ASSESSMENT REPORT

OF THE

HARIPUR TAHSIL

OF THE

HAZARA DISTRICT

BY

H. D. WATSON, Esquire, M.A, C.S.,

Settlement Collector, Hazára.

1904.

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Sole Contractors for Printing to the Punjab Government.

1904.

No. 2342 G.

FROM

M. F. O'DWYER, ESQ., C.S.,

Revenue and Financial Secretary to Chief Commissioner, N.-W. F. Province,

TO

THE HON'BLE MR. J. M. DOUIE,

Settlement Commissioner, Punjab, Lahore.

Dated Peshawar, the 16th December 1904.

SIR,

I am directed to acknowledge receipt of your letter No. 4204, dated 17th November, forwarding a review of Mr. Watson's Assessment Report of the Haripur Tahsil and to convey the following orders and remarks of the Chief Commissioner thereupon.

2. The problems of assessment in Haripur are very similar to those of the Mansehra Tahsil on which orders were recently conveyed in my letter No. 1966 G., dated 1st November, and most of the remarks contained therein are equally applicable in this case. The data for assessing Haripur are not, however, so complete as in Mansehra, because the results of the new measurements (Supplementary Statement A) are available only for about three-fifths of the area and for the rest the figures of the annual papers must be accepted. Those, as you point out, owing to the defective maps and records of last settlement, and the unreliable character of the crop inspections—especially in the hill circles—are not a very safe basis for assessment. However the comparison (paragraph 3 Supplementary Report) of the statistics of the annual papers with those of the new measurements in completed villages, goes to show that the latter bring out a larger area of cultivation, and an improvement in the quality of the soils. Therefore in accepting the former data where the latter are not available no risk is run of exaggerating the resources of the tract.

3. The main factors which justify an enhancement of the present demand are:—

(*a*) It was fixed 32 years ago and was, as Captain Wace pointed out (pages 220—234, Final Report) very lenient at the time, probably not exceeding the value of one-tenth of the produce though the standard assumed was one-sixth.

(*b*) It is substantially less than what was usually taken by the Sikhs, and even below the comparatively lenient demand fixed by Diwán Múlráj over 60 years ago (paragraph 33, Report) though the tract has developed enormously in every respect within the interval.

(*c*) Since last settlement cultivation has increased by at least 14 per cent. (from 131,590 to 149,497 acres—Supplementary Statement A), the irrigated area by 10 per cent., and owing to the expenditure of labour and manure by an industrious population there has been a decided up-grading of soils.

(*d*) Prices have risen by about 80 per cent., and as the tract has a good rainfall—averaging 30 inches—and failure of the crops is rare except in the precarious Kandi Kahl and Gandgarh Circles, it has suffered little from local scarcity and has enjoyed the full benefit of the high prices in adjoining Districts.

(*e*) There has been a marked rise in the rates of rent in kind payable by tenants-at-will (paragraph 21, Report) which on irrigated land now average 45 per cent. of the produce against 41 at last settlement, and on dry lands two-fifths as against one-third.

(*f*) The agricultural community has large resources—owing to the abundant waste and hill lands—in their cattle, which have nearly

doubled, and in their grass and firewood, the value of which has been considerably enhanced. As these sources of income as well as the value of the straw on cultivated lands are left untaxed (excepting for the tax of one anna per head on sheep and goats now under consideration) there need be less hesitation in claiming a fairly full assessment on the cultivated area.

(*g*) Population has increased by 30 per cent., but as the produce of the land has increased in even greater proportion, and there is a large and increasing outlet for the surplus population in Government service which yields an income of 3½ lakhs per annum or more than double the land revenue to the proprietary body alone (paragraph 41, Report) there is no present risk of overcrowding.

(*h*) The present assessment has been paid with ease; the total remissions during its currency amount to only Rs. 1,039—for hail and locusts; the total suspensions for drought to less than Rs. 9,000 which was subsequently realised.

(*i*) The selling value of land (paragraph 40, Report) has more than trebled since last settlement and now represents over 100 years purchase of the land revenue.

4. All the above facts indicate a prosperous and rapidly developing tract. On the other hand we have to bear in mind as reasons for caution in assessment that at last settlement the policy of lenient assessment was deliberately accepted and that, however political and other circumstances may have altered since then, any sudden alteration of that policy would now be reckoned as a hardship; that the improvement since last settlement is largely due to the industry of an increasing and comparatively dense population; that there is little room for further expansion, that proprietary holdings are small in the Kinara Darya, Badhnak, and Kandi Kahl Circles, and that in the latter two circles and Gandgarh the agriculture is almost entirely dependent on the rainfall which is uncertain as compared with other parts of the tahsil.

5. It now remains to decide what is the standard or rather the limit of the new demand according to the half assets estimate, and how near should we go to that standard with reference to the above considerations in fixing the assessment.

For the reasons explained in paragraph 26 of the Report and paragraph 19 of your Review, the working out of a reliable half assets estimate from the available data of cultivated area, crops, yields and prices is one of extreme difficulty, and unfortunately there are not sufficient data as to cash rents to form the basis of an alternative estimate for the whole tract. Mr. Watson's various estimates range from Rs. 3,10,000 to Rs. 3,70,000 and as the rates of yield and of prices assumed are undoubtedly moderate, and the value of the straw (except *moth bhusa* in certain cases) and of the services and dues rendered to the landlord by tenants have been excluded, the Chief Commissioner thinks that your estimate of 3½ lakhs may be accepted as reasonable. This is 146 per cent. above the present demand on the land—Rs. 1,42,853—and as it is impossible to assess up to it, the question is how far with reference to the present demand in each circle and other general considerations the assessment should fall short of it.

6. Mr. Watson at first proposed an assessment of Rs. 2,20,900. Subsequently after collecting further data, which however tended to show that the increase in cultivation and the improvement in soils were greater than he had originally allowed for, he suggested Rs. 2,12,100. This reduction appears to have been the result of his rough village to village distribution (paragraph 12, Supplementary Report) and of the natural anxiety of an officer in assessing his first tahsil to avoid an enhancement which, however justified in principle, might seem to be too sweeping in individual villages.

It appears to the Chief Commissioner that the three circles Maidán Hazára Utla, Maidán Hazára Tarla, and Khánpur in which Mr. Watson now

proposes to assess Rs. 12,000 below his original figures, are the circles in which special leniency is least necessary, and he accepts your view (paragraphs 25 and 26, Review) that in the two Maidán Circles the reduction is not called for at least to the extent Mr. Watson proposes.

7. The following table shows the present demand in each circle and the various estimates of and proposals for the new assessment:—

Circle.	Present Jama 1902-1903.	Half assets.		Assessment proposed.		
		Cash rents.	Produce rents.	Settlement Officer's first proposal.	Settlement Officer's second proposal.	Settlement Commissioner.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Kinára Darya	19,573	...	48,345	30,700	30,700	30,000
Gandgarh	7,250	...	10,124	9,400	9,400	10,000
Badhnak	3,943	...	11,318	5,400	6,000	6,000
Hazára Tarla	37,864	53,308	86,827	53,400	51,000	52,000
Hazára Utla	37,532	1,06,933	1,09,505	66,700	61,000	64,284
Kandi Kahl	12,308	18,432	28,191	15,000	15,000	14,000 to 15,000
Khánpur	24,483	50,867	76,158	40,300	39,000	40,285
Total ...	1,42,853	...	3,70,468	2,20,900	2,12,100	2,16,569 to 2,17,569

The percentage of increase in cultivation and population since last settlement as far as ascertained has been—

	Kinára Darya.	Gandgarh.	Badhnak.	Hazára Tarla.	Hazára Utla.	Kandi Kahl.	Khánpur.	Total.
Cultivation ...	5	18	44	9	8	14	26	14
Population ...	26	39	100	20	34	36	39	30

The Chief Commissioner approves of the rates and total assessment you have proposed for the Kinára Darya, Gandgarh and Badhnak Circles, and agrees with you that in the precarious Kandi Kahl Circle the Settlement Officer would be well advised to assess nearer to Rs. 14,000 than to Rs. 15,000. In the three last-mentioned circles the irrigated area is insignificant—in no case exceeding 2 per cent. of the whole—the rainfall is also uncertain in amount and distribution, and the consequent great fluctuations in the area under and outturn of crops are strong reasons why a fixed cash assessment should be considerably below the half-assets estimate.

8. In the remaining three Circles, Hazára Tarla, Hazára Utla and Khánpur, the irrigated area is considerable—15, 33 and 17 per cent. respectively of the total cultivation. Nearly all of this is first-rate land yielding two crops and even more in the year. These circles have also a more even and in the case of Khánpur a higher rainfall, and they have benefitted more than the rest of the tahsil by the improvements in communications and the opening out of new markets. In these circles too we find some competitive cash rents paid by tenants-at-will (Supplementary Statement D) which afford a useful check on the produce rent half-assets, and those data point—except in Hazára Tarla—to a very much higher assessment than has been proposed. There seems, therefore, no reason why Mr. Watson should not assess up to the sums he originally proposed, which in all cases are less than 60 per cent. of the produce-rent half-assets and in the cases of Hazára Utla and Khánpur represent only 62 per cent. and 80 per cent. respectively of the cash rent half-assets.

9. To give him a clear line to follow Colonel Deane would fix the minimum assessment in these circles as follows:—

	Rs.
Hazára Tarla	53,000
Hazára Utla	65,000
Khánpur	40,000

This will give Rs. 2,18,000 for the tahsil, which practically agrees with your proposal, Rs. 2,16,500, and represents about 62 per cent. of the half-assets as estimated by you and an enhancement of 52·5 per cent. on the present demand. Considering the leniency of the old assessment even when imposed, and the fact that the landlord now gets a larger share (10 to 16 per cent. more) of the produce on a larger area (14 per cent. more), and further gets a price higher (by about 80 per cent.) for that produce, there can be no doubt that the new demand is lighter than the old assessment was when first introduced.

10. For the reasons given in paragraph 8 of the orders on the Mansehra Assessment Report it appears unnecessary to adopt the system of progressive assessments in this tahsil. The Settlement Officer might, however, be authorised to defer part of the new demand—up to Rs. 20,000—in estates where the enhancement exceeds 50 per cent. for a period of three years, *i. e.*, to Kharíf 1907.

11. The assessment of water-mills has been separately reported on, but the proposal should be printed as an Appendix to the Report and they may be conveniently disposed of here. At last settlement there were 668 mills assessed at Rs. 3,592. The number is now 1,012 and the demand Rs. 4,411, the new mills having, it would appear, been leniently assessed.

Mr. Watson, by a rough calculation based on cash rents, arrives at a half-assets demand of Rs. 7,447 and proposes Rs. 5,000 as the new assessment. It is clear from his remarks that the rents are in most cases purely nominal and non-competitive, and the explanation of this is to be found in Captain Wace's remarks at page 220 of the Final Settlement Report:—

> "These tenants (of water-mills) in the Haripur and Abbottabad Tahsils ordinarily pay cash rents little exceeding the amount of the assessment. The proprietors have hitherto regarded the whole rent of the mill as due to the State: they have now in most cases enhanced the rent by one-fourth or one-third of the sums previously paid; these enhancements have been effected by agreement without litigation."

The position seems to be still much the same as that above described and any estimates based upon the cash rents must therefore be fallacious. The reasons for enhancing the mill revenue are as cogent here as in Mansehra, where the assessment has been (paragraph 9 of the orders on the Report) doubled. Captain Wace maintained the rates of the Summary Settlement of 1852 though admitting that the great rise in the price of grain—the miller receives a fixed proportion, generally one-twentieth and in some cases one-sixtieth of the grain he grinds—would have warranted a substantial increase. Those rates still obtain, though the price of grain and the value of the mill receipts have probably trebled since 1852, and as the mill owner benefits by the rise in prices to a much greater extent than the agriculturist, who is as often a buyer as a seller, there is no reason why the State should forego its share in these enhanced profits.

An estimate calculated as in Mansehra, *viz.*, by taking half of the landlord's share (generally two-fifths of the mill receipts) of the grain ground, after making a liberal deduction of 25 per cent. for grain grown in the tahsil that does not reach the local mills, brings out the value of the State share as Rs. 9,692 on flour mills. It has further been calculated that the annual profits of the 52 snuff mills which grind tobacco imported for the purpose from adjoining Districts is Rs. 8,000, of which the State share at one-fifth would be Rs. 1,600. In Mansehra out of a half assets estimate of Rs. 10,500, it was decided to take two-thirds, or Rs. 7,000. Working on the same lines in Haripur the half assets estimate of Rs. 11,292 justifies a new assessment of Rs. 7,500, an increase of about 70 per cent. on the old demand. The Settlement Officer should therefore so assess the mills as to bring out a demand of between Rs. 7,000 and Rs. 8,000. The assessment will be separate from that on the land and will be

governed by the proposed di-alluvion rules. The Chief Commissioner agrees with your view that it is not advisable to exempt the less valuable mills from the assessment which they have always paid.

12. The cesses will in future be Rs. 21-14 per cent., or 3½ annas per rupee, *viz.* :—

	Rs.	a.	p.
Local rate	10	6	8
Patwári	6	7	4
Lambardári	5	0	0

against 21-10-8 at present.

As in Mansehra the assessment should be announced provisionally for 20 years from Kharíf 1904. The dates of the revenue instalments will remain, as at present, 15th January and 15th July.

Mr. Watson's proposals (paragraph 52) for the assessment of gardens are approved.

The Chief Commissioner also agrees with Mr. Watson (paragraph 49) that the clause inserted in the *sanads* of the Gakhar Chiefs when restored to their estates at last settlement, *viz.*, that in the event of their being guilty of oppressive conduct, Government would deprive them of the management of their estates, is no longer necessary, and should now be considered as cancelled. The proviso appears to have raised false hopes in the minds of the tenants—the vast majority of whom have rights of occupancy and are well able to defend their interests—and by encouraging frivolous or exaggerated complaints has tended to strain rather than to improve the relations between them and their landlords.

13. With reference to Mr. Watson's remarks (paragraph 35) that considerable extensions of the irrigated area could be effected by a more economical distribution of the water, the Chief Commissioner would be glad if the Settlement Officer and Deputy Commissioner would take up the matter as soon as possible, and frame proposals.

As the District Board income from local rates will be considerably enhanced by the new assessment, it should take in hand the improvement of communications especially in the hill tracts, and the extension of Primary Schools and Medical relief, both of which are at present very limited.

14. The want of complete and reliable data for the whole tract has made Mr. Watson's task an unusually difficult one, and it is to be regretted that even in his Supplementary Report and Statements the results of the new survey were not fully available.

His report is clear and well reasoned and his proposals show careful observation and sound judgment. In a tract like Haripur, where soils and agricultural conditions are so varied, and the present assessments are often unequal, a thorough local knowledge is more than usually essential, and the Chief Commissioner is confident that the distribution of new assessments over villages and holdings will satisfy the people that the demand is a just one in itself and has been fairly apportioned.

In conclusion, the Chief Commissioner desires to specially acknowledge the action you have taken to advise and direct Mr. Watson in his very difficult task, and for your thorough and helpful discussion of his proposals.

I have the honour to be,

Sir,

Your most obedient servant,

M. F. O'DWYER,

Revenue and Financial Secretary to
Chief Commissioner, N.-W. F. Province.

REVIEW

OF

HARIPUR ASSESSMENT REPORT.

Introductory Remarks.

1. I have recently reviewed the Assessment report of the Mansehra *tahsíl* at considerable length. It will be possible in the case of the Haripur report to deal more briefly with some of the matters which have already been discussed. Mr. Watson had unfortunately to write his report with very imperfect assessment data before him. The tables appended to it were drawn up in the autumn of 1903, when less than half the villages had been measured. Naturally, also, the smaller estates were surveyed first. Had the former maps and records in Hazára been reliable, it would not have mattered much, but this was certainly not the case. Between 26th April and 12th May I made a pretty thorough inspection of the *tahsíl* in company with Mr. Watson. I then asked him to prepare supplementary area, crop, and cash rent statements embodying the latest statistics, and to test his proposals by a rough preliminary assessment of all the villages. The result is embodied in his supplementary note, dated 18th July 1904, with its appended tables, which has recently reached me in print. The present areas referred to in this review are those given in Supplementary Statement A.

Assessment circles.

2. The most natural division of the *tahsíl* is into—

(*a*). The hill tracts, consisting of Gandgarh, Badhnak, and the central and eastern parts of the Khanpur Circle.

(*b*). The Kandi or tracts lying on the skirts of the hills, chiefly represented by the Kandi Kahl Circle.

(*c*). The unirrigated plain between the Gandgarh hills and the Sarra ridge. This forms a continuation of the Nala Circle in Attock, and consists of the north-western part of the Khanpur Circle and the southern part of the Maidán Tarla Circle.

(*d*). The riverain lands between the Gandgarh range and the Indus (the old Khari Circle). This resembles in some ways the adjoining Chhachh Circle in Attock, has valuable and increasing well irrigation, and a good deal of land enriched by the spill from the Gandgarh hills, which has formed the most valuable soil in the Chhachh plain.

(*e*). The tracts irrigated by cuts from the Dor, Siran, and Haro streams. In a *tahsíl* like Haripur, where changes in the character of the soil are nearly, if not quite, as rapid as in Mansehra, it is impossible to form really homogeneous assessment circles. But I think the present division of the *tahsíl* into circles requires a good deal of remodelling, and that this should be carried out before the new assessment circle note-books are started. I am addressing Mr. Watson separately on this subject.

Classes of land.

3. I shall not repeat the lucid description of the different soils given in the 4th paragraph of Mr. Watson's report or my own remarks in the Mansehra review as to the extreme variation in the quality of soils necessarily described by the same name in Hazára. The following is a convenient classification in Haripur:—

Dofasli	Chahi.	
	Abi I—Bágh, whether under crops or fruit trees.	
	Abi II—Báhardi and hotar.	
	Barani I—Bari.	
Ekfasli	Abi III—Barangar and gharera.	
	Barani II—Kund and maira.	
	Barani III—Rakkar and kalai.	

Bágh includes two very different classes of land, the true *bágh* and *bari ábi*, and it is a pity these were not distinguished in the record. In the real *bágh* an early crop of maize is sown in May with turmeric and reaped in the end of July. It benefits the young plants of turmeric by its shade, and itself gives a heavy outturn. The other great kharíf crop is cane. The rabi crops, which consist of wheat and barley, are less important and cover a smaller area. In *bari ábi* wheat or barley follows ordinary maize, and the kharíf and rabi areas are about equal.* *Barangar* and *gharera* need not have been distinct classes. *Hotar*, so important among *ábi* soils in Mansehra, is here quite insignificant. *Kund* corresponds to *bela* in Mansehra and is on the average a good deal better than *maira*. There is enough of it to justify its being retained as a separate class for assessment purposes. The distribution of the cultivated land in the different circles is shown below:—

Soil.	Badhnak.	Gandgarh.	Kandi Kahl.	Kinára Darya.	Maidán Tarla.	Maidán Utla.	Khánpur.	Total.
Cháhi	...	...	...	4·	·5	...	...	·6
Abi I	·6	·2	1·	4·2	3·	12·2	4·3	4·3
Abi II	·2	...	·9	3·9	6·4	13·6	11·1	6·6
Báráni I	16·6	14·8	10·8	7·1	5·4	3·	19·6	9·9
Abi III	...	...	....	·4	4·7	8·2	·7	2·8
Báráni II	40·1	66·6	56·3	63·4	64·8	46·3	47·7	56·2
Báráni III	42·5	18·4	31·	17·	15·2	16·7	16·6	19·6

Rainfall.

4. The rainfall is usually abundant. It averages 30 inches yearly, of which 21 fall between April and September. It is interesting to compare the Haripur figures with those for Attock, 35 or 40 miles to the south-west. For the 12 years ending 1902-1903 the average at Attock was 18, and at Haripur 31 inches. But fortunately for Attock the difference between the cold weather rainfall of the two tracts is not so great, Attock getting 6, and Haripur 8½ inches. Hence, while two-thirds of the crops in Attock belong to the rabi harvest, the preponderance of spring crops in Haripur is not very marked.

Extension and improvement of cultivation.

Paragraph 35 of Report and Supplementary Statement A.

5. The cultivated area has increased by at least 11 per cent. Mr. Watson does not allude to the exaggeration of cultivation in the old records, on which Captain Beadon laid such stress in the Mansehra report. But the same causes which led to the results noted in Mansehra must have had a similar effect, though in a less degree, in Haripur. The number of wells has been doubled in the south of the Kinára Darya and Maidán Tarla Circles, the only parts of the *tahsíl* where well irrigation is of the least importance. The valuable *bá h ábi* shows a rise of 60 per cent. *Ábi II* has increased by 13, and *ábi III* decreased by 50 per cent. *Barani I* has risen by 29 and *barani II* by 22 per cent., while *barani III* has slightly declined. The important point is the increase in *bágh* from 4,022 to 6,425 acres, and in *barani I* from 11,489 to 14,731 acres. The advance in the proportion of the total area occupied by the better soils may be partly due to more careful classification. But in large measure it has been rendered necessary and possible by the increase of population and cattle. Much future extension of cultivation is neither to be expected nor to be desired. The impression one gets in such a tract as Badhnak is that every foot of land fit for tillage has been brought under cultivation. The existing fields may, however, still to some extent be improved.

Cattle.

6. Manure is abundant, as wood is used for fuel and the supply of grass is usually sufficient to support flocks and herds. If we may believe Statement IX horned cattle other than bullocks have increased twofold since last settlement. The great increase of sheep and goats, though their droppings are most valuable as manure, is a very doubtful benefit.

* Since the above was written Mr. Watson has informed me that he thinks it would be difficult to distinguish the true *bágh* from the *bari ábi*. It will, however, be necessary to do so to a considerable extent in assessment and distribution of the demand over holdings.

Population.

7. The growth of population since last settlement has fortunately been less rapid than in Mansehra. Still it amounts to 30 per cent. The incidence per square mile of cultivation is 631 as compared with 831 in Mansehra, where the grazing facilities are far greater. The land-owning tribes are a very miscellaneous body. This is specially true of the two Maidán Circles. Gakkhars, Gujars, Tarkhelis, Tanawalis, and Awáns have between them 60 per cent. of the area. A few Gakkhar families own nearly the whole of the Khánpur Circle. Tarkhelis occupy the same position in respect of most of the Gandgarh circle and the southern part of the Kinára Darya. They are a "thriftless, extravagant, and idle race, leaving most of the cultivation to their tenants." An interesting little colony of Mishwanis holds the rest of the Gandgarh Circle. They are the exact opposite of the Tarkhelis, have broken up every inch of land they can, and work it assiduously with their own hands. Tanawalis own the Badhnak hills. They have the first of the qualities St. Paul ascribed to the Cretans, but none of the others. Like the Mishwanis they toil to extract a livelihood from small holdings in a very poor tract. Both tribes take readily to military service. Gujars are fair cultivators and some of them are large landowners. Many of the tenants are Gujars. Here, as elsewhere, Awáns are a sturdy hard-working race, and are often tenants where they are not proprietors.

Size of holdings.

Paragraph 39 and Supplementary Statement E.

8. The ordinary holdings are very small, consisting of three or four acres. A Mishwani holding is on the average less than two acres. Small proprietors very often eke out their income by tilling other land as occupancy tenants or tenants-at-will.

Debt.

9. The amount of floating debt is said to be about four times the land revenue, so the yearly interest payable may be taken as equal to it. In proportion to resources indebtedness is heaviest in Badhnak and Kandi Kahl.

Transfers.

10. The figures regarding transfers need cause no anxiety. Where holdings are small, and a good many of the landowners depend on service, mortgages are sure to be common. A large part of the *tahsíl* has no attractions to the Hindu money-lenders. It is only in the two Maidán Circles and in Kandi Kahl that they have secured any appreciable share in the land sold, and recent legislation has shut the door against further operations in the same field.

Increase of resources.

11. It may be doubted whether the growth of population has outstripped the increase in the produce extracted from the soil, if the amounts of cane, turmeric, and tobacco raised on the *bágh* and *chahi* lands be converted into a weight of food grains of equal value. The improvement of communications due to the extension of the railway from Ráwalpindi to Peshawar and the metalling of the Hasan Abdál-Abbottabad road mean the opening of many new sources of income. I have been told that fruit from Haripur now finds its way to the Bombay market.

Cultivating Occupancy.

12. Two-fifths of the soil is cultivated by the owners with their own hands or through *halis*, and more than two-fifths is tilled by occupancy tenants, two-thirds of whom pay kind rents. Tenants-at-will have only 18 per cent. of the land, and in no circle does the proportion they cultivate rise above one-fourth. They nearly all pay by division of crop. I find it a little hard to reconcile the statement made in the 20th paragraph of the report that the *batai* rates for occupancy tenants and tenants-at-will are usually the same with the figures in the 21st paragraph showing the marked change in the rent rates of the latter class since last settlement. Presumably occupancy tenants pay now what they paid then. Payment in kind by an occupancy tenant is not always a good thing for the landlord. As pointed out in the case of Attock it sometimes induces the tenant to neglect the land and "take to the road" in an innocent sense.

Crops.

13. In the second chapter of his report Mr. Watson has given a careful account of the system of agriculture pursued and the crops grown on the different classes of land in his seven circles. For the reasons stated in the beginning of the fifth chapter the figures in Chapter II must be taken for what they are worth. Measurements were not finished till a year after the statements annexed to the report were drawn up. Even in Kharíf 1903, the crop inspection of little more than one-third of the cultivated area was made on the basis of the new survey. Moreover *girdáwaris* made before settlement in such a country as Haripur under imperfect supervision cannot be trusted, and Mr. Watson believes that the failed area in the first three years, of which the harvest results are tabulated in his 15th paragraph, is understated, specially in the Hill circles. Yet in each of these years the percentage of *kharaba* is considerable, and in the bad Kharíf of 1899 it rose as high as 42 per cent. I shall deal with the cropping of each class of land, so far as necessary, when discussing the assessment proposals for the different circles.

Contrast between ekfasli and dofasli lands.

14. In most parts of the Punjab one has to guard against the tendency to appraise too highly the irrigated as compared with the unirrigated soils. Here and in the Attock *tahsíl* the danger is the other way. It will be worth while at this stage to give a partial demonstration of two facts on which, as it seems to me, the successful assessment of Haripur depends :—

(*a*) that the unirrigated soils except the manured homestead *bari* lands, which constitute about 12 per cent. of the whole unirrigated area, are only moderately secure and give a very light outturn ;

(*b*) that the difference in assessable value between the first class soils (*cháhi*, *ábi* I and *II* and *bari*) and the other soils (*ábi III*, *báráni II* and *III*) is very great.

The figures below give the proof so far as it depends on the existence or absence of double cropping and the extent of failure. The rest of the proof is furnished by the assumed yields and the details as to the crops grown on different classes of land which will be given later.

Harvests on ekfasli lands not really secure.

15. The first table shows the results for the whole *tahsíl* of the eight harvests observed since the settlement began. The percentages are calculated on the latest figures of cultivated area as given in Supplementary Statement A.

Year.	Kharif			Rabi.			Total.		
	Sown	Failed.	Harvested.	Sown.	Failed.	Harvested.	Sown.	Failed.	Harvested.
1900-01	53	11	42	63	4	59	116	15	101
1901-02	40	6	34	61	35	26	101	41	60
1902-03	57	17	40	62	12	50	119	29	90
1903-04	52	11	41	62	7	55	114	18	96
Average	50	11	39	62	14	48	112	25	87

The figures are affected by the inclusion in them of the Rabi of 1902, when the crops failed to an extent which is most unusual in Hazára. The rabi sowings are more constant than the kharíf, and the proportion of failure is usually less. A delay of the summer rains such as occurred in 1901 has a marked effect in this tract where kharíf crops are sown early, and a break between the middle of August and the middle of September has very serious results. There is with rare exceptions enough rain in September and October to ensure the rabi sowings and drought between the middle of December and the middle of February, which would ruin the unirrigated crops, is very rare. The extraordinary drought which destroyed the Rabi of 1902, lasted from the middle of October to the middle of March. We may fairly say that in this submontane tract with more than one-fifth of its area consisting of double-cropped land (*cháhi*, *ábi I*, and *II*, *bari*) only 9 acres of crops are produced per 10 acres of land.

The insecurity of the dry soils is still more apparent when the results on irrigated and unirrigated soils are shown separately. The materials will only admit of a tabulation of the average results of the six years ending 1902-03, and of the kharíf and rabi harvests of 1903-04. The percentages are taken out on the totals of the irrigated and dry areas shown in Supplementary Statement A.

A.—IRRIGATED SOILS.

Detail.	Kharif.			Rabi.			Total.		
	Sown.	Failed.	Harvested.	Sown.	Failed.	Harvested.	Sown.	Failed.	Harvested.
Average six years	72	4	68	72	5	67	144	—9	135
1903-04	73	3	70	70	2	68	143	—5	138

B.—UNIRRIGATED SOILS.

Detail.	Kharif.			Rabi.			Total.		
	Sown.	Failed.	Harvested.	Sown.	Failed.	Harvested.	Sown.	Failed.	Harvested.
Average six years	46	13	33	60	15	45	106	28	78
1903-04	49	13	36	60	7	53	109	20	89

When we consider that one-fifth of the irrigated land is *ábi III*, which certainly does not yield more than one crop in the year, and that some 12 per cent of the unirrigated land is manured homestead land *bari*), which is largely doubled cropped, we shall not be far wrong in saying that 10 acres of land of the first class (*chāhi*, *ábi I* and *II*, and *bari*) yield 14 or 15 acres of crops and 10 acres of the other soils about 7.

Yields.

16. In my review of the Mansehra report I have pointed out the great difficulty of framing a trustworthy estimate of the produce of unirrigated and unmanured soils in Hazára. As regards yields in Haripur the points to bear in mind are—

(1) That the crops grown on the 2nd class *ekfasli* lands give light returns, partly because a great deal of the land is intrinsically poor, and partly because so much attention is concentrated on the *dofasli* lands.

(2) That the yields of rabi crops on *dofasli* lands in Haripur are low, because the kharíf crop is far more regarded than the rabi.

I was much struck last spring with the poor results of double cropping here. In his estimate Mr. Watson has given much weight to the above considerations, as the following examples will show. The yields are given in maunds:—

Crop.	Ekfasli Soils.			Dofasli Soils.			
	Rakkar Kalsi.	Maira.	Abi III.	Bari.	Abi II.	Abi I.	Chahi.
Maize	3—4	7—9	8—10	12—14	14—16	18—20	20—22
Bájra	2—3	3—5	...	5—6	...	...	...
Wheat	2½—3	4—7	5—7	8—9	8—10	9—11	10—11
Barley	3—3½	5—8	6—8	9—10	9—11½	10—13	10—13

Surplus produce estimate.

17. In the surplus produce estimate given in the 51st paragraph of the report the calculation would point to the necessity of importing food on a pretty large scale to feed the population. Possibly in assuming 6 maunds per head as the consumption of the people as a whole there is some exaggeration. A *jagírdár* landowner in Attock recently told me the food he allowed to his *halis* and the wages he paid to his servants usually amounted to one-half seer of grain daily, which is equivalent to 4½ maunds yearly. To this some addition must be made for pulses. The estimated yield of the food crops allows for a consumption of 5⅕ maunds per head, if we suppose the *tahsíl* to be self-supporting as regards food.

Prices.

18. On the subject of prices I have nothing to add to what I wrote in the review of the Mansehra report. Prices have been leniently estimated. From a practical point of view it does not matter much whether the rise since last settlement is 57 per cent. as I calculated in the case of Mansehra, are 80 per cent. as Mr. Watson supposes here. The important point is that a market outside the *tahsíl* is now available when the harvests yield more than is required to feed the somewhat dense population, and this must steady prices and keep them at a higher level. It cannot be supposed that of ordinary food grains there is much over to be sent away, and it must be noted that the rise in one of the two most valuable of the products grown for export, *gur*, has been trifling, and that in the case of the other, turmeric, the price fluctuates rapidly, and lately showed a tendency to drop greatly.

Half net assets estimate.

19. The landlords' share of the produce on *dofasli* lands (*cháhi, ábi I* and *II, bari*) has been taken at one-half, except that in the Kunára Darya Circle *ábi II* has been put at two-fifths, and in Gandgarh and Badhnak *bárí* at one-third. The rent in the case of *maira* is taken at one-third in the same two circles, and two-fifths elsewhere. The share of crops grown on *rakkar* everywhere and on *kalsi* in all circles but Badhnak is assumed to be one-third. That on *kalsi* in Badhnak is put at one-fourth. These are not true arithmetical averages of recorded rents, but the general result seems fair. As a matter of fact the kind rent statistics by soils are only given for the estates which had been measured by the autumn of 1903. The allowance for menials' dues is 5 per cent. This may be compared with 8 per cent. in Mansehra, and 10 per cent on unirrigated, and 15 per cent. on irrigated, lands in Attock. On the whole the Government share of the produce seems to have been very fully estimated, on the other hand the prices adopted are distinctly low. In the report Mr. Watson has given three half net assets estimates which vary between Rs. 3,10,000 and Rs. 3,18,000. The supplementary note contains a fourth amounting to Rs. 3,70,000 based on the harvests of 1903-04. We shall probably be safe in saying that a true half net assets demand would not fall below 3½ lakhs. Exactness, even if attainable, would be of small use, for with an existing demand of Rs. 1,43,000 any approximation to a standard assessment is impossible.

Cash rents.

20. Cash rents are paid on but 2 per cent. of the cultivated area. The available statistics will be found in Supplementary Statement D. Where any use can be made of them I shall refer to the matter in discussing the assessment proposals for the different circles.

Fiscal history.

21. The fiscal history of Haripur need not detain us long. Since 1872, when Captain Wace's demands were introduced and at least for ten years before that, the *tahsíl* has enjoyed a very lenient assessment. For the reasons given in my review of the Mansehra report it may be assumed that Captain Wace's half net assets or rather one-sixth produce estimate was a very low one, and he assessed the *tahsíl* much beneath it, though the divergence was far less than in Mansehra. The people have rarely had any difficulty in paying a revenue so leniently estimated.

Ábi lands, areas and rates.

22. I have already expressed the opinion that it would have been an advantage if the true *bágh* in the record had been distinguished from *bari ábi*. Had this been done all plain estates watered by cuts from the main streams of the Siran, Dor, and Haro, as

distinguished from hill villages in which the irrigation is from springs or from tributaries of the larger streams, like the affluent of the Haro known as the Nilan in Khánpur, might well have been grouped in a single circle. In view of these considerations and of the great importance of *ábi* lands in Haripur it will clear the ground to deal with their cropping and assessment rates in the four circles where they form an appreciable part of the cultivated area before considering the assessment proposals for each of the seven circles as a whole.

It is a pity that the same rate has been proposed for the valuable Panjkatha irrigation in Khánpur and the very inferior *ábi* inside the hills, but this will of course be corrected in actual assessment.

The proportions which the different classes of *ábi* land bear to the total cultivated area and the rates proposed by the Settlement Officer are shown below :—

Circle.	Abi I.		Abi II.		Abi III.	
	P. C.	Rate, Rs.	P. C.	Rate, Rs.	P. C.	Rate, Rs.
Maidán Utla	12·2	12	13·6	5	8·2	1½
Kinára Darya	4·2	8	3·9	4	·4	...
Maidán Tarla	3·	7	6·4	3½	4·7	1¼
Khánpur	4·3	7	11·1	3 and 2½	·7	...

No separate rates are proposed for the insignificant area of *ábi III* in the Kinára Darya and Khánpur Circles.

Cropping of *ábi* lands.

23. In the following table the figures are based on Supplementary Statements B and C. The cultivated areas on which the percentages are calculated are entered beneath the names of the circles. Owing to the backwardness of measurements in the Kinára Darya Circle no data of any value are available for *ábi II* lands there :—

Crop.	Abi I.				Abi II.			Abi III.	
	Utla Maidán 1,369.	Darya Kinára 98.	Tarla Maidán 529.	Khánpur 466.	Utla Maidán 2,022.	Tarla Maidán 1,303.	Khánpur 2,213.	Utla Maidán 1,205.	Tarla Maidán 1,018.
Maize	62	92	92	89	52	54	53	9	6
Cane	20	...	...	2	5	...	...	1	...
Turmeric	14	...	...	2	2	...	...	...	...
Rice	...	...	...	...	1	...	6	3	...
Toria and chari	10	...	2	...	2	2	...	3	3
Others	1	2	3	5	11	8	4	18	12
Total Kharif	107	94	97	98	73	64	63	34	21
Wheat	38	68	44	32	47	53	37	49	37
Barley	15	32	39	25	14	23	5	16	14
Tobacco, vegetables, melons ...	3	...	2	...	...	1	...	...	...
Others	4	...	2	6	3	2	3	3	4
Total Rabi	60	100	87	63	64	79	45	68	55
Total both harvests ...	167	194	184	161	137	143	108	102	76

To understand the figures one must remember the failure to distinguish between *bágh* and *bari ábi*. True *bágh* is largely represented in the Maidán Utla Circle where in two or three of the very best villages it

fetches rents of from Rs. 96 to Rs. 144 an acre. It is found to a small extent in the Panjkatha of the Khánpur Circle. In the estate of Khánpur itself there is excellent *bágh* of this description for which rents of Rs. 35 an acre are paid. But generally the recorded *bágh* in the Khánpur Circle is of the inferior type, and the figures are affected by the inclusion of a good deal of land in hill villages in which the yearly area of crops, I believe, often hardly exceeds the cultivated area. In the Maidán Tarla and Kinára Darya Circles real *bágh* scarcely exists. It is a pity that the figures for the latter do not include the very large and rich *ábi I* lands of Tarbela. But these, excellent though they are, really consist almost wholly of *bari ábi*. I went over them last spring and was surprised to see how little cane there was. For some reason its cultivation seems to have recently declined, and the growing of poppy, for which Tarbela was once famous, has been forbidden.

Considering how much of the *ábi I* in Maidán Utla is true *bágh*, it ought to be able to pay Rs. 12 an acre. We have cash rents on 275 acres giving an average of Rs. 38½ an acre, and, as noticed above, much higher rents are to be found in the very best estates. But for the fact that the old rates were only Rs. 8 and Rs. 6, we might perhaps go higher. In the Siran villages of the Kinára Darya Circle Rs. 9 had better be reduced to Rs. 8, notwithstanding the high character of the cultivation in Tarbela, which furnishes more than half of the total area. The latest figures for this circle show higher areas of land under all but the two worst classes (*maira* and *rakkar kalsi*) than Mr. Watson assumed in the 43rd paragraph of his report, and the smallness of the holdings in Tarbela must be kept in mind. The old rates were Rs. 8 and Rs. 8-6, but possibly these were not actually taken, for the assessment of the present Kinára Darya Circle was much below rates. Rs. 7 may be lowered to Rs. 6 in Khánpur and Maidán Tarla. The reduction is necessary in the former because of the inclusion of a good deal of land in the hills and because Mr. Watson has found great difficulty in framing village assessments in this circle which will bring out the demand he originally contemplated. The second reason applies also in the case of Maidán Tarla. The *ábi I* lands there are at the tail of the Dor irrigation, and I have little doubt they will be as heavily assessed at Rs. 6 as the Maidán Utla lands will be at double that rate. *Abi II*, except that it includes a little *hotar*, is simply inferior *bari ábi*. It yields the same crops, but the *dofasli* area is much smaller. The cropping in the Maidán Utla lands is distinctly better than in the other two circles and we have cash rents on 96 acres averaging Rs. 20. But it will not be easy to take the full assessment at rates in this circle (paragraphs 12 and 13 of note). Hence I would lower the rate to Rs. 4. If in actual assessment Mr. Watson finds it better to give the reduction in *ábi I* (he says his difficulty arises from the great enhancement his rates give in the best estates), he should be allowed to do so. I accept the rate of Rs. 3½ for the Maidán Tarla villages, and I would put the rate in Kinára Darya at the same figure. For most of the *ábi II* in Khánpur a rate of Rs. 3 is proposed, but for *hotar*, of which there is more in Khánpur than elsewhere, one of Rs. 2½ is suggested. I would take Rs. 2½ all round. The cropping is similar to that of *nahri* land lower down the Haro in Attock, but the irrigation is more secure, and 100 acres of land yielded in 1903-04 108 acres of crops as compared with an average of 94 in Attock. The sanctioned rate in Attock is Re. 1-10.

Abi III is a very poor class of land, and its cropping is vastly inferior to that of the other two classes. The kharíf area is small and the crops of little value. *Moth* and cotton, which in Haripur is little esteemed, are often grown. In the rabi wheat and barley are the chief crops. I would put the rates at Re. 1 and Re. 1¼ in the Maidán Utla and Tarla Circles, respectively, giving a reduction of four annas in each case.

Kinára Darya Circle.

24. The Kinára Darya Circle is very heterogeneous. In my judgment the southern part of it, forming the old Khari Circle, should have remained separate, the Kulai villages to the north of Tarbela should have been put in Badhnak, and the two estates to the south of it in Gandgarh, while Tarbela and the other villages irrigating from the Siran might have formed part of a large *ábi* circle. The distinguishing features of the old Khari Circle are its rich well irrigation,

and the benefit the unirrigated lands, especially towards the borders of the Chhachh Circle of Attock, derive from the Gandgarh spill.* The estates in the Siran Valley, of which Tarbela only has any connection with the Indus, have valuable *ábi* irrigation. It is difficult to give a clear description of the character of the unirrigated lands. The confusion caused by the inclusion of villages, whose cultivation lies mainly in the hills, in a river circle, is mitigated by the recognition of *rakkar* and *kalsi* as separate soils. The river lands in the estates above Tarbela are of no extent or value, but there is some good loam on level shelves and in flat terraced fields on the outer spurs of the Badhnak hills. The *maira* in the villages in the upper part of the Siran Valley is sometimes stony, but lower down the large estates of Swábi Maira and Tarbela have a lot of good loam, the former in a large basin in the Badhnak hills, and the latter to the south of the Siran, where the Gandgarh Range, just before it ends, recedes from the river. Between Tarbela and Gházi the hills come down close to the Indus and the loam is shaley and stony. It improves south of Gházi, and near the Attock border becomes a clean light coloured loam, which is easily worked and very fertile. The best of the loam has been recorded as *kund*, which forms a much larger proportion (13 per cent.) of the total cultivation in this circle than in any other. Cultivation has increased by 5 per cent. and population by 26 per cent. The incidence per square mile of cultivation is 703. The Tarkhelis in Khari have large holdings, the Utmanzais and Tanawalis, who own the rest of the circle, very small ones. Colonel Wace's assessment was 34 per cent. below rates. The present demand is Rs. 19,573, which may be contrasted with a half net assets estimate of about Rs. 48,000. Mr. Watson's rates give Rs. 30,689, and his later preliminary rough detailed assessment Rs. 30,020. I consider that a demand of Rs. 30,000 should be sanctioned. I proceed to consider the different soil rates.

Supplementary Statement A.

A well in the Kinára Darya, the only parts of the *tahsil* where this form of irrigation is of much importance, waters about seven acres of crops yearly, these crops being raised on rather more than 4 acres of land. The cropping may be compared with that in the Attock Chhachh. But the finest class of Chhachh well devoted to the raising of vegetables or *paundha* cane and snuff tobacco, which can easily pay an assessment of Rs. 12 an acre,† is not to be found in Haripur. I show below the *cháhi* cropping in the Haripur and Attock Circles. The figures for the Haripur villages relate only to finished estates and to the harvests of 1903-04, but the variations from year to year must be small.

Crop.	Kinára Darya.	Chhachh Attock.
Maize	93	62·4
Cane	...	17·5
Others	5	9·5
Total Kharif	98	89·4
Barley	13	26
Wheat	4	11·3
Tobacco	48	21·3
Others	18	24·2
Total Rabi	83	82·8
Both harvests	181	172·2

The tobacco is not so good as the best Chhachh tobacco. The revenue rate proposed is Rs. 6, which is that sanctioned for Attock. There is no reason why it should not be adopted. Eight acres of *cháhi* land held by occupancy tenants pay an average rent of Rs. 13-10 and tenants sinking new wells are prepared to agree to a rent of Rs. 17 an acre.

* Compare paragraph 14 of Mr. Butler's Attock Assessment Report.

† See paragraph 10 of my Review of the Attock Assessment Report.

I have suggested rates of Rs. 8 and 3½ for *ábi I* and *II*. The rate proposed for *bari* is Rs. 2½, the same as in the two Maidán Circles. *Bari* must suffer in the Khari and Siran villages where so much manure is required for the *cháhi* and *ábi* lands, and so much attention is paid to them. I was struck with the poorness of the *bari* in the Khari villages, where the good land near the homesteads has been taken up for wells, and the *ba i* is often sloping and stony. The crop returns indicate that *bari* here should be assessed lower than in either of the Maidán Circles, as the following figures prove :—

Circle.	Maize per cent.	Bajra per cent.	Others per cent.	Total Kharif per cent.	Wheat per cent.	Barley per cent.	Others per cent.	Total Rabi per cent.	Grand total per cent.
Kinára Darya 192 acres ...	6	17	13	36	53	13	1	67	103
Maidán Tarla 943 acres... ...	45	11	14	70	20	43	9	72	142
Maidán Utla 303 acres	41	4	23	68	42	43	4	89	157

"Other" kharíf crops consist mainly of *jowar*, *chari*, and fodder. A rate of Rs. 2 will be quite high enough. This may be compared with the sanctioned rate of Re. 1½ for *tipara*, which is the same as *bari*, in the Chhachh Circle of Attock.

The *kund* consists chiefly of the best of the loam which benefits from the Gandgarh spill and of a stretch of fine land in Tarbela. The chief crops are wheat and *mung*, both of which are valuable. The proposed rate of Rs. 2 may be sanctioned. It is the rate approved for *las* in the Chhachh, which is similar, but perhaps superior.

The *maira* is often very stony. The figures for completed villages give 86 acres of crops per 100 acres, which is just about the same as in the case of *kund*. The land is usually fallow in kharíf and wheat is the great crop. Possibly the rate of Re. 1 is in itself suitable, but it will raise the revenue of the circle much above what Mr. Watson thinks ought to be taken (paragraph 12 of Supplementary Report). It might be reduced to 14 annas. Six annas, as proposed, will be enough for *rakkar* and *kalsi*. Here, too, wheat is the great crop. But there is also a good deal of barley, and some *moth* and *bájra*. There are 65 acres of crops for 100 acres of cultivation.

These rates applied to the latest areas would give a demand of Rs. 30,657, which is practically what Mr. Watson originally proposed, and rather more than the sum of his preliminary village assessments. The rise is 57 per cent., with which Government may well be content, as there is no appreciable increase of cultivation and no room for any.

Supplementary Statement A.

25. As already noted the Maidán Tarla Circle consists of two very different parts, the irrigated estates in the north and the dry tract in the south. There are a few wells in the latter in the lowlands on the edge of the Soka Kahl. The circle includes three estates which ought to be in Gandgarh, and a few others on the skirts of the Tanáwal Hills which might with advantage have gone into the Kandi Circle. The cultivation has increased by 9 per cent. The population has risen by 20 per cent. and the incidence is only 461 per square mile. Between 1891 and 1901 the population remained practically stationary. Colonel Wace's assessment was 17 per cent. below his soil rates, which seems to have been pretty full ones. The present demand is Rs. 37,864. Mr. Watson's rates applied to the assessable areas stated in the report (page 59) give a demand of Rs. 53,388. Applied to the revised areas in Supplementary Statement A, they bring out a revenue of Rs. 55,092. As a result of his rough preliminary village assessments he thinks he ought not to take more than Rs. 51,000.

Maidán Tarla Circle.

Supplementary Statement A.

The rate suggested for *cháhi* lands is Rs. 5 per acre, which is that in the adjoining Nala Circle of Attock. There were only 22 wells at last settlement, now there are 78. The area attached to a well is under 4 acres, and the cropping is very close. In 1903-04 the area for which we have figures gave 190 acres of crops per 100 cultivated. Much less tobacco is grown than in the Khari villages, but vegetables and spices occupy part of the land. Maize is ordinarily followed by wheat or barley. I have already suggested Rs. 6, 3½, and 1 as the rates for *ábi I*, *II*, and *III*. The *bari* is distinctly superior to that in Kinára Darya, and the rate of Rs. 2½ may be approved.

In the *kund* the cropping is closer than in Kinára Darya, an acre of land giving in 1903-04 a full acre of crops. There is much more kharíf cultivation. Wheat accounts for 45 per cent. and maize for 24 per cent. of the whole crops. The proposed rate of Re. 1½ may be accepted, though it is half as high again as the *las* rate in the Nala Circle of Attock. The *maira* rate requires careful consideration, for 56 per cent. of the cultivation falls under this head and the cropping is certainly far from secure. I invite a reference to the table on the 11th page of the report, the figures in which include all unirrigated soils in this circle. But we may put the *bari* and *kund* as balancing the *rakkar* and *kalsi*, and treat the figures as giving a good idea of the amount of failure which occurs in *maira*. We have figures for a large area (9,103 acres) in 1903-04, when the amount of failure recorded was far below the average. Even so only 85 per cent. of the area bore a crop. The cropping is very similar to that in the adjoining Nala Circle. Wheat and barley are the chief crops, and the former is by far the more important of the two. Cash rents on 134 acres average less than 10 annas. The sanctioned rate in the Nala is 8½ annas, but that is an average rate, since the value of the *maira* varied very widely and some had to be assessed at 5 or 6 annas. In the estates adjoining the Maidán Tarla Circle I believe the rate was about 12 annas. I think it will be enough to raise this slightly, and to fix the rate here at 13 annas. The *rakkar* in a year of small *kharába* like 1903-04 produced less than 3 acres of crops for four of cultivation. Wheat, barley, and *bájra* are the chief crops, *bájra* being much less important than either of the other two. A rate of 6 annas is quite enough. If these rates are accepted the demand will be Rs. 51,892, and Mr. Watson should take not less than Rs. 52,000, for the increase will be only 38 per cent., and the circle is said to be generally well off, while the people have sources of income outside agriculture, which are more likely to increase than to diminish.

Maidán Utla Circle.

26. The Maidán Utla is more homogeneous than the Maidán Tarla Circle, but four or five estates near Pharari should have been put in the Kandi. One quarter of the cultivated area consists of 1st and 2nd class *ábi*. The former is extraordinarily valuable, though part is not true *bágh*. The demand for manure is great and some of it has to be imported from the hills and the Kandi Kahl. The poor 3rd class *ábi* occupies 8 per cent. of the cultivation. The *bari* area is small (3 per cent)., and as it is well cropped, I think most of it must be in the unirrigated Kandi estates. Elsewhere there would be very little manure to spare. The *kund* (6 per cent.) is on the edges of the ravines with which the southern part of the circle is scored. The *maira* (40 per cent). varies greatly. There is good but thirsty land on the flattish stretches between ravines, elsewhere much of the *maira* is sloping and stony. It receives very little attention. The *rakkar-kalsi* is curiously large (16 per cent.). Most of it must be in the Kandi villages. The rise in the cultivated area is 8 per cent. What is much more important is the increase of *bágh* by 76 per cent and of *ábi II* by 4 per cent. and the falling off of *ábi III* by 30 per cent. On the whole *ábi* has increased by 5 per cent. It would be interesting to know how far these changes are due to differences of classification and how far to real improvements. Was, for example, the definition of *bágh* more rigid and therefore more accurate at last settlement than now? Both causes have doubtless been at work, but I have no means of judging how much should be ascribed to each of them.

Supplementary Statement A.

Population has risen by 34 per cent. since settlement, and the increase went on steadily between 1891 and 1901, which was not the case in the greater

part of the *tahsil*. Drought cannot strike this circle very hard, however much it may ruin the *bárání* crops. The incidence is 774 per square mile of cultivation. Captain Wace assessed here only 9 per cent. below his rates, which were full ones except for *bágh*.

The present demand is Rs. 37,532. The half net assets estimates vary from Rs. 76,000 to Rs. 1,09,000, the last being the estimate for the year 1903-04. Mr. Watson's rates give Rs. 66,678 on his original and Rs. 69,326 on his revised areas. Having made a rough preliminary assessment he asks to be allowed to limit the increase to Rs. 61,000. I have already discussed the *ábi* rates, which might be Rs. 12, 4, and 1½. There seems no reason for putting the *bari* rate below Rs. 2½. So far as the evidence goes the cropping is better than in Maidán Tarla. The *kand* rate may also be the same (Re. 1½) as in that circle. We may apply a rough test to the real value of the *maira* by noting what proportion of unirrigated crops failed on the average in the six years between 1897-98 and 1902-03. In the Tarla Circle the percentages are kharíf 27, rabi 29. Here they are kharíf 32, rabi 28. In both circles we may say the sowings are equal to the cultivated area. In 1903-04 our figures for *maira* give only 80 acres of crop per 100 acres cultivated as compared with 85 acres in Maidán Tarla. There is more wheat in the Utla than in the Tarla Circle, though the quality of the land in the latter is distinctly better. Pre-occupation with irrigated cultivation discounts any advantage Maidán Utla may have in the shape of better rainfall. If 13 annas is a suitable rate for *maira* in Maidán Tarla 12 annas will be sufficient here.

Page 62 of report and Supplementary Statement A.

Six annas may be taken for *rakkar-kalsi* as in Maidán Tarla. If the rates I have suggested are adopted the demand will be Rs. 64,284, giving a rise of 73 per cent. Mr. Watson should take this if he can. If he cannot he will under the 3 per cent. rule be able to go nearly Rs. 2,000 below it without further reference to Government.

27. The Kandi Kahl Circle is described in the 13th paragraph of the report. Cultivation has increased by 13 or 14 per cent. The *ábi* area only accounts for 2 per cent. of the cultivation. Eleven per cent. of it is *bárání I*, 56 *bárání II*, and 31 *bárání III*.

Kandi Kahl Circle.

Population has risen by 36 per cent. The increase between 1891 and 1901 was fortunately small. The incidence, 508 per square mile of cultivation, is quite high enough for such a tract. A normal owner's holding is 4½ acres. Debt is heavy and Hindús have bought much more land here than elsewhere. It is a poor tract with an unprosperous population, and its revenue management should be closely watched, and relief given freely in bad years.

Captain Wace assessed the circle 13 per cent. below his rates which were not light. The present demand is Rs. 12,208. The half net assets estimates vary between Rs. 26,000 and Rs. 28,000, but it is difficult to frame any reliable estimate in such a tract. Mr. Watson's rates give Rs. 14,917 on the assessable areas stated on page 54 of the report, and Rs. 15,001 on the revised figures in Supplementary Statement A. His rough village to village assessments give Rs. 14,050, but he has not asked to be allowed to take less than Rs. 15,000, which gives an increase of 23 per cent. The *ábi* rates need not detain us. They do not here materially affect the general pitch of the assessment, and Mr. Watson can assess the *ábi* land where it occurs on its merits without much regard to circle rates. The *bari* land is important, as it covers a considerable area and there is no want of manure. The cropping in 1903-04 was in percentages on cultivated area—

Kharif.					Rabi.				Total both harvests.
Maize.	Bájra.	Jowár, chari, fodder.	Others.	Total.	Wheat.	Barley.	Others.	Total.	
28	4	22	4	58	37	43	6	86	144

These figures may be compared with those for the Maidan Circles given in paragraph 24. We may take the same rate, Rs. 2½, for all three.

It may be right to put the *kund* rate four annas below that in the Maidán Circles, though it would be difficult to prove it statistically.

The figures in the 13th paragraph of the report are significant of the insecurity of the *maira* and *rakkar-kalsi* soils. The rates of 11 and 5 annas may be accepted.

I shall not be surprised if Mr. Watson, when he has finished his village inspections, thinks it prudent here to stop a good way below the result of his rates. I think, while these may be sanctioned, he should be told that he may assess at any figure not below Rs. 14,000 and not above Rs. 15,000 which he thinks proper.

Gandgarh Circle.

28. The 9th paragraph of the report may be referred to for a description of the Gandgarh Circle. Owing to the nature of the rocks of which the range is composed the fields are often very shaley.

Supplementary Statement A.

Cultivation has increased by 18, and population by 39 per cent., but the rise between 1891 and 1901 was trifling. The incidence is 614 per square mile of cultivation. In the Mishwáni villages the holdings are very small. That hard-working tribe fortunately owns 27 per cent. of the cultivation. Of the cultivated area 15 per cent. is *bari*, 67 *kund* and *maira*, and 18 *rakkar* and *kalsi*. There is no want of manure, but Tarkheli landlords sometimes complain that occupancy tenants prefer to sell it in the Chhachh and Khari villages to putting it in their own fields.

Captain Wace fortunately assessed 26 per cent. below his very heavy rates. The present demand is Rs. 7,250, and in their own estates the Tarkhelis retain three-fourths of the revenue as *jagír*. Half net assets estimates range from Rs. 10,000 to Rs. 12,000, but here they are not of much value. Mr. Watson's rates on his assumed areas as stated on the 55th page of the report give Rs. 9,452 and on the revised areas in Supplementary Statement A Rs. 10,656. The cultivated area is much larger than was originally estimated, the rise in *bari*, *kund*, and *maira* much more than balancing the fall in *rakkar-kalsi*. After making a rough village to village assessment the Settlement Officer adheres to his original proposal to take Rs. 9,400, which gives an increase of 30 per cent.

As the rates proposed for the purely hill circles are practically identical it will be well to compare their cropping. The degree of insecurity is the same in both, as the figures in the 9th and 10th paragraphs of the report indicate. The recorded average proportion of failure for the six years 1897-98, 1902-03 is 24, and for the reasons given by Mr. Watson it ought probably to have been a good deal more. It rose very high indeed in the disastrous harvests of Kharíf 1899, Rabi 1902, and Kharíf 1902. It is to be hoped that no Deputy Commissioner will make the mistake of treating Gandgarh and Badhnak as secure tracts. I proceed to note the cropping on the different unirrigated soils so far as it can be judged by the harvests of 1903-04.

Crop.	Bari.		Kund.	Maira.		Rakkar-Kalsi.	
	Gandgarh 184.	Badhnak 147.	Gandgarh 195.	Gandgarh 1,385.	Badhnak 377.	Gandgarh 381.	Badhnak 778.
Maize	...	67	...	...	28	...	11
Bájra	51	...	10	10	...	7	...
Others	...	5	...	1	12	...	11
Total Kharíf	51	72	10	11	40	7	22
Wheat	15	15	45	35	21	23	14
Barley	27	61	7	7	41	6	32
Others	4	...	7	11	1	7	...
Total Rabi	46	76	59	53	63	36	46
Total both harvests.	97	148	69	64	103	43	68

The figures below the names of the circles are the areas for estates finished before Kharíf 1903. No entries have been given for *kund* in Badhnak as the data are insufficient. The noteworthy points are the preponderance of maize and barley in Badhnak and of *bajra* and, except in the case of *bari*, of wheat in Gandgarh, also the insignificance of the area under Kharíf crops in the *maira* and *rakkar-kalsi* of Gandgarh. For these curious differences there are two reasons. Above 3,000 feet maize and barley supplant *bajra* and wheat, and a number of the lower Badhnak villages have, as I think wrongly, been put in the Kinára Darya Circle. Maize is largely grown in the great Mishwáni estate of Srikot in the Gandgarh Circle, and, could returns for it have been included, the figures would have been different. I think the proposed rates for *bari* and *rakkar-kalsi* in Gandgarh may stand, but that those for *kund* and *maira* should be lowered to Re. 1 and As. 10 respectively. If these changes are accepted the demand by rates will be almost exactly Rs. 10,000, and the increase will be 38 per cent. If Mr. Watson finds he cannot take Rs. 10,000 or a sum within 3 per cent. of it without unduly raising the demand in the Mishwani estates he can ask for further orders.

Badhnak Circle.

29. Badhnak is a poor tract with a hard-working and terribly prolific population. The normal owner's holding does not equal 4½ acres, which is very little for a livelihood where there is no irrigation, and 40 per cent. of the cultivation consists of *kund* and *maira* and 43 per cent. of *rakkar* and *kalsi*. The manured homestead land (*bari*) round the small central *abadis* and the detached homesteads scattered over the hills cover 17 per cent. If past figures are to be trusted the population has more than doubled, but since 1891 the increase has not been very great. The incidence is 661 per square mile of cultivation. Pressure of population has led to the breaking up of every available inch of culturable soil on the hill sides except in the protected areas. This extension of cultivation has often involved a good deal of labour for a very small return. The people bear the outward signs of poverty, but old and patched garments mean less in Hazára than elsewhere. There are only two shops in the whole tract, and they are closed for part of the year.

Captain Wace assessed 18 per cent. above his rates, and relatively at least, his demand was very high. The present revenue is Rs. 3,948. The half net assets estimates vary between Rs. 9,000 and Rs. 11,000, but appraisement in such a tract is very risky work. Mr. Watson's rates on his assumed assessable area (page 57 of report) give Rs. 5,421 and on the revised areas in Supplementary Statement A Rs. 7,080. He now thinks he can take Rs. 6,000, which is equivalent to an enhancement of over 50 per cent. Though the increase of cultivation is now estimated at 44 per cent. and our figures, if trustworthy, would show that the manured homestead lands have nearly doubled, I cannot advise that more than this should be taken. If we reduce the *kund* and *maira* rates by two annas, and the *rakkar* and *kalsi* rates by one anna we shall get a demand of Rs. 6,263, and Mr. Watson may be allowed to go a little below this in fixing his village *jamás*.

Khánpur Circle.

30. The difficulty of dealing with the assessment of the Khánpur Circle is much enhanced by its heterogeneous character. It is not a *chak* but an *ilaka*. There was much to be said for Captain Wace's division of it into four circles. But two of these might at the present settlement have been amalgamated with other circles, and probably there would have been no great harm in keeping all the hill villages together as a single circle. The owners are a small body of Gakkhars, and their revenue paying capacity is lessened by the fact that four-fifths of the cultivated land is in the hands of occupancy tenants.

Supplementary Statement A.

According to the latest returns the increase in the cultivated area is 26 per cent. Population has risen by 39 per cent. and the fact that its steady growth was not checked between 1891 and 1901 is some evidence that years of bad rainfall hit this circle less hard than most of the others. The incidence is 812 per cultivated acre. The circle can bear this burden because grazing is abundant and cattle are numerous. For the same reason there is no lack of manure.

Captain Wace did not assess much below his moderate rates. The present demand is Rs. 24,483. The half net assets estimates vary from Rs. 63,000

to Rs. 76,000, but none of them can be considered trustworthy. Mr. Watson's rates on his original areas (page 66 of report) give Rs. 40,340 and on his revised areas (Supplementary Statement A) Rs. 43,836. Even the former figure represents a rise of 65 per cent. About one-fourth of the whole revenue is assigned to some of the land owners. Mr. Watson in his preliminary detailed assessments has found it difficult to work nearly up to the demand by rates and he now wishes to limit the revenue to Rs. 39,000, giving a rise of 59 per cent. I agree that it will be wise to do so, especially in view of the fact that the Gakkhars have not as a rule a free hand in the management of their lands. As already suggested the rates on *ábi I* and *II* may be reduced to Rs. 6 and 2½, respectively.

The cropping of *bari* lands in 1903-04 may be compared with that in Maidán Utla.

Circle.	Maize.	Bájra.	Jowár, Chari, Fodder.	Others.	Total Kharif.	Wheat.	Barley.	Others.	Total Rabi.	Total both Harvests.
Khánpur	65	14	1	1	81	33	26	1	60	141
Maidán Utla	41	4	20	3	68	42	43	4	89	157

It is the cropping natural to *bari* in a circle with much hill land and abundant manure. Probably the rate suggested, Rs. 2¾, is in itself quite fair. But in view of the fact that the recorded area of *bari* has more than doubled since last settlement and of the necessity of limiting the total enhancement here, I would not take more than Rs. 2½. For similar reasons the *kund-maira* rate may be lowered to 11 annas. For *rakkar-kalsi* 5 annas will be enough.

These reductions will lower the demand by rates to Rs. 40,285, and the permissible variation of 3 per cent. from the demand by rates in the circle as a whole will enable Mr. Watson to take only Rs. 39,000.

Financial results.

31. The financial result, if my proposals meet with the approval of the Chief Commissioner, will be to raise the revenue of Haripur from Rs. 1,43,000 to Rs. 2,16,500, or by 50 per cent. The revenue will be between one-seventh and one-eighth of the produce estimate embodied in Statement D (1). It is extremely difficult to say whether we are really asking two-fifteenths or some considerably smaller fraction of the outturn. But undoubtedly we are taking much less than the share of the net assets which Government has fixed as the standard by which its claims should be measured. I have considered the rates carefully. But in a tract in which the existing assessments are admittedly unequal and where the estates in the same neighbourhood vary so enormously in assessable value rates can be nothing but very general guides. The village assessments and the distribution of the demand over holdings will have to be done with the greatest care.

Deferred assessments.

32. The same general directions as to progressive assessments might be adopted here as I suggested in the case of Mansehra, except that 75 might be substituted for 100 and 50 for 66 per cent. There seems little doubt that the former demand was a fuller one in Haripur than in Mansehra.

Other matters.

33. Garden land may be treated like *bágh* and the initial remissions given which Mr. Watson has proposed in the 52nd paragraph of his report. A preliminary report on mill assessments has been submitted, and detailed proposals will have to be framed. I have nothing to add to the remarks made in the review of the Mansehra Report as to cesses, instalments, and term of settlement. With the proposal to amend the Gakkhar *sanads* I am not concerned.

Concluding remarks.

34. The assessment report has been written under very difficult conditions, hence the cumbrousness of the statistical tables attached to it. It is an excellent one and bears evidence of careful enquiry and sound judgment. The supplementary note and tables are valuable additions to the report. A map on a somewhat larger scale and showing more clearly the chief physical features of the country, something like that which Mr. Butler prepared for *tahsil* Attock, would have been useful.

J. M. DOUIE.

31*st October* 1904.

INDEX.

ASSESSMENT REPORT

OF THE

HARIPUR TAHSIL

OF THE

HAZARA DISTRICT.

PART I.—PRELIMINARY.

CHAPTER I.—PHYSICAL CHARACTERISTICS.

Boundaries and area.

The Haripur Tahsil is the southernmost of the three tahsils of the Hazára District. It is bounded on the north-west by the Abbottabad Tahsil and the feudal territory of the Nawáb of Amb, on the north-east by the river Indus and on the south-east and south-west, respectively, by the Attock and Ráwalpindi Tahsils of the Ráwalpindi District. Thus its southern boundary divides the North-West Frontier Province from the Punjab. Across the Indus to the north-east it is faced for the northern half of the boundary by the independent hill territory of the Utmanzais and other Pathán tribes, and for the southern half by the Swábi Tahsil of the Peshawar District. The area of the tahsil is about 666 square miles or one-fourth of the total area of Hazára, and the number of estates is 310.

Physical features.

2. The tahsil presents a great variety of physical features. Roughly speaking half is hill and half plain. Far the most extensive and important plain tract is that known as the Maidán Hazára which stretches in a south-easterly direction through the middle of the tahsil from the Abbottabad to the Attock boundary, on either side of the high-road from Abbottabad to Hassan Abdál. It varies from 2 to 12 miles in width. The river Dor flows through the northern portion from east to west and supplies abundant irrigation to the lands on and near its banks. The villages most benefiting thereby are those in the neighbourhood of and to the east of the town of Haripur and form a tract of exceptional fertility. Further to the west the supply is less plentiful, though except in bad seasons it cannot be called inadequate. South-west again, up to the boundary of the Attock Tahsil, there is no irrigation to speak of, but one long level stretch of *maira*, broken here and there by ravines and *nullahs*. The south-eastern portion of the Maidán Hazára plain is known as Kandi Kahl. It is less favoured than the rest, being much cut up by ravines and with a soil becoming stonier and barrener as it approaches the hills of the Khanpur tract to the south and east. Ranges of low hills shut in the Maidán Hazára plain to the north-west and south-east. Those on the north-west side consist of the Gandgar range to the south and the Badhnak hills to the north. Between these two the united stream of the Dor and Siran Rivers cuts its way. The Siran comes down from the north through the Tanáwal hills of the Abbottabad Tahsil, and flowing for a short distance along the eastern edge of the Badhnak tract joins the Dor five miles east of the Indus. The Badhnak tract, which forms the north-western corner of the tahsil, is a continuation of Tanáwal and is of similar character, a congeries of low hills, between 3,000 and 4,500 feet in height, with deep *nullahs* and ravines which after heavy rain discharge their floods into the Indus or the Siran. There is little level ground, but a few strips will be found along the banks of the rivers or in the valleys between the hills, the most extensive being that on the bank of the Indus, known as Kulai, which at its broadest, however, is not a mile wide.

The Gandgar range stretches from north-east to south-west along the Indus into the Attock Tahsil. In the Pír Than peak it attains a height of 4,400 feet. Between this range and the Indus is a level strip like Kulai, but much wider in parts and benefiting by well irrigation which the other lacks. It is known as Khari.

The south-eastern portion of the tahsil consists mainly of the Khanpur hills, which take their name from the village forming the head-quarters of the Gakkhar tribe who own most of this tract. These hills are a continuation of the Murree and Gali ranges and vary between 3,000 and 5,600 feet in height. The river Harroh flows through them from north-east to south-west, and before it enters the Attock Tahsil irrigates a small but fertile plain at the base of the hills known as the Panjkatha.

Assessment circles.

3. The assessment circles as sanctioned for the new settlement correspond more or less to the physical features of the tahsil and are shown in the map attached. The Harípur plain or Maidán Hazára contains three. First there is the Maidán Hazára Utla or upper Maidán Hazára Circle, the most fertile tract in the district, which gets all the best of the Dor irrigation. Next comes the Maidán Hazára Tarla or lower Maidán Hazára Circle which receives the tail end of the Dor irrigation and also comprises the good unirrigated *maira* lands extending to the borders of the Attock Tahsil on either side of the Hassan Abdál road; and thirdly, there is the Kandi Kahl Circle, lying between the two Maidán Hazára Circles and the Khanpur range, which is less favourably circumstanced than either of the others owing to the want of irrigation, the stony nature of much of the soil and the comparative scantiness of the rainfall. South and south-west of Kandi Kahl is the Khanpur circle, comprising the whole of the Khanpur tract. This is not a very homogeneous circle for it includes the cool tracts of the upper Khanpur hills and the hot but well-irrigated Panjkatha plain; but the unirrigated lands have much in common, and it was thought on the whole best to avoid the inconveniences of sub-division into smaller circles and to make the necessary allowances in the detailed assessments. The north-western part of the tahsil is divided up into three circles—Gandgar, Kinára Darya and Dhaka Badhnak. Gandgar consists of the range of that name, Dhaka Badhnak is the hilly portion of the Badhnak tract (*dhaka* signifying hill), and Kinára Darya (or the river bank circle) comprises the level strips of land along the Indus and the Siran to which I have referred above.

The assessment circles of the tahsil are thus seven in number as against the 20 circles of last settlement. The number is still rather inconveniently large, but no further reduction seems possible if there is to be any considerable degree of uniformity in the circumstances and physical conditions of each tract for which separate rates are to be framed.

Soils.

4. The classification of soils adopted for this tahsil is practically the same as that which was in force at last settlement, the only variation being that whereas then a number of local terms were used to denote slightly differing kinds of soil which were included in the same class, we have now, to secure greater simplicity and uniformity, retained one or at the most two only of such local terms for the designation of each class and abolished all the others.

These classes are as follows:—

A.—Irrigated.

(1). *Cháhi.*—Land irrigated by wells.

(2). *Bágh.*—Heavily manured land in the vicinity of the village site or homestead.

(3). *Báhardi ábi.*—Land which lies beyond the immediate vicinity of the village site or homestead and is not so carefully manured or tended as *bágh*.

(4). *Hotar.*—Rice growing land, mainly on the banks of hill streams. It is only in Khanpur that this soil is of any importance; in other circles for the purpose of the produce estimate it will be included in *báhardi ábi*.

(5). *Barangar ábi.*—Poor stony soil, lying generally towards the tail end of the irrigation channel. There are large areas of this soil in Maidán Hazára Utla and Maidán Hazára Tarla only: elsewhere it will be treated in the same way as *hotar*.

(6). *Gharera ábi.*—Stony land lying in the beds of streams and exposed to their action. The area of this soil is small and it will be lumped with *barangar ábi* with which it is about on a level.

B.—UNIRRIGATED.

(1). *Bari or Chari.*—Manured land in the vicinity of the village site or homestead.

(2). *Kund.*—Good loam soil situated in a hollow or at the base of a hill or on the banks of a stream or ravine, with special facilities for receiving and retaining moisture. In this class is also included *bela*, which is land lying along the banks of a river, subject to inundation and benefiting by the silt brought down by the floods.

(3). *Maira and Mohri.*—*Maira* is the common light loamy soil of the Punjab plains. *Mohri* is soil of a similar character situated on the level tops of ridges or mounds, though such soil is often also termed *maira*.

(4). *Rakkar.*—A hard gravelly soil. The term also includes all soils which owing to the presence of sand or stones are of an inferior quality to *maira*.

(5). *Kalsi.*—The narrow sloping terraced land on the sides of the hills. It is of importance only in the three hill circles and in the others for the purposes of the produce estimates will be lumped with *rakkar*.

The correct classification of soils under the above categories has been a matter of no small difficulty. The entries of last settlement were very inaccurate; in fact up to date it has been found necessary to alter the classification in no less than 30 per cent. of the fields and this leaves out of account the several cases in which the old maps have had to be abandoned as altogether hopeless and measurements to be made on the lines of possession without reference to the old numbers. The majority of such alterations are due not to changes in the actual character of the soil but to mistakes made at last settlement, which are generally but not always in the direction of under classification. Moreover, it is often very hard to say to which of the above classes a particular field should be assigned. To decide where *bágh* ends and *báhardi ábi* begins, and similarly to draw the line between *báhardi ábi* and *barangar ábi*, *bari* and *maira*, or *maira* and *rakkar*, often puzzles the most experienced settlement official and leads to much diversity of opinion. But endeavours have been made to secure as great uniformity as possible and to check the soil entries with care, and it may safely be said that with due allowances for the difficulties above referred to the classification now being carried out is an accurate one.

Bágh and *bari*, the two best soils among the irrigated and unirrigated classes, respectively, call for some further remark. *Bágh*, as the name implies, is properly garden land, growing vegetables or fruit trees, but it also applies to all land that is heavily manured and well irrigated and grows the valuable crops of sugarcane or turmeric, or is cultivated twice a year, usually with wheat or barley in the rabi and maize in the kharíf. In the hill tracts it generally partakes of the latter character, being in fact really *bari ábi* or irrigated *bari*, and except for the convenience of having one term to denote the best class of irrigated land in each circle, it has hardly a title to be called *bágh* at all. *Bari* is the hardest of all soils to classify. It should include all unirrigated land that is regularly manured, but as the limits of such land sometimes vary from year to year according to the number of the cattle in the homestead and other circumstances, and it is often difficult to see how far the manuring extends, much must be left to the individual judgment of the patwári and the officers who check him. No hard and fast rule can be laid down as to what is *bari* and what is not, but general instructions have been issued to the effect that land which is cropped twice a year or is called *bari* or *chari* by the zamíndárs may generally be assumed

to be such and that in outlying homesteads the amount of *bari* may be estimated at from 1 to 2 kanáls per head of cattle. A certain measure of uniformity has, I think, been obtained, but the tendency is probably to exaggerate the area under this class of soil.

Another point in connection with *bari* which should be noted is that its quality varies more than any other soil from village to village and within the village itself. As it simply means regularly manured land, it may be either manured *kund*, *maira*, *rakkar* or *kalsi*, and the crops which it yields vary accordingly. The difference is most noticeable in the *bari* round the village site which is usually free from stones and of good quality, and the *bari* round outlying homesteads, especially in the hill tracts, which is often much inferior. Strictly speaking, therefore, we ought to have at least two classes of *bari*, but it has not been thought worth while to increase the difficulties of classification in this way; the difference in quality will be as far as possible allowed for in the detailed village assessments and the *báchh*.

Classification of waste land.

5. The system of classification adopted for uncultivated land also calls for some remark. In the hilly tracts especially the waste is a very important part of the village estate. It supplies wood for building or for fuel, and grass for the grazing and feeding of the cattle or for sale as fodder in the neighbouring markets. To assist in forming an estimate of the resources of each village in these respects the following classes of waste land are shown in addition to the ordinary kinds.

(1). *Banna.*—The strips of waste land lying between cultivated fields. These are most common in the hills and the grass on them is usually preserved and cut after the rains. It is not easy to estimate the area of *banna* in a big cultivated field on the hill side; detailed measurement would be too lengthy a business, and usually a rough calculation only can be made. So though orders have been issued to impress on the supervising staff the importance of checking these calculations, it is quite possible that in a number of cases the *banna* area has been considerably under or over-estimated. This cannot, however, be helped, and as the cultivated land is usually of the poorest description it does not very much signify.

(2). *Dhaka Chorágah.*—Hill waste suitable for grazing.

(3). *Dhaka rakh.*—Hill waste on which the grass is preserved and cut for fodder.

Land known as *dhaka rakh* is closed to grazing between July and September to allow the grass to grow and be cut. For the rest of the year it is grazed upon like *dhaka charágah*. As a rule *dhaka rakh* is held in separate possession, while *dhaka charágah* is *shámilát deh* and open to the whole village.

(4). *Dhaka darakhtán.*—Hill waste thickly covered with bushes or trees, which permit little or no grazing.

Rainfall and climate.

6. Statistics of the rainfall as recorded at the Haripur Tahsil are given in Appendix A. It will be seen that the average fall of the last twenty years is 30·30 inches, which is almost exactly the same as the average of the fifteen years ending 1872-73 quoted by Captain Wace. Of this 21·07 inches or somewhat over two-thirds occur in the hot weather months, April to September, and 9·23 inches in the cold weather months, October to March. July and August are the rainiest months in the hot weather, and January, February and March in the cold. In most years the rainfall throughout the tahsil is well distributed and sufficient for the sowing and ripening of the crops, but there are some tracts where it is occasionally scanty and which suffer from drought in consequence. The Kandi Kahl, Gandgar and Dhaka Badhnak Circles and the southern portion of Maidán Hazára Tarla are most liable to be affected in this way. They have very little irrigation and their rainfall is certainly less than in other parts of the tahsil, and is sometimes liable to fail at critical periods. On the other hand, in the upper portion of Khanpur, where the hills are higher than elsewhere and well wooded, the rainfall is more abundant than in the Haripur plain.

The climate is a pleasant one for the greater part of the year. The winter months are cold and bracing; it does not begin to get really hot till May, and by the end of September it is fairly cool again. The most disagreeable months are July and August, when it is very close and muggy. The Kandi Kahl Iláqa is the driest and hottest in the tahsil, but the heat in the Badhnak, Gandgar and lower Khanpur hills can also be very trying. On the other hand the upper portion of the Khanpur Iláqa is quite tolerably cool even in May and September.

CHAPTER II.—SYSTEM OF AGRICULTURE, CROPS, &c.

Preliminary remarks.

7. In the following paragraphs details are given of the cultivation in each circle. But before I proceed to comment on them, I would remark that though my figures may be accurate enough for the drawing of broad conclusions I cannot pretend that they are as reliable as could be desired. Only about half the villages of the tahsil had been measured when the statements required for this report were made out, and for the larger half of the tahsil I have been obliged to take my figures from the last detailed *jamabandís*. Were the old records to be depended on this would matter little, but, in the hill circles especially, the maps and the soil entries, as already remarked, are extremely unreliable and the areas of the fields are very incorrect. It follows from this that the entries regarding crops must also be untrustworthy, for even granting that the patwáris have in past years made a regular field to field inspection (which in the hills at any rate is a very large assumption), their *girdawaris* must have been at least as inaccurate as their maps. The results brought out by remeasurements up to date indicate that while there will be little difference in the total cultivated area as shown in the *jamabandís* and as now measured, there will be very considerable alterations in the areas under each class of soil, and this fact must be remembered in connection with the areas given below. It will also be noticed that for the hilly circles of Gandgar, Dhaka Badhnak, and Khanpur details of the matured area on each class of soil are not given, which is owing to the fact that it was not thought worth while to make an excerption by soils from the very inaccurate records in these circles. These points will be further discussed in connection with the figures of the produce estimates and the assessment proposals.

Kinára Darya Circle.

8. The Kinára Darya Circle comprises 31 villages. It includes Captain Wace's circles of Khari, Tarbela, Kulai and Maidán Badhnak, with the exception of the three villages of Kalinjar, Gandaf and Mari in the latter circle which have been incorporated in Dhaka Badhnak. The following are the statistics of the cultivated and matured area :—

	Soil.	Cultivated area.	Average matured area 1897-98 to 1902-03.			Percentage of cultivated area matured.
			Kharif.	Rabi.	Total.	
Irrigated	Chahi	625	511	567	1,178	188
	Bágh	697	633	627	1,260	181
	Báhardi ábi	472	466	505	971	205
	Hotar	170	59	81	140	82
	Baranger and Gharera abi	52	30	45	75	144
	Total irrigated	2,016	1,799	1,825	3,624	180
Unirrigated	Bari	2,109	799	1,227	2,026	96
	Kund and bela	2,911	685	1,956	2,641	91
	Maira	7,962	1,474	4,905	6,379	80
	Bakkar	2,320	261	1,618	1,879	81
	Kalsi	1,071	208	459	667	62
	Total unirrigated	16,373	3,427	10,165	13,592	83
	Grand Total	18,389	5,226	11,990	17,216	94
Kharába			990	1,928	2,918	...
Percentage of total sowings			16	14	14	...
Dofasli			8	37	45	3

The tract is on the whole a very fertile one. Eleven per cent. of the cultivated area is protected by irrigation, and the unirrigated land is, as a rule, of good quality. The wells number 173, having nearly trebled since last settlement. They nearly all lie along the east bank of the Indus extending from where the Siran meets the big river at Tarbela to the southern boundary of the tahsil adjoining the Chach plain. They only irrigate on the average under 3 acres a piece, but practically all this is double-cropped. They are built with boulders taken out of the bed of the Indus; in the majority of cases these are cut and cemented with lime; in the rest no lime is used. The depth from the surface to the water varies from 10 to 40 feet. A masonry well costs from Rs. 200 to Rs. 600; a well of rough boulders from Rs. 100 to Rs. 200.

The rest of the irrigation is mainly by cuts taken out of the Siran. The water supply is plentiful and the cultivation good, especially in Tarbela village where the pressure on the soil is an incentive to the villagers to make as much as they can out of it. The *bágh* is thus of high quality, and the *báhardi ábi* is good also, though the double cropping on it has been over estimated. The area of *hotar* has been exaggerated, and for purposes of the produce estimate it and *barangar* and *gharera* will be lumped with *báhardi ábi*.

Lying as they do at the base of the Gandgar and Badhnak ranges the unirrigated soils benefit by the drainage received therefrom which spreads over the level land, and except at the edges of the *nullahs* or at the immediate base of the hills where the slope is greater suffer little damage from floods. There is also some good alluvial soil along the bank of the Indus. In some villages it is true, there are stretches of poor sandy *maira*, but on the whole the *maira* and the *kund* are above the average and the crops seldom fail. The *bari* is also good but is not in parts so well manured or cultivated as it might be because most attention is paid to the irrigated lands. The *rakkar* lies at the foot of the hills or on the banks of the *nullahs* and the *kalsi* is mainly found in the outer fringe of hills which forms a part of the villages in the Kulai tract. On the unirrigated land the rabi is much the most important crop and accounts for 75 per cent. of the matured area. On the irrigated land it accounts for 50 per cent.

The chief kharíf crop on the irrigated soils is maize which covers no less than 89 per cent. of the matured area and thrives exceptionally in Tarbela village. Sugarcane, which is grown mainly on the Tarbela *bágh* lands, accounts for 3 per cent. In the rabi wheat and barley are as usual the staple crops, the former covering 43 and the latter 34 per cent. of the matured area. The unusually high proportion of barley to wheat is due to its cultivation on well lands in succession to maize. Tobacco is also an important rabi or rather extra rabi crop in this circle. It is sown on the well lands and accounts for 13 per cent. of the total matured crops on the irrigated area.

On the unirrigated lands in the kharíf maize accounts for 16 per cent. of the matured area, *jowár* for 11 per cent., *bájra* for 27 per cent. and *moth* for 32 per cent. They are grown on all soils, but maize is usually found on the *bari* and *kund* and the best class of *maira*, and *moth* on the inferior *maira* and *rakkar*. In the rabi wheat covers 69 per cent. and barley 19 per cent. of the matured area. Oilseeds account for 7 per cent., *viz.*, *sarshaf* 1 per cent. and *tárámíra* 6 per cent. Wheat and barley flourish on all soils and *tárámíra* is grown chiefly on sandy *maira* or *rakkar*.

While cultivation on the irrigated lands is, as a rule, careful and good, on the unirrigated lands, where a fair yield is generally obtained with very little trouble and irrigation demands most attention, it is often careless and slovenly. The usual plan on *ekfasli* lands along the Indus is to grow a rabi and kharíf crop in succession and then to let the soil lie fallow for a year. Sometimes a third crop in the two years is obtained by scattering some *tárámíra* seed among the *bájra*.

Owing to the general excellence of the soil the area of *kharába* is comparatively small. On the irrigated land it averages only 4 per cent. On the unirrigated land it is under 17 per cent. It was highest in the rabi of 1902 when it was 40 per cent. and lowest in the preceding rabi when it was 4 per cent. only.

The miscellaneous assets of the circle may here be referred to. There are fine *shisham* groves and good grazing ground on some *belas* in the Indus; and the hill waste at the back of many of the villages yields a fair supply of grass and also of *sanátha* (*Dodonæa Burmanniana*), and other shrubs which the residents in the villages nearest to Haripur sell for fuel in the market there.

Gandgar Circle.

9. There are 21 villages in the Gandgar Circle, which includes Captain Wace's two circles of Gandgar and Srikot.

The details of soils and of the matured area are as below :—

Soil.		Cultivated area.	Average matured area, 1897-98 to 1902-03.			Percentage of cultivated area matured.
			Kharif.	Rabi.	Total.	
Irrigated	Cháhi and bágh	26	33	37	70	205·9
	Bábardi ábi	8				
	Total irrigated	34	33	37	70	205·9
Unirrigated	Bari	1,425	2,441	6,559	9,000	82·2
	Kund	965				
	Maira	5,450				
	Rakkar	2,349				
	Kalsi	765				
	Total unirrigated	10,954	2,441	6,559	9,000	82·2
	Grand Total	10,988	2,474	6,596	9,070	82·6
Kharába		...	971	1,852	2,823	...
Percentage of total sowings		...	28	22	24	...
Dofasli		...	...	2	2	...

The irrigated area is absolutely insignificant. There are only four small wells and a few acres watered by springs. The unirrigated area is 99·7 per cent. of the total cultivated area. The soil for the most part is poor and arid but varies much from village to village. There are a few stretches of good level *maira* at the base of the hills, but on the south side of the range there is little to distinguish it from *rakkar*. The latter soil and *kalsi* are both very inferior, though in a year of good rainfall they yield better crops than one would expect. In some of the higher and cooler villages the *bari* and *kund* are of good quality, the former being as a rule double-cropped. The cultivation in the three Mishwáni villages at the north-eastern end is laborious and careful, for here the owners are self-cultivating and the pressure on the soil is great. In the rest of the circle, where most of the cultivation is in the hands of *batái* paying occupancy tenants who have other sources of income, it is poor. The kharíf is the principal crop in the villages at the north-eastern end, but over the greater part of the tract the rabi is far the most important. It covers about 73 per cent. of the total matured area. Of the total rabi crop 62 per cent. is wheat, 24 per cent. barley, and 8 per cent. oilseeds, mainly *tárámira*. Of the kharíf crop 58 per cent. is *bájra*, 23 per cent. maize and 10 per cent. *moth*. Maize is grown chiefly on the higher lands and *bájra* in the south-western portion of the circle. On the average nearly one-fourth of the crops sown fails to come to maturity. The figures

of the matured and failed area during each of the last six years being as follows:—

	Kharif.				Rabi.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.
1897-98	3,378	677	4,055	17	6,945	1,000	7,945	13
1898-99	2,889	395	3,284	12	7,537	946	8,483	11
1899-1900	1,181	2,305	3,486	66	6,642	1,473	8,115	18
1900-01	2,963	659	3,622	18	7,475	1,046	8,521	12
1901-02	1,561	480	2,041	24	3,797	4,726	8,523	55
1902-03	2,872	1,310	4,182	31	7,184	1,920	9,104	21

It will be seen that the sown area varies from year to year much more in the kharíf than in the rabi, and that the former is also on the whole the more uncertain crop. Except in 1902, the *kharábi* of the rabi harvest has never reached an abnormally high figure; but I am inclined to think that it has usually been under-estimated. Occasional failure of the harvest is, however, in some measure compensated for by the miscellaneous assets which are large.

The hills, though they are being rapidly denuded, still in parts yield a certain quantity of *sanotha* and other brushwood, and this finds a ready sale in the markets of Haripur, Hassan Abdál and Hazro. Grazing is plentiful, cattle numerous and the profits from sale of *ghi* and wool considerable, and in the villages near the south-western end of the range the cultivators make money by the sale of manure for use on the well-land of the Kinára Darya Circle and the Chach plain.

The Dhaka Badhnak Circle.

10. The Dhaka Badhnak Circle comprises 36 villages and corresponds to Captain Wace's circle of the same name with the addition of the three villages from Maidán Bádhnak mentioned at the beginning of paragraph 8. It is similar in many respects to Gandgar, but on the average slightly inferior. The following are the details of soils and matured area:—

	Soil.	Cultivated area.	Average matured area, 1897-98 to 1902-03.			Percentage of cultivated area matured.
			Kharif.	Rabi.	Total.	
Irrigated	Bágh	29	72	73	145	188
	Ináhardi ábi	48				
	Total irrigated ...	77	72	73	145	188
Unirrigated	Bari	839	3,003	4,864	7,867	93
	Kund	1,124				
	Maira	2,180				
	Rakkar	3,134				
	Kalsi	1,202				
	Total unirrigated ...	8,479	3,003	4,864	7,867	93
	Grand Total	8,556	3,075	4,937	8,012	94
Kharába		...	1,444	1,088	2,532	...
Percentage of total sowings		...	32	18	24	...
Defaulti		...	...	1	1	...

The circle is thus practically all unirrigated. The little irrigation there is, is from springs in the *nullahs*, the crops grown being maize in the kharíf and wheat and barley in the rabi.

The unirrigated land is on the whole of inferior quality. There are some good *bari* round the village sites and some excellent level patches of *maira* and *kandi* along the banks of the *nullahs*, but most of the soil is sloping and stony. Everything depends on the rainfall and the harvests consequently vary greatly from year to year.

The following figures give details of the matured and cultivated area during the last six years:—

	Kharif.				Rabi.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.
1897-98	3,468	797	4,265	19	5,485	203	5,688	4
1898-99	4,391	7	4,398	...	3,942	1,531	5,473	28
1899-1900	3,024	1,262	4,286	29	4,881	498	5,379	9
1900-01	2,904	1,481	4,385	34	5,788	147	5,935	2
1901-02	3,006	834	3,840	22	1,655	3,578	5,233	68
1902-03	1,657	4,284	5,941	72	7,868	572	8,440	7

But I do not think the figures of the first three years, before, that is, settlement operations began are at all to be trusted. The kharába must have been under-estimated, for with the soil such as it is, it is impossible that in one kharíf there should have been no kharába at all. In recent years the rabi and kharíf of 1902 were exceptionally bad. The rabi is the more important crop and covers 62 per cent. of the matured area. It consists almost entirely of wheat and barley, but the usual proportions between the two crops are reversed, barley which seems to do better than wheat in the inferior soil on the hill sides forming 56 per cent. and wheat 39 per cent. of the total rabi harvested area. In the kharíf 48 per cent. of the matured area is under maize, 10 per cent. under *bájra* and 33 per cent. under pulses of various kinds, the most important of which are *mung* (14 per cent.) and *moth* (9 per cent.). The large percentage under pulses is in itself an indication of inferiority of the soil, for they are grown on land that is not good enough to support maize.

The population being numerous, and the holdings small, the cultivation is laborious and the double-cropping extensive though the under-estimation of *kharába* makes the percentage of cultivated area which is matured larger than it should be. The miscellaneous assets are considerable. The hills in parts abound with *sanátha* and other wood suitable for fuel, and a few villages nearest to the Harípur market make a large income from this source. The villagers are also fairly well off for cattle and in years when rain has been plentiful and the supply of grass in the hills is good, they make money by the sale of *ghi* and wool in Darband, the capital of Feudal Tanáwal, in Harípur and elsewhere.

11. The Maidán Hazára Tarla Circle consists of 55 villages and comprises Captain Wace's circles of Kot Najíbulla, Jagal and Khálsa. Its statistics of cultivated and matured area are as follows:—

Maidan Hazára Tarla Circle.

	Soil.	Cultivated area.	Average matured area, 1897-1903.			Percentage of cultivated area matured.
			Kharíf.	Rabi.	Total.	
Irrigated	Cháhi	229	227	231	458	200
	Bágh	908	841	797	1,638	180
	Bábardi ábi	2,317	1,517	1,790	3,307	143
	Barangar ábi	2,679	773	1,911	2,684	100
	Total irrigated ...	6,133	3,358	4,729	8,087	132
Unirrigated ...	Bari	1,897	1,252	924	2,176	115
	Kund	2,728	1,150	1,092	2,242	82
	Maira	24,486	8,152	9,433	17,585	72
	Rakkar	6,455	1,570	2,550	4,120	64
	Kalsi	147	50	62	112	76
	Total unirrigated ...	35,713	12,174	14,061	26,235	74
	Grand Total	41,846	15,532	18,790	34,322	82
Kharába		...	4,613	6,091	10,704	...
Percentage on total sowings		...	23	24	24	...
Dofasli		...	...	...	...	...

Irrigation covers nearly 15 per cent. of the total cultivated area. It is mainly from the Dor River and in the northern portion of the circle. But in the southern portion, chiefly along the banks of a large dry *nullah* known as the Kahl Soka, there are 78 wells which irrigate on the average about 3 acres a piece. They are most of them made of unlined stone taken out of the bed of the nullah and cost between 100 and 200 rupees. The depth from the surface to the water is between 10 and 30 feet. They are all double-cropped, but on the average are not quite so good as those in Kinára Darya, as some of them are liable to diluvion and the water occasionally runs low. The Dor irrigation is on the same system as in Maidán Hazára Utla which will be described below, but as most of the villages lie near the tail end of the irrigation channels, it is not so abundant. In seasons of short rainfall some of these villages suffer from a distinct scarcity of water, and throughout the circle crops like sugarcane and turmeric which require constant irrigation cannot be grown. The soil is also intrinsically inferior to that of Maidán Hazára Utla. The *bágh* and *bábardi ábi* are good in parts, but there is an extensive tract of *barangar ábi*, which is very stony and gets little water. In seasons of drought the crops upon it are very poor, but if there is rainfall to help the irrigation the rabi harvest, especially the wheat, can be surprisingly good. Most of the unirrigated land is *maira* and includes some of the best soil in the tahsil. That in the villages lying near the base of the Gandgar range in the old Jagal Circle is perhaps the finest, it is a light and easily worked loam and benefits by the drainage from the hills. The soil on the southern side of the Abbottabad-Hassan Abdál road in the old Kot Najibulla Circle is a stiffer loam and requires more rain for maturing the crops. This sometimes it does not get, and the crops are a failure in consequence. The following figures are instructive

showing the matured and failed areas on *bárání* land in this circle in each of the last six years :—

Year.	Kharif.				Rabi.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.
1897-98	14,540	3,499	18,039	19	17,099	3,263	20,362	16
1898-99	14,774	1,673	16,447	10	17,199	3,741	20,940	18
1899-1900	8,605	8,252	16,857	49	15,969	2,843	18,812	15
1900-01	12,825	4,690	17,515	27	19,033	1,158	20,191	6
1901-02	9,976	2,229	12,205	18	4,688	16,542	21,230	78
1902-03	11,250	6,204	17,454	36	10,895	6,759	17,654	38

It will be seen that in five out of the last eight harvests the failed crops have been over one-fourth of the total sowings, and the last three harvests have been particularly unfavourable. Of the total matured irrigated area 58 per cent. is under crop in the rabi and 42 per cent. in the kharíf. The only rabi crops worth mentioning here are wheat (62 per cent. of the matured area) and barley (29 per cent). In the kharíf the only irrigated crop of any importance is maize which accounts for 83 per cent. of the matured area.

On the unirrigated land the proportion of the total matured area is nearly 54 per cent. in the rabi and over 46 per cent. in the kharíf. Wheat is here again the most important rabi crop accounting for 64 per cent. of the matured area; barley comes next with 25 per cent ; and the only other crop worth mentioning is *sarshaf* 7 per cent. In the kharíf there is a greater variety. Maize accounts for 24 per cent., *bájra* 33 per cent., *moth*, cotton and *jowár* for 17, 13 and 9 per cent., respectively. Generally speaking the cultivation of the irrigated land is poor. Except on the best soil weeds grow in great abundance and the cultivators have not the energy and application required to keep the land clear of them. The cultivation of the *bárání* land is neglected in villages where the area of irrigated land is large, or where the cultivators are *batái* paying occupancy tenants, but in some villages which have little or no irrigation and the cultivators are the owners themselves or cash paying tenants, it is as careful and thorough as anywhere in the tahsil. Lying as it does on the main roads from the railway to Harípur and Abbottabad, the villagers of this circle have other sources of income besides the land. A number own bullock carts which ply between Hassan Abdál and Kashmír; some sell milk and butter in the Harípur market; others wood and grass; for several villages have either some hill waste on the outskirts of the Gandgar range or rights of user in some of the Gandgar villages. Others earn wages as day labourers. These additional resources, however, are not an unmixed benefit, for they lead to neglect of the land for an easier means of livelihood.

Maidán Hazára Utla Circle.

12. The Maidán Hazára Utla Circle contains 46 villages and comprises Captain Wace's circles of Serai Saleh, Mánakrai, Harípur and Tir Maira Bagra, with the exception of the five villages of Kailak, Garhi Seriáu, Bandi Sher Khan, Gheba and Barthal which

have been included in the Kandi Kahl Circle. The following is a summary of the statistics of its cultivated and matured area:—

	Soil.	Cultivated area.	Average matured area, 1897-98 to 1902-03.			Percentage of cultivated area matured.
			Kharif.	Rabi.	Total.	
Irrigated	Bágh	2,297	2,193	1,480	3,673	160
	Báhardi ábi	3,440	2,467	2,313	4,780	139
	Hotar	18	7	8	15	83
	Barangar ábi and Gharera ábi	2,540	1,069	1,688	2,757	108
	Total irrigated	8,295	5,736	5,489	11,225	135
Unirrigated	Bari	746	342	434	776	104
	Kand	1,121	448	689	1,137	101
	Maira	9,891	2,434	4,466	6,900	70
	Rakkar	4,459	1,114	1,655	2,769	62
	Kalsi	340	94	118	212	62
	Total unirrigated	16,557	4,432	7,362	11,794	71
	Grand Total	24,852	10,168	12,851	23,019	93
Kharába		...	2,402	3,282	5,684	...
Percentage of total sowings		...	191	20	20	...
Dofasli		...	125	9	134	6

From these figures it will appear that while the total irrigated area is 33 per cent. of the total cultivated area, it yields an acreage of crops nearly as large as that yielded by the unirrigated area owing to 85 per cent. bearing two crops in a year. It should also be noted that the *dofasli* area (*i. e.*, the land bearing two crops in the same harvest) given in the above statement is much under-estimated. This is due to the fact that the early maize crop which is sown among the turmeric and is reaped at the end of July was not, before 1901, entered up in the *girdáwari* papers at all. If this is taken into account, the *dofasli* area should be nearly 600 acres on the average. The irrigation in this circle is almost entirely by cuts taken out from the Dor or River, or from springs rising in the river bed or on the bank above. The water from the river itself is drawn off into the cuts by dams made of stone and brushwood. There are generally two or three villages dependent on the same water channel and they take the water in turn, the village situated highest up coming first. The supply is usually ample for their wants; if ever there is a deficiency the villages take the water in accordance with the shares prescribed in the Record of Irrigation Rights prepared at last settlement, so many days and nights being allotted to each village. The villages at the head of the system usually come off best in this arrangement, for they have more opportunities of appropriating more than their fair share, and the tahsil officials have sometimes to interfere to see that the villages lower down are not unduly defrauded.

A notable feature in the irrigation system of this circle is what is known as the Rangíla tank, two miles east of Harípur on the left bank of the Dor. This tank which at the time of last settlement was *kacha* but in 1876 was given a masonry lining, receives through a cut from the Dor the water to which twelve villages in this circle and nine in Maidán Hazára Tarla are entitled, and distributes it to them in smaller channels, the width of the mouth of each channel as it takes out from the tank being proportionate to the allotted share of the village. By this means an automatic and equitable distribution of water is made at which no one can cavil. The irrigated area which extends half a mile or less from the right bank and about a mile from the left bank of the Dor is a tract of great fertility. It would be difficult to find a richer soil than the *bágh* lands lying below the high banks of the Dor from Kohlián to Shah Muhammad. The *bágh* on the top of either bank and on either side of the high-road is not much inferior. The *báhardi ábi* is also good of its kind and gets a fair amount of manure.

The least fertile villages are at the eastern end of the circle, where there is a large area of *barangar* and the water supply is not quite so ample. The unirrigated land lies to the north and south of the irrigated tract. On the north side it is at a much higher level and extends up to the Tanawal hills; on the south it is cut off from the irrigation by a wide ravine, and is much

split up by smaller and deeper ravines. The soil is a *mara* of varying quality which deteriorates into *rakkar* at the base of the hills or on the edges of the ravines. It gets more rainfall then that of Maidán Hazára Tarla, but is not so good intrinsically and its cultivation is neglected in the villages (and they form the great majority) where there is much irrigated land, as the latter yields a larger and more certain return.

The area matured in the rabi is somewhat larger than that matured in the kharíf, the proportions being 56 and 44 per cent., respectively; but this preponderance is entirely due to the unirrigated soils where the area under rabi crops covers 62 per cent., whereas on the irrigated soils it is 49 per cent. only. In the kharíf the best *bágh* and *bahárdi ábi* lands grow sugarcane or turmeric, both extremely valuable crops requiring plenty of water and manure. They account respectively for 10·5 and 8·6 per cent. of the total area of kharíf crops. The other important crop is maize which is matured on 59·1 per cent. of the irrigated area. In the rabi wheat and barley account for 63·5 and 25·5 per cent. of the matured area, respectively. The other *rabi* crops require no notice. On the unirrigated land, the chief crops in the kharíf are maize (22·9 per cent. of matured kharíf area), *moth* (41·7 per cent.), *bájra* (12·7 per cent.) and cotton (12·3 per cent.). In the rabi wheat is very widely cultivated and accounts for 64·6 per cent. of the matured area. Barley accounts for 24·6 per cent., and the only other crop of any importance is *sarshaf* which accounts for 6·2 per cent.

The *kharába* as will be seen averages about one-fifth of the total sowings. It is only 5 per cent. on the irrigated land, which is quite secure, but on the unirrigated land the poorness of much of the soil and the careless cultivation bring it up to a high figure in dry years. In the rabi of 1902, for instance, it was as much as 76 per cent., but this was very exceptional; in the rabi of 1901 it was only 7 per cent. and the average in the kharíf and rabi of the years 1897-1903 is 32 and 29 per cent., respectively.

The miscellaneous assets correspond to those of Maidán Hazára Tarla Circle, but are not so large. Only a few villages have any hill waste, but some of these make a large profit out of the sale of wood and grass. They lie on the right bank of the Dor or at the eastern end of the circle away from the left bank.

The Kandi Kahl Circle.

13. The Kandi Kahl Circle contains 35 villages and comprises Captain Wace's circles of Kandi Kahl and Dhaka Bagra with the addition of the five villages mentioned in the preceding paragraph and shows the following figures for cultivated and matured areas:—

	Soil.	Cultivated area.	Average matured area, 1897-98 to 1902-03.			Percentage of cultivated area matured.
			Kharíf.	Rabi.	Total.	
Irrigated	Bágh	187	157	117	274	146
	Bahardi ábi	178	137	132	269	151
	Hotar	30	28	23	51	170
	Barangar and gharera	15	2	3	5	33
	Total irrigated	410	324	275	599	146
Unirrigated	Bari	1,515	1,087	992	2,079	137
	Kund	996	490	527	1,017	102
	Maira	9,432	3,367	4,322	7,689	82
	Rakkar	3,975	1,348	1,228	2,576	65
	Kalsi	793	337	286	623	79
	Total unirrigated	16,711	6,629	7,355	13,984	84
	Grand Total	17,121	6,953	7,630	14,583	85
Kharába		...	2,616	2,609	5,225	...
Percentage of total sowings		...	27	25	26	...
Dofasli		...	1	1	2	...

The irrigated land is insignificant, the cultivated and matured areas being about 2 and 4 per cent. of the total cultivated and matured areas, respectively. The irrigation is from small streams in the ravines which are fed by springs. In the kharíf, which accounts for 54 per cent. of the total matured area, 74 per cent. is under maize, and a little sugarcane and turmeric are grown on the

bágh lands, which are of good quality. In the rabi wheat and barley are almost the only crops, each covering 48 per cent. of the matured area.

The unirrigated land is as a rule poor. There are some stretches of good *maira* on the western side of the circle near the borders of Maidán Hazára Utla and Maidán Hazára Tarla, and there is some good soil of this class in the old Dhaka Bagra Circle at the north-eastern corner. Here and there also there is some excellent *kund* in the ravines, and *bari* round the village sites, but the soil generally, especially towards the hills on the east, is stony and shaly, and to bring them to maturity the crops require a good rainfall, which is occasionally wanting. The rabi is on the whole the more important harvest. It covers 53 per cent. of the total matured unirrigated area; 61 per cent. of the crop is wheat, 28 per cent. barley and 8 per cent. *sarshaf*. Of the kharif 40 per cent. is maize, 20 per cent. *moth*, 14 per cent. *bájra* and 9 per cent. cotton.

The average *kharába* area of the last six years is over one-fourth of the total sowings and the following figures show the variations in the matured and failed area from year to year:—

	Kharif.				Rabi.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.
1897-98	8,290	2,144	10,434	21	8,972	1,543	10,515	15
1898-99	7,859	1,476	9,335	16	8,137	2,895	11,032	26
1899-1900	4,360	5,090	9,450	54	8,041	1,527	9,568	16
1900-01	7,528	2,381	9,909	24	10,448	855	11,303	8
1901-02	5,734	1,139	6,873	17	2,221	6,980	9,201	76
1902-03	7,720	3,518	11,238	31	8,179	1,768	9,947	84

It will be seen that the fluctuations both in the sown and matured area are great, the kharíf of 1899, and the rabi and kharif of 1902, being especially poor harvests.

There is a large area of hill waste in the villages on the eastern border, but it is of poor quality. The hill sides are bare and rocky, and save in one or two villages where special measures of preservation have been taken the supply of grass is scanty and most of the wood has been cut down. A certain income is made out of the sale of manure to the irrigated villages of the Maidán Hazára Utla Circle and the employment of camels in carrying wood from other tracts that is sold for fuel in the Haripur and Abbottabad markets.

Khanpur Circle.

14. The following are details of the matured and cultivated area in the Khanpur Circle, which embraces Captain Wace's four circles of Dhaka Utla Khanpur, Dhaka Tarla Khanpur, Báharwál and Panjkatha and consists of 86 villages:—

	Soils.	Cultivated area.	Average matured area, 1897-98 to 1902-03. Kharif.	Rabi.	Total.	Percentage of matured area.	Percentage of double cropped.
Irrigated	Bágh	808	3,222	2,083	5,305	22·2	122
	Báhardi abi	2,720					
	Hotar	623					
	Barangar and Gharera ...	191					
	Total irrigated ...	4,342	3,222	2,083	5,305	22·2	122
Unirrigated	Bari	3,256	10,972	7,592	18,564	77·8	·87
	Kund	934					
	Maira	9,648					
	Rakkar	5,328					
	Kalsi	2,260					
	Total unirrigated ...	21,426	10,972	7,592	18,564	77·8	87
	Grand Total ...	25,768	14,194	9,675	23,869	100	92
Kharáta		...	4,099	2,887	6,986	...	...
Percentage of total sowings		...	22	23	23	...	...
Defaulti		...	17	1	18	...	...

Irrigation covers about 17 per cent. of the total cultivated area. It is all from the Harroh and its tributary streams. Seventy-one per cent. is in the Panjkatha The water is here drawn by *bands* placed in the bed of the river into channels which are usually shared by two or more villages in the same manner as in the Maidán Hazára Utla. The water supply is as a rule plentiful and constant and the *bágh* and *báhardi ábi* are of excellent quality. In the hills there is some good *hotar*, but most of the *bágh* is really irrigated *bari*, which in the colder villages sometimes bears only one crop a year.

In the irrigated area 61 per cent. of the matured crop belongs to the kharíf. Of this 73 per cent. is maize and 10 per cent. rice and 5 per cent. cotton. A little sugarcane and turmeric are grown on the best *bágh* lands, accounting for 1½ per cent. and 1 per cent. of the matured area respectively.

The unirrigated soils vary greatly in quality; the best *bari* is in the higher lands to the east, the old Dhaka Utla Circle, where the soil is rich and black. The *kalsi* here is also above the average, for the hills are well wooded with *chir* (*Pinus longifolia*), *phula* (*Acacia modesta*), *sanátha* and other kinds of brushwood, which prevent erosion of the earth and attract the rain. The lower hills in the centre of the tract constituting the old Dhaka Tarla Circle are more bare and arid and the soil is poorer in consequence. In the old Báharwál Circle at the western end of the tract adjoining Maidán Hazára Tarla and the *Nala* Circle of the Attock Tahsil there are some stretches of excellent *maira*, but here the rainfall is apt to be deficient. As the area of *kund* is comparatively small, I have combined it with *maira* for the purposes of the produce estimate. The figures below give particulars of the matured and failed areas of the *bárání* land in each of the last six years:—

	Kharif.				Rabi.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.	Matured.	Kharába.	Total sown area.	Percentage of kharába on total sowings.
1897-98	12,337	2,792	15,129	18	9,054	2,361	11,415	21
1898-99	11,318	2,702	14,020	19	6,996	3,067	10,063	30
1899-1900	7,188	7,789	14,977	52	7,027	2,536	9,563	27
1900-01	11,584	4,067	15,651	26	9,931	1,532	11,463	13
1901-02	11,235	1,502	12,737	12	3,345	4,767	8,112	59
1902-03	12,173	4,438	16,611	26	9,201	2,043	11,244	18

The average *kharába* area on *bárání* land for these years is 26 per cent. both in the kharíf and *rabi*. The upper portion of the hilly tract owing to an abundant rainfall is quite secure, but occasionally the lower hills and the *maira* lands to the west suffer like the adjoining tracts of Kandi Kahl and Maidán Hazára Tarla though to a less degree.

Of the total matured area 59 per cent. is under kharíf crops. Of these 57 per cent. is maize, 28 per cent. *bájra*, 8 per cent. pulses of various kinds and 3 per cent. cotton. The maize is grown chiefly in the hilly portion of the tract and the *bájra* in the plains. Of the rabi 53 per cent. is wheat, 38 per cent. barley and the remaining 9 per cent. is accounted for by oilseeds (*sarshaf* and *tárámira*).

Cultivation which is almost entirely by tenants is as a rule slovenly where rents are paid in kind and of good quality where they are paid in cash and there is more incentive to make the best of the land. The hills, especially in the western half of the circle, yield grass and wood in abundance, and though the sale of wood from the village forests has recently been stopped, the villagers make considerable profits out of the sale of grass in the Haripur

plain and in the Ráwalpindi Tahsil, and wood being available for domestic purposes, they can devote all the manure of their numerous flocks and herds to the improvement of their fields.

Recent harvests.

15. The area of crops matured and failed in each harvest in the tahsil during the last six years is as follows:—

Year.	Kharif.				Rabi.				Total.			
	Matured.	Kharába.	Total sown area.	Percentage of kharába.	Matured.	Kharába.	Total sown area.	Percentage of kharába.	Matured.	Kharába.	Total sown area.	Percentage of kharába.
1897-98 ...	63,896	13,119	77,015	17	82,593	11,625	94,218	12	146,489	24,744	171,233	14
1898-99 ...	64,665	8,269	72,934	11	76,626	17,163	93,789	18	141,291	25,432	166,723	15
1899-1900 ...	43,701	31,190	74,891	42	75,449	12,360	87,809	14	119,150	43,550	162,700	27
1900-01 ...	61,835	16,940	78,775	22	88,646	6,529	95,175	7	150,481	23,469	173,950	13
1901-02 ...	50,705	8,752	59,457	15	38,650	52,621	91,271	58	89,355	61,373	150,728	41
1902-03 ...	60,006	24,717	84,723	29	74,092	18,357	92,449	20	134,098	43,074	177,172	24
Average of six years.	57,468	17,164	74,632	23	72,676	19,776	92,452	21	130,144	36,940	167,084	22

The above harvests are those on which the produce estimates are based, and they may briefly be described as follows:—

Kharíf 1897.—There was some deficiency in the rainfall at the end of the hot weather, and consequently the crops in the dry tracts were below average but otherwise the harvest was an average one.

Rabi 1898.—The rainfall from January to May was somewhat deficient, and as in the kharif the *bárání* crops suffered a little; but the harvest on the whole was average.

Kharíf 1898.—The rainfall though smaller than usual was timely and well distributed and the harvest was an average one.

Rabi 1899.—January was rainless and in the dry plain tracts the crops were consequently poor, but elsewhere they were average.

Kharíf 1899.—The rainfall in the hot weather months was less than usual and failed in September, with serious consequences to the unirrigated crops. The result was a poor harvest and a large percentage of *kharába*.

Rabi 1900.—The rainfall was light in the first half and heavy in the second half of the cold weather, and the result was an average crop.

Kharíf 1900.—The rainfall was heavy and the crop in most parts of the tahsil an excellent one.

Rabi 1901.—The timely and heavy rainfall continued throughout the cold weather and resulted in a bumper rabi crop, one of the best on record.

Kharíf 1901.—Very little rain fell till the end of July and sowings were retarded and less extensive than usual in consequence. But good rain fell in August and September and the outturn on the whole was average. The grass supply in the hills however was deficient owing to the want of timely rain in June and July.

Rabi 1902.—From the middle of October till the beginning of March practically no rain fell and the drought was the severest within the memory of the oldest inhabitant. There was good rain in March and April which saved such *bárání* crops as had not already withered, but on the poorer soils the harvest was an almost total failure, and the yield of the unirrigated crops generally was much below the average.

Kharíf 1902.—There was good rain for the kharíf sowings, but an unfortunate break occurred during the last part of July and the first part of August, a critical time for the maize crop, with the result that the yield on unirrigated soils was below average throughout the tahsil, except in the case of the pulses, and in the Dhaka Badhnak Circle the crops were a total failure in many villages. The supply of grass was also deficient, except in the upper Khanpur hills.

Rabi 1903.—Some timely rain in October enabled an extensive area to be sown, and though no rain worth mentioning fell thereafter till near the end of January, and February was also rather dry, copious rains fell in March and saved the *bárání* crops. The harvest in the hilly circles of Dhaka Badhnak, Gandgar and Khanpur was a very good one and the only part where it was much below average was in the plain tract south and south-west of Haripur.

Kharíf 1903.—Though this is not included in the harvests of the last six years on which the main produce estimate is based, as the statements were prepared in July and August, some of the returns will be used in a subsidiary produce estimate and some remarks on the nature of the harvest are therefore necessary. The rains came rather late and were below average in June and July, but there was an ample and well distributed fall in August and heavy showers early in September, so that up to the middle of that month everything looked well. But from September 11th onwards no rain to speak of fell, October being very dry and hot. The consequences to the later sown *bárání* crops on the drier soils in all circles were rather serious. They were withered and scorched, and, except in the case of pulses and cotton, the yield was on the whole below average. Seldom has there been a better illustration of the truth that a timely well distributed rainfall is much more important than a heavy one. The total rainfall in September was more than double the average, but as it came all towards the beginning of the month it was not sufficient to counteract the effect of the succeeding weeks of heat and drought. The irrigated crops on the other hand had seldom been better and the supply of grass in the hills was plentiful.

The character of the above harvests may be summed up as follows :—

	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.	1903.
Kharíf	Fair ...	Fair ...	Poor ...	Good ...	Fair ...	Rather poor	Rather poor
Rabi	Fair ...	Fair ...	Fair ...	Very good	Bad ...	Fair ...	...

The cycle of years taken is thus a fairly representative one but, if anything, the harvests on the whole have been below average, especially the kharíf. These remarks do not apply to the irrigated crops which owing to the plentiful supply of water vary little from year to year.

Crop experiments.

16. The percentage of the total matured area under each crop in each circle and for the whole tahsil is as follows:—

	Kharif.												Rabi.							
	Rice.	Maize.	Jowár.	Bájra.	Mung.	Moth.	Other pulses.	Sugarcane.	Cotton.	Turmeric.	Other miscellaneous kharif crops.	Total kharif.	Wheat.	Barley.	Gram.	Sarshaf.	Other oilseeds.	Tobacco.	Other miscellaneous rabi crops.	Total rabi.
Kinára Darya	...	12	3	6	2	7	...	...	1	...	...	31	45	15	2	1	4	1	1	69
Gandgar	...	6	.	16	...	3	1	...	...	...	1	27	45	18	4	1	5	...	...	73
Dhaka Badhnak	...	19	...	4	5	3	4	...	2	...	1	38	25	34	...	1	2	...	...	62
Maidán Hazára Tarla	..	16	3	12	...	6	1	..	5	..	1	44	36	15	...	3	1	...	1	56
Maidán Hazára Utla	1	19	1	2	...	8	3	3	4	2	1	44	36	14	...	3	1	...	2	56
Kándi Kahl	..	21	2	6	...	9	3	...	5	...	1	47	32	15	...	4	2	...	...	53
Khanpur	1	36	1	13	1	2	2	...	2	..	1	59	23	15	...	2	1	...	...	41
Total Tahsil ...	..	19	2	9	1	6	2	½	3	½	1	44	34	16	1	2	2	...	1	56

A number of experiments have been made to ascertain the yield of these crops on the soils where they are most extensively grown and the results are shown in Appendix B. I cannot consider these results altogether satisfactory

or reliable. There were such a number of circles and soils that, although several leading zamíndárs were invited to assist the Settlement officials, it was impossible in many cases to make as many experiments with certain crops on certain classes of soil as could be desired if a fair estimate of the average yield was to be framed, and of the five harvests during which experiments could be made on an extensive scale, one, the rabi of 1902, was so poor that the results obtained on *bárání* land were in many cases almost *nil*. Further there is always some difficulty in selecting an average crop in an average field, and I have been obliged to reject a number of returns as being much too high or too low. There was no previous experience to go upon, for Captain Wace's estimates of yield were for irrigated and unirrigated crops only and took no account of the great differences in the capacities of the various irrigated and unirrigated soils, and I found it impossible to get any reliable data from the accounts of big landlords. But I have discussed the question of yields with numbers of zamíndárs of all classes. I have consulted the Extra Assistant Settlement Officer and the Settlement Tahsildar, who both have a good knowledge of the tahsil and whose estimates (which in most cases seem to me too high) are given in the Appendix B. I have compared the yields assumed in neighbouring districts, and I have checked the results obtained in these ways by the impressions given by my own observations. My estimates are if anything below the mark, but I prefer to err on the side of caution in a question of this kind where it is so difficult to be sure of one's ground. The outturn assumed for the more important crops will be discussed in the following paragraphs.

Kharíf Crops: Maize.

17. Maize is the staple kharíf crop though it has not quite the preponderance which it possesses in the rest of the District. In this tahsil 41 per cent. of it is grown on irrigated and 59 per cent. on unirrigated land. It is a crop that requires either irrigation, or plenty of manure or moisture in the soil or an abundant rainfall to bring it to maturity; hence what is not sown on irrigated land is, in the plain and low hill tracts, usually grown on *bari* and *kund*. The *maira* crop is often a failure, but in the upper Khanpur hills, where the rain is plentiful, it flourishes even on *kalsi*. Except in the Khanpur hills aforesaid where it is sown in May or June and reaped at the end of September, it is sown in July and August and reaped in October and November. It is mainly either the white or the yellow "country" variety. The former is much the more popular as it has the larger and tastier grain. "Yellow" maize does better however in dry hot tracts as it requires less water. In parts of Maidán Hazára Utla a little American maize is grown from seed which was received from the Director of Land Records and Agriculture, Punjab, in 1891, but this has not spread to anything like the extent that it has in the other two tahsils of the District. From returns prepared at the kharíf of 1902 it would appear that of the total crop grown about 83 per cent. is the white, 11 per cent the yellow, and 4 per cent. the American variety. Mention should here also be made of what is called *sathi makki*, maize, that is, which is sown in the turmeric fields in April and cut about the end of July. As these fields are very heavily manured and constantly watered the crop is usually a very good one and the yield is on the average higher than that of ordinary maize. A little maize is also similarly sown on the *banns* of fields of sugarcane in the same circle but is generally given to cattle as fodder. I have not found it easy to decide what to assume as the outturn of maize on the various soils in the different circles. Few crops repay careful cultivation more, and on some of the wells in Kinára Darya or the *bágh* lands in Tarbela and a few villages in Maidán Hazára Utla the yield runs up to 30 and 40 maunds an acre and even more. I have been told by zamíndárs that an estimate of 24 maunds an acre on well lands and as much or a little less on the best *bágh* lands is a fair one, and the experiments on *bágh*, at any rate, seem to bear this out, but I have not ventured to go quite so high as this. Some of the wells in Kinára Darya give poor returns and the cultivation of the *bágh* lands in that circle outside Tarbela village and in the majority of villages in Maidán Hazára Utla does not reach the level of the others. I have therefore assumed 22 maunds as the yield on *cháhi* in Kinára Darya (which is half a maund less than the yield assumed in the corresponding circle of the same name in the Swábi Tahsil of Peshawar) and 20

maunds as the yield on *bágh* in the same circle and in Maidán Hazára Utla; I have put the yield on *cháhi* higher than that on *bágh* because the cultivation of maize on wells is usually more careful and painstaking and gives better results in consequence. On *báhardi ábi* I have thought 16 maunds a fair estimate both in Kinára Darya and Maidán Hazára Utla. The experiments show a much higher yield in the former and a lower yield in the latter circle, and it no doubt varies very widely from village to village, but I believe an average yield of 4 maunds less than *bágh* is about correct. On *barangar ábi* in Maidán Hazára Utla I do not think we should be justified in going above 10 maunds.

In Maidán Hazára Tarla the irrigated soils are inferior to those of Maidán Hazára Utla and Kinára Darya and the experiments show a lower yield of maize in consequence. But a yield of only 9 maunds on *bágh* must be much under the mark. I have assumed yields of 20, 18, 14 and 8 maunds on *cháhi*, *bágh*, *báhardi ábi* and *baranjar ábi*, respectively.

In the Panjkatha tract of the Khanpur Circle where most of the irrigated maize is grown, I consider that the yield is quite equal to that of the Maidán Hazára Utla Circle, and I have therefore assumed the same outturns. The yield of maize on irrigated soils in the other circles does not call for separate notice.

Among *bárání* soils the yield of maize on *bari* is most important. In Kinára Darya, Maidán Hazára Utla and Tarla, Kandi Kahl and Badhnak I have estimated this at 12 maunds. Though the soil of the first three circles is intrinsically better than that of the last two, it is not so well cultivated and much of the manure goes to the irrigated land; hence the yield may be considered the same for all five circles. In Gandgar, where the maize-growing *bari* is heavily manured and much of it is of good quality, I have estimated the yield at 13 maunds; and in Khanpur, where the *bari* in the hillier portion of the circle is excellent, the yield may be calculated at 14 maunds. The experiments on the whole more than justify my assumptions, except in the case of Maidán Hazára Tarla where the average yield of 6½ maunds must be much below the mark, as it is exceeded by the yield on both *kund* and *maira*.

On the latter two soils and on *rákkar* and *kalsi* the experiments have been too few and the results too contradictory to be at all reliable. I have taken 10 maunds on *kund* in all circles (except in Khanpur where *kund* is combined with *maira*) and 8 maunds on *maira* except in Kandi Kahl where owing to the inferiority of the soil 7 maunds should be sufficient and in Khanpur where owing to the abundant rainfall over a large portion of the tract the average may be raised to 9 maunds. On *rakkar* and *kalsi* it is not safe to go higher than 4 maunds except in Khanpur where they can be assumed to yield a maund more. In Kandi Kahl I do not propose to take more than 3 maunds.

Rice and jowár.

Of the other kharíf crops rice is only grown to any extent in Khanpur where a yield of 12 maunds on *báhárai ábi* and 14 maunds on *hotar* may be assumed. *Jowár* is grown chiefly for fodder as *chari* and not for grain, but the landlord usually takes his share. The price of *chari* varies very considerably according as other fodder is scarce or not, but if we take it at 8 annas a maund, and assume a yield of 6 or 7 maunds on good irrigated and 3 or 4 maunds on good unirrigated land, we get a value per acre ranging from Rs. 20 downwards, and I have made my calculations accordingly.

Bájra.

Bájra stands next to maize in importance among the kharíf crops. It is grown chiefly in the plain tracts near the Attock border. It stands drought better than maize and therefore is more suited to the level *maira* lands. It is sown in May, June or July and reaped in October. The experiments do not give reliable results but, so far as they go,

indicate that the yield is usually poor. For the *maira* in Kinára Darya, which is of high quality, and for that in Maidán Hazára Utla which has a fairly certain rainfall, I have assumed a yield of 5 maunds, for Maidán Hazára Tarla and Khanpur 4 maunds, as these lands are more liable to drought; and for the poorer soil of the other circles 3 maunds. The yields on other soils are in proportion.

Moth.

Of the kharíf pulses *moth* is the most popular and is grown extensively on the *maira* and *rakkar* lands of the plain tracts. It is usually sown early in May and reaped in October. With a little rain to help it it thrives on a poor soil and does well in years when the cereals are withering from drought. It is commonly grown more for its *bhúsa*, termed *missa*, than for its grain. The *bhúsa* sells for from 8 to 12 annas a maund, and if we estimate the yield on *maira* at 12 maunds of *bhúsa* and 4 maunds of grain per acre (at 26 annas a maund), the value of an acre of *moth* is between Rs. 10 and 12. I have therefore estimated the value of the yield at between Rs. 20 and Rs. 4 according to the quality of the soil. In Khanpur and Badhnak however the landlord does not apparently (though in Khanpur this is disputed) take a share of the *bhúsa* as well as of the grain, and therefore the outturn of grain only need be taken into account. The other kharíf crops requiring notice are cotton, sugarcane and turmeric. Cotton is grown chiefly on unirrigated and unmanured land in the plain tracts. It does not seem to thrive well in this District. I have seldom before the present kharíf seen a good field of this crop, and the cultivation seems to be diminishing. Such experiments as have been made give an extremely low yield and I have not thought it safe to go above 3 maunds an acre on *bari* and *kund* and 2 maunds on *maira* and *rakkar*, or above 4 maunds on *bágh* and *bahardi* and 3 on *barangar*.

Sugarcane.

Sugarcane is confined mainly to the Maidán Hazára Utla Circle, where it is grown on the best irrigated *bágh* and *báhardi ábi* lands. It is planted between the middle of March and the end of April and is cut between the end of November and the end of February. An acre requires between 30 and 40 maunds of seed, the price of which is from 12 annas to Re. 1 a maund. Usually sugarcane follows turmeric and then little or no manure is required, for turmeric is so heavily manured that the effect on the soil lasts for at least a year after the crop has been removed. The variety most commonly grown is termed *watani* or *paona*. The *gur* is excellent and fetches a good price. There is also a little of the kind known as *sahárni*, which has thicker stems, and is much sold for chewing.

The yield of *gur* is high. Experiments on *bágh* show 53 maunds and on *bahárdi ábi* 28 maunds an acre. Zamíndárs estimate the yield at between 4 and 5 maunds a kanál or between 32 and 40 maunds an acre. I believe I shall be quite safe in assuming 32 maunds on *bágh* and 20 maunds on *bahárdi ábi* and am not sure whether I ought not to go higher. The net value of the crop on *bágh* land may be calculated as follows per acre:—

	Rs.
Yield 32 maunds at 71 annas a maund (the price assumed for the purposes of this report)	142
Deductions—	
Cost of seed	32
Cost of manure, say	8
Hire of sugar press and cauldron (at Re. 1 a kanál)	8
Share of háli or ploughman (who also extracts the gur), one third of total produce	47
Total deductions	95
Net profit	47

I have not allowed for the expenses of the bullocks required for ploughing, as these may be considered as more than covered by the value of the manure which the cultivator obtains from them free of cost. Sugarcane is often

sold to sahúkárs standing and the following figures showing the price realised are instructive :—

Assessment Circle.	1900.			1901.			1902.			Total.		
	Area sold.	Price.	Average price per acre.	Area sold.	Price.	Average price per acre.	Area sold.	Price.	Average price per acre.	Area sold.	Price.	Average price per acre.
	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.
Maidán Hazára Utla.	20 1½	4,441	220	26 2	5,430	207	33 ½	6,480	196	79 4	16,351	206
Kandi Kahl ...	0 7	151	173	...	...	...	...	...	...	0 7	151	173
Khanpur ...	8 2½	1,169	141	4 4½	636	140	8 2½	1,350	163	21 1	3,155	149
Kinára Darya ...	0 7½	139	144	0 5½	95	132	1 1½	234	201	2 6½	468	165
Maidán Hazára Tarla.	...	...	...	0 3½	45	96	...	...	...	0 3½	45	96
Total Tahsil ...	30 2½	5,900	195	32 0	6,206	194	42 4	8,064	190	104 6½	20,170	192

These figures indicate a higher profit than that which I have worked out, for, as the purchaser pays for the hire of the press, the net value to the producer, taking Rs. 200 as an average price for the crop, will be 200 — 87 = Rs. 113; this is due partly to the market price in the years in question being much higher than that which I have assumed and partly to the crop sold being generally above the average. It is in fact usually *sahárai* cane, of which the yield is heavier than that of *watni*.

Turmeric.

Like sugarcane and generally in rotation with it turmeric is grown on the *bágh* and *báhardi ábi* lands of the Maidán Hazára Utla Circle. It is an extremely valuable crop, the root being exported by the sahúkárs of Haripur and Serai Saleh to the Punjab and Káshmír and other parts of India, where it is used mainly as a condiment but also as a dye. The crop is sown in April, May, or the beginning of June, and gathered in December, January or February. The soil is ploughed six or seven times before sowing. Water is given every sixth day till the middle of October, and then every week till the middle of November, after which there is no need of more irrigation. Sometimes if the crop is not a very promising one it is left in the ground for another year. This second year turmeric is called *modi* and gives a heavier yield than the ordinary. When the root is dug up it is cleaned and then boiled and dried. This process diminishes the weight by about four-fifths in the case of the turmeric gathered by the end of the year and by about three-quarters in the case of turmeric gathered later; so we may assume that the average weight of *pakka* turmeric is $\frac{9}{20}$ths of the *kacha*.

The crop experiments give a yield of about 68½ maunds of *kacha* turmeric per acre on *bágh* land in Maidán Hazára Utla, or say 15⅓ maunds *pakka*, but this is undoubtedly much below the mark. That of 37 maunds *pakka* given on *báhardi ábi* is nearer it, though it is too high. Turmeric experiments must in their nature be very unreliable. It is difficult to be sure that all the roots are dug up, and the person on whose land the experiment is made is usually interested in keeping back the true facts. I have discussed the question of yield with various zamíndárs and sahúkárs and find that it is estimated at between 13 and 20 *pakka* maunds of *kacha* turmeric per kanál, a *pakka* maund being equivalent to 1⅕ English maund. If we assume an average yield of 15 *pakka* maunds, then the yield of dry turmeric will be $\frac{9}{20}$ths of this, or 3⅜ maunds, which is equivalent to about four maunds English. The average yield may thus be estimated at 32 maunds per acre, but to be on the safe side I propose to take 30 maunds only on *bágh*, and on *báhardi ábi* 25 maunds. The net value of the crop on *bágh* land, after deducting the cost of labour, manure and seed, may be calculated as follows :—The price of turmeric has been assumed in this report as Rs. 7 per maund; the total value of an acre of turmeric is therefore Rs. 210. Of this the owner pays one-fourth (in Serai Saleh and neighbouring villages it is sometimes one-fifth) to the *háli* who tends the crop for him. Manure costs about Rs. 5 a kanál or Rs. 40 an acre. About

5½ maunds of seed per kanál are required and with turmeric at Rs. 7 a maund, seed is about Rs. 2 a maund; so it costs Rs. 11 a kanál. But one-fifth or one-sixth of the cost of seed is recovered when the turmeric is dug up by separating the root of which it consisted from the other tubers and selling it. It is called *chechri* and is used for dyeing purposes. It is sold at about Rs. 4 a maund, but shrinks considerably in the drying process. We may thus deduct Rs. 2 from the cost of seed per kanál on this account.

The expense of digging up, boiling and drying the turmeric is estimated at 4 annas a maund of the dried root; of this one-fourth falls on the *háli*. We thus get the following figures :—

		Rs.	a.	p.
Gross value of crop		210	0	0
Deductions.—1. Cost of manure		40	0	0
2. Cost of seed Rs. (88 — 16)		72	0	0
3. Cost of digging up root, boiling and drying (25 maunds at 3 annas a maund) ...		4	11	0
4. Share of *háli* at one-fourth		52	0	0
Total deductions		169	0	0
Net value per acre ... about		41	0	0

The profit per acre is therefore in average years not as high as that on sugarcane as the crop is a more expensive one to raise. The cultivation is in fact rather a speculation. There is no forecasting what the market price may be in any year. It may be as high as Rs. 15 or Rs. 16 a maund, and it may be as low as Rs. 3 or Rs. 4, and the cultivation may in one year result in a large margin of profit and in another in a dead loss. But it must be remembered that in most turmeric fields a heavy crop of *sathi* maize is generally grown also, which in itself is almost sufficient to provide the tenant with the wherewithal to pay his cash rent to the landlord.

Turmeric is often sold standing to sahúkárs like sugarcane, and the following figures show the results of such sales in the last three years :—

Assessment Circle.	1900.			1901.			1902.			Total.		
	Acreage.	Price.	Average price per acre.	Acreage.	Price.	Average price per acre.	Acreage.	Price.	Average price per acre.	Acreage.	Price.	Average price per acre.
	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.	A. K.	Rs.	Rs.
Maidán Razára Usla ...	43 2½	13,606	314	13 0	2,890	222	33 0	6,202	188	89 2½	22,698	254
Kandi Kahl	0 4½	198	352	...	...	...	...	...	...	0 4½	198	352
Khanpur	0 4½	139	247	1 5½	578	349	0 1	20	160	2 2½	737	315
Kinára Darya	0 1½	65	297	...	...	...	...	...	...	0 1½	65	297
Total Tahsil ...	44 5½	14,008	313	14 5½	3,468	237	33 1	6,222	188	91 11½	23,698	256

The cost of gathering, boiling and drying falls on the vendee, so that if we assume an average price for the crop of Rs. 240 an acre, the net profit to the producer is Rs. 240 — Rs. 164-8-0, or Rs. 75-8-0. As with sugarcane this is a higher figure than what I have above worked out and the discrepancy is probably due to the same causes.

Rabi crops : wheat.

18. The staple rabi crop and the most important crop in the tahsil covering over one-third of the total matured area is wheat. It is grown on all soils, though less in proportion on *chahi* and *kalsi* than elsewhere. It is sown between the ends of September and November and reaped at the end of April or in May. If there has been a

deficiency of rain at the usual sowing time and the winter rains are early, a later crop is sown on the *bari* lands from December up to the middle of January. Crop experiments give very varying results, and it is not easy to fix an average outturn for each soil. On *dofasli* irrigated and unirrigated lands the soil is often somewhat exhausted by maize or some other kharif crop and the yield is much less than what one would expect, and, except on *chahi* lands and in a few select villages, little pains are usually taken with the cultivation. I have assumed yields of 10 or 11 maunds on *cháhi*, from 9 to 11 maunds on *bagh*, from 8 to 10 on *báhardi ábi* and from 5 to 7 on *barangar*. The best irrigated wheat is grown in the Kinára Darya and Khanpur Circles. In Maidán Hazára Utla much of the best soil is occupied by sugarcane or turmeric, and the cultivation of wheat is comparatively neglected; so I have pitched the outturn a little lower than in the other two circles. Even so it is higher than the experiments indicate, but I think the latter must be below the mark. In Maidán Hazára Tarla I have gone yet a maund lower, and in the case of the *barangar abi*, which is very poor soil, 2 maunds.

On unirrigated soils I have taken 8 maunds as the outturn on *bari*, except in Khanpur and Kinára Darya, where the quality of the soil is good enough to warrant us in taking 9 maunds. Experiments in Kandi Kahl and Badhnak would justify a higher estimate, but even on manured lands in these circles the crops are so dependent on the rainfall that I hesitate to go above the figure named. On *kund* I take 8 maunds on the specially good soil of Kinára Darya and 7 in other circles, except Badhnak, where 6 are sufficient. The experiments fully warrant these rates. On *maira* I take 7 maunds in Kinára Darya where much of the soil is almost *kund*, but in other circles, although some of the soil in the two Maidán Hazáras and Khanpur is as good, I do not care, owing either to the precariousness of the rainfall or to inferior methods of cultivation, to go above 6 maunds. In Gandgar 5½, in Kandi Kahl 5 and in Dhaka Badhnak 4 maunds will be sufficient. In some instances the experiments hardly justify these rates, but it must be remembered that the average has been unduly depreciated by the exceptionally bad rabi of 1902. On *rakkar* and *kalsi* a yield of from 3½ to 2½ maunds is quite as high as it is safe to go.

Barley.

Barley ranks next to wheat in importance among the rabi crops. It is usually sown a little later and ripens a few weeks earlier. It often follows maize on *dofasli* lands, especially on the irrigated soils where the kharif crop is cut late. It also seems to thrive better than wheat on poor soil in the hills, and hence in Dhaka Badhnak it is the most important rabi crop. The outturn is considered to be as a rule a little heavier than wheat, and this is on the whole borne out by the experiments. I have therefore assumed a yield of from two maunds to half a maund more than that of wheat according to circumstances.

Oilseeds.

Of the other rabi crops oilseeds are the only ones of importance. *Sarshaf* (rape) is commonest in Kandi Kahl and the two Maidán Hazáras. It is rather a precarious crop, being liable to attack by insects and being also the first to suffer from a failure of the winter rains. The experiments are conflicting and unreliable, but I think that the yields which I have assumed are fairly safe. Other oilseeds consist chiefly of *táramíra*, which is grown extensively on the *maira* and *rakka* lands in Gandgar and Kinára Darya. Its yield may be assumed to be the same as that of *sarshaf*.

Gardens.

Mention should here be made of the fruit gardens of Maidán Hazára Utla and Khanpur, which are very profitable. They grow chiefly apricots, plums and loquats, and to a smaller extent oranges, mangoes, peaches and grapes. The apricots are small and tasteless, but the loquats and some of the plums are excellent. The fruit is generally sold on contract. In Maidán Hazára Utla during the last three years an average area of 174 acres has been sold in this way realising the sum of Rs. 79 per acre. In Khanpur an average of 46 acres has been sold at a price of Rs. 56 an acre. In the produce estimate I have combined vegetables, which are not quite so profitable, with fruits, and estimated the value of an acre at Rs. 60 in Maidán Hazára Utla and Rs. 40 in Khanpur.

CHAPTER III—PRICES.

Rise in prices.

19. Comparisons between the prices assumed in this settlement and last and between the actual prices prevailing in the period before the introduction of each settlement are made in the following statement (the figures are in annas per maund) :—

Crop.	Average of actual prices prevailing in 11 years before last settlement.	Average of actual prices prevailing before this settlement.	Rise in actual prices per cent.	Prices assumed at last settlement.	Prices assumed in this settlement.	Rise in assumed prices per cent.
Wheat	22	38	73	15	27	80
Barley	12	25	108	10	18	80
Sarshaf	29	55	89	20	40	100
Rice	53 (husked)	58 (husked)	53 (husked)	40 (husked)	21 (unhusked)	...
Maize	17	32	88	12	23	92
Gur	80	81	1	66	71	8
Turmeric	92	148	61	80	112	40
Mung, másh	32	53	66	24	30	25
Moth	21	33	57	16	26	62
Cotton (unginned)	64	77	20	43	53	23
Bájra	19	38	100	13	28	115

It should be remarked that the average of the actual prices prevailing before this settlement is for wheat, barley and rice, taken on the 20 years, 1881-1900; and for maize, *gur*, *bájra*, *sarshaf*, and cotton, it is on a period of 17, 15, 16, 10, and 2 years respectively, figures for the whole period not being available. In the case of turmeric, *mung* and *másh*, and *moth* the traders' books of the years 1891—1900 are the authority, as the prices are not quoted in the Gazette. I should also note that I have reduced the assumed price of turmeric from Rs. 8 to Rs. 7. There has been a great fall in the market price since I submitted my preliminary report, and it is now selling at from Rs. 6 to Rs. 5 a maund. A further examination of the traders' books shows, as I have already mentioned in paragraph 17, that the price fluctuates greatly from year to year. In 1900 it was as high as Rs. 16 a maund, and in 1894 and 1897 as low as Rs. 2-8 and Rs. 3 a maund, respectively. It varies with the demand from the Punjab, Kashmír, and down country Possibly also over-production has something to do with the fall in price, for the area under this crop has increased considerably of late years. But there seems no doubt that prices will go up again, and I think that Rs. 7 is a fairly safe average to assume. I should add that for purposes of the produce estimate I have taken the price of gram, *táramíra* ("other oilseeds") and tobacco at the rates adopted in the Attock Assessment Report, since the areas on which these crops are chiefly grown adjoin that tahsil and the market facilities are similar.

An estimate of the all-round rise in prices is made in the following table. I have taken the chief saleable and exportable crops covering between them 84 per cent. of the matured area, and to get the average yield of each per acre. I have divided the total matured acreage under each into the total yield shown in my produce estimate :—

Crop.	Percentage of total matured area.	Average yield in maunds per acre.	Column 3 multiplied by column 2.	Rise in actual price.	Rise in assumed price.	Column 5 multiplied by column 4.	Column 6 multiplied by column 4.
1	2	3	4	5	6	7	8
Maize	19	12	228	88	92	20,064	20,976
Bájra	9	4	36	100	115	3,600	4,140
Sugarcane	1	28	14	1	8	14	112
Turmeric	1	23	11	61	40	671	440
Cotton	3	2	6	20	23	120	138
Wheat	34	6	204	73	80	14,892	16,320
Barley	16	7	112	108	80	12,096	8,960
Sarshaf	2	4	8	89	100	712	800
Total ...	84	...	619	84	84	52,169	51,886

From the above figures we are justified in assuming an actual rise in prices of at least 80 per cent. The causes of this remarkable rise are partly the increase of population which has more than kept pace with the increase of cultivation, but mainly the extension of the North-Western Railway from Lahore to Pesháwar and the general improvement in communications. At the time of last settlement Hazára was a remote and secluded district with few facilities or inducements for interchanging its productions with the world beyond its borders. The railway which passes a few miles from the Haripur boundary and the metalled road through Haripur to Abbottabad have altered all this. The surplus produce which formerly remained in the District and tended to keep prices at a low level can be disposed of at a profit elsewhere and the rates are now sometimes even higher than they are in the neighbouring districts of Ráwalpindi and Pesháwar. There has also been a considerable rise in the prices of other village produce, such as wood and grass. Grass now sells in the Haripur market at from 1 to 1½ maunds a rupee, whereas at last settlement its price was 3 to 4 maunds a rupee. Wood also sells at from 2 to 3 maunds a rupee as against 4 maunds a rupee at last settlement (Settlement Report, page 176). Cattle sell for a few more rupees a head than they did 30 years ago, and the wages of unskilled labour are perhaps about an anna a day higher. To what extent the cost of living has risen also is a difficult question, but it certainly has not increased to nearly the same extent as the price of grain, *e. g.*, country cloth still sells at from 14 to 16 yards to the rupee as it did in Captain Wace's time. That the average zamíndár spends more than he did 30 years ago is no doubt true, but this is largely because his standard of living is higher and his tastes for luxuries greater. He uses English cloth where he was formerly content with the local product, builds better houses and buys more jewellery. And this is mainly because he can get much higher prices for his grain than formerly and the village *bannia* is in consequence prepared to lend him more money.

CHAPTER IV.—TENANTS AND RENTS.

Cultivating occupancy. Tenants of various classes.

20. The following figures compiled from Statement No. VII, show the percentages of cultivated area occupied by owners and tenants of all classes:—

		Kinara Darya.		Gandgar.		Dhaka Badhnak.		Maidan Hazara Tarla.		Maidan Hazara Utla.		Kandi Kahl.		Khanpur.		Total Tahsil.	
		Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.
Cultivated by owners		34	34	22	20	71	73	54	49	40	36	70	69	5	5	41	39
Cultivated by tenants free of rent or at nominal rent.		...	1	...	...	1	4	..	...	...	2	...	1	...	2	...	1
Cultivated by occupancy tenants	Paying at revenue rates with or without málikána.	...	...	..	...	...	...	1	3	4	4	...	2	...	...	1	2
	Paying other cash rents	10	10	2	4	2	2	3	3	23	19	10	8	35	34	13	13
	Paying in kind with or without an addition in cash.	32	30	57	51	6	6	32	26	24	20	10	6	53	47	32	27
	Total cultivated by occupancy tenants.	42	40	59	55	8	8	36	32	51	43	20	16	88	81	46	42
Cultivated by tenants-at-will	Paying at revenue rates with or without málikána.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Paying other cash rents	6	2	1	1	3	3	...	1	2	3	2	2	1	2	2	2
	Paying in kind with or without an addition in cash.	18	23	18	24	17	12	10	18	7	16	8	12	6	10	11	16
	Total cultivated by tenants-at-will.	24	25	19	25	20	15	10	19	9	19	10	14	7	12	13	18
Total cultivated by rent paying tenants of all classes.		66	66	78	80	29	27	46	51	60	64	30	31	95	95	59	61

Occupancy tenants.

The most notable feature in this table is the very strong position held by occupancy tenants in all circles, except Dhaka Badhnak and Kandi Kahl, where the proportion of self-cultivating owners is large. The history of the tenancy question in this District is given in Chapter 5 of Captain Wace's Settlement Report. Here it need only be said that the reasons for the conferment of occupancy rights over so large an area

were the general weakness of the proprietary body and the desirability of recognising the privileged status of those cultivators who had stuck to the land throughout the insecurity of the Sikh *régime* and were thoroughly well disposed to our rule which brought them peace and prosperity. And so the passing of a special Tenancy Regulation for the District enabled the Settlement Officer to extend such rights to many cases which would not have come under the ordinary Punjab Tenancy Law. The result has been the creation of a strong body of cultivators, secure in their tenure, paying light rents, supplementing their resources in many instances from miscellaneous products such as wood and grass on which they pay no rent at all, and prospering generally. There is a certain amount of discontent among them, for the *batái*-paying tenants are anxious for their rents to be converted into cash, which in face of the invariable objection of the proprietors is not feasible, and in some tracts, notably in Khanpur, where the proprietors who had been ousted by the Sikhs have been reinstated by the British Government and the tenants, who used to pay the revenue to lessees selected from their own body, have been relegated to a subordinate position, they have a deep seated grievance. But now that they realise that their rents will not be commuted or their status altered in the present settlement, they will probably acquiesce in the position, and disputes between them and their landlords become less frequent than before.

It will be noticed that the percentage of cultivated area held by occupancy tenants has decreased by 4 per cent. since last settlement, but this is due not to an actual decrease in the total cultivated area in their possession but to a larger proportionate increase in the area held by other classes, a result which was only to be expected, as if an occupancy tenant enlarges his holding he has only the rights of a tenant-at-will over the additional area.

I should here remark that the figures for the area held under rents fixed in terms of the revenue and that held under other cash rents are not reliable, though the total of the area under cash rents may be accepted as fairly correct. I find that there are many entries about these rents in the vernacular settlement record which do not tally with the remarks about them made in Captain Wace's Settlement note-books. It often happens that cash rents which appear from the latter to have been fixed in terms of the revenue *plus* 30, 40, or 50 per cent. *málikána*, as the case may be, are shown in the former as *chakota* rents, that is, as lump sums fixed on the holding and they are considered as such by both landlord and tenant who have no idea what was their real origin. An examination of the settlement note-books indicates that the true percentages of the cultivated area at last settlement held under rents fixed in terms of revenue and under cash rents respectively should be 7 and 7 instead of 1 and 13. Of the area under the former class 24, 52, 21 and 3 per cent. pay 20, 30, 40, and 50 per cent. *málikána* respectively in addition to the revenue rates and cesses. The "other cash rents" are mainly *chakota*, and in a few scattered villages are acreage rates.

Cash paying occupancy tenants are particularly strong in Maidán Hazára Utla where these rents are paid largely on the best irrigated lands. In Kinára Darya cash rents are paid mainly on the *chahi* area. In Khanpur and Kandi Kahl, where the proportion is also large, they are paid impartially on irrigated and unirrigated land.

The whole question of the cash rents paid by occupancy tenants will have to be taken up separately when the revision of the record is complete. The raising of the revenue will necessitate a corresponding enhancement of these rents, and to prevent litigation between landlord and tenant regarding cash rents not expressed in terms of the revenue, it will probably be advisable to pass a special regulation empowering the Settlement Officer to fix these in such terms and thus provide for their automatic enhancement.

I may here notice a curious cess which is commonly paid by occupancy tenants in addition to the cash rents in the record of rights. It is termed "local rate" and is usually 1 anna in the rupee. I cannot trace its origin with certainty, but I suppose it is derived in some way from the practice of fixing rent in terms of revenue and cesses and possibly dates from the time when the various local cesses were converted into a single local rate, representing a slightly higher percentage on the revenue. Whether the landlords are

really entitled to demand this cess is not clear. The tenants usually admit that they pay it but deny the landlord's right to it.

The *batái* rates are usually the same as those paid by tenants-at-will, which will be discussed below.

A somewhat curious kind of occupancy tenancy found in the Khanpur Circle may here be mentioned, where two forms of this tenancy are found in the same holding. There is what is known as the *chakotadár* who pays a fixed cash rent to the proprietor; and cultivating the land under the *chakotadár* and paying *batái* rents to him, is a sub-tentant also with rights of occupancy. The *chakotadár* has usually a group of such holdings under him and is a sort of middleman between the landlord and the real cultivator of the soil.

Tenants free of rent.

Of the other classes of tenants those cultivating free of rent or at nominal rent need little notice. They are often proprietors who are cultivating land recorded as belonging to another person, under the impression that it is their own. The records are full of what are probably mistakes of this kind; but as the proprietor, who finds to his astonishment that he is entered as the owner of a field hitherto possessed by, and supposed to be the property of, somebody else, usually proceeds to swear that the land belongs to him, and that if he has not been cultivating it, it is only because he has been forcibly dispossessed, it is generally found best on the whole, unless the evidence in favour of the man in possession is very strong, to record the latter as a tenant-at-will under the nominal proprietor but paying no rent to him and to leave the parties to fight the case out in the courts.

Tenants-at-will.

Compared with the occupancy tenants the tenants-at-will are a small body. They now occupy 18 per cent. of the cultivated area, an increase of 5 per cent. since last settlement, and are most numerous in Gandgar, Kinára Darya and Dhaka Badhnak; many of them moreover are proprietors or occupancy tenants cultivating land in addition to that which they hold on a more secure tenure. Most of them pay *batái* rents, though in all circles there is a small percentage of cash paying tenants. Very few pay cash at revenue rates, though the settlement note-books show that at last settlement the area paying such rates should be 642 acres instead of the 89 recorded in Statement No. VII. The rest of the cash rents are *chakota* fixed by agreement or judicial decision, and there are a few cases of acreage rates. Among the *batái* rents are included some *zabti* rents paid on crops in Kinára Darya.

Size of holdings.

The size of the tenancy holdings averages a little over 2½ acres of cultivation for occupancy tenants and 2 acres for tenants-at-will. The average area has contracted to one-half what it was at last settlement, but when it is remembered that a good many holdings, in the hilly circles especially, include a considerable area of valuable waste, the size is not too small.

Batái rates.

21. Statistics of the *batái* rates paid by tenants-at-will on irrigated and unirrigated land will be found in Statement No. VII. And for completed villages I have shown in Appendix C the rates paid on different soils.

There has been a notable increase in the rates of *batái* rents since last settlement owing no doubt largely to the rise in prices. This will be clear from the following figures, which shew the percentages of the total area cultivated by *batái* paying tenants-at-will held under the various rates at last settlement and now:—

		Paying one-half or more.	Paying two-fifths and less than one-half.	Paying one-third and less than two-fifths.
Irrigated ...	Last settlement	12	86	2
	Now	58	30	10
Unirrigated ...	Last settlement	6	24	59
	Now	30	26	37

The increase in irrigated land paying one-third only is due to some light rates on *báhardi ábi* in the Kinára Darya Circle, which will be further referred to below. Otherwise the rise is steady. It has been most conspicuous in Maidán Hazára Tarla, where there are now 577 irrigated and 3,282 unirrigated acres paying one-half *batái* as against 6 and *nil* respectively at last settlement, in Maidán Hazára Utla, where the acreage paying one-half *batái* is 754 and 463 against 56 and 3, and in Kandi Kahl, where it is 25 and 1,040 against *nil* and 83.

The rates on the various soils may now be discussed in detail. On *cháhi* and *bágh* land the average rate may be taken as one-half. On such of the best *bágh* lands as do not pay cash rates it is sometimes as high as two-thirds or even three-fourths, but in these cases the landlord generally pays a share of the seed, or the manure, or provides the bullocks, whereas when he takes one-half, all these expenses fall on the tenant. I am, however, making an exception in the cases of sugarcane and turmeric. *Batái* is seldom if ever paid on these crops, but if it were it would certainly not be as high as one-half. In the calculations made in paragraph 17 I have shown that in the case of sugarcane the net value of the crop to the producer is about one-third and in the case of turmeric about one-fifth. I have accordingly in working out the produce estimate taken these as the rates of *batái* on these two crops respectively on all the soils on which they are grown.

On *báhardi ábi* as on *bágh* the *batái* rate is usually one-half though it is occasionally two-fifths. I have decided to take one-half, except in Kinára Darya, where I take two-fifths. In the latter circle Statement No. VII shows that a good deal of the irrigated land pays only one-third. This is mainly *báhardi ábi* on the bank of the Siran. It is good enough land and could well afford two-fifths, but the proprietors are non-residents and treat their tenants with undue leniency. So there is no reason why two-fifths should not be the rate for *báhardi ábi* in this circle. I take the same rate on *hotar* in Khanpur. The only *barangar ábi* worth considering is in the Maidán Hazára Circles. This generally pays two-fifths, and I have assumed that as the average rate. It sometimes pays one-half, but this can be set off against the *báhárdi ábi* that pays two-fifths.

With regard to unirrigated soils the common rate for *bári* is one-half, except in the Dhaka Badhnak and Gandgar Circles, where the almost universal rate on all *bárání* land is one-third, and I have assumed accordingly. On *kund* I have thought it safest to take two-fifths, except in the two circles above named, and in Kandi Kahl and Maidán Hazára Tarla, where the high rates on *kund* and *maira* justify me in taking one-half. In other circles, where some *kund* pays one-half, it can be set off against *bari* that pays two-fifths. On *maira* the rates vary from one-half to one-third, being highest in Kandi Kahl and Maidán Hazára Tarla, the former because of the pressure on the soil, the latter because of the excellence of it. I think two-fifths is a fair rate to assume all round, except in Gandgar and Dhaka Badhnak. On *rakkar* and *kalsi* the usual rate is one-third and it will not be safe to go higher. And in Badhnak much of the *rakkar* pays one-fourth only, which, I think, it will be better to take than one-third, in view of the very poor quality of the soil. It will be seen that, judging by the completed villages of Kandi Kahl, a good deal of the *rakkar* there pays as much as one-half, but the measured villages happen to be those with the best soils and the ordinary *rakkar* of this circle cannot possibly pay so much.

Landlord's share of straw and other dues.

22. It is not customary in this tahsil for the landlord to take any appreciable share of the straw. An examination of the records shows that on only about 21 per cent. of the holdings paying *batái* rents does he take any share at all, and in less than half of these is the share a fraction of the total produce as in the case of the grain. It is usually a fixed amount, *viz.*, one *tarangri* (a load weighing two or three maunds) of wheat and barley *bhúsa*, or one *gaada* (a similar load) of maize *tánda*, and this is not worth considering in estimating the landlord's profits. In Dhaka Badhnak and Khanpur the landlord takes no share whatever. The highest percentage of holdings paying a share of the straw is 59. This is in Gandgar, but here the share almost always takes the form of *tarangris* and

gaddas. In Maidán Hazára Tarla 19 per cent. of the holdings pay a share of the straw at rates similar to those of grain; but no other circle approaches this percentage. For these reasons I have decided to leave the share of the straw altogether out of the calculation of the landlord's assets, though, as shown in paragraph 17, an exception must be made in favour of *moth bhusa* in all circles except Khanpur and Dhaka Badhnak.

Another item that may here be mentioned are the miscellaneous dues (*habúbat*) paid to the landlord as a part of the rent in addition to the ordinary share of grain. They go under various names, such as *sardári*, *kharch*, *kiráya*, and they vary much from village to village, and are most frequent where the landlords belong to a leading or historically important tribe. In Khánpur, for instance, there are numerous *habúbat* recorded in the Gakkhar Rajas' villages. They usually take the form of one or two *odis* of grain per threshing floor, an *odi* being a measure which varies in capacity in different tracts and according to the kind of grain weighed, but which may be taken as roughly equivalent on the average to 4 sérs. In many cases, however, the correctness of the last settlement entry is hotly disputed by the tenants and it is difficult to ascertain the real facts. But there is no doubt that if not always to the extent recorded, these dues are generally paid. I have not, however, thought it necessary to take account of them among the landlord's profits. They are small in amount and in some villages non-existent; in some cases, as with *muhásil*, they are an equivalent for expenses incurred in cultivation (*muhásil* being a watcher of crops), and in any case they may be set against the wastage that usually occurs in the actual division of the produce.

Menials' dues.

23. The two village menials connected with agriculture, who on *batái* paying lands universally receive their dues from the common heap, are the *tarkhán* and the *lohár*, whose duty it is to make and repair the implements of cultivation. They are usually paid per plough, and the amount received varies from 2 to 5 *odis* and from 1 to 5 '*púlas*' (or sheaves) of maize or *bájra* in the kharif, and from 2 to 3 *odis* and 3 to 6 *gaddis* (or sheaves) of wheat or barley in the rabi. I have attempted a rough calculation of the deductions that should be made in the following manner. By dividing the total number of ploughs in the tahsil into the total matured area I get an average of matured area per plough of 9 acres. Of this it may be assumed that 2 acres are under maize and barley respectively, 1 under *bájra* and 4 under wheat. If we take the figures given in paragraph 19 for the average yield of these crops, we find that the cultivated area covered by one plough provides 24 maunds of maize, 4 maunds of *bájra*, 24 maunds of wheat and 14 maunds of barley, or 28 maunds of grain in the kharif and 38 maunds in the rabi. The average amount received by the *lohár* and *tarkhán* respectively may be taken as 4 *odis* or 16 sérs and 4 '*púlas*' or 8 sérs of grain in the kharif, a total of 24 sérs, and 3 *odis* or 12 sérs and 4 *gaddis* or 4 sérs of grain in the rabi, a total of 16 sérs. That is, out of every 66 maunds of grain the two village menials named get between them 2 maunds or 3 per cent. The above estimate is, I think, a fair one; at one division of produce which I witnessed in Maidán Hazára Tarla the share of the *tarkhán* and *lohár* came to just that amount; at another it was between 4 and 5 per cent., but then the holding was a very small one. Other menials also, such as the barber, *mochi*, and *khádim* of the mosque, are often paid out of the common heap, and an *odi* or two is usually left at the bottom of the heap for *fakírs*, but these payments need not be considered as they are not connected with agriculture.

There is, however, one other item which must be mentioned, and that is *letri* or the share of the reaper, who is usually allowed to take 1 sheaf in every 20, *i.e.*, 5 per cent of the total crop. It is not easy to decide to what extent this should be allowed for. On large holdings and with a good harvest the employment of outsiders as reapers is necessary, but where the holding is small or the crop scanty the cultivator does the work himself. I think it would be an exaggeration to allow a 5 per cent. deduction throughout on this account, and I therefore propose to take an average of 2 per cent. only, which will raise the total deductions to be made from the gross produce before the landlord's share is calculated to 5 per cent. This is not, I think, far off the mark. On large holdings it must be remembered that although *letri* may be paid the acreage per plough is more and the percentage received by the village

menials diminishes in proportion; while on small holdings, though no *letri* is usually paid, the percentage received by them is higher. It only remains to add that on well lands the *kumhár* receives as much as the *tarkhán*, but, on the other hand, the *lohár*, who does not require to be often called in to repair the plough, usually gets only some sheaves of maize, and there is no *letri*; so here, too, 5 per cent. is a fair deduction for expenses previous to the division of the crop. On other irrigated lands no *kamiána* is as a rule paid on sugarcane and turmeric, as the holding usually comprises *báráni* land as well, but where there is no *báráni* land, the *lohár* and *tarkhán* each receive the produce of a *kiára* or bed of turmeric or sugarcane, which an allowance of 5 per cent. more than covers.

Maintenance of water-courses.

24. In calculating the landlord's profits it has also to be considered whether any deduction should be made on account of expenditure incurred in maintaining the water-courses, many of them several miles in length, through which the irrigation from the Dor, Siran and Harroh rivers is effected. I have come to the conclusion that this is unnecessary. On the majority of such water-courses mills have been constructed, and where such is the case, it is the duty as well as the interest of the owner or worker of the mill to clear out and repair the channel, and the landowner or cultivator thus escapes all expense on that account. Where there are no mills on a water-course, the cultivators, whose lands are irrigated from it, whether owners or tenants, have to keep it in order, but as this is the exception and not the rule, I shall take no account of it in my general proposals, and make what allowances seem advisable in my detailed village assessments.

Cash rents.

25. The area cultivated by cash-paying tenants-at-will is small in all circles, being highest in Maidán Hazára Utla, where it is 3 per cent., and lowest in Gandgar and Maidán Hazára Tarla, where it is 1 per cent only. Caution must, therefore, be exercised in deducing any general conclusions from such rents, especially as separate figures for the rents paid on the various soils are only available for re-measured villages (Appendix C). The cash rents paid in different circles will be referred to in the assessment proposals. Here it is sufficient to note that Statement No. VII shows, as in the case of *batai*, a considerable rise in these cash rents since last Settlement. This will appear from the following table which gives the average cash rent per acre paid in each circle on irrigated and unirrigated land, respectively, at last Settlement and now :—

	Kinára Darya.	Gandgar.	Dháka Badhnak.	Maidán Hazára Tarla.	Maidán Hazára Utla.	Kandi Kahl.	Khánpur.	Total Tahsil.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Irrigated—								
Last Settlement ...	4 0 0	...	2 8 0	12 10 0	10 0 0	12 8 0	10 8 0	9 0 0
Now	26 0 0	0 13 0	0 15 0	0 10 0	2 0 0	1 1 0	1 5 0	24 0 0
Unirrigated—								
Last Settlement ...	1 0 0	...	0 14 0	9 0 0	26 0 0	7 0 0	30 0 0	1 4 0
Now	3 1 0	0 15 0	0 9 0	2 11 0	2 4 0	1 13 0	2 0 0	2 0 0

Although neither set of figures may be quite reliable, and one or two decreases in the rates are difficult to explain, the fact of a general all-round rise cannot be doubted. I regret that I have not also got figures for the *chakdia* rents paid by occupancy tenants. The necessary statistics will be supplied in the separate report promised in paragraph 20.

CHAPTER V.—HALF-ASSETS RATE.

Calculation of produce estimate.

26. We are now in a position to calculate the value of the total produce and the share thereof due to the landlord and to Government. The produce estimates in which these calculations are made will be found in Appendix D. I regret that from the nature of the case these estimates must be more unreliable even than they usually are. The reasons for this are indicated in paragraph 7. In the four plain circles of Kinára Darya, Maidán Hazára Tarla, Maidán Hazára Utla and Kandi Kahl the old maps and records are not perhaps much more inaccurate than usual in districts measured under the old plane table system. I have, therefore, excerpted the crop entries on each soil during the last six years and struck the average in the usual manner, the areas and soils shown in the *khasra girdáwaris* of re-measured villages having been corrected in accordance with the new returns. But for unmeasured villages I have had to accept the old areas and classification of the fields. As a check on the produce estimate of the whole of each of these four circles so compiled, I have shown separately a produce estimate based on the average of the same cycle of years for re-measured villages only, in which the returns and areas of crops grown on each class of soil may be assumed to be fairly correct. And as a further check I have made out a produce estimate of the measured villages for the Rabi and Kharif of 1903, in which the *girdáwaris* were made on the new maps; these returns may be considered as accurate as we are ever likely to get, while the year is on the whole an average one. For the three hill circles of Gandgar, Dháka Badhnak and Khánpur I have less data to go upon. To excerpt by soils from the *khasra girdáwaris* of the last six years would have been waste of time, for the results could not have inspired any confidence. Till this Settlement the *girdáwaris* of the hill villages have, as a rule, been very perfunctorily carried out. It is beyond human nature to expect that a patwári will toil up a steep hill to record on the spot the crops grown in fields which he knows his superior officers will never think of inspecting, and which he may find it difficult to identify on his map. The usual procedure in such villages in past years, I believe, has been for the patwári at *girdáwari* time to collect the zamíndárs round him, enquire from each what crop they are growing on their holdings in the current harvest, make a rough guess at the *kharába*, and write up his papers accordingly. At the beginning of this Settlement a Hindu patwári in Dháka Badhnak, the son of an official on the District Staff, applied to me for a transfer on the ground that there were no other Hindús in his circle. Enquiry showed that he had been in this circle for six or seven years, and when I suggested that if he had endured his position for so long, his transfer now seemed hardly necessary, it was explained to me that though nominally attached to this circle he very seldom visited it and usually resided in Haripur many miles away. But now that Settlement operations made it incumbent on him to reside in his circle he began to feel the pinch. Again, in a village in Khánpur which I inspected, the aged chaukidár informed me that since the days of last Settlement, no Tahsildar or higher official had ever been there, but he thought a Naib Tahsildar had been once. These are but extreme instances of a general neglect, and show how hopeless it is to expect in these circles even the standard of accuracy attained in the plain tracts. All one can say is that the total areas under each crop are perhaps not very wide of the mark, and that the relative amount of *kharába* has in the last three years, *viz.*, since Settlement operations began, been fairly correctly estimated.

The manner in which I have framed produce estimates for these three circles is to take the average areas of irrigated and unirrigated crops during the last six years and distribute them over the various soils as best I can, using as guides, firstly, the excerpted returns of eight unmeasured villages in each circle for the last three years and secondly, the returns of the *girdáwaris* of re-measured villages for the Rabi and Kharif of 1903. By taking the proportions of each crop grown on each soil and the proportionate area of each soil cultivated in each harvest as shown in the above-mentioned returns, checking the results thus worked out by my own knowledge of the relative productiveness of each soil and the crops usually grown on it, and adapting them to the soil areas given in the *milán rakba* and the total areas under each crop, I

have made out a produce estimate which, though it may be largely fictitious, is probably at least as reliable as one worked out by excerption would be and takes much less time to construct. And to check the returns thus obtained I have framed two subsidiary produce estimates, one of the eight selected unmeasured villages above referred to and another of the re-measured villages for the Rabi and Kharíf 1903, in which *girdáwari* was made on the new maps, as in the four plain-circles. I could wish that the number of measured villages completed before the Rabi of 1903 in Dháka Badhnak and Gandgar had been larger, but I have had to make the best of the returns available. The calculations above described lead, I fear, to rather a superabundance of figures, but in the circumstances I feel that more checks than usual are required.

Half-assets estimate.

27. With these preliminary remarks I proceed to give in the following table the half-asset crop and soil rates and the total value of the Government share in each circle which are brought out by the various produce estimates:—

	Kinara Darya.						Maidan Hazara Tarla.						Maidan Hazara Utsa.						Kandi Kahl.						Gandgar.						Draka Badhnak.						Khanpur.					
	Half-assets crop rate on produce estimate, whole circle.	Half-assets crop rate on produce estimate, remeasured villages.	Half-assets crop rate on produce estimate, remeasured villages, 1903.	Half-assets soil rate on produce estimates in column 2.	Half-assets soil rate on produce estimates as in column 3.	Half-assets soil rate on produce estimate as in column 4.	Half-assets crop rate as in column 2.	Half-assets crop rate as in column 3.	Half-assets crop rate as in column 4.	Half-assets crop rate on produce estimates as in column 5.	Half-assets soil rate as in column 6.	Half-assets soil rate as in column 7.	Half-assets crop rate as in column 2.	Half-assets crop rate as in column 3.	Half-assets crop rate as in column 4.	Half-assets soil rate as in column 5.	Half-assets soil rate as in column 6.	Half-assets soil rate as in column 7.	Half-assets crop rate as in column 2.	Half-assets crop rate as in column 3.	Half-assets crop rate as in column 4.	Half-assets soil rate as in column 5.	Half-assets soil rate as in column 6.	Half-assets soil rate as in column 7.	Half-assets crop rate as in column 2.	Half-assets crop rate according to produce estimate for 8 selected villages, 1900-01.	Half-assets crop rate as in column 4.	Half-assets soil rate as in column 5.	Half-assets soil rate according to produce estimate as in column 26.	Half-assets soil rate as in column 7.	Half-assets crop rate as in column 2.	Half-assets crop rate as in column 20.	Half-assets crop rate as in column 4.	Half-assets soil rate as in column 5.	Half-assets soil rate as in column 22.	Half-assets soil rate as in column 7.	Half-assets crop rate as in column 2.	Half-assets crop rate as in column 36.	Half-assets crop rate as in column 4.	Half-assets soil rate as in column 5.	Half-assets soil rate as in column 39.	Half-assets soil rate as in column 7.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.	38	39	40	41	42
	Rs. a.	Rs. a.	Rs. a.	R.a.	Rs. a.	R.a.	Rs. a.	Rs. a.	Rs. a.	R.a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	R.a.	R.a.	R.a.	Rs. a.	Rs. a.	Rs. a.	R.a.	R.a.	R.a.	Rs. a.	Rs. a.	Rs. a.	R.a.	R.a.	R.a.	Rs. a.	Rs. a.	Rs. a.	R.a.	R.a.	R.a.	Rs. a.	Rs. a.	Rs. a.	R.a.	Rs. a.	Rs. a.
Chahi ...	7-11	7-11	7-4	14-3	14-1	13-5	6-1	6-3	6-3	12-1	12-11	12-10	...	...	...	...	...	...	...	...	...	...	...	...	4-8	...	3-5	8-12	...	10-0	...	...	...	...	...	...	...	...	...	...	...	...
Bágh ...	6-1	5-8	...	11-0	10-10	...	4-10	4-10	4-13	8-6	8-9	8-13	2-4	7-10	10-3	14-12	12-0	16-10	6-6	7-7	8-9	9-5	10-2	9-9							4-12	...	...	9-8	...	...	6-12	6-15	5-12	9-13	10-10	8-2
Bahardi ábi							3-11	3-11	3-13	5-5	5-2	4-14	5-1	4-10	5-1	7-1	6-2	7-7																			4-7	4-8	4-8	5-3	5-6	4-10
Hotar ...	3-9	3-6	...	6-2	2-13	...																															4-7	4-12	4-3	5-3	7-0	3-13
Barangar ábi and Gharera ábi.							1-13	1-12	1-14	1-13	1-9	1-1	2-7	2-3	2-6	2-10	2-1	1-11	3-15	3-13	4-5	5-11	4-13	6-12	3-3	...	...	7-10	...	...	3-11	...	...	6-12	...	...	Included in Bahardi ábi.					
Pari ...	3-3	3-0	2-13	3-1	3-4	2-12	3-2	3-3	3-6	3-9	3-11	3-0	3-3	3-4	3-3	3-3	3-14	4-5	3-4	3-4	3-4	4-7	4-12	4-6	1-15	2-0	1-10	3-8	2-0	1-14	2-1	2-1	2-2	3-0	2-5	2-14	3-14	4-1	3-12	5-12	5-14	5-11
Kund ...	2-6	2-5	2-3	2-2	2-3	1-4	2-12	2-12	2-2	2-4	2-4	2-1	2-4	2-4	2-6	2-4	1-13	2-4	2-13	2-12	2-12	2-14	2-14	2-4	1-12	1-14	1-11	1-10	1-11	1-7	1-10	1-10	1-8	1-11	0-5	0-12						
Mairs ...	1-15	1-15	1-15	1-3	1-12	1-0	1-11	1-11	1-11	1-3	1-4	1-0	1-12	1-12	1-12	1-4	1-4	1-2	1-9	1-8	1-8	1-3	1-3	1-3	1-4	1-3	1-3	0-15	0-11	0-13	1-1	1-2	1-2	1-0	0-13	1-4	1-13	1-13	1-13	1-7	1-5	1-8
Rakkar ...	0-12	0-12	0-12	0-9	0-9	0-12	0-12	0-12	0-12	0-8	0-8	0-2	0-13	0-13	0-13	0-9	0-7	0-8	0-11	0-11	0-11	0-7	0-6	0-6	0-11	0-11	0-11	0-8	0-8	0-6	0-9	0-9	0-9	0-8	0-14	0-5	0-13	0-14	0-12	0-9	0-10	0-7
Kalsi ...																									0-11	0-11	0-12	0-6	0-8	0-5	0-7	0-7	0-7	0-6	0-6	0-4	0-15	0-15	0-12	0-10	1-2	0-2
Total half-assets on base of above rates.	42,038	42,642	46,179	...	...	...	73,360	73,251	73,314	...	...	...	84,569	75,792	87,780	...	...	...	26,236	24,563	27,034	...	...	...	12,109	11,986	11,096	...	...	...	9,029	9,086	9,019	...	...	...	64,999	66,619	62,546	...	...	...

Grand Total Tahsil—

By 1st produce estimate 3,13,286

By 2nd produce estimate 3,09,737

By 3rd produce estimate 3,16,908

It will be seen that the totals of the three half assets estimates approximate closely to one another, there being a difference of under Rs. 9,000 between the highest and lowest. Together they indicate that the full share to which Government is entitled in this tahsil is at least three lakhs of rupees. I should add that where in later paragraphs I speak of the half assets estimate, without further specification, it is the first of the three that I refer.

PART II.—THE ASSESSMENT.

CHAPTER I.—FISCAL HISTORY.

Assessments under native rule.

28. The chequered history of the Hazára District, prior to the annexation of the Punjab by the British, which is largely the history of the tract now included in the Haripur Tahsil, is recounted at length in Captain Wace's Settlement Report. Here the most salient points only need be noticed. In the time of the Moghal Empire the "Maidán Hazára" appears to have been under a Governor whose head-quarters were at Attock, while the Khánpur *iláqa* was under the Gakkhar Chiefs. During the decline of that empire the tahsil was the scene of constant strife between the various tribes inhabiting it, in the course of which the Tárins and Utmánzais established themselves in the Haripur plain at the expense of the Gujars. In 1752 the Punjab and Kashmír were ceded to Ahmad Shah Duráni, and under his rule, and that of his successors, a certain measure of security appears to have been introduced. Large allowances were made to local chiefs; the Khánpur *iláqa* remained under the management of the Gakkhars, and the Hazára plain under that of the Kárdárs of Attock or of the Tárin Chief.

There was no organised system of revenue, but the Duráni rulers probably collected as much as they could on their way to and from Kashmír. By the beginning of the 19th century their authority had become much weakened, and the turbulence of the Hazára tribes increased greatly in consequence. There was no central control; each tribe fought for its own hand and prospered or the reverse in accordance with the capacity of its leaders. The unruliness of the population is shown by the fact that when in 1803 the Governor of Attock sent an emissary to collect the revenue of the Haripur plain, his camp at Sikandarpur was attacked at night by the Tárins; he himself was slain and his followers fled back to Attock. This was one of the last acts of the Duráni Government in Hazára; in 1818, seven years after Ranjít Singh had siezed Attock, the Sikh rule commenced. The first Sikh Governors had a troublesome time with the Tárins and other turbulant tribes of the District, and it was not till the advent as Governor about 1820 A.D. of the famous Sardár Hari Singh Nálwa (from whom the town of Haripur takes its name) that the complete subjugation of the District began. In the Haripur Tahsil the hill tribes were the greatest obstacles in the way of the Sikhs, but in 1824 the Mishwánís of the Gandgar range were subdued, and in 1830 the Gakkhar Chiefs were evicted from the Khánpur *iláqa* and the tract taken under direct management. From this time onwards till the year 1845 comparative peace and security reigned in Haripur. The country was dominated by forts at Srikot, Tarbela, Khánpur and Haripur itself, which were filled with Sikh garrisons. The leading chiefs were kept quiet by large *iágirs*, including the Gakkhars who were conciliated in this manner in 1837. The *khálsa* revenue was collected in the usual Sikh fashion, *viz.*, either direct from the zamíndárs by appraisement of the crop, the share of Government being one-half the total value, or through farmers to whom the revenues of the villages were leased and who collected at these rates. Sardár Hari Singh was killed at the battle of Jamrúd in 1837, and was succeeded by various Governors. In 1842 Hazára was made over to the control of Guláb Singh, the Governor of Kashmír, but in 1843, after the murder of Mahárája Sher Singh at Lahore, the Darbár resumed the direct management, and sent Diwán Múlráj Dilwáiwála, to govern the District. His revenue arrangements were more moderate and judicious than those of his predecessors, whose assessments of the value of the half share claimed by the State were usually made at rates considerably above current market prices. He gave leases to the great majority of the villages at fairly reasonable rates, and the measures taken by him afforded great relief to the country.

Towards the end of 1845 fresh disturbances arose in Hazára and the weak Sikh Government at Lahore, disorganised further by its reverses at the hands of the British in the first Sikh war, was unequal to coping with them. The Mishwánís, the Gakkhars and finally the Tárins rose. The Srikot and Khánpur forts were captured, and the Tárins took Haripur town in March 1846. Although the Sikh Garrison in the Haripur fort got the better of the rebels, Diwán Mulraj had no stomach for fighting, and on the 16th April 1846 he marched out of the fort and left for Hassan Abdál with all his troops.

The Hazára Chiefs assembled at Haripur thereupon appointed Said Akbar the leader of the Hindustáni Colony at Sithána across the Indus, as their ruler, and an attempt was made to restore the state of thing which existed prior to Sikh rule. This period is known as the "Lundi Musalmáni." Lundi signifies "incomplete," and it was in fact for only a very brief time that the Muhammdans were in the ascendant. By the peace concluded on 19th March 1846 between the Darbar and the British Government, Kashmír and its dependencies, including Hazára, were ceded to Rája Guláb Singh, and accordingly, in May 1846, Diwán Hari Chand arrived in Haripur to collect the revenue on the Rája's behalf, and most of the tribes in lower Hazára submitted to him. Early in 1847, however, the Darbár took over Hazára from the Rája who received territory near Jammu instead, the basis of the exchange being "that an equitable assessment should first be made in Hazára involving the release of *jágírs*, and other rent-free holdings, and that on the reduced income lands should be given on another part of the border to half the value of those of Hazára."

First Summary Settlement.

29. It was in accordance with this agreement that Major (subsequently Sir James) Abbott, then Assistant to the Resident at Lahore, was deputed to make the first Summary Settlement, Sardár Chatar Singh being at the same time nominated by the Darbár as Governor of Hazára. As above stated, the Sikh demand was estimated at half the total value of the produce, and though less than this was no doubt taken in the more remote and hilly tracts of the District, it is probable that in the country most completely under control, such as the Haripur plain and that in the vicinity of the forts, a full half share was exacted, and if it be remembered that there were numerous and vexatious cesses levied over and above the land-revenue, and estimated by Captain Wace at not less than 12 per cent. thereof, and that great harshness was shown in the collection of arrears, the lot of the average Haripur zamíndár even in Diwan Mulráj's time cannot have been a very enviable one. So to lighten the burden on the people Major Abbott was directed to reduce the standard of the State's demand from one-half to one-third of the produce; and at the same time he was not to adhere rigidly to this proportion, but to make due allowances for the circumstances of each case. According to Captain Wace, the method of assessment which was followed by Major Abbott, who had no measurements or village papers to guide him, seems to have been to ascertain the sums levied by the Sikh Government during the few years preceding, and after enquiry into the circumstances of each village to assess on the average 15 per cent. lower than the previous payments. The result was a reduction of the revenue from Rs. 1,49,299 to Rs. 1,27,802 and the abolition of all the extra cesses levied by the Sikhs.

The assessment thus imposed was a great improvement on what preceded it, and as the chiefs were also treated with much liberality in the way of *jágírs* and allowances, the country was by the beginning of 1848 completely pacified. In that year, however, the District was again thrown into a ferment by the revolt of the Sikh troops in Hazára under Sardár Chatar Singh, and the outbreak of the second Sikh war. With the support of the Mishwánis, and some of the Tarkhelís and Utmánzáis, Major Abbott maintained himself first in Gandgar and afterwards in Tanáwal, and defied all the efforts of the Sikhs and of the Afgháns who came to their aid to dislodge him. At length, in February 1849, the second Sikh war was brought to a close by the victory of Gujrát; the Afghán and Sikh troops retired, and with the annexation of the Punjab in 1849, Hazára entered on an era of peace and prosperity which has continued ever since.

Second Summary Settlement.

30. Major Abbott was the first Deputy Commissioner of the District under British rule, and at the close of the year 1851, he obtained the permission of the Board of Administration to revise his first Settlement, the leases of which had been given for a term of three years. The revision was all the more necessary as a great fall had taken place in the price of grain since 1847, which rendered reduction, at any rate, in the plain tracts of the Haripur Tahsil, advisable. Accordingly, during the year 1852, Major Abbott revised the leases of nearly the whole of the District, with the result that in the Haripur Tahsil he reduced the assessments in 114 villages, raised them in 50, and maintained them unaltered in 145. The net result was a reduction of the previous assessment by 20 per cent., from Rs. 1,27,802 to

Rs. 1,20,000. The largest reductions were given in Maidán Hazára and Kandi Kahl, while big increases were taken in Kulai and some of the Gandgar villages.

The revenue thus fixed was paid during the ensuing twenty years with the greatest ease. Neither the famines of 1860-61 nor the scarcity of 1869-70 seriously affected Hazára; the Rabi instalments in part of the Haripur Tahsil were, it is true, suspended in 1861, but they were paid up very shortly; and the zamíndárs benefited greatly in these years by being able to dispose of their produce at high prices. In the Summary Settlement of 1852 as in its predecessor, the standard assumed as the State's share was one-third of the total produce; but Captain Wace estimates that the share actually taken did not amount to more than one-fourth. A yet lower standard, *viz.*, one-sixth, was assumed in the assessments made by Majors Adam and Coxe in 1862-63. These assessments were never sanctioned by the controlling authorities, but it is worth noting here that in spite of the lower standard adopted the increase in cultivation combined with a slight increase in prices had been such that the assessment recommended for the Haripur Tahsil exceeded that of the second Summary Settlement by nearly 3 per cent.

First Regular Settlement.

31. The first Regular Settlement of Hazára was commenced by Captain Wace in May 1868, and was finally completed in 1874, but the new assessments were introduced with effect from the Kharíf of 1872. The whole District was measured by patwáris and an elaborate record of rights was prepared. For assessment purposes the Haripur Tahsil was divided first into five tracts, *viz.*, irrigated plains, unirrigated plains, low dry hills, temperate hills, high lands and cold mountain tracts, and these again divided into the twenty assessment circles to which I have before alluded. A classification of soils was adopted which has been referred to in paragraph 4 and an estimate of the average yield of each crop on irrigated and unirrigated land in each tract was framed. The irrigated and unirrigated acreage under each crop was ascertained from the patwaris' returns, and by multiplying the assumed yield by the acreage an estimate of the total produce of the tahsil was obtained. Of the total produce one-sixth was taken to be the Government share and the value of this share at the prices assumed was then calculated for each tract and village. Further, as a check on the produce estimate, Captain Wace by an independent calculation devised soil rates on each class of soil. To help him in arriving at these he had certain soil rates framed by Major Abbott in 1852 and Major Adams in 1861-62, and in fixing the rates on Bágh in the Haripur plain he also used cash rents as a guide. But for the most part he had to rely on his own judgment as to what was suitable in view of the relative value of each soil. As a second check he also deduced plough rates for each tract, calculated on the acreage required per plough. The soil and plough rates he found to be useful aids in distributing the assessment for, as he says, "by means of the soil rates villages possessing land better or worse than the average were charged proportionately; and by means of the plough rates like consideration was given to the strength or weakness of a village in cultivators and plough cattle."

As a matter of fact, however, a detailed inspection of the villages in the Haripur Tahsil inclines one to the belief that Captain Wace in his assessments was guided more by a consideration of what each village had been paying in the past and of how much above or below that sum in his own opinion and that of his Extra Assistant Settlement Officer, Mirza Azam Beg, who had a very intimate knowledge of the District, it could afford to pay in the future, than by his produce estimate or rates, and in comparatively few instances does the actual *jama* of a village conform to that deduced by any of the latter methods. Considering the data on which Captain Wace had to base his estimates this is not surprising. The returns of acreage under crops were only those of the year of measurement and in themselves must have been very unreliable, for only the crop that was on the ground when the village was being measured was recorded from actual observation, and on land that bore two crops in the year only one crop was shown. The estimates of yield were also very conjectural; Captain Wace was not able to make many experiments himself and for the most part had to accept the estimates framed by Majors Adams and Coxe; and except for the distinction between irrigated and unirrigated land, no attempt was made to discriminate between the yields

on the different kinds of soils. Lastly, the patwáris' maps and the classification of cultivated land made by them were, as already mentioned, in many cases very incorrect, and the results deduced therefrom were vitiated in consequence.

The following table shows the assessment of the land-revenue of the Haripur Tahsil according to the estimates and as actually fixed :—

	Rs.
Assessment at one-sixth gross produce	1,57,234
Do. at soil rates	1,76,466
Do. at plough rates	1,56,538
As fixed	1,43,778

The actual assessment was thus about 9 per cent. below the estimate of one-sixth gross produce, 19 per cent. below that of soil rates and 8 per cent. below that of plough rates. The total assessment of the tahsil, including that imposed on mills, amounted to Rs. 1,47,370, a rise of Rs. 27,280, or 23 per cent. on that fixed by Major Abbott, though still some Rs. 2,000 below the *jama* of Diwán Mulráj. There was little need to justify this increase. Indeed, from the fiscal point of view, the circumstances of the tahsil would have allowed a somewhat higher assessment. In the twenty years of peace and security that followed the Summary Settlement of 1852, the prosperity of the tahsil had made a striking advance. There had been a great rise in the price of grain, which reduced the proportion of the produce absorbed by Major Abbott's assessments from one-fourth to one-eleventh. Cattle had greatly increased in value; a thriving export trade in butter and grain had sprung up; the sale of grass and wood brought considerable profits to some villages; and, lastly, there had been a great extension of cultivation. The main reasons for the leniency of the assessment were that from political considerations it was not advisable in a frontier district to exact so heavy a revenue as in less exposed tracts, and also that in any case it was unwise to take a very large and sudden increase which the people might be unprepared for, and, in consequence, unable to meet.

Working of Regular Settlement.

32. The general impression given by Captain Wace's rates is that for unirrigated soils, considering the circumstances of the time, they are full, and for irrigated soils are moderate to light. It may indeed be said that the leniency of his assessment consisted more in the fact that he imposed a revenue much below that warranted by his rates than in the lowness of those rates themselves. His anticipations as to the lightness of its incidence have been fully borne out. It was sanctioned for thirty years, and during all that period the revenue has been paid with ease. Inequalities of distribution there may be, but the standard is, as a rule, low enough to enable villages which have been assessed at rates higher than their circumstances, as compared with those of their neighbours, warranted to meet the demand with little difficulty. In the dry tracts, it is true, there have been occasional suspensions owing to drought, but these have been realised in the succeeding harvests, and the only remissions granted have been on account of damage done by hail or locusts. The appended table shows the amount of these suspensions and remissions according to returns supplied by the District Office.

Assessment Circle.	Suspensions.							Remissions.		
	1875-76.	1876-77.	1891-92.	1896-97.	1899-1900.	1901-02.	1902-03.	1892-93.	1899-1900.	1901-02.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. a. p.	Rs. a. p.	Rs.	Rs.	Rs.
Kinára Darya	...	...	...	...	...	...	...	...	...	496
Gandgar	...	...	...	358	...	...	...	165	...	...
Dháka Badhnak	...	...	200	...	...	...	841-8-0	...	...	10
Maidán Hazára Tarla ...	...	...	...	35	1,948	1,250-0-0	...	...	83	225
Ditto Utla ...	...	...	...	186	80	...	...	...	...	...
Kandi Kahl	555	196	...	1,166	1,081	480-8-0	...	...	60	...
Khánpur	...	...	...	405	...	...	...	...	...	...
Total Tahsil ...	555	196	200	2,150	3,109	1,730-8-0	841-8-0	165	143	731

Summary of results.

33. The results of the various assessments of the tahsil are for convenience summarised below. The land-revenue is, where possible, shown separately from the assessment of mills, the amount of which in the Summary Settlements is a rough estimate only. The difference of Rs. 288 between the revenue imposed at the introduction of the Regular Settlement and that levied in the year 1902-03 is due mainly to dialluvion.

	Land-revenue.	Mills.	Total, with increase or decrease on previous assessment.
	Rs.		Rs.
Last Sikh jama of Diwán Mulráj, 1845	1,49,299		1,49,299
Summary Settlement of 1847	1,24,902	2,900	1,27,802 −21,499
Summary Settlement of 1852	1,17,190	2,900	1,20,090 −7,712
Regular Settlement of 1872	1,43,778	3,592	1,47,370 +27,280
Revenue, 1902-03	1,42,853	4,229	1,47,082 −288

Assignments.

34. The following are the figures for the amount of revenue assigned at last Settlement and now:—

	Last Settlement.	Now.
	Rs.	Rs.
Assigned jama of whole villages or shares of villages or plots of land	33,207	27,685
Assignments in cash out of gross assessment	10,424	9,405
Total	43,631	37,090
Deduct nazrána payable by assignees	2,274	2,947
Balance revenue assigned	41,357	34,143

Thus out of a total revenue of Rs. 1,47,082 no less than Rs. 37,090, or 25 per cent., is assigned; or, if we deduct *nazrána*, 23 per cent. Of the total assignments Rs. 31,390, or 84 per cent., is in perpetuity, and Rs. 4,735, or nearly 13 per cent., for the period of Settlement, and the rest is for life or lives, or at the pleasure of Government.

The large extent of the *jágírs* is due to the situation of the tahsil on the frontier and the number of chiefs whom the Sikhs found it politic to conciliate and to whom we have continued the Sikh grants, or who rendered services to Major Abbott in the troublous times prior to annexation and were rewarded in this way. The biggest jagírdárs in the tahsil are the Nawáb of Amb, the head of the Tanáoli tribe, to whom the whole of Badhmak and Kulai is assigned, the Khan of Khalabat who is the head of the Utmánzais, the Gakkhar Rájás, the Awán Qázís of Sikandarpur, the Gujar Mukaddam of Kot-Nají-bullah, the Utmánzai Khan of Topi across the Indus in the Pesháwar District, and the Tarkheli proprietors of the Gandgar and Khari *iláqas*. The *jágírs* are chiefly the assigned revenue of whole villages or shares of villages, and their holders will, therefore, benefit by an increase of the assessment. The assignments which were granted for the term of Settlement consist mainly of *lambardári ináms*, and will now come under revision.

CHAPTER II.—GENERAL STATISTICS.

Area statistics.

35. The following table gives in percentages of the total area particulars of the cultivated and uncultivated area of the tahsil:—

	Kinára Darya.		Gandgar.		Dhaka Badhnak.		Maidan Hazara Tarla.		Maidan Hazara Utla.		Kandi Kahl.		Khanpur.		Total Tahsil.	
	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.	Settlement.	Now.
Government Forests	...	...	...	...	...	...	..	...	1·2	1·3	..	..	21·0	21·0	5·9	5·9
Other unculturable	67·0	67·4	81·9	80·9	78·7	74·1	39·0	36·1	43·8	41·6	60·1	54·6	57·3	55·8	59·4	57·4
Available for cultivation ...	3·4	1·9	2·2	1·3	1·9	·2	8·0	4·4	4·7	2·3	2·4	2·0	3·3	1·3	3·9	2·0
Cultivation... Irrigated ...	2·7	3·4	...	·1	·2	·2	8·1	8·7	17·1	18·3	·6	1·0	3·5	3·7	4·6	5·0
Cultivation... Unirrigated ...	26·9	27·3	16·8	18·6	19·2	25·5	44·9	50·8	33·2	36·5	36·9	42·4	14·9	18·6	26·2	29·7
Cultivation... Total Cultivation	29·6	30·7	16·8	18·7	19·4	25·7	53·0	59·5	50·3	54·8	37·5	43·4	18·4	21·9	30·8	34·7

The proportion of unculturable waste is large in all the circles; in Gandgar, Dháka Badhnak and Khanpur it is chiefly hill land, partly covered with trees or scrub and partly with grass only which affords excellent grazing, and in certain localities is preserved and cut in the autumn for fodder. In Kinára Darya and Kandi Kahl there is also a fair amount of hill land in some of the villages of varying quality; the rest of the waste is mainly in the beds of rivers, ravines or *nullahs;* which is also the character of most of the waste in the two Maidán Hazára Circles.

Although however so much of the hill land has been classed as unculturable it should be noted that it does not follow that no extension of cultivation is possible therein. The less steep hill sides can with some labour be terraced into *kalsi* fields and even without terracing can be cultivated so as to produce a scanty crop. But it has been thought advisable to classify practically all uncultivated land on the slopes of hills as *ghair mumkin* because it is difficult to say what is culturable and what is not, and when it is broken up by the plough the cultivation is usually of the poorest character. It should also be observed that in the Kinára Darya, Dháka Badhnak, Gandgar and Khanpur Circles there are altogether 38,029 acres of what is known as protected waste, or waste land demarcated under the provisions of the Hazára Forest Regulation within which all cultivation is prohibited without the special sanction of the Deputy Commissioner. It is distributed among these four circles as follows—Kinára Darya 3,322 acres (9 villages), Dháka Badhnak 8,840 acres (22 villages), Gandgar 14,737 acres (16 villages) and Khanpur 11,130 acres (38 villages). The object of reserving this area is to prevent the hill sides being denuded of forest growth to the detriment of the soil beneath, and to maintain a supply of fuel and timber for the villages. These village forests are now being re-demarcated and the protected area will be considerably diminished, but the figures are not available in time for this report. The Government Forests, which cover 5·9 per cent. of the area of the tahsil, are confined to the Maidán Hazára Utla and Khanpur Circles. That in Maidán Hazára Utla is a grass rakh under the management of the District Board; the forests proper are in the Khanpur range and contain a thick growth of *sanatha*, *phulá*, *káo* and other trees suitable for fuel purposes, while there is a quantity of *chír* in the higher hills.

The actual increase in the total cultivated area is from 131,590 acres to 147,520, a rise of 15,930 acres or 12 per cent. Out of this the increase in the irrigated area is from 19,685 to 21,307 acres, or nearly 9 per cent., and the increase in unirrigated area is from 111,955 to 126,213 acres, or nearly 13 per cent. The increase in the irrigated area is due partly to the construction of new wells and water-courses and partly perhaps to a more careful distribution of the water. On unirrigated land the extension of cultivation has been mainly in the direction of breaking up new land on the edges of ravines or on the slopes or at the bases of the hills, which is generally of inferior quality.

The following table shows the increases or decreases in the areas of the various soils according, firstly, to the latest figures and, secondly, to a rough estimate as to what will probably be the figures after measurements have been completed (*cf.* Appendix E).

Soil.	Area at last settlement.	Area according to latest figures.	Probable area after complete re-measurement.	Increase or decrease between last settlement and latest figures.	Increase or decrease per cent.	Increase or decrease between last settlement and probable area after complete re-measurement.	Increase or decrease per cent.
Chahi	360	858	828	+498	+138	+468	+130
Bágh	4,022	4,948	5,578	+926	+23	+1,556	+39
Kahárdi abi	7,836	9,183	9,673	+1,347	+17	+1,837	+23
Hotár	911	841	681	−70	−8	−230	−25
Barangar abi and Gharera abi ...	6,506	5,477	4,547	−1,029	−16	−1,959	−30
Bári	11,489	11,787	12,472	+298	+3	+983	+9
Kund	12,706	10,779	9,099	−1,927	−15	−3,607	−28
Maira	56,871	69,049	72,849	+12,178	+21	+15,978	+28
Rakkar and kalsi	30,889	34,598	31,793	+3,709	+12	+904	+3
Total	131,590	147,520	147,520	+15,930	+12	+15,930	+12

Owing mainly to the increase of population and cattle there has been a general rise in the area of the superior soils except in the case of *kund*, which was much overestimated at last Settlement. The increase in the area of *maira* is due partly to the inclusion in this class of much land that was formerly recorded as *kund* and partly to the breaking up of new land. The latter is also the cause of the increase in the joint area of *rakkar* and *kalsi*. As a matter of fact *kalsi* in itself has decreased, for much land was wrongly so classed which is now shown as *rakkar*. There is probably room for a considerable extension of the irrigated area by still more economical distribution of the water, much of which even now runs to waste, and it is under contemplation to propose for this District the adoption of some of the provisions of the Peshawar Canal Regulation. One or two ambitious schemes for taking out cuts from the Siran have been mooted, but they have been found too expensive. On unirrigated soils little further extension of cultivation is possible except in the direction which, as above noted, it has already taken, though perhaps some cultivation of a better class might be secured by embanking ravines and *nullahs*.

Population and tribes.

36. The population of the tahsil at last Settlement was 116,368; in 1881 it was 124,532; in 1891, 142,856 and in 1901, 151,640. It has thus increased by 30 per cent. since the last Settlement and 6 per cent. in the last decade. It is distributed by assessment circles as follows:—

Assessment circle.	Population.	Number of persons to each square mile of total area.	Number of persons to each square mile of cultivation.
Kinára Darya	20,377	217	703
Gandgarh	10,443	114	614
Dháká Badhnak	8,588	165	661
Maidán Hazára Tarlá	29,962	272	461
,, ,, Utla	36,073	426	774
Kandi Kahl	13,722	221	508
Khanpur	32,475	176	812
Total Tahsil	151,640	219	631

The population, numbering 5,860 souls, of the town of Haripur, which is the only one of importance in the tahsil, has been excluded from the above calculation. Even allowing for the thickly populated irrigated area an average for the tahsil of 631 persons to each square mile of cultivation is a fairly high figure. The provincial average of the Punjab is 492. In the Swábi, Mardán

and Nowshera Tahsils of the Pesháwar District the incidence is 417,277 and 566, respectively. In Attock it is 489, in the Kohát Tahsil 514, in Jhelum 344. The only higher incidences in neighbouring districts are to be found in the Pesháwar Tahsil, where it is 664, and in the Hangu Tahsil of Kohát District, where it is 778. The incidences in the several circles will be referred to where necessary in the assessment proposals.

The following table gives statistics of the population according to the chief tribes and of the percentage of cultivated area owned by each (Statement No. VI)*:—

Names of Tribe.	Population.		Percentage of total population.		Percentage of cultivated area owned	
	Last Settlement.	Now.	Last Settlement.	Now.	Last Settlement.	Now.
Dilázák	1,581	1,605	1½	1	4½	4½
Jadún	2,087	2,654	2	1½	4½	4
Tárkheli	569	?	½	?	13	11
Tarín	1,968	1,689	1½	1	5½	5½
Utmánzai	2,243	1,401	2	1	5½	3
Miscellaneous Paṭháns	3,780	13,512	4	9	9	10
Mishwánis	2,778	3,959	2½	3	1½	1½
Tanáoli	5,362	11,478	5	7½	6½	8½
Turk	578	119	½	...	3	2
Gakkhar	1,595	1,747	1½	1	15½	16
Gujar	15,728	20,016	14	13	14½	15
Awáns	19,965	31,251	17	21	8	9½
Sayad	3,659	5,742	3	4	4	3
Miscellaneous Muhammadans	44,029	47,281	38	31	5	6
Hindús and Sikhs	7,865	9,186	7	6	½	½

The Dilázáks, who are Patháns, own land in Serai Sáleh and other villages in Maidán Hazára Utlá. Their leader, Iláhi Bakhsh, is one of the biggest and wealthiest proprietors in tahsil. They do not cultivate much themselves, but let their land to tenants, largely Malliars, who are the best of cultivators.

The Jadúns are not genuine Patháns though they call themselves so. They were originally a colony from the Jadún tribe in Yusafzai, trans-Indus, and immigrated to Hazára at the beginning of the 17th century. They own land in the Maidan Hazára Utlá and Kandi Kahl Circles and are fair cultivators.

The Tarkhelís are strictly speaking a branch of the Utmanzai tribe. They own the Kharí tract in the Kinára Darya Circle, and all the villages in Gandgar except three; most of the land is the *jágír* of the proprietors subject to the payment of one-fourth *nazarána*. They also own some villages in the adjoining portion of the Attock Tahsil. They are a thriftless, extravagant and idle race, leaving most of the cultivation to their tenants, with whom they are usually on bad terms.

The Tarins, who also are of Pathán origin, own land in Maidan Hazára Utlá and Kandi Kahl. They were formerly the leading tribe in the Haripur plain and owned most of it, but they have fallen from their high estate and are now of little account. They cultivate mainly through tenants and have themselves little aptitude for agriculture.

* Note.—The figures for present population were supplied from the Census office but the tabulation did not appear to have been done very accurately, for the total according to tribes was 9 per cent more than the Census total for the tahsil, and the Tarkhelis were altogether omitted as a separate tribe. I have made the total by tribes tally with the Census total by deducting the excess from the number of miscellaneous Muhammadans, but I cannot vouch for the accuracy of the figures.

CORRECTION SLIP.

Page 42, line 7 following. *Read* "The following table gives statistics of the population according to the chief tribes and of the percentage of cultivated area owned by each (Statement No. VI). Figures for the present population of the Tárkhelís were not obtainable from the Census Office" :—

Name of Tribe.	Population.		Percentage of total population.		Percentage of cultivated area owned.	
	Last Settlement.	Now.	Last Settlement.	Now.	Last Settlement.	Now.
Dilázák	1,581	1,605	1½	1	4½	4½
Jadún	2,087	2,654	2	1½	4½	4
Tárkheli	569	...	½	...	13	11
Tarín	1,968	1,689	1½	1	5½	5½
Utmánzai	2,243	1,401	2	1	5½	3
Miscellaneous Pathán	3,780	11,923	4	8	9	10
Mishwánís	2,778	3,959	2½	3	1½	1½
Tanoli	5,362	11,478	5	7½	6½	8½
Turk	578	119	½	...	3	2
Gakkhar	1,595	1,747	1½	1	15½	16
Gujar	15,728	20,016	14	13	14½	15
Awán	19,965	31,251	17	21	8	9½
Sayad	3,659	5,742	3	4	4	3
Miscellaneous Muhammadans	44,029	49,702	38	33	5	6
Hindús and Sikhs	7,865	8,354	7	5	½	½

and *omit* note at bottom of page.

The Utmanzais came originally from across the Indus where their fellow clansmen still reside. They acquired their lands in the Tarbela village of the Kinárá Daryá Circle and in Maidán Hazára Tarlá partly by conquest and partly by purchase from the Gujars. They are an extravagant lot as a rule and lazy and slovenly cultivators. Their chief, the Khan of Khalábat, whose father rendered good services to Major Abbott, has a large jagir but is heavily in debt.

The miscellaneous Pathán are chiefly Sulemánís, who are mixed up with the Utmanzais, and Pannis whose head-quarters are at Pannian in Maidán Hazára Tarla, five miles west of Haripur.

The Mishwánís, a Pashtu-speaking tribe of Sayad origin, who were loyal supporters of Major Abbott, own three villages at the north-east end of the Gandgar range, the chief of which is Srikot. They are well behaved and industrious agriculturists, but their land is hardly sufficient to sustain the population and large numbers of them are in Government service.

The Tanáolis, the increase in whose numbers is noticeable, reside mainly in Badhnak and the Kulái tract of the Kinára Daryá Circle. They chiefly belong to the Pallál branch of the tribe, and are not particularly well disposed to the Nawáb of Amb, who is the head of the Hindwáls, the other great section, and by whom the whole of these tracts is held in *jágír*. They are hard working cultivators, but much of their land is of poor quality and the holdings are small; a fair number are in Government service.

The Turks own land at Mánakrai and adjacent villages in Maidán Hazára Utlá. Their forefathers are believed to have been rulers of the country before the beginning of the 17th century, but they are now a dying race, thriftless and lacking in energy.

The Gakkhars own practically the whole of the Khanpur Circle. Formerly rulers of this part of the country they were ousted by the Sikhs, and remained out of possession of most of their villages till last Settlement, when after considerable discussion it was decided to restore to them their ancestral property, most of the tenants, including the former lessees of the revenue, being given occupancy rights. The Gakkhars cultivate almost entirely through these tenants who belong to various tribes.

The Awáns are to be found mainly in the Kandi Kahl, Kinára Daryá and Maidán Hazára Circles. They are as a rule good cultivators. The leading Awáns of the tahsil are the Qázís of Sikandarpur near Haripur, who hold a considerable *jágír*. The prosperity of the tribe is indicated by the increase of the percentage of cultivated area held by them from 8 to 9½ per cent.

Most of the villages owned by Gujars are in Maidan Hazára Tarla, but Gujar proprietors are also to be found in Maidan Hazára Utla, Kandi Kahl and Kinára Darya. The Gujars of this tahsil are not a pastoral tribe but ordinary landowners like the rest, and are as a rule fair cultivators. There are some good families among them, the best being that of the Mukaddam of Kot Najíbulla.

The Sayads are scattered among the various circles; they are, as usual, poor agriculturists and are losing their hold of the land.

The miscellaneous Muhammadan proprietors are chiefly village menials of various kinds who in the Maidan Hazára and Kandi Kahl Circles have acquired a considerable amount of property. They make as a rule excellent cultivators.

The area owned in this tahsil by Hindús, though it has increased slightly since Settlement is, except in a few villages in the Maidan Hazára and Kandi Kahl Circles, still quite insignificant.

Communications.

37. The tahsil is traversed by the tongá road from Hassan Abdál to Abbottabad, which branches off at the former place from the Grand Trunk Road to Peshawar and was first metalled in 1893. Formerly the main road left the Grand Trunk Road at Kála-ki-Serái and passed through Kot Najíbulla to Haripur. It is still practicable for *ekkás* and bullock carts and is used by troops marching between Abbottabád and Ráwalpindi. Another road runs from Haripur to Tarbela and then turns down along the Indus to Gházi and the Chach plain. It is practicable for bullock carts for six miles from Haripur, and for *ekkás* as far as Tarbela. From this road, at a point about five miles from Haripur, another road, fit for wheeled

traffic for a few miles, branches off and runs through the Badhnak *iláqa* to Darband, the chief village in the feudal territory of the Nawáb of Amb. In the other direction a road, unsuited for wheeled traffic, runs from Haripur to Khanpur and thence to Usmán Khátir in the Ráwalpindi Tahsil where it joins the road from Kálá-ki-Serái. Thus it will be seen that the plain tracts of the tahsil are on the whole well off for communications. In the hills, on the other hand, the roads are bad. Many of them are mere hill paths, impracticable for mules even, and the best, such as the road through the Badhnak hills to Tanáwal, or that through the Khanpur range from Khanpur to Lora in the Abbottábád Tahsil and on to Murree, are generally so stony and broken that a pony can seldom go out of a walk and in parts are quite unridable. There is a ferry across the Indus at Dal Mohat half way between Tarbela and Gházi whereby communication with the Pesháwar District is maintained. The North-Western Railway, which is used for exporting the surplus products of the tahsil, was extended from Ráwalpindi to Attock in 1881 and on to Pesháwar in 1883. The nearest stations are Hassan Abdál, which is 19 miles from Haripur and about eight miles from the boundary of the tahsil, and Kála-ki-Serái, which is only about two miles from the edge of the Panjkathá tract. The exported produce of the Haripur plain finds its way to the former station and that of the Khánpur *iláqa* to the latter. Some of the produce of the Khánpur *iláqa* is also taken across the hills to Golra in the Ráwalpindi Tahsil, and the Khári tract of Kinára Darya sends its tobacco to Gurgushti or Hazro in the Chach, whence it is conveyed to the North-Western Railway station of Lawrencepur. The Cantonments of Abbottabad and the Gallís also take some of the produce of the tahsil. The main exports are maize, wheat, *sarshaf*, turmeric and *gur*. Most of the exported maize, however, comes from Abbottabad and Mansehra, as what is grown in Haripur forms the staple food of the population, and from statistics, which I shall give at the end of the next chapter, it would appear that in normal years a large quantity of maize has to be imported into the tahsil to make up deficiencies in the local supply. Apart from maize the chief imports are salt and cloth.

It will be seen that communications are much improved since last Settlement, and the effect of this on prices has already been noted. A further stimulus to trade may be expected to be imparted by the recent opening to wheeled traffic of the Kashmír road through Mansehra, Garhi Habíbulla and Domel. And if the project of making a railway from Kála-ki-Serái through the Haripur plain to Abbottabad and thence to Mansehra and perhaps Kashmir is carried out, the general prosperity of the tahsil should be still further enhanced. The principal market town is Haripur, as it is the centre of an exceptionally fertile tract and also lies on one of the main routes to Kashmír; a large trade is done here in grain, sugar, turmeric, *ghi* and cloth. Serái Saleh, on the main road, three miles east of Haripur, and Bagrá, about two miles to the south of that road and ten miles east of Haripur, are large villages where some wealthy grain merchants reside. Serái Saleh is further noted for its snuff mills worked by water power, to which tobacco from the Chach plain and the Swábi Tahsil is brought in great quantities. A certain amount of trade is also done in the villages of Khanpur, Tarbela, Kot Najíbulla and Jágal.

Agricultural stock.

38. Statement No. 9 gives figures of the agricultural stock in each circle at last Settlement, in 1899, and in September 1903, when a special census was made. The present figures and those of last Settlement are compared below:—

	Bulls and bullocks.	Other cattle.	Sheep and goats.	Horses, mules, donkeys and camels.	Ploughs.
Last Settlement	26,350	30,847	44,806	5,100	12,068
1903	27,828	61,488	87,151	9,226	14,246
Increase per cent. since last Settlement.	6	99	94	99	18

The numbers of live-stock at last Settlement were probably under-estimated, but in any case the increase must be large. There is plenty of grazing available everywhere except in some of the plain villages, and though the cattle

are small they are hardy. Even buffaloes are found in large numbers in the hill circles. The increase in the numbers of goats is not an unmixed blessing, for their browsing on young trees and shrubs does much damage to forest growth and the soil loosened by their sharp feet is apt to be washed away by heavy rain. A number of flocks from Kagan visit the Khanpur hills in the cold weather and so much harm do they do on the hill sides that it is under contemplation to prohibit their coming altogether. But the manure of sheep and goats is highly valued, and it is a practice to pen them out in the fields at night in order to fertilise the soil. While, however, we note the increase in agricultural stock since last Settlement, we should also observe that the numbers have considerably decreased since the Census of 1899-1900. This may partly be due to more correct enumeration, but there is no doubt that in some tracts, particularly in the hill circles, the numbers have gone down. This has been due to a succession of years in which the supply of grass in the hills was much below the average. 1902 was a particularly disastrous year for cattle, and in Gandgar and Dháka Badhnak a number died, while most of the rest migrated for a season to more favoured pasture grounds. It will require a year or two of good rainfall to enable these tracts to recover their position in this respect. Fortunately in the present year the supply of grass is on the whole good.

Proprietary tenure and holdings.

39. The proprietary tenures of the tahsil are classified as follows:—

Zamíndári	89
Pattidári	89
Bhaiáchára	131
Owned by Government	1 (Máuakrai Rakh).

The *bhaiáchára* villages are practically all "incomplete" as, especially in the hill circles, most have a large area of *shámilát* or common land, which is unculturable and used jointly by the villages for grazing purposes. Even when the *shámilát* has been partitioned (and almost every year several cases of such partitions occur), it is usually divided between subdivisions of the village and not between individual owners.

The tendency is for the *pattidári* villages to become *bhaiáchára*, and this process will undoubtedly be greatly accelerated after the new assessments are announced, for in many villages possession is so little in accordance with shares though nominally so, that there is a general wish to pay revenue henceforward on the former rather than on the latter basis.

The following figures show in acres the cultivated area per proprietor's holding and per proprietor at last Settlement and now in each circle:—

Circle.	Per holding.		Per proprietor.	
	Last Settlement.	Now.	Last Settlement.	Now.
Kinára Darya	5·3	4·4	9·7	6·2
Gandgar	18·7	11·2	11·9	7·6
Dháka Badhnak	8·8	5·1	5·3	4·6
Maidán Hazára Tarla	13·7	7·3	10·6	7·0
Ditto Utla	8·5	6·4	12·4	7·3
Kandi Kahl	7·8	6·2	8·2	5·1
Khanpur	45·5	36·8	34·9	31·2
Total Tahsil	10·6	7·4	11·2	7·4

The cultivated area per proprietor is thus smallest in Badhnak and Kandi Khal where most of the owners are self-cultivating, and largest in Khanpur where whole villages are owned by the heads of the Gakkhar clan. The holdings are small also in portions of Kinára Darya, which is partly due to irrigation