

Department of Agriculture, Bombay.

BULLETIN No. 66 OF 1914.

INDIGENOUS IMPLEMENTS

OF THE

BOMBAY PRESIDENCY

BY

Rao Saheb G. K. KELKAR,

Acting Deputy Director of Agriculture, Bombay Presidency.



BOMBAY

PRINTED AT THE GOVERNMENT CENTRAL PRESS

1915

[Price—Rs. 2-2-0 or 3s.]

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BOMBAY TRACT & BOOK SOCIETY, Bombay.
N. B. MATHUR, N. K. H. Press, Allahabad.
PROPRIETOR OF THE NEWAL KISHORE PRESS,
Lucknow.

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PREFACE.

During my College experience as an Assistant Professor of Agriculture at the Agricultural College, Poona, for about 5 years, it has been observed by me that it was very difficult to impress upon the students the various methods of cultivation practised in different parts of the Presidency without giving them a correct idea of the local and indigenous implements in the various tracts. Although this difficulty was partly overcome by the description of implements given by Mr. Mollison in his standard Book on Indian Agriculture, I undertook a survey of the indigenous implements in order to obtain further details. This work of survey was very much facilitated as I was in charge of several districts and had opportunities to see implements personally and talk about them directly with the people concerned.

As a worker in the Agricultural department it has been my experience that foreign implements, though valuable and efficient in certain cases, are not in general so suitable in the present economic condition of the agriculturists, as to replace the indigenous ones, on account of their cost and want of facilities for repair, etc. I have already published a book on useful foreign implements in Maráthi and I thought to have a similar book regarding indigenous implements, so that a student caring to improve upon indigenous implements can have a detailed ready reference. For, I am of opinion that every detailed information on a particular agricultural subject is quite essential before we can suggest any improvement.

Moreover this will serve as a record of the implements used at present as it is likely that some implements might become extinct altogether or may be changed in form. For example, the Khándesh hand gin is becoming practically extinct on account of the introduction of the ginning factories.

In this book I have not made any attempt to discuss the merits and demerits or to suggest any possible improvements in the implements described by me, as a good deal of thorough and exhaustive study and experimental work has to be done before any definite opinion can be formed. Unfortunately I had no time at my disposal to take up this phase of the work.

I am very thankful to various members of the Agricultural Department and others, who have helped me in collecting information for this work. Almost all the photos referred to in this book have been taken by the Departmental Artist Mr. Tilak for which my thanks are due to him.

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APPENDICES.

APPENDIX

PLO

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
1	Hal	Plough	50	Rs. 3-8 to 5	1	2	Gujarat tract. Ahmedabad.	...	...
2	Do.	Do.	51	Rs. 51	1	2	Kaira P a n c h Mahals.	IX XIV	8 2
3	Do.	Do.	40	Rs. 2-4-0	1	2			
4	Do.	Do.	45	Rs. 7 to 12	1	2	Surat	XVI	2

A.

UGHS.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
<p>The plough consists of four parts:—</p> <p>1. The body and stilt are in one piece and are generally made of bábul or rayen. This is nearly a straight piece of wood about 10' to 12' broad and 5" to 6" thick. It is thin at the top and thick at the bottom. The small pin fixed to the stilt projects more inwardly and is used for handling the implement.</p> <p>2. Chowra is a separate piece. It is made of bábul wood and fixed at the lower end of the body. It measures about 1 foot.</p> <p>3. The plough share is a square bar of iron and is about 2' long with a broad and sharpened point. Share is adjusted on the chowra which is inserted into the body and kept in position by means of a wedge at the back.</p> <p>4. Pole is made of teak or bábul or any available wood. It is fixed nearly in the centre of the body with a wedge by which the angle can be adjusted as required. It is 9' to 11' long having two to three pieces of iron inserted at its end about 5" to 6" apart. These pins are inserted on the underside and are of great use while yoking the bullocks.</p> <p>Similar to No. 1</p> <p>This varies from No. 1 in that it has (1) a plough share 13" to 15" long with a broad point (2) wooden pins to the pole instead of iron ones.</p> <p>The plough differs from No. 1 in the following points:—</p> <p>1. Body—18' long, 8" broad and 2½" thick.</p> <p>2. Chowra—18" long and is more conical than in No. 1.</p>	4" to 6"	1	0	<p>The plough is used for ploughing Gorádu lands during the monsoon as well as for interculturing bájri & cotton. It is also used for opening furrows while sowing gram and castors.</p> <p>The plough used in Bhal tract (plate X, No. 1) is almost similar in construction to the Ahmedabad and Kaira plough but it is heavy (about 85 lbs.—plough share alone weighs 8 lbs). The soil in this tract is black, main crops being wheat, cotton and jowár.</p>
	4" to 6"	1	...	<p>This is the whole and sole implement used for cultivation in this tract. It is used for ploughing in both kharif and rabi seasons in all kinds of soils. It is also used for sowing maize, gram, wheat, etc., by attaching a tube.</p>
	4" to 6"	...	25 gunthas during rains.	<p>The plough is used for ploughing black and Gorádu soils after the commencement of the monsoon. It is used for interculturing cotton, jowár, chillis and brinjals</p>

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
							Gujarat tract— <i>contd.</i>		
5	Hal	Plough	47	Rs. 7 to 12	2	2	Surat	XVI	3
6	Nangar	S u g a r-cane planting plough.	106	Rs. 15 to 20	3 men & 2 boys.	4	Do.	V	3
7	Hal	Plough	42	Rs. 6 to 7	1	2	Broach	VI	3
							Deccan tract		
8	Nangar	Do.	125	Rs. 7 to 12	1	2 to 4	Khândesh	XVII	2

A—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
<p>3. Share—10' long but small and pointed and is nailed down on the chowra.</p> <p>4. Pole—10' long usually made of tanach.</p> <p>The pins fixed to the pole are made of wood generally.</p> <p>Similar to the above except in that it has a rather broad share. Chowra has a hole for fixing the tube for sowing Vâl and castors.</p> <p>The plough is of a heavier construction—broader and thicker in parts. It has a tube bored through the body and the shoe through which the seed canes are put in by a man sitting on the top of the broad portion of the pole who feeds the canes. Two men direct the bullocks and the two boys supply the seed canes.</p> <p>Similar to Surat plough No. 4 in general construction as well as in dimensions of parts.</p>	<p>4" to 6"</p> <p>6" to 8"</p> <p>4" to 6"</p>	<p>1</p> <p>1</p> <p>...</p> <p>...</p> <p>...</p>	<p>...</p> <p>30 to 35</p> <p>30 during rains.</p> <p>*20 to 30</p>	<p>and for mixing and puddling mud in rice fields. The same plough is used for making ridges and water channels by fixing a board to the body of the plough.</p> <p>The plough is used for sowing rabi Vâl and castors in rice fields.</p> <p>This plough is worked only after the land is thoroughly prepared by 8 or 10 ploughings. It is used for planting whole canes on Gorâdu and Besar soils in Jalâlpur, Chikhli and Gandevi tâlukas.</p> <p>The plough is used for ploughing the lands after commencement of the monsoon, ploughing vashil (fallow) fields in the months of October and November and ploughing between the rows of cotton in August.</p> <p>*This varies according to the size of the bullocks, time of ploughing and nature of the crop after which it is to be ploughed.</p> <p>Towards Taloda, Nandurbâr and Prakâshe, a lighter plough is used for ploughing stiff black wheat lands. The ploughing is exclusively done during rains. A still smaller plough with a hole in the shoe</p>
<p>The ploughs used in the Deccan differ from those used in Gujarât in that the body and the stilt are in different pieces. In Gujarât plough the body and stilt are in one piece and the shoe (chowra) separate—but in the Deccan plough the head piece (doke) and the shoe (da'nt) are made out of one block of wood.</p> <p>Body—Head is 1'-7" long 9" wide and 6" thick; shoe is 1'-7" long, share is a square bar of iron about 2'-6" long. One end of the share is secured into the socket of the body, the other end is secured to the shoe by means of a ring—the sharpened point projects about a foot beyond the end of the shoe. The beam is made of tivas and is about 11' long.</p>	<p>6" to 9" according to the nature of the soil and time of ploughing.</p>	<p>...</p>	<p>...</p>	

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
						Deccan	tract— <i>continued.</i>		
9	Nangar.	Plough.	100	Rs. 10 to 12	1 or 2	4 to 6	Ahmed-nagar.	...	...
10	Do.	Do.	65	Rs. 8 to 10	1	2	Násik	...	...
11	Do.	Do.	150	Rs. 9 to 10	2	10	Poona	II	2
12	Do.	Light plough.	100	Rs. 5 to 6	1	4	Poona	...	...

A—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
				to receive the sowing tube is used for sowing gram in the Tápti Valley. This plough is called Nál (नाळ) plough. It is sometimes used for sowing wheat when the moisture goes deep down.
				The work of Khándesh plough is superior to the two bullock Deccan or Karnátak plough. When deep ploughing is necessary a heavy stone is placed on the body of the plough and then it is worked by 4 bullocks.
Similar to Poona plough, head 18" long, 9" broad and 4" thick; shoe 26" long, share 15" long and 3" wide.	4" to 9"	...	15 in hot weather, 20 in cold weather.	Used for ploughing heavy and medium black soils.
Similar to Poona plough, head 20" long, 12" wide and 14" thick; shoe 2'-6" long; share 1'-9" long and projects 8" beyond the shoe.	4" to 6"	...	25 to 30	Do. do. Násik plough is more like Poona and that of Málegaon more approaching Khándesh plough. Towards Trimbak the plough has similar construction but it is light and is used for ploughing and puddling rice fields. It costs about Rs. 3.
Head 1'-5" long, 12" broad and 4" thick. The shoe is 1'-10" long. The share is flat and sharp at the end and is about 1½' long. It is laid on the shoe and is secured to the main block by a small piece of wood called <i>phalkamb</i> . The front end of the share projects about 6" beyond the point of the shoe and is secured by means of a ring. The pole is bent and about 9½' long. The back end of the pole is inserted into the body and projects about three inches which gives support to the stilt. All the parts of the Poona plough are made of bábul wood.	6" to 9"	...	12 to 20	Used for working heavy soils, eradicating weeds and for making ridges and water channels in sugarcane lands.
Similar to the above, head 18" long, 9" broad and 4" thick; shoe is 26" long, share 15" long and 3" wide.	4" to 6"	...	15 to 20	Used for ploughing medium black soils in Khed and Junnar and for making ridges for planting potatoes.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.		
					Men.	Bullocks.		Plate.	Number.	
13	Nangar.	Heavy plough.	285	Rs. 12 to 15	2	8 to 10	Deccan tract—concluded.	Sholápur.	II	1
14	Do.	Light plough.	...	Rs. 7 to 8	1	2	Do. ...	...	...	...
15	Do.	Heavy plough.	180	Rs. 15 to 20	4	10	Sátára. ...	It	3	3
16	Do.	Light plough.	133	Rs. 10 to 12	3	8	Do. ...	...	...	...
17	Negalu	Heavy plough.	125	Rs. 6 to 8	2 to 3	6 to 8	Karnatak tract. Belgaum.	...	...	...
18 4	Ranti ...	Light plough.	82	Rs. 3½ to 4	1	2	Do.	...	...	...
19	Negalu.	Heavy plough.	200	Rs. 8 to 10	3	8 to 12	Dhárwár...	III	1	1
20	Ranti.	Light plough.	84	Rs. 4 to 5	1	2	Do. ...	III	4	4

A—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
Body—the head is 20" long, 12" broad and 7" thick; shoe is 2'-3" long; share is 16" long and about 3" to 4" broad. The pole is bent and about 12' to 13' long.	6" to 11"	...	13 to 15	The plough is used in ploughing heavy and deep black soils.
.....	4" to 6"	...	20	This plough is in general use and is used for ploughing in bāgāyat and jirāyat lands.
Body—the head is 1'-8" long, 12" broad and 8" thick; shoe is 2'-2" long; share is spear-shaped about 18" long and 4" to 5" broad and projects about 5" beyond the shoe. The beam is bent and is 9' to 10' long.	6" to 9"	...	20 to 25 during cold and hot weather.	This heavy plough is used once in three to five years.
Body—head is 1'-9" long, 9" broad and 6" thick, shoe is 1'-10" long; share is spear shaped 16" long and 3" to 4" broad. The length of the beam varies from 7' to 10'.	4" to 6"	...	25	This plough is in general use. It is used during the monsoon to prepare land for tobacco or for rabi preparation after the removal of the kharif crop.
Similar to heavy plough used in the Sātāra District (Sāngli). Body—head 1'-9" long, 7" broad and 6½" thick; shoe 1'-9" long; share is flat spoon shaped, it is 1-10" long and about 5" wide in the centre.	7" to 9"	...	12 in hot weather.	This plough is used for ploughing heavy lands, hariāli bound and sugarcane lands.
Similar to the Ranti of Dhār-wār. Body—head is 1'-9" long, 7" broad and 5" thick; shoe is 1' 9" long. Share is flat in front and narrow at the back. It is 1' 6" long, 3" wide and projects 6" beyond the shoe.	5" to 6"	...	20	This plough is in general use. It is used during rains as well as in cold weather.
Body—head 2' long, 10" broad and 5½" thick; shoe 3 feet long, share is flat 3'-2" long, 2½" wide and ½" thick. The share is laid on the shoe and fixed to it by driving in staples: the share does not project very much beyond the shoe. Length of the stilt is 3'-4" and that of the beam is about 9'.	6" to 9"	...	15 to 20	This plough is seldom used. It is very heavy and specially suited for ploughing and eradicating hariāli from deep black soils of the cotton tract.
Similar to Negalu but lighter in construction. Body—head 1'-9" long, 6½" broad and 4½" thick; shoe 2'-7" long; share is small thin piece of iron and is secured on the shoe with staples. It is 1'-5" long, 1" broad and ½" thick.	4"-5"	1 during rains.	...	This plough is in general use and used for ploughing after the commencement of the monsoon.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
21	Negalu	Heavy plough.	185	Rs. 12 to 15	2	8	Karnatak tract— Bijápur. ...	...	...
22	Madiki	Light plough.	95	Rs. 6 to 7	1	2	Do. ...	...	...

A—concluded.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
Body—the head is 2' long, 11" broad and 7" thick; the shoe is 2'-3" long; the share is 18" long and projects about 6" beyond the shoe. The length of the pole is about 10'.	6" to 10"	...	10 to 12	This heavy plough is used for ploughing once in 5 to 7 years.
Body—the head is 2' long 10" broad and 6" thick; the shoe is 2'-2" long; the share is about 18" long and projects 4" to 6" beyond the shoe.	5" to 7"	...	15	This plough is in general use. It is worked both in the hot season and after the rains.

APPENDIX
HAR

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
1	Kaliu or Ramp.	Harrow (Bhal tract).	68	Rs. 7.	2	4	Gujarát Ahmedabad	tract. X	5
2	Havedu.	Harrow (Bhal tract).	47	Rs. 4.	1	2	Do.	...	...
3	Rupto.	Harrow (Bhal tract).	57	Rs. 7.	1	2	Do.	XII	1
4	Karab.	Harrow	55	Rs. 2-8	1	2	Do.	...	...
5	Dantal.	Toothed harrow.	35	Rs. 4.	1	2	Kaira.	IX	7
6	Ghanio.	Do.	38	Rs. 3.	1	2	Do.	IX	6

B.

ROWS.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
<p>The harrow consists of five parts :—</p> <p>(1) The head piece is straight and round. It is 4'—2" long and about 5½" in diameter.</p> <p>(2) The head piece has two prongs in front fixed in a slanting direction. They are made of iron, being 1'—3" in length.</p> <p>(3) The blade is made of iron—while at work the ends of the blade are inserted into the ends of the prongs. It is 3' long, 2½" broad and ½" thick.</p> <p>(4) Two poles are separately fixed. They join at the yoking point. They are about 10 feet long.</p> <p>(5) The stilt is fixed on the top of the head piece in the centre.</p>	2" to 3"	2	...	It is a heavy harrow used for stirring up the black soil as well as for removing stubbles of jawar.
<p>Head piece is 2' long, 7" broad and 6" thick. Blade 16" long and 2" broad. The length of the prong is 11".</p>	1½" to 3"	2	...	It is used for stirring the soil as well as for interculturing cotton.
<p>Head piece 6'—3" long and about 3" in diameter. Blade is 5'—2" long. It is adjusted to the head piece by three iron prongs, one being about the middle. The length of the prong is 10". There is no stilt to this implement.</p>	1½" to 2"	8	...	It is a light harrow used for stirring the soil as well as for covering seed.
<p>The head piece is 2' long, 6" broad and 6" thick. The blade is 18" long and 1½" to 2½" broad. The length of the prong is about 10".</p>	1½" to 2"	3	...	It is used for stirring up the soil, only a few cultivators have this harrow.
<p>In this implement 6 tines are fixed in a wooden body (36" long) 6" apart.</p> <p>The tines (1½' long) are tipped with iron. The pole is made of teak rafter and the body and the tines of Babul wood.</p>	2" to 3"	3	...	Its action is like a grubber. When this implement is used for weeding and thinning out kodra mixture then it is worked crosswise to the direction in which the rows are sown. It is also used for harrowing muddy rice fields before transplanting.
<p>In this implement 6 to 8 tines having points at both the ends are fixed into the body (34" long). The upper ends are shorter than the lower ends. The tines are not tipped with iron.</p>	3" to 4"	3	...	It is used for mixing and puddling mud in rice fields before transplantation. The front tines lift up the weeds and the back tines which are shorter in size distribute

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
							Gujarát tract	—continued.	
7	Vakhar.	Harrow.	36	Rs. 2-8-0	1	2	Panch Mahals.	XIV	4
8	Karab.	Do.	47	Rs. 9 to 11	1	2	Surat ...	XVI	8
9	Valkhal Karab.	Do.	54	Rs. 10 to 12	1	2	Do. ...	...	...
10	Dantal.	Toothed harrow.	34	Rs. 10 to 11	1	2	Do. ...	V	1
11	Karab.	Harrow.	68 (heavy) 36 (light).	Rs. 9 to 10	1	2	Broach ...	VI	5
							Deccan tract.		
12	Vakhar.	Heavy harrow.	53	Rs. 5 to 6	1	2	Khándesh .	XVII	3
13	Dhaya or Dankiya Vakhar.	Light harrow.	45	Rs. 4 to 5	1	2	Do. ...	XVII	4

B—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
<p>The head piece is made of Bābul wood about 22" long and 6" in diameter. The blade of iron is 15" to 18" long and 2" broad. The pole is attached to the head piece by bifurcating one of its ends. It is about 10' long.</p>	½" to 3"	2	...	<p>the weeds in lines and prevent clogging. Its special action is that of weakening weeds.</p> <p>This implement is used for harrowing after the harvest of gram and wheat. It is found only with the well-to-do cultivators of Dohad and Jhalod Tālukas. Ordinary cultivators do not keep harrow.</p>
<p>The head piece is concave shaped and is scooped out in the middle for allowing the clods to pass freely. It is made of Bābul or Tanach. It is 2' long, 6" broad and 6" thick. The blade of iron is slightly curved. It is 1'-8" long and 2" broad. The length of the iron prong is 9". Pole is bifurcated and made of teak.</p>	½" to 3"	2 to 2½	...	<p>It is used for harrowing jowār and cotton fields, for removing jowār stubbles, for mixing manure and covering seed. It is used in the preparation of land for rabi crops like wheat, tur, til, etc.</p>
<p>Same as No. 8 but with a longer and thinner blade which is about 27" long.</p>	½" to 1"	5	...	<p>It is used for covering seed.</p>
<p>Similar to No. 5 used in the Kara District.</p>	1" to 2"	2 to 3	...	
<p>Similar in construction to the Surat harrow No. 8. The head piece is 25" long, 6" broad and 5½" thick. The blade of iron is curved. It is 21" long and 3" broad. The prong of iron is 5½" long.</p>	½" to 4"	2½ to 3 according to season and bullocks.	...	<p>It is used in kharif and rabi preparation of land for all the crops. It is also used for interculturing cotton when 8" high and onwards. Number of harrowings given vary from 1 to 8. Specially Vashil fields receive more harrowings.</p>
<p>The head piece and prongs are made of Bābul and the pole of teak wood. The head piece is 2'-10" long, 7" broad and 6" thick. The blade is 2'-3" long and 2½" broad. The prong of wood is about 9" in length.</p>	2" to 4"	1½ to 3 according to the nature of soil, time of harrowing and the bullocks.	...	<p>In the Tāpti Valley the Vakhar is rather smaller in size. A small Vakhar having 18" blade is used for interculturing chillies, plantains and sometimes used for sowing cotton after removing the blade. The harrow is used at all seasons of the year for preparation of land. It is used also for uprooting cotton stalks.</p>
<p>Similar to No. 12. The head piece is 4'-6" long, 5" broad and 4" thick. The blade is 3'-8" long and 1½" broad. The prong of wood is 10' in length.</p>	1½" to 2½"	4 to 5 in covering and 3 in harrowing.	...	<p>It is used for covering seed and harrowing during rains.</p>

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
							<i>Deccan tract—continued.</i>		
14	Kongi Vakhar or Aut.	Heavy harrow.	70 (blade alone 7 lbs.)	Rs. 4-8-0	1	2	Ahmed-nagar.	...	...
15	Pharát.	Light harrow.	60 (blade alone 5 lbs.)	Rs. 3-8-0	1	2	Do.	...	...
16	Kokarya Kulav.	Harrow.	56	Rs. 5-8-0	1	2	Násik	...	...
17	Rakhia.	Do.	50	Rs. 5	1	2	Do.	...	...
18	Kulav.	Heavy harrow.	70	Rs. 3.	1	2	Poona	IV	1
19	Pharát.	Light harrow.	45	Rs. 3	1	2	Do.	...	...
20	Kulav.	Heavy harrow.	65	Rs. 3	1	4	Sholápur.	...	...
21	Do.	Harrow.	45	Rs. 5	1	2	Sátára	...	...

B—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
Head piece is bent but the blade is almost straight. All the parts except blade are made of bābul wood. Head piece is 3' long, 5" broad and 3" thick; blade is 23" long and 2½" broad.	2" to 4"	2	...	It is used for kharif and rabi preparation of land. In rabi preparation 4 bullocks are used. It is then called <i>Chahuri Vakhar</i> .
Ends of the head piece are bent upwards. It is 3' long, 4" broad and 3" thick. Blade is 2'-8" long and 1½" broad.	½" to 2½"	2 to 2½	...	It is used for covering seed and for 2nd and 3rd harrowing. There is another kind of harrow called <i>Rakhia Pharāt</i> . Its whole construction is of a lighter description. It is used for covering seed as well as for making <i>kharad pallis</i> during the hot weather. It costs about Rs. 3.
The material used for the construction of this implement is bābul. The upper side of the head piece is rather curved. It is 3' long, 6" broad and 4" thick. The blade is 2' long and 2" broad. The length of the wooden prong is 10".	2" to 4"	3	...	It is used for harrowing at all seasons of the year; but during the hot weather a rather heavy harrow called <i>kongia</i> is used for giving <i>unal pallis</i> (hot weather harrowing.)
The head piece is 4'-10" long, 4½" broad and 4" thick. The blade is 3'-8" long and 1½" in thickness.	1½" to 2½"	5½	...	It is used for covering seed.
All the parts are made of bābul wood. The head piece is 3'-9" long, 6½" broad, 4" thick. The blade is 2'-7" long and 2½" broad. The prong is 9½" in length.	1½" to 3"	1½ to 2	...	It is used for harrowing at all seasons of the year.
The head piece is 4'-8" long, 5" broad, 3½" thick. The blade is 3'-4" long and about 1½" broad. The length of the prong is 9".	1½" to 2"	4	...	It is used for covering seed
The head piece is 4' long, 8" broad and 4" thick. The length of the prong is 12"; the blade is 3½' long, 3" broad and ½" thick.	1½" to 3"	1 to 2	...	It is used for scarifying the soil at all seasons.
The head piece is 4' long, 5" broad and 4" thick. The length of the prong is 7". The blade is 3' long and 2½" broad.	1½" to 3"	2	...	It is used for scarifying the soil at all seasons. When the work is heavy, then 4 bullocks are yoked. A lighter harrow is used for covering seed. The work done per day is about 4 acres.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks		Plate.	Number.
22	Kulav.	Heavy harrow for harvesting ground-nuts.	110	Rs. 9	3	8	Deccan tract Sátára ...	... ...	<i>concluded.</i> ...
23	Kunti.	Harrow.	65	Rs. 3	1	2	Karnátak tract. Belgaum. ...	... ...	... ...
24	Balisal Kunti.	Light harrow.	50	Rs. 3	1	2	Do. ...	... ...	... ...
25	Dodd Kunti.	Do.	98 (blade alone 16 lbs.)	Rs. 4	2	4	Do. ...	... ...	... ...
26	Harguv Kunti.	Heavy harrow.	78 (blade alone 15 lbs.)	Rs. 5 (blade alone Rs. 2.)	2	4	Dhárwát ...	......	......
27	Kir Kunti.	Light harrow.	55 (blade alone 10½ lbs.)	Rs. 5 blade alone Rs. 1-4-0.	1	2	Do. ...	... ...	... ...
28	Balisal Kunti.	Light harrow.	53 (blade alone 10 lbs.)	Rs. 5 blade alone Rs. 1-4-0	1	2	Do. ...	... ...	... ...
29	Ukki Kunti.	Heavy harrow.	75	Rs. 8 to 10	2	4	Biájpur ...	......	......
30	Kunti.	Light harrow.	48	Rs. 4 to 5	1	2	Do. ...	... ...	... ...

B—continued.

Short Description.	Efficiency.			REMARKS.
	Depth.	Work done per day.		
		Acres.	Gunthas.	
The head piece is 3' long, 10" broad and 5" thick. The blade is 2' long and 3" broad. The length of the prong is 11".	3" to 4"	1	...	It is used for harvesting groundnut. While working 2 men sit on the head piece.
All the parts are made of bābul excepting the pole which is made of teak. The head piece is 3'-6" long, 7" broad and 4" thick. The blade is 2½' long and 2½" broad. The prongs are 9" in length.	½" to 2½"	1 in hot weather and 1½ afterante-monsoon showers.	...	It is used for harrowing as well as for covering seed after removing the blade and the prongs. It is also used for making beds.
The head is 4'-2" long, 5" broad and 3" thick. The blade is 3' long and 1½" broad. The length of the prong is 9".	½" to 2"	4	...	It is used for covering seed.
The whole implement is strong and stout. The head piece is 3'-3" long, 8" broad and 5" thick. The blade is 2'-4" long, 3" broad and ½" thick. The length of the prong is 10".	3" to 4"	1	...	It is used for harvesting groundnut.
The head piece is 4'-2" long, 7½" broad and 4" thick. The blade is 2'-10" long and 3½" broad. The length of the prong is 10".	½" to 2½"	1 to 1½	...	It is used for stirring and breaking clods after ploughing.
The head piece is 3'-9" long, 6½" broad and 2½" thick. The blade is 2'-8" long, 2½" broad and ½" thick. The length of the prong is 8½".	½" to 2"	2	...	It is used for stirring the soil and removing jawār stubble. The first harrowing is done by this implement and the second is done by Balisal Kunti.
The head piece is 4'-10" long, 5" broad and 2" thick. The blade is 3'-8½" long and 2½" broad. The prongs are 9½" long.	½" to 2"	4	...	It is used for covering seed and second and third harrowing.
The head piece is 4'-6" long, 15" broad and 15" thick. The prong is 1½' long. The blade is 2'-3" long and 3" broad. The pole is about 7½' long.	½" to 3"	...	20	It is used for scarifying heavy and stiff black soils.
The head piece is 4'-6" long, 6" broad, and 4" thick. The length of the prong is 9"; the blade is 3½' long. The pole is about 7½' long.	½" to 2½"	2 to 3	...	This is the ordinary harrow used for scarifying the soil as well as covering seed.

APPENDIX
CLOD

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
1	Samar.	Leveller or clod crusher.	65 ⁷ to 120	Rs. 3 to 5	1	2	Ahmedabad.	X	3
2	Do.	Do.	70	Rs. 3	1	2	Kaira ...	IX	5
3	Samar or Gahan.	Do.	180	Rs. 4	2	4	Panch Mahals.	XIV	11
4	Moto Samar.	Do.	283	Rs. 3 to 5	2	4	Surat ...	V	4
5	Patiu (small) Samar.	Do.	80	Rs. 3 to 5	1	2	...	V	5
6	Samar.	Heavy clod crusher and Leveller.	100	Rs. 3	2	8	Broach ...	...	...
7	Do.	Light leveller.	65	Rs. 4 to 6	1	2	...	...	...
8	Pathar.	Heavy clod crusher and leveller.	80 to 100	Rs. 8 to 10	1	2	Khandesh.	XIX	2
9	...	...	...	...	...	...	Ahmadnagar.	...	...

C.

CRUSHERS.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
It is made of babul or rayan wood. It is a plank 7' to 9' long 9" broad and 4" thick. Two rings are provided for tying ropes and attaching them to the yoke.	4 to 5	...	It is used for levelling and crushing small clods; for covering seed and for rolling the bajri crop to encourage tillering. In the <i>Bhal</i> tract the Samar used is of heavier description; when it is used for breaking clods 2 men and 4 bullocks work the implement.
It is made of the same material as No. 1. It is made of a plank about 10' long, 8" broad and 1½" thick. Two iron rings are fixed about the middle 1½' apart from the centre. At one of the ends an iron hook is fixed to carry the implement to the fields.	4 to 5	...	It is used for levelling, covering seed and crushing small clods. When the <i>Samar</i> is used for breaking large clods then two pairs of bullocks are yoked and 5 or 6 men stand on it.
It is made of Mowra or Sadad wood. It is 13 to 14' long, 10" broad and 6" thick. Two wooden pegs are driven into the body to work the implement by attaching ropes to it.	3 to 4	...	It is used for breaking clods and levelling the land after sowing maize, gram, &c.
It is a square wooden beam about 11' long, 1' broad and 7" thick. The working side is scooped out; for working 2 rings are fixed into the body 8' apart.	4 to 5	...	It is used for breaking large clods and for levelling the land.
It is a wooden plank about 7' long, 11" broad and 3" thick.	4 to 5	...	It is used for breaking small clods and levelling lighter and <i>Goradu</i> soils. It is also used for covering broad-casted seed of rice, wal, Diwella in rice fields (kiaris.)
It is a half split beam of toddy palm about 20 feet long. It is specially used for crushing clods in <i>Bett</i> and <i>Bhatta</i> lands when tobacco and jawar are grown after subsiding of the floods.	4	...	While working 8 to 12 bullocks are yoked to the beam and about 12 men stand on it.
It is similar to No. 2	4 to 6	...	It is used for levelling <i>Goradu</i> soils in Jambusar and Ankleshwar talukas. It is also used for covering seed in <i>Bett</i> lands.
It is a square log of wood 5 to 8 feet long, 8" broad and 5" thick. It is drawn over the lands by attaching ropes to the rings or holes made into the body.	1 to 1½	...	It is rarely used in dry crop cultivation but mostly used for crushing clods in irrigated lands.
.....	...	...	The work of crushing clods in this District is done by working the harrow several times. In the sugarcane areas the clods are broken by small mallets. Recently some of the Saswad cultivators have introduced a maind (clod crusher) for breaking clods.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
10	Phali.	Clod crusher.	200	Rs. 6 to 8	2	4	Nasik ...	...	...
11	Kabade.	Leveller.	60	Rs. 2	1	2	...	...	...
12	Maind.	Clod crusher.	166	Rs. 5 to 8	2	6	Poona ...	VII.	1
13	Hendore.	Clod crusher.	128	Rs. 2 to 3	2	2	Belgaum.	XXXVI	3
14	Doni	Do.	76	Rs. 3	1	2	Dhárwar.	...	...

C—continued.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
It is a plank 12' long, 11" broad and 9" thick. It is drawn over the land by tying ropes through the holes made into the body.	2	...	It is used for crushing clods.
It is a bent piece of wood about 6' long, 6" broad and 3" thick. It is drawn over the land by attaching a pole about the centre.	3	...	It is used in <i>Mawal</i> tract (Dindori, Kalwan, &c.) for levelling mud in rice cultivation.
It is a huge log of Babul wood about 10' long, 1' broad and 9" thick.	2½ to 3	...	It is used for crushing clods. It crushes clods but leaves them pressed which are again required to be brought up by means of the harrow. In <i>Mawal</i> a smaller maind made of the mango wood is used to level fields after ploughing which are intended for sowing wheat or gram, &c.
It consists of one big plank to which another small piece is joined lengthwise. The surfaces of these two planks being uneven help in crushing clods. The whole implement is 8' 4" long, 5" broad and 3" to 5" thick. Two pegs of wood are inserted about the middle at a distance of 2' for tying ropes while it is drawn over the land.	3 to 4	...	It is used for crushing clods in rice as well as in dry crop cultivation.
It is a plank scooped out from below. The scooped side touches the surface and breaks clods. It is 6' long, 9½" wide and 3" thick. Two pegs are provided for drawing the implement.	4	...	It is used for crushing clods.

APPENDIX
SEED

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
1	Trifan.	3 coultered drill.	50	Rs. 4	2	2	Gujarat Ahmedabad.	Tract.	...
2	Wāvniō.	Do. (Bhal tract.)	84	Rs. 6	2	4	Do. ...	XI	1
3	Chawad.	4 coultered drill.	53	Rs. 4	2	2	Do. ...	X	7
4	Dantal.	5 coultered drill + 2 more coulters on the out side for marking the lines.	80	Rs. 6	2	2	Do. ...	X	6

D.

DRILLS.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
<p>The drill consists of 6 parts—</p> <p>(1) The head piece is made of babul or teak and it gives attachment to all other parts. It is 4' 4" long with 4" in diameter.</p> <p>(2) Coulters—They have holes about the middle and are fixed into the head piece in a slanting direction; the distance between coulters being 18." The length of the coulters is 18."</p> <p>(3) Tubes are usually of bamboos and are laid on the holes of the coulters; as they rise they incline towards each other and join in the seed bowl.</p> <p>(4) The bowl is usually made of teak, sisam or some other light wood; it has three holes for receiving and dropping the seed into the tubes.</p> <p>(5) Pole is bifurcated and made of teak; it is about 9' long.</p> <p>(6) Stilt is fixed on the top of the head piece and is used for guiding as well as for lifting the drill at turnings.</p>	6	...	It is used for sowing cotton in Daskroi and in the talukas bordering Kaira District.
<p>The head piece and the poles are heavy and long. It is 5' 9" long and 5½" in diameter; coulters are 18" long and the distance between coulters is 16" to 18". Two separate poles are fixed into the head piece and they join at the yoking point.</p>	6	...	It is used for sowing cotton; the implement is worked by 2 men and 4 bullocks in the Bhal Tract; it is also used for sowing wheat in Sanand, Virámgam and Dhanduka Tálukas of the Ahmedabad District, where the distance between two coulters is 12."
<p>Similar in construction to No. 1 except that it has 4 coulters and the distance between coulters is 1 foot.</p>	5	...	It is used for sowing bájri, jowári, kodra and pulses; it is specially found on Kaira side of the Ahmedabad District. In the Bhal Tract it is called Hemarni Chawad; it is strong and weighs about 90 lbs. and costs about Rs. 10. The head piece is 5' 9" long and it is used for sowing rabi jowar, gram and sesamum.
<p>Similar to No. 2; the distance between coulters being 1 foot.</p>	4	...	It is used for sowing, bájri, jawár, kodra, til, etc. The implement is known in Bhal as 'Ovio. Towards Sanand, Viramgam side the Dantal is heavy while towards Kaira it weighs only 55 lbs.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
5	Trifan.	3 coul-tered drill.	42	Rs. 3 to 4	2	2	Kaira ...	IX	4
6	Orni.	Sowing tube.	...	Rs. 0-2-0	...	...	Panch Maháls.	...	...
7	Faidko.	2 coul-tered drill.	48	Rs. 10 to 12	2	2	Surat ...	XVI	4
8	Do.	2 coul-tered drill.	58	Rs. 10 to 12	2	2	Surat ...	...	...
9	Do.	2 coul-tered drill.	60	Rs. 10 to 12	2	2	Do. ...	...	...
10	Trifan.	3 coul-tered drill.	48	Rs. 10 to 12	2	2	Do. ...	XVI	5
11	Vakhelu.	2 coul-tered drill.	30	Rs. 5 to 6	2	2	Broach ...	VI	7
12	Tarfen.	3 coul-tered drill.	35	Rs. 5 to 6	3	2	Do. ...	VI	9
13	Karab (used as drill.)	2 coul-tered drill.	36	Rs. 6 to 7	2	2	Do. ...	...	...

D—continued.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
The head piece is made of rayan, the coulters and the pole are of babul or teak. The head piece is 2' 8" long, 4" broad and 2" thick. The coulters are 16" long and the distance between 2 coulters is 12".	4	...	It is used for sowing kodra and bajri mixtures and sundhia, etc. Furrows are made by the tines and these lines are used for transplanting bawto (Náchni). Towards Baroda, the drill is used at times as a grubber for stirring the surface soil. Towards Mátar (Kaira District) a 4 coulters drill is used; it is called <i>chawad</i> .
It is made of bamboo about 3' long the bowl is made by splitting one of its ends and stitching it with leather; this funnel-shaped tube is tied behind the body of the plough at the time of sowing.	1 of maize and 20 to 30 gunthás of wheat or gram.	...	There is no seed drill in Dohad and Jhálod Tálukas and all sowings are done by this method.
The head piece is made of babul or tanach; it is scooped out in the middle; it is 2' 7" long, 5 $\frac{3}{4}$ " broad and 5" thick. The coulters are 11" long and the distance between 2 coulters is 1' 6".	5 to 6	...	It is used for sowing cotton and jowár in southern tálukas (Jalál-pore) of the district where soil is heavy. A similar but heavy 2 coulters drill is used in the Olpád Táluka for sowing wheat.
Similar to No. 7; coulters 24" apart ...	6 to 8	...	It is used for sowing cotton, til, jowár in the northern talukas (Chorásí, Olpád and Bárdoli) of the district where the soil is less heavy than that of the Jalálpore side.
Similar to No. 7; coulters 36" apart ...	6 to 8	...	Towards Broach side it is widely used for sowing cotton.
Similar to No. 7; coulters 12" apart ...	4 to 5	...	It is used for sowing fodder crops, bajri, sundhia, groundnut, etc.
It is similar to No. 9 Surat drill; distance between 2 coulters varies from 2' 5" to 3'.	5 to 8	...	It is used for sowing cotton.
When cotton and rice are sown, two side tubes are used for sowing cotton; on the middle coulters a separate bamboo tube with a bowl is fixed and through this tube rice is sown. Length of the head piece is 3' 3". It is 4 $\frac{1}{2}$ " broad and 3 $\frac{1}{2}$ " thick. The distance between coulters is 18".	5	...	It is used for sowing cotton and rice mixture. When the drill is used for sowing Vahsil field, the coulters are not shod with iron. When a 3 coulters drill is used for sowing bajri, kodra, etc., on goradu soils the distance between 2 coulters is 15".
A small harrow, with its head piece about 3' 3" long, 4" broad and 3" thick is taken, its prongs and blade are removed and coulters substituted instead. The length of the coulters is 10 $\frac{1}{2}$ ". When tubes and bowl are tied the drill is ready; the distance between 2 coulters is 1' 9".	5	...	It is used for sowing rabi crops like wheat, shialu, etc.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
14	...	Plough & tube.	...	.....	2	2	Broach ...	...	...
							Deccan Tract.		
15	Dussa.	2 coultered cotton drill.	43	Rs. 4½ to 6	1 man 2 women	2	Khândesh ...	XVIII	2
16	Moghadya.	3 coultered wheat drill.	95	Rs. 7 to 9	2	2	Do. ...	XVIII	1
17	Pambhar.	3 coultered drill.	57	Rs. 4-8-0	1 or 2 men.	2	Do. ...	XVIII	3

D—continued.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
It is similar to No. 6	3	...	It is used for sowing lang and gram.
The head piece of the drill is 2' long, 7" broad and 6" thick; the length of the coulters is 14"; the distance between coulters is 18". In the case of Khândesh drill the coulters are not shod but a separate square bar of iron with flat point called <i>Kusali</i> is fixed on to the coulters by means of a ring in front and ropes at the back. While at work two <i>magnis</i> (artis) are tied to the drill by means of ropes; the length of the rope is about 4'. Two women hold the funnel-shaped sowing tubes in their hands, walk behind and drop the cotton seed through in the furrows opened by the coulters.	4 to 5	...	It is used for sowing cotton and kharif jowâr. When jowâr is sown the tubes and the bowl are attached as in the case of an ordinary drill. According to the nature of the soil, the distance between 2 coulters or rows of cotton varies from 12" to 20". In the Tapti Valley cotton seed is sown by harrow; only one row is sown at a time by attaching one tube to one end of the prong. The distance between two rows varies from 24" to 28". When the moisture in the soil is not enough then the covering of the seed is done by tying a blade of the hoe behind the sowing tube. In case it is raining at the time of sowing a branch of a <i>Palas</i> (Butea Frondosa) tree is attached to the tube to cover the sown seed. When there is deficiency of bullocks in some parts of Dhulia Taluka, even two rows are sown with one Vakhar or harrow.
It is a drill of heavier construction, the <i>kusalis</i> are long, slightly bent near the hole of the coulters to facilitate the fixing of the tube. The <i>kusalis</i> project nearly 6" beyond the end of the coulters. The opposite ends are inserted into the head piece of the drill. The head piece is 22" long; it is 7" broad and 7" thick. The length of the coulters is about 11"; the distances between coulters is 9" to 11". Towards Jalgaon a 2 coulters drill (<i>Moghada</i>) is used for sowing dry crop wheat; the distance between coulters being 12" to 13".	2	...	Both 2 and 3 coulters drills are used for sowing rabi crops (wheat, jowâr, linseed, coriander and gram.) In the Tapti Valley the drills are comparatively lighter than in other parts of Khândesh. The drills are weighted down with stones at the time of sowing.
The head piece is 32" long, 5" broad and 3" thick; the length of the coulters is 10"; the distance between 2 coulters is 9" to 12".	4	...	It is used for sowing jowâri, bājri, and maize. In the Tapti Valley 3 coulters drill with coulters without iron points is used for sowing bājri (Taloda and Shahada) when the soil is soft and friable.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
18	Nál or Nagari.	Small plough with tube.	68	Rs. 3-8	2	2	Khándesh ..	XIX	1
19	Pambhar.	3 coul-tered drill.	58	Rs. 4-8 to 6	1	2	Ahmed-nagar.	...	...
20	Do.	4 coul-tered drill.	96	Rs. 6-8	1	2	Do. ...	...	...
21	Meghad.	2 coul-tered drill.	80	Rs. 5	1	2	Násik ...	...	...
22	Tiphan.	3 coul-tered drill.	62	Rs. 5	1	2	Do. ...	...	...
23	Pambhar (Chowphan).	4 coul-tered drill.	70	Rs. 5	1	2	Do. ...	...	...
24	Tiphan or Moghad.	3 coul-tered drill.	70	Rs. 4	1	2	Poona ...	...	...
25	Pambhar.	4 coul-tered drill.	65	Rs. 4-8	1	2	Do. ...	...	...
26	Tiphan.	3 coul-tered drill.	85	Rs. 3 to 3-8	1	2 to 4	Sholápur...	...	...
27	Kuri.	4 coul-tered drill.	70	Rs. 5 to 5-8	2	2	Sátára ...	...	...
28	Hadgi	3 coul-tered drill.	100	Rs. 7 to 8	3 or 4	8	Do. ...	...	...

D—continued.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
It is a small plough to which a sowing tube and bowl are attached; the tube is fixed into the shoe of the plough by boring a hole. It is almost similar to No. 14.	2	...	It is used for sowing gram in the Tapti Valley when the moisture in the soil goes down deep. This implement is common in the Tapti Valley.
The head piece is 3' 4" long, 7" broad and 3" thick; the length of the coulter is 12" and the distance between 2 coulters is 10".	2	...	It is used for sowing early crops in medium and heavy soils. The distance between coulters varies from 10" to 15" when it is used for rabi crops (jowar and wheat); on heavy soils the middle coulters are removed and only 2 coulters are used when it is called <i>Moghad</i> .
The head piece is 3' 2" long, 6½" broad and 4" thick; the length of the coulters is 10" and the distance between 2 coulters is 8".	3	...	It is used in shallow and medium soils for sowing bajri, gram, safflower, jowar, etc. The implement is also used as a grubber (<i>Phan</i>) for stirring the soil after harvesting the crop.
The head piece is 3' 9" long, 9" broad and 8" thick; the length of the coulters is 15" and the distance between coulters is 18".	2	...	It is used for sowing rabi crops like wheat, gram, lentils, lang and peas.
The head piece is 3½' long, 6" broad and 4" thick; length of the coulters is 13" and distance between coulters is 14".	4 to 5	...	It is used for sowing cotton.
The head piece is 3' 11" long, 6" broad and 4" thick; the length of the coulters is 13" and distance between coulters is 11".	4 to 5	...	It is used for sowing jowari, bajri, til, kulthi, linseed, etc.
The head piece is 4' 10" long, 9" broad and 5" thick; the length of the coulters is 15" and distance between coulters is 12".	2	...	In Moghad the head piece is heavier and the coulters are longer. It is used for sowing rabi crops like wheat, gram and shalu. It is specially used in Desh tracts where the seed is required to be dropped deeper to ensure germination.
The head piece is 3' 8" long, 6" broad and 4½" thick; the length of the coulters is 12" and the distance between coulters is 9".	2½ to 3	...	It is used for sowing early crops like jowari, bajri, til, fodder crops, etc. It is used in Mawal for sowing rabi crops.
The head piece is 4' long, 8" broad and 4" thick; the length of the coulters is 12" and the distance between coulters is 10" to 12".	2½	...	The drill is used for sowing rabi and kharif crops.
The head piece is 3' 4" long, 5" broad and 5" thick; the length of the coulters is 16" and distance between coulters is 10".	4	...	The drill is used for sowing kharif crops.
The head piece is 4' long, 7" broad and 4" thick; the length of the coulters is 18" and the distance between coulters is 1' 7".	2	...	The drill is used for sowing rabi crops and it is also used as a grubber.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
							Karnatak		Tract
29	Kurgi.	2 coult- ered drill.	55	Rs. 2-8	2	2	Belgaum ...	...	...
30	Do.	Do.	75	Rs. 3	2	2	Do. ...	...	...
31	Do.	3 coult- ered drill.	64	Rs. 3-8	2	2	Do. ...	...	...
32	Do.	Do.	67	Rs. 3-8	2	2	Do. ...	...	...
33	Naktal Kurgi.	4 coult- ered drill.	70	Rs. 3-8	2	2	Do. ...	...	...
34	Hatti Kurgi.	2 coult- ered drill for cotton.	37	Rs. 4	1 man and 2 women	2	Dhárwár ...	...	...
35	Do.	3 coult- ered drill.	72	Rs. 5	1 man & 3 women	2	Do. ...	...	...
36	Kurgi.	Do.	49	Rs. 6	2	2	Do. ...	...	...
37	Do.	4 coult- ered drill.	65	Rs. 6	1 man & 1 woman	2	Do. ...	...	...
38	Do.	Do.	89	Rs. 7	1 man & 1 woman	2	Do. ...	...	...
39	Do.	3 coult- ered drill.	60	Rs. 5	1 man & 1 woman	2	Bijápúr ...	...	...
40	Do.	4 coult- ered drill.	68	Rs. 6	2	2	Do. ...	...	...

D—concluded.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
The head piece is 2' 6" long, 6" broad and 4" thick; the length of the coulter is 14" and distance between drills is 18".	3	...	It is used for sowing Kumpta cotton.
The head piece is 3' 3" long, 8" broad and 4" thick; the length of the coulter is 12" and the distance between coulters is 24".	3 to 4	...	It is used for sowing Broach cotton seed.
The head piece is 3' 6" long, 6" broad and 4" thick; the length of the coulter is 12" and distance between coulters is 15".	3	...	It is used for drilling maize.
The head piece is 4' 2" long, 7" broad and 3" thick. The length of the coulter is 12" and the distance between coulters is 18".	3	...	It is used for drilling maize and cotton.
The head piece is 4' 2" long, 6" broad and 3" thick; the length of the coulter is 11" and distance between coulters is 12".	4	...	It is used for sowing jowár, maize, wheat, til and bajri.
The head piece is 2' 6½" long, 7" broad and 3" thick; length of the coulter is 14" and distance between coulters is 20".	2½ to 3	...	It is used for sowing cotton.
The head piece is 4' 8" long, 6½" broad and 2½" thick; length of the coulter is 15½" and distance between coulters is 20".	6	...	Do. do.
The head piece is 3' 11" long, 5½" broad and 2½" thick; length of coulter is 15½ inches and distance between coulters is 15".	4	...	It is used for sowing jowár, gram and rabi jowár in heavy soils.
The head piece is 4' long, 6" broad and 2½" thick; the length of the coulter is 16" and distance between coulters is 10".	4	...	It is used for sowing crops in light soils, such as kharif jowári, til, bajri, ragi (Náchni), millets, kulthi, etc.
The head piece is 4' 6" long, 7½" broad and 2½" thick; the length of the coulter is 16" and the distance between coulters is 16".	4	...	It is used for sowing rabi jowári, wheat, safflower, linseed, etc. In wheat sowing 4 bullocks are used.
The head piece is 3' 9" long, 5½" broad and 3½" thick; the length of the coulter is 15" and the distance between coulters is 15".	3	...	It is used for sowing rabi jowár.
The head piece is 3' 11" long, 5½" broad and 2½" thick. The length of the coulter is 15" and the distance between coulters is 11".	4	...	It is used for sowing wheat and millets. In the northern division of this district it is used for sowing cotton; the distance between coulters being 15 inches. In the southern division the same drill is used but only two rows at a time are sown by attaching two sowing tubes on alternate coulters.

APPENDIX
INTERCULTURING

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
				Per Pair.	Per	Pair.	Gujrat	Tract.	
1	Rampdi.	Hoe.	35	Rs. 4	2	2	Ahmadabad.	...	...
2	Karab Ramp or Havedu.	Heavy Hoe.	47	Rs. 5	2	2	Do. ...	...	...
3	Beli (Bhal Tract.)	Double Hoe.	55	Rs. 4-12	2	2	Do. ...	...	...
4	Hemarni Beli (Bhal Tract.)	Double Hoe.	40	Rs. 3	2	2	Do. ...	XIII	3
5	Dhundiu (Bhal Tract.)	Hoe.	45	Rs. 3-2	2	2	Do. ...	X	4
6	Karabdi or Rampdi.	Hoe.	25	Rs. 2-8	2	2	Kaira ...	IX	1
7	Do.	Hoe.	27	Rs. 2	2	2	Do. ...	IX	2
8	...	...	...	...	...	...	Panch Mahals.	...	...
9	Karpi or Karabdi.	Hoe.	19	Rs. 12	2	2	Surat ...	...	...
10	Do. (Ardhya).	Do.	30	Rs. 14 to 15	2	2	Do. ...	XVI	6
11	Do. (Ardhya).	Do.	36	Rs. 14 to 15	2	2	Do. ...	...	...
12	Do. (Ponia).	Do.	36	Rs. 14 to 15	2	2	Do. ...	XVI	7

E.
IMPLEMENTS.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
The head piece is 17" long, 5" broad, 4" thick. The length of the blade is 9".	3	...	Worked always in pairs sometimes even three are worked on one yoke. <i>Rampdis</i> are used for interculturing when the crop is small. Hoes smother weeds and stir the surface soil.
The head piece is 27" long, the length of the blade is 15".	2 to 2½	...	These are in fact harrows used for interculturing cotton.
The head piece is round and it is 3' long. In this case two hoes are fixed on one head piece; the space between two hoes being 6". The length of each blade is 12". Two separate poles run straight to the yoke for attachment.	4	...	It is used for interculturing cotton in <i>bhal</i> tract when the rows are straight and the weeds few.
Same as No. 3; but the distances and weights vary. The head piece is 1' 10" long. Distance between 2 hoes is 5"; length of each blade is 7".	4	...	It is used for interculturing jowar and bajri.
The length of the head piece is 1' 3" with a diameter of 3" to 4"; the length of the blade is 12".	5	...	It is a heavy hoe worked in pairs for interculturing cotton when there are more weeds and when it is necessary that deeper mulch must be made.
The length of the head piece is 10". The length of the blade is 8".	3 to 4	...	The <i>karbdis</i> are worked in pairs sometimes even three in urgent cases. The hoes are used for interculturing bajri, kodra, sundhia, bavto, &c. It is drawn by hand in tobacco fields when the seedlings are very young.
The length of the head piece is 16". The length of the blade is 12".	3 to 5	...	It is used for interculturing tobacco 2nd time and onwards. It is also used for chillies, brinjals, variali, &c.
.....	...	...	In Panch Mahals specially towards Dohad and Jhalod there is no interculturing implement.
The head piece is 9" long, 3" broad and 3" thick. The length of the blade is 4".	4	...	It is used for interculturing crops sown 1' apart like groundnut.
The head piece is 14" long, 4" broad and 4" thick. The length of the blade is 9".	6	...	Used first time for crops sown 18" apart.
The head piece is 18" long, 5" broad and 5" thick. The length of the blade is 12".	6	...	Used first time for crops sown 24" apart.
The head piece is 20" long, 5" broad and 5" thick. The length of the blade is 15".	6 to 8	...	Used first time for the crops sown 24"-30" apart. It is also used for interculturing chillies, brinjals, &c. At this time only one hoe will be worked and the area gone over will be only 2½ acres.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
13	Karpi.	Hoe.	47	Per Pair. Rs. 14 to 15	Per. 2	Pair. 2	Surat ...	...	...
14	Karabdi (Ponia.)	Do.	51	Rs. 8	2	2	Broach ...	VI	1
15	Karabdi.	Do.	16	Rs. 5-0	2	2	Do. ...	...	...
16	Kolpa.	Do.	19 to 23	Rs. 6 to 8	2	2	Deccan Khandesh.	Tract. XVIII	4
17	Do.	Do.	20	Rs. 4	2	2	Ahmed- nagar.	...	...
18	Do.	Do.	18	Rs. 5	2	2	Do. ...	...	...
19	Do. (Vilangi).	Do. with entire blade.	14	Rs. 4	2	2	Nasik ...	...	...
20	Kolpa landgi.	Hoe with two cutting blades.	14	Rs. 4	2	2	Do. ...	...	...
21	Kolpa.	Hoe.	18	Rs. 3	2	2	Poona ...	XV	1
22	Do.	Do.	25	Rs. 2	2 or 3	2	Sholapur ...	...	...
23	Do.	Do.	20	Rs. 3	4	2	Satara ...	...	...
24	Do.	Do.	22	Rs. 3	2	2	Do. ...	...	...

E—continued.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
The head piece is 24" long, 5" broad and 5" thick. The length of the blade is 18".	4	...	It is used always for interculturing when the crops have received first interculture with a smaller hoe. It is used singly. It is also used for interculturing chillies, brinjals, &c.
Similar to light harrow. The head piece 1'-10" long, 8" broad and 7" thick. The length of the blade is 1'-7" and breadth 3".	4	...	It is used for interculturing cotton when the plants are smaller than 8" when the cotton plants are more than 8" high, the ordinary (karab) harrow is used for interculturing cotton.
The head piece is 1'-2" long, 5" broad and 3" thick. The blade is 10½" long and 1½" broad.	6	...	It is used for hoeing bajri, kodra and rabi jowar.
The length of the blade of the hoe is 11" when it is worked in 10" drill, 4" to 5" when it is worked in 11" drill.	5	...	Kolpas are used in pairs when the crop is small—A seven or eight inch hoe is worked first time in cotton, bajri or jowar. A small harrow is very often used for interculturing in Khán-desh.
The head piece is 12" long, 4" broad and 2" thick. It has two cutting blades with a space between of about 2". As the kolpa is worked the row of the standing crop passes through the space between two blades.	2	...	Worked always in pairs, used for interculturing jowari and bajri. These kolpas cannot be used when the crop is much advanced. Wheat and gram (rabi crops) are never intercultured.
The head piece is 1'-6" long, 4" broad and 3" thick.	2	...	The kolpa is used for hoeing cotton in Newasa and Shevgaon Talukas.
The head piece is 12" long, 3" broad, 2½" thick. The length of the blade is 8".	3	...	It is used for interculturing cotton in Malegaon and Nandgaon Talukas.
Similar to No. 16	3	...	It is used for interculturing jowari, bajri, tili, &c.
The head piece is 1'-11" long, 3½" broad and 2½" thick. The length of each component blade is 6".	4	...	It is used for interculturing jowar and bajri.
The head piece is 2" long, 3" broad and 3" thick. It has two cutting blades with a space between.	2 to 3	...	Two to three kolpas are worked on one yoke for interculturing jowar, bajri, &c. For interculturing cotton small sized harrows are used.
The head piece is 1'-3" long, 3" broad and 2" thick. It has two cutting blades with a space between.	8	...	Four hoes are worked on one yoke. These are used for interculturing crops sown with 4 coulters drill.
The head piece is 1'-10" long, 4" broad and 3" thick. The blade is 15" long and 2" broad.	3	...	Two hoes are worked on one yoke. They are used for interculturing tobacco and cotton.

APPENDIX

Serial No.	Local Name.	English Name.	Weight in pounds.	Price.	Labour employed to work the implement.		Locality where the implement is used.	Reference to illustration.	
					Men.	Bullocks.		Plate.	Number.
25	Kolpa (Dube).	Hoe.	26	Per Pair. Rs. 6	Per 2	Pair. 2	Satara ...	...	...
26	Kolpa.	Do.	65	Single. Rs. 3	Single. 1	2	Do. ...	...	...
27	Do.	Do.	70	Rs. 3	Single. 2	2	Do. ...	...	...
28	Yedi Kunti.	Do. with a slit.	25	Per Pair. Rs. 2-8	Per 2	Pair. 2	Karnatak Belgaum ...	Tract. ...	...
29	Patti Kunti.	Hoe with entire blade.	29	Rs. 2	2	2	Do. ...	...	...
30	Kabin Dumgunti.	Sugar-cane Hoe.	64	Single. Rs. 1-4	Single. 2	2	Do. ...	...	...
31	Yedi Kunti.	Hoe.	25	Per Pair. Rs. 3	Per 2	Pair. 2	Dharwar ...	...	...
32	Patti Kunti.	Hoe with entire blade.	21	Rs. 3	2	2	Do. ...	...	...
33	Badni Kunti.	Hoe.	27	Single. Rs. 3	Single 1	2	Do. ...	...	...
34	Heeli Yedi (Kunti).	Do.	24	Per Pair. Rs. 6	Per 2	Pair. 2	Bijapur ...	...	...
35	Dumgunti or Petti Kunti.	Do.	18	Rs. 3	2	2	Do. ...	...	...

E—concluded.

Short Description.	Work done per day.		REMARKS.
	Acres.	Gunthas.	
The head piece is 1'-3" long, 4" broad and 2" thick. The blade is 12" long.	2	...	Two hoes are worked on one yoke. These are specially meant for chillies.
The head piece is 1'-2" long, 7" broad and 4" thick. The length of the blade is 11".	1	...	This hoe is used for making ridges for planting chilli seedlings.
The head piece is 11" long, 7" broad and 5" thick. The length of the blade is 9".	...	25	This hoe is called <i>Tapecha kolpa</i> and is worked in the sugarcane field. This implement is followed by another kolpa, to which a wooden phavdi is attached for making ridges. The pavdi is 11" high, 11" broad and has a handle about 2½' long. The phavda weighs 18 lbs. and costs Re 1.
It is a double bladed hoe with a slit between. The head piece is 1'-5" long, 4" broad and 3" thick. The length of the prong is 10".	2	...	Worked in pairs. Used for interculturing bajri, tur and jowar.
The head piece is 1'-4" long, 3½" broad and 3" thick. The length of the prong is 8". The blade is 8" long.	3	...	Used for interculturing cotton, brinjals and chillies. Both slit bladed as well as entire bladed hoes are used for all the crops. The length of the blade varies according to the distances between 2 coulters of the drills.
The head piece is 1'-3" long, 8" broad and 4" thick; the length of the prong is 1'. The blade is 11" long and 2½" broad.	...	15	It is used for stirring up the soil and earthing up sugarcane. The prongs are projected above the head piece for pressing the implement.
It is a double bladed hoe with space between. The head piece is 18½" long, 4½" broad and 3½" thick. The length of the prong is 7½".	2	...	It is used for interculturing jowar and cotton. There is a wedge arrangement in fixing the prongs to increase the slit.
The length of the blade is 10". The head piece has the same dimensions as No. 31.	2	...	It is used for hoeing jowar when the crop grow taller. Sometimes 2 to 4 hoes are worked on one yoke.
The head piece is 2'-3" long, 4½" broad and 2½" thick. The length of the prong is 9"; the blade is 1'-10" long, 2½" broad and 1½" thick.	2	...	It is worked singly between the rows of brinjals and chillies.
The head piece is 1'-8" long, 4½" broad and 3" thick. It is a double bladed hoe.	3	...	Two or three hoes are worked on one yoke. In the northern part of the District, the hoes with slit between the blades are used for hoeing cotton, while in the southern part entire bladed hoes are used for interculturing cotton
The head piece is 12" long, 4½" broad and 3" thick. The blade is 7" long.	2	...	

APPENDIX F.
YOKES.

Serial Number.	Local Name.	English Name.	Weight in lbs.	Price.	Name of the District.	Short description.			REMARKS.
						Total length.	Length from neck to neck.	Neck space.	
1	Jusari ...	Single yoke ...	11	Rs. a. p. 1 0 0	Ahmedabad.	6'-0"	4'-0"	10"	Used for plough.
2	Do. ...	Do. ...	15	1 8 0	Do. ...	8'-0"	6'-6"	9"	" for drill and hoes.
3	Tarela ...	Double yoke...	30	2 0 0	Do. ...	5'-2"	3'-8"	15"	" for mhot or where 2nd pair is used for cart, plough, etc.
4	Jusari ...	Single yoke ...	11	1 0 0	Kaira ...	5'-6"	4'-2"	12"	" for ploughs, drills and hoes.
5	Do. ...	Do. ...	16	1 0 0	Do. ...	6'-3"	4'-8"	12"	" for hoeing tobacco as well as where three hoes are worked on one yoke.
6	Tarela ...	Double yoke...	22	1 8 0	Do. ...	4'-5"	3'-4"	9"	" for mhot.
7	Jusari ...	Single yoke ...	17	0 12 0	Panch Mabals.	4'-7"	3'-8"	12"	" for sowing wheat.
8	Tarela ...	Double yoke...	25	1 8 0	Do. ...	6'-0"	4'-0"	12"	This is a general purpose yoke in place of a single yoke.
9	Jusari ...	Single yoke ...	19	1 2 0	Surat ...	6'-3"	4'-6"	13"	Used for ordinary plough and 18" drill.
10	Do. ...	Do. ...	21	2 4 0	Do. ...	9'-6"	7'-9"	14"	" for 24" drill and for working ardhya and ponja hoes.
11	Do. ...	Do. ...	15	1 8 0	Do. ...	7'-6"	5'-10"	14"	" for 24" drill and for hoeing in crops sown 18" apart.
12	Chokia ...	Double yoke...	38	4 to 5	Do. ...	6'-0"	4'-4"	15"	" for working Mhot and iron ploughs.
13	Jusari ...	Single yoke (small)	14	1 8 0	Broach ...	6'-5"	4'-7"	13"	" for plough, harrow and drill.
14	Jusar ...	Do. ...	18	2 0 0	Do. ...	7'-7"	5'-8"	11"	" for hoes.
15	Tarela ...	Double yoke...	26	3 to 4	Do. ...	4'-6"	3'-3"	12"	" for working mhot and iron plough.
16	Dusar ...	Single yoke ...	16	1 8 0	Khandesh...	6'-0"	4'-4"	12"	" for plough, harrow, cotton and jowar drills and bullock hoes.
17	Do. ...	Do. ...	14	1 8 0	Do. ...	5'-0"	3'-4"	12"	" for drills, for sowing rabi crops (wheat, gram, jowar and coriander.)

18	Jodni or Juvadi.	Double yoke...	26	3 0 0	Do. ...	5'-3"	4'-9	12"	" for working the mhot.
19	Ju	Single yoke ...	25	2 0 0	Ahmednagar.	9'-0"	7'-6"	10"	" for plough.
20	Do.	Do. ...	16	0 10 0	Do. ...	5'-8"	4'-2"	10"	Ordinary yoke used for harrow, seed drill and bullock hoes.
21	Shivlat or Jadi.	Double yoke...	23	1 0 0	Do. ...	4'-0"	2'-8"	12"	Used for mhot and for the plough when second pair is used.
22	Ju	Single yoke ...	20	1 8 0	Nasik ...	6'-0"	4'-2"	7"	Used for plough.
23	Do.	Do. ...	16	1 4 0	Do. ...	5'-2"	4'-2"	7"	" for harrow, drill and bullock hoes.
24	Shilat	Double yoke...	15	1 4 0	Do. ...	4'-8"	3'-3"	12"	" for working the mhot.
25	Ju	Single yoke ...	40	3 0 0	Poona ...	9'-5"	7'-8"	8"	" for plough.
26	Shelati	Double yoke...	18	1 0 0	Do. ...	5'-0"	3'-8"	9"	" for harrow, mhot, etc.
27	Ju	Single yoke ...	15	1 0 0	Do. ...	6'-0"	4'-0"	8"	" for drill and hoes.
28	Ju	Do. ...	75	2 0 0	Satara ...	11'-0"	9'-5"	8"	This is the first yoke for the heavy plough.
29	Sheval	Double yoke...	32	1 8 0	Do. ...	4'-0"	2'-9"	12"	This is the second yoke for the plough.
30	Ju	Single yoke ...	36	1 4 0	Do. ...	7'-9"	5'-9"	7"	This is used for groundnut harvesting harrow and drill.
31	Ju	Do. ...	18	0 12 0	Do. ...	11'-0"	8'-5"	8"	It is made of bamboo. It is used for working kolpas in tobacco and cotton.
32	Shevlat	Double yoke...	24	1 8 0	Do. ...	6'-2"	4'-5"	11"	Used for working the sugarcane hoe.
33	Do.	Do. ...	25	2 4 0	Do. ...	5'-7"	4'-3"	10"	It is used for working the hoe and for making ridges for chillies.
34	Ju	Single yoke ...	44	1 4 0	Do. ...	7'-5"	5'-9"	8"	For three kolpas.
35	Do.	Do. ...	22	0 12 0	Do. ...	9'-6"	7'-7"	8"	This is of bamboo and is used for 4 kolpas.
36	Do.	Do. ...	23	1 4 0	Do. ...	5'-7"	4'-3"	7"	Used for working the drill.
37	Do	Do. ...	50	2 8 0	Sholapur ...	9'-0"	7'-5"	7"	" for plough.
38	Do	Do. ...	55	1 0 0	Belgaum ...	8'-6"	6'-0"	5"	Only one yoke is used for working all the implements in mallad tract.
39	.....	Double yoke...	27	1 4 0	Do. ...	6'-10"	4'-9"	10"	Double yoke is used only for mhot.
40	.....	Do. ...	28	1 0 0	Do. ...	6'-1"	4'-0"	10"	Used for harrow.
41	.....	Do. ...	27	1 4 0	Do. ...	7'-0"	5'-0"	6"	Used for 4 coultured drill.
42	Do. ...	26	1 8 0	Do. ...	9'-9"	8'-0"	6"	3 " drill 15" apart and for " interculturing implements with entire blades. " " working hoes with slit between.

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On this yoke 3 hoes can be worked at a time. 3 holes are provided on each side for adjustment of length.

APPENDIX F—continued.

Serial Number.	Local Name.	English Name.	Weight in lbs.	Price.	Name of the District.	Short description.			REMARKS.
						Total length.	Length from neck to neck.	Neck space.	
43	Double yoke...	30	Rs. a. p. 1 4 0	Belgaum ...	8'-9"	7'-1"	6"	Used for 3 coulters drills 18" and 24" apart.
44	Single yoke ...	33	2 8 0	Dharwar ...	9'-2"	6'-10"	5½"	This is the first yoke for the big and heavy plough.
45	Double yoke...	18	2 0 0	Do. ...	6'-3"	4'-0"	8½"	This is the 2nd yoke for the big plough. " " 1st yoke for a small plough. " " yoke for small harrow (kirkunti). " " yoke for 4 coulters jowar drills. " " used for interculturing cotton and jowar where only one hoe is used.
46	Do. ...	32	2 0 0	Do. ...	6'-2"	4'-0"	5½"	This is the yoke for wheat drill. " " " for Balesal kunti. " " " for 4 coulters jowar drill.
47	Do. ...	21	1 8 0	Do. ...	7'-2½"	5'-2"	5"	" " " for 2 coulters cotton drill. " " " for 3 coulters drill for jowar and wheat.
48	Do. ...	25	1 8 0	Do. ...	9'-0"	6'-6½"	6"	This is the yoke for 3 coulters cotton drills. " " for working 2 to 3 hoes on one yoke.
49	Single yoke ...	18	1 4 0	Do. ...	9'-4"	7'-2"	6"	Yoke with 4 holes on each side; when inside 2 holes are used then 3 hoes are put on one yoke; when outside pair of holes are used then 4 hoes are worked on one yoke.

50	Modala Naga.	Do. ...	48	2 8 0	Bijapur ...	10'-0"	8'-0"	4½"	This is the first yoke for the heavy plough.
51	Dabbi Naga or Kleda Naga.	Double yoke...	32	2 0 0	Do. ...	6'-0"	4'-10"	10"	This is the yoke for harrow, mhot and seed drill.
52	.....	Single yoke ...	40	2 0 0	Do. ...	6'-9"	5'-7"	4½"	Used for 3 coultered drill.
53	.....	Do. ...	32	1 12 0	Do. ...	7'-6"	6'-4"	4½"	" " 4 " drill.
54	.....	Do. ...	35	0 12 0	Ratnagiri ...	6'-3"	4'-11"	6"	Used for plough and leveller.

APPENDIX G.

GLOSSARY OF VERNACULAR WORDS OF CROPS, KINDS OF WOOD
USED IN MANUFACTURE OF IMPLEMENTS Etc, WITH
THEIR SCIENTIFIC NAMES.

English name.	Botanical name.	Vernaculars.		
		Guzerati.	Marathi.	Kanarese.
Wood.				
Babul	Acacia arabica	Baval ...	Babul ...	Jali.
Teak	Tectona grandis	Sag ...	Sag ...	Sag.
	Ogeinia dalbergioides	Tanach ...	Tiwas ...	...
	Terminalia tomentosa	Panio sadado.	Ain ...	Matti.
	Mimusops hexandra	Rayan ...	Rayan ...	...
	Dalbergia Sissu	Sisam ...	Sisoo ...	Sisa.
	Bassia latifolia	Mahuda ...	Moha ...	Ippi.
	Melia azadirachta	Limbado ...	Nimb ...	Bevu.
Bamboo (large thorny).	Bambusa arundinacea	Vans ...	Vansa, Velu...	Bidaru.
Solid Bamboo...	Dendrocalamus strictus			
Mango...	Mangifera indica	Ambo ...	Amba ...	Mavu.
...	Erythrina indica	Panurvo ...	Pangara ...	Kaliwara.
CROPS.				
Cereals.				
Wheat	Triticum sativum	Gahu ...	Gahu ...	Godi.
Great millet	Andropogon sorghum	Jowar ...	{ Jowari ... } { Jondhala. }	Jola, Yenigar.
Do.	Do. do.	Sundhia ...	...	...
	var cernuus.			
Rice	Oryza sativa	Dangar, Bhat.	Bhat...	Nellu, bhatta.
Bulrush millet	Pennisetum typhoideum	Bajari ...	Bajari ...	Shejji, chajji.
Maize	Zea mays	Makai ...	Maka, bhuta...	Goinjol.
Inferior millet	Paspalum scrobiculatum	Kodra ...	Harik ...	Harik.
Do.	Eleusine coracana... ..	Bavto, Nagli.	Nagli, Na- chani.	Ragi.
Pulses.				
Pigeon pea	Cajanus indicus	Tuver ...	Tur, turi ...	Togari.
Gram	Cicer arietinum	Chana ...	Harbara ...	Kadle.
Peas	Pisum sativum	Vatana ...	Vatana ...	Battgadde.
Chickling vetch	Lathyrus sativus	Lang ...	Lakh ...	...
Lentil	Lens esculenta	Masur ...	Masur ...	Channangi.
Cluster beans	Cyamopsis psoralioides	Guvar. ...	Govari ...	Govarkai.
Horse gram	Dolichos biflorus	Kulthi ...	Kulthi, Hulga.	Hurali.
Oil Seeds.				
Sesamum	Sesamum indicum	Tal ...	Til ...	Yellu.
Groundnut	Arachis hypogea	Bhoising ...	Bhuimug ...	Bhuimug.
Linseed	Linum usitatissimum	Alsi ...	Javas ...	Agasi.
Safflower	Carthamus tinctorius	{ Kabari. } { Kusambi. }	Kardai ...	Kusbi.
Fibres.				
Cotton... ..	Gossypium... ..	Kapas, ru ...	Kapas, ru ...	Hatti.
Sann Hemp	Crotolaria juncea	Sann ...	Tag ...	Sannabu.
Deccan Hemp...	Hibiscus cannabinus	Sheria ...	Ambari ...	Pundi.

APPENDIX G—continued.

English name.	Botanical name.	Vernaculars.		
		Guzerati.	Marathi.	Kanarese.
Garden crops.				
Sugarcane	Saccharum officinarum ...	Sherdi ...	Us ...	Kabbu.
Brinjal (Egg plant) ...	Solanum melongena ...	{ Vangan... } { Vantak... }	Vange ...	Badane.
Chillies	Capsicum frutescens ...	Marcha ...	Mirchi ...	Menasinakai.
Spices.				
Coriander	Coriandrum sativum ...	Dhana ...	Dhane ...	Havija.
Fennel... ..	Foeniculum vulgare ...	Variali ...	Badishep ...	...
Anise	Pimpinella Anisum ...		Shopa ...	Sabbasige.
WEEDS.				
...	Cynodon dactylon ...	Daroi ...	Hariali ...	Karki.
...	Cyperus rotundus ...	Gunderdo ...	Lavala ...	Jek.
...	Eragrostis cynosuroides ...	Chido	Darbha ...	Darbha,
...	Ischæmum pilosum ...	Dabhdo ...	Khavo ...	Kunda ...
Special terms.				
Winter ... ..	...	Shialu ...	Rabi...	Hingari.
Monsoon ... ..	...	Chomasa ...	Kharif ...	Mungari.
Fallow ... ..	...	Vashil ...	Padit ...	Pada.
Heavy rainfall tract above and along the Ghats ... ..	...	...	Mawal ...	Mallad

APPENDIX H.

Vernacular names of different parts of implements with their English equivalents.

(M) Marathi, (G) Guzerati, (K) Kanarese.

Ploughs	...	(G) Hal or santi, nagar	(हल, सन्ती अथवा नागर).
		(M) Nagar, nagri	(नागर, नागरी).
		(K) Neglu, ranti	(नेगळु, रंती).

Parts—

Body-Head...	(G) Pati or tungu	(पाटी or तुंगु).	
	(M) Doke	(डोकें).	
	(K) Kordu	(कॅडुडा).	
Shoe	...	(G) Chavdu	(चवडु).
		(M) Dant	(दांत).
		(K) Kula.	(कुळ).

In Marathi the head and shoe combined is called ankada
(आंकडा) or khadsa खडसा.

Beam or pole.	(G) Hal or ched	(हल or छेड).	
	(M) Halas	(हलस).	
	(K) Jesu	(जेसु).	
Plough share.	(G) Koslu or kos	(कोसळु or कोस).	
	(M) Phal	(फाल).	
	(K) Kuda	(कुदा).	
Ring	...	(M) Vasu	(वसु).
		(K) Balli	(बळी).
Wooden peg joining the share and the body...	(M) Phal kamb	(फाल कांब).	
Stilt	...	(G) Rumnu or khilu	(रुमळुं or पीळुं).
		(M) Rumne	(रुमणें).
		(K) Mali	(मळ).
Pin attached to the stilt—	(G) Hadeli	(हदेली).	
	(M) Muthya	(मुठ्या).	
	(K) Hidi	(हिडी).	
Yoke	...	(G) Jusru	(जुसरु).
		(M) Ju, jokhad or Dusar	(जू, जोखड or दुसर).
		(K) Noga	(नोगा).

Harrow	...	(G) Karab, ramp, vakhar	(કરબ, રાંપ, or વખર).
		(M) Vakhar, aut, kulav, pharat	(વફર, આજત, વુલવ, ફરાટ).
		(K) Kunti, Balisal Kunti	(કુંટી, બલિસલ કુંટી).
Parts—			
Head piece	...	(G) Lodh or lodhio	(લોઢ or લોઢીયો).
		(M) Dind	(દિંડ).
		(K) Dindu	(ડિંડુ).
Prongs	...	(G) Danta or dadha	(દાંતા or દાદા).
		(M) Janole	(જાનોલે).
		(K) Tal	(ટાલ).
Blade	...	(G) Phas or pasiu	(ફાસ or પાસીયુ).
		(M) Phas	(ફાસ).
		(K) Kuda	(કાડા).
Ring	...	(G) Dehelu or bela	(ડેહેલુ or બેલા).
		(M) Wasu	(વસુ).
		(K) Balli	(બાલી).
Pole	...	(G) Hal	(હાલ).
		(M) Dandi	(દાંડી).
		(K) Jesu	(જેસુ).
Stilt	...	(G) Rumnu or khilu	(રુમનુ or ખીલીયુ).
		(M) Rumne	(રુમને).
		(K) Mali	(મલી).
Seed drills	...	(G) Faidko, tarfan, chawal, chawar.	(ફાઈકો, તરફતુ, ચાવળ, ચાવર).
		(M) Dussa, moghadya, tifan, pambhar	(દુસા, મોઘદ્યા, તિફળ, પામર).
		(K) Kurgi, hatti kurgi, naktal kurgi.	(કુર્ગી, હાટી કુર્ગી, નાકટલ કુર્ગી).
Parts—			
Head piece	...	(G) Lodh or lodhio	(લોઢ or લોઢીયો).
		(M) Dind	(દિંડ).
		(K) Dindu	(ડિંડુ).
Coulters	...	(G) Danta	(દાંતા).
		(M) Phan	(ફળ).
		(K) Tal	(ટાલ).
Iron shoe	...	(G) Phalva	(ફાલવા).
		(M) Pharole	(ફારોલે).
		(K) Tal	(ટાલ).

Bamboo tubes.	(G) Naria, nalwa, bhungla	(नारीया, नलवा भुंगला).
	(M) Nalya	(नल्या).
	(K) Lalgi	(लर्गी).
Bowl	... (G) Orni or chadu	(ओरणी or चाडु).
	(M) Chadq	(चाडे).
	(K) Bala	(बाल).
Pole.	... (G) Delu	(डेडु).
	(M) Dandi	(दांडी).
	(K) Jesu.	(जैसु).
Stilt	... (G) Rumnu	(रुमनु).
	(M) Rumne	(रुमणे).
	(K) Mali	(मलि).

Hoe—interculturing implement—

	(G) Karabdi, karpi, rampdi	(करबडी, करपी, रंपी).
	(M) Kolpa	(कोल्पा).
	(K) Yedi kunti	(येदि कुंटी).

Parts—

Head piece	... (G) Lodh or lodhio	(लोड or लोडीयो).
	(M) Dind	(दिंड).
	(K) Dindu	(दिण्ड).
Prongs	... (G) Danta or dadha	(दांता or दाढा).
	(M) Golia	(गोल्या).
	(K) Tal	(टाल).
Blade	... (G) Phas or pasiu	(फास or फासीयु).
	(M) Phas	(फास).
	(K) Kuda	(कुडा).
Ring	... (M) Wasu	(वसु).
	(K) Balli	(बलि).
Pole	... (G) Hal or delu	(हल or डेडु).
	(M) Dandi	(दांडी).
	(K) Jesu	(जैसु).
Stilt	... (G) Rumnu or khilu	(रुमनु or खिलु).
	(M) Rumne	(रुमणे).
	(K) Mali	(मलि).