

APPENDIX Vc.—(Concluded.)

Statement showing the sales and mortgages of land registered in District Ludhiána arranged in periods of five years.—(Concluded.)

Serial No.	Name of tahsil.	Years.	SALE.			MORTGAGES WITH POSSESSION.			MORTGAGES WITHOUT POSSESSION.		
			Area.	Price.	Average per acre.	Area.	Mortgage money.	Average per acre.	Area.	Mortgage money.	Average per acre.
3	Jagrón,—(Concluded.)	1876 ...	476	20,392	43	1,951	67,525	25	711	16,049	29
		1877 ...	399	18,037	45	1,848	59,338	28	785	15,937	9
		1878 ...	501	25,963	52	2,454	87,854	31	853	22,275	24
		1879 ...	996	41,745	42	4,937	1,89,779	24	404	11,097	...
		1880 ...	623	42,288	68	3,798	1,78,160	30	57	2,105	58
		Total, 1876—80	2,995	1,48,425	50	14,988	5,80,656	39	2,810	67,493	24
		1881 ...	561	41,822	75	2,290	1,32,597	58	737	30,090	41
	Total district.	Total tahsil 1856—81	7,254	3,00,467	41	45,291	14,49,432	32	13,364	2,78,419	21
		1852—81	20,338	8,59,417	42	92,720	27,94,634	30	20,976	4,39,088	21

NOTE.—The total of this return will not of course agree with that of the preceding, because the same land may appear several times in this as often as it has changed hands.

APPENDIX VI.

SHOWING THE DISTRIBUTION OF LAND AMONGST THE
AGRICULTURAL TRIBES.

APPENDIX VI.

Showing the distribution of Land amongst the Agricultural tribes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Serial Number.	Name of tahsil.	HINDUS.																					
		JATS.																		OTHER HINDUS.		GRAND TOTAL.	
		Garewál.		Gíl.		Sidhu		Dhaliwál.		Dhilon.		Sekhon.		Bhander.		Other Jats.		Total.					
		Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	Samrála.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,18,512	1,80,669	1,18,512	1,80,669	12,612	14,861	1,31,124	1,95,530
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	64	69	64	69	6	6	70	75
2	Ludhiána.	37,931	54,725	13,145	13,644	22,448	11,198	11,810	10,786	6,470	5,221	4,940	5,517	11,437	15,177	1,46,046	1,69,183	2,54,227	2,85,451	37,828	26,362	2,92,055	3,11,813
		8	13	3	3	5	3	3	3	1	1	1	1	3	3	34	39	58	66	9	6	65	72
3	Jagrón.	3,648	3,556	13,341	12,097	24,603	21,508	16,370	15,463	5,257	4,699	...	...	...	...	1,16,863	1,11,536	1,80,082	1,68,909	14,796	10,991	1,94,828	1,79,900
		1	2	5	5	9	9	6	7	2	2	...	...	...	...	45	47	68	72	6	5	74	77
4	Total.	41,579	58,281	26,486	25,741	47,051	32,706	28,180	26,249	11,727	9,920	4,940	5,517	11,437	15,177	3,81,421	4,61,438	5,52,821	3,35,029	65,186	52,214	6,18,007	6,87,243
		5	6	3	3	5	3	3	3	1	1	1	1	1	1	1	43	50	62	63	8	6	71	75

APPENDIX VI.—(Concluded.)
Showing the distribution of Land amongst the Agricultural tribes.

Serial Number.	Name of tahsil.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
		MAHOMEDANS.														MISCELLANEOUS.		TOTAL.	
		RAJPUT.		GUJAR.		ARAIN.		JAT.		OTHERS.		TOTAL.							
		Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.
1	Samrāla.	18,347	22,851	5,108	7,323	1,960	2,328	24,920	30,834	3,101	3,001	53,436	66,340	19	1	1,84,579	2,61,871		
		10	9	3	2	1	1	13	12	2	1	30	25	...	...	100	100
2	Ludhiāna.	47,013	38,841	38,497	31,385	11,788	12,592	12,320	14,086	27,380	21,084	1,36,998	1,17,988	4,986	480	4,34,039	4,30,281		
		11	9	9	7	3	3	3	3	6	5	32	28	1	1	100	100		
3	Jagrāon.	21,148	14,971	17,446	14,337	15,861	14,970	21,726	1,089	10,735	7,854	67,912	53,221	799	404	2,63,539	2,33,525		
		8	7	7	6	6	6	1	1	4	3	26	23	1	1	100	100		
4	Total.	46,508	76,663	61,051	5,30,045	30,909	29,893	38,962	46,012	41,216	31,939	2,58,346	2,37,549	5,804	885	8,82,157	9,25,677		
		10	8	7	6	3	3	4	5	5	3	29	25	1	1	100	100		

APPENDIX VII.

STATEMENT SHOWING THE VARIETIES OF TENURES HELD
DIRECT FROM GOVERNMENT IN THE LUDHIANA DIS-
TRICT.

*(No. XXXIII of the Statements accompanying the Annual Revenue
Administration Report.)*

APPENDIX VII.

Statement showing the varieties of tenure held direct from Government in the Ludhiána District.

1	2	3	4	5	6	7	8
NATURE OF TENURE.	No. of estates.	No. of villages.	No. of holders or shareholders.	Gross area in acres.	Average area of each estate.	Average assessment of each estate.	Revenue per acre.
I.—Zamindari.							
(1.) Great Zamindaris paying above Rs. 50,000 revenue.	(a) Held by individuals under law of primogeniture. ...	...	...	...	...	...	...
	(b) Held by individuals and families under ordinary law. ...	...	...	...	...	...	...
(2.) Large zamindaris paying above Rs. 5,000 revenue	(a) Ditto ...	...	...	...	...	...	...
	(b) Ditto ...	...	...	...	...	...	...
(3.) Zamindaris paying from Rs. 1,000 to 5,000 revenue.	(a) Ditto ...	...	...	...	...	...	...
	(b) Ditto ...	...	...	...	...	...	...
(4.) Zamindaris paying Rs. 1,000 and under.	(a) Ditto ...	...	...	...	...	...	...
	(b) Ditto ...	5	5	1,627	325	371	1-2-3
(5.) Proprietary cultivating communities paying in common.	...	22	350	7,857	357	277	0-12-5
II.—Village Communities not paying in Common.							
(1.) Pattidari ...	In which the land and the revenue are divided upon ancestral or customary shares, subject to succession by the law of inheritance. ...	9	545	4,513	501	633	1-4-2
(2.) Bhaiachara ...	In which possession is the measure of right in all lands. ...	47	7,428	55,640	1,184	1,485	1-4-2
(3.) Mixed or imperfect Pattidari or Bhaiachara.	In which the lands are held partly in severalty and partly in common. The measure of right in common land being the amount of the share or the extent of land held in severalty. ...	818	88,347	8,12,166	993	1,293	1-4-9

APPENDIX VII.—(Continued.)

Statement showing the varieties of tenure held direct from Government in the Ludhiána District.

1	2	3	4	5	6	7	8
NATURE OF TENURE.	No. of estates.	No. of villages.	No. of holders or shareholders.	Gross area in acres.	Average area of each estate.	Average assessment of each estate.	Revenue per acre.
III.—Grantees of British Government (not falling under any of the previous classes) paying revenue direct to Government in the position of—							
(1.) Proprietors ... { Including individuals rewarded for services, or otherwise but not purchasers of Government waste (v). }	...	...	...	...	...	...	...
(2.) Lessees ...	...	...	...	...	...	...	...
IV.—Landholders who have redeemed the revenue and are not members of any village community not included in any of the previous classes. }	...	...	...	...	...	...	...
V.—Purchasers of Government waste paying revenue direct to Government, and not falling under any of the previous classes. }	...	...	...	...	...	...	...
VI.—Government waste reserved or unassigned. { (a) Administered as forests under forest law. (b) Other lands... }	2 1	... ...	... ...	277 77	138 77	......	......
TOTAL ...	3	908	96,705	8,82,157	118	...	1-4-2

APPENDIX VIII.

STATEMENT OF TENURES NOT HELD DIRECT FROM GOVERNMENT.

*(No. XXXIV of the Statements accompanying the Annual Revenue
Administration Report.)*

APPENDIX VIII.

Statement of Tenures not held direct from Government in the
Ludhiána District.

District.	NATURE OF TENURE.	Number of hold-ings.	Area of land held.	Average area of holding.	Average cash rent of each holding.	Average rent per acre.
LUDHIANA.				A. R. P.	Rs. A. P.	Rs. A. P.
	I.—Tenants with right of occupancy—					
	Paying cash rents.					
	(1) Paying only the amount of the Govern-ment revenue to the proprietors ...	3,669	16,844	4 2 14	5 5 0	1 2 6
	(2) Paying such amount <i>plus</i> a cash malikana ...	1,622	5,816	3 2 14	5 7 11	1 8 6
	(3) Paying at stated cash rates per acre ...	205	345	1 2 29	3 6 7	2 0 5
	(4) Paying lump sums (cash) for their hold-ings ...	591	1,649	2 3 6	6 2 7	2 3 4
	Total, paying rent in cash ...	6,087	24,654	4 0 8	6 5 4	1 9 0
	Paying in kind.					
	(1) Paying by a stated share of the produce in kind.					
	A. { (a) $\frac{1}{2}$ produce and more	84	744	8 3 17	...	...
	(b) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	583	3,888	6 1 12	...	...
	(c) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	430	555	1 1 7	...	...
	(d) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	...	...	...	...	...
	(e) less than $\frac{1}{2}$ share of produce ...	...	...	...	...	...
	(2) Paying by a stated share of the produce <i>plus</i> a further cash contribu-tion.					
	B. { (a) when the share of produce paid is $\frac{1}{2}$ and more ...	...	...	...	...	...
	(b) when the share of produce paid is less than $\frac{1}{2}$...	22	85	3 3 18	10 6 7	2 11 1
	(3) Paying a fix-ed amount of grain for their holdings with or without a further cash contribution.					
	C.	86	728	8 1 34	2 7 3	0 4 7
	Total, paying rent in kind ...	1,205	5,800	4 3 5	...	...
	Grand total of tenants with right of occupancy ...	7,292	30,454	4 0 28	...	...
	II.—Tenants holding conditionally—					
	(1) For life ...	...	...	...	...	...
	(2) For period { (a) written on lease. { (b) not written } ...	...	...	...	...	...
	(3) Subject to village service and payment of rent ...	...	...	...	...	...
	III.—Tenants-at-will—					
	(a) Paying in cash ...	19,335	45,977	2 1 20	...	...
	(b) Paying in kind { $\frac{1}{2}$ produce and more less than $\frac{1}{2}$ produce ...	12,746	34,495	2 2 3	...	...
	(c) Paying in cash and partly in kind ...	316	1,220	3 3 1	...	...
	IV.—Holders of service grants cultivating the lands held <i>i. e.</i> , parties enjoying free holds from proprietors, being excused all revenue—					
	(1) Sankalap or Dharmarth ...	1,744	2,314	1 1 35	...	...
	(2) Conditional on service ...	143	139	0 3 35	...	...
	Total ...	53,791	1,49,682	2 3 5	...	...

REMARKS.—The details of this return have been taken from the annual papers of 1882-83, and differ somewhat from those of App. II., which was prepared from the Survey papers of 1878-79.

APPENDIX IX.

GOVERNMENT NOTIFICATIONS REGARDING THE LUDHIANA
SETTLEMENT WHICH HAVE BEEN ISSUED
FROM TIME TO TIME.

APPENDIX IX.

Government Notifications regarding the Ludhiána Settlement which have been issued from time to time.

(1).—General Notifications.

Notification No. 216, dated 25th February 1879.—Whereas the Ludhiána district is to be put under Settlement, His Honor the Lieutenant-Governor is pleased, with the previous sanction of the Governor-General in Council, to issue the following notification of Settlement, in accordance with the provisions of Section 11 of the Panjáb Land Revenue Act, 1871 :—

- (1). The local area which is hereby put under Settlement consists of the Ludhiána district.
- (2). Powers—See below.
- (3). The Settlement to be made will be a re-Settlement, and will comprise both a re-assessment and a revision of the record of rights.
- (4). Surveys and plans will be made for the whole district.

Notification No. 2338, dated 14th August 1880.—In exercise of the powers conferred by Section 35 of the Court Fees Act VII of 1870, the Governor-General in Council directs that the fee on a plaint or memorandum of appeal in a suit for a declaration of title instituted in the Court of a Settlement Officer invested with the powers under Section 49 of the Panjáb Courts Act, 1877, shall be reduced to one rupee.

Notification No. 267, dated 25th October 1882.—So much of *Panjáb Government Gazette* Notifications, Nos. 216, 217 and 220 of 25th February 1879, 889 of 29th July 1879, 1237 of 17th November 1879, 1340 of 13th December 1879, 590 of 26th June 1880, 372 of 31st March 1881, 395 of 2nd April 1881, 754 of 11th July 1881, 1139, dated 27th October 1881, 215 of 7th September 1882, and 237 of 23rd September 1882, as related to the trial of suits and appeals regarding land or the rent, revenue or produce of land arising in the Ludhiána district, is hereby cancelled with effect from the 2nd November 1882.

Under Section 49 of Act XVII of 1877, the Honorable the Lieutenant-Governor is pleased to direct that the jurisdiction hereby withdrawn shall from the said date be exercised solely by the Civil Courts by which such jurisdiction would have been exercised had the parts of the aforesaid notifications hereby cancelled not been published. Provided that any cases now pending before any officer under any of the said notifications shall be disposed of by him as if this present notification had not been issued.

Notification No. 248, dated 31st October 1883.—In continuation of of *Panjáb Government Gazette* Notification No. 267, dated 25th October 1882, the Honorable the Lieutenant-Governor, on the report of the Financial Commissioner that Settlement operations are complete in the Ludhiána district, is pleased to direct, under Section 17 of Act XXXIII of 1871, that the record of rights recently prepared for the said district be handed over to the Deputy Commissioner of Ludhiána.

(2).—Powers of Officers.

Mr. T. Gordon Walker, Settlement Officer.

CIVIL POWERS—

Notification No. 216, dated 25th February 1879.—Powers of a Deputy Commissioner as defined in Act XVII of 1877 to decide suits and appeals—

- (1). Under the Panjáb Tenancy Act, 1868.
- (2). To alter or cancel any entry in the register of names of proprietors of revenue-paying estates.
- (3). Under Section 9 of the Specific Relief Act of 1877.

Notification No. 1237, dated 17th November 1879.—To hear suits and appeals for declaration of title in land, or the rent, revenue or produce of land.

REVENUE POWERS—

Notification No. 218, dated 25th February 1879.—Powers of a Deputy Commissioner specified below—

- (1). Under the Panjáb Tenancy Act, 1868.
- (2). Under the Panjáb Land Revenue Act, 1871, proceedings for the collection of revenue or arrears of revenue being excepted.

CRIMINAL POWERS—

Notification No. 219, dated 25th February 1879.—To continue to exercise in the Ludhiána district the Magisterial powers with which he was invested by Panjáb Government Order No. 804, dated 18th July 1877.

M. Charanjit Lál, Extra Assistant Settlement Officer.

CIVIL POWERS—

Notification No. 216, dated 25th February 1879.—As above.

REVENUE POWERS—

Notification No. 216, dated 25th February 1879.—As above.

CRIMINAL—

Notification No. 219, dated 25th February 1879.—As above.

M. Ahmad Bakhsh, Officiating Extra Assistant Settlement Officer.

CIVIL POWERS—

Notification No. 215, dated 7th September 1882.—As above.

REVENUE POWERS—

Notification No. 216, dated 7th September 1882.—As above.

CRIMINAL POWERS—

Notification No. 217, dated 7th September 1882. Powers of the Magistrate of 1st class.

M. Harbans Lal, Superintendent.

Notification No. 216, dated 25th February 1879.—Powers of a tahsildar with special powers in respect of the classes of Civil and Revenue cases mentioned above.

M. Khushál Singh, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Ahmad Bakhsh, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Ishar Dás, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Mahomed Azím Khán, Officiating Superintendent.

Notification No. 889, dated 29th July 1879.—As above.

M. Jodh Singh, Superintendent.

Notification No. 1340, dated 13th December 1879.—As above.

M. Khádam Husein, Superintendent.

Notification No. 590, dated 26th June 1880.—As above.

M. Amír Chand, Officiating Superintendent.

Notification No. 372, dated 31st March 1881.—As above.

M. Karm Sháh, Officiating Superintendent.

Notification No. 395, dated 2nd April 1881.—As above.

M. Amír Chand, Superintendent.

Notification No. 548, dated 25th March 1881.—As above.

M. Karm Sháh, Officiating Superintendent.

Notification No. 237, dated 23rd September 1882.—As above.

APPENDIX X.

RETURN OF CIVIL, REVENUE AND OTHER CASE WORK
DISPOSED OF BY THE OFFICIALS OF THE
LUDHIANA SETTLEMENT.

APPENDIX X.

RETURN OF CIVIL, REVENUE AND OTHER CASE WORK DISPOSED OF BY THE OFFICIALS OF THE LUDHIANA SETTLEMENT.

I.—General Statement showing the work performed by each grade of officials.

OFFICE.		Original Civil Suits.	Execution Cases.	Original Revenue Cases.	Civil Appeals.	Revenue Appeals.	Criminal Cases
Settlement Officer	...	...	...	2,200	181	87	25
Extra Assistant Settlement Officer.		284	91	5,411	123	18	54
Superintendents	...	1,236	265	3,792	...	...	128
TOTAL	...	1,520	356	11,403	304	105	202

11.—*Classified Statement of Original Civil and Revenue cases decided.*

No. of heading.	No. in the Business Return form.	DESCRIPTION OF SUITS.	No. of cases.
		<i>A.—Ordinary suits for rights.</i>	
1	7	Suits to recover possession of immovable property, Section 9 of the Specific Relief Act ...	321
2	12	Correctness of an entry in a record of rights under Section 20 of Act XXXIII of 1871 ...	100
3	13	Other rights affecting the immovable property not expressly provided for ...	537
		TOTAL A ...	958
		<i>B.—Rent suits and suits under Panjab Tenancy Act.</i>	
4	23	Suits to recover arrears of rent from tenants without right of occupancy ...	37
5	29	Suits to recover under Section 5 by tenants for right of occupancy ...	171
6	30	Suits to recover to establish right of occupancy under Section 8 ...	25
7	31	Suits under Section 6 by landlords for rebuttal of presumptive right of occupancy ...	29
8	32	Suits under Sections 10 and 11 for enhancement of rent ...	227
9	36	Suits under Section 19 by landlords for ejectment of tenants without right of occupancy (Section 19, clause I) ...	5
10	38	Suits under Section 20 by landlords for ejectment of tenants without right of occupancy ...	12
11	39	Suits under Section 25 by tenants to contest notice of ejectment ...	56
		TOTAL B ...	562
		<i>C.—Revenue cases.</i>	
12	46	Lambardars' cases ...	1,035
13	47	Patwaris' cases ...	164
14	49	Erection of boundary marks, Section 22 of Act XXXIII of 1871 ...	150
15	54	Grants of revenue to gardens and groves, Finl. Comr.'s B. Cir. I of 1870 ...	10
16	55	Investigations as to grants and resumptions of assignments other than mentioned in Financial Commissioner's Book Cir. XII of 1875 ...	2,784
17	56	Alluvion and Diluvion ...	489
18	58	Mutations in the registers, other than lambardars' cases ...	5,103
19	59	Partition of lands held in joint ownership ...	1,353
20	60	Complete partition of estates ...	1
21	61	Under Section 17 for division or appraisement of produce ...	6
22	62	Under Section 23 services of notice of ejectment ...	266
23	63	Under Section 26 proceedings in assistance of ejectment ...	42
		TOTAL C ...	11,403
		GRAND TOTAL A, B, C ...	12,923

APPENDIX XI.

(I.)—STATEMENT SHOWING THE EXPENDITURE FROM IMPERIAL AND PROVINCIAL REVENUE UP TO 31ST OF DECEMBER 1883.

APPENDIX XI.

(1.)—Statement showing the expenditure from Imperial and Provincial Revenue up to 31st of December 1883.

Major head of service.	Minor head of service.	Expenditure.
		Rs. As. P.
LAND-REVENUE SETTLEMENT CHARGES.	Establishment.	Salary and Settlement allowance of gazetted Officers ...
		Travelling allowance of gazetted Officers ...
		88,294 15 11
		6,242 9 0
		TOTAL ... 94,537 8 11
		Office establishment ...
		Munserims' and Sadr Munserims' allowance ...
		Patwáris' Assistants ...
		95,648 1 8
		57,733 6 10
		1,48,589 7 5
		TOTAL ESTABLISHMENT ... 3,01,970 15 11
	Contingencies.	Travelling allowance of Establishment ...
		Hot and cold weather charges ...
		Tour charges, including pay of khalassis and carriage of records ...
		Purchase and repairs of tent ...
		Hutting ...
		Survey equipment ...
		Other items ...
		11,774 1 5
		1,286 5 5
		7,917 11 10
		1,800 12 6
		482 0 0
		2,499 9 0
		11,178 6 2
		TOTAL ... 36,938 14 4
		Advance from Parcha fees ...
		24,212 15 5
		TOTAL LAND-REVENUE SETTLEMENT CHARGES ... 4,57,660 6 7
Law and Justice, Stationery, Printing.		Process serving establishment ...
		Country stationery ...
		Lithography ...
		7,652 6 6
		17,989 5 10
		3,785 0 9
		TOTAL ... 29,426 13 1
Other heads.		Office rent ...
		7,181 0 11
TOTAL Rs.		4,94,267 4 7

APPENDIX XI.—(Continued.)

(2).—Statement of receipts and expenditure under the head of Settlement Fees up to 31st of December 1883.

No.	Head.	Receipt.	Expenditure.	Balance.
		Rs. As. P.	Rs. As. P.	Rs. As. P.
1	Patwáris' fees ...	2,05,800 9 7	2,00,388 1 6	5,412 8 1
2	Parcha fees, 6 pies...	8,532 1 0	4,662 0 6	3,870 0 6
3	Fine of Patwáris ...	3,703 3 0	3,430 11 4	272 7 8
4	Miscellaneous ...	8,793 4 11	8,774 12 9	18 8 2
5	Office Record Fund...	1,533 4 6	580 6 4	952 14 2
6	Copyists' fee ...	10,086 5 0	10,084 6 4	1 14 8
	TOTAL ...	2,38,448 12 0	2,27,920 6 9	10,528 5 3

(3).—Statement showing the amounts to be credited to Government on account of Settlement Fees and other items, and the net cost of Settlement operations.

Head of Receipt.	Amount.
	Rs. As. P.
Balance of 6 pies fees ...	3,870 0 6
To be realized on account of final Parcha fees ...	91,855 8 0
To be realized from Jágirdars on their share of the expenses of Settlement ...	41,753 0 0
Credited to Government by sale of waste paper, &c., &c.	650 2 9
TOTAL Rs. ...	1,38,128 11 3
Total cost of Settlement ...	4,94,267 4 7
Deduct ...	1,38,128 11 3
NET COST OF SETTLEMENT ...	3,56,138 9 4

APPENDIX XII.

NOTE ON THE SUBJECT OF THE PRICES OF AGRICULTURAL
PRODUCE IN THE LUDHIANA DISTRICT, WITH A
COMPARATIVE STATEMENT OF THOSE PRE-
VAILING FOR THE LAST FORTY YEARS.

APPENDIX XII.

Note on the subject of the prices of agricultural produce in the Ludhiāna district, with a comparative statement of those prevailing for the last forty years (written in 1880.)

1. IN a district like Ludhiāna, where there was little margin left at the last Settlement for extension of cultivation, an enhancement of the assessment must be chiefly based on a rise of prices; and the subject of the fluctuations of prices attains the first importance.

2. There are two branches of inquiry into the subject of prices which present themselves in a revision of assessment like this. There is first the general one of the variations of prices during the term of the expiring assessment, and the question of what alteration in the average of prices has occurred since the last assessment was fixed which calls for its revision; and there is, next, the more particular one of what rates we ought to adopt in the produce estimates by which our assessments are checked. It is most convenient to take up both branches of the subject at one time; and, indeed, they are scarcely separable. The two forms of the inquiry are, *first*, to what extent the value of agricultural produce has varied, and how the prosperity of the agriculturist has been affected by variations of the price which he has been enabled to obtain for his surplus produce; and, *second*, what variations have occurred in the value of the share of his surplus produce to which Government is entitled. I do not mean to say that this share is a fixed quantity; for it of course varies with changes in the productive power of the soil and with rents, both of which causes of variation ought to adjust themselves in the produce estimates.

3. The inquiry as to prices was made under directions contained in Settlement Commissioner's Circular No. 74 of 1879. It was based on three sources of information, which I give in order of importance—

I.—The prices which the agriculturists make over their produce at harvest time to the village shopkeepers.

II.—The trade prices at the principal marts of the district.

III.—The prices at the headquarters of the district reported fortnightly and published in the *Gazette*.

The inquiry as to agriculturists' prices (I) was made by the four Superintendents in the chief villages of their charges. A good many villages had to be selected by each Superintendent, so that the books found in them might make up for mutual deficiencies and might give a reliable average for each tahsíl. The number of villages in which books were examined by each Superintendent was—Samrála, seven; Ludhiána, seven; Pakhowál, five; Jagráon, four. I think that the inquiry has been extremely well made, and that the result is reliable. The prices taken by the Superintendents from the books of the shopkeepers were those entered as allowed to agriculturists at the time of making up their accounts, that is about 15th June for the Rabi, and 15th December for the Kharíf. The trade prices (II) were inquired into by the Extra Assistant Settlement Officer in the four principal marts of the district, Ludhiána, Khannah (both on the line of Railway), Jagráon and Raikot (each distant about 25 miles from Ludhiána, but now connected with it by a metalled road). Two sets of prices have been taken from the traders' books: (1) those prevailing at the time of harvest; (2) the average of the year—of the prices at a certain date in each month. The statement of prices worked out from those reported in the *Gazette* is as complete as it could be made from the materials.

4. The period over which the inquiry extends is the forty years 1840 to 1879. The averages for eight periods of five years have been struck, and the result obtained for the principal kinds of produce from each of the three Statements entered in a comparative statement (appended), which shows for the whole district the agriculturists' and trade prices for these periods of five years side by side. The trade prices are shown for 30 years only, as the Extra Assistant Settlement Officer did not extend his inquiry further.

5. The prices with which we are most concerned are those at which the agriculturists dispose of their produce; and the trade prices are useful principally as a check on these. The relation between two sets of prices as it appears in the Statement is very much what we should have expected. Anomalous results occur here and there; but these disappear in the final averages, at all events in the price of the more common grains.

6. Let us consider first then the general question of the variations of prices as shown in these statements. Mr. Carpenter, in a memorandum on the subject (Deccan Riots Inquiry,) lays down the principle that "when an enhancement of assessment is proposed proportionate to a rise in the price of grain, the proposal rests on the following assumptions:—

(1). At a given period the assessment bore a proper relation to rent.

(2). A rise in the price of grain has taken place since that period.

- (3). A rise in the price of grain produces an equivalent rise in rent."

Elsewhere he defines a rise :—"A permanent rise, when it does occur, is not a clearly defined and tangible event taking place within a period of two or three years. It takes place through a series of fluctuations, the general level of the last fluctuation of the series being higher than that of the first." I will apply these three tests to our statements.

7. First, then, as to the relation that the existing assessment bore to rent, or to what represents it in the case of cultivating proprietors, the net profit of cultivation. The assessment was fixed in this manner. Estimates were framed of the value of the gross outturn in each village, and from this the value of the net profits or proprietor's share of the produce (as distinguished from the cultivator's) was worked out. The proportion of this taken to represent the share of Government was generally two-thirds; but the actual assessments were much under the estimates, and did not exceed half of the net profit thus calculated. The three other elements in an estimate of the value of the Government share of the produce of a tract are : (1) the productive power of the land ; (2) the prices at which the produce will be disposed of by the revenue payers ; (3) the proportion of the produce that represents the proprietor's share or rent.

8. (1). The rates of produce adopted for the estimate were much under the mark, unless the productive power of the soil has increased greatly. It would be out of place here to enter into this subject in detail, so I merely state the result at which I have arrived on a comparison of the records of the former estimates with our experiments and other means of inquiry.

As to (3) the rates of rent were fixed on inquiry, and were probably correct for the time.

9. (2). The estimates were framed about 1850, and the prices adopted for them were based on the average of a few years. The decade 1840 to 1850 was one of high prices, as we all know ; and was followed by a general fall consequent on the introduction of British rule, which led to a sudden expansion of cultivation. For ten to fifteen years prices remained at a low level here as elsewhere through the Panjáb, and did not regain the point at which they had been when the assessment was framed till communications were properly opened, and increase of population raised the demand for agricultural produce. Had the assessment been fully up to the nominal standard, the value of the Government share of the produce being calculated at the prices of the four or five preceding years, it would for the first ten or twelve years of its currency have been in excess of that standard. Had it been the full two-thirds of the proprietor's share valued in this manner, it is clear that nothing would have been left to the proprietor when prices fell. But I have already noticed that the actual

assessment was considerably short of the estimate, and that the assumed rates of produce were under the mark. No difficulty appears to have been experienced here in realizing the revenue, though the demand must have pressed more heavily than was designed; but the ease with which it has always been paid, even when prices were very low, is a proof that it was well under the standard.

The prices assumed varied in the different parganas. They were for the principal products. Wheat, 40 to 45 seers a rupee; barley, 52 to 65; sarson, 25 to 30; joar, 56 to 68; moth, 46 to 60; maize, 50 to 62; wheat and gram, 45 to 52. The prices are in keeping with those prevailing from 1840 to 1850; are much higher than those of 1850 to 1860; and are considerably below the average of the term of Settlement, the last thirty years.

From these considerations I conclude that the amount at which the expiring assessment was fixed did not on the whole exceed the standard now laid down, namely half rent or net assets, though it may have done so for a few years.

10. Next as to the rise that has taken place in prices. Referring to the Statement, we see that during the first two periods of five years (1840 to 1850) there is a general rise of prices, and that at the close of the period they are very high. The prices are irregular, and vary greatly from place to place. In considering the prices of these periods we must bear in mind the political condition of the country, which was broken up into a number of small independent States. Under these circumstances trade was scarcely possible, for each State levied tolls, and there was no police to protect the traffic on the roads, such as they were. Prices were in a great measure arbitrary and varied within short distances.

During the ten years 1850 to 1859 prices remained at a low level, falling steadily till the end of the period. I have referred to the causes of this in the last paragraph and need not do so again. The period of five years 1860 to 1864 is one of transition, prices being on the rise.

During the last fifteen years 1865 to 1880 the level of prices has been stationary.

11. For purposes of comparison I think it is best to take the two periods of twenty years 1840 to 1859 and 1860 to 1879, remembering that the first of these includes the high prices preceding Settlement and the low prices following it. Taking these two periods, we find that there has been a rise in the price of wheat of about 65 per cent. If we compare the average of the last twenty years with the assumed average of Regular Settlement, the increase is only about 33 per cent. There has been a corresponding rise in the price of other grains of from 50 to 65 per cent.; or, if the comparison be made with the assumed Settlement rates, of about 30 per cent. The rise in "gur" is about 28 per cent., and that in cotton 45 per cent. from the average of the first twenty years.

12. It would make this note too long if we were to examine minutely the fluctuations, tracing them from year to year. Up to the end

Variations from year to year, and general conclusions to be drawn.

of 1859 the variations are not very marked, or at all events the level of prices is low: but bad seasons raised the prices of rabi 1860. Then followed failure of the autumn rains and loss of the harvests kharif 1860 and rabi 1861, resulting in a famine. There was a recovery of prices, but they never quite returned to their old position. From 1865 there is no tendency to return to the old level. There are oscillations, but they are over a higher line than before. If we exclude the scarcity year of 1869 we find that in Ludhiána between 1865 and 1877 the price of wheat varied between 37 and 28, and averaged 31. It is interesting to note the sudden recovery of prices after the scarcity of 1861-62 and the more gradual return after 1868-69, when the means of communication were more complete.

It is clear, then, that for the last fifteen years prices have on the average been stationary. The variations have not been abnormal, and are such as would naturally occur in consequence of full or short harvests. After the scarcity of 1868 prices returned to the level of the four years preceding it; and there is no reason for not believing that prices, which have been very high for the last two years, will not re-attain their average. On the whole, we may conclude that the level of the last fifteen years has been fairly established, and that, humanly speaking, there will, at all events, be no rise above that level during the next twenty or thirty years. An examination of the causes of the rise will confirm us in this.

13. Into the causes of the general rise in the prices of agricultural produce throughout India we cannot here inquire. Had the district continued in a state of isolation, and the means of communication through it remained as imperfect as they were at the time of the Regular Settlement, there would still have been a rise of prices. But the improvement in communications is the principal cause which has operated to produce, or, at all events, has accentuated the rise in this district to the level of the last fifteen years. The opening of the Sindh, Panjáb and Delhi Railway, which took place above twelve years ago, has, by extending the market for the produce of the district, once and for ever we might say, brought up prices. The area of the district is only 1,378 square miles, and it is traversed by about 35 miles of railway and 125 miles of metalled road. The principle that supply follows demand has been establishing itself in practice; and nothing short of a decided fall in the value of agricultural produce all over India, and, we may add, Europe, will make prices recede towards their old level. The means of communication in the district are now so good that a demand in any part of India is at once felt throughout it and answered. Were prices to fall much now, it is pretty certain that a good deal of the wheat of the district would find its way eventually into European markets; and the importance of wheat is much greater than its mere acreage denotes; for it is *the* grain of export, and is cultivated on the best irrigated lands, which yield three times as much as unirrigated.

14. I can do little more than refer to the third assumption quoted in paragraph 3, the rise in rent consequent on the Corresponding rise in rents. rise in prices. Generally speaking, the two other principal facts which affect rents are (1) changes in the productive power of the land, and (2) changes in the standard of comfort of the cultivator. Our new assessments must be grounded on rents or the net profits of the proprietor as they are found to exist now. My inquiries into the subject of rents show that cash rents are very sensitive, and have a tendency to vary with prices. Rents in kind are fixed by custom, but a rise in prices directly enhances the value of a kind rent. The share of the produce which the proprietor now takes is certainly not less than what he used to take ; so that we may say there has been a rise in rents corresponding to the rise in prices. The productive power of the land has certainly not deteriorated, though on the other hand it has not probably increased. The method of cultivation, amount of manure used, &c., have not altered within the last thirty years.

The standard of comfort of the cultivator has probably risen, markedly so in some parts of the district ; but this has not in any way interfered with the rise in rents, as the value of the cultivator's share of the produce has also increased in proportion to that of the proprietor. The area under cultivation of tenants paying competition rents is not very large, and cultivating proprietors hold upwards of four-fifths of the whole. In the case of the latter there is nothing to check the rise of the standard of comfort ; and it is probably greater than in the case of tenants. But, on the whole, I think we may fairly argue from the analogy of the rent paid by tenants-at-will to the net profit of the cultivating proprietor. We have no other data.

15. The conclusions to be drawn from an examination of the rise in prices is that, if we had only to look to them, we might expect an enhancement of the present assessment of 25 to 33 per cent., if we make a comparison with the prices assumed in framing it. There has, however, been a rise of 50 to 65 per cent. in the prices of the last twenty years over those of the preceding twenty ; and, as the expiring assessment has been easily borne through the whole of its course, we might conclude that the rise in prices pointed to an enhancement to this amount.

16. We now come to the second part of the subject, and have to determine what scale of prices should be adopted in calculating the value of the net profits of cultivation. There is a marked difference between the prices shown in the first two columns (the harvest prices) and the averages of the year shown in the third and fourth. This was of course to be expected. When the new grain of a harvest is poured into the market the prices prevailing between traders will, except in the case of a failure of harvest, be lower than the average for the year. We should expect also that the prices at which the

agriculturists disposed of their surplus produce to the local traders, or rather money-lenders, would be lower than those at which the latter resold it. The difference between the first two columns is the traders' profit in an immediate resale.

I believe that the prices shown in the first column are those which the average agriculturist actually realizes. Money-lenders may in practice give less favorable prices than they show in their books by taking over-weight and other devices; but, on the other hand, a good proportion of the agriculturists do not require the assistance of the trader, being able to bring their produce to market and dispose of it themselves, realizing the traders' prices. Some are also quite independent enough to store their grain and wait for a favorable market. The ordinary agriculturist is not bound down to his money-lender, but is quite capable of seeing that he gets a fair price. We may therefore neglect such considerations as interest on advances, *bantias*' perquisites; and assume that the average agriculturist realizes at least the prices shown in the first column.

17. In the Statement I have entered the prices which I propose to adopt for our produce estimates. These are, with a few trifling alterations, the averages of the agriculturists' prices for the last twenty years, the period laid down in the directions to Settlement Officers. Variations have been made here and there, where deficiency of materials or some other cause had produced an abnormal result; and a note is given on the statement explanatory of the prices adopted. It is improbable that the average of prices during the term of the revised assessment will exceed the average of the last fifteen years; but the difference between those of the last fifteen and of the last twenty years is not very great, and I prefer to adhere to the latter.

No. 1393, dated 11th September 1880.

From—MAJOR E. G. WACE, *Settlement Commissioner, Panjáb,*

To—THE SETTLEMENT OFFICER, *Ludhiána.*

I HAVE the honor to reply to your No. 228, dated 24th ultimo, forwarding a note and statement showing the results of your inquiries into the prices of the past forty years, and those which you propose to assume in your assessments as the average value of produce.

2. I append a statement in which the average values thus arrived at by you are compared with those on which other recent Settlements have been based.*

3. In paragraph 9 of your note you state that the produce estimates and the assessment of the expired Settlement was based on the prices which prevailed from 1840 to 1849. These prices as recorded

* Note.—Given in para 213 of the Report.

in the assessment papers and as now ascertained compare with the average prices of the past twenty years as follows :—

				SEERS PER RUPEE.		
				Value assumed at last Settlement.	Average value for the ten years ending 1849 ascertained by present in- quiries.	Average value for the twenty years ending 1879.
Kharif produce. Rabi produce.	Wheat	...	...	40 to 45	41	30
	Barley	...	...	52 to 65	67	40
	Gram	...	...	45 to 52	53	35 and 38
	Wheat and Gram	...	...	45 to 52	...	33 and 35
	Mustard seed	...	...	25 to 30	31	20 and 22
	Cotton (uncleaned)	...	...	...	17	10
	Maize	...	...	50 to 62	50	32 and 36
	Joar	...	...	56 to 62	51	36 and 40
	Bajra	...	...	...	85	...
	Moth	...	...	46 to 60	46	35
	Til	...	...	...	30	15
	Gur and Rab	...	...	...	19	15 and 16

And (in paragraph 15 of your note) you observe that from the point of view of prices only, Government may expect at this Settlement an enhancement of revenue not less than 25 per cent. at the lowest. The causes which have contributed to the establishment of these enhanced prices are described by you as being the general progress of the country during the past thirty years, the famines of 1860-61 and 1868-69, with their consequent stimulus to trade and especially the opening of the railway to Ghaziabad in 1870, which opened the local market to the demands of the whole of India and its seaports, and has thereby rendered it improbable that the prices of agricultural produce will ever sink again to the low level which prevailed between 1850 and 1860.

4. As the average prices on which you propose to assess agree closely with those recently assumed in the Settlements of the Delhi division and of the Rohtak district, and in view of the great trading advantages now possessed by the Ludhiána district, I approve of your framing your produce estimates on this basis.

PRICES CURRENT. COMPARATIVE STATEMENT.

SHOWING TRADE AND AGRICULTURISTS' PRICES OF THE CHIEF STAPLES FOR PERIOD OF FORTY YEARS.

Comparative statement showing the prices current of the principal staples as ascertained (1) from money-lenders' books, i. e., prices at which cultivators disposed of their grain; (2) from traders' books, (a) prices prevailing at harvest time between traders, (b) average of prices on a certain date in each month; (3) from the reports published in the Government Gazette, i. e., prevailing at head-quarters of the district.

Period of five years.	NAME OF TARSIL.	RABI.														KHARIF.														TIL.																																																																																																																																																																																																																																																			
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Notes in explanation of prices adopted. Wheat, 30 seers adopted all round, the average of twenty years agriculturists' prices. Gram, 35 adopted for Ludhiāna and Samrāla, as the line of Railway passes through both; 38 adopted for Jagrāon and Pakhowāl, as there is probably this amount of difference in prices paid on the spot to the agriculturists. The twenty years average is a little out, owing to insufficient data for the first two, and I have taken something above the average of fifteen years. Barley is not much grown and what is grown is eaten, not sold. The data not being sufficient, I have adopted 40 all round. Wheat and gram.—The materials collected by Superintendents are not sufficient for an average. The traders' prices show this mixture to be slightly better than gram, and I have adopted 33 and 35, making difference between the two divisions of the district. Gur and Cotton, adopted 15 and 10 all round; not grown in Jagrāon. Maize—the great kharif crop in Jagrāon, nothing else being grown, hence cheaper there. In Pakhowāl grown only in upper parts; adopted 32, 32, 32, 36. Moth—No real cause for difference in prices. Those of Samrāla, where it is largely grown, are most reliable; adopted 35 all round. Joar is an inferior grain, much eaten by the people. I have adopted 34 and 40 which are nearly the 20 years' averages. Rab only made in Samrāla Bēt and in a few adjoining villages.

APPENDIX XIII.

NOTE ON THE CULTIVATION OF SUGARCANE AND THE
MANUFACTURE OF SUGAR IN THE LUDHIANA DISTRICT.

APPENDIX XIII.

Note on the cultivation of sugarcane and the manufacture of sugar in the Ludhiána District.

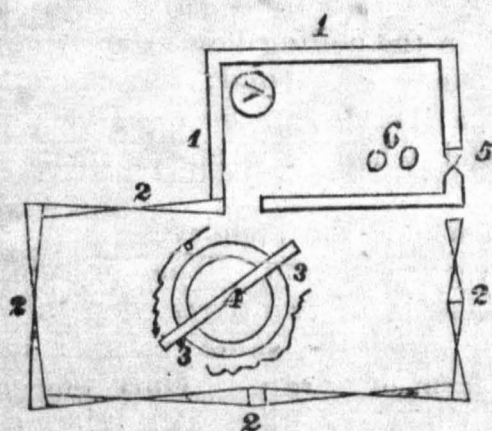
1. In this district sugarcane is grown either in the high lands with the aid of irrigation from wells, or in the low unirrigated lands along the river (Bét) where the soil is moist or actually flooded. The only exception to this distribution is that "Ponda," or the thick sort of sugarcane which is eaten raw, grows in a few of the Bét villages about Ludhiána city at the wells; but the area under this is very small, and I will, for the present, leave it out of account. In the Bét cultivation is confined to the Samrála tahsíl and to a few villages adjoining it. In the uplands there is very little west of a line drawn due north and south through the city of Ludhiána.

2. The varieties of cane and the method of cultivation have been described with sufficient detail in paragraph 112 of the Report, and I need not repeat what I have written there.

3. It is difficult to estimate the cost of each process of the cultivation of any crops; and I think that all calculations of this sort are to be distrusted. A cultivator distributes the labour of himself and his cattle over the whole of his holding in which many different crops are grown; and it is impossible to say that his labour on such and such a process of the cultivation should be valued at so much. The only method of arriving at a satisfactory conclusion appears to me to be this, to find out by actual experiment the average yield in the form that the cultivator disposes of the produce and the value of this; and to determine from the prevailing rates of rent paid how much of this is to be assigned to the cost of cultivation and how much to the rent. In this district land is mostly cultivated by proprietors, and the whole area under tenants is not large. When land is taken by a tenant for the cultivation of sugarcane, a rent in kind or share of the produce is never paid, but a cash rent is agreed on. The same is the case with maize and cotton; and the reason is apparently that the cultivator prefers to take the chance of reaping the full benefit of his labour to allowing the proprietor to share in the result of any extra exertion that he may make. Kind rents are suited to unirrigated lands where the labour is only that of ploughing, reaping and threshing, and where so much depends on the character of the season. The labour involved in cane cultivation is much heavier than in that of any other crop, for it is continual and lasts for about twelve months; and there is besides the labour and expense of manufacture. Bullocks used in cane cultivation and in the presses last for a very short time comparatively, and have to be replaced after five or six years. These facts make it very difficult to estimate the cost and profit of cul-

tivation, and should also prepare us for a great discrepancy between the value of the outturn and the cash rents prevailing; and this we find to exist. It will be more convenient if I first describe the processes of manufacture and the various forms of produce, and then endeavour to estimate the yield in its various forms.

4. The processes of manufacture employed in the Bét and in the Dbaia or uplands are quite distinct, and an account of the latter will be given first. When the season for pressing approaches (November to March) the *belna* or mill and other appliances are put in order. The number of *belnas* in a village depends on the area under cane, one being generally shared by three or four proprietors, and being sufficient to press some six or seven acres of cane in the season. The *belna* is put up outside the village, and is surrounded by a wall four or five feet high with an opening at one side. Leading off this enclosure is the house where the juice is boiled. The house and enclosure are allowed to fall into ruin every year, the former having to be re-roofed and almost completely renewed annually. The *belna* too is dismantled every year; and the machinery lies about, in the village pond generally, where it is immersed. The building of the boiling house and the



1. Boiling-house.
2. Enclosure of the mill.
3. Levers worked by bullocks.
4. The *belna* or mill pit in which it works, &c.
5. The furnace (mouth of it.)
6. The pans for boiling.
7. The plate for cooling ("gand").

the parts reserved for seed set aside. The cane is then carted to the mill in the evening, and next day it is pressed and the juice extracted. Two men sit at opposite sides of the rollers passing through the cane, which is tied up in bundles of 40 or 50 canes each. The juice runs into "chattis" or jars of earthenware placed beneath the rollers to receive it. As the jars are filled the juice is taken into the boiling-house, and the boiling commences.

5. At one end of the boiling-house there are two pans of iron, about four feet in diameter, placed over a flue heated by a furnace fed from the outside of the building (see sketch), the fuel being the refuse stalks, heads, &c.

setting up of the *belna* are a great undertaking. The annexed sketch shows the position of the *belna*, boiling house, &c. The mill used throughout the district is of the sort described in "Punjab Products" (p. 305). The cane is pressed between two horizontal rollers of wood, which are made to revolve by two vertical cogged wheels, working into an upper horizontal one, which is turned by two pairs of bullocks yoked to levers attached to it. The horizontal wheel is above the surface, while the rollers are sunk in a pit. The day before the cultivators "vári" or turn at the mill, the cane is cut and stripped in the field, and

The pan nearest the wall is lower than the other, and is fixed (called "pichla"); and into this the juice is poured. The second pan is higher and movable. When the juice has been boiled and evaporated in the lower pan for half an hour, it is lifted with a ladle into the upper pan, which is cooler; and there boils more slowly till it is ready, generally in about an hour. The pan is then lifted off, and the juice stirred till it is cool, when it is poured into a flat dish of earthenware, ("gand"), where it lies to the thickness of about one or two inches. It is, when cool, scraped up with a wooden scraper, and is either granular, in which case it is called "shakar," or viscous ("gur"). If "gur," it is made up into balls of about four seers weight ("bheli.") "Shakar" is put into earthenware jars. It depends entirely on the quality of the juice whether the produce takes the form of *shakar* or of *gur*: and this depends again on the soil and the character of the season. In the above process no chemical appliances are used; but in places lime and water are poured into the boiling juice to clean it, the scum being removed. This is generally done where *shakar* is produced, and has the result, it is said, of giving it a light colour, which is a recommendation.

The total number of men employed on pressing and boiling is generally seven: two to drive the bullocks, two to feed the mill, and one to hand the cane to the feeders, one in the boiling house, one to feed the furnace outside. The last is a Chamár or menial; but the other six are all of the cultivating class. The Hindu Jats of the Dhaia not only make, but sell at their own price and when they choose their *gur* and *shakar*.

6. The state of things in the Bét, where the population is all Mahomedan, is very different. The process of manufacture in the Bét. manufacture there is of two parts, the juice is extracted and boiled at the "belua" in much the same manner as in the Dhaia; but takes the more liquid form of "ráb." Only one pan is placed on the furnace; and, when two jars are filled with juice they are emptied into this through a straining cloth, and the juice boiled. Water boiled with "sakhlaie" bark is added for the purposes of purifying the juice, and the scum is removed as it rises. The boiling takes about 2½ hours. When the boiling is completed the juice, now in a semi-liquid state and called "ráb," is taken out in a ladle, and put into an open vessel of earthenware till it cools, when it is poured into high jars ("matti"), the mouths of which are then closed with mud. These jars hold about 3½ to 4 maunds (packa* weight) of ráb.

The boiler, called "rábi," is always a man of the shopkeeping class, boiling being something of an art. The other men at work are, as in the uplands, cultivators or village menials. But the cultivator has really nothing to do beyond extracting the juice. Where the cultivator is not involved and can dispose of his produce himself, the "rábi" is his servant and paid by him. But he is generally the servant of the money-lender who has advanced money on the crop. It will be better if I here describe the relations between the ordinary cultivator of the Bét and his money-lender, as they so materially affect the sugar industry.

* The *packa* maund is the Government standard, and the *kacha* that in use amongst the people. The latter is about two-fifths of the former.

7. The Mahomedan cultivator of the Bét is naturally much more thriftless than the Hindu Jat of the uplands. Relation between money-lender and cultivator in the Bét. Besides this the area under cane is generally in much greater proportion to the cultivation (12 per cent. in Samrála Bét), and he cannot subsist on his other produce and pay the Government demand while the crop is maturing, so he has to borrow money; and he finds no difficulty in getting as much as he pleases on the security of his cane crop. He is charged a fair rate of interest on the advance, and in payment of it his "ráb" is taken at a valuation according to its quality, the price being fixed year by year. The cultivator is thus entirely at the mercy of the money-lender. The latter depends for this gain not so much on the interest as on the profit that he derives from the manufacture of ráb into sugar; and when the cultivator is completely involved and owes more than he can ever pay, the money-lender seldom proceeds to extremities, provided that enough of cane is grown.

8. The second part of the process of manufacture is completely in the hands of the shopkeeper class, the headquarters of it being in the town of Máchiwára, which lies just over the Samrála Bét. The Second process of manufacture. ráb is taken off in the jars to the shop of the purchaser, in the back room of which, in one of the corners, a space four or five feet square is walled off to the height of about four or five feet. This is called a "káhncbí." At the bottom of this, about a foot from the ground, a rough strainer is made of sticks fixed in the walls and running across at intervals, on the top of which are placed reeds and on the top of these a coarse cloth. The sides of the káhncbí are lined with "chitai," or matting made of river grass. When twenty or thirty jars have been collected the ráb is poured into the káhncbí and left for twenty or thirty days, during which the "sírah" or more liquid part drains off into a receptacle. The ráb is then covered with a weed that grows in the water, (called "jála") put on to the depth of two or three inches (see name at p. 308 of "Punjab Products"). This is changed every three or four days for about a fortnight. The effect of this covering and the straining is to clarify the mass; and, as the upper part assumes a light yellowish colour, it is taken off, and the remainder covered up again. The produce thus taken out is put in the sun and trampled. It is then called "khand." Another and superior form of produce is "bura," which is thus made. The sírah is strained off as for "khand," and the "khand" is mixed with one-fourth part water, and boiled for evaporation in a pan for half an hour. It is then taken off and stirred till cool, when it takes the form of "bura." The sírah or "let" (molasses) is boiled and kept in jars till the rains, when it is treated like ráb, being put into a káhncbí: or if it is not good enough for this, it is used in its liquid form for sweetmeats, &c.

9. An idea of the relative values of the various forms of produce may be derived from the prices per maund (packa) prevailing last year:— Relations of the various forms of produce.

Sírah	...	...	Rs. 2-4	
Ráb	...	...	„ 2-8	(Raw sugar in a liquid state.)
Gur	...	...	„ 4-0	(Raw sugar.)
Shakar	...	...	„ 5-0	(Ditto.)
Khand	...	...	„ 10-0	(Refined sugar.)
Bura	...	...	„ 12-0 or 13-0	(Ditto.)

The price of *ráb* is that allowed to the cultivators by the money-lenders; those of *gur* and *shakar* are full prices, as the Jats of the Dhaia sell at full prices: the prices of *khand* and *bura* are those prevailing in the bazars of Ludhiána and Máchiwára at the time of the trade (March—May.) The prices of all forms of produce vary a great deal from year to year according to the demand, a poor outturn here or elsewhere generally raising them.

Most of the *ráb* of the Bét finds its way to Máchiwára, the manufacture into *khand* and *bura* being in the hands of resident Khattris and others.

Estimate of produce in Máchiwára. The following facts as to the total outturn per annum of *khand* and the variation of prices during the last ten years may be interesting. The total number of “*khánchis*” in the town is about seventy, and the outturn of *khand* for each *khánchi* is on an average 130 maunds *packa*. This would give the whole trade at 9,100 maunds per annum, worth about Rs. 90,000. The prices per maund *packa* have been:—

1872	...	Rs. 10-0	1878	...	Rs. 15-8
1873	...	„ 9-8	1879	...	„ 12-0
1874	...	„ 8-0	1880	...	„ 12-0
1875	...	„ 8-8	1881	...	„ 10-0
1876	...	„ 8-8	1882	...	„ 9-0
1877	...	„ 13-0			

There are also *khánchis* at Bahlolpur, and in a few of the larger villages in the Bét or just over it. This estimate does not take into account the yield of “*sírah*,” of which there is a very large export. From an estimate of the amount of *sírah* that comes out of each “*khánchi*,” I think that the total value of the export from Máchiwára would be Rs. 60,000, making the whole trade worth about one and a half lakhs per annum. Octroi is charged on *ráb* brought into Máchiwára at an *ad valorem* rate of 1 per cent.; and the income under this head for the last three years has been, I am informed, Rs. 1,182,683, 1,387, which would make the average value of the “*ráb*” about one lakh, manufactured and sold as above for about one and a half lakhs. For the *khánchis* in other places we may add about one lakh as the value of the produce.

11. The “*khand*” and “*bura*” produced in Máchiwára and the Bét villages, as well as the “*gur*” and “*shakar*” of the Dhaia, are bought up for the most part by traders who come in search of it.

The *gur* or *shakar* generally finds its way into the “Jangal” or country lying to the south-west of this district (Protected States and Ferozepur district); and some of the *khand* goes in this direction, too, in return for the common grains brought up by the

trading Jats in their carts. A good deal of the latter also goes by Rail towards Lahore and beyond it, as it is not produced much higher up, and is in great demand with the makers of sweetmeats in large towns. The rustic population prefer the raw forms.

12. Experiments made to determine the outturn are not very reliable, because they cannot conveniently cover a large enough area. One or two made by me in the uplands indicated a yield of over thirty maunds of "gur" an acre, and the estimates given by agriculturists point to the same result, some giving a much higher one. They say that the yield of a poor crop is ten *kacha* (four *packa*) maunds for a *kacha* or local bigah, and that a fairly good yield is 20 maunds, while as much as 25 or 30 maunds are obtained in a good year. The result of these estimates is, in our weight—

Kacha maunds per kacha bigah,	Packa maunds per acre (approximately.)
10	20
20	40
25	50
30	60

The price of gur averages between Rs. 3 to 4 a *packa* maund, which would give the average gross produce at about Rs. 100 an acre. Beginning from the other end, we find that the rent paid for land in the Dhaia (irrigated) land intended for sugarcane varies from Rs. 12 to 18 and even 20 an acre. The average is about Rs. 15.

In the Bét the crop is poorer, and I would not estimate the value of the outturn at more than Rs. 60 or 70 an acre. Cash rents for the sugarcane land do not run so high, averaging about Rs. 10. The average outturn of *ráb* is about 30 maunds (*packa*) an acre. As before pointed out, it is difficult to say what the actual cost of cultivation of the cane crop is, because each cultivator grows a variety of crops in his holding. The cane crop is always turned into cash, paying the revenue and providing ready-money for marriage and other expenses: while the maize and the rabi crops are mostly eaten. Thus the whole agriculture of the holding hangs together, and we cannot separate any crop and say that its cost of cultivation is so much. Cash rents are not a safe guide for the reasons given before, and because they have to be paid in advance, while the cultivator has to wait at least eighteen months for his return. I should say that the cost of the cultivation would be in the proportion of about 3-4 of the whole outturn, that is if it were done on the present method by a large proprietor employing hired labour. The profit to him would be per acre about Rs. 25 in the uplands, and Rs. 15 or 18 in the lowlands, if he sold the produce in the form of *ráb*.

13. As to the profit in the manufacture of "khand" &c., it is estimated that on an average three maunds of *ráb* go to one maund of *khand*, and there is the "sirah" besides. This would make the manufacturer's profit upwards of 30 per cent. on his outlay (see relation of prices in paragraph 9.) The labour involved is very small. As a matter of fact the profit is much greater, because interest is charged on the advances and the prices are fixed by the money-lender. One need only point to the wealth in the town of Máchiwára as a proof of this. There is not much competition in the trade, which is in the hands principally of a few Khatris, Baniyas and Súdís, the first of these being the majority. The cultivators would not take the trouble of looking to their own interests and securing better terms even if they were free to do so; and most of them are much too deeply involved. I do not think that much less than 50 per cent. on his outlay returns to the money-lender and manufacturer annually. The transactions are on such a small scale that my calculations as to outturn and profit are, I fear, little better than guesses: but the facts remain that, notwithstanding the relatively much greater rise in the price of grain and heavier labour and other disadvantages involved in the cultivation of cane and the manufacture of *gur* and *ráb*, the area under cane has been very considerably extended, and there is no tendency to give up growing it. This points to the crop as a very profitable one, and as to the profits of manufacture from *ráb* there can be no doubt.

14. I can at present see no prospect of such a development of the industry as would lead to the separation of the cultivation from the processes of manufacture of *gur* and *ráb*. No improvement has up to the present been attempted in the mill or in the process of boiling. It is not unlikely that changes will occur within a short period in respect of these, if endeavours are made to introduce new mills or model boilers. The process of making *khand* from *ráb* is obviously very rude. The annual value of the outturn of the crop may be estimated at two and a half lakhs of rupees (in refined sugar, or less than two in *ráb*) in the lowlands and nine and a half in the uplands, total twelve lakhs or nearly twice the revenue of the portion of the district in which cane is grown; and there are sugarcane growing districts on three sides of this. I am scarcely prepared to say what would be the result of the introduction of capital on a large scale into the industry; but it would be possible to do much to improve it without taking it out of the hands in which it now is.

15. There is good deal of anxiety at Máchiwára lest the opening of new lines of railway (particularly the Rewári-Ferozepur line) should bring in a trade from lower down, and cut out that from this district. It is also possible that the extension of irrigation from the Sirhind Canal may very materially affect the trade in *gur* from the uplands of this district to the southwest, as there is no apparent reason why cane should not grow in the "Jangal." The country through which the Abohar and Bhatinda branches of the canal will run at present draws a great part of its supply from the Ludhiána district, but time only can show whether these apprehensions are well grounded.

APPENDIX XIV.

Glossary, illustrative sayings, proverbs, &c.

The following glossary has no pretensions to be exhaustive. The names of the crops, agricultural operations, &c., &c., do not differ ordinarily from those in use throughout the Panjab, and may be found in any dictionary; and the words given here are some of the more common ones which are peculiar to the District, and are meant merely to be illustrative.

VERNACULAR.		ENGLISH.
ad, ad-o-ad	...	... separate.
akéran	...	... on one occasion.
án	...	... oath.
áihan	...	... evening.
awagon	...	... senseless.
badh	...	... stubble.
badna	...	... to cut (crop); also to beat.
bagal	...	... side ("ekbagal"=on one side.)
baghal	...	... enclosure.
báhla	...	... very much.
bája	...	... partially insane.
bál	...	... wind.
banota	...	... a debtor.
bát	...	... distance, e.g., "das ko bát"=ten kos distant.
beh	...	... hole.
berra	...	... barley or wheat sown with gram.
bhon, bhuin	...	... land.
bobo, bobi	...	... mother.
bohál	...	... a heap of grain after threshing.
buja	...	... a young boy.
buláhr	...	} a village mental, whose business it is to call the villagers together for any purpose.
buláhri	...	
burkna	...	... jump.
chakota	...	} a fixed sum.
chakáwa	...	
charánd	...	... grazing ground.
charsa	...	... bucket of a well.
chháe	...	... the ashes from the furnace of the sugar boiling-house.
chhallí	...	... maize.
chhida	...	... thin.
chobar	...	... stout.
chugara	...	... four pairs of, bullocks at a well with two buckets.
chún	...	... a corner.
dáb	...	... a piece of common land cultivated without permission.
dabra	...	... a high place.
dáda ladhi	...	... ancestral property.
dagar	...	... a clear road.
daul	...	... field boundary.
dathaur	...	... a man who belongs to two villages.
dhaka	...	... by violence.

Note.—It has been found impossible in printing to distinguish the consonants by diacritical marks.

dhál	...	...	government revenue.
dham	...	...	very hot weather in the rains.
dhán	...	...	rice.
dhata	...	...	a bull.
dhusa	...	...	thick cloth of any sort.
gabla	...	...	in the middle.
ghoá	...	...	proclaiming aloud.
gohar	...	...	a road.
lak	...	...	cry, call.
dháli	...	...	revenue.
hím khím	...	...	profit and loss.
kh	...	...	sugarcane.
jā	...	...	a name applied by a woman to her sister's husband
ohar	...	...	village tank.
jota	...	...	tenant.
kakh	...	...	grass.
kalán kár	...	...	clever.
kales	...	...	quarrel.
kand	...	...	gram, straw.
kanauji	...	...	a late crop of barley.
kát	...	...	for what reason?
khál	...	...	water course.
khalna	...	...	family.
khámbi	...	...	the man who drives the bullocks down the run of the well.
khata	...	...	a small division of a field.
khatána	...	...	a holding of land.
khéra	...	...	the village homestead.
kiára	...	...	a small division of a field.
lág	...	...	near.
lahar	...	...	anger.
láhna	...	...	a cultivator's holding.
lap	...	...	the full of one hand open.
lasera	...	...	lean.
líhan	...	...	cart rucks.
malkína	...	...	rent.
mallo malli	...	...	violently.
mandwára	...	...	drought.
maranga	...	...	form.
máru	...	...	irrigated.
matili	...	...	a pillar of mud.
mer	...	...	property.
mintá	...	...	measurer.
minti	...	...	measurement.
modhi	...	...	the man who catches the well bucket when it comes up.
náka	...	...	the opening through which the water goes into the field.
náki	...	...	the man who lets the water into the field.
nem	...	...	oath.
níra	...	...	straw.
palá	...	...	a village road.
pahí	...	...	a small road to a well.
páli	...	...	cowherd.
pánda	...	...	white clay, very hard.
páo	...	...	a public drinking place.
parókon	...	...	strength.
pathkan	...	...	} enclosure where cowdung cakes are made up.
pathwára	...	...
patri	...	...	village boundary.
Opawádh	...	...	east.

pawáh	...	...	a man who attends to the páo (see above).
pursár	...	...	for generations ("pusht dar pusht.")
qita	...	...	occupation, trade.
qail	...	...	trouble, extremity.
rarkha	...	...	broom.
reh	...	...	manure.
rohé	...	...	a waste piece of country.
runga	...	...	something given over and above a purchase.
sahára	...	...	relief, recovery (from sickness, &c.)
sájhra	...	...	morning.
sakíri	...	...	relationships.
sammán	...	...	favourable season ("samman lag gia" = there has been rain and the harvest is good.)
sáu	...	...	respectable.
sand	...	...	an instrument of any sort.
sánj	...	...	evening.
sánwin	...	...	fallow.
sarjána	...	...	to be completed.
sénd	...	...	a heap of half-threshed grain.
sénju	...	...	irrigated.
siár	...	...	a furrow.
sidhra	...	...	an innocent fellow.
sotha	...	...	agreement.
tagáda	...	...	jewelry.
tanpar	...	...	waste land.
tirk	...	...	a long narrow field.
than	...	...	recollection.
thula	...	...	a subdivision of the village.
tibi	...	...	sandy soil.
tóbah	...	...	village pond.
tut	...	...	balance of revenue due on land.
uchal	...	...	choice ("teri uchal," you may take your choice.)
ut	...	...	a foolish fellow.
unjal	...	...	the full of two hands together.
valndar	...	...	cultivated land.
vidh	...	...	the stake on which the wheel of the well is supported.
wár	...	...	hedge.
wárah	...	...	hedged enclosure.

Specimens of agricultural and other sayings, proverbs, &c.

1. "Barsia Diwáli; já phusi, já háli."

"With rain at the Diwáli, a bad and a good husbandman are the same."

2. "Kata laga, kál siáte."

"When the month of Kátak begins (15th October), it may be known whether there is to be a scarcity or not."

3. "Assu kar gia ghassu: Kátak dhunde mahengla; bhule phire guár."

"If Assoj (15th September—15th October) passes empty (without rain) the man that looks for clouds (rain) in Kátak is a fool."

4. "Kateon Sáwan kare, je bháwe kartár."

"If God wills He can make Kátak like Sáwan," i. e., He can give as good rain in Kátak (October) as in Sáwan (August).

5. "Je sir bhije Kakra, Singi bhije páth:

Dak kahe, 'sun Bhadle, sammán lage sir bhuj.'"

"If the head of *Kakra* (last day of *Hár*) is wet, and the back of *Singi* (a date at the end of *Bhádón*) *Dak* says to *Bhadle*: "The harvest will be as high as the head." *Dak* was a famous Brahmin seer, and *Bhadle* his wife; and the saying means that, if rain falls from the end of *Hár* to the end of *Bhádón* (July—September), there will be a splendid harvest.

Two other lines say,

"Je na bhije *Kakra*; *Singa* kháli jái :

Dak kahe sun *Bhadle*, palián bhar bik jái."

"If there is no rain at *Kakra* and *Singa* also passes without it, *Dak* says to *Bhadle*, grain will sell by measure of a *pali*," (a very small dish), i. e. grain will be very dear.

6. "Dáta kál parakhiyé; dhínmen *Phágan* mahán ;

Nári tán parakhiyé, ján dhan pale nán."

"Famine time is the test of charitable man : the month of *Phágan* of a good milk cow ; a wife is tested by poverty (when the pocket is empty)."

7. "*Phágan* na si jándi ; jad bhar bhar kunála chhándi."

A man says to his wife : "Do you not think of the month of *Phágan* when you fill the kneading dish so full," i. e., *Phágan* being the critical month, when the old grain has been used up, and the new not in, it should always be borne in mind in using the store of meal.

8. "Má nálon dhí siáni : ride pake páwe páni."

"The daughter is cleverer than her mother" (spoken sarcastically) ; she pours water in the food just as it is cooked" (and spoils it).

9. "Asso dekh mitháian ; bhar *Bhádón* kapás :

Chet dekh ke kanak nun ; bhech bháwe khá.

"In *Assoj* look to the cane ; throughout *Bhádón* to the cotton ; in *Chet* look to the wheat (when these seasons have passed without injury to the crops) you may sell or eat (what you have in store without anxiety)."

10. "Biáh Bhogedi : arrát Jogedi."

"A marriage in the house of *Bhoga* and the *din* (usually attending one) in that of *Joga*," i. e., one man has cause for rejoicing and another does it for him.

11. "Má moi kaphan kolon ; dhi da náon bukhí."

"The mother died without a coffin, and the daughter is called a bagful," said of a person who has risen from nothing.

12. "Je na bhiji *Kakra* ; kás khasáuna lakra."

"If *Kakra* is not wet (see No. 5), what is the use of yoking the plough?"

13. "Kohálián dián báhián : kadóhián dián dóhián :

Kapálian dián chárian : tíre niphal gíán."

"The ploughmán, milker and grazer who do not know their work, lose their labour." *Háli*=ploughman ; *dohí*=milker and *páli*=cowherd : the prefix *ka* or *ko* means ignorant.

14. "Dakhan bage san badle : rand milái khá :

O barse ; o udale ; kháli koi ná já."

"If the south wind blows with clouds ; and a widow eats cream : the one will rain and the other go away (with some one) ; both of these things will surely happen."

15. "Sawér sár da mahengla ; sawín sanjh panihár :

Chike tor paráoná ; tihánnun gáte már."

"Clouds in the morning ; rain in the evening ; a guest who comes after meal time : all three be hanged." *Chike tor* means the time when everything has been eaten, except the fragments (*tor*) kept for the children in a basket (*chike*).

16. "Barsa Chét : na ghar na khét."

"If rain falls in *Chét* the grain will neither come home nor remain in the field : " i.e., rain in the month of *Chét* does only harm.

17. "More charkha piche kand : is bidh jáe bibí de lang :

Khái kanak te pahne pat ; ki kare, Jalan Jat."

"If she keeps her spinning wheel before her and the wall behind, a woman will go on all right ; if she eats wheaten bread and dresses in silk, what can you do, Jalan Jat, (to keep her from going wrong)."

This *Jalan Jat* is an original character who appears in popular stories. He was on one occasion sent by his brother to a *Jotsi* or astrologer's house to inquire the proper date for the marriage of his brother's daughter. On the road he passed the house of a *baid* or physician, and heard the people lamenting. He inquired what was the matter, and was told that the doctor's son was dead. He was astonished and said : "Do doctor's children die?" At the *Jotsi's* house also he found lamentation, and was told that the *Jotsi's* son-in-law had died. He went away saying : "Baidán ghar pitie, Jotsian ghar rand : Chal, Jalan, ghar ; apne sáhá de nasang," which means that doctor's children die and *Jotsis* cannot fix so favourable times for their daughter's marriage as to prevent their being left widows ; therefore you may fix your own 'sáhá,' or auspicious date for a marriage.

18. "Jatka Jat na raha káma ; bhukha Jat kare salámá ;

Rajia Jat kade gál ; Jat bigáre murshid nál ;

Jadon Jat de ábu pake : denda sake bápñun dhake."

These lines are descriptive of the character of the Jat. "Jat will never serve Jat : a hungry Jat will make obeisance ; a full Jat will give abuse : a Jat will fall out with his *murshid* (spiritual guide) ; when his harvest is secured (*ábu* means a half ripe condition) a Jat will turn on his own father."

19. "Bhuka Karár, khir khir hase.

Bhuka Rangar kamar kase :

Bhuka Jat páwe ro : leni ek, na, deni do.

"A hungry shop-keeper will laugh loud ; a hungry *Rangar* will pull himself together (tighten his waist) : a hungry Jat begins to cry" (the rest is without meaning.)

20. "Jat, dhat, sansár kabíla gálda ;

Káon, Kalál, Kamboh kabíla pálda.

A *Jat*, a bull and an aligator will destroy (or ill use) even their own offspring. A crow, *Kalál* or *Kamboh* cherish them."

21. "Panchanda kahna sir mathe : parnála uthe."

"The *panch* or arbitrator's decision is bowed to ; but the *parnála* or drain pipe (about which the dispute arose) remains where it was."

22. "Baghiára khá na khá, munh lahu bhariya." "Whether the wolf ate the sheep or not it gets the credit for doing so" (*lit* : its mouth is full of blood).

23. "Banne Jat na cheriye, hati te Karár :

Beri mallah na cheriye : bhan dewe buthár."

"Do not interfere with a Jat in his field, a Karár in his shop, a boatman in his boat ; or you will have your face broken."

24. "Dáhriwála nál chale : tán main dangar chár liáwán."

A small boy says. "Give me a man with me, and I will herd the cattle."

25. "Nau sau chuha kháke billi ; Hajnun chali."

"The cat goes on a pilgrimage after eating nine hundred mice" said of a wicked person who thinks to sanctify himself by a journey to Mecca.

The most popular songs amongst the Jats are the tales of *Hér and Ránjha*, *Mirza and Sáhibán*, *Sassi and Punun* and many others of the same class well known throughout the Province. These stories have been the subject of poems by Wáris Sháh ("Báre Sháh") of Jandiáli Sherkhán, &c., but there are many versions current amongst the people themselves, passed from mouth to mouth. The following verses from a current version of *Mirza and Sáhibán* will serve as a specimen of these popular forms.

(Sáhibán says) :—

" ' Uthín, Mirza, sutia jandon ghat wahír,
Nathe nun ján ná denge Sáhibán de sake vír,
Uthia ugáre bhanke, chille cháhria tír,
Pahle máre kaske, phatia Ján Shamír.
' Uh nun na marín, Mirzia, katha chungian shír'
Máro na Mirza yárnun, phar lio mere bánh,
Mainun purje purje udádeo aise yár de thán,
Jitna gunah jahánde likh-lo mere náon'."

Mirza, and his friends have taken away Sáhibán from her people, and are sleeping. Sáhibán's brother and his friends came up. Sáhibán says. "Get up Mirza from the jand tree and take the road with your friends, my brother will never let you go." Mirza got up and yawned ; then he strung his bow and fired, wounding Shamír" (Sáhibán's brother). (Sáhibán says to Mirza) "Do not kill him, Mirza, we drunk the same milk" : (to her brother) "do not kill Mirza, my lover ; seize me and tear me in pieces in his place. Set down all the sins in the world to my name."

Marriage and funeral songs are generally without much in the way of rhyme or meaning, and the former are generally unfit to be reproduced, the

following is a specimen of "ghori" or song sung at the bride-groom's house when the date of the marriage is announced :—

"Aj din haria ; aj ándi gur di rori,
Satgur kiti Rám jori ;
Ajdin ánda tél jí ; Satguru kíta melji
Mere Govind kíta melji."

"To-day is a lucky day, to-day *gur* has come." (*Gur* is distributed on the occasion). The *Guru* and God have made this union. To-day oil has been brought, the *Guru* has made the union ; my Govind made the union."

The following is a specimen of the "sohág" or song in the bride's house :—

"Kithe charh suta, bibida bába, kahia teri nind :
Sónindon kahia babal tenun chinta pari ;
'Na, bibí, meri nind sónind, na mainun chinta pari.'
'Háth phar sonti, bába, ter kar dhoti,
Bibida var bhálan já."

This is addressed to the father of a marriageable girl, who ought to have married her to some one. "Where have you gone to sleep, father of the girl, how can you sleep ? Can you sleep quietly, are you not anxious." (He replies) "I am neither at ease nor in anxiety." "Take a stick in your hand and gird your loins ; go and look for a husband for the girl."

T. GORDON-WALKER,
Settlement Officer.