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A TEXT BOOK
OF
PUNJAB AGRICULTURE.

BY

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GLOSSARY.

Anhi-godi	... "Blind hoeing," <i>i. e.</i> , before plants (generally sugarcane) appear above ground.
Arti	... Commission agent, p. 110.
Ata	... Wheat meal.
Badshah	... King.
Baguri	... Hand-hoe for blind hoeing of sugarcane.
Bair	... Wooden drum of a Persian-wheel.
Bar	... An arid tract
Bara	... A very hard type of heavy alkaline soil, p. 3.
Bari	... Similar to Bara, but less hard.
Barani	... Rain-watered.
Bahaduri	... Gram caterpillar, p. 156.
Bengals	... Commercial name of a low grade of Indian cotton.
Berra	... Wheat and gram grown in mixture.
Bet	... Riverain tract.
Bhari	... Bundle.
Bharola	... Cylindrical mud bin for storing grain.
Bhusa	... Also "turi" means crushed wheat straw, p. 104.
Bhusa-missa	... Crushed gram straw after threshing.
Bund	... See "wat."
Candy	... The Bombay candy of cotton is 784 lbs. or 9½ mds. of lint or two bales nett.
Chahi	... Well-irrigated.
Chak	... Group of rectangles or squares in canal colonies, p. 71.
Chakkal	... Horizontal toothed disc of the Persian-wheel, p. 65.
Chakli	... Cog-wheel of the Persian-wheel.
Chait	... March-April, name of one of the Indian months.
Chapati	... A thin loaf of bread.
Char-a	... Leather bucket or bag for lifting water from wells.
Chhaj	... Flat winnowing basket.
Chhatta	... Broadcast sowing, p. 40.
Chhiklis	... Bullock muzzles.
Chow	... Wooden breast or mouldboard of "munah" plough, p. 47.
Cusec	... Technical irrigation term meaning cubic foot of water per second.
Dáb	... See p. 37.
Dál	... Split pulses.
Desi	... Country ; indigenous.
Dhan	... Unhusked rice, p. 118.
Dhar	... Long low heaps of stored "bhusa" covered with mud.

Dharwar	...	Part of the Bombay Presidency growing American cotton since 1860, p. 132.
Dranti	...	Also "datri" or "dati," sickle.
Duty	...	A technical irrigation term to express relation between area of crop grown and water used.
Fakir	...	Beggar.
Fellah	...	Egyptian cultivator.
Gandala	...	Also "chuha-ramba," hole-digger, p. 56.
Godi	...	Interculture after cultivation.
Goji	...	Gram and barley grown in mixture.
Gur	...	Raw sugar in lumps.
Hal	...	Form of wooden plough used in the Punjab, p. 46.
Hals	...	Beam of the "hal," p. 47.
Haq	...	Right, generally percentage area of irrigation guaranteed.
Hathi	...	Handle of the plough.
Hithar	...	Low-lying lands, p. 49.
Hukkah	...	Indian pipe.
Jandra	...	Bidging rake, p. 56.
Jhallar	...	Form of Persian-wheel for tanks or rivers.
Jhul	...	Rough horse-blankets.
Kabuli	...	From Kabul in Afghanistan.
Kahi	...	Also "kasi"; a spade, p. 56.
Káhi	...	<i>Saccharum spontaneum</i> .
Kallar	...	Also "reh" or "usar"; alkaline incrustation on soil.
Kalrathi	...	Heavy alkaline soil.
Kan	...	Proportion of lint in seed cotton.
Kanal	...	$\frac{1}{8}$ th of an acre.
Kapas	...	Seed cotton.
Karah	...	Leveller.
Karand	...	Also "papri"; hard crust formed on the surface of soil after rain or irrigation.
Kasola	...	Small spade.
Kera	...	Dropping seed in the furrow behind the plough, p. 41.
Khal	...	Water-course.
Kharaba	...	Remission of land revenue and water rate.
Khapra	...	Larva of <i>Trogoderma khapra</i> , p. 106.
Kharif	...	Monsoon or summer crops.
Khurpa	...	Also "ramba"; hand-hoe, p. 56.
Kiari	...	Also "kiara"; compartment of a field for irrigation.
Kikar	...	<i>Acacia arabica</i> .
Killa	...	$\frac{1}{25}$ th of a square. In Lower Chenab Canal=1 $\frac{1}{2}$ acres, and in Lower Bari Doab Canal=1 acre.
Killi	...	Toggle or wooden pin.
Kohla	..	Bullock mill for crushing oil-seeds.

Kor	... First watering after sowing.
Kothi	... Rectangular mud bin for storing grain.
Kulhari	... Axe, p. 56.
Kur	... Main working part of the "hal."
Kup	... See "mussal."
Lalkasarwali	... Bearded red-awned wheat, <i>e.g.</i> , No. 11.
Leeping	... Rubbing over with cow-dung; cotton seed is thus treated before sowing.
Lambardar	... Village headman, p. 11.
Mahl	... Rope ladder of the Persian-wheel.
Maira	... Sandy soil.
Mandi	... Market.
Marla	... $\frac{1}{80}$ th of a kanal or $\frac{1}{180}$ th of an acre.
Mat	... Large earthen pitcher.
Maund	... 82½ lbs. or 40 seers.
Mohla	... Pestle, p. 118.
Mote	... Charsa, p. 68.
Munah	... A form of native plough in use in the Punjab, p. 46.
Murabba	... A square of land measuring 25 "killas" or acres as the case may be.
Musal	... Also "kup," a conical stack of stored "bhusa" generally thatched with straw.
Mussalman	... Muhammedan.
Nali	... See "por."
Neem	... <i>Melia Azadirachta</i>
Nehri	... Canal irrigated.
Nili Bar	... An arid tract in the Multan and Montgomery Districts.
Okru	... Irregular, p. 47.
Oomras	... Commercial name of a Central Indian cotton of medium staple.
Pahar	... Turn of water of 3 hours.
Pahora	... Wooden rake.
Panjali	... Yoke.
Panj-danta	... Horse-hoe, p. 51.
Palla	... Cylindrical stacks of stored "bhusa" thatched with mud.
Patwari	... Village revenue or irrigation subordinate.
Phallah	... Share of a plough, p. 47.
Phalla	... A hurdle dragged by bullocks in wheat threshing.
Por	... Also "nali," a seed tube with funnel-shaped mouth attached behind the plough for sowing.
Pora	... Sowing with the "por," p. 42.
Pucca	... Masonry.
Punjabi	... Pertaining to the Punjab.
Ráb	... Partly boiled cane juice fit for making sugar.

Rabi	... Winter crops.
Rahat	... Persian-Wheel.
Rajbaha	... Canal distributary.
Ramba	... See "khrpa."
Ramio kos	... Common charsa.
Ranni	... Watering applied shortly before sowing.
Reh	... See "kallai."
Ság	... Pot-herbs ; vegetables.
Sailab or sailaba	... Lands subject to periodical or annual flood.
Sanga	... Wooden fork, p. 56.
Sannah	... Front of the beam of a "hal."
Ser	... $\frac{1}{16}$ th of a maund, approximately 2 lbs.
Shakkar	... Raw sugar.
Sohaga	... Levelling beam; wooden beam used in breaking clods and covering seed, p. 53.
Fuklai	... Bark of the tree (<i>Kydia calycina</i> , Rox.), p. 143.
Sundi	... Larval stage of certain insects.
Sundho kos	... Self delivering charsa, p. 67.
Susri	... Any small beetle attacking stored grain, e.g., <i>Calandra oryzae</i> and <i>Rhizopertha dominica</i> .
Tahsil	... Part of a district, p. 11.
Tahsildar	... Officer in charge of a tahsil, p. 11.
Tarangli	... 5 to 7 pronged iron fork with wooden handle, p. 56.
Tela	... Small sucking insects, e.g., aphid.
Theka	... Bin made of sacking for storing grain.
Tilli	... White variety of "til" or gingelly.
Toka	... Fodder cutter or chopper.
Ukhli	... Mortar.
Usar	... See "kallar."
Wadanak	... Macaroni wheat (<i>Triticum durum</i>), p. 94.
Wadh	... Stubble.
Wahn	... Water applied to a field to enable it to be ploughed.
Wari	... Turn of irrigation, p. 72.
Wat	... Also "bund," irrigation ridges.
Wattar	... Right condition of land for ploughing after rain or watering.
Wazir	... Minister.
Zaid kharif	... Autumn crops, e.g., "toria."
Zaid rabi	... Spring crops, e.g., melons.
Zail	... One of the divisions of a tahsil.
Zaildar	... Non-official who helps in the work of running a zail.
Zemindar	... Farmer, may be tenant or owner.

ERRATA.

PAGE.

1	Line	8	<i>for</i>	"Lahor"	<i>read</i>	"Lahore".
1	"	9	"	"Capitae"	"	"Capital".
1	"	10	"	"extremel"	"	"extremes".
15	"	8	"	"th"	"	"the"
17	"	1	"	"ffesh"	"	"flesh".
18	"	last	"	"th"	"	"the".
26	"	4	"	"w ll"	"	"will".
26	"	9	"	"severa"	"	"several".
26	"	10	"	"i"	"	"it".
35	"	20	"	"tinned"	"	"tined".
36	"	13	"	"tinned"	"	"tined".
36	"	4	"	"have"	"	"leave".
38	2nd heading		"	"pl ugh"	"	"plough".
45	Line	6	"	"metheds"	"	"methods".
46	"	last	"	"adopted"	"	"adapted".
55	"	32	"	"acres"	"	"sarer".
56	"	27	"	"othe"	"	"Sugarcane".
58	"	16	"	"except"	"	"expect".
60	"		"	"Leath"	"	"Leather's".
60	"	foot-note	"	"emoirs"	"	"memoirs".
60	"	"	"	"grear"	"	"great".
61	"	last	"	"Th"	"	"The".
66	"	17	"	"o"	"	"of".
66	"	18	"	"l"	"	"10".
67	"	13	"	"wel"	"	"well".
70	"	30	"	"paynent"	"	"payment".
74	"	1st heading	"	"An ther"	"	"another".
77	"	10	"	"ow"	"	"low".
79	"	9	"	"Gr m"	"	"Gram".
79	Table IV, line 2	"	"	"Table IV"	<i>instead</i>	"V".
79	<i>read</i>		"	"S nji"	<i>read</i>	"Senji".
83	Table 2nd, line 2	"	"	"soi"	"	"soil".
92	Line	18	"	"tota"	"	"total".
94	"	19	"			

PAGE.					
103	Line 3	<i>for</i>	"car"	<i>read</i>	"can".
104	" 1	"	"genera"	"	"general".
106	" 13	"	"mean	"	"means".
106	" 38	"	"steadily"	"	"steadily".
106	" last	"	"complete"	"	"complete".
107	" 22	"	"larvæ"	"	"larvæ".
109	" 11	"	"inna"	"	"anna".
115	" 11	"	"it"	"	"is".
115	" 12	"	"wheas"	"	"wheat".
118	" 5	"	"croppee".	"	"cropped".
127	3rd heading	"	"piked"	"	"picked".
133	Line 38	"	"nelectum"	"	"neglectum".
134	" 32	"	"Sinc"	"	"Since".
139	" 2	"	"Saccha am"	"	"Saccharam".
142	1st heading	"	"Hoei ghoeed"	"	"Hoeing".
144	4th heading	"	"s gar"	"	"sugar".
150	Line 3	"	"prep red"	"	"prepared".
158	Line heading	"	"iseases"	"	"Diseases".
163	1st Table	"	"acr s"	"	"acies".
166	Line 12	"	"g ing"	"	"36".
169	" 3	"	"s"	"	"sqing".
169	" 4	"	"n"	"	"is".
169	" 19	"	"i"	"	"in".
170	" 16	"	"Brassi a"	"	"is".
171	" 30	"	"wel"	"	"Brassica".
					"well".

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INTRODUCTION.

Agriculture has long been, and is no less to-day, the means by which man has obtained the most important necessities for his life and comfort. It is a business involving the production and sale of certain commodities required by the community, usually for food or clothing.

The successful farmer has to learn not only from experience on his own farm, but also by looking further afield. Practices exist in one part of a district or tract which are not generally known, but which may often be adopted in other parts. New conditions are constantly arising in the world's markets which render new crops or products more profitable relatively than before. Again in the Punjab the spread and development of irrigation is opening up new fields and new conditions which render the older methods of farming unprofitable and obsolete. American cotton first tried in the Punjab in 1902 in a systematic manner is now grown over half a million acres annually. There are good prospects that a better variety than 4F will be grown if the relative price of long staple cotton is maintained in Liverpool and Bombay. The work of the Agricultural Department in improving cultivation by line cultivation and the introduction of simple country made implements bids well to revolutionise present methods of farming, and will enable the farmer better to face the increasing cost of hand labour. Improved agriculture does not merely mean growing pure seed in place of present mixtures, important as that is as a preliminary measure, but concerns all farming operations where a profitable saving can be made. A close study of costs must guide the farmer in the adoption of even the smallest improvement. One of the main objects of this book is to encourage such a study as the safest basis for the future stability and progress of Punjab Agriculture. The progressive farmer must continue to progress for the so-called scientific agriculture of to-day is often the ordinary practice of to-morrow.

This book is intended mainly for students and teachers of agriculture in the schools. It is hoped, however, that it may be found useful by Revenue and Irrigation Officers, business Firms dealing in agricultural produce, and the general public. A book of this kind must of necessity have many defects. We hope that on the whole it may be found useful and practical.

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