (3) the small *pargana* or *jagir* of Ballabgarh on the extreme south with 13 estates which was granted originally by Jaipur about 1721 A.D. to Chaudhri Ratti Ram, the Jat Sirdar of Ballabgarh, and was maintained to his descendants by the Bharatpur Rajas on condition of military service. It was temporarily taken over by the late Maharaja in 1880 in discharge of a debt. This *jagir* being for the present *khalsa* has been brought under assessment like other *khalsa* villages, but its assessment will be separately

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shown to provide for the contingency of its being restored to the *Jagirdar*, Faujdar Debi Singh, Member of Council.

The total area is 234 square miles, of which 130 or 56 per cent. are under cultivation. The *khalsa* area is 220 square miles, of which 54 per cent. is under cultivation, 23 per cent. is unculturable (*viz.*, 12 per cent. or 27 square miles under hills, and 11 per cent. otherwise unculturable), 7 per cent. is recent fallow and 16 per cent. old *banjar* suitable for cultivation. Hence there is ample room for extending cultivation, but owing to various causes, which will subsequently appear, the increase since last settlement has been less than 3 per cent. Much of the culturable is dense but rather sandy jungle along the banks of the Banganga, overgrown with high reeds, etc., the breaking up of which is laborious and expensive. Special arrangements have now been made to lease out this for cultivation on favourable terms. Part of the culturable land represents holdings abandoned by the old owners owing to drought or pressure of assessment which has gradually fallen out of cultivation. For this arrangements have now been made either by reinstating the old owners, or if they refuse, by allotting it to other agriculturists. Finally some of the culturable especially under the hills on the south is light sand soil barely worth the expense of cultivation.

Of the cultivated area 33 per cent. is *chahi*, 1 per cent. *chahi-sairaba*, 1 per cent. *khatili*, 4 per cent. *sairaba*, 51 per cent. *barani* and 10 per cent. *bhur*. The *bhur* or inferior sandy soil is met with chiefly along the banks of the Banganga where sand has been deposited and also under the hills in the south of Bhusawar and Ballabgarh. In Weir there is very little even under the hills as these are composed of bare rocks.

Excepting the hilly portion on the south, all the rest lying north of a line from Bhusawar to Weir is a fairly level plain sloping gently to the north-east and crossed from west to east by the Banganga which has a course of 16 miles through this tahsil. The soil of this portion is generally a fairly good loam, wells are very numerous and well water is generally sweet though there are many villages close to the Banganga as well as at a distance from it, *e.g.*, Chonkarwara, Kallan, Salimpur, Jahanpur, Bijwari, Kherli, Gujar, Bewar, etc., where the water is very bitter, cotton in consequence is not sown at all on the wells, and even after a *rabi* crop is raised the land has often to be left fallow for a year to get rid of the injurious effects of the saline water.

The southern or hilly portion of the tahsil has a lighter soil except in Weir. Water is generally sweet but far from the surface and owing to the drought of recent years now very low. In the whole tahsil about 80 per cent. of the wells are sweet and about 20 per cent. bitter, brackish or oily—the last kind being the most injurious for agriculture.

The tahsil naturally falls into four main sub-divisions—(1) the northern or Trans-Banganga with 42 estates, (2) the small Ballabgarh *pargana* with 13 estates on the extreme south, and between these two (3) the Bhusawar *pargana* on the west and (4) the Weir *pargana* on the east.

The estates north of the Banganga have a good clean level soil in which *khariif barani* crops thrive and *pala* grows in profusion. Along the Banganga this changes into uneven sandy Bet land in which *pala* grows. Owing to the proximity of the stream the water level is near—26 feet for masonry and 23 in *kacha* wells—and the supply generally abundant—13 feet in masonry and 8 in *katha* wells. The quality is, however, very variable and the prosperity of a village generally depends on whether its wells are sweet or bitter.

The Banganga here flows through fairly high beds and ordinarily inundates only 351 *bighas* in the two low-lying villages of Hatinjar and Nimatpur. As explained in paragraph 7 it is liable to burst through its banks in years of high flood, and in 1881 it broke out north at Khanpur on the extreme west and at Thilchahi close to Haleyna and flooded all the country to

the north. The Pathena and Haleyna canals now take out from these points. The former is still under construction, but the latter has already irrigated a considerable area in Haleyna and the villages east of it on both sides of Bharatpur-Jaipur road which is used as a training work, and has also done much to improve the wells. There is no *band* in these northern villages, as there are no suitable sites, but they will benefit immensely by the extension of irrigation from the two canals mentioned. Owners are chiefly Jats, and as a rule men of more substance and energy than in the villages to the south.

The soil in the northern portion of the Bhusawar *pargana* is similar to that of the Trans-Banganga villages being a fairly good level loam, but it deteriorates as we go south towards the hills and becomes a yellowish mixture of hill sand and clay. This even where to the eye it appears stiff and firm is very inferior in productive power, and *pala* will not grow in it. Around Bhusawar itself is found a species of reddish *bhur* very light in texture which is particularly suitable for the growth of mango and *mahua* trees.

The local custom is that any one is at liberty to plant a mango tree even on another man's land, but in the latter case half the produce goes to the owner of the land, half to the owner of the tree. The encouragement thus given has led to about 8,000 mango trees being planted in and around Bhusawar. Some of these are 100 years old, and in the village of Ataonda there is a single tree the fruit of which sells annually for Rs. 50 to 100. The more valuable trees have their own special names. These trees were till lately taxed by the State in various ways. Up to A. D. 1882 the State took one-third of the produce. In 1883, the trees were grouped into four classes according to the estimated quantity and quality of the produce and (1) where the soil was not previously assessed a tax of from 3 annas to 12 annas per tree was imposed, (2) where the land was already assessed the tax varied from 9 pies to four annas per tree. The average income to the State from trees in *khalsa* lands (excluding trees and gardens owned by the State) was for the 5 years ending in 1894-95 Rs. 1,903 per annum. In 1896 when a number of miscellaneous taxes and imposts were remitted this tax on the mango trees was also abolished. This was I think a mistake. The land under these trees was either not assessed at all, or assessed very lightly at last settlement on the understanding that the tax on the trees would be maintained. The mango trees are a valuable property as will appear from the fact that 2954 trees are now held in mortgage for a total amount of Rs. 7,552 or Rs. 2-8-0 per tree. The State is entitled to a share of this produce, as it is entitled to a share of the other produce of the land, and in similar circumstances the British Government taxes date trees in Mooltan and the Derajat. I therefore propose that in the new assessment the produce of these trees be taken into account as part of the assets of the estates to which they belong, and included in the assessment which will show separately the amount charged on the land and on the mango trees. The people will then be consulted as to whether the latter amount will be distributed over the land or maintained as a separate charge on the trees.

Wells are very numerous in this tract, but on the north between Bhusawar town and the Banganga where the soil is stiff the well water is very brackish in some 10 or 12 estates. The average water-level is 30 feet while the depth of water averages 5 feet in *kacha* and 10 in masonry wells. Towards the Banganga water is fairly plentiful, but on the south round Bhusawar there are general and well founded complaints of its inadequacy, and within the last two years great numbers of *kacha* wells have been sunk to make good the deficiency. Besides the deficient rains of late years another cause of the diminution of the supply is the damming of the *Chohi* torrent in Jaipur at Ghanna Garauli about 35 miles west of Bhusawar town. This stream, which in the rains used to bring down a great volume of water, enters the tahsil at Randhirgarh, flooded the low ground around Bhusawar, and after filling the *bands* of Garhi, Musapur, and Baroli, finally emptied itself into the great Ataripur *band*—4 miles long—on the north-east of the tract, whence the overflow in years of heavy rainfall run due east into

the Lalpur *band* north of Weir. Of recent years none of these *bands* has filled as the *Chohi* has never come down in heavy flood and hence the water-supply in the wells has been much reduced. An attempt has been made (see para. 7(e)) to supplement the deficiency by cutting a channel from the Banganga at Oohlu, 8 miles off to the Ataripur *band*, but this has never worked satisfactorily and a new channel from Mala Hera three miles further east is now being dug. Besides the *bands* mentioned there are several small *bands* in villages to the south of Bhusawar which hold up the rainfall from the hills. These have recently been repaired by the State, but have never yet filled properly, and the *sairaba* area in this *pargana* is at present small and of inferior quality. The owner in this tract are generally Jats, Brahmins, Dhakars and Gujars and are excellent cultivators. The Henna plant (*mehndi*) is grown in Bhusawar. The estates are very uneven as regards quality and prosperity. Those in which water is sweet and abundant are flourishing, while a large number owing to bitter wells, failure of water, etc., have broken down; and large areas have gone out of cultivation owing to the desertion of shareholders.

The Weir *pargana* on the east of the tahsil is a level plain on the north

(3) Weir *pargana*.

from Weir to the Banganga similar to the adjoining tract in Bhusawar. The portion lying south of Weir is very hilly and the four large estates of Jahaj, Hatori, Umrend and Tuhari are quite shut in by hills. The soil which is rather light towards the hills gets stiffer to the north, and as there is a rather sharp slope to the Banganga the local rainfall and the drainage from the hills runs off where not impounded by irrigation dams. Hence nearly every village in this tract has its *band* and some have more than one. The *bands* here as elsewhere had been much neglected during the reign of the late Maharaja to the great disadvantage of the land and the wells, but within the last three years the State has wisely laid out considerable sums in restoring them. The seasons have not, however, been favourable, and only a few, *viz.*, those of Moroda, Khohri, Raniwala (Weir town), Kotha, and Rajgarh have filled well. The wells, which are generally sweet, are very low in many villages.

The greatest irrigation work in this tract is the Lalpur *band* subsidiary to which are the Jiwad, Bansi, Lohasa, Ajrond *bands*, all lying between Weir town and the Banganga. These are fed partly by the overflow from the Ataripur *band* in Bhusawar; but since this source has failed they derive their supply chiefly from a channel from the Banganga through Hasaonda. This has worked admirably and the best *sairaba* cultivation in the tahsil is to be found on these *bands*. A very large area within these *bands* and also inundated by the Banganga is at present dense jungle, much of it being State Runds. All of this, except 1,500 *bighas* retained for State uses has now been leased out for cultivation, and if irrigation can be provided will be speedily brought under the plough. On the extreme south of the tract the drainage of the mass of broken hills around Jahaj with a catchment of 12 square miles of rocky ground runs west towards Balabgarh, and was formerly held up by a masonry dam in Jahaj constructed in 1881 at a cost of Rs. 24,000. This burst in the first heavy rains thereby causing the breach of the Ballabgarh *band* a little further west, and since then all this valuable drainage has passed away uselessly to Jaipur. The restoration of the Ballabgarh *band* at the expense of the *jagir* has now been sanctioned.

As Bhusawar is famous for its mango groves so is Weir famous for its produce of the *ber* fruit or wild plum. The land under these gardens will in future as in the past be assessed as *barani* cultivation. *Pala* grows in profusion, and there is much culturable waste, but though the soil with careful handling would yield excellent *barani* crops, the agriculturists concentrate their industry chiefly on the wells and the *barani* is neglected.

This tract with a good soil, numerous wells and irrigation dams, was in former days—as the name implies—one of the richest tracts in the State. It is now suffering from a severe but temporary depression which will be removed by a year or two of good rainfall sufficient to replenish the wells and fill the *bands*. The chief proprietors are in order of industry and prosperity, Dhakars, Gujars and Gaddis.

The small Ballabgarh *pargana* on the extreme south is at present the most prosperous and highly cultivated portion of the tahsil. All the villages but one—

(4) Ballabgarh *pargana*.

Nithari—are in the *jagir* of Faujdar Debi Singh, member of the State Council, whose claim to recover possession from the State (see para. 4) is pending before the Political Agent. The zamindars are Jats and Minas, extremely industrious, and the *chahi* cultivation is very superior, water being sweet and the soil—a light red-dish loam—very generous. Since the breaching of the Ballabgarh *band* the water level has sunk and the supply diminished—the average is now 39 feet to water level and 9 feet of water,—but the restoration of the *band* will improve matters. All the local drainage now runs off in deep *nalas* south-west into Jaipur. I may here note that the *Jagirdar* claimed full proprietary rights in all these estates, but after full enquiry it was found that the present village communities were in existence long before the grant of the *jagir*, the zamindars had freely exercised their right to sell and mortgage their lands to one another, and as the accepted tradition in the Bharatpur State is that a *Jagirdar* is entitled only to the revenue of the land, not to the land itself, I decided that the zamindars of all those estates, except Ballabgarh and shares in a few villages which are admitted to be the hereditary property of the *Jagirdar*—held the same proprietary rights as in *khalsa* villages.

The rainfall of Bhusawar is practically the same as that of Biyana.

(c) Rainfall.

There are two registering stations, at Bhusawar and Weir. The average rainfall for the former is 25.69 and for the latter 26.34 inches. The average cold weather fall is 1.4 inches, but in five years out of the last fourteen it has fallen below half an inch. This is the chief reason why gram and oilseeds are so sparingly grown even where the land is eminently suited for them. The rainfall of the last 5 years has not only been very much below the average, *viz.*, 19 inches against an average of 26, but has been very badly distributed, as in four out of the five years the September rains were less than an inch and the winter rains less than half an inch, and this, which has reacted on the wells and *bands* on which the agricultural prosperity of the tahsil mainly depends, is the chief cause of the present depression.

Bhusawar and Weir, the two chief towns in the tahsils are distant 16 and 14 miles respectively from the railway

(d) Communications.

station of Nadbai, and Bhusawar is only 12 miles distant from the Kherli station in Alwar. The Banganga however comes in between, and its broad sandy bed, and the large deposits of sand on each side of it are a serious obstacle to heavy traffic even in the dry weather, while in the rainy season traffic is often interrupted for days. The Agra-Jaipur metalled road which passes through Haleyna and runs close to Bhusawar intersects the tahsil transversely. This was formerly an important mail route and was then well maintained, but since the opening of the Rajputana-Malwa Railway it has lost its importance and is now maintained in a tolerable state only as far as Haleyna. The old Moghul highway from Agra to Jaipur also passed through this tahsil, and its course can still be traced by the milestones, signposts, and the remains of the mosques and rest-houses. A fair unmetalled road runs from Bhusawar to Weir and on to Biyana.

The agricultural tribes are in order of importance Jats who hold 65 estates out of 149, *viz.*, Sinsinwar Jats 12

(e) Agricultural population.

and other Jats 53, Gujars 28, Brahmins 19½, Minas 11, Dhakars 6, Gaddis 7, Rajputs 2, other tribes 7½, and the State 3. Of these Jats, Dhakars, Minas, Bagri, Brahmins and Mallis, who hold 75 estates or half the area, are first class agriculturists. All the others may be placed in the second class. The tahsil as a whole is fortunate in its agricultural population. The zamindars have, however, been disheartened by the drought of the last five years, and especially by the scarcity of 1895-96 and 1896-97, in which the State by attempting to collect the full revenue broke down many villages and caused desertions of owners and tenants on a large scale. The great majority of these have now been induced to resettle and been given

possession of all or part of their ancestral lands, so that, given a few good seasons and a watchful and sympathetic revenue administration a speedy recovery may be anticipated.

19. Having described with perhaps needless prolixity the special features of each tahsil, I now return to the general description. The relative importance of the different classes of soil in each tahsil will appear from the following table, which shows the proportion of each class to the total cultivation (a) at last settlement, (b) in 1898-99, the year taken as the basis of the new assessment, and (c) for purpose of comparison in the year 1899-1900, which was however an abnormal one :—

Tahsil.	Detail.	CHAHÍ.				CHAHÍ-SAIRABA.				Total chahi.	Khatili.	SAIRABA.				BARANI.			Grand total.
		Hal.	Sabika	Temporary.	Total.	Hal.	Sabika.	Total.	Hal.			Sabika.	Barishil.	Total.	Barani.	Bhur.	Total.		
Rupbas ...	1891-92 ...	21	9	...	30	...	...	...	30	...	...	25	25	44	1	45	100
	1898-99 ...	8	6	2	16	2	...	2	18	1	6	13	10	53	10	63	100		
	1899-1900 ...	8	4	3	15	4	...	4	19	1	10	9	19	52	9	61	100		
Oochain ...	1891-92 ...	30	7	...	37	...	...	...	37	...	...	18	18	45	...	45	100
	1898-99 ...	14	6	...	20	5	1	6	26	...	26	12	38	34	2	36	100		
	1899-1900 ...	15	4	...	19	10	1	11	30	1	18	13	31	35	3	39	100		
Biyana ...	1891-92 ...	39	6	...	39	...	...	...	39	...	...	14	14	47	...	47	100
	1898-99 ...	25	5	1	31	2	...	2	33	...	9	3	13	44	10	54	100		
	1899-1900 ...	25	4	1	30	3	1	4	34	1	0	2	12	44	10	53	100		
Bhusawar ...	1891-92 ...	34	9	...	43	...	...	...	43	...	3	1	4	53	...	53	100
	1898-99 ...	25	8	...	33	1	...	1	34	1	4	...	4	51	10	61	100		
	1899-1900 ...	24	8	1	33	2	...	2	35	...	3	1	4	51	10	61	100		

20. The classes of soil are the same as those described in para. 16 of last year's report with the addition of (1) *chahi-sairaba hal*, i.e., land inundated from the Banganga or from *bands* as well as irrigated from wells, (2) *chahi-sairaba sabika*, i.e., land which has both sources of irrigation but received neither during the year. This latter class is of little practical use as in assessment it will be grouped with *chahi sabika*. The first class is however important in these tahsils and will be separately rated.

At last settlement the classification was not so elaborate as now, and does not show with any accuracy the details of the major classes—*chahi*, *sairaba* and *barani*. We must therefore be content to compare the totals under these major classes. Looked at in this light the figures show, (1) a considerable falling off not only in the proportion of *chahi* to total cultivation, but of the total *chahi* area as compared with last settlement in all four tahsils; (2) the *sairaba* area has actually increased in all tahsils but Biyana, where it is stationary; but if the areas of 1899-1900 be taken in Biyana, it shows a great increase and has increased relatively to the total cultivation in Biyana and Bhusawar; (3) the total *barani* area including *bhur* has increased enormously in Rupbas, fallen off slightly in Oochain—owing to the extension of *sairaba*—increased absolutely and relatively in Biyana and Bhusawar owing to the breaking up of new lands and the decrease in well irrigation.

21. The following table compares in detail the statistics of wells, *chahi* area, and area actually irrigated at last settlement and now:—

Tahsil.	Detail.	MASONRY WELLS.						KACHA WELLS.		DHERS DHIN KLIS		CHAHAI AREA.		
		WORKING DURING YEAR.		WORKING IN ROTATION.		Total working.	Out of work.	Working in year.	In rotation.	Permanent.	Temporary.	Total.	Irrigated within year.	By dhinklis.
		Wells.	Laos.	Wells.	Laos.									
Rupbas ...	1891-92 ...	676	931	...	...	676	274	71	...	1	...	15,314	11,727	...
	1898-99 ...	641	814	145	220	786	246	264	...	2	25	14,550	9,642	2
	1899-1900 ...	691	856	129	203	809	230	407	...	2	82	16,319	12,622	6
Oochain ...	1891-92 ...	1,331	1,759	71	71	1,402	426	94	1	27	...	37,953	30,299	...
	1898-99 ...	1,174	1,555	206	390	1,440	420	92	14	13	41	31,954	23,928	1
	1899-1900 ...	1,352	1,790	209	244	1,561	299	201	7	14	423	33,783	28,616	40
Biyana ...	1891-92 ...	1,933	2,541	...	...	1,933	347	786	1	5	...	52,671	44,839	...
	1898-99 ...	1,776	2,549	106	128	1,882	361	614	47	24	24	46,880	39,001	1
	1899-1900 ...	1,856	2,348	98	106	1,954	298	725	57	25	465	48,906	41,434	42
Bhusawar ...	1891-92 ...	2,098	2,757	32	104	2,130	451	417	21	3	...	79,376	63,349	...
	1898-99 ...	1,945	2,743	204	422	2,239	400	537	47	242	48	66,203	50,242	37
	1899-1900 ...	...	...	...	...	...	...	...	...	...	...	...	...	...

These figures show (1) that the total number of masonry wells at work has increased since last settlement in all tahsils, but the number actually working in the year had fallen off in 1898-99, but increased considerably in 1899-1900 owing to the stimulus of the drought, and for the same reasons the number of wells out of work shows a steady decrease in all tahsils since last settlement, (2) the drought also gave a considerable stimulus to the sinking of *kacha* wells which have increased considerably in all tahsils but Biyana, and (3) temporary *dheres* and *dhenklis* increased enormously in 1899-1900, having been sunk wherever possible to save the *sairaba* and *khatili* crops, (4) as regards the number of working wells all tahsils but Biyana are now better off than at last settlement, but owing to the diminution of the well supply the efficiency or irrigating power of these wells has been much reduced; so that (5) the total *chahi* area and the area actually irrigated within the year show a great falling off in 1898-99 as compared with last settlement, and although to remedy this and cope with the drought the number of working wells increased considerably in 1899-1900, the areas did not come up to the standard of last settlement except in Rupbas.

We are safe however in drawing the conclusion that given normal rainfall and ordinary years, the well irrigation will exceed rather than fall short of the figures of last settlement. The great increase in *kacha* wells in recent years in Rupbas, Oochain and Bhusawar is due to their having been sunk wherever possible to eke out the irrigation from masonry wells. The wells working in rotation, *i. e.*, in alternate years or out of work are generally brackish or bitter wells which cannot be worked regularly without injuring the soil. Hence they are relatively most numerous in Oochain.

22. This point will be more readily understood from the following table
 Classification of wells according to which classifies the wells of each tahsil
 quality. according to the quality of the water and
 shows the area irrigated in 1898-99 from each class :—

Class of wells.	Details.	RUPBAS.				OOCHAIN.				BIYANA.				RHUSAWAR.			
		WELLS.		CHANI.		WELLS.		CHANI.		WELLS.		CHANI.		WELLS.		CHANI.	
		Working.	Not working.	Hal.	Sabka.	Working.	Not working.	Hal.	Sabka.	Working.	Not working.	Hal.	Sabka.	Working.	Not working.	Hal.	Sabka.
Sweet	Masonry ...	486	112	6,183	3,618	600	137	10,126	4,954	1,511	90	28,241	5,635	1,411	230	32,040	11,713
	Kacha ...	207	...	1,168	...	69	14	474	255	569	44	4,877	1,268	493	45	4,313	1,796
	Total ...	693	112	7,341	3,618	669	151	10,600	5,209	2,080	134	33,118	6,903	1,904	265	37,263	13,440
Oily	Masonry ...	9	1	209	12	8	2	131	60	47	4	1,012	271	102	22	2,253	791
	Kacha ...	...	...	...	...	...	...	...	...	16	1	130	30	5	...	79	9
	Total ...	9	1	209	12	8	2	131	60	63	5	1,142	301	107	22	2,332	800
Hard	Masonry ...	...	...	...	...	...	...	...	...	...	...	...	...	128	3	3,509	630
	Kacha ...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	63	29
	Total ...	...	...	...	...	...	...	...	...	...	...	...	...	134	3	3,622	659
Brackish	Masonry ...	71	7	1,244	612	252	45	5,426	1,439	116	2	2,510	232	81	18	1,705	343
	Kacha ...	3	...	3	...	12	...	195	...	14	...	144	25	2	...	6	...
	Total ...	74	7	1,247	612	264	45	5,621	1,439	130	2	2,655	257	83	18	1,711	343
Bitter	Masonry ...	75	25	817	575	314	82	7,408	1,318	103	10	1,897	363	223	34	6,080	713
	Kacha ...	27	...	128	...	11	...	168	...	34	2	190	55	31	2	244	58
	Total ...	102	25	945	575	325	82	7,576	1,318	117	12	2,087	418	254	36	6,324	771
Total	Masonry ...	641	145	8,453	4,817	1,174	266	23,091	7,771	1,777	106	33,660	6,501	1,945	294	45,547	14,189
	Kacha ...	237	...	1,289	...	92	14	837	255	613	47	5,341	1,378	537	47	4,605	1,833
	Dhenklis ...	27	...	27	...	54	...	52	...	46	...	50	...	290	...	365	8
GRAND TOTAL ...		905	145	9,769	4,817	1,320	280	23,980	8,026	2,436	153	39,051	7,879	2,772	341	50,607	16,020

Put in the form of percentages the result is—

Detail.	Rupbas.	Oochain.	Biyana.	Bhusawar.
Sweet ...	80	55	87	76
Oily ...	1	1	3	4
Brackish ...	8	19	5	9
Bitter ...	11	25	5	11

which shows that in Oochain nearly half the wells are oily, brackish, or bitter, and irrigation from them unless supplemented by rain is injurious to the land in the long run, while in the other tahsils the proportion of such wells is one-fourth in Bhusawar, one-fifth in Rupbas and one-eighth in Biyana.

The large area of *chahi-sabika* shown opposite each class of well is due to several causes, of which the most obvious are (1) the insufficiency of the well water, (2) the necessity of growing a dry crop after an irrigated one on bitter wells so as to arrest deterioration, (3) the want of sufficient cattle, etc., to work the wells fully.

Double cropping and average area irrigated per *lao*. 23. Double cropping is generally confined to sweet wells on which if the water-supply is sufficient maize, cotton, and *bajra* in the *khari* are followed by wheat, barley, or *zira* in the *rabi*.

The area so double cropped within the year of attestation was—

Rupbas	2,887	bighas or 29 per cent.
Oochain	4,254	" 18 "
Biyana	14,070	" 36 "
Bhusawar	10,157	" 20 "

The average area irrigated per *lao* or well-rope works out as follows for the different classes of wells :—

Detail.	Rupbas.	Oochain.	Biyana.	Bhusawar.
Masonry wells	11	15	15	17
Kacha	4½	9	9	9

The average is fairly uniform except in Rupbas, where it has been much reduced by the failure of the wells in the Wal tract. A *dhenkli* on the average irrigates 1 to 1½ *bigha*.

Kinds of wells in use.

24. The classification of wells according to method of construction is as follows :—

Detail.	Rupbas.	Oochain.	Biyana.	Bhusawar.
Masonry	702	1,241	643	...
Pathraura or loose stone	329	199	1,239	...
Kacha pakka ... ..	...	...	283	...
Kacha	264	106	377	...
Total	1,295	1,546	2,542	...

Masonry wells, *i.e.*, in which a masonry cylinder is first constructed and sunk from above or which are built up from below, are most common in the open plains and in the area flooded by the Banganga. They are more expensive than the other forms, but last longer and usually have a better water-supply as they tap the spring level.

The *pathraura* wells made of loose stone generally undressed and without mortar or cement, are found in the stony lands under the hills, are very common in the Wal of Rupbas and almost universal in the Dang of Biyana. They cost comparatively little, but dry up quickly in a drought as they often depend for their supply on the percolation of the surface drainage and do not tap the spring-level. *Kacha-pakka* wells are most common in the Nahera of Biyana where the water level is very deep, and to ensure greater stability from 10 to 20 feet at the mouth of the well is lined with masonry.

Kacha wells are most common in Biyana and Bhusawar. They generally require a firm subsoil. Their increase in recent years is due to the necessity of supplementing the failing supply in masonry wells.

Takavi advances. 25. The following table shows the amount of *takavi* advanced by the State for wells and other purposes and the number of wells constructed :—

Tahsil.	ADVANCED BEFORE 1890.			ADVANCED SINCE 1890.						NUMBER OF WELLS.		
	Advanced.	Realised.	Balance.	For bullocks and seed.			For wells.			Newly made.	Repaired.	Under construction.
				Advanced.	Realised.	Balance.	Advanced.	Realised.	Balance.			
Rupbas ..	4,422	3,871	551	18,700	17,185	1,515	7,709	6,031	1,678	37	7	...
Oochain ..	6,831	4,827	2,004	35,458	34,827	631	11,740	11,019	721	29	9	...
Biyana ...	65,791	55,025	10,766	25,602	22,727	2,875	10,649	8,315	2,334	33	26	3
Bhusawar ...	6,987	6,550	437	13,394	13,115	279	15,245	14,321	924	52	23	7
Total ...	84,011	70,273	13,738	93,154	87,854	5,300	45,313	39,686	5,627	151	65	10

The advances in these tahsils since 1890 have been far more liberal than in the Central or Northern tahsils. Over Rs. 90,000 have been advanced in the four tahsils for seed and bullocks, and over Rs. 45,000 for construction or repair of wells with which no less than 151 new wells have been sunk, 65 have been repaired, and 10 are under construction.

In para. 13 of last year's report I indicated the lines on which the *takavi* system should be worked. The necessity of having a liberal but well-supervised system in these tahsils is all the greater, as in all tahsils but Rupbas half or more of the revenue demand is paid by the wells.

26. The leading feature of natural and artificial irrigation from Banganga and Gambhir floods and irrigation dams have been described in the remarks on *Sairaba* cultivation and *bands*. During the reign of Maharaja Balwant Singh, *i.e.*, between 1825 and 1853, nearly all the existing irrigation works in this as in the other parts of the State were carried out. These were efficiently worked and added to by Lieut. Home, R. E., between 1862 and 1867 during the minority of the late Maharaja. On his accession this important branch of the administration was neglected, and works in progress such as the Bareta *band* were abruptly stopped. The result was that the *bands* fell into ruin or disrepair, thus causing a steady deterioration in *sairaba* cultivation and in agriculture generally during his reign. On the reorganisation of the State administration under the Political Agent in 1895 the improvement of the irrigation system was at once taken in hand, and since then it has been pursued with unremitting energy and zeal by the Executive Engineer Mr. J. A. Devenish with the best results to the people and the State. As a single instance of the many direct results achieved I need only refer to what has been done to control the Banganga floods (para. 7) which from being the curse of these tahsils have now become the mainstay of their agricultural prosperity; and as an example of the indirect benefits I may quote the fact that in the severe scarcity of 1896-1897 and the recent famine the State was able to entrust the

entire organisation of the famine labour to the Public Works Department which was in a position to profitably employ it for the most part on the construction or repair of the irrigation dams. A detailed list of the principal works in these tahsils will be separately printed. When those now in hand are completed, much will have been done towards the improvement and security of agriculture in the tract.

27. The main facts as to the rainfall have been stated under each tahsil

Rainfall and barani cultivation.

and detailed figures are given in Appendix A. The average for the tract may be taken as 25 inches in the year, which if well distributed is sufficient to secure both crops. Unfortunately we are passing through a cycle of years, beginning with 1895-96, in which the rainfall has been not only very deficient—the average fall for the last 5 years being only 19 inches—but very badly distributed. In three years out of the five both the September and the winter rains have practically failed, thereby much reducing the outturn of the autumn crop and causing a general failure of the non-irrigated spring crops.

28. The tract as a whole though not in direct contact with the railway

Communications, trees, climate, etc.

is not remote or isolated, the headquarters of the various tahsils being within from 11 to 25 miles from a railway station. For internal communications all tahsils but Oochain are dependent on fair-weather roads and are liable to considerable interruption of traffic in the rains when the Banganga and Gambhir are in flood. The portion of the tract lying north of Banganga is generally bare of trees; south of the river vegetation is more luxuriant. The plains of Bhusawar and Biyana abound in fruit-trees, *viz.*, the mango, the *mahua* from the flower of which liquor is distilled, the *ber* or wild plum. The hills in the Dang and the low broken ground along the banks of the streams and *nalas* in the Nahera are covered with a dense growth of brushwood and provide abundant grazing for sheep and goats. Betel-leaf is successfully cultivated in some villages of Bhusawar and Biyana.

The climate is generally better than that of the northern or central tahsils, as water-logging is not so common, owing to the lighter texture of the soil, and the drinking water is generally excellent. Some of the villages on the east of Oochain which have a low-lying alluvial clay soil and are annually inundated are however very subject to malarial fever.

CHAPTER II.

FISCAL HISTORY.

29. The rise of the Bharatpur State has been described in Chapter II of

Early history of Biyana.

my previous reports. The early history of this tract centres round Biyana, which nature and art combined to form into one of the most famous strongholds in India even in the days of Hindu dominion. During the invasion of Mahmud of Ghazni in the 11th century a Jadu Rajput Bijey Pal ruled in Biyana, and his conduct in endeavouring to forcibly secure a Mohamedan girl is said to have led to Biyana being stormed and captured in 1031 A.D., by Mahsud Salar nephew of the Sultan. Bijey Pal was killed in battle, but the fort is said to have been soon after recovered by the Rajputs. At all events it was again stormed successfully by the famous Abu Bakar Kandhari in A. D. 1047. Abu Bakar was killed fighting, and his tomb is still pointed out close to Biyana. Thenceforward Biyana seems to have been held by whatever dynasty ruled in Delhi. At the end of the fifteenth century the local Governor rebelled against Secunder Lodi, who after capturing Biyana founded a new city at Secundra, a few miles to the south, the ruins of which are still to be seen. This city was

like Biyana at the foot of the hills and covered the entrance to the mighty fort or series of forts which crown the crests and have even now a circumference of 7 miles. Successive conquerors, Hindu and Musalman, had devoted their energies to the strengthening of this splendid natural stronghold and it is now a curious medley of Hindu and Mahomedan relics which would well repay antiquarian research.

Babar writing in 1526 describes Biyana as one of the most famous forts in India. The combined Rajput forces advancing northwards to encounter the Moghul invaders expelled the garrison left by Babar and took possession of the fort, and it was 20 miles to the north-east at Khanwa in Rupbas that Babar put a seal to his conquests and hopelessly shattered the last attempt of the great Rajput confederacy to recover the empire of Hindustan by a complete victory over the Rajput forces under Raja Sanga of Meywar. This victory is known commonly as that of Fatehpur Sikri, which place is however about 10 miles distant from the battle-field. His son Humayun wrested the fort of Biyana from the Lodis in 1535, and from that date to the rise of the Jat power it was held by the Moghuls.

30. Owing to its vicinity to Fatehpur Sikri and Agra which are only 10 and 30 miles distant from Rupbas, this tract had a close connection with the

History under Moghul rule. Moghul Emperors. The fine palace and tank at Rupbas were constructed in Akbar's time by Mian Rup, a Rajput convert to Islam and a favourite of the Emperor who used frequently to visit Rupbas on hunting expeditions. The finest specimens of Moghul architecture at Agra, Dehli, and Fatehpur Sikri were built of the famous white and red sandstone of Rupbas.

31. In the Ain-i-Akbari the tract is shown as belonging to the Agra land revenue valuation under the Sirkar or district of the Agra Subah or Moghuls. Province. In the following table I quote the *mahals* or subdivisions mentioned in the Ain-i-Akbari which can be identified as now included in the Bharatpur State, with the land revenue then levied from them.

Pargana or mahal.				Land revenue in rupees.	Tahsils in which now included.
				Rs.	
Biyana	...	...	...	1,77,753	Biyana.
Bhusawar	...	...	...	1,37,636	Bhusawar.
Khanwa	...	...	...	73,056	Part of Rupbas.
Kumher	...	...	...	18,650	Part of Kumher.
Heylak	...	...	...	69,717	Part of Kumher.
Pahari	...	...	...	30,725	Pahari.
Kama	...	...	...	12,613	Kama.
Muicira	...	...	...	15,453	Kama.
Ol (part)	...	...	...	1,37,738	Kumher and Bharatpur.

Unfortunately owing to the difficulty of identifying the old with the present names the comparison cannot be made complete. So much however is evident that the three old *parganas* of Biyana, Bhusawar and Khanwa, which now go to make up part of the four southern tahsils then paid a land revenue of Rs. 3,58,455, or more than half of what the whole tract pays at present. I have shown in Chapter II, of this year's report on Alwar that in Akbar's time the prices of agricultural produce were only from one-fourth to one-sixth of what they are now so that even assuming that the assessment then was only half of what it is at present, the proportion of the produce then taken, *i.e.*, the pitch of the assessment, was very much higher than at present. This is also evident from the fact that Akbar's standard of assessment was one-third of the estimated

produce—and his estimates were pitched very high as shown in my Alwar report—converted into cash at the current prices of the year, or the average prices of the previous ten years.

32. The conquest of this tract by the Jats between 1720 and 1750 A. D. has been related in previous reports. The parwana of Weir in Bhusawar was granted as a separate Jagir by Badan Singh to his second son Partab Singh who built the present fort and palace, beautified the place with tanks and gardens, and enjoyed the title of Raja. Maharaja Jawahir Singh suspected him of intriguing with the Moghuls and aiming at setting up a separate State. He therefore captured Weir and forfeited the Jagir leaving Partab Singh only 12 villages for his maintenance. These his descendants held for some generations with the title of Raja. Maharaja Balwant Singh reduced the grant to the two villages of Bárha and Salempur, and on the death of Daryao Singh, the late Maharaja resumed even these and gave a cash allowance instead to the present head of the family Raja Samundar Singh who is pursuing his studies in the Mayo College.

In the same way Thakur At Ram younger brother of Churaman and the ancestor through his adopted son, Sardul Singh, of the Pathana Thakurs received a grant of Haleyna and about 200 villages in the vicinity. He built a fort at Haleyna which still exists. When Jawahir Singh attacked Weir the Haleyna chief Sawai Ram, who was in charge of the operations was suspected of intriguing with Raja Partab Singh. His large Jagir was at once confiscated, only a small portion being left for his maintenance. Even this has been gradually resumed and the descendants of At Ram now hold only a small area in Haleyna as sub-proprietors.

33. These two cases are typical of the manner in which the Bharatpur chiefs aggrandised themselves by absorbing the possessions of their feudatory Jagirdars. While the State was still growing under Badan Singh and Suraj Mal and these chiefs had need of the strong arm of their Jat kinsman, the services of the latter were rewarded by liberal grants of *jagirs* and *mafis* from the conquered territory. Thus grants on a large scale were given to the 16 sons of Badan Singh, known as the Thakurs of the Solah Kothris, who became the founders of what are still the most prominent families in the State. When the boundaries of the State ceased to expand the Maharajas—from Jawahir Singh downwards—began to cast a jealous eye on these large grants and set themselves to resume or reduce them by various pretexts. In A. D. 1808, even after Weir and Haleyna had been resumed, no less than 43 estates (excluding Ballabgarh) in the present Bhusawar tahsil, embracing over one-third of the area, were still held in *mafi* or *jagir*. At the settlement of 1855–57 the number had been reduced to 16, while subsequent resumptions have now reduced it to seven estates covering only 5 per cent. of the area. The temporary resumption of the Ballabgarh jagir has been referred to in paragraph 18. Even “the brothers near the throne” *viz.*, the Thakurs of the Solah Kothris have suffered, the shares of those who died without having male heirs of the body having been resumed under the *Nath* rule. Large Inam grants were held also by horsemen on condition of service to the State when required. These horsemen used to band themselves together and commit organised raids and dacoities in Agra and the neighbouring States. Maharaja Balwant Singh struck at the root of the evil by enrolling the horsemen in a Cavalry regiment, resuming their lands and granting cash salaries instead. These were looked on as hereditary for some generations but most of them have now disappeared. Another method of reducing the area of Inam was by the resumption of the Inams of those who deserted in the famine of 1877–78, or failed to pay the miscellaneous cesses which the State levies on such lands.

The result of these measures is that the total extent of alienations—excluding *Chauth* estates—in Bharatpur is only one-eleventh of the total area and one-ninth of the cultivated area—probably lower than in any State in Rajputana.

The *Nath* rule has now been abolished and as long as there are any descendants of the original grantee, resumptions cannot be effected. So that any further considerable diminution of the *jagir* and *mafi* grants, except those which are purely temporary or personal, is improbable.

34. The leading agricultural tribes have already been noticed in the remarks under each tahsil but the following table gives fuller details of the number of estates, total and cultivated area held by each.

Tribe.	RUPBAS.			OOCHAIN.			BIYANA.			BHUSAWAR.			TOTAL.		
	No. of estates.	AREA.		No. of estates.	AREA.		No. of estates.	AREA.		No. of estates.	AREA.		No. of estates.	AREA.	
		Total.	Cultivated		Total.	Cultivated		Total.	Cultivated		Total.	Cultivated		Total.	Cultivated.
Jat Sinsinwar ...	1½	3,529	1,961	11½	20,180	14,770	8	20,460	12,524	12	20,821	13,930	33½	64,990	43,104
Other Jats ...	10	42,079	19,308	20½	71,123	48,752	11½	24,338	12,074	53	1,32,661	73,624	114½	2,70,194	1,64,748
Thakurs ...	...	...	...	½	1,073	873	5	10,610	6,697	6	11,100	7,612	11½	22,783	15,582
Minas ...	...	...	...	½	667	535	6	10,027	5,763	11	25,068	16,703	17½	35,763	23,001
Brahmins ...	15½	29,103	12,544	13½	47,175	26,616	18	34,239	17,378	19½	46,650	32,445	66½	15,167	88,953
Lodhas ...	6	8,333	5,613	3½	5,924	4,843	...	...	...	...	...	...	9½	14,257	9,999
Gujars ...	8	13,245	7,105	16½	44,619	24,414	90	3,02,856	72,945	28	88,143	39,435	144½	4,46,663	1,37,799
Rajputs ...	16½	57,395	27,190	6	21,688	13,515	8	56,767	15,029	2	6,821	3,604	32½	1,45,671	59,329
Malis and Kachis ...	3	4,568	2,462	1½	793	415	6	9,596	4,655	2	3,321	2,370	11½	18,276	10,102
Other Hindus ...	1	2,175	1,493	2½	3,019	2,392	3	5,082	2,723	3½	10,986	6,133	8½	21,202	14,746
Gaddis ...	1	1,018	405	½	1,664	647	8	12,016	7,464	7	9,635	5,643	16½	24,333	14,240
Sayads, Sholkhs, &c., }	5½	11,675	7,298	1	3,076	3,124	4	5,901	1,714	2	9,767	6,600	12½	20,019	18,743
Other Mussalmans ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kham ...	½	1,613	1,030	4	5,465	2,972	1½	7,301	1,909	...	...	...	5½	14,379	5,011
State property ...	1	7,417	...	2	2,733	...	1	2,731	...	2	10,030	3,027	7	22,911	3,027
Total ...	78	1,82,341	86,592	90	2,32,999	1,43,508	168	5,01,133	1,61,656	149	3,74,003	2,07,644	491	12,90,476	5,99,410

The statistics include revenue-free as well as *khalsa* villages. Details of each class are given in para. 14, and revenue-free grants will be further considered in chapter IX.

Of the 490 estates in the tract 33½ or about one-fifteenth are held by Sinsinwar Jats relations of the ruling family. All of these were originally and a few are still held in *Inam* on condition of Military service. Other Jats hold 114 villages or about two-ninths of the whole. They are scattered over all tahsils but are strongest in Oochain and Bhusawar. The Jats are rare south of the Banganga. In Rupbas they have ousted the Panwar Rajputs from many villages. Brahmins hold 67 villages or about 14 per cent. of the total number and are fairly well represented in all tahsils. The Bagri Brahmins are often spoken of as a separate caste, and are superior in industry to the other Brahmins. They hold 20 villages.

Gujars are by far the strongest tribe, holding 144½ villages or 30 per cent. They are scattered over all tahsils but are found chiefly in the hilly portions where

facilities for pasturing cattle are abundant, and are most numerous in Biyana where they own more than half the estates and practically have a monopoly of the Nahera and Dang tracts.

Rajputs are fairly numerous in Rupbas all of which they once held, but hold only scattered villages in the other tahsils. In the whole tract they own 32 estates or one-fifteenth. Minas hold 17 villages in Biyana and Bhusawar generally along the borders of Jaipur which is their chief *habitat*. Lodhas hold 10 villages in Rupbas and Oochain, but here as elsewhere are a feeble, spiritless race. Malis and Kachis who represent the market-gardening or *petite culture* agriculturists hold about 11 villages, and other Hindus hold nine of which three belong to Mahajans. The only Hindu tribe not mentioned in previous reports are the Dhakars. These claim to be of Rajput descent, and are probably one of the many mixed races formed by the intermarriage of Rajputs with inferior castes—probably in this case with the Jats. They own 11½ villages in Oochain, Biyana, and Bhusawar, and are the most industrious and prosperous agriculturists in the tract.

Mohamedans own only 29 estates or 6 per cent. of the whole. The most important section are the Gaddis who own 16½ villages chiefly in Biyana and in the vicinity of Weir. Their origin is doubtful. According to some accounts they are Rajputs forcibly converted to Islam under the Lodi or Moghul dynasty, while they themselves have a tradition that they are the descendants of Kshatriyas or *Khatris* from Maghiana in the Punjab. They certainly have the Punjabi rather than the Rajput cast of features. They are poor agriculturists but take readily to service, especially in the railway.

The agricultural capacity of all these tribes has been described in previous reports and they may be classed as follows—

Good cultivators.—Other Jats, Minas, Dhakars, Mallis and Kachis.

Fair—Jats Sinsinwar Gujars, Brahmans.

Bad—Rajputs, Lodhas, Mohammedan and all others.

Thus about one-third of the estates are held by good, one-half by fair, and one-sixth by bad agriculturists. On the whole therefore the tract is fortunate enough in its agricultural population.

35. The origin and growth of rights in the soil, and the manner in which Rights of the agriculturists in the they have now been defined have been land. sufficiently discussed in previous reports. A remarkable feature in these tahsils and the Bharatpur State generally is the tenacity and success with which the zamindars of *masi* and *jagir* estates have resisted the attempts of the *jagirdars* and *masidars* to appropriate the rights in the soil. The Russian serf before emancipation said to his lord "Mui vashe, no zemliya nasha" i.e., "we belong to you, but the land belongs to us," and the Bharatpur peasant will similarly reply to his master, whether the State itself or a *Jagirdar* "Bhej tumhara, dharti hamara" i.e. "the revenue is yours, the land is ours." One of the most satisfactory features of the present Settlement is that the proprietary rights of the Zamindars have now been once for all formally recognised and put on record.

36. The droughts and famines which have affected this tract are the same as those mentioned in previous reports. Drought and famine. To the peasants of every country these famines mark the milestones on the road of history; and just as the Irish peasant calculates from the "Bad Times" i.e., the famines of 1846-47 and of 1877-78, so his Indian brother reckons events from "Satara" or "Chauntis" i.e., the famines of 1917 (A. D. 1860-61) or of 1934 (1877-78). The latter famine and the severe scarcities almost amounting to famine of 1896-97 and 1899-1900 will be referred to in connection with the history of the working of the various assessments which will now be examined.

37. The circumstances which led to the first Summary Settlement in 1855, carried out in the northern tahsils by Sir Former assessments. H. Lawrence, Agent to the Governor General, and in the rest of the State by his Assistant, Captain Nixon, have been

described in Chapter II of previous reports. The various re-assessments up to date have been:—

1. Summary Settlement ... 1855-57.
2. Three years' Settlement ... 1858-61.
3. Six years' Settlement ... 1862-70.
4. Addition of 10 per cent. to (3) ... 1871-73.
5. The fifteen years' Settlement up to date. [This Settlement was found oppressive in the other tahsils and the demand was revised on the expiry of 10 years but here it was maintained.]
6. Ten years' Settlement ... 1874-90.

Of these Settlements or rather re-assessments—for no record of rights was framed prior to the present operations—the first two were carried out on broad and just lines by Captain Nixon under the instructions of Sir H. Lawrence, and all the rest were the work of inexperienced and inefficient State officials whose main idea was to raise the State demand wherever possible, and to show improved financial results on paper quite regardless of the fact that the revenue collected was very much below that demanded.

38. In the following table I have endeavoured to show as clearly as the limited materials at my disposal will allow, the total demand and arrear of these tahsils at each re-assessment, and as Ballabgarh has been included in Bhusawar only since 1880 I have shown it separately.

No.	Settlement.	RUPBAS.		OOCHAIN.		BIYANA.		BHUSAWAR.		TOTAL.		BALLABGARH.	
		Demand.	Arrears.	Demand.	Arrears.	Demand.	Arrears.	Demand.	Arrears.	Demand.	Arrears.	Demand.	Arrears.
	1854-55	Rs.	Rs. 1,02,791	Rs.	Rs. 46,019	Rs. 1,51,412	Rs. 1,47,396	Rs.	Rs. 2,02,306	Rs.	Rs.	Rs.	Rs.
1	Summary	99,099		1,15,984		1,44,466		1,50,851		5,10,400		28,978	
2	Three years	1,16,200	14,399	1,20,490	5,299	1,43,363	22,487	1,71,359	7,960	5,51,412	50,145		
3	Six years	1,18,299		1,26,180		1,62,592		1,80,645		5,87,716		24,856	
4	Do. revised	1,29,670		1,35,639		1,79,959		2,00,207		6,45,475			
5	Ten years	1,40,536	4,61,608	1,69,509	1,89,688	1,90,682	85,997	2,20,792	96,405	7,21,919	8,32,758		
	In 1882	1,42,879		1,74,403		1,87,539						32,158	30,782
6	15 years 1890	1,00,513		1,72,373		2,06,947		2,36,271		7,16,104		34,707	7,541
	1892	1,05,766	1,30,623	1,72,373	1,35,794	2,06,947	66,650	2,36,271	1,52,954	7,21,357	4,80,021		38,273
7	1908-90	1,05,855		1,72,705		2,05,972		2,36,480		7,21,012			
	Total		5,92,291		3,27,482		1,62,647		2,40,369		13,21,779		

Of the arrears prior to the Summary Settlement, the total amount shown above was remitted in 1884 in Rupbas, Oochain and Biyana, while the amount unrealised up to that date Rs. 1,61,897 was remitted in Bhusawar. Hence the total arrears as now shown date only from the Summary Settlement of 1855. The pitch of these assessments and their working for the State as a whole was discussed in the introduction to my report on the northern tahsils.

39. Prior to the Summary Settlement the State in theory took one-third of the produce—a relic of Akbar's land-revenue system—which was levied either by actual division of the crop (*batai*), or more frequently taken by appraisement of the yield of the standing crop (*kankut*) which was converted into a cash demand at the current rates. A further development of this led to the *theka* or contract system by which the Zamindars or a middleman (*thekadar*) contracted to pay a fixed sum for a year or a term of years. In practice however the State took all it could exact from the people, and much of the residue was swallowed up by rapacious and corrupt officials.

40. To show that this is no fancy picture I quote from Captain Nixon's Condition of the people at time of report (No. 77, dated 6th March 1858, to summary settlement. the Agent to the Governor General) on the re-assessment of the *pargana* of Bhusawar and Akhegarh.

"On making the Summary Settlement I found the inhabitants of these two *parganas* in the most wretched state of destitution. I visited numbers of villages and collected the household property of the inhabitants to test actually what they were possessed of. Nothing can describe what their poverty then was and I expressed my conviction that they were actually gaunt with hunger. On other occasions they pleaded that they were starving and that the tahsil officials had taken both heaps of grain (the cultivator's share as well as the State's) alluding to the *kharif* and *rabi* crops or as they expressed it "*donon kurrar le liya*", and this was actually admitted by the tahsil officials themselves. I have only troubled you with these remarks with a view of pointing out that the discrepancy between male and female children is not always as we suppose the result of infanticide, for it is a well-known fact that the people to relieve themselves from temporary pressure give their female children in marriage to those whom they consider their inferiors obtaining a sum of money for so doing. In my general report* No. 98, dated 31st May 1857 sending up the Summary Settlement of this territory, I fully remarked

* Not available.

on the causes that induced me to reduce the taxation. The Summary Settlement was instituted by Sir H. Lawrence and has been a blessing of no ordinary magnitude to the population whom it has relieved from much oppression and injustice."

41. Unfortunately Captain Nixon's report on the Summary Settlement Reduction of the demand at Summary Settlement cannot be traced, but from Sir H. Lawrence's reference to it the reduction must have been over 15 per cent. on the old demand; for he writes.

"His (Captain Nixon's) reductions were even greater than mine (which had been 14.75 per cent.) and in Bhusawar especially, where the Political Agent had been deceived into believing that the reports of the distress were fictitious and got up by the tahsildar, his reductions exceeded by one-tenth the average of the last ten years' jama."

The reductions for the whole State were over three and-a-half lakhs on the previous demand, and in these tahsils were probably one and-a-half lakhs.

42. The Summary settlement was intended to be merely a temporary measure pending a regular settlement of the State for which under the orders of Sir H. Lawrence a field-to-field survey and a complete record of rights were being prepared by Captain Nixon with the aid of Lieutenant Hamilton, R. E., of the Survey Department. The report for the regular settlement of the first two *parganas* Bhusawar and Akhegarh was submitted in March 1858 as already stated.

43. In that report Captain Nixon discussed several important questions as to the rights of the Zamindars and the share of the assets to be taken by the State, and as in previous reports I had not access to that correspondence I now quote a few of the most salient points. In para. 3 he writes.

"In accordance with the view of the late Sir H. Lawrence I have allowed the *biswadars* of Bharatpur in the new settlement a margin of profit varying from 30 to 50 per cent. Under the late Rajah they only received a *Hakk Mokkaddami* of from 2 to 5 per cent. as their profits, and under the summary settlement which I carried out in 1855 this *Hakk* was allowed. Hitherto in Bharatpur the Rajas have exercised the functions of proprietors or zamindars; that is they have enjoyed all the powers of the proprietor of the soil, have given whole villages in *jagir*, have measured out portions to their servitors, have cut down trees and in every way exercised signorial and proprietary rights. But henceforth by the introduction of a regular settlement these rights will be nullified, inasmuch as it is our system in making such a settlement to confer proprietary rights on the *biswadar*. After this explanation I solicit your explicit instructions as to whether you desire to confer proprietary rights on these people, for if not it would be as well after fixing the State demand to cease from prosecuting the Settlement any further, and thus leave the position between Raja and *biswadars*, and *biswadars* and cultivators for the present undefined. On the other hand should you desire to confer proprietary rights on the *biswadars* the definition of these rights can be proceeded with as in our Provinces."

After criticising the advantages of creating a class of middlemen or proprietors who rack-rent the actual cultivators, Captain Nixon concludes with the opinion that in British provinces we legislated blindly by giving the *biswadars* a proprietary interest where they previously held only a "tenant right."

44. Captain Nixon then goes on to explain his assumed rent-rates and how he arrives at them. I quote here the rates of the Bhusawar *pargana* converting them from rates per acre into rates per *bigha* :—

Class of soil.				Circle I.	Circle II.	Circle III.	Circle IV.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Chahi	...	...	...	2 13 0	2 6 6	2 3 0	1 7 0
Sairaba	...	...	...	2 2 0	1 13 0	1 10 0	1 1 0
Barani	...	...	...	1 6 0	1 3 0	1 2 0	0 11 0

He adds :—

"The old *tahsil* rates of collection or *revenue* rate under the Rajah much exceed the *rent* rate now fixed by me, and the zamindars get a profit (remission) of 33 per cent. and upwards on this rent-rate besides being able by a fixed settlement to bring other land into cultivation without further demand from the State officials."

For the Bhusawar *pargana*—excluding Weir—Captain Nixon proposed an assessment of Rs. 90,785, a reduction of Rs 7,500 on the Summary Settlement Rs. 98, 290—which had been more than 10 per cent. below the average realisations of the preceding ten years—thereby proving the genuineness of his intentions to leave a considerable share of the assets to the Zamindars. He also proposed that the Settlement be made for ten years in the first instance to enable the Maharaja on attaining his majority to ratify it for a further term of years should he think fit.

Had these proposals been accepted and applied to the whole State, as was the intention of Sir H. Lawrence and Captain Nixon, the prosperity of the Zamindars and of the State would have been put on a solid basis, and the revenue history of the State would have been very different. What orders if any were passed on Captain Nixon's proposals the files in the Bharatpur or Abu offices do not show, nor have I been able to ascertain. The people however, when they complain of over-assessment invariably ask to have the *jama* fixed as "Laland Sahib" (Sir H. Lawrence) or the "Chota Sahib" (Captain Nixon) fixed it 45 years ago.

45. This much is clear that instead of a settlement for 10 years to be continued when the Maharaja came of age, the term of settlement was limited to three years, and the demand for the Bhusawar *pargana* so far from being reduced from Rs. 98,290 to Rs. 90,785 was raised to Rs. 1,10,725 and is now Rs. 1,48,708 or 65 per cent. above the *jama* proposed by Captain Nixon. Enhancements on a similar scale (see paragraph 38) were taken in all *tahsils* but Biyana, although Sir H. Lawrence and Captain Nixon were both of opinion that considerable reductions on the Summary Settlement were necessary; while nothing was settled as to the status of the zamindars. Thus a golden opportunity of placing the revenue administration on a secure basis was lost, and though, as will be seen, one Political Agent after another took up the question of reassessment, they dealt with it in a tentative and timorous way lest their action should hamper the Chief when he should come into power.

The term of the three years' settlement expired with the *rabi* of 1862, and the Political Agent, Lieut. Walter, writing in November 1861 proposed that a new Settlement should be made for a longer period *i.e.* for six years, so

that its expiry might coincide with the Maharaja's coming of age in 1868. This was sanctioned by the Agent to Governor General who added that—

"the Summary Settlement of Captain Nixon and the three years' settlement of Major Bouverie have both worked satisfactorily, and the capabilities of each village ought now to be so well known as to render the new assessment a work of comparative ease, even though it is fixed for a longer period. I beg that you will carefully make full enquiries in each village before assessing so as to ensure an equitable and popular settlement, bearing in mind that justice to the ryot is of higher importance than an increase to the State revenue".

The re-assessment, for it was nothing more, was carried out by the revenue officer—Ahmad Hussain—under the supervision of the Political Agent, and the result was another considerable addition, averaging 7 per cent. for the whole tract, to the State demand.

46. This new assessment appears to have worked well and the demand to have been paid with reasonable fulness and punctuality. The term expired in the *rabi* of 1868. The Political Agent writing in September 1867 proposed that a new settlement for a term of 20 years, to which the Council and the young Maharaja agreed, should be made from the autumn harvest of 1868. He negatived the suggestion to have this settlement carried out by a British Officer, as owing to the several short-term settlements already made the value of land was well known, and the records of former settlements together with the papers of previous years would form a sound basis for fixing the new demand. He therefore proposed to form an assessing committee of experienced Revenue officers to be associated with the Deputy Collector, Mr. Heatherly, who should after examining the records of past realisations and inspecting each estate give their opinion to the future assessment, the final decision being passed by the Political Agent in the presence of Maharaja.

The system proposed though a rough and ready one, would if worked by honest officials possessed of sound local knowledge have probably secured a fair demand. The work was begun on these lines but owing to the scarcity and bad harvests of 1868-69, the settlement was postponed and the demand of six years' settlement continued till the close of the year 1870-71.

47. By that time the late Maharaja had come into power and his first step was to add 10 per cent. all round to the existing demand with effect from the years 1871-72.

72. An indiscriminate enhancement of this nature must inevitably have given rise to inequality and excessive taxation in certain tracts and in a great number of individual villages, but the Maharaja justified his action by quoting the opinion of Captain Powlett, Political Agent, in the administration Report of 1871-72.

"I have good authority for saying that the assessment can be immediately raised by 2 lakhs without oppressing the people".

The new demand was however paid almost in full for the 2 years 1871-72 and 1872-73, as during the sixteen years of the minority the agricultural population had increased in prosperity, cultivation had considerably expanded, great numbers of new wells had been sunk and old ones restored with the help of State loans, and the irrigation system had been developed and extended in the hands of a competent Engineer.

48. Meantime the Maharaja was pushing on the work of a new assessment by means of a committee. The result of their labours—of which there is no other record—was to enhance the demand for the whole State from Rs. 16,90,202 to Rs. 20,16,584 an increase of 20 per cent. In these tahsils the increase on the previous demand was Rs. 76,444 or about 12 per cent. and as compared with Major Nixon's Summary Settlement 15 years before it reached the enormous amount of Rs. 2,11,519 or over 40 per cent. Although the Political Agent in reporting on the new assessment justified the enhancement taken and accepted the Darbar's assurances that the settlement far from being a hard one would bear further increasing after a period of years, I have no hesitation in saying that coming after a series of enhancements, the last of which—at an all-round rate of 10 per cent.—had been made only two years before, the new settlement was grossly excessive, and even if it had not been strained to the breaking

pitch by the famine of 1877-78, it must inevitably have broken down of its own weight. The pressure of over-assessment was felt all the more because no steps were taken to prepare any record of rights or to secure an equitable distribution of the liability. The committee, it is true, professed to frame soil and rent-rates according to the accepted principles of assessment and to leave one-third of the assets to the Zamindars, but this was merely part of the policy of make-believe with which the Bharatpur administration successfully deceived the outer world for over 20 years. The sole object was to wring more money out of the people, while at the same time the State in return gave them no help towards developing their resources, but absolutely neglected the duty of maintaining the irrigation works, and allowed the richest parts of the State to become a desert devastated by the uncontrolled floods of the Banganga and overrun by thousands of wild cattle. For a few years the zamindars aided by the good seasons and the accumulations of past years were able to meet the new demand and arrears were small, but the famine of 1877-78, and its effects caused a general cataclysm in which hundreds of estates disappeared altogether, and from which hundreds more have not yet fully recovered.

49. The effects of the famine in these tahsils were practically the same as already described in paras. 59-67 of the report on the northern tahsils, viz.: (1)

Effects of the famine of 1877-78. decrease of population owing to death and emigration; (2) depopulation and desertion of estates owing to the loss of cattle and agricultural resources, the break-down of credit, and the general panic among the people; (3) the criminal neglect of the Darbar to take any adequate measures of relief, and its ill-timed action in endeavouring to extort the full demand from a starving and impoverished people and to compel the *baniyas* to sell grain at fixed prices and make advances to the zamindars; (4) an enormous decrease in the cultivated area, and a deterioration in agriculture generally owing to want of labour and capital to work the land; (5) the beginning of the enormous arrears of land revenue which have continued almost without interruption up to the present date; (6) a general transfer of estates and holdings either compulsorily—by the State for payments of arrears, etc., or voluntarily by the owners to escape revenue liability.

50. These will be incidentally referred to in this and succeeding chapters.

History of revenue collections and arrears up to date. The point bearing most directly on the new assessment is that of revenue collections which I shall now consider in detail.

From 1855-56 to 1876-77 the collections of revenue had been astonishingly

(1) Prior to the famine year of 1877-78. good for a Native State considering the high assessment. In Bhusawar the total arrears were only Rs. 18,177 of which Rs. 10,313 were subsequently collected leaving only Rs. 7,864 actually now in balance. In the other tahsils too the arrears must have been comparatively little as the amounts now outstanding from 1855 to 1877 are only—Rupbas, Rs. 14,379; Oochain, Rs. 5,299; Bhusawar, Rs. 22,489.

The demand and arrears, including cesses, for 1877-78 and the four following years were as follows:—

(2) 1877-78—1882-83.

Name of year.	RUPBAS.			OOCHAIN.			BIYANA.			BHUSAWAR.			BALLABGARH.		
	ARREARS.			ARREARS.			ARREARS.			ARREARS.			ARREARS.		
	Demand.	Realised.		Demand.	Realised.		Demand.	Realised.		Demand.	Realised.		Demand.	Realised.	
		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
1877-78	...	1,44,328	1,428	40,657	1,78,959	973	683	1,05,633	1,072	15,323	2,22,129	32	27,749	...	...
1878-79	...	1,43,615	920	41,541	1,83,072	2,945	16,021	1,05,750	6,591	3,490	2,20,136	1,980	14,314	...	...
1879-80	...	1,50,152	1,076	40,663	1,80,335	6,394	2,450	1,08,430	5,770	2,702	2,41,932	18,081	11,608	33,935	...
1880-81	...	1,51,629	1,438	39,492	1,57,688	2,501	13,325	1,09,280	4,651	10,357	2,37,879	6,538	35,721	33,511	2,965
1881-82	...	1,50,767	1,386	29,197	1,07,127	6,550	15,109	1,09,950	4,630	2,709	2,41,275	7,044	21,624	35,959	1,294
Total	...	7,40,490	6,854	1,89,760	9,30,093	21,336	41,601	9,38,963	22,714	37,641	11,72,641	34,565	1,16,915	1,03,689	1,294
Average	...	1,48,098	1,371	37,750	1,87,039	4,267	8,332	1,87,793	4,543	7,528	2,34,628	6,911	22,183	34,163	437

These figures show that in disregard of the intense agricultural distress the State not only formulated the full demand from year to year, but also endeavoured to realise the arrears of each year in subsequent years. Meantime the resources of the Zamindars were being gradually exhausted and even when the years of drought passed away and good seasons returned they were unable to meet their liabilities. Thus for the whole period of five years the net arrears deducting sums realised within the period (excluding Ballabgarh) and their proportion to the total demand were as follows :—

Details.	Rupbas.	Oochain.	Biyana.	Bhusawar.	Total.
Total arrears in Rs. ...	1,81,896	20,325	14,927	76,160	2,93,308
Percentage of total demand.	25	2	1.5	6.5	...

From this it appears that the famine fell very unequally on different tahsils. Rupbas which has a stiff soil requiring a heavy rainfall, suffered most and one-fourth of the demand remained in arrears. Bhusawar came next with arrears amounting to one-fifteenth, while in Oochain and Biyana the arrears were not very heavy and a considerable portion was paid off in the period leaving only 2 and 1.5 per cent. respectively in arrears at its close. No rainfall statistics for these tahsils are available during this period. They would no doubt help to explain the greater severity of the distress in Rupbas. The annual reports however show that the rainfall of 1880-81 was very deficient throughout the State, and that accounts for the large arrears of that year in all tahsils and delayed the recovery of the tract from the famine of 1877-78. The cultivated area of years prior to 1881-82 is not known. On the cultivation of that year the incidence of the collections per *bigha* were—

Rupbas.	Oochain	Biyana	Bhusawar.
Rs.	Rs.	Rs.	Rs.
2-1-8	1-10-0	1-9-3	1-6-3

which is higher, and in the case of Rupbas and Oochain very much higher, than the present incidence.

In 1882-83 the 10 years' settlement expired, and the demand was revised and reduced by about a lakh in the five northern tahsils—Gopalgargh, Pahari,

Kama, Dig, Kumber—which were supposed to have suffered most from the famine and the drought of 1880-81. Though these tahsils were equally in need of relief none was given. The old demand was maintained and attempts made to realise the arrears. The only concession given was that in consequence of the drought of 1883-84 the old arrears prior to 1855-56 were remitted; but Sir H. Lawrence had given directions to this effect 30 years before, so the boon was an empty one.

The total and average demand, arrears, and incidence for the next 8 years 1882-83—1889-90, are shown in the following table :—

Detail.	RUPBAS.		OOCHAIN.		BIYANA.		BHUSAWAR.		BALLABGARH.		TOTAL.
	Total.	Average.	Total.	Average.	Total.	Average.	Total.	Average.	Total.	Average.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Demand—revenue and cesses ...	11,57,395	1,44,074	15,45,505	1,93,188	16,70,399	2,08,810	20,18,348	2,52,903	3,04,682	38,085	66,96,327
Realised—revenue and cesses ...	8,84,586	1,10,873	13,80,721	1,72,590	16,22,643	2,02,830	17,97,339	2,24,668	2,86,311	35,780	56,71,609
Old arrears realised ...	7,787	973	19,167	2,398	73,169	9,146	16,889	2,111	2,723	485	1,20,735
New arrears incurred ...	2,72,808	34,101	1,64,784	20,598	47,753	5,969	2,21,009	27,628	8,371	1,296	7,24,725
Cultivated area ...	4,30,553	53,619	8,08,020	1,01,003	10,67,340	1,33,405	12,70,441	1,59,555	1,37,824	19,689	37,30,078
Incidence per <i>bigha</i>	(a) Demand ...	2 11 0	...	1 14 7	...	1 9 0	...	1 9 0	...	1 15 0	...
	(b) collections ...	3 1 2	...	1 11 8	...	1 9 5	...	1 6 9	...	1 13 6	...

In this period therefore the new arrears in Rupbas amounted to 24 per cent. of the total demand, in Oochain and Bhusawar to 11 per cent., in Biyana to only 3 per cent.; and if we allow for the arrears collected the net arrears were—

RUPBAS.		OOCHAIN.		BIYANA.		BHUSAWAR.		BALLABGARH.	
Rs.	Per cent.	Rs.	Per cent.	Rs.	Per cent.	Rs.	Per cent.	Rs.	Per cent.
2,65,021	23	1,45,617	9.5	Nil	Nil	2,04,120	10	14,049	5

In Biyana the old arrears collected exceeded the new arrears by Rs. 25,416 so that the tahsil more than paid its way during this period. As in the previous period the arrears in Rupbas were by far the highest and there is no doubt that the tahsil was grievously overassessed as the incidence of the demand and collections on the cultivated area clearly proves. In Oochain the large arrears were due partly to the damage done by Banganga floods and by wild cattle which threw much land out of cultivation and thus made the assessment an excessive one, the incidence of the demand averaging Rs. 1-14-7 per *bigha* of cultivation. In Bhusawar the wild cattle pest did not exist but several villages had suffered from the Banganga floods which choked the wells and transformed cultivated lands into wastes of arid sand. Moreover many estates were wholly or partly abandoned or managed *Kham*. Here too the incidence of the demand, Rs. 1-9-6 per *bigha*, was relatively high. The Biyana tahsil alone showed rapid recovery.

With the exception of the severe drought in 1883-84 this period was on the whole one of good rainfall and average prosperity, and given a moderate demand all tahsils would have been able to recover from the effects of the famine. But owing to the depopulation, bad revenue management, neglect of the irrigation dams &c. &c., the cultivated area so far from expanding receded considerably in all tahsils but Biyana.

The situation had now become critical in all but the northern tahsils, (4) Fifteen years settlement in 1890-91 where the demand of the 10 years settlement and subsequent collections and arrears had been considerably reduced, and the Maharaja determined on a new settlement beginning with the year 1890-91 to last for a term of 15 years. The first step to this was the levy of a cess of 10 per cent. on the existing demand from every village to meet the cost of the operations, and this brought in Rs. 1,63,674 of which about Rs. 63,600, was actually spent on survey, etc., and the rest went to the State. The next was the appointment of the inevitable Assessing Committee headed by the Court Physician, Rahim Buksh. For absolute incompetency and failure to realise even in the dimmest manner the requirements of the situation, I have never met anything that could approach the proceedings of this Committee. Masses of estimates and calculations were prepared, throughout the dreary maze of which it is impossible to perceive a glimmer of intelligence or common sense except when here and there a Tahsildar with some local knowledge describes the condition of a village in one or two brief lines.

An attempt was made to prepare a record of rights which is the despair of any official who has to refer to it. The sole document of any value is the Field map prepared by imported *amins*. As regards the assessment the Committee generally relied upon the opinion of the Tahsildar, and where he was both honest and capable—a combination not over-common in Native States—the result was fairly satisfactory; where he was a fool or a knave, or where the Committee relied upon their own judgment, the most extraordinary contradictions and inequalities were the consequence. The final result of their labour was to give an enormous reduction amounting to about 30 per cent. in Rupbas, a slight enhancement in Oochain, which was not justified at the time, a considerable enhancement in Biyana which if properly apportioned according to the resources of each estate would not have been unfair, and a considerable and unjustifiable enhancement in Bhusawar which was one of the main causes of the general collapse of that tahsil in the first subsequent year of drought.

As this is the settlement which I am revising, its working may with advantage be examined year by year. The demand and arrears include revenue and cesses.

Years.	RUPNAG.				OCHAIW.				BITANA.				BHUSAWAN.				BILLAGAON.				REMARKS.	
	Demand.	ANNUALS.		Area cultivated.	Demand.	ANNUALS.		Area cultivated.	Demand.	ANNUALS.		Area cultivated.	Demand.	ANNUALS.		Area cultivated.	Demand.	ANNUALS.		Area cultivated.		
		Realised.	Incurred.			Realised.	Incurred.			Realised.	Incurred.			Realised.	Incurred.			Realised.	Incurred.			
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
1890-91	1,08,675	1,455	13,847	47,479	1,90,162	3,032	13,412	92,082	2,25,225	10,724	4,010	1,27,438	2,58,412	2,157	13,976	1,51,832	37,618	272	579	19,458
1891-92	1,12,836	2,307	14,656	57,545	1,92,601	4,823	7,778	1,02,961	2,24,013	12,438	1,683	1,34,601	2,66,134	5,439	13,790	1,66,596	38,001	453	1,109	19,740
1892-93	1,15,396	2,042	7,514	50,619	1,87,421	5,478	7,096	99,172	2,24,044	12,749	2,869	1,31,625	2,63,696	6,301	9,731	1,75,575	38,151	842	1,172	19,980
1893-94	1,15,432	4,253	6,708	60,103	1,86,739	3,798	5,401	1,00,393	2,24,147	10,768	3,546	1,29,701	2,61,567	9,418	7,718	1,70,386	38,222	585	617	19,178
1894-95	1,15,642	3,174	5,161	67,287	1,85,907	2,345	7,043	1,05,911	2,24,254	9,392	4,480	1,31,925	2,61,934	6,050	5,125	1,73,679	37,768	1,104	768	19,343
1895-96 (one harvest)	41,437	903	2,267	56,756	1,88,202	3,623	51,100	84,412	2,24,161	3,055	15,164	1,18,051	2,61,300	2,251	24,152	1,47,169	38,007	408	1,769	19,464
1896-97	1,15,021	4,963	42,253	57,652	1,88,890	10,556	53,008	94,471	2,24,374	25,861	35,166	1,19,196	2,60,571	4,713	78,693	1,49,358	38,123	829	2,225	19,612
1897-98	1,14,767	4,338	26,013	79,606	1,90,502	18,346	8,015	1,14,470	2,24,997	18,428	3,570	1,35,445	2,64,242	19,420	21,053	1,60,565	38,243	1,195	895	20,303
1898-99	1,15,614	6,725	7,646	63,049	1,89,708	19,709	12,735	1,23,593	2,23,825	19,228	2,640	1,42,060	2,65,104	13,260	22,437	1,70,378	37,548	1,069	1,033	20,899
Old harvest	73,430	1,967	21,524	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of 9 years	10,39,260	34,127	1,48,789	5,47,265	17,00,122	72,510	1,66,188	9,17,485	20,19,040	1,22,616	73,128	11,70,002	23,62,920	69,009	1,91,675	14,65,529	3,41,681	6,737	10,197	1,77,407
Average	1,14,250	3,792	16,532	60,807	1,88,902	8,057	1,88,405	1,01,943	2,24,338	13,627	8,125	1,30,000	2,62,546	7,698	21,297	1,62,837	37,905	751	1,133	19,712
Average total realisations	1,01,510	...	...	...	1,78,94	...	...	...	2,29,840	...	...	...	2,48,917	...	...	...	37,503	...	...	...
Per bigha	1-1 0-8	...	...	...	1-1 2-0	...	...	...	1-1 2-4	...	...	...	1-1 6	...	...	...	1-1 4-6	...	...	...

The first five years of the nine were a period of good rainfall and average agricultural prosperity. Cultivation increased rapidly in all tahsils; some old arrears were collected; and though the new arrears were considerable in Rupbas, Oochain and Bhusawar, they were due in great measure to an unequal distribution, to the deterioration of several villages close to the Banganga, and to the slackness of the revenue authorities in collecting especially in Rupbas.

(5) The two years, 1895-96 and 1896-97, were years of very severe drought and scarcity almost amounting to famine in this tract. The rainfall was as follows:—

Years.				Rupbas.	Oochain.	Biyana.	Bhusawar.
1895-96	...	...	...	18.83	12.51	18.36	12.04
1896-97	...	...	...	10.35	11.02	8.31	15.19

Both crops failed largely in both years, and compared with 1894-95 the area sown fell off by 20 per cent. in Rupbas and Oochain, by 15 per cent. in Bhusawar and by 10 per cent. in Biyana. Cattle died of starvation, the people began to feel the pinch of hunger and crowded to relief works. The State did nothing to encourage the zamindars by suspending part of the demand, and the pressure employed in collecting the revenue especially in Bhusawar, where even the plough and well cattle were in some cases sold up by the tahsil officials, led to wholesale desertions of agriculturists. In that tahsil alone no less than 2,537 persons or 4 per cent. of the population deserted in these years of whom 1594 sought refuge in foreign territory, and this struck a blow at the prosperity of the tahsil from which it has not yet recovered. The Wal tract in Rupbas, the Rudawal and Jatmai portions of Oochain, and the Dang and Nahera of Biyana also suffered severely. The arrears in these two years combined were equal to those of the remaining seven.

The favourable rains of 1897-98 put new heart in the people; the area under cultivation increased enormously; and two good harvests enabled them to more than meet their obligations in Oochain and Biyana—where the amount of old arrears paid up exceeded that of the new arrears. In Bhusawar the two items nearly balanced one another, but in Rupbas the arrears amounted to over 20 per cent.

The year 1898-99 was one of average rainfall except in Rupbas where it was again short, and in the year just concluded the total rainfall was not deficient. But, as already remarked, nearly all the rain fell in both years in June, July and August; the September rains were almost a total failure, and practically no rain fell in the cold weather months. Hence the autumn and spring crops were decidedly below the average in 1898-99, and in the last year the crops except on sweet wells or inundated lands have been almost a total failure. Thus it will be seen that the steady progress made in the first five years has been undone by the disastrous character of the last five. It should be explained that the arrears since 1890 have been considerably swelled (1) by the inclusion of fees due for coercive processes the amount of which included in the arrears is Rs. 9,842 in Bhusawar alone, Rs. 9,086 in Rupbas; Rs. 6,613 in Oochain and Rs. 3,954 in Biyana, (2) by showing as arrears in *kham* villages or deserted holdings the difference between the settlement demand and the sums actually realised. The arrears under this head are Rupbas *nil*, Oochain, Rs. 9,956; Biyana, Rs. 19,158; Bhusawar, Rs. 25,528.

Deducting sums realised in subsequent years, the arrears now outstanding for the 9 years 1890-91—1898-99 and their proportion to the total demand are

as follows :—

Detail.	Rupbas.	Oochain.	Biyana.	Bhusawar.	Ballabgarh.	Total.
Rupees ...	1,30,623	1,38,794	66,650	1,52,954	7,541	4,96,562
Per cent. ...	12.5	8	3	6.5	2	7

On the other hand the following sums were realised during this period on account of old arrears.

Rupbas.	Oochain.	Biyana.	Bhusawar.	Ballabgarh.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
14,269	23,056	21,824	30,288	4,101	93,538

51. Details of the total arrears now outstanding from 1855-56 to 1898-99

Total arrears of land revenue and cesses now due. in each tahsil are shown in the following table the absolute accuracy of which, though prepared after the most searching enquiry from materials supplied by the tahsil offices, I cannot however guarantee.

Period.	Rupbas.	Oochain.	Biyana.	Bhusawar.	Ballabgarh.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1855-56 — 1876-77 ...	14,379	5,299	22,487	7,960	...	50,125
1877-78 — 1881-82 ...	1,88,750	41,661	37,641	76,460	18,234	3,62,746
1882-83 — 1889-90 or 1890-91 in Rupbas.	2,72,808	1,64,784	47,753	42,273	16,599	5,44,217
Total up to last settlement ...	4,75,937	2,11,744	1,07,881	1,26,693	34,833	9,57,088
Of which since realised ...	14,269	23,056	21,884	30,288	4,101	93,598
Balance still due ...	4,61,668	1,88,688	85,997	96,405	30,732	8,63,490
Arrears since last settlement ...	1,30,623	1,38,794	66,650	1,52,954	7,541	4,96,562
Grand Total still due ...	5,92,291	3,27,482	1,52,647	2,49,359	38,273	13,60,052

The total arrears for the tract are Rs. 13,60,052 or nearly two years land-revenue demand.

52. Of this enormous sum Rs. 8,63,490, representing all the arrears prior

Proposals for the remission and collection of these arrears. to last settlement, have already been remitted by the State in commemoration of the birth of a son and heir to His Highness the Maharaja last year. The arrears since last settlement i.e., down to *rabi* 1899 have now to be disposed of. In the course of my village inspections I have enquired carefully into this subject, and in the arrangements made for the settlement of *kham* villages and deserted holdings the amount of arrears to be levied has already been settled and accepted by the zamindars.

The general causes of these arrears, *viz.*, over-assessment, a bad distribution, damage caused by Banganga floods in all tahsils and by wild cattle in Oochain, neglect of irrigation works, the break down of the assessment in *kham* villages and deserted holdings, the great number of bad harvests in late years, and to a great or less extent in all tahsils slackness or collusion on the part of the tahsil officials have already been referred to.

An officer with a wide experience of revenue management in Native States has recently pointed out to me, that there are three methods of calculating the collections—

- (1) the amount actually realised from the people;
- (2) that which comes into the hands of the tahsil officials;
- (3) that which actually finds its way into the State coffers.

The last falls short of (1) and (2) in a greater or less degree according to the varying efficiency of the revenue administration. In these tahsils I fear the amount realised by the State by no means represents what has been taken from the people.

A good deal has stuck to the palms of the Patwaris and subordinate tahsil agency, while if the Tahsildar was slack or corrupt he found only too many opportunities for feathering his own nest at the expense of the State. Up to the last few years there was no attempt at supervising the Tahsildars' work, and the traditional policy was that they should be given an absolutely free hand in collections and when these were in progress the superior revenue officials were to refrain from touring or interfering with them in any way.

A consideration of all these facts and of the present condition of the people makes it essential to take a lenient view in deciding what amount of these arrears is now to be realised. My proposals based on a village-to-village examination of the facts is to realise as follows—

Rupbas.	Oochain.	Biyana.	Bhusawar.	Ballabgarh.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
20,000	20,000	15,000	27,500	2,500	85,000

and to remit the remaining Rs. 4,11,652 as irrecoverable.

The arrears due on *Mafi* holdings since last settlement will be considered in Chapter IX, Part II. All other miscellaneous arrears for *Takavi*, salt, wells, etc., prior to last settlement have already been remitted. In giving out the new assessments the total amount of arrears to be levied will be fixed and as a rule it will be distributed over the 20 years term of settlement and realised regularly as part of the State demand. This system has been found to answer well in the tahsils already assessed. It is possible that the sum-total of the arrears when fixed village by village may be above or below the amounts above indicated, but I shall endeavour to work up as closely as possible to them.

53. The following table shows the extent to which holdings have been abandoned by deserters who have not yet returned.

Tahsil.	Total number of estates.	Number in which owners deserted.	UP TO AND INCLUDING 1877-78.				SINCE 1877-78.				TOTAL UP TO DATE.			
			No. of deserters.	No. of holdings.	Area.	Jama.	No. of deserters.	No. of holdings.	Area.	Jama.	No. of deserters.	No. of holdings.	Area.	Jama.
Rupbas	76	61	406	300	4,358	4,450	561	264	3,951	4,110	1,057	570	8,309	8,560
Oochain	96	83	581	164	16,180	14,004	811	278	22,692	27,581	1,425	442	38,872	36,576
Biyana	168	134	2,748	1,318	61,803	31,180	1,781	811	25,577	16,079	2,932	2,169	87,380	51,159
Bhusawar	140	137	1,710	840	80,108	67,936	1,633	818	54,664	41,733	3,343	1,067	1,14,833	99,669

In Rupras the deserters number one-third of the owners still left, and the area deserted is about one-twelfth of the whole. In Oochain too the number of deserters is equal to one-third of those remaining, but their shares represent one-fifth of the area. In Biyana the number of deserters is equal to half the present number of owners and the abandoned area is more than one-fourth of the whole; while in Bhusawar the desertions were on a scale even more enormous, the deserting owners numbering one-half of the present number and the abandoned lands representing nearly two-fifths of the Jama of the tahsil. In all tahsils half or more of the desertions occurred in the famine year of 1877-78 or prior to it, and were primarily due to the harsh and shortsighted revenue policy then pursued. After that desertions on a very large scale took place in 1895-96 and 1896-97, especially in the Bhusawar tahsil, where they were due to the mistaken zeal of a tahsildar in harshly enforcing the full demand in years of drought and scarcity. The desertions in other tahsils of recent years have been comparatively few, as less vigour was employed in realising the revenue, and employment was found for the destitute by the Public Works Department in repairing *bands*, digging canals, etc.

Within the last year though the scarcity was greater than in any year since 1877-78 there were practically no desertions owing to the liberal policy pursued by the State in suspending part of the demand and opening relief works; in fact great numbers of the old deserters have returned and resumed possession of their holdings.

54. Besides the enormous areas voluntarily abandoned by the impoverished owners; when estates fell into arrears and the owners were unable to arrange for payment the State interfered and of its own motion transferred whole estates or shares of them to outsiders, or the owners under pressure of the State demand themselves made such transfers. The arrears so transferred from the famine of 1877-78 up to date are as follows.

Tahsil.	Detail.	Number of villages transferred in whole or part.	Area.	Jama.	Purchase money.	REMARKS.
Rupbas	By order of State	17	9,342	6,301	6,765	
	Mutual agreement	8	2,617	1,025	536	
	Total	25	11,959	7,326	7,301	
Oochain	By order of State	11	5,806	4,523	2,487	
	Mutual agreement	9	1,661	1,261	1,533	
	Total	20	7,467	5,784	4,020	
Biyana	By order of State	7	1,138	1,297	858	
	Mutual agreement	10	3,383	2,160	...	
	Total	17	4,521	3,457	858	
Bhusawar	By order of State	10	7,723	6,058	4,867	
	Mutual agreement	33	11,334	7,873	7,773	
	Total	43	19,057	13,931	12,640	

In this way whole estates or shares in them paying 7 per cent. of the present Jama in Rupbas, 3.5 per cent. in Oochain, about 2 per cent. in Biyana and over 5 per cent. in Bhusawar were sold up for arrears by the State or transferred by the owners, and it is a sad commentary on the system that the purchase money in no tahsil amounts to one year's land revenue of the area transferred. The State would have shown not only more humanity but also more enlightened self-interest had it remitted or given lenient instalments for the arrears and encouraged the old owners to stick to their lands.

55. Even the desertions and the compulsory or voluntary transfers, extensive though they have been, by no means exhaust the estates which broke down under the strain of overassessment, bad harvests, and bad administration. A favourite device in the past has been to take estates in which the owners got into difficulties and refused to be any longer responsible for the State demand, under direct management, the State leasing out the land to the old owners as ordinary cultivators or to others at such rates as it considered fit.

Given efficient management this arrangement though not a desirable one might serve as a temporary expedient. As worked in Bharatpur, where *kham* estates are managed by the Naib Tahsildars through the local Kanungo or Patwari generally with an eye rather to their own interests than to those of the State, the system has caused immense loss to the State and further deterioration in the condition of the villages. As an example of the abuses prevalent I may mention a case brought to my notice in Biyana this year where the Naib-Tahsildar had leased 50 *bighas* of land for Rs. 0-8-0 per *bigha* for which, the Tahsildar had no difficulty in obtaining Rs. 3-4-0 per *bigha* and that too paid in advance.

One of the many evils in the old assessments was that where an estate was *kham* or deserted a nominal Jama was fixed and no steps were taken to arrange for its future payment, the result being an enormous accumulation of arrears in such cases. Every case of a *kham* estate or holding has now been taken up, and arrangements made for the abolition of the *kham* system from the new assessment. Where, as generally happens, the old owners agree to accept a fixed assessment and can show their ability or give security to pay it, the land is settled with them in whole or in part, and where they refuse or are unable to accept liability arrangements have been made with other agriculturists.

56. In Rupbas the *kham* holdings are limited to half of one estate and one-third of another, and in both cases permanent arrangements have now been made with the old owners.

In Oochain the following estates (1) Barkoli, (all), (2) Bahrauli (all), (3) Ratauwa (all), Nangla Radha ($\frac{3}{4}$), Kakrauwa ($\frac{1}{2}$), (6) Basi Kalan ($\frac{1}{2}$), (7) Gugrawa ($\frac{1}{2}$), have come under direct management since last settlement. In (1), (4) and (6) the whole area has been restored to the old owners, in (2) and (5) they have been given half the land, the other half going to temporary lessees or other cultivators, in (3) they have retained a $\frac{1}{2}$ share and voluntarily given $\frac{1}{4}$ to a relation, while in (7) owing to the desertion of the old owners the share has been transferred to a neighbouring Zamindar. The whole area thus settled in Oochain amounts to 5742 *bighas*, paying a *jama* of Rs. 4,228. Payment of a suitable amount of the arrears the total of which is Rs. 8,774 has been arranged for in each case by easy instalments.

* In Biyana the large estate of Farsu, area 7,000 *bighas*, which suffered from Bahganga floods has on the application of the Mahomedan owners been managed *kham* since 1885. The estate is now in good working order but as the old owners are incapable of managing it all, a considerable area of waste has been allotted to the zamindars of adjoining villages which had little or no culturable land subject to the payment of *nazarana*; certain occupancy tenants have been recognised as owners of their holdings; and the rest has been given back to the old owners.