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Tabular Statement of agricultural operations for various crops.

Crops.	Harvest.	When sown	Sown after watering (*palewd*) or without.	Quantity of seed per *pukka bigha*	Number of ploughings.	Number of hoeings or cleanings	Is manure used or not.	Irrigated or unirrigated land	Month of harvest.	Produce per *pukka bigha*	Preceded and succeeded by what crops	Remarks as to weather, rain, and soil required.
Sarson ...		Kátik ...	See wheat	1 ser.	6	No cleaning.	See wheat.	See wheat.	Baisákh	3 to 5 mds.	See Wheat.	This brings out the salt of the soil, which tobacco likes exceedingly.
Chiná ...		Mágh ...	See wheat.	½ ser to ¾ ser.	6	3	See wheat.	Irrigated (15 waterings.)	Jeth ...	12 to 15 mds.	Preceded by cotton or *jowár*, and succeeded by *jowár*	A very rapid crop, and requiring copious irrigation, said to show bad cultivation.
ons.	Rabi.	Mágh ...	Without watering.	½ ser.	6	3	Manure used.	If irrigated, once, but it is generally unirrigated being grown in moist lands. (See Appendix IV.)	Jeth ...	50 to 250 mds.	Preceded by *mahi*, succeeded by the same.	

able for labour. There are three kinds of sugarcane known in the district.

(1.)—*Lálrí*—said to be the original kind, and considered the best as no insects attack it. This is the only kind actually used in the district.

(2.)—*Miratí*—very productive and white, but if the *gúr* is kept long it gets worms, and it is weak also in the rains, and sometimes falls.

(3.)—*Soratha*—white and productive. Good for sucking, but sticky. Not so subject to worms as *miratí*.

Paunda, or *ganna*, is distinguished from the ordinary sugarcane by its thickness. It requires more water for its cultivation, and *gúr* is not made from it. Its only use in fact—often a very profitable one—is for eating; it is sold in the bazar at prices varying from ¼ to 1 or even 1½ anna the stick. The kind first sown is *miratí*, then *soratha*, and *lálrí* last. *Miratí* is quickest is springing. A speciality is said to exist in *lálrí* that it can be reproduced from any knot of the stalk (*ganda*), whereas for *miratí* and *soratha* only the *top* knot of each stalk will do.

Sugarcane for seed is put in clamps (*bijghara*) in Phágan, where the earth keeps it moist and fresh, a damp situation being considered good. What is kept in the house is for use; it does not keep long. The ploughing generally begins in June, unless there is a crop tried for in the *kharíf* preceding the cane crop. If a *zamindár* has enough ground, he will avoid doing this. When the *kharíf* crop is taken, the ploughing for sugarcane begins in (Poh) December, and is continued at intervals according to leisure and other circumstances, the number of times varying from five to twelve. The first two ploughings may well be made one directly after the other, but the subsequent ploughings should come at intervals. For the first ploughing, either rain or a first watering (*paleuá* or *paléó*) is necessary. Sometimes the land is dug (with a *kasí* or *kahí*) for the first time, and this is fully equal to two ploughings. No cash estimate of the cost of this can usefully be made, as it is never done by hired labour.

The quantity of manure used is very large; from three to six four-bullock waggon-loads go to a *kacha bighu*. This at the lowest estimate, gives $3 \times 3 \times \frac{2}{3} \times 20$ maunds = 288 maunds = nearly 11 tons to an English acre. The *zamíndárs* urge strongly, that without such manuring the land will not be fairly productive. The time for putting in the manure begins in Mágh, and goes on to the end of Phágan, and sometimes even after planting. After manuring, the land is ploughed, unless of course it has been sown. Ploughing takes place in the end of Phágan (February, March) and may be continued through Cheyt, but the best time is the beginning of the latter month. Water is given before planting. Furrows are made regularly along the field, and a boy follows the plough, putting in the seed pieces of cane (*gandírí*), which must have one or more points in each piece, horizontally at regular distances,* usually rather less

* The way of calculating the distance is by counting the number of *pulis* (or bundles), planted in a *kacha bigha* (5-6 of an English rood); seven bundles are a large number, making of course the intervals smaller, six a very frequent one. The

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than a foot along the furrow. The seed-stalks are taken out of the clamp; one man cuts it up, or rather two, as one cannot do it well alone. Another man carries it to the place where it is put in; four or five are wanted to plant for one plough. There is, however, no lack of hands, as all the young boys of the family help in this, in order to get the holiday food, which is given on planting day. The food consists of rice, sugar, and *ghí* and mixtures of these, and such food-giving is called *Máh Kálí* or *gúr bhata*; the work begins in the morning, and goes on till it is done. Three yoke of oxen can get through ten *kacha bighas* a day. One yoke ploughs, and the other two follow with the *sohágá* (clod crusher). Water is given a month after planting, and, if the rains are good, three subsequent waterings are enough; if they are not, as many as five may be necessary at intervals of a month. Cultivation of cane by well-irrigation is not uncommon in the Khádar of Sunipat, but is not usually if ever met within the Delhi *tahsíl*. In Ballabgarh, there are three or four villages which have it. Delhi, too, has some in the Dáhar circle, from natural flooding. A fair well may water ¾ *bigha* in a day.

Hoeing is carefully kept up; the number of times depends much on the character of the season, and varies from five to nine or ten. The first time comes a few days only after planting. A man's fair work per day at hoeing is put at three *biswas*. When the canes get high, they are generally tied together at the top. Cutting begins in October; it is a practice for Hindus not to begin till after the Dassehrah. Hired cutters get Rs. 3 a month and their food, but the *zamíndár*, unless lazy, does much himself in this. A two-ox waggon should cart one *bigha's* cane in a month, but the animals do other work probably besides. Rent paid by *zabti* is about Rs. 5 per *bigha*, but in some villages it goes even up to Rs. 9. It is taken at the time the Government revenue falls due, and does not depend on the quality of the crop. No difference is made in the rent, whether in the previous *kharíf* another crop was taken; but when the land was left fallow it is called *tapar*.

The expenses of cultivation may be thus summed up:—

Ploughing ten times				10	0	0	*pakka bigha.*
Manure				5	0	0	
Seed				5	0	0	
Irrigation				4	2	0	
Price of water	3	2	0				
Cleaning of water course	1	0	0				
Hoeing				4	0	0	
Tying up canes				2	0	0	
Cutting and stripping				7	0	0	
Rent				6	0	0	
Carriage to the *kolhú*				3	0	0	
Planting (estimated)				2	0	0	

The *kolhú* or sugar mill is made of four kinds of wood, first quality *sál*, second *kíkar*, third *siris*, fourth *farásh*; *kíkar* is the one most commonly used. The mechanism of the *kolhú* is the

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way of getting at the *pála* is rather curious. As many sticks as laid down in a line make up 21 *hátha* (or cubits) make a *parya*, and either 20 or 21 *paryas* (according to two different standards) make a *pali*; a rupee will buy three or sometimes four *pális*.

same as in Shahjehanpur;* the names, too, are much alike; *kolhú* is the mill itself, *páth* is the horizontal boom, *láth* or *mohan* is the pestle, and *mánkri* (instead of *mackun*) is the diagonal spar joining the *páth* and the *láth*; *bánknal* is the piece (not noted in Mr. Butt's description) which springs up from the boom, and receives the lower end of the *mánkri*. The five pieces, therefore, form an irregular pentagon; the *kolhú* standing upright, the *páth* working on its outside edged horizontally, the *bánknal* stands vertical to the *páth* at its further end, from the upper end of the *bánknal* springs the *mánkri* inclining to meet the *láth*, which also works slantingly in the *kolhú*.

A *kolhú* complete costs Rs. 80 or Rs. 90, or even more, the work being made as durable and thorough in every respect as is possible to the not inconsiderable skill of the local carpenter. The *láth* often breaks, and must be replaced at the cost of a rupee. It is always made of *kíkar*. The wages of the carpenter who looks after the *kolhú* are considerable.† The produce of about 40 *bighas* of sugarcane is pressed in one *kolhú*; a good many proprietors unite generally in working it. They bring their cane themselves from the field, and put it together, reckoning their several shares by the number of oxen they each have. A *kolhú* lent on hire is said to cost Rs. 7 to the hirer, but it is often more than this. The men who own the cane, almost always own the oxen that work the *kolhú*. Four kinds of work are distinguished in the *kolhú*. Two *pindiás* put the short cut pieces of cane (*girariyán*) into the *kolhú*, and take out the cane straw *khói*; one man relieves the other at this arduous work, which is also rather dangerous for any but a left-handed person. Wages Rs. 10 to Rs. 15 a month. Two *gurriyas* who cook the *gúr*. Four *jhonkneualas* who keep up the fire, and dry the *khói*. Two *muthiyas*, who feed the *pindiás* with cut up canes, put into a basket. The man who sits on the *páth*, driving the oxen, is not a hired labourer but one of the proprietors. Two men are employed with each pair of oxen. The sugarcane is generally cut by the proprietors, or by hired labourers at two annas a day each. The *kolhú* goes on day and night, but the workers are divided into day and night batches. A *malka* holding twenty *sers* is filled with the pressed juice in about an hour; and the oxen do this twice before they get taken off. The juice is thrown into the *kánd*, a large earthen jar. From there it is put into the *karaí* or cooking cauldron, and is boiled slowly till it becomes pretty thick, and then it is put into a second vessel smaller than the first, and the boiling process goes on till the *gúr* becomes thick and consistent enough to make the *bhélis* or *gur*-balls. These are always four *sers* each. The place where the cooking goes on is called a *gurgói*. It is merely a thatched shed with a hollow floor to allow of the *kasais* being placed in it, and underneath them the cooking-fires. Molasses (*rab*), and coarse sugar (*shakar*) are not made in this district, or if made, very

* See foot note to page 113.

† Since this was written the new iron *kolhú* patented by Thomson and Mylne has obtained great popularity in the district. Its superiority is admitted on all sides.

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rarely; it would of course be a more delicate process than the primitive one above described: yet this too requires care. If the boiling is too prolonged it spoils the *gúr* and diminishes its selling value. Delhi district *gúr* goes to Bághpat, Biwáni in Hisár, and Rewárí and Fírozpur Jhirka in Gurgáon. The *zamíndár* generally manages his *gur*-making himself, and there is no commonly received rate of sale, but Bághpat rates more or less influence the market. There is no custom of *kataotí* as in Sháhjehánpur. The weight of juice turned out is commonly ⅔ of the sugarcane. The straw is used for burning in the *gurgóh*; it is good for nothing else; and from the juice ⅓ of its weight will turn out in *gúr*.

Cultivation of Melons.

Melons are chiefly cultivated on the sandy soil of the river side near Delhi; the soil considered good is *dumat*, (*i.e.*, *do matti*) being ⅔ earth and ⅓ sand. The cultivators are chiefly tenants, such as Mális, Káchís, Mallíhs, and Shaikhs, but in some places proprietors cultivate themselves. Before the crop is sown an agreement, generally in writing, is made fixing Rs. 5 to Rs. 15 per acre as rent for *rabí*. Manure is bought at a rate of Rs. 6 per 100 bullock loads weighing 2½ maunds each when the field is within two miles from Delhi; when it is further off, then from Rs. 7 to Rs. 12 per hundred. 150 loads are required for an acre of land. The cost of manure per acre therefore is Rs. 9 for villages within two miles from Delhi and from Rs. 10 to Rs. 18 for villages beyond this. This includes both cost and carriage. When the manure has been brought to the field the cultivator must buy *púla* bundles of *kánsa* grass, for fence and screen for the young and tender crop. This will cost him about Rs. 10 an acre, a thousand bundles (*púlas*) being required at Rs. 1 a hundred. This screen is called *taota*, and fence *bhel*. Pits are dug in a line at distances of three feet yard square, and 1¼ yard in depth. It is not essential to have the depth so great, but as the sand silts in from the side it is generally done. The object is to reach down to the *dumat* soil above spoken of, which is found sometimes at less sometimes at more than this depth. On every line the grass fence is stuck in to protect it from sand blown in by the wind. When the pits are ready, the manure is mixed with earth and thrown into them, and a hollow bed (*tháonlá*) is made in the centre of the pit. Thirty men can thus prepare an acre of ground for seed in one day, and get for it Rs. 7-8 at a rate of four annas per head. Three men are required to sow the seed when the *tháonlás* are ready, and at two annas a day each. Half a *ser* of seed will sow an acre, and costs eight annas. The labourers get into the pits and bury two seeds in each *tháonlá*. On the north side of the bed the screen (*tattí*) is erected. Within 12 days the seed should sprout in every *tháonlá*; where it does not, fresh seeds are sown. When the plants are a month old, they are earthed up by hand to give strength to the roots; three men do the work in an acre of land in one day and are paid four annas a piece. About a fortnight after this the screens and fences are pulled up, and the pits are filled up with loose earth; the *púla* is spread over it and the creeping plant laid carefully on it; ten men will do this in an acre per day costing Rs. 2-8. The grass keeps the plant from getting too dry. The crop is not irrigated, except in years of drought, when it gets water once; the labour of 12 men at two annas each will

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manage for one acre in a day, generally by digging *kachá* wells on the bank of the river, and then using the *dhenkli*, or watering by hand from earthen vessels. The crop is gathered in May and June, and the crops are watched day and night to protect it from thieves, biped and quadruped. Jackals and wild pigs are fond of melons. Fires are lit, chiefly of the useful grass, which, having done its work, is thus disposed of. If the cultivator does not watch the crop himself, he keeps a watchman to do so at Rs. 4 a month. The cost of the crop and income realized from it may be reckoned at Rs. 50 and Rs. 120 respectively, and, if the cultivator is his own *chaukidar*, the cost is reduced to Rs. 42. In the villages, at some distance from Delhi, Rs. 6 must be added to the cost of manure. On the other hand, land in such villages is obtained at a lower rent, say Rs. 5; while near Delhi the rate of rent is often Rs. 10 per acre. The income is equal in both months, May and June, as in May the fruit is less in quantity but dear in price, while in June it is abundant, but fetches only a lower price.

The items of cost of cultivation per acre are shown here together:—

	Rs.	A.	P.
Manure, 150 loads	9	0	0
Bundles of grass (*pula kána*) 1,000... ...	10	0	0
Labour for digging pits...	7	8	0
Seed	0	8	0
Labour for sowing	0	6	0
Labour for earthing (*thapna*)	0	12	0
Labour for filling up pits and spreading out the grass	2	8	0
Irrigation	1	0	0
Rent	10	0	0
Watchman	8	0	0
TOTAL ...	50	2	0

Government demand is Rs. 4 per acre near Delhi, and Rs. 3 and Rs. 2-8 for lands lying further off the city.

Average yield. Production and consumption of food grains.

Table No. XXI shows the estimated average yield in lbs. per acre of each of the principal staples, as shown in the Administration Report of 1881-82. The average consumption of food per head has already been noticed at page 46. The total consumption of food grains by the population of the district, as estimated in 1878 for the purposes of the Famine Report, is shown in maunds in the margin.

Grain.	Agriculturists.	Non-agriculturists.	Total.
Wheat	417,143	839,570	1,256,713
Inferior grains ...	1,213,508	615,686	1,829,195
Pulses	265,455	410,456	675,911
Total ...	1,896,106	1,865,711	3,761,817

The figures are based upon an estimated population of 608,850 souls. On the other hand the average consumption per head is believed to have been over-estimated. A rough estimate of the total production, exports, and imports of food grains was also framed at the same time; and it was stated (page 151, Famine Report) that there was an annual deficit of nine lakhs of maunds, which had to be supplied by imports of wheat, gram, *bájra*,

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Average yield. Production and consumption of food grains.

jowár, rice, and pulses, from Gurgáon, Ambalá, Amritsar, Mirath Rohtak, Bhawáni, and Karnál. The rates of produce, as ascertained partly by experiment, and partly by the opinion of the most intelligent *zamínداrs*, are given as Appendix II to Mr. Maconachie's Settlement Report. In the table at pages 114 to 116 will be found other estimates, which Mr. Maconachie considers fairly correct for *good* soil, but too high as general averages. He writes:—

"Taking the average of all estimates obtained during the Settlement, and checking them by my own knowledge I should give the produce of the principal crops per acre as follows:—

Crop.	Kharif.		Crop.	Rabi.	
	Irrigated.	Unirrigated.		Irrigated.	Unirrigated.
Jowár	.....	240 sers	Wheat ...	410 sers	240 sers.
Bajra	.....	180 ,,	Barley ...	480 ,,	240 sers.
Sugarcane ...	720 sers	360 ,,	Gram	.....	360 sers.
Cotton ...	100 ,,	110 ,,	Barley & Gram ..	300 ,,	320 sers.
			Wheat & Gram ...	480 ,,	300 sers.

"The above I believe represent the average crops of the district throughout. Of course on some lands the manured and irrigated yield of wheat (for instance) would be much higher. It might be 18 or even 20 maunds, but such a yield is exceptional, and any general estimate founded on figures approaching this would be utterly fallacious."

Live-stock.

Table No. XXII shows the live stock of the district, as returned in the Administration Report. But see below for more accurate figures.

Cattle form an important feature of the agricultural economy* of the district. An ordinary Játt will certainly have his yoke of oxen and a cow or buffalo, or both. A cow gives eight or ten calves, one a year; and a buffalo will give 15 or more. The cattle are milked (*dúhná*) at sunrise; the vessel (*dúhní*) either of earth or of *pítal* is put up in a niche in the wall and some two hours later the milk is warmed up to boiling. The skim comes up, and then the vessel is taken off the fire and put away for use, but the cream (*maldi*) is taken away. *Ghi* is made the next day in the churn (*bilomini*), the milk being curdled with a little *lassi*. Buffaloes' milk is considered richer and stronger than cows' or goats.' Among buffaloes one of a *bhúrá* (dirty grey-brown) colour is the best, though it is rare; its milk is considered especially nourishing.† Cattle are taken out to graze when the sun gets up in winter; in the hot weather buffaloes and bullocks are taken out in the last

* An old saying is "either the teat of the buffalo or the masonry top of the well (is necessary in time of drought)."

† There are several sayings of a very idiomatic kind, which are explained by this. As for the rarity of the colour "a *bhúrá* buffalo, a woman with no hair on the top of her head, a winter rain in Poh, these may be, but rarely." Then again as to the strength of the nourishment of its milk. Two men are wrestling together, and one tauntingly challenges the other to come on "have you been drinking the milk of a *bhúrá* coloured buffalo?" And as to the value of the animal, when a man is angry without a cause, the object of his resentment says "have I carried off your *bhúrá* buffalo?"

watch of the night (*pasar.*) Sheep and goats cannot feed when the dew is on the ground; they get worms in the mouth and feet. Water is given about 10 o'clock, and again after this toward sunset; they come home before the sun goes down. In the cold weather water is generally given only once, as of course thirst is less. The following statement shows the number of horned cattle, sheep, goats and mares in the district as compiled from the Settlement Statements:—

Tahsil.	Chak.	Plough cattle.	Other kind.	Sheep.	Goats.	Mares.	Total.
Ballabgarh.	Khádar Bángar ...	6,480	12,402	412	1,558	286	20,038
	Bángar ...	8,313	20,327	950	3,500	336	33,961
	Dabri Sailábá ...	2,634	3,947	417	671	98	7,713
	Zerkohí ..	2,809	6,700	191	5,339	198	15,317
	Khandrát ...	1,280	3,022	314	608	36	5,260
	Kohí ..	2,841	12,039	133	12,743	30	27,776
	Total ...	23,812	58,437	2,307	24,867	691	1,10,114
Delhi.	Khádar Bángar ...	1,350	4,373	642	182	69	6,605
	Bángar ...	11,200	32,453	2,344	3,225	681	49,905
	Bábar ...	7,118	17,027	728	809	194	25,963
	Zerkohí ...	2,489	6,860	496	673	116	10,643
	Kohí ...	1,576	4,382	98	869	44	7,187
	Khandrát ...	1,338	3,778	520	744	68	6,448
	Total ...	24,942	68,913	4,646	6,814	1,092	1,06,206
Sunipat.	Khádar ...	14,209	39,750	4,879	2,831	279	51,937
	Bángar ...	17,847	37,091	3,401	4,451	375	74,165
	Total ..	32,056	77,841	8,270	7,282	654	1,26,102
District.	Grand Total ...	80,816	2,04,191	15,222	38,763	2,038	3,42,422

In connection with the subject of cattle may be noticed the custom of *rorá nikálná*. *Rorá* is a disease of the cattle, as bad as cholera is for men. To do away with it a rope is tied across from one house to another at the entering in at the village; on it a piece of *siris* wood and a *ghará-lid* (*chapni*) are tied in the middle, and underneath it a plough in the ground. A weed, called *bhainsá-gúgal*, is burnt like incense in a fire; its smoke is put on all the animals of the village; it either stops disease or prevents it; on the rope near the *chapni* a red piece of thread and *supári* (*chhalia*) is fixed; on the day of giving smoke to the animals they eat stale bread so as not to light their own fires. Neither is grinding heard throughout the village that day, which is called *akhtá*. All Hindu *zamíndárs* observe the ceremony, and so do Musalmáns.

Breeding operati

There is nothing worthy of particular notice about the horses, mules, &c., of the district. The style of mare possessed by the better class of *zamíndár* has improved since the appointment of *zaildárs*, and there are some pretty animals, chiefly brought in from Kaithal and Patiála, ridden by these men, and the Sunipat *zamíndárs* have some good mares. In all perhaps 60 mares might be found fit for branding. Horse and mule-breeding, however, are not much attended to, though there are signs of the possibility of awakening interest in the matter, if it were energetically taken up. Some of the mares are taken to the Government stallion at Patti Kallyána

Chapter IV, B.

Occupations, Industries and Commerce.

Breeding operations.

in Karnal. At present there are only one Government stallion horse, and one donkey-stallion, at Moiarband near Badarpur, and at Sikri, both in the Ballabgarh *tahsil*. These are under the management of the Haupper Stud authorities. The breeding of oxen and cows is chiefly managed by the 'Brahmani' bulls (locally termed *ánkal* and *bijar*); though in one or two places Hissár bulls imported by Government have been let free with good effect. Rams are not of large size, some of the best are used for fighting. There are no horse or cattle fairs held in the district.

SECTION B.—OCCUPATIONS, INDUSTRIES AND COMMERCE.

Occupations of the people.

Table No. XXIII shows the principal occupations followed by males of over 15 years of age as returned at the Census of 1881. But the figures are perhaps the least satisfactory of all the Census statistics for reasons explained in the Census Report; and they must be taken subject to limitations which are given in some detail in Part II, Chapter VIII of the same Report. The figures in Table No. XXIII refer only to the population of 15 years of age and over. The figures in the margin show the distribution of the whole population into agricultural and non-agricultural, calculated on the assumption that the number of women and children dependent upon each male of over 15 years of age is the same, whatever his occupation. These figures however, include as agricultural only such part of the population as are agriculturists pure and simple; and exclude not only the considerable number who combine agricultural with other occupations, but also the much larger number who depend in great measure for their livelihood upon the yield of agricultural operations. More detailed figures for the occupations of both males and females will be found at pages 69 to 78 of Table XIIA, and in Table XIIB of the Census Report of 1881. The figures for female occupations, however, are exceedingly incomplete.

Population.	Towns.	Villages.
Agricultural ...	10,681	247,363
Non-agricultural ...	193,836	192,435
Total ...	204,717	439,798

Principal industries and manufactures.

Table No. XXIV gives statistics of the manufactures of the district as they stood in 1881-82, and Table No. XLVA gives similar figures for the manufactures of the Municipality of Delhi.

Mr. Lockwood Kipling, Principal of the Lahore School of Art, has kindly furnished the following note on some of the special industries of the district :—

"The reputation of Delhi as a manufacturing centre is perhaps greater than is warranted by the actual state of the industries now practised there. Many of the trades for which the city is famous, like, those of Lucknow, Gulburga and Haidarábád, (Deccan) are relics of the Musalman Courts, and only precariously survive. Nearly all are now, so far as their profits are concerned, in Hindu hands. Before it was a Mogul capital Delhi was a Hindu city; and it would seem that in wealth and in social and political influence the Hindus are resuming their ancient sway. And the tendency of the leading castes in modern times is more

towards trade as a means of accumulating money than towards craftsmanship. So while the city is growing, and must from its position continue to grow in commercial importance, it is doubtful whether the arts by which it is historically known are equally flourishing.

Jewelry.

The jewelry of Delhi was a favourite theme of the early European travellers who visited it. There is now but little scope for the sumptuous extravagances of which they wrote, such as the peacock throne and similar works; but the tradition remains, and one of the special excellences of the Delhi jeweller is still his consummate skill in mounting and arranging gems, sometimes of great price, but also often of little intrinsic value, so as to produce the greatest amount of artistic contrast, richness and variety. In these days this branch of the art once practised on a large and costly scale is confined to smaller articles of adornment. The throne, the belt, the slipper, the spear, the sword, the elephant *howdah* and goad are but seldom incrusted with gold, enamels and jewels as formerly; and most Anglo-Indians know Delhi jewelry as an assortment of lockets, rings, crosses, bracelets and necklaces, as European in their details as in their purpose. Articles made for wealthy natives, even when they preserve traditional forms, are growing noticeably neater in execution, with a neatness that counts for nothing as art, and more timid in design, while there is less variety of pattern than formerly. European designs are growing popular, especially among those native ladies who have come under the influence of missionaries, or indeed under any educational influence.

The work now produced for native courts is but seldom seen by Europeans, and it is impossible to form a correct estimate of its value. There is no doubt that many costly articles are made, and that Delhi workmen are frequently employed at distant places resetting and repairing such objects.

The telegraph and the modern facilities for travel have brought the precious stone trade of the world together in a way that is surprising to those unfamiliar with its workings. It is now, as always, a somewhat secret branch of commerce. German Jews, trained in Paris, are perhaps the most prominent and leading dealers. There is scarcely a wedding or an accession affording an opportunity for the sale of precious stones that is not telegraphed to Paris, London, St. Petersburgh, Amsterdam, Berlin and Vienna. Delhi and the rest of India are now included in this secret syndicate, and are periodically visited by dealers who come and go unnoticed; so that Tavernier was but the forerunner of a succession of jewel merchants. For pearls, Bombay is a great market; but even there, one of the leaders of the trade, Panniah Lall, is a Delhi man. In coloured stones this city has still a considerable trade, and the greater part of the valuable find of sapphires in the Cashmere territory has been absorbed by the Delhi jewellers. Most of these men are in the hands of bankers, or perhaps more correctly they are the agents of bankers.

The banker of the East, it is unnecessary to remark, adheres to the practices of the guild that are comparatively neglected by the great money-dealers of Europe, and counts jewels among his means of trade and not merely as objects to be kept in a safe. The name of the actual workman never appears in connection with the more costly articles of Delhi production. Some of the most skilful are said to be men of extravagant habits, and all are entirely in the hands of the dealers, who keep them practically enslaved by a system of advances. This indeed is the case in most Indian handicrafts, and the astute Hindu-dealer resembles the London tradesman in his efforts to efface the maker of the goods he sells, and to pose as the actual producer. Even miniature painting on ivory, which would be supposed to be an art where the name of the artist is absolutely essential,

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Jewelry.

is said to be in many cases produced by quite other men than those who sign the pictures.

Enamelling on gold as an accessory in jewelry is here practised, and it is not easy to distinguish the best Delhi work from that of Jeypore.

It is impossible to give any trustworthy figures as to the value of articles that might be classed as jewelry. But it must be considerable, since there are Delhi jewellers, *i.e.*, tradesmen who sell Delhi wares, in every large town.

As to the objects produced, there is scarcely anything called jewelry that cannot be imitated at Delhi; and the continual passage of tourists has created a demand for several varieties of native work not strictly belonging to the locality, as well as for articles of English style. Massive rings with one precious stone set in strong open work, and *almost* as well finished as those in a Bond Street window, are now as frequent as the rings with several stones which are perhaps more like the true Delhi notion. Many of these are tastefully arranged and skilfully mounted. The embossed silver work of Madras, with Dravidian figures in relief, known as Swami jewelry, is more coarsely imitated. In the best Madras examples the figures are entirely hand-worked, but they are often made at Delhi by die-stamping, afterwards chased. Filigrain has always been used as an accessory to more solid work, and now the lightness of Genoese or Cuttack articles is sometimes attempted. Silver and silver gilt wire woven into a kind of matting pattern is applied to belts and bracelets. All the varieties of watch chain are imitated, and some adaptations of native chains have been done. The patterns of necklaces worn in the hills are now regularly wrought at Dehli. In gold, suites of amethyst, topaz, turquoise and other stones are made. The gold framework is sometimes twisted or of *babúl* work. This last is one of the oldest and most characteristic forms. The name is taken from the pretty and sweetly-scented flower of the *babul* or *kikar* (*Acacia Arabica*) which is a ball of delicate yellow filaments. It is also called *khár-dar*, or thorn-work. Convex forms, as the centres of brooches, the fringing balls set round miniatures, &c., are studded over with the minute gold points, each of which, with a patience and delicacy of hand that defy European imitation, is separately soldered to the thin plate base. Good, soft gold alone is used for the points, while the base is of slightly inferior metal. The articles are finished by being placed into a sharply acid bath, which produces a clear, mat-gold bloom, that does not long survive wear and tear. Major McMahon says that various castes wore ornaments of this sort before its suitability for objects of English use came to notice. A bolder form of similar work is called *gokru*, and is based apparently on the *bur*. (The cal trap of Indian and also of mediæval European war-fare. A ball studded with spikes thrown to impede the progress of cavalry is also called a *gokru*.) This is worn by Jáṭ men as an earring, and the same treatment is applied to women's bracelet. Among other patterns produced by soldering small details on a base may be mentioned a rose pattern of minute flowers. This is common all over India, but is perhaps most perfectly done in the red-stained gold ornaments of Burmah. The miniature paintings of Delhi are frequently set in gold cable twist patterns as bracelets, necklets and brooches. Small plaques of Pertabgarh enamel, a semi-translucent green incrusted with tiny gold-chased patterns of figures and animals, are also, with true and false avanturine, mounted in a similar way. The almost invariable feature of Delhi work is a thin shell of gold incrusted with better gold, or with stones of some kind and afterwards filled with hard lac. The enamel work is often spoiled by being done on gold too thin to withstand without distortion the heat of the enamel fire.

Jewelry.

Another speciality of Delhi is the incrustation of jade, with patterns of which the stem work is in gold and the leaves and flowers in garnets, rubies, diamonds, &c. For examples of the best of older work we must now go to the great European collections, where are objects of a size and beauty now seldom met with in India. The mouthpieces of *hookahs*, the hilts of swords and daggers, the heads of walking-canes, and the curious crutch-like handle of the *gosain's* or *byragi's* staff, also called a *byragi*, are, with lockets, and brooches for English wear, the usual application of this costly and beautiful work. Each individual splinter of ruby or diamond may not be intrinsically worth very much, but the effect of such work as a whole is often very rich. The *murassia kár* or jewel-setter was formerly often called upon to set stones, so that they could be sewn into jewelled cloths. For this purpose, as when the stone was to be incrusted upon another, as with minute diamonds or pearls on large garnets, a common Delhi form, or on jade, he works with gold foil and a series of small chisel-like tools and fine agate burnishers. The open work claw-settings which leave the underside of a stone clear, have been copied from European work. There is no *dodge* of the European jeweller, such as tinted foil backing for inferior stones or fitting two splints of stone to form one, that is not known to the Delhi workmen. These and many other devices they have *not* learned from Europe, for they are tricks of the trade common to all countries. It is easy to find fault with a certain quality of flimsiness and sometimes gaudiness in the articles unfolded day by day in hotels and dák bungalows all over the country and exposed for sale in shops. But now-a-days people will not pay a sufficient price for good work. The conditions of the trade, too, would seem to be fatal to the production of such masterpieces as we read of and sometimes find. In former times a good workman with his family was dependent on the court or on some wealthy noble. He was often harshly treated, and though he was never suffered to want, he seldom received what would now be considered a fair equivalent for his labour. But he was provided for whether he worked or played, and plied his task with a leisurely consideration and care which is now impossible. The wonder is rather, when the rapacity and also the expenses of the dealer or middleman are taken into consideration, that so fair a value is given for the money spent on Delhi jewelry.

Silversmiths' work.

Turning from jewelry proper to silversmiths' work of the larger sort, it is doubtful whether so much is now done as formerly, and it would seem that Europeans who spend much money on race and other prize cups and similar wares from England, are scarcely aware of the powers of native workmen. A large and bold treatment of silver is a tradition of Indian work, but it is only now coming into favour among the silversmiths of Europe and America. The artistic roughly-chiselled silver of Messrs. Tiffany of New York, which was reckoned a novelty, has some points in common with Indian work, especially in that it was not like most European work, teased with a uniform high finish. Large *hookahs* chased and perforated with elaborate garniture of open work, *chillum* covers, and chains with pendant fishes and other fanciful *breloques*, *abkhoras* or drinking vessels for wealthy Muhammadans, spice-boxes or *pandans* similar to the familiar copper *pandan*, models of cooking pots for wedding presents, and occasionally for wealthy Hindus such sacrificial wares as the *Nandigan* or bull of Shiva with a canopied arrangement for dropping Ganges water on it in worship, or the *argha*, an oval *patera* that represents the female energy, are the principal objects now made. The *chatera* or metal-chaser carries on his trade separately from the smith, who, like the blacksmith of the Siálkot and Gujrát damascened work, confines himself to forging and shaping. Beaten foliage like

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that of Cutch is wrought, and the superficial engraving of English silver plate is skilfully imitated.

Silversmiths' work.

No workmen are more careful than Indian gold and silversmiths in the handling of the precious metals. As they use no benches, their filings cannot be preserved, as in English shops, in a leather apron fitted to a drawer; but they file on a wooden standard set in a large dish, and their small crucibles for casting are most carefully handled. Yet it pays some people to buy their ashes and sweepings for the sake of such gold and silver as they may yield. The leading silversmith of Delhi presents his to the poor of his caste, and a respectable sum is annually extracted from the refuse of his shop. It is not often that beaten silver work of the boldest kind is seen in process of execution. That is to say the embossed plates of a silver *howdah*, the large cartouche-shaped pendants of the necklaces with which the elephant is adorned, the state chairs made for Rájás and chiefs, and similar objects. It is impossible not to admire the boldness with which the metal is handled in many of these works, but it must be admitted that when new they are not free from a touch of vulgarity.

The steps of gradation from such work to the ornaments in common use are really very slight. There is no difference in the processes or tools, and the silversmith who shapes the *chaunk* for a native lady's head does not give it much higher finish than the elephant pendant receives. In this, as in the goldsmith's neater craft, the die or *thappa* is greatly used with a notable economy of labour. The ornament represents in many cases merely so much money, and neither the owner nor the maker, who is usually as much shroff or money-lender as craftsman, cares greatly about its form. Many of the forms, however, are beautiful, and few are entirely without interest. At Delhi a large variety is made, because the women of Rajputana, as well as those from the nearer districts, are now customers.

Mock jewelry.

Large quantities of sham jewelry made of brass, coloured glass, and plain glass with tinted foil behind it, are sold. These preserve the native forms of earrings, bracelets, and head ornaments, and are often very pretty. Year by year, however, a larger number of European imitations are imported; notably large brass beads in open work rudely counterfeiting filigrain. It is not always easy to say in such things where Germany or Birmingham ends and Delhi begins, for the stamped tinsel settings are combined with wire, silk and beads in the most ingenious way, till the completed ornament resembles those made in good materials of real native work. There is no affectation, however, about the ornaments cast in zinc for very poor people, where the workmanship, though following the forms of silver and gold, is rough and costless as the material. A considerable amount of taste is displayed in the stringing and arrangement of small coloured glass beads. From one shop the writer purchased 32 necklaces of different patterns, some in beads, others made of seeds and suitable for *faqirs*, &c., others of lac, coated with yellow foil with coins, also in lac, hanging to them, and others in wood. No two were alike, and the price asked for the 32 was two rupees. To a native purchaser it would have been less. Nowhere else can so much bravery be bought at so cheap a rate; and from the proverbs quoted by Dr. Fallon about Delhi dandyism, it would appear that cheap finery is a 'note' of the place.

Brass and copperware.

The coppersmiths are no less skilful than the workers in silver. In the Lahore and other copper bazars, visitors are invariably offered real Delhi *deychis*; and most of the smiths from other places admit that they are not so skilful with the hammer and stake (*sandán*) as those at Delhi. In shaping a circular vessel of changing diameter they find it necessary to solder pieces on; while a good Delhi coppersmith shapes the whole without

joint from one piece. Nests (*ganj*) of *degchis*, with cleanly defined edges fitting closely into each other, are the usual articles made, and they are often admirable specimens of plain hammer work. Brass articles are tastefully ornamented by the *chatera* with foliage in low relief. There is a considerable production too of small fantastic toys in brass, roughly made, but often ingenious. The native merry-go-round seen at *melás* furnishes one model, and railway trains, *raths*, grotesque figures and toy vessels of all sorts are also made. The best Hindu sacrificial brass wares come from Benares, Muttra and Brindaban, but many are now made at Delhi. Small boxes of brass with lids perforated in foliated patterns and furnished with a false lid in which a small mirror is fixed, are favourite possessions of native ladies, who use them to keep cardamoms or small articles of adornment. These are made in great numbers and find their way into Rajputana as well as all over the Punjab. The trade in brass small wares, however, is not likely to increase very largely, on account of the competition of German articles of a similar kind which are now imported in great numbers. The wholesale rates at which these are delivered to dealers are almost incredibly low. There is a special fabrication of things for this market, and the most important condition is that they shall cost the importer very little. When serviceable umbrellas are supplied at ten shillings a dozen, it may be imagined that stamped tin and brass boxes, pocket mirrors, beads, pocket knives, buttons, and other varieties of German small wares which are sold by pedlars sitting in the streets of all large towns and at all fairs and country side gatherings, are about the most minute and least costly objects known in modern trade. A great part of these things are in plain English mere rubbish, and the wonder is that they find purchasers at any price. The workmen of Delhi, it must be confessed, are themselves apt at this sort of trade, and it would occupy much space to enumerate the trivialities of local production exposed for sale in the Chándni Chauk.

Brass and copper ware.

Tunnah or tin foil is made here, and tinted sometimes with coloured varnish; it serves as gold tinsel. A surface of wood covered with this material and then painted on in foliated patterns used to be a favourite form of decoration for doors, some of which are to be found in the fine old *havelis* in the older parts of the city. German orsidue, however, is made in so many forms, and imported at so cheap a rate, that this trade is scarcely likely to survive.

Tin foil.

Imported plate and common glass are silvered in the old style with mercury and tin foil, and the edges are often bevelled and cut by the workmen with the aid of corundum powder. Many of these looking glasses are mounted in a gaudy style with borders of painted glass, and an arrangement by which they stand at an angle or fold flat. Glass bangles are said to be made. They are certainly sold in large quantities.

Mirrors, &c.

Lac bangles incrusted with spangles in stamped orsidue and with beads are made in large numbers. Some are coated with tin, ground and applied as a paint and then covered with a tinted varnish, a method of obtaining a metallic glimmer through colour which is characteristic of many Indian forms of decoration.

Lac bangles.

Ivory-carving is practised by only one or two artisans. It is impossible to praise the camels, elephants, bullock *raths* and figures here made. They are not equal to the Murshedabad work. Combs, paper-knives and other small objects, often ornamented with the figure of a bird or perforated in geometric open work patterns, like those of Amritsar, are also made. But the art cannot be said to flourish.

Ivory-carving.

Neither is wood carving a prosperous or popular business. There are some particularly fine examples of old doors and doorways in the city, but

Wood-carving.

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nothing of any importance is now produced. It has been demonstrated however by Col. Montgomery Hunter that, supposing a demand were to arise, there are carvers capable of rivalling the old work. That gentleman had the doors and carven wainscot of a large room prepared under his superintendence. The result was successful, but the completed work had more of stone than wood treatment.

Stone-carving.

Stone carving is not very extensively practised, but there are numerous examples of modern work which show a high average of excellence. The spandrels or *mihrábs* of doorways seem to be the favourite field for the stone-carver's art. The foliage, as in all modern work, is excessively suave and flowing in line, and somewhat tiny in detail; contrasting in this respect with the simpler and more rigid lines and scantier forms of the ornament of the best periods.

Plaster work.

In the open courts and larger rooms of the better class of native houses the pilasters and arcades are wrought in plaster work, which, though late in design, is pretty and tasteful in execution. The notable deterioration which has taken place of late years in the *ráj mistri's* craft is attributed by the workmen themselves to the introduction of the very different method of treating wall-surfaces necessary for our large English buildings, where immense stretches of wall have to be covered with plaster as economically as possible. A skilled workman will tell you that any cooly can learn to do such work; and as a matter of fact the greater part of the men employed by the Public Works Department are only promoted labourers, and very few of them are capable of working out such details as the pendentives of vaults or the foliated pilasters and *mihrábs* of the arcades which are universal in the work of fifty years ago. Even in English bungalows built at that period, the native fancy, though evidently ill at ease in our vast, rectangular domestic barns, broke out in quaint panelling on the walls and in ornamented mantel pieces. The barrack and the railway station, however, have now effectually checked this; and the *ráj mistri* has learnt how to combine the worst and least durable plaster work ever wrought in India, with pure, utilitarian hideousness.

Dehli porcelain.

Dehli pottery, as purchased and understood by Europeans, is a craft of recent origin. For many years large jars or *martabáns* for native domestic use, jars of a smaller size for the pickles and preserves which are specialities of Dehli, and small *dawáts* or inkstands, have been made in a rough sort of porcelain covered with a glaze. There was no specimen of the ware in the Punjab Exhibition of 1864, and no notice was taken of it by Europeans.

In 1869, the writer, passing through Delhi, purchased a number of these jars and took them to the London Exhibition of 1870, where their fine texture of glaze, a rough, duck-egg-like coating, was admired by connoisseurs, notably by the late Mr. Fortuny, a celebrated Spanish painter, then visiting England. (One of these articles by the way happened to be marked *martabán*, the native name for a jar, and was afterwards described on a museum label as coming from Martabán, a port on the Burmese coast.)

Since that time new forms have been suggested to the potters. These are mostly flower vases, *chágulu*, *surahis*, and similar decorative shapes of Indian or Persian character. As this application of pottery is entirely new to this part of India, there are no traditions to be interfered with. Lack of enterprise and ignorance of the possibilities of the art have prevented it from being largely developed. Little has been done to meet the demand, and nothing to anticipate or stimulate it. The workmen have been dragged into notice with apparent reluctance, and do not cordially accept

opportunities of making money. Bhola is the best known of the Delhi potters. Another member of the family was some years since attracted to Jeypore, and works in connection with the School of Art there, where pottery similar as to "paste" or body and glaze, but decorated with more skill, is produced.

Delhi porcelain.

The ware, from the fact of the "paste" being an artificial one, *i.e.*, compounded of pounded stone and gum, and not a natural clay, has to be made in moulds, and cannot be freely handled and made in great variety of form on the wheel.

It is curious that so little has been done to improve the paste, as true China clay is found not far from Delhi, and is used habitually by the gold and silversmiths for their crucibles. Mr. Mallet of the Geological Survey writes: "Kaolin is obtained at Kusseempur near Delhi from a decomposed granite. The rock is elutriated, and the washed Kaolin made up into small cakes which are chiefly used for white-washing. The blue and white Delhi pottery is probably made from the same material." This surmise is a natural one, since China clay, similarly procured and prepared, is used in Europe and China for pottery. But the Delhi pottery, in slackly burnt samples, is almost pure sand, and can be rubbed into holes with the finger nail where the glaze does not hold it together. A mixture of the Kaolin with the pounded stone ought to result, if it were sufficiently fired, in a good porcelain. As it is in some of the best pieces, the "body" is semi-translucent. Blue and a pale-green are the colours used for decoration. The patterns are poor in design, and though the general air of the product is delicate and pretty, it has a somewhat sickly quality, happily described by a connoisseur as "anæmic" when compared with the fulness of colour and richness of pattern of Multán ware.

The potters of the latter place, it may be noted, are Muhammadans, and of very different social standing from the *kumbhar*. The Delhi potters are Hindus, and probably of the ordinary *kumbhar* or potter caste.

Earthen toys.

In unglazed earthen pottery, there is not much to note. At fair times Delhi produces, perhaps a larger variety than is seen elsewhere of those grotesque toys and figurines, which periodically call forth the invention of the potter and notably add to his income. Here, indeed, as the city is regarded as a place of pleasure, their sale goes on all the year round. It is at fair times that caricature portraits in burnt clay, rudely painted, are produced; and stories are told of too sensitive civil officers making the potters' fortunes by buying up libellous representations of their features and figure. This toy trade, popular all over India, is the root from which the remarkable figure modelling of the North-West Provinces has grown.

Models of snakes.

A skilful toy-maker, Hera Singh, produces models of snakes in terra-cotta, which are carefully coloured from the plates in Sir Joseph Fayrer's *Thanatophidia* and other works, and sold to civil officers for use in *tahsil* offices as a help towards the identification of snakes for the destruction of which rewards are offered by the Government. The models are beautifully made and coloured.

Basket-making.

Another recent trade, which seems likely to be popular in its humble way, is basket-making. Tiffin baskets, work and tea-tables, chairs and other articles, are now made in split bamboo with bands of coloured splints. The work is fairly neat and strong. The basket-makers call themselves Rájpúts; but as this is the answer most Hindus of low degree give when asked to what caste they belong, it need not be taken very seriously. Cane is not used, and the Chinese basket-maker, who gets the best work of Calcutta and Bombay, does not compete with local labour.

Tin working.

Among new trades may also be mentioned the growing use of native-made tin ware. A great number of tin-lined packing cases are imported,

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and here as elsewhere they are put to use. But the Delhi tinmen seem to be more skilful than those of other regions, and among other things their tin lanterns may be specially noted for unusual neatness of make.

Seal-engraving.

Seal-engraving is an art which, owing probably to the unusual skill of two generations of engravers who worked in the Dariba, is considered to be a speciality of Delhi. All that can be done in Persian letter cutting on seals is done here, but there has never been in India any good intaglio cutting as it is understood in Europe. It is curious that races which excel in minute work should have so completely neglected this form of art.

Paper.

Paper of the usual fibrous and rough quality is made in the city, and finds ready sale, as it is good of its kind.

Embroidered shoes.

Connected with the gold and silver wire trade about to be noticed in detail, is the considerable trade in embroidered shoes for which Delhi has long been celebrated. The variety of patterns and shapes is remarkable, even in a country where phantasy runs riot. Nothing could be prettier or more dainty than some of the slippers, (*zenana juti*) made for native ladies' wear; embroidered with seed pearls usually false, with spangles and every variety of gold and silver thread; and inlaid with red, black or emerald green leather in decorative patterns. Gilded and silvered leather are also used. Sometimes gold and silver embroidery is worked on cloth over a basis of leather. Men's shoes are often no less elaborate. In 1864, according to Mr. B. H. Baden-Powell, Delhi exported shoes to the value of four lacs of rupees yearly. It is probable that the trade has greatly increased since that time; for the railway has opened new markets, and shapes unknown in the Punjab are now made, *e.g.* the Maratha shoe with a heavy, cleft, broad toe, much turned up. English forms are creeping into use. No sumptuary regulation to restrain extravagance in gilded shoes and enforce the use of plain black leather could be half so potent, as the unwritten ordinance which permits an Oriental to retain a pair of patent leather boots on stockinged feet, and requires him to doff shoes of native make when in presence of an English superior. In time perhaps the preference for European forms consequent on this ordinance may tell on the Delhi shoe trade; but hitherto it cannot fairly be said to have done it much harm.

Textile fabrics.

Turning to textile fabrics, in spite of the large importation of piece-goods from Europe, one of the visible signs of which is the busy piece-goods *bazár* off the Chándni Chauk, there is a considerable cotton weaving industry here, and *pagris* and *dopattas* of local make are largely exported. If hand-loom weaving is dying, which, taking India as a whole, would seem to be the case, it must be admitted it is dying hard in the Punjab. The fine muslins which were formerly woven for the wealthy still survive. In the portraits of Mughal nobles, as in illustrations of popular poetry, figures are constantly represented attired in muslin so transparent that the under garments show clearly through. The oft-repeated story of the Emperor who reproached his daughter for being imperfectly clad when she was swathed in many yards of fine muslin, is quoted as a proof of the skill with which Gossamer webs of cotton were produced. A market for these fine muslins has now to be sought in native states, and it is at Patiála and Nabha and in Rajputana that they are mainly disposed of. Compared with the bulk of the European importations of cotton goods, the local production, however, is but small. Some fancy dyeing, including the curious knot and stripe dyeing in which patterns are produced by tying up minute pockets of the cloth with fine thread in simple ornamental forms and then immersing in dyes of different colours, is done.

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The rapid development of the wheat trade has given a great impetus to the weaving of gunny bags—a trade which is entirely new and sternly utilitarian in character.

In popular estimation Delhi stands pre-eminent for its lighter and more decorative manufactures, such as jewelry and embroidery.

Gold and silver embroidery.

The embroidery in which gold and silver thread are used is commercially the most important. True *khimkháb*, like that of Benares and Ahmedábád in which gold and silver threads are loom-wrought, is not made, the closest approach to it in the whole of the Punjab being the gold and silk-weaving of Multán and Bahawalpur, and the gold and silk belt-weaving on a stout warp of Amritsar. According to Mr. Stogdon, C.S., who furnished some valuable and trustworthy notes on the gold and silver wire industries of Delhi to the Report of the Internal Trade of the Punjab, 1881-82, it is calculated that about 50,000 souls are employed here in this and its kindred trades, and that about 327,950 miles of silver and silver-gilt wire are annually produced. Much of this is used for covering silk thread with silver or gold, when it is called white or yellow *kalabatún*. The purity of the metals used, which in former times, especially at Lahore, was the subject of stringent regulation and surveillance both on the part of Governments and the guilds of wire-drawers, is now necessarily left to the exigencies of a trade in which cheapness is yearly growing a more essential condition. A sort of assay, however, is consequent on the demand of the Municipality for octroi duty. Mr. Stogdon thus describes this part of the business: "The Municipal Committee have established an octroi station in Delhi. To this station the *byopáris* bring their raw material to be melted down, and the amount of duty payable by them depends on the quality of the ingot they intend to turn out. The scale is as follows: Gold *kandala*, Re. 1-8 per ingot of 75 *tolas*; silver *kandala*, Re. 1-4 ditto; sham gold, 8 annas per ingot of 75 *tolas*; ditto silver, 4 annas; *kandala mel* (half silver half copper) 12 annas per ingot; silver wire, three pie per *tola*. The *byopári* presents his silver and copper to be weighed, and on payment of the duty a receipt is granted to him. He then takes his metal into the station and melts it down in an earthern crucible, called *kathála*, in one of the numerous compartments set aside for the purpose. From the crucible he pours it into an iron mould called *reya*. The bar or ingot of silver and copper when thus melted down is called *gulli*. If it is intended to work gold leaf into it, it is about 8 inches long by 1¼ inches square. The *gulli* is then made over to the *kandala kash*."

It is scarcely worth while here to follow Mr. Stogdon or Mr. Baden-Powell, through a careful description of the processes by which this ingot is first gilded and subsequently drawn into wire. The chief difference between wire-drawing in England and India lies after all in the lack of machinery in the latter country. There is, however, wonderful delicacy of hand, and skill that can only be attained by long years of practice in some of the processes. The flattening of a row of slender wires with a hammer as they are drawn over a tiny steel anvil, into minute ribbons of equal width, is one of those feats of manual dexterity, the exceeding skilfulness of which a bystander can only realise by an attempt to imitate it. Similarly nothing can look easier than the covering of thread with these minute ribbons. The thread hangs from a hook in the ceiling and is wound on an iron spindle. The workman gives the spindle a quick twirling motion by passing it rapidly under the palm of his hand over a sort of greave that covers his thigh; while the thread is rapidly spinning, the gilt wire is applied. The workman's hand, accompanied by a glistening streak of gold, travels rapidly upwards with

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no apparent effort, but it leaves the thread perfectly covered with gold evenly coiled; no silk showing and no uneven overlapping. The exceeding tenuity to which gilded silver can be drawn out and yet retain an unbroken surface of gold has been continually dwelt upon in all accounts of wire-drawing. It does not pay to draw out tinsel so fine. Silver unfortunately will bear the admixture of a considerable quantity of copper without losing colour to ordinary eyes; and Delhi *kalabatún* contains often more copper than the purchaser bargained for. The various qualities of gold thread are discriminated at a glance with perfect accuracy by experts. I have often failed to assort a series of skins according to their value—a task which is easy to any gold embroiderer. It is evident from a tradition mentioned in Mr. Griffiths' catalogue of Bombay contributions to the Calcutta International Exhibition, 1884, that the manufacture of gold thread is of some standing. Mr. Griffiths writes: "Ahmedábád and Surat workers state that their ancestors came from Chámpáner, and that the craft was originally carried on by Musalmáns at Dehli and Agra, under the patronage of the Mughal Government. A tradition is current that a goldsmith from Chámpáner went to Delhi and happened to see gold and silver thread, and wanted to learn the art, but could get no information. Feigning blindness he got himself employment as a cooly to hammer the bars of silver. There he learned the art of gilding and drawing wire to the required thinness. He afterwards opened a workshop in his native town, whence the process was carried to Ahmadábád, Paithan in the Nizam's territory, Surat, Yeola, Poona, and Bombay." This story is told, *mutatis mutandis*, of nearly every skilled handicraft in existence, but it seems to show that the art was unknown in the rich Hindu region of Guzerat.

The gold thread work of Gulburga further south was also Muhammadan. So it appears likely that the early Hindu civilization, concerning the splendours of which so much has been written, was innocent of golden tissues.

Embroidery on leather for shoes has been mentioned as one of the uses to which gilt thread is put. But this is only one of many uses. As gold thread is not easily worked on the needle, it is usually laid on the surface of the cloths to be ornamented and tacked down at intervals with a stitch of silk through the fabric. To do this conveniently so that one hand is free to pass the reel on which the gilt thread is wound, while the other stitches it down, a frame is necessary; hence gold embroidery is called *kárchob*, frame work. But this name seems to be used to distinguish more particularly the large embossed work familiar in State elephant *jhools*, *masnads* and the like. The finest examples of this work must be sought for in native States and in European museums, and it is but seldom that large and important pieces are now wrought. In cases where the whole of the field is to be covered with gold work, a stout cotton cloth is stretched on the frame. On this the design is drawn by the *naqqásh*, and the parts to be raised are worked over with thick, soft cotton, dyed yellow, passed on the surface from a reel, and stitched down at each passing with ordinary sewing thread. The centre veins of leaves and other forms are marked with stitching, and a kind of modelled surface is thus produced in thick cotton thread. Over these forms the gold and silver thread is laid, their lines following sometimes those of the cotton underlay and sometimes going in opposite directions. For the grounds, varieties of basket-work and herring-bone stitches are adopted; spangles and lines of twisted wire *sulma* are introduced to mark and relieve the leading lines of the pattern. Several men work at once on these fabrics, and they are not so long in execution as this description may seem to indicate. The sheen of the gold threads interlaced in different directions as they cross over raised surfaces,

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produces a brilliant and in large pieces a splendid effect. In cases where coloured silk velvet is bordered with raised gold embroidery of this kind, the velvet is sewn on strong cotton cloth, and during the work the parts to be left plain are kept carefully covered up. In the same way caps, cushions, tea cosies and other trifles are wrought; but as relief is not always necessary as in large throne cloths, elephant housings and the like, the forms are not always embossed in cotton.

A pretty variety of gold embroidery which has become popular of late years is called *mina* work, because of a slight resemblance to *cloisonné* enamel. The outlines of foliage are done in gilt thread, but the leaves and flowers in brightly coloured silk. On a suitable ground this work is very charming. Table covers, panels for screens, mantel-piece borders and ornaments for brackets seem to be the favourite objects. It must be admitted that Bombay and Sindh run Delhi pretty close in *bharat kám* (filled in work), as they call *karchob*; but the largest Bombay-maker, Daudbhay in the Kalbadevi road, "employs a large number of workmen who are principally from Delhi." Since the world of fashion has decreed that gold and silver embroidery, for many years considered theatrical and pretentious, is only picturesque and beautiful, some excellent work has been produced for ladies' dresses. The shapes of these change so quickly in the western world, however, that the Delhi artizan has scarcely completed a skirt or a dress front when it is hopelessly out of fashion and useless.

Strange forms of bygone periods are still adhered to, such as the *burnous* opera-cloak and loosely-fitting jackets with open sleeves. Borders and trimmings it is being discovered are a safer field for the exercise of the art. A very dainty sort of embroidery is worked on net, and in this case the gold thread is not passed but run through. Gold sprays are also wrought on white muslin *jamdáni*, with an effect similar to that of the well known Lucknow work.

The variety of embroidered caps worked for the better classes of natives in real gold and silk, and for those of lower degree in tinsel, is beyond enumeration. Many shops are devoted exclusively to the sale of caps. Nautch-women's dresses are often triumphs of gaudy and gilded broidery. Weddings consume a large amount of finery, and on holidays and at fairs gilt lace, real or false, makes all the children gay.

A large quantity of gold and silver thread is used by the *nechabands* in the manufacture of *hooka* snakes and pipes. This is prettily variegated with coloured silk, and no small skill and neatness are displayed in their plaiting. The *patua* or *patoti* makers work up a great deal in stringing necklaces, head ornaments and bracelets together, the ties being usually in gilt thread. In the *parándas* or queue terminations for the three long tails of hair affected by native ladies, pretty combinations of gilt thread with brightly coloured silk are produced. The *paránda* is also frequently made in embossed silver. The tassels of the *azárband*, the universally worn *pajama* string of silk, are frequently costly arrangements in *kalabatún*, which is also worked into a great variety of fringes for decorative purposes. Some of this is wrought on a tiny loom, the heddles of which are perforated cards that can be grasped and turned in one hand. One sort of fringe of flattened gilt wire is worked weft-wise in a miniature loom into a warp of silk, beyond which the loops of wire are carried and secured round an iron L-shaped hook attached to the weaver's waist. When the loop is full the wires are released and cut open. A loose fringe of glistening gold is thus bordered by a woven hem of silk. There is no end to the variety of braiding and edging made. The invariable practice seems to be to braid by hand, holding the card taut to an iron hook on a small standard fixed on a

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pedestal, which is very frequently the richly carved base of one of the enriched pillars common in the old buildings of Delhi.

Gold lace proper is not now, Mr. Stogdon writes, so much used as before the Mutiny. "At present Husain Bakhsh and his son Aziz Bakhsh are the only manufacturers in Delhi." The machine used is an exceedingly neat contrivance, an elaborate loom in miniature, the heddle strings converging to a sort of pedal board, like that of an organ on a minute scale. The great toe, which in the native foot is flexible and free in movement, picks out and depresses each heddle in turn with unerring precision. This quadrumanous facility of grasp is of the greatest use in silk-winding, braiding, and gilt cord-making, the great toe being constantly used to hold the work.

Silk embroidery.

Silk embroidery is of several kinds. A long loose stitch in white filoselle, worked in pine or other forms on grey, blue, and other colours of Cashmere (English), is one of the commonest. Shawls and articles of female attire are the usual forms, but it is not now fashionable. The woollen fabrics of Cashmere and Amritsar are also decorated with silk embroidery. This is frame work in all cases. Satin of European make is coming into increased use for silk embroidery, and some of the recent patterns, notably one counterfeiting the markings in peacocks' feathers, are brilliant and effective. As a rule, however, it can scarcely be said that this gay and attractive work is good or even tolerable art when judged by any serious standard. There seems to be a touch of flimsiness in most Delhi work, and this characteristic is not likely to be cured by the determination of the public on one hand to pay cheap prices and of the dealer on the other to secure large profits.

Tinsel printing.

Some cotton-printing is done of no remarkable quality. Silver tinsel-printing on Turkey red muslin, *salu*, is made in quantities for weddings, &c., but it is inferior to that of Kangra and Rohtak.

Delhi-painting.

The miniature painting of Delhi has grown from the practice of illuminating costly M.S. books, introduced from Persia, and greatly in favour at the Mughal court in its palmy days. The names of calligraphers of the 18th century still survive in Persia, though little remains that can be confidently attributed to them. During the 16th and 17th centuries the art, which from the manner of its growth and fostering, as well as from the costly splendour of its finest examples, has some right to be called a Royal one, flourished in India. The catholic spirit that led the great Akbar to have Sanscrit epics translated into Persian, inclined him to look favourably on the limner's art, though it is opposed to Muhammadan religious canons. Abul Fazl in the *Ain-i-Akbari* makes the monarch say :—"There are many that hate painting, but such men I dislike. It appears to me as if a painter had quite peculiar means of recognising God ; for in sketching anything that has life, and in devising its limbs one after the other, he must come to feel that he cannot bestow individuality upon his work, and is forced to think of God, the only giver of life, and will thus increase in knowledge."

The courtly author may be responsible for the form of this utterance, but there can be no doubt about the spirit in which the Emperor regarded the liberal arts. It is true that there are no representations of living figures in Muhammadan architecture, excepting in the altogether abnormal pottery decorations of the north front of Lahore Fort ; but it is clear that the portrait limner was encouraged in the practice of his art. There is scarcely an art collection in existence that does not include examples of Perso-Indian pictures. Mr. W. W. Hunter writes : "The Royal Library at Windsor contains the finest examples in this bye-path of art. A noble manuscript of the Sháh Jahán Nameh, purchased in Oudh for £1,200 in the last century, and now in possession of Her Majesty, will amply repay a visit." The

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house of Firmin Didot of Paris, however, possessed perhaps the largest and most complete collection of "examples of this bye-path" which is in fact a broad highway, leading, as has been demonstrated in Europe, to the highest achievements of pictorial art. M. Ambroise, Firmin Didot, and M. P. Barty exhibited in the retrospective department of the Paris Exhibition of 1878, works which it would now be difficult to match in Persia or India. Recently several leaves of a superb Shah Nameh, each leaf a picture full of most elaborate and perfectly wrought detail, have been acquired for the South Kensington Museum by Mr. Purden Clarke. These pictures contain a complete exposition of the architectural forms of Samarcand and Persia. Many similar treasures are still in the possession of native Princes and others belong to wealthy families. The production of such work, notwithstanding its minuteness and finish, must have been immense; for Albert de Mandelso records that Akbar was credited with the possession of 24,000 manuscripts richly bound. Many of these, as invariably in the case of the Kuran, were probably M.S. illuminated with ornaments merely in gold and colour. But many contained pictures, and one in the Lahore Museum marked as having belonged to Akbar seems to have been an exposition of the miracles in the Bible. In later times an English traveller speaks of the Delhi artists as excelling in licentious subjects, a line that is followed in secret to this day.

There is no record of the introduction of the practice of painting on ivory. This was probably modern, and imitated from the miniatures which with our grandfathers took the place of the photograph of to-day. It is known that an English miniaturist, one of the earliest members of the Royal Academy, and a contemporary of Sir Joshua Reynolds—Mr. Ozias Humfrey—spent some years in India, and it is not unlikely that his work was copied. This is only a surmise, but it is certain that the material used in the older work was invariably fine grey paper, like that known as Cashmere paper. The "manner" of the modern Delhi miniature, excepting when it is copied from a photograph, is identical with that of the old portfolio picture or the book illumination. Water colour alone is used, and the head is drawn full front (*do chashm*,) two-eyed, or in profile (*yek chashm*) one-eyed. There is, it need scarcely be remarked, no indigenous oil-painting of any kind throughout the country.

There are "Delhi painters" in Calcutta and Bombay, and a large amount of work is annually sold. Pictures of the chief public buildings of Northern India are used to embellish carved ebony cabinets. Others of small size are set in gold and sold as jewelry. Books and frames filled with a series of portraits of the Mughal dynasties are favourite subjects. Akbar II in *durbar* is frequently repeated, with a British officer who keeps his cocked hat on in the royal presence. The beauties of the court are also drawn, and it is noticeable that the Persian artist (those of Delhi claim Persian descent) paints the light-coloured Persian complexion and ignores the dusky hues of India. An exception is made in favour of Ranjit Singh, who is always represented as very dark. Sketches are extant which show that in former times the Delhi artists sketched from nature, but by dint of repeating the same heads over and over again, the features naturally become conventionalized and exaggerated, so that peculiarities like Aiamgir's long nose and Nur Mahal's round face are at once recognisable. In the same way in the early days of "*Punch*," before the multiplication of photographs put so many authentic studies from nature in the hands of the artist, familiar types were drawn and redrawn, until Lords Brougham, Derby and Disraeli were indicated with a very few strokes. A characteristic of all Indian

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work is that the craftsman learns to do one thing, and then goes on doing it for the rest of his life. The Delhi draughtsmen many years ago learnt how to draw English gentlemen and ladies and English soldiers, and to-day when left to himself the *naqqásh* shows English people in the costume of sixty years ago. The lady, even in pictures of a railway station, wears a huge poke bonnet, large gigot sleeves, her waist is just under her arm, her skirts are short and tied sandals are on her feet. The British officer invariably wears a cocked hat and a high cravat, while the private soldier is crowned by the tall infantry shako with a large round knob atop; a head dress, by the way, which copied from our troops, is still worn by the retinues of some native princes.

The introduction of photography is gradually bringing about a change in Delhi miniatures. The artists are ready to reproduce in colour any portrait that may be given to them; and, although sometimes the hardness of definition and a certain inky quality of the shadows of some photographs are intensified, much of their work in this line is admirable. The stiffness which used to be their unfailing characteristic is disappearing; landscape, a branch of art treated in indigenous art with stern conventionality, is attempted in a freer spirit, and it seems not unlikely that a new and perhaps more fresh and vital way of looking at nature may be adopted. Supposing this change to be desirable, a point that is not absolutely certain, the Delhi work of to-day is strongly marked by the faults of its qualities—the excessive delicacy and minuteness of handling, well expressed by their customary phrase, *ek bál qalm*, a brush of a single hair, the quality of the handling being far more esteemed than sound drawing, good colour, or truth of effect.

The ivory used for miniatures is prepared in the city, and the mounts, said to be of Aleppo glass, are also cut, rounded and polished here.

Course and nature of trade.

There are no statistics available for the general trade of the district, though the total value of the imports and exports of the Municipality of Delhi for the last few years and a brief notice of the trade of the city will be found in Chapter VI, and Table No. XXV gives particulars of the river traffic that passes through the district. The exports and imports of food-grains have already been noticed at page 121. The trade of the district as a whole practically coincides with that of the city, its great central emporium, and cannot usefully be brought under separate description.

SECTION C.—PRICES, WEIGHTS AND MEASURES, AND COMMUNICATIONS.

Prices, wages, rent-rates, interest.

Table No. XXVI gives the retail bazar prices of commodities for the last twenty years. The wages of labour are shown in Table No. XXVII, and rent rates in Table No. XXI; but both sets of figures are probably of doubtful value. The Table at pages 139-40 shows the village prices for the last twenty years, as ascertained at the recent Settlement, together with the rates assumed for assessment purposes.

Statement of average prices in Delhi district.

	Crop.	First five years ending 1858-59.				Second five years ending 1863-64.				Third five years ending 1868-69.			
		Ballabgarh.	Delhi.	Sunipat.	Total.	Ballabgarh.	Delhi.	Sunipat.	Total.	Ballabgarh.	Delhi.	Sunipat.	Total.
		M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.
1	Cotton, uncleaned ...	.....	0 19 12	0 15 10	0 17 11	.....	0 13 8	0 11 8	0 12 6	.....	0 8 14	0 9 1	0 8 15
2	Vegetables	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Chillies	.....	.....	1 16 10	1 16 10	.....	.....	1 0 16	1 0 16	.....	.....	1 0 9	1 0 9
4	Melons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Methi	.....	.....	.....	.....	.....	.....	0 26 12	0 26 12	.....	.....	0 28 10	0 28 10
6	Ajwain, Dhania ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Tobacco	.....	.....	0 12 14	0 13 14	.....	.....	0 15 0	0 15 0	.....	.....	0 13 0	0 13 0
8	Molasses (Gúr) ...	0 18 12	0 22 0	.....	0 20 11	0 11 2	0 15 0	0 15 8	0 14 1	0 12 15	0 14 0	0 15 1	0 13 11
9	Onions	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Safflower	.....	0 3 0	.....	0 3 0	.....	0 2 8	.....	0 2 8	.....	0 3 0	.....	0 3 0
11	Indigo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Wheat	0 37 2	0 38 11	1 1 9	0 39 2	0 26 12	0 25 7	0 27 15	0 26 11	0 24 1	0 21 8	0 24 2	0 23 2
13	Gram	1 3 5	1 13 2	1 9 11	1 12 1	0 34 7	0 34 0	0 33 14	0 30 12	0 30 4	0 26 10	0 30 3	0 29 0
14	Wheat and Gram ...	.....	1 1 5	.....	1 1 5	.....	0 30 6	1 5 0	0 37 11	.....	0 22 15	0 26 1	0 24 8
15	Wheat and Barley ...	.....	1 2 11	.....	1 2 11	.....	0 21 13	.....	0 31 13	.....	0 25 14	.....	0 26 14
16	Sarson	0 25 14	0 27 3	0 28 12	0 26 10	0 19 11	0 18 6	0 20 2	0 19 12	0 20 10	0 19 14	0 20 4	0 20 4
17	Rice (Dhan) ...	.....	.....	1 2 6	1 3 6	.....	.....	0 29 9	0 29 9	.....	.....	0 25 5	0 25 5
18	Jowár	1 7 2	1 10 13	1 10 7	1 12 7	0 38 10	0 32 13	0 30 5	0 33 14	0 33 3	0 29 2	0 30 12	0 31 0
19	Indian corn	1 9 12	1 15 2	1 6 12	1 10 8	1 1 13	0 32 14	0 30 13	0 37 3	0 32 11	0 30 15	0 34 10	0 32 12
20	Tarab	0 33 14	0 34 9	0 35 0	0 31 2	0 25 14	0 21 8	.....	0 23 11	0 27 16	0 23 10	.....	0 26 13
21	Barley	1 14 4	1 14 10	1 19 10	1 16 3	1 0 6	0 33 6	0 34 4	0 37 11	0 32 7	0 30 11	0 35 10	0 33 16
22	Barley and Gram ...	1 9 2	1 9 7	.....	1 9 4	0 38 4	0 36 15	.....	0 37 10	0 31 15	0 29 7	.....	0 30 11
23	Bájra	1 4 13	1 8 6	1 5 6	1 6 3	0 37 8	0 31 3	0 27 13	0 33 2	0 30 5	0 23 15	0 26 15	0 28 6
24	Til	0 20 4	0 26 3	0 16 0	0 19 14	0 16 8	0 13 6	0 14 12	0 14 14	0 16 16	0 12 10	.....	0 14 13
25	Mash	1 1 11	1 5 11	1 6 14	1 4 12	0 33 15	0 24 6	0 22 3	0 26 13	0 26 9	0 16 2	0 18 5	0 20 0
26	Masur	.....	0 30 14	.....	0 30 14	.....	0 25 2	.....	0 25 2	.....	0 21 8	.....	0 21 8
27	Hemp	.....	0 20 0	0 21 0	0 20 8	.....	0 14 8	.....	0 14 8	.....	0 1. 2	0 17 8	0 14 9
28	Chari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Jowár	.....	1 24 3	.....	1 24 3	.....	1 4 0	.....	1 4 0	.....	0 37 10	1 3 0	1 0 5
30	Lobia	.....	1 19 10	.....	1 19 10	.....	1 1 13	.....	1 1 13	.....	0 29 13	.....	0 29 13
31	Italian Millet (Kangni)	.....	0 29 4	.....	0 29 4	.....	0 20 6	.....	0 20 6	.....	0 22 12	.....	0 22 12
32	Moth ...	1 7 14	1 12 3	1 6 8	1 8 8	0 36 0	0 32 11	0 31 0	0 33 4	0 30 7	0 24 6	0 34 8	0 29 12
33	Arhar	.....	1 0 10	.....	1 0 10	.....	0 28 1	.....	0 28 1	.....	0 23 14	.....	0 23 14
34	Mung	1 7 5	1 10 12	1 15 6	1 11 2	0 30 7	0 24 13	0 22 4	0 25 13	0 27 9	0 19 12	0 25 2	0 24 2
35	Peas (Mater) ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Mandwa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Statement of average prices in Delhi district.—(Continued.)

	Crop.	Fourth five years ending 1873-74.				Of 20 years.				Value assumed for assessment purposes.			
		Ballabgarh.	Delhi.	Sunipat.	Total.	Ballabgarh	Delhi.	Sunipat.	Total.	Ballabgarh	Delhi.	Sunipat.	Total.
		M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.	M. S. C.
1	Cotton, uncleaned ...	.....	0 10 4	0 9 11	0 10 0	0 12 2	0 13 0	0 10 11	0 11 12	0 12 2	0 13 0	0 11 0	0 12 0
2	Vegetables	.....	.....	.....	.....	2 20 0	2 0 0	2 20 0	2 13 5	2 20 0	2 0 0	2 20 0	2 13 5
3	Chillies	.....	.....	1 8 13	1 8 13	0 32 0	1 0 0	1 8 9	1 0 3	0 32 0	1 0 0	1 9 0	1 0 5
4	Melons	.....	.....	.....	.....	3 0 0	3 0 0	2 20 0	2 33 5	3 0 0	3 0 0	3 0 0	3 0 3
5	Methi	.....	.....	0 26 8	0 26 8	.....	.....	0 27 2	0 27 2	.....	.....	0 27 0	0 27 0
6	Ajwain, Dhania ...	.....	.....	.....	.....	0 12 6	0 13 0	0 14 0	0 13 13	0 12 6	0 13 0	0 14 0	0 13 13
7	Tobacco	.....	.....	0 15 0	0 15 0	0 29 1	0 32 0	0 14 4	0 14 4	0 29 1	0 32 0	0 15 0	0 15 0
8	Molasses (Gur) ...	0 6 7	0 13 0	0 14 8	0 12 0	0 12 3	0 16 0	0 10 15	0 1 1	0 12 3	0 16 0	0 17 0	0 15 1
9	Onions	.....	.....	.....	.....	4 0 0	4 0 0	4 0 0	4 0 0	4 0 0	4 0 0	4 0 0	4 0 0
10	Safflower	.....	0 2 14	.....	0 2 14	0 3 12	0 2 14	0 2 12	0 3 2	0 3 12	0 2 14	0 3 0	0 3 8
11	Indigo	.....	.....	.....	.....	.....	.....	0 15 0	0 16 0	.....	.....	0 16 0	0 16 0
12	Wheat	0 18 14	0 20 9	0 22 4	1 20 9	0 29 11	0 26 8	0 36 13	0 27 5	0 27 0	0 27 0	0 29 0	0 27 11
13	Gram	0 18 10	0 24 2	0 23 4	0 23 0	0 31 10	0 34 7	0 36 12	0 34 4	0 32 0	0 34 0	0 37 0	0 34 5
14	Wheat and Gram ...	.....	0 25 4	0 33 11	0 29 3	0 29 3	0 30 0	0 31 5	0 30 3	0 29 0	0 30 0	0 31 0	0 30 0
15	Wheat and Barley ...	.....	0 27 8	.....	0 27 8	0 33 2	0 33 0	.....	0 32 8	0 33 0	0 32 0	0 33 0	0 32 11
16	Sarson	0 12 14	0 14 7	0 15 15	0 14 8	0 19 12	0 19 8	0 20 9	0 19 15	0 20 0	0 20 0	0 21 0	0 20 5
17	Rice (Uhan)	.....	.....	0 27 6	0 27 6	0 29 9	1 0 0	0 30 10	0 38 12	1 0 0	1 0 0	0 31 0	0 37 0
18	Jowár	0 27 3	0 29 4	0 26 4	0 27 4	0 36 9	0 35 8	0 34 9	0 35 9	0 37 0	0 36 0	0 36 0	0 36 0
19	Indian corn	0 27 4	0 29 4	0 28 14	0 27 13	0 37 14	0 37 1	0 35 3	0 36 11	0 38 0	0 37 0	0 36 0	0 36 11
20	Tarah	0 15 13	0 19 18	0 24 6	0 19 14	0 24 10	0 25 6	0 24 8	0 25 2	0 26 0	0 26 0	0 25 0	0 25 5
21	Barley	0 25 4	0 31 5	0 27 15	0 29 4	0 39 9	0 38 13	0 38 1	0 38 13	1 0 0	0 39 0	0 38 0	0 39 0
22	Barley and Gram ...	0 24 3	0 30 14	.....	0 27 9	0 35 16	0 36 11	0 37 0	0 36 8	0 36 0	0 37 0	0 37 0	0 36 11
23	Bájra	0 24 4	0 29 10	0 23 13	0 25 14	0 34 2	0 35 1	0 29 7	0 32 14	0 34 0	0 35 0	0 30 0	0 33 0
24	Til	0 11 4	0 10 6	0 10 3	0 12 6	0 16 0	0 16 3	0 15 5	0 16 8	0 19 0	0 15 0	0 15 0	0 15 5
25	Mash	0 19 13	0 21 1	0 18 9	0 19 13	0 30 4	0 27 5	0 27 5	0 28 5	0 30 0	0 27 0	0 27 0	0 28 0
26	Moth	.....	0 19 11	.....	0 19 11	0 39 9	0 24 2	0 30 0	0 31 4	1 0 0	0 24 0	0 30 0	0 31 5
27	Hemp	.....	0 10 12	.....	0 10 12	0 16 0	0 14 2	0 19 13	0 16 10	0 16 0	0 14 0	0 20 0	0 16 11
28	Gharí	.....	.....	.....	.....	5 0 13	5 0 0	.....	5 0 7	5 0 13	5 0 0	.....	5 0 0
29	Jowár	.....	1 1 2	0 39 6	1 0 4	1 8 0	1 6 12	1 0 0	1 4 15	1 8 0	1 7 0	1 0 0	1 6 7
30	Lobia	.....	0 31 15	.....	0 32 16	0 31 7	1 1 1	.....	0 36 4	0 31 0	1 1 0	0 30 0	0 34 0
31	Italian Millet (Kangni) ..	.....	0 20 9	.....	0 20 9	.....	0 23 4	0 30 0	0 28 10	.....	0 33 0	0 30 0	0 26 0
32	Moth	0 22 8	0 26 0	0 24 12	0 27 14	0 34 2	0 33 13	0 32 6	0 33 17	0 34 0	0 34 0	0 32 0	0 33 9
33	Arhar	.....	0 24 8	.....	0 24 8	0 31 7	0 29 0	.....	0 30 3	0 31 0	0 29 0	.....	0 30 5
34	Mung	0 20 7	0 24 11	0 22 5	0 22 15	0 31 7	0 30 0	0 29 10	0 30 6	0 31 0	0 30 0	0 30 0	0 30 0
35	Peas (Matar) ...	.....	.....	.....	.....	0 39 9	1 0 0	1 0 0	0 38 14	1 0 0	1 0 0	1 0 0	1 0 5
36	Mandwa	.....	.....	.....	.....	.....	.....	0 38 0	0 38 0	.....	.....	0 38 0	0 38 0