MONOGRAPH

ON THE

GOLD AND SILVER WORKS

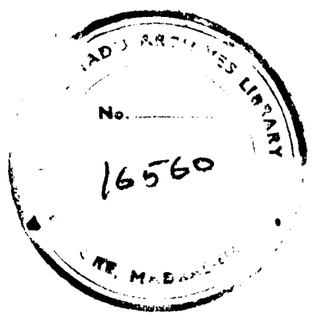
OF THE

PUNJAB.

1888-89.

Published by Authority.

Lahore:
THE CIVIL AND MILITARY GAZETTE PRESS,
Contractors to the Punjab Government.
1890.



No. 787.

FROM

R. G. THOMSON, ESQUIRE,
Offg. Revenue Secretary to Government,
Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO FINANCIAL COMMISSIONER, PUNJAB.

Dated 18th December 1890.

Revenue and Agriculture.
General.

SIR,

I AM directed to acknowledge the receipt of your letter No. 762, dated 13th November 1890, submitting a monograph on the gold and silver works of the Punjab compiled by Mr. E. D. Maclagan, C.S., together with the Financial Commissioner's review of the same.

2. In reply, I am to say that the Lieutenant-Governor agrees with Mr. Elsmie that Mr. Maclagan has carried out the task entrusted to him with much success, and that he has merited the acknowledgments of Government.

I have, &c.,

R. G. THOMSON,
Offg. Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—20-12-90—.560

No. 762—7230.

FINANCIAL COMMISSIONER'S OFFICE, PUNJAB.

LAHORE, *dated* 13*th November* 1890.

From

D. C. JOHNSTONE, ESQUIRE,

Offg. Junior Secretary to Financial Commissioner, Punjab,

To

R. G. THOMSON, ESQUIRE, C.S.

Offg. Revenue Secretary to Government, Punjab.

SIR,

I am directed to forward five copies of a Monograph on Gold and Silver Work in the Punjab, compiled by Mr. E. D. Maclagan, C.S., from district reports, corrected and amplified by personal investigation. The Monograph is, in Mr. Elsmie's opinion, very interesting, and contains much useful information. The illustrations appended to it have been prepared under the supervision of the Principal, Mayo School of Art, Lahore, and they add, in the Financial Commissioner's opinion, to the interest and value of the publication.

2. Mr. Elsmie, I am to say, trusts that His Honor the Lieutenant-Governor will agree with him in thinking that Mr. Maclagan has carried out the task entrusted to him with much success, and has fully merited the thanks of Government. The instructions issued by this office will be found in Financial Commissioner's Circulars Nos. 20 and 51 of 1889. For reasons to be explained later there are difficulties in the way of making such monographs really full and exhaustive; but Mr. Maclagan has, in Mr. Elsmie's opinion, made excellent use of the materials at his disposal.

Silver supply.

3. He first states the sources of supply of the precious metals. None of the silver used is, it would appear, found in the Province. The supply is made up of (*a*) Chinese silver imported *vid* Bombay in slabs of considerable size; (*b*) bar-silver, known as *kurs*, or bread-loaf silver, imported from Europe; (*c*) Yárkandi and Bokháran *kurs;* (*d*) silver imported from Bombay and known as *háthipaur* silver; (*e*) melted coins, the best being (in order) the *Nánakshái* rupees, the *Nandrámi* rupees, and the British rupees; (*f*) silver from melted ornaments.

Gold supply.

4. In para. 2 Mr. Maclagan states the names of the places in the Punjab where gold is found, and describes the manner in which gold is obtained. This source of supply is unimportant. Gold also comes from Europe and Australia in ingots, and in leaves (*panna, patra*) from China. Gold leaves are also made from old coins, of which a great quantity appears to be utilized for jewellery; Russian gold in the shape of five-rouble pieces is largely imported; and Yárkandi and Bokháran gold dust also finds a market in the Punjab.

Imports of gold and silver.

5. The annual imports of gold and silver into the Province generally must be very large, but no attempt is made to estimate them. Delhi alone is said to import a crore of rupees of the two metals annually. It is said also that the bulk of the imports pass through Delhi, Amritsar, Lahore and Pesháwar.

The *sráf* and the *sunár.*

6. The *sráf* is in the Punjab the capitalist holder of gold and silver, and the *sunár* (or artizan goldsmith) is ordinarily merely a workman who is supplied either by a *sráf* or by his customers with the metal to be worked up. The observations in paragraphs 10 and 11 regarding the *sunárs* as a caste and their character are, the Financial Commissioner thinks, interesting. The *sunár*, Mr. Maclagan says, is not appreciated by his customers: he is inhospitable, has no sympathies, and is nobody's

friend. He is generally "known to the police," and he has a reputation for inveterate dishonesty. His business is by no means a paying one; and the general effect upon it of the 40 years of British rule is thus described by Mr. Maclagan:—

"We have therefore a decrease in the merely ostentations class of works: "an increase but a concentration of the better forms of ornament industry, and "a large development of the simplest and coarsest kinds. As regards the "*sunárs* as a class the effect has been generally beneficial."

Goldsmiths' weights, &c., and assaying and purification of gold and silver.

7. The goldsmiths' weights and instruments are carefully described in paras. 14 and 15, and in para. 16 the modes of testing the precious metals are explained. The various ways in which gold and silver are commonly purified are set forth in para. 16.

Ornament making, &c.

8. Metal of the required purity having been obtained the *sunár* proceeds to make the ornament. In villages the ordinary *sunár* will do the chasing and embossing and setting of stones himself; but in towns there are separate classes of workmen for these different processes. In para. 19 Mr. Maclagan describes in considerable detail the manufacture of each of the most common ornaments; and then proceeds to the subject of the making of gold and silver wire, lace, thread, ribbon and so forth. Gold inlaying has ceased at Mooltan, and is declining elsewhere, except, it is said, in Gujrat city. The electro-plating industry seems not very important at present, though a hand-book describing the processes was lately published at Delhi.

Enumeration of Punjab ornaments, &c.

9. Mr. Maclagan's description of the various ornaments contains much useful detail. The Financial Commissioner has read with interest the observations regarding the religious scruples of the people as to wearing or not wearing ornaments. The social aspect of the matter of ornament-wearing is discussed in the closing para. of the Monograph. The wealth of the Province in jewellery must be very considerable indeed, and there is every reason to believe that it is increasing steadily at present; though it is possible, as Mr. Maclagan remarks, that the spread of English education, and anything that may in the future give a very decided impetus to commercial enterprize, will effect a change of habits.

District Reports.

10. As usual the treatment of the subject by the officers who have written the District Reports has been very unequal. In Mr. Maclagan's opinion the best reports are by—

Lála Múlráj, Extra Assistant Commissioner, Lahore;

Lála Jowála Pershád, Officiating Extra Assistant Commissioner, Dera Ismail Khan;

Mr. R. P. Warburton, Officiating Extra Assistant Commissioner, Hissár;

Lála Chuni Lál, Extra Assistant Commissioner, Kángra;

Mr. A. H. Diack, C.S., Kulu;

Maulavi Zia-ud-dín, Extra Assistant Commissioner, Delhi, has prepared a very full report; and that prepared in the Jhang District Office shows care and industry.

As an instance of the inequality of treatment alluded to above, I am to remark that the Dera Ismail Khan Report covers 168 pages of foolscap, while that from Dera Gházi Khan is contained on one side of a sheet of paper. It is partly owing to this cause, and partly owing to the non-receipt—up to five months after due date—of the Karnál Report, that Mr. Maclagan has found difficulty in giving statistical figures such as those embodied in the monographs of the last two years.

I have, &c.,

D. C. JOHNSTONE,

Offg. Jenior Secretary to Finl. Commr., Punjab.

TABLE OF CONTENTS.

Monograph on the Gold and Silver Works of the Punjab, 1888-89.

MONOGRAPH

ON THE

GOLD AND SILVER WORK

OF THE

PUNJAB.

---

1. Scope of the following sketch.—The following account of the Gold and Silver Work of the Punjab is compiled from District Reports submitted to the Financial Commissioner in reply to a call for information. The main defects under which it labours are a want of comprehensiveness of treatment and an absence of personal information on the part of the Compiler. Meantime I would premise that where certain facts are stated in the following pages as true for certain districts, this does not necessarily imply that they are not true for other districts also, but merely that information is forthcoming regarding certain districts only. Further, I have avoided as far as possible the repetition of information already accessible in Mr. Baden-Powell's "*Punjab Products*" and "*Punjab Manufactures*," and Mr. Kipling's notes in the *District Gazetteers*. I would also premise that the word "Goldsmith" in the following pages stands generally for a Silversmith as well. Further, that the monograph does not deal with the craft as practised in Native States, nor does it treat, except incidentally, of work in precious stones. And lastly, that it does not deal with jewellery as made for European customers. A few plates have been attached to the monograph, but further illustrations will be found in Mr. Baden-Powell's "*Punjab Manufactures*" and in the Appendix to Captain Davies's Shahpur Settlement Report.

2. Gold and Silver found in the Province.*—The only native silver traced in the Province is that of the Wazíri Rupi Mines in Kulu, which have not now been worked for many years.

Gold is found in small quantities in the sand of the Seeswán, Manimájra, Ghaggar and Kosulla Nadís in the Umballa District; of the Sutlej in Simla; of the Mangarwál, Dhobah, Chohal and Dadar Khads of Hoshiárpur; of the Biás in the Dera and Hamirpur Tahsíls of the Kángra District; of the Jhelum above the Gatalián ferry; of the Kahan, Kási and Bunhá "kas"-es of the Jhelum Tahsíl, the Sanj, Nalla Bunha and Kahán "kas"-es of the Chakwál Tahsíl, and of the Gabhir, Sawan and Aukar "kas"-es of the Talagang Tahsíl of the Jhelum District. Also in the sand of the Sohán, Seel and Indus Rivers of the Pindigheb and Attock Tahsíls of Ráwalpindi; in the Indus and Kábul Rivers and their tributaries in Pesháwar; and in the Indus in Hazára, Kohát and the Miánwáli Tahsíl of Bannu. In Pesháwar the extraction of gold is confined apparently to ten villages; in Kohát to the four tappás of Jabbi, Mandari, Niláb and Shakardara; and in Ráwalpindi to the sixteen villages of Attock, Kharakhel, Durmah, Mulak, Jullaba, Pindigheb, Iklas, Kambal, Kot Malior, Mari, Balah, Chapri, Oojri, Nara, Makhad and Khani.

---

* Some facts given in the official correspondence on the subject are incorporated in the following account. There is further information to be got in the Settlement Reports [Delhi paras. 26 and 204; Hoshiárpur, para. 11; Jhelum, paras. 35 and 121; Pindi (Cracroft), para. 644; Hazára, para. 20; Pesháwar, para. 12, Kohát, para. 359 and in Ball's *Economic Geology of India*]. Gopal Dás, *Tawárikh-i-Peshdwar* gives an excellent account of the whole subject for that District.

The season for working in Umballa is the three months of the rains; in Kohát, August and December to March; in Pesháwar, in early winter and in summer when the rivers are low. As to Pesháwar, however, Captain Hastings reported some years ago that the gold was washed in September and October, and again in March and April. In Jhelum the yield is said to be proportionate to the abundance of the rains.

The washing is done in Umballa by "Kahárs" called "Doolas," who work in gangs of eight and ten men, sharing the profits and independent of a capitalist. No Pesháwaris wash for gold, but all the work in Pesháwar is done by Cis-Indus Káhirs and Nyárias in parties of ten or more. In 1875 the average size of a party in Pesháwar was reported to be seven; in Kohát the average is ten to a tray.

The processes employed in the Salt Range are detailed at pages 12 and 13 of Mr. Baden-Powell's "*Punjab Products*," to which the reader is referred. In Pesháwar the sand is collected by damping the palm and applying it gently to the ground, instead of by scraping the sand out with a wooden shovel. The form of *drán* or cradle varies. In Umballa it is a large open round trough with a tube in one side; in Pindigheb it is a rectangular wooden box open at the top, with an aperture at the bottom of one of the sides; in Pesháwar (where it is called a *hawa*) it is a circular tray about six inches deep and three feet in diameter. All these are different from the Jhelum type described by Mr. Baden-Powell. In Kohát the cradle is ten feet long by two feet broad, and is said to cost Rs. 10. In Ráwalpindi the water for washing the sand is applied with a ladle called *kaswa*. The reed-sieve does not seem to be used in Pesháwar, Kohát and Umballa; nor does the *karí* or wooden platter (called "*phulli*" in Ráwalpindi) come into play for the purposes of a second washing in those districts. In Ráwalpindi the sand is transferred to the *phulli* when about a sér has been left, and mercury is applied after this has been reduced to half a sér. In Umballa mercury is applied when the mud has been reduced to a twentieth of its original weight. The amount of mercury used in Ráwalpindi is supposed to equal half the estimated weight of the gold. In Ráwalpindi too water is used to help the process of rubbing away the mud from the mercury and gold. In Pesháwar the mercury is squeezed out through the cloth without being heated; the gold being heated afterwards to strengthen it. In Ráwalpindi and Umballa the use of the cloth at all is not noticed.

The total amount of gold found in the Province is, it is hardly necessary to say, quite insignificant. The gold resulting from one washing in Pesháwar is stated to be between one and two *máshás*; and in Kángra four to five annas worth of gold dust is all that can be extracted in a day. The return for the season in Pesháwar and Kohát is said to average ten *talás* a day. The profit to be made from the industry is equally insignificant. In Umballa eight annas is the most a man can make in a day even when he is successful in finding his gold. In Pesháwar the goldwashers make from three annas to one rupee, or on an average about six annas a day, per man; but in 1875 the average was reported to be from two to four annas a day, and two annas a day is really as much as the washer expects. The river gold of Umballa is held to be first class, but that of the Indus is inferior and sells in the Pesháwar and Kohát markets for only Rs. 14 to 16 a *tolá*.

The owner of a tray on the Indus, when he is separate from the workmen, may in Pesháwar take the gold from the workmen at Rs. 2 below the Pesháwar price; in Kohát he gets Rs. 4 for each *tolá* extracted. The farmer's gross annual profits are in Kohát estimated at Rs. 40 a tray, and his net profits, after deducting advances, price of gold, etc., at Rs. 29 a tray. The proprietors of the soil too in some places in Pesháwar get Re. 1 a tray; in Zarobi they get Rs. 2, and in other villages at various rates. At Hund the Khán takes one *rati* per diem per tray. In Bannu the gold is delivered at a fixed price to a farmer, while the proprietors get a fixed proportion of the proceeds.

The Government does not tax the washings in Kángra, Hoshiárpur, Hazára, Bannu or Pesháwar. In Umballa the monopoly for the Seeswán and Manimájra is sold annually; the average return for the last three years has been Rs. 14 on the former, and Rs. 103 on the latter nadi. In the Jhelum Tahsíl cradles are assessed at Rs. 2-8-0 each; in Chakwál at Rs. 5; and in Talagang at Rs. 2-4-0 to Rs. 3. The number of cradles last year in the above three Jhelum Tahsíls was, respectively, 83, 24 and 33. In Ráwalpindi the ordinary system is for licenses to be given to the workers, the rate at Makhad being Rs. 5 a license, and in the other villages Rs. 2. The average results for the three years ending 1888 was Rs. 206. In 1889-90 the goldwashing of the Attock and Sohán was leased for Rs. 916. In Kohát Government takes Rs. 6 a tray, of which, in jágír villages, three quarters go to the jágírdár. The average yield for the last five years in Bannu is Rs. 139.

The figure reached by the Ráwalpindi licenses in 1889 is the outcome of an attempt made by European enterprize to work the goldwashings on a large scale. I understand that the works were destroyed by a flood, but the history of this attempt is entirely ignored in the report submitted from the Ráwalpindi District, and further information regarding it is wanting.

3. Different kinds of Gold.—The bulk of imported gold is *passá*, a term applied to English and also to Australian gold and to European gold generally. A "*pásá*" or "*passá*" is a lump or ingot; and the word is used because English gold is always sold in block. The ingot is sometimes stamped with a B., sometimes with the words "National Bank" or "Khális Bank 100"; and sometimes with a figure showing the percentage of fineness. In Hissár we find the *passá* in small hexagons of 24 *tolás* and 4½ *máshás* each, said to be imported from Sharp and Wilkins; but most commonly it seems to be in bars. In Amritsar the piece is of 26 *tolás* less 2½ *máshás*; in Gujránwála 26 *tolás*; and in Dera Ismail Khan 25 *tolás*. Another account weighs it at 24 *tolás* 8 *máshás* and 6 *ratís*. The stick or bar form imported to Amritsar weighs 30 *tolás* 4 *máshás*. The import into Dera Ismail Khan is said to be made through the Bombay Bank, and sometimes by the Lahore Branch of the Bank of Bengal. One account says that *passá* gold is passed through the furnace 24 times with a loss of 4 *ratís* per *tolá* of alloy; and that there are two kinds of *passá*, the *asli* and the *nakli*, of which the latter has no mark, does not adhere to the size of ingot and is inferior in quality, selling at about 8 annas less per *tolá* than the *asli*. Some Banks sell *passá* purer than others, and (in Amritsar at least) there will generally be Re. 1 to 1-8-0 of silver in a *tolá* of *passá*. The prices of European gold, of course, fluctuate; but the figures quoted last autumn in Hissár are Rs. 23, Rs. 23-8-0 and Rs. 24 per *tolá*, according to quality; in Rohtak Rs. 24; in Gurgáon Rs. 23, or Rs. 23-12-0; and in Siálkot Rs. 23. In Mooltan bars marked "100" obtained Rs. 23-4-0 per *tolá*, and for each unit below 100 the price is decreased by 3 annas 9 pies per *tolá*. In Lahore the price given was Rs. 24-13-0 and in Kohát Rs. 25. The usual price, it will be seen, was from Rs. 23 to 24 a *tolá*: the high figure for Lahore is unexplained. The cost of carriage raises the price in Kángra to 4 annas a *tolá* above the Amritsar price for the corresponding quality, and the sea-imported gold of Pesháwar is quoted at 4 annas a *tolá* above the corresponding Bombay rate.

Panna or *patra* gold is gold in the form of leaves. It is in this shape that the gold known as Chinese is sold: it fetches Rs. 22-14-0, Rs. 23-6-0 or Rs. 24 at Hissár; and will be found in the market as far as Pesháwar. Gold in leaves a few inches square is sold in Simla: the best kind of this form of gold has the figure 100 stamped on it.

When *old ornaments* are melted down and sold in lumps they appear in various sizes and shapes with various rates, and are known as "*desia pássá*." In Siálkot we find the gold of solid ornaments, such as *haslís* and bangles, selling for as much as Rs. 22 the *tolá*, while the more delicate articles when melted down, give a gold valued at Rs. 16 to Rs. 20 a *tolá*. When old ornaments are (as seems to be more generally the case) sold by the leaf they are known as "*desia panna*," or more commonly merely as "*panna*," "*patra*," "*patar*," "*raini*," etc., which will sell according to purity at all prices from Rs. 16 to Rs. 24 per *tolá*. The same terms apply to plates made out of impure gold, gold lace, gold wire, etc., which have been purified. Such plates sell in Lahore at Rs. 24-8-0 a *tolá*.

Gold "*patrás*" may also be made from old *coins*. You hammer your coin out flat, dip it in salt water, rub it with *Bhathor* from the *chúlhá*, and heat it

till the alloy disappears or nearly so. The "*patra*" that results is of course less in weight than the original coin; for instance, the Russian *mohar* or five-rouble piece used at Dera Ismail Khan for this purpose weighs 7½ *máshás* (*másha* of 7 *ratís*) and contains about 5 *ratís* of copper; and the resulting *patra* weighs 6¼ *máshás* (*másha* of 8 *ratís*). The size of *patra* is given at 4 inches square. A very valued coin for this purpose is the Jaipur *mohar*, the gold of which sells at Siálkot for Rs. 24 a *tolá*: in the Deraját it is apparently no longer found though its name is still known. Similarly "*athmáshás*" and "*chemáshás*" are no longer employed in Gujránwála, though in Gurdáspur and Umballa the *athmásha* at least is occasionally used: it contains ¾ *másha* of copper alloy. The Bokháran "*tillá*" is commonly used; for example, in Pesháwar, Hazára, Shahpur, Ráwalpindi, Mooltán and Siálkot: at Siálkot it fetches Rs. 22 a *tolá*, at Mooltan Rs. 23 and in Hazára Rs. 24; while in Ráwalpindi a *tillá* sells for Rs. 9. With Bokháran *tillás* will sometimes be found coins of Khokand. The gold obtained from *tillás* is generally considered slightly inferior to *passá*. The Dutch *ducats* known as *butkís* or *budkís* are also extensively used. In Siálkot (where they are also said to be called *putlís*) their gold sells at Rs. 24 per *tolá*: at Mooltan at Rs. 23, and in Hazára at Rs. 25. In Ráwalpindi a *butki* is said to fetch Rs. 7-8-0. *Mohars* of Aurangzeb sell at Ráwalpindi for Rs. 26-10-0 a piece, and Muhammad Shah's at Rs. 22. Old *mohars* of Murshedábad and Farrukhábad will be found in the Dera Ismail Khan District, but they are kept now merely as *nazars* or to be strung on a necklace (*hewkal* or *hamail*). In Siálkot a Farrukhábadi or *Kaldári* (*i. e.*, an E. I. C., Murshedábadi) *mohar* commands a price of Rs. 25 per piece or Rs. 24-8-0 per *tolá*. In Simla the coins most in request used to be those of Akbar's coinage, which fetched, they say, Rs. 25 to Rs. 28 each: now the favorite coin is the old Jaipuri *ashrafi*; the gold of the new Jaipuri *mohars* is not so good. And in Mozaffargarh will occasionally be found *mohars* imported from Baháwalpur.

Russian gold is also imported largely in the shape of five-rouble pieces, known as *bittís*. It is said that 150 of these enter Amritsar every day: and the *bitti* as there known is 6½ *máshás* in weight and is valued at Rs. 12-4-0. They are found in Jhang, Ráwalpindi and doubtless in other districts also. In Shahpur the term *bitti* is apparently applied to English sovereigns and half sovereigns.

Gold dust is generally known as *gori*, and will be found in the Jhelum and Ráwalpindi markets, in the latter of which it is also known as "*drúnwála*," from the *drún* or cradle used by goldwashers. Yárkandi dust is sold in Kulu, and in Lahore it fetches the low price of Rs. 12 to Rs. 20 a *tolá*. Bokháran dust, however, is quoted at the same figure in Lahore, and in Mooltan it fetches Rs. 20 or Rs. 21. Pesháwar gold dust is worth Rs. 22 a *tolá*, but before reaching the goldsmiths it is further purified, losing 4 *ratís* in the *tolá*, and it is sold in Pesháwar for Rs. 23-2-0 a *tolá*. The gold dust is, in Pesháwar at least, generally melted and made into sticks before being sold in the market. A gold known as "*Jútá Bokhára*" will be found in Gurdáspur, where it is said to be obtainable only from certain old Sikh families.

The purest gold of all is known as "*kundan*." It costs about Rs. 25 a *tolá*, and is used for beating out gold leaves. It is also very generally used in setting stones, whence the setter of stones or *murassakár* is often known as the "*kundansáz*." In Hoshiárpur pure gold is known as "*kora*." For alloys various names are found, as, for instance, *lagda* (an alloy with copper and silver) in Gujrát; and in Muzaffargarh gold containing $\frac{1}{12}$ alloy is called *babriwanak*. In Siálkot any gold which has in it an alloy of anything between 2 *ratís* and one *másha* to the *tolá* of gold is called *chandna*: an alloy of silver with gold in Jhelum is called *obri*, in Dera Ismail Khan *pithi*, in Umballa *rúpcha*. A similar alloy of copper is called *sobi* in Siálkot, Jhelum and Dera Ismail Khan; or *subhanga*, as in Siálkot and Umballa: while an alloyed gold containing one *máhsa* of silver and one of copper to the *tolá* of gold is known as *dokara* or *dorassa*; the former word being affected in Jhelum, the latter in Dera Ismail, and both indifferently in Siálkot. In Hoshiárpur any gold alloyed with silver is called *pitak*, and gold alloyed with copper *long*.

In Jhang we meet with a kind of gold called *sil* gold, which perhaps corresponds with the *silli* silver noted below.

4. Different kinds of Silver.—A very large amount, as much, it is said, as Rs. 8,000 worth per diem, of *Chinese* silver is imported into Amritsar *viâ* Bombay: this generally appears in the form of slabs valued at Rs. 3,000 a piece. Similar slabs can be seen in Bhiwáni and doubtless elsewhere. The Chinese silver at Amritsar contains a copper alloy of about Re. 1-8-0 per cent. In Rohtak Chinese silver sells at 11 *máshás* to the rupee; in Hissár at Rs. 107, Rs. 107-8-0 or Rs. 108 per hundred *tolás*, according as it is 16 *pan*, 16½ *pan* or 17 *pan*. (The odd rupees over 100 in this form of calculation are known as *badha* in Hissár, and as *badlaur* in Kohát). In Hissár the Chinese silver is known as *silli*, from the *sils* or slabs in which it is sold.

Another kind of silver, that known as the *kurs* or breadloaf silver, is the bar silver imported from Europe; it is especially pure, and sells at Siálkot for Re. 1-1-3 a *tolá* and in Hazára for 10½ *máshás* to the rupee. Yárkandi and Bokháran *kurs* is imported into Lahore, where it sells at 11 *máshás* to the rupee. Yárkandi *kurs* has about Rs. 100 in an ingot, and is found also in Kulu: it sells in Montgomery at 10¾ *máshás* the rupee. In Gujránwála the use of Yárkandi *kurs* has apparently died out.

A very much esteemed silver is the *háthípaur*, or elephant's foot silver, so-called from the shape. It is a soft silver, and used for its softness in wire-drawing: an ingot from which silver wire is to be drawn will consist of three parts of copper to 64 of *háthípaur* silver. It is said generally to have a horse's hoof impressed on it, when sold in the market. It is imported from Bombay to Lahore, where it sells at 10 *máshás* 7 *ratís* to the rupee. In Dera Ismail Khan it sells at Re. 1-1-6 a *tolá*. This is probably the same as the *súmwáli* or hoof-marked silver which is used in brick in Gurdáspur; and perhaps the same as the *passá* or bar silver employed in Jullundur and Ludhiána.

The *coin* most commonly melted for silver is the *Nánakshái* or Sikh rupee, the silver of which is very ordinarily used for ornaments. In Gujránwála its use is said to have died out, but we still find it used in districts like Gurdáspur, Jhelum and Dera Ismail Khan. In the last named district the price is stated to be Re. 1-0-9 per *tolá*. This rupee is supposed to weigh 11½ *máshás*, and sells at Re. 0-15-9. More modern Sikh coins are known to the trade as *Rájsháhi*, and are used in Umballa and Kulu, where they appear to be mainly represented by recent Patiála coinage. The *Nandrámi* rupee from Kábul is used on the frontier, and is considered the next best silver after the *Nánakshái*. Shah Shuja's and Dost Muhammad's coins are held to be the best; those of the present Amír Abdurrahmán are alloyed with one *másha* of lead and copper to the *tolá*. The English rupee is looked on as containing ¾ *másha* of copper and lead; and is valued, roughly, at 1 anna less than the same weight of silver.

Silver also appears in the market in blocks or wedges, known as *thobís*, which will sometimes be deeply indented so as to divide off into even weights. The *thobi* is prepared from inferior silver by refining or purification. It sells for 11 *máshás* the rupee at Lahore, in Montgomery and in Hazára; at Re. 1-0-1 per *tolá* in Siálkot.

Silver prepared from *melted ornaments* is sold in Hissár in "*chaktís*" or small circular pieces of various sizes, generally about 40 *tolás* in weight. The quality is generally 17 *pan*, qualities below this being seldom found. This class of silver is known as "*ghát*" in Jhelum. It sells in Hazára at 12 to 14 *máshás* the rupee; in Dera Ismail Khan old unsoldered ornaments fetch Re. 1 a *tolá*, while the lighter soldered kinds fetch 15 annas a *tolá*; and similarly in Siálkot old *karás* and *haslís* fetch Re. 1 a *tolá*, while old jewellery containing alloy will fetch only 12 annas a *tolá*.

The general name for alloyed or inferior silver is *rúpa*: in Jullundur the general rate is 10 to 12 annas a *tolá*. In Umballa, Siálkot, Jhelum and Pesháwar an alloy with zinc or pewter is known as *jasti*; an alloy with copper is known in Siálkot, Pesháwar, Jhelum and Lahore as *sobi*, in Umballa as *subhang*; an alloy with lead is called in Umballa *kasis*; while an alloy with both zinc and copper is termed *dokari* or *dorassi* in Lahore and Siálkot, and as simple *rúpa* in Jhelum. *Tokai* or *toaki* in Jhelum is said to be a name for an alloyed silver; in Ráwalpindi it is applied to silver obtained from melting old ornaments. In

Muzaffargarh the better kind of silver is known as *Suniwáli*, and an inferior kind as *Sodhiánwáli, Chakiwáli* or *Talwálli*. The common silver of Montgomery is known as *Rasmi chándi*, and sells at the low rate of 16 *máshás* to the rupee. In Pesháwar there is a kind of silver called *Yammu;* and in Shahpur the *Tikki* or silver procured by *Nyáryás* from the sweepings of goldsmiths' shops is a recognized species only inferior to *kurs*. *Dilidara, Chauki-Shah-jahán, Urai, Phitichúna, Muhim-sháhi, Ajota Gágarsháhi** and *Shuda-shuda chandi* are names given to various kinds of silver in Kulu, some of which are very possibly the same as some of those described above. It may be noted that the price of silver in Kángra is ordinarily ½ anna per *tolá* above that of the corresponding quality in Amritsar.

5. Export and Import of Bullion, &c.—The official foreign trade returns show the exports and imports of treasure (*i. e.*, specie and bullion, gold and silver) separately for transactions undertaken by the public and by Government. The outlying countries are classed in the four groups of Kashmír, Sewestán, Kábul and Ladákh. The export of treasure to any of these tracts is quite infinitesimal compared with the large imports received from them; and the export of bullion for the express purpose of employment on ornamental work is practically non-existent. A certain amount of the gold imported into Kulu from Hoshiárpur and Amritsar is said to find its way beyond British territory.

There are especially large imports of treasure from Kashmír, but very little of this seems intended for employment in gold and silver work; and, similarly, the imports from Sewestán appear to have little to do with our present purpose, though in the absence of further details in the official statistics one cannot be quite certain. The Punjab official returns also give little help towards ascertaining the extent of the large import for the purposes of trade that flows into the Punjab from Calcutta, Bombay and Karáchi. The imports of Delhi, which are almost entirely from outside the Province, are estimated at 40 lakhs of gold and 60 lakhs of silver, but I am unable to give any details as to the sources of the supply. Amritsar imports 6¾ lakhs of gold and 29¼ lakhs of silver: the gold being mainly brought in the form of Russian "*bittis*" (value Rs. 12-4-0, weight 6½ *máshás*) through Bombay; Australian gold is also imported through the Union Bank of Australia, the Chartered Bank of Bombay, and the National Bank of India at Karáchi. Amritsar also imports a little of the gold known as Chinese. Not more than one-sixth of its whole imports is used locally; the rest being exported to all parts of the Punjab. Lahore imports 6 lakhs of gold and 7½ lakhs of silver direct *viâ* Bombay; and 2 lakhs of gold and 3 lakhs of silver through Amritsar. Mooltan, Ferozepore, Umballa and Pesháwar also seem to have some direct dealings with Bombay: and similar claims, though less sound, I fancy, are advanced by Shahpur, Muzaffargarh, Jhang and Ludhiána. The imports to Pesháwar from Bombay, Bokhára and Kábul aggregate some 2 lakhs of gold per annum, but a great part of this is not worked into ornaments but passed on in the regular course of trade. The imports from Afghánistán are said to show a very marked decrease since the accession of the present Amír: they are stated to have gone down to one-fourth of their previous amount, and to be now insufficient for the wants of the Pesháwar District alone. Hazára imports some Rs. 5,000 of gold every year from Chilás. The imports from Yárkand to Kángra are given as Rs. 4,000 of gold and Rs. 10,000 of silver; from Yárkand to Kulu as Rs. 5,000 of gold and Rs. 10,000 of silver, most of which is passed down to the Punjab; and from Yárkand and Bokhára to Lahore as one lakh of gold and half a lakh of silver. The Bokhára imports are in three forms: first, that of coins—*Russian, Bokháran, Kokan, Yárkandi, Babukhani Mashdi, Butki* etc.; secondly, gold sand from Khulm, Khotan and Kokand; thirdly, Russian gold wire or *kalábátún*. This last is bought in Bokhára at 5 *tillás* per bundle of 20 *tolás*, and sold in Pesháwar at Rs. 1-12-0 per *tolá*.

6. Internal Distribution of Gold and Silver in the Province.—The preceding paragraph makes it plain that the bulk of the gold and silver imported into the Province for the purpose of conversion into ornaments and the like must pass through Delhi, Amritsar, Lahore or Pesháwar. From Delhi the local markets of the Hissár, Rohtak and Gurgáon Districts are naturally supplied. In Umballa and Ludhiána the supply comes partly from Delhi and partly from Amritsar; some of the Umballa supply coming also by Patiála;

* In Umballa rupees stamped with the Queen's head are sometimes called Ghagrasháhi or petticoat Government rupees (*Punjab Notes and Queries*, Vol. I., No. 891).

Kángra, Siálkot and Gujránwála depend almost entirely on Amritsar: Gujrát gets its supplies either direct from Amritsar or through Gujránwála: Mooltan, too, besides a little direct importation, looks to Amritsar and Pesháwar for its supply: Jhang imports either from Mooltan or from Amritsar, and Muzaffargarh from Mooltan or Baháwalpur. Import from Baháwalpur to Mooltan has ceased; Baháwalpur itself is now dependent, as Dera Ismail and Dera Gházi are, on Mooltan. Jhelum gets its gold from Pesháwar and Amritsar, but its silver almost exclusively from Amritsar. So that for the most part Delhi and Amritsar divide the custom of the Province. Of the crore of rupees worth of gold and silver annually imported into Delhi, about a third is said to be re-exported in the shape of wire, lace, tinsel, etc., and the greater part of the remainder in other forms, that is, presumably, in the form partly of ornaments ready made, but more largely of bullion. There seems to be little or no export of gold or silver from Lahore. Gurdáspur is said to import no raw material, the better class of ornaments being procured by order or ready made from Amritsar and Lahore.

With a very few exceptions, therefore, every district in the Province is dependent for its supply of gold on one or other of the large centres, and the following figures will serve to show roughly the degree in which the supply is drawn upon in the various districts with regard to either of the two metals. The annual gold imports of the Rohtak District are valued at Rs. 1,60,000; of Umballa at Rs. 1,55,000; of Ludhiána at Rs. 3,50,000; of Siálkot at Rs. 1,00,000; of Jhelum at Rs. 40,000; and of Kohát at Rs. 3,000. The supply of Mooltan (part of which appears to be obtained direct from outside the Province) is put down at 2 lakhs. Similarly, the annual import of silver into Rohtak may be taken as Rs. 3,60,000; into Umballa as Rs. 3,40,000; into Ludhiána as Rs. 4,65,000; into Siálkot as Rs. 60,000; into Jhelum as Rs. 60,000; into Pindi as Rs. 2,84,370; and into Kohát as Rs. 5,000. The Mooltan supply is put down at 3½ lakhs; but part of this is obtained direct from Europe and part is again re-exported. The small proportion of silver received at Siálkot as compared with the gold is noticeable, and I have no explanation for it. Six lakhs of silver and gold are said to be imported annually into Jullundur; a lakh and a half into Muzaffargarh; and Rs. 67,000 into Dera Ismail Khan, but the annual fluctuations in the last named district are severe. It is estimated that of 2 lakhs of gold received annually in Mooltan, Rs. 70,000 are exported to Muzaffargarh, Dera Ismail, Dera Gházi, Baháwalpur, &c., and that of the 3½ lakhs of silver received, 1¼ lakhs are similarly exported, leaving Rs. 1,30,000 of gold and Rs. 2,25,000 of silver to meet local wants. Of a lakh of rupees worth of silver and gold imported into Jhelum about a half is re-exported to Bhera, Khusháb or Jammoo territory.

The common agency for the distribution of the precious metals is that of the *sráf*. The *sráf* is an indispensible complement to the *sunár's* trade. He is equally indispensible to the customer. Sometimes a customer will order his jewellery through the *sráf* and the *sráf* employs a goldsmith, but remains responsible for the work. In a few cases the *sráf* provides ready made jewellery, which is worked for him by goldsmiths whom he keeps on a monthly stipend. To a man who wants bullion to give to the *sunár* the *sráf* will sell gold and silver, or he will sell ornaments at the cost price of the metal. When a man has had an ornament completed, he takes it to a *sráf* (generally for precaution's sake, to the *sráf* of another village) for the *sráf* to test and weigh. The *sráf* for a small commission values the gold and silver and settles the price of the article. In the same way every goldsmith has his *sráf*: the *sráf* watches the fluctuations of the value of the metals, and being the great importer of bullion and wholesale vendor of old jewellery he is practically the goldsmith's bank. He advances bullion to the *sunár*, the amount to be payable after a certain interval; and if paid before the appointed time, discount is given; if after, interest is charged. In Jullundur the ordinary rate of discount for ready money is quoted at 1½ per cent., and interest at 7¾ per cent. Such advances are made when the goldsmith is in arrears with his orders; when the customer orders his bullion through the *sunár*; or when the customer cannot advance the full amount of the bullion required. In transmitting to the artizan goldsmith, the *sráf* will of course sell the metals at a profit. The extent of the profit is given

Where the custom in ready-made articles is not absorbed by Delhi, the supply is mainly from Amritsar and Lahore. For instance, Jullundur imports annually Rs. 4,235 of gold ornaments and gold leaves, Rs. 4,285 of silver ornaments, and Rs. 24,000 of *kandlas*, *kalábátún*, *kaitún* and silver leaf, from Amritsar. Hoshiárpur gets from Amritsar necklaces, rings and turban ornaments. Hazára gets from Amritsar Rs. 2,000 a year of gold and silver lace, thread, ribbon and edging, which is sold locally at a profit of two to four annas a rupee. Dera Ismail Khan gets Rs. 6,000 worth of *kimkhabs* and Banárasi *dopattás* through Amritsar in the year, besides being supplied from Amritsar itself with Rs. 3,000 of lace and *gotá*. The small pendants which the ladies of Dera Gházi Khan wear on their nose-rings are imported from Amritsar; Rs. 100 worth every year. Most of the Rs. 1,500 of electroplated ware which Gujránwála takes in annually is from Amritsar; and Rs. 40,000 of ready-made articles are received in Pesháwar annually from Amritsar and Ráwalpindi. Amritsar and Lahore supply Siálkot every year with Rs. 20,000 worth, and Ferozepore with Rs. 5,000 worth of made-up jewellery. Gold head-ornaments of the kinds known as *singharpatti*, *tikka*, and *dasti*, and nose-rings set with gems to the value of Rs. 3,000, find their way annually to Muzaffargarh from Lahore and Amritsar.

Mooltan turns out Rs. 25,000 of *kalábátún* in the year, a half of which it takes for itself, and with remainder of which it supplies Jhang, Dera Ismail Khan, Dera Gházi Khan and Jammoo territory. Mooltan of course must have a pretty general market for its enamel; but it would appear as though, even in the immediately adjoining districts, the demand in each case was very insignificant. For instance, although Rs. 2,000 worth of Mooltan enamel work goes to Dera Gházi Khan yearly, yet some Rs. 300 of enamelled rings represents all the export to Muzaffargarh. There is practically no trade in Kángra enamel: it is either employed locally or carried away for private use by the pilgrims to Kángra and Jawálamukhi; the amount so carried away is valued at Rs. 5,000 per annum. The quaintness of the Kulu ornaments induces English travellers to procure and take away a certain amount of these, but the amount is very limited, and if we value it at Rs. 400 a year we are probably making a very liberal estimate. If we further notice a few *attardáns* and gold nose-rings set with gems (*boola* or *balka*) sent from Baháwalpur to Muzaffargarh, some Rs. 20,000 worth of ornaments exported from the same place to Dera Ismail Khan, Rs. 2,000 of lace and *gotá* sent from Baháwalpur to Mooltan, some Rs. 18,000 worth of jewels and Rs. 4,000 worth of embroidered shoes sent to Dera Ismail Khan from Mooltan, Rs. 1,000 of *lungís* and Rs. 2,000 of caps and *kullas* received in the same district from Pesháwar, we have probably exhausted all that is worth mentioning of the intra-provincial transmission of ready-made articles.

9. Trade Organization.—The figures given by the district reports on this head are of such uneven value that it is best to fall back on the figures collected officially in 1881. There were then 44,338 workers and dealers in gold and silver in the Province. This distribution into classes and into town and country-workers is interesting—

	Towns.	*Villages.*	*Total.*
(i)—Gold-washers, diggers.—[*Soná nikálnewále: soná dhonewále: zarkash: sansoi: kairi: kambar: nyárya: soná dhonewále*].	18	157	175
(ii)—Gold and silver merchants—[*Chándi farosh: chándi, soná bechnewále: zewar bechnewále, &c*].	72	0	72
(iii)—Gold and silver-smiths.—[*Sunár: zargar: sádakar: zewar banánewále: gahná gharnewále: chándi sodhnewále: jhútá zewar banánewále, &c*].	11,464	27,245	38,709
(iv)—Gold and silver engravers, chasers.—[*Chaterá: chaterá zewar: chítr kári*].	14	0	14
(v)—Gilders and platers.—[*Gilat sáz: mulamma karnewle, &c*].	45	0	45

	Towns.	*Villages.*	*Total.*
(vi)—Gold and silver foil-beaters, dealers—[*Zarkob: koftgar*: warq chándi bechnewále, &c.*]	175	3	178
(vii)—Gold and silver wire-beaters—[*Kandlakash: dabkai: tárkash*].	1,033	17	1,050
(viii)—Damasceners†—[*Mínákári*]	107	0	107
(ix)—Refiners;—[*Nyáryá: núrá dhona: sodha*]...	718	426	1,144
(x)—Gold and silver thread-makers, dealers—[*Kalábátún bunnewále: tilla sáz: kárigar zari, &c.*]	309	91	400
(xi)—Gold and silver cord, lace, makers, dealers—[*Zari báf: dori baf: tílla batnewále, &c.*]	753	52	805
(xii)—Gold and silver ribbon, cloth, weavers, dealer.—[*Gota bánanewále: kanári báf: tillá báf: gotá bechnewále: pemak bechnewále, &c.*]	1,585	54	1,639
Total‡ ...	16,293	28,045	44,338

Some of the information given later on in this monograph will throw a further light on these figures. Meantime it is worth noticing how entirely, or almost entirely, certain branches of work, such as that of the merchant of ready-made goods, and those of chasers, gilders, enamellers, and others, are confined to the towns. The fact is that it is only in towns that branches to the goldsmith's work are recognized; the village goldsmith confines himself to the simple forms of ornaments, and in country towns or large villages the same man will often turn his hand to what would in large centres be looked on as separate occupations, such as embossing, chasing, &c. Further, the goldsmith and the silversmith are almost universally the same; you will of course find men who are more adept at one metal than the other, but there is no recognized distinction between the two branches of the trade.

A goldsmith will as often as not sit in his shop alone, or at most will admit a relation or two; it is very seldom that he admits a stranger into partnership. The figures given by District Officers bring out an average of about five men to every two shops, and this for the Province at large is probably about right: though of course in villages it will often be found uncommon to have more than one man to a shop, while in centres like Lahore and Delhi the average works out to three men to a shop. The figures given work out a high average per shop in Shahpur and Dera Ismail Khan, also in Siálkot, but the Siálkot figures are especially audacious. Apprenticement is recognized: an apprentice presents his master on apprenticement with sweetmeats or a *pagri*: his term of service is not fixed in any way. The nearest approach to co-operation is in the wire-drawing trade: there are ten workshops of *tárkashes* at Delhi employing 20 hands and over, five of *dabkayás* and one of *batayás*, and you generally find eight or ten men to a *kandla* in this trade. In no other class of gold and silver work can the Province show a single workshop employing as many as 20 hands. The more elaborate work of other branches of the trade passes from hand to hand at each stage of the process.

I fancy that something over one-third of the total population engaged in gold and silver work is Mussalmán: and the proportion of Mussalmáns to the rest is greatest on the Western Frontier, and in the Delhi District where about half the workers appear to be Mussalmáns. The proportion among *sunárs* proper will be noticed immediately. The figures given by District Officers do not lead one to suppose that any particular branch of the trade is universally monopolized by any special religion; but they would imply that trades such as those of the embosser, chaser and jewel-seller were generally in the hands of Hindús or Sikhs, while *koftgars* and others are more usually Mussalmáns. In Delhi the *sádakar*, *zardoz*, *kinári sáz*, *salma sáz* and *sitará sáz* classes are said to be exclusively Mussalmán.

* The word more generally applies to damasceners.

† Rather "enamellers."

‡ There are also 90 jewel-sellers (*mussakár: murassa sáz: kundan banánewále: kundangar: jaryá*), all in towns.

The localization of the trade presents as many strange points as in other trades and other countries. For almost any species of article you can count on a supply at Delhi and Amritsar; and it is difficult to say that either of these places has a speciality. The work of Lahore, Pesháwar and Gujránwála has a celebrity of a very local character. For enamel Mooltan or Kángra is preferred: for inlay Kotli or Gujrát. If you want the best jewellery of Kulu you go to Dughilag near Sultánpur; and if you want a silver-headed walking stick you go to Nizámabad in Gujránwála District. The country town of Ráhon has a name for gold and silver ribbon; that of Pasrúr for *dori* and *kaitán*. If you want a good "*sonsehra*" or fringe for a bridegroom, you order it from Siálkot. You will find one town or village producing, or supposed to produce, one class of ornament better than another: some particular form of gold necklace is best made here, some special kind of silver earring there; nose-rings here, finger rings there, and so forth; without any imaginable reason being assigned for the phenomenon. But one finds very little trace of a transference of trade to new centres. The enamel work of Maghiána, and that of Dhamtaur and Naushahr in Hazára, is gradually expiring, but one does not hear of any trade springing up elsewhere to take its place. An immigration of Hindu craftsmen from the north has been noticed in Montgomery: some Sikh stone-setters have recently left Lahore for Mooltan; and there is said to be a small emigration from Lahore and Mooltan to Dera Ismail Khan. But on the whole the trade is stationary, and the goldsmith with all his astuteness and avarice remains, like other men, a very difficult piece of luggage to transport.

10. The Sunars as a Caste.—Talking of the *sunárs* at para. 634 of his Census Report, Mr. Ibbetson says that they would appear to be a true caste: and the information now forthcoming seems to confirm in a sense this surmise. In parts of the country we find Jats and even Biluchís working as goldsmiths, but they are classed as separate from *sunárs* proper; and a *sunár* himself becoming a *munshi* or clerk, although he may pass himself off as a Khatri, always remains a *sunár* in the eyes of the people. Even in the case of the Mussalmán tribes practising as *sunárs*, noticed below, the interfusion with the original *sunárs* is far from complete. The *sunárs* are very uniformally and widely dispersed, being found in nearly every village, and yet it is quite exceptionally* that they ever appear as village servants receiving a share of the produce from the cultivators. In Kulu the *sunárs* nearly all own land, which they would seem to have acquired and settled along with the other families of the village to which they belong. "The *sunár*," says Mr. Ibbetson, "prides himself on being one of the twice-born, and many of them wear the *janeo* or sacred thread; but his social standing is far inferior to that of the mercantile and most of the agricultural classes, though superior to that of many, or perhaps of all other, artizans. In Delhi it is said they are divided into the Dase who do and the Deswale who do not practise *Karewa*:† and that the Deswála *sunár* ranks immediately below the *Banya*. This is probably true if the religious standard be applied; but I fancy a Jat looks down on a *sunár* as much below him."‡ In Kohát the Hindu *sunár* is said to be equal in position to the Arora: and the Mussalmán *sunár's* rank is above that of the Mussalmán menial castes.

As stated in the Census Report, the *sunár* is very generally a Hindu throughout the eastern plains and the Salt Range tract, though in the (old) Mooltan Division and on the frontier he is often a Mussalmán, while in the centre of the Province there are a few Sikh *sunárs*. The caste contains both Hindús and Mussalmáns, but outside the caste proper it will be found, as is the case in Mooltan, that among Muhammadans a man of the Khoja, Sheikh, Mogal or any other class may practise as a *sunár* and be called a *sunár* without losing his right to intermarry with his co-religionists. Among the Hindu *sunárs* a large number in the Mooltan and Jhelum Districts are Shamsís or followers of Shams Tabríz: they themselves keep separate from the Muhammadans, and are in

* The *sunárs* will be found classed as village servants in one of Mr. Purser's Jullundur Assessment Reports.

† In Hissár the *sunárs* are divided into Desi and Bágrí, but the only distinction is that the latter cannot do the fine (*bárik*) work: the former do.

‡ See para. 229, Karnál Settlement Report.

turn looked on practically as Muhammadans by other Hindú *sunárs*, who will not eat or intermarry with the Shamsís. The legend is that a *sunár* prayed to Shams Tabríz for a son; and all his descendants are called Shamsís; and in fact there can be little doubt that the Shamsís were originally ordinary Hindú *sunárs*. They do not seem, however, to have preserved any separate caste divisions amongst themselves, or at least such castes are no longer recognized: in Pesháwar the Shamsís are classed as one of the subdivisions of Hindú *sunárs* along with Dhedis, Ajatís and the like.

The main division of the *sunárs* recognized in the Punjab is that into Mair (Mer, Mahipotra, Mahar) and Tánk: these two divisions will not intermarry or smoke with each other. The Mair are found mainly in the Punjab Proper; there are no Mairs, for instance, in Kulu or Dera Ismail Khan. The Mairs are apparently the original *sunárs*, while the Tánk are probably, as they profess themselves to be, degenerate Khatrís or Aroras: but the point is not at all clear. In Simla it is said that a Khatrí will smoke from the same *hukka* as a *sunár*. It can be understood, however, how in Hoshiárpur the Mairs are looked on as springing from the Jats and inferior castes: while a travelling Mair in Dera Ismail Khan is looked up to by, and receives alms from, the resident Tánk *sunárs*. There are two very similar myths—equally unoriginal and unappetizing—about the origin of the Mairs. According to one story, the goddess Devi constructed a man out of the dirt and sweat of her forehead, and bade him destroy a golden demon who was persecuting her: this man—who was in fact the *Ur-Mair*—polished up the demon's nails with beads while the demon was asleep; and so delighted the demon that he induced him, in order to make the whole of his body shine like his nails, to sit on a charcoal fire. The unsuspecting demon thereupon melted away, and the goddess presented the Mair with the gold mass which represented all that was once the demon. The Mair, like a true *sunár*, grumbled at the inadequacy of his reward, and the goddess cursed him in consequence; with result that his work does *not* prosper to this day. The other version represents the Mair as having been made from the scum (*mail*) of dirt and soap or paste scraped off the body of a holy woman or "*mai*": and as having rescued her from a golden demon by throwing the demon into the fire. In this version a *sráf* seizes the golden ingot, and the Mair, who contented himself with the stray pieces of gold, received the *Mai's* blessing, so that he *does* prosper to this day. In both versions the Nyárya (regarding whom more below) is said to have slunk up afterwards and to have extracted gold from the ashes of the fire. The Tánk generally represent themselves, as the Aroras do, to be Khatrís by origin, who changed their title in the persecuting era of Paras Rám, the great enemy of the Khatrís. The chief subdivisions of the Tánk are the Bunjáhí and Bárhi, which are also the names of prominent subdivisions among both Khatris and Aroras. The Mair *gôts* generally contain both Mussalmáns and Hindús: while the Tánk *gôts* are generally confined to Hindús.

The following are the 48 subdivisions of the Mairs as reported from Lahore: Jálu, Dhalle, Masawan, Sarwana and Sur, Dhune, Sunák, Nichol, Ludhar, Babar, Ahat, Karwal, Manan, Mitru, Nál, Suchú, Dáwar, Bhulle, Suse, Ahi, Ballan, Dharna, Sarna, Shín, Udera, Sadeuri, Khurnee, Kandi-vaddí, Chal ageri, Hauzkhawasí, Pidrí, Kingar, Malhaddí, Rodi, Kande, Khich, Basán, Rudke, Gund, Rete, Ledhe, Partole, Wurar-Kokre, Ratte, Main, Vaid, Nagaurie, and Tauri-wal: of whom the Dhalle and Sur alone are exclusively Hindús. And the following those of the Tánk *sunárs*, *viz.*, Mittu, Viru, Rodkí, Bhole, Rasín, Ratre, Ochí, Ajátí (or Che-játí), Thande (or Panj-játí), Samnu, Janjoge, Akásh-mohle, Bunjáhí (divided into Mehra, Sanduria, Bobal, Kakki, Tráme and Chánglí), Bahrí (divided into Kokal, Katarmal, Gidar, Kaun, Ujaimal, Salgotia, Teju, Khich, Gijar, A'hat, Thothre, Patní, Samánia and Hichar), Panjjáti (divided into Bhopale, Batti and Botan) and Sunak; all of whom are exclusively Hindús except the Sammí. In Hoshiárpur the Tánk *gôts* are said to be the Gojaní, Kanot, Bhagha, Pholu, Kashri and others unspecified. In Dera Ismail Khan the Mussalmán *sunárs*, who are said to have come from the Chenáb in the Jhang District, are reported to be of three subdivisions—the Dharne, Katarmal and Nahár, which are also subdivisions of the Aroras. The Hindú *sunárs* of Dera Ismail Khan are divided openly into Khatrís and Aroras: of whom the Khatrís are subdivided into twelve *gôts* (eight of which are found in the district),

and the Aroras into nine. Of the eight Khatri *gôts*, five—the Sarne, Dhande, Ajoti, Akásmole and Kan—will not intermarry with any of the remaining three, the Makhu, Nukra and Bobál. Similarly although all the Arora *gôts* of the *sunárs* call themselves Uttarádhís, yet six of them (the Bútte, Súchche, Dhaneje, Malpaní, Battan and Ragte) will not intermarry with the remainder—the Chandpul, Taramine and Lodar—whom they look on as Dakhinís. In Peshá-war the divisions of *sunárs* given are: for Hindús, Itan, Waid, Dangai, Gond, Darberai, Lugí, Bobal, Ranger, Sandhari, Shamsí, Dhedí, and Ajatí; and for Mussalmáns, Báhár, Ríte, Liláb and Gharwál. In Ferozepore the Mair *gôts* are given as Sedhi, Maháich, Thákrán, Guggar, Jhangí, Dhariwál, Sunnak and Karor; the Tánk *gôts* as Thothre, Ahat, Khich, Ajemal, &c.; and the Bunjáhís as Dhanne, Sur, &c. In Shahpur the divisions are Chopra, Kapúr, Dhaun and Sont; the first three of which are purely Khatri divisions. I give all these names for what they are worth; and more still are to be found in the Lists of Tribes and Clans published from the returns of the last census. It would be interesting to compare these different lists and to see what inferences could be made from the similarity of the names of *sunár* subdivisions to those not only of Khatris and Aroras, but also of other castes. But this requires more time and experience than I have at my command.

11. The Character of the Sunars.—The *sunár* is not appreciated by his customers, and the popular ideas about him are not flattering. Stories of his craft and unscrupulous rapacity are in every one's mouth. In the towns the *sunár* always works in his shop; but in the villages a careful zamíndár will have the *sunár* to his house to do his work for him, or will sit over him in his shop till it is done. Even then he cannot be sure of him. In Lahore they tell how the *sunár* made the gold of his own Guru disappear before his eyes and then complimented the Guru on his miraculous powers. There are one or two stories about the *sunár* and his deception which are told all over the Province. One very common one is the tale of the *sunár* who made a *hass* or necklet for his mother without alloying the metal. The harassing thought of his lost opportunity reduced the *sunár* to a skeleton, and it was only when his mother divined the cause of his illness and broke the necklace in order that he might have it to mend, that the *sunár* retrieved his lapse into virtue and brightened up again. All sorts of little variations are introduced into the framework of this story: one only is worth mentioning, and that is a characteristically blood-thirsty one from Pesháwar, which represents the ornament in question as a nose-ring, and says that the goldsmith recovered it by cutting off his mother's nose when she was asleep. Another very common tale is that of the *sunár* (or some say the Sanák, a subdivision of the *sunárs*) who went to visit the shrine of Badri Naráin in Garhwál and, finding that his iron ring on touching the statue became gold, cut off one of the god's fingers for his private use; but the stump began to ooze with unmistakeable blood, and from that day to this no *sunár* dares to come near the idol for fear of being struck blind. All over the Punjab, too, one finds a proverb telling you to keep your hand on your purse when you see a goldsmith the other side of the river. In Kulu they tell a somewhat inconsequent tale how a Sádh, seeing a *sunár*, swam across the river with his rupee between his teeth, and finding afterwards that he had so marked the rupee with his teeth that he could only get 14 annas for it, rather unreasonably vented his anger on the *sunár*. A *zargar* if he gets a broken head will make money by it. He is never fully honest. In Montgomery they say that if he is fully honest he is only half so (*sunára kadí nausárá : jo sárá, so ádhá*). In Kángra a collusive quarrel is known as *jang-i-zargarí*. But they sing in Gurgáon an "address to a goldsmith" which is the most unkindest cut of all, beginning "*Terí bát men dagha ; tere háth men dagha ; terí zát men dagha.*"

The *sunár*, too, in common estimation, is inhospitable and a curmudgeon: has no sympathies, and is nobody's friend. The tailor, the goldsmith and the doctor, they say, have no sympathy for their fellows. There are several calculations as to the number of goldsmiths it takes to make a *thag* and so on. In Jullundur they say *sunára kattiára* (the goldsmith is an alloyer): *sunára kis ká yár* (and no one's friend). In Montgomery, if you hesitate about trespassing on your host's hospitality for a second meal, he says to you "*Koi suniárán dí rotí hai*"—"Are you a sunár's guest that you should expect only one meal?") The *nyárya* is, of course, a still more perfect type of parsimony.

The *sunár*, too, is generally "known to the police." He is as often as not a receiver of stolen goods: a man who melts stolen jewellery and takes part of the profit. He shares this reputation with the *sráf* and the *tezábia* or refiner of old ornaments; and he bears this character in almost every part of the Province. There is said to be a "*zargarí*" or thieves' language employed by some *sunárs*; but the reports give no information about this.

The *sunár* has a further curious trait. In Jullundur they call ornaments *takkáda*,—things that cannot be got except by *dunning*,—and the *sunár's* procrastination is a favorite topic. The truth is that he is as often as not in debt, and uses the silver given him for to-day's order in making an ornament ordered last month, and so on.

12. Prosperity of the Trade.—The people hold that the *sunár's* malpractices have entailed on him the curse of poverty. Be the cause what it may (and it is quite as often the poverty that leads to the malpractices), there is no doubt that the *sunárs* as a class are poor. If you find a *sunár* in prosperous circumstances he is sure to have gained his wealth not by his trade, but by money-lending, agriculture or some other extraneous occupation. The number of *sunárs* receiving an income over Rs. 500 a year can be ascertained from the income tax assessments: the number assessed in Rohtak is four or five only; in Gurgáon seven; in Jullundur nineteen; in Kulu nine; in Montgomery eight; in Amritsar twelve; in Simla three; in Ráwalpindi twenty-seven; in Kohát three; in Muzaffargarh thirty. In most of these cases the *sunár* is taxed at the lowest rate, and in many he is taxed on the profits of forms of enterprize other than his own trade. In Jhang only 12 *sunárs* out of 545 are taxed. In Umbálla 50 *sunárs* are taxed at a total sum of Rs. 661, but of this only Rs. 130 represents the taxation of the *sunár's* proper trade. In Amritsar there are ten *kandla-drawers* who pay a total of Rs. 192. In Mooltan two-thirds of the enamel workers and four stone-setters are subject to the tax: but only 5 per cent. of the goldsmiths are assessed, and they only at the lowest rate possible. The goldsmith pure and simple is therefore no capitalist. From Hissár, Shahpur and other districts complaints are made of the difficulty which the *sunár* now finds in making both ends meet: and it is only in a few tracts, such as Rohtak, Kulu, Ludhiána and Gujránwála, that a real influx of prosperity is acknowledged, and even then we are told that it is not so much by his wares as by his agriculture or his banking or his receptivity in the matter of stolen goods that the goldsmith is advancing. Our forty years of peace have had a threefold effect on the goldsmith's trade, and though the results have been on the whole advantageous to the goldsmiths as a class, they have displayed themselves so gradually and unevenly as to leave ground for complaint. The first tendency of our rule has been the repression of the more markedly ostentatious and barbaric forms of the art. The princelings of the Kángra neighbourhood can no longer afford to support the stone-setters that used to find a livelihood at their hands. Lahore is giving up its painting in gold: and Gujránwála its embroidered saddle cloths. The *koftgari* or inlay of Gujrát and Kotli is no longer what it was: and is only kept alive by a fitful and indiscriminating European custom. And the taste for ornamentation of the male population in our cities has in pursuance of the same influence greatly sobered down. A second tendency of our rule is a tendency to improvement in the make and material of the better forms of gold and silverware. In Delhi and Lahore the trade of all the better forms of jewellery is in good condition and men acquainted with them are in no fear of want. The *kandlakash* owes his high, though fitful, profits partly to this and partly to the secrets that render his trade more or less a monopoly. To the goldsmiths of county towns this increase in the prosperity of the better classes of work is discounted by the opening of communications, and the concentration of work, more especially of wire and lace work and the like, in large centres. The third and most noticeable feature of the trade under our *régime* is the enormous development afforded to the simplest forms of wearing-ornaments among the lower and poorer classes of the people. We have therefore a decrease in the merely ostentatious class of work: an increase but concentration of the better forms of ornament industry, and a large development of

the simplest and coarsest kinds. As regards the *sunárs* as a class the effect has been generally beneficial, but, as noted above, the results are at present being worked out gradually and unevenly.

13. Wages and Profits.—The general practice in the Punjab—a practice which in Pesháwar alone is noted as exceptional—is to provide the goldsmith with the material on which he has to work and to pay him for his work at a rate per *tolá* on the weight of the finished article. The "wages" of a goldsmith are therefore practically the payment of his labor only, and the payment is regulated according to the nature of the labor required. In some tracts we find two rates employed—one for solid, unsoldered work, and another for the finer work which requires the soldering together of separate pieces. In others the test of soldering is not applied, and the rates vary merely according to the ease or difficulty of the work. Elsewhere, and especially in large centres, each different kind of ornament will have its separate rate per *tolá* for cost of workmanship. And of the sum per *tolá* which the purchaser disburses a fixed proportion or a lump sum will often go to the embosser, the *mathera*, or some other craftsman who aids in the production of the ornament. As a specimen of the rates charged, I append in a note a list of the prices in Lahore for some of the principal kinds of ornaments.* The general rates of the Province vary for silver work between 3 pies and 2 annas; the rate is higher in Mooltan, Jhang, Kulu and Umballa, and in Kángra as much as six annas per *tolá* is sometimes charged for the better class of work. The rates for gold are not quite so uniform as those for silver, but the rate charged will generally be found to lie between 4 annas and 1 rupee per *tolá*. In some parts of the Province work of a sort is done for as little as 1 anna per *tolá*; and in others we find rates ranging as high as Re. 1-8-0 and Rs. 2. In Simla it is customary to pay what is called *garái*, a percentage on the value of the made article at 2 pice to 4 annas the rupee.

The system of payment by the day will only be found in places where the goldsmith accepts orders of a larger amount than he is able to carry out unassisted; in which case he will employ labor at a fixed daily rate. Such instances are rare; and to gain a conception of the daily earnings of the craftsman we have to fall back on his own statements regarding the amount which his work brings in to him daily on an average. On this authority we can estimate the average daily earnings for ordinary *zargar's* work in Amritsar at 8 annas; in Delhi they would vary between 4 annas and a rupee; in Lahore between four and ten annas. In the smaller towns it is rare to find more than 8 annas made per diem; and in the country shops rarer still.

The actual profits of the trade constitute a matter on which it is of course still more difficult to get definite information. The wear of tools, consumption of charcoal and the like constitute roughly the outlay incurred by the goldsmith, and he lives on the balance of the proceeds of the rates charged. The expenses of manufacture are calculated in Umballa to be ½ per cent. in silver and 1 per cent. in gold work, but how far this estimate can be accepted generally I cannot say. The net profits in most districts fluctuate little, if at all, from year to year; in Hissár we are told that they have not altered in the last fifty years. When the purchaser employs the craftsman to procure him the gold and silver on which to work as well as to do the work itself, the latter gets further opening for profit. The goldsmith will sell a little dearer than he bought from the *sráf*; and the *sráf* in his turn makes his own profits. Of the

* GOLD ORNAMENTS.—*Kara sáda*, or plain bracelet, 2 annas per *tolá* of gold, of which ¼ anna goes to the *chitera*; *kara jarau*, or jewelled bracelet, one rupee per *tolá*, of which the *chitera* takes half; *gokharu*, or serrated bracelet, two annas a *tolá*; *chúra bángánwála* or *akaira kaintha*, a ribbon-shaped bracelet, 1½ annas a *tolá*, of which the *chitera* takes ¼ anna and the *lohár* one pice; *chúra chúhedandi* and *chúra chauruthappa*, one anna per *tolá*; *báhi*, or solid tube-like armlet, 6 annas per *tolá*, of which the *chitera* takes half; *paunchi*, or beaded wristlet, 12 annas per *tolá*, of which the *chitera* takes 8 annas; *chankangan*, 12 annas a *tolá*; *paribaud* 8 annas a *tolá*; *tádán sádáu*, or plain armlets, 6 annas per *tolá*, *chitera* taking Re. 1 a pair; *bázúband*, 12 annas a *tola*, of which the *chitera* gets Re. 1 a pair; *arsí jarau*, or jewelled thumb-ring, 8 annas a *tolá*, of which the *chitera* gets half; *ratan chauk* or head ornament, 12 annas a *tolá*; *anguthi* with one stone 4 annas, and with nine stones *(naunági)* 8 annas.

SILVER ORNAMENTS.—*Kara* and *gokharu*, two pice per rupee, of which the *chitera* gets half; *chúri chuhedandi (tehra thappa)*, 2 pice per rupee, of which ¼ pie goes to the *lohár*; *paunchi*, 2 annas a rupee, of which the *chitera* gets a lump sum of 4 annas; *band thappawála*, 2 pice per rupee; *chankangan* and *paribaud*, 2 annas a rupee; *tádi*, one anna per rupee; *bázúband*, 2 annas per rupee, of which *chitera* takes 4 annas down; *bhawatta*, 2 annas a rupee, *chitera* taking 3 annas down: *báhi*, 1½ annas per rupee, of which ¼ goes to the *chitera*; *arsi*, 2 annas per rupee, of which one anna goes to *chitera*: *angúthi*, one anna.

sráf and his profits I shall be noting further below; in Lahore his profit is put down at an anna in the rupee or 6¼ per cent. The goldsmith's profit appears to vary in gold from 4 to 8 annas a *tolá*, or about 1 to 2 per cent., and in silver from ½ anna to 1 anna or about 3⅛ to 6¼ per cent. For instance, if the *sráf* provides gold at Rs. 24-8-0 a *tolá*, the goldsmith would charge, say, Rs. 24-12-0, or 25; and for silver provided as Re. 1-1-9 per *tolá*, he would charge, say, Re. 1-2-3, or Re. 1-2-9. Then, again, if the purchaser provides his own material in the shape not of metal bought from the *sráf* but of old ornaments to be recast, then the goldsmith is considered entitled to a due of 4 *rattís* per *tolá* of silver and 1 *ratti* per *tolá* of gold; which he will take by retaining $\frac{1}{24}$th part by weight of the ornament if it is of silver and $\frac{1}{96}$th if it is of gold. Such at least is stated to be the custom in Gujránwála, and it is probably acted on with local variations elsewhere. And besides the legitimate profit procured in this way, the goldsmith has always open to him the profit to be gained by surreptitious alloying and the like, regarding which complaints are only too common.

The above refers merely to the wages and profits of common ornament-making. In the other branches of the trade different rates prevail. Setting of jewels, for instance, will be charged for either at a rate per stone set or at a rate per *tolá* of the weight of the completed ornament. In Umballa 1 to 4 annas is charged per stone, and in Ludhiána 12 annas per *tolá* on the weight of the piece. In Jullundur the charge is apparently Rs. 3 a *tolá*, in Amritsar it is Rs. 6 per *tolá* of gold used in setting, and Rs. 4 per *tolá* of the same for false gems. In Delhi the stone-setter makes 4 annas to one rupee a day, and in Dera Ismail Khan 8 annas to one rupee. In Jhelum he gets an average daily wage of 12 annas and in Amritsar 8 annas, while in Lahore he is said to get Re. 1 to Rs. 2. For ornaments set or studded with stones a combined rate will often be charged varying from Rs. 3 to 6 a *tolá*. In Mooltan, where this form of industry brings in 6 to 12 annas a day, the rate charged is said to be from Rs. 4 to 6; in Gujránwála from Rs. 4-8-0 to Rs. 5, and in Gurdáspur from Rs. 3 to 4. For enamelling the charge in Mooltan is 4 to 12 annas per *tolá*, bringing in some 4 to 6 annas per diem; in Delhi the daily income lies between 4 annas and a rupee. The in-layers of Siálkot make 6 to 8 annas a day, and those of Lahore 8 to 10 annas. A *kandla-drawer* in Delhi makes 4 annas to 2 rupees a day, in Lahore Re. 1 to Rs. 2; and in Amritsar he can draw 3 to 4 *kandlas* a day at Rs. 2 each, but is not certain of continuous employment. A *tarkash* at Mooltan charges 2 annas a *tolá*; at Delhi he makes 2 to 4 annas a day; in Lahore 2 to 6 annas and in Amritsar 8 to 10 annas. Makers of gold ribbon (*gota*) get about 4 annas a day in Siálkot; in Umballa the wholesale profit on the sale of *gota* is Rs. 9-6-0 per cent. gross, or, after deducting carriage, commission, octroi, etc, Rs. 6-4-0 per cent. net; the retail profit is put down at 15 per cent. In Mooltan capitalists provide machines for drawing the *kandlas*, and pay their employés (three of whom go to a machine) four rupees a month each, for 6 hours work a day. The wage at Mooltan for making *kalábátún* is 2 annas for one *tolá* of silk and one *tolá* of silver, the profit is put down as 3 pie to one anna per *tolá*.

And so on through the other branches of the trade. It will probably be sufficient to note the following rates of daily pay which are reported from Delhi and Lahore, *viz.*, Delhi—*súdakárs*, 4 annas to 2 rupees; *materas* and *chiteras*, 4 to 8 annas, *pardázsáz*, *mulammasáz* (gilder), *jilakár* (polisher) and *ilákaband*, 4 annas to 1 rupee; *dabkaya* and *zardoz*, 3 to 6 annas; *batayás* 3 to 4 annas; *kinárisáz* 2 to 6 annas; *thappasáz* 4 to 7 annas; *salmasaz* 4 to 8 annas; and *satárasáz* 4 to 6 annas; Lahore—*súdakárs*, 8 annas to 1 rupee; *materas* and *dabkayás*, 4 to 8 annas; *chitera* and *lohár*, 8 annas to 1 rupee; *baigari and kináribáf*, 4 to 6 annas, *tillavat*, *nyárya* and *daftrikut*, 4 to 5 annas, *tezábia* and *gilatsáz* 1 to 2 rupees; *nakásh*, 8 to 12 annas; *devalikash*, 4 to 10 annas; and *bindligar*, 12 annas to 1 rupee.

14. The Goldsmith's Weights.—The common measure is that of eight *rattís* to a *másha*, and twelve *mashás* to a *tola*, but it requires a far more detailed investigation than that conducted on the present occasion to give anything like an accurate account of the various meanings given to, and the devices made from, this scale in different parts of the country and different br-

of the trade. You find, for instance, that a *tolá* in Umbálla and Jhelum is looked on as the weight of a Government rupee *plus* two *ratís*. In Kohát the *tolá* for silver is Government rupee, while for gold it is 4 *ratís* heavier. So also in Dera Ismail Khan there are only 7 *ratís* to a *másha* for gold; so that a *tolá* of gold is equal to only 84 *ratís* or 10½ *máshás* of silver. The *rati* itself, the basis of the scale, is an uncertain quantity. It should by rights be the weight of the seed of the *Albus precatorius;* but in Ludhiána it is taken as 2 grains; in Lahore as 4 grains of wheat or 8 grains of rice; in Siálkot and Muzaffargarh 4 grains of wheat; in Pesháwar 8 mustard seeds, and so on. The dishonest goldsmiths of course have heavy *ratís* for buying and light for selling, though the difference in weight is infinitesimal. Similarly, you will often find a goldsmith trying to sell by the rupee, as though it equalled a *tolá*, when in his buying he would count it as less.

Every goldsmith has his *kánta* or *kánti*, the larger or smaller scales, for weighing; the body of these is of iron and the bowls of brass; the bar being sometimes of steel. They are sometimes locally made, but usually are procured from large towns. For instance, those used in the Siálkot District come mostly from Delhi. They are very carefully kept in wooden boxes to prevent them getting crooked. The weights used are the ½ and ¼ *rati*; 2, 3 and 4 *ratís;* the *másha*, 2, 3, and 6 *máshás;* the *tolá*, 2, 3, 4, 5, 10, 20, 50 and 100 *tolás*. Many goldsmiths dispense with some of these; for instance, the 4 *tolá* pieces seem to be rare, and pieces above 20 *tolás* are seldom required. The goldsmith will keep about 12 or 10 *rati* weights; for amounts over a *tolá* he will often have an unrubbed Government rupee, giving the due value as above noted. The larger weights are of brass, but the *máshás* and smaller weights are more usually of broken porcelain.

15. The Goldsmith's Instruments.—Mr. Powell at pages 164 and 165 of his *Punjab Manufactures* notices the chief instruments used by the ordinary goldsmith. He mentions his hammer (*hathauna*), his blow-pipe (*nál*), forceps (*sannu*), mould (*reza*), bladed pincers (*katíra*), long curved pincers (*sanni*), straight heavy pincers (*zambúr*), and small square headed hammer (*chaurási*); also his stamp dies (*thappás*), his crucible (*kutáli*), and his two pointed anvil (*ekwai*), and his various *chisels*, the *chúrna*, the *chaini*, the *kanerna*, the *lurta*, the *thalna*, the *gulsam*, the *golra* and the *súmbha*. And at page 169 he incidentally mentions also the rubber (*moharí*), the files (*sohán and ráwati*), the iron pincers (*chimta*), the scissors (*káth*) and the compasses (*parkár*). I need make no further mention of the above, most of which are described in *Punjab Manufactures*, and this paragraph will be mainly devoted to noting the names of instruments not already mentioned there. For instance, there are the bellows (*khal phúkni*) and the small forceps (*chosth*). There is also the hair hand-brush (*balainchi or kuchi*): the *kuchi* is of hog's hair and Mussalmáns substitute for it a brush of khas or of the rootlets of the *jál tree*. The *zambúri* is a smaller kind of *zambúr;* and the *chimti* a smaller kind of *chimta*. In Kulu large pincers are known as *sensu*, and small pincers as *sensi*. In Dera Ismail Khan there are small crooked-bladed pincers known as *kawa-changi* or crow's claws. There is an implement, the *sundan* or *sandrán*, which seems to be the same as the *ekwai* or pointed anvil; and there is the *dastpana*, a long curved pair of pincers, the same as the *sanni*. The *katira*, or bladed pincers are also known as *katyás*. A *banknal* is a blow-pipe smaller than the *nál* and curved at one end. The file is also known by the common name of *reti;* and in Kulu there is a kind of small hammer called *tora*, which seems different from the ordinary kinds. The *trakla* is a pointed iron tool; the *kuchhar* is a round-headed hammer; the *jilaini* is an instrument for polishing minute silver work; the *tohna* is a blunt headed iron punch used with the *makál* noticed below; the *salai* or *shalai* is a boring-stob thrust through the loops of filigree work to keep them parallel; a *kundi* is a stone cup; *pot* are glass beads for polishing massive jewellery; and *bhodál* are plates of *mica* or talc (*abrak*) on which to fix in clay with their points upwards the minute parts of an ornament or chain which are to be fused together. Besides the above the goldsmith has a variety of instruments which are practically moulds or instruments of the form to which the metal is to be shaped: such as the *pansa* or bell metal cube on which he shapes *topís, katorís, ghungrus*, etc.; the *kalhata* or wooden cylinder for framing

karás, bálás, etc.; the *makkál* or collection of moulds for rounding beads, etc.; the *katka killi* or tapering wooden cylinder about which wire is wound; the *mathni* (round), *kabia* (hexagonal) *gazi* (for making hooks), *athulna* (round), *balma* (for grooves), *moti, patriní*, or *patarni, kandali* or *kandwáli, jalbist, talidána, tirkát, challadár molí, kangalola, maroridár, phorwan, bhedi, dáruwad* and *darikánsi*, and so forth. His *thappás* or dies are distinguished according to the object they are intended to produce, as the *thappa chúri*, the *thappa angúthia, challa, mundri, táwíz, cheki, kara, chotiphul, wálí, takhtián, tawítri, bhawatta, jambor, tredhára, tika tilái, kadhi* and other *thappas* innumerable. The words *katori, kimchi, tawai* and *arore* are also given in various districts as the names of instruments used by the goldsmith, but I have no information as to their use and properties. The instruments used in the more elaborate processes of *kandla-drawing* and the like are noticed in Mr. Baden-Powell's book; the wire-drawing machine there described differs a little from that used in Hissár, and there are perhaps other instruments also in which local variations from the types described by Mr. Powell may be found.

Most of the goldsmith's instruments are made of *kánsi* or bell metal though iron instruments too are often used. They are generally, I fancy, made up in the larger towns only; those used in Kulu, for example, are brought by *nyáryás* from Amritsar. The *kutháli* or crucible which figures so prominently in the processes of alloy and purification described below is made of cotton or munj-ends, and chalk or good clay pounded together and beaten on to a piece of wood known as the *ganath*. The general name for the goldsmith's implements in Kulu is *shandar;* and his tool-bag is known as *shandra lárí*. In Dera Ismail Khan and elsewhere the goldsmith keeps his instruments in a wooden almirah with drawers, and his spare gold and silver he puts in a box (*peti*) with compartments, which he takes home with him from his shop every evening. He also has some spare brass wires for tying the joints of hollow ornaments, and some little boxes (*dibbi*) containing cotton to put gold and silver into. These with his wood, charcoal, *angíthi*, and the implements above mentioned and the materials about to be noticed, constitute his whole equipment.

A goldsmith in the ordinary line has not a large stock of materials. For purifying gold and silver he requires some or all of the following:—Salt, saltpetre, red earth (*geru*), brick dust (*surkhi*), alum, blacksmith's ashes, calomel and corrosive sublimate (*raskapúr*), sulphuric acid and nitric acid; the uses of these will be noticed later on. For a flux he is constantly needing borax (*suhága*); and for his fire he needs charcoal, cowdung and wood. The wood used in Dera Ismail is *kikar* or *karíl*; in Hissár *kikar*; and in Rohtak broken cartwheels. For cleaning silver he needs *kishta*, an acid made from dried apricots, and *ámchúr* or mango parings. For brightening gold ornaments he wants sal ammoniac (*nausádar*) and blue vitriol (*nila thotha*). He uses *másh* seed for soldering; and the seed of the *abrus precatorius* as a powder to increase adhesion in delicate parts of ornaments. Yellow ochre (*zard mithi*) also is used for cleaning gold, and lac for setting stones; lac and pine resin (*selra*) are used in Kulu for material in which to insert an article that is to be embossed. Tamarind seeds are also used by goldsmiths, but I do not know for what purpose. Lead, too, besides being used for purifying silver, &c., is kept by goldsmiths to put between the gold or silver and the hammer, when the former are being hammered into the shape of a *thappa* or die.

16. The Assay of Gold and Silver.—A *Sanskrit slok* tells us that man is tested in four ways just as gold is; and the four tests of gold are said to be the touchstone, boring, heating and beating. In practice there are really only two tests, the boring, heating and beating being all parts of the same process. You can ascertain the purity of gold and silver by going through the processes described in the next paragraph but one; but they can also be assayed without breaking up or destroying the piece in one or other of the following ways.

The commonest method of assaying *gold* is by rubbing it on the touch stone (*kasauti, kaswatti, ghaswati*); then either the dealer will recognize by the shade of the mark made the quality of the gold, or he will compare it with the marks made by pieces of gold of known purity. The purer the gold,

redder should be the tinge of the streak made, but it needs an experienced eye to tell the amount of alloy used: the gold alloyed will always give a paler and yellower colour than pure gold; but a copperish tinge in this paler streak betokens the presence of copper, and a white streak that of silver. No description, however, can do justice to the nicety with which the experienced *sunár* or *sráf* will hit off the exact amount of purity from observing the mark made on the touchstone. Leaf gold, if it is tested by the touchstone, has to be melted down first into a nugget with the ladle or *reza*. Touchstones are of various descriptions; one kind is found at Attock on the Indus. It is part of the necessary stock in trade of every goldsmith.

Another and in some ways a more satisfactory test is that made by boring a hole and heating the gold. The following is a description of this method as pursued in Hissár:—

"A small piece of gold is flattened slightly on the anvil. The *sunár* then takes any sharp-pointed instrument that comes to hand, and applying the point to the flattened surface of the piece of gold, gives the head of the instrument a gentle blow with a hammer. The point just enters below the surface and, by turning the instrument round, the *sunár* is enabled to make a small conical hollow. The piece of gold is now placed on a plate of talc and put in the *angithi* or stove on a bed formed of very small dried pieces of cow-dung. A circular cake of cow-dung is then broken into two and the pieces placed on each side of the plate of talc so as to partially cover it by meeting above it, and to leave in front an opening forming an angle of about 45 degrees. On the top of these two a third and small piece of cow-dung is placed, and thus a sort of miniature hut stands on the plate of talc. A little cow-dung or charcoal fire is then thrown on each side of the plate of talc, and, through the opening which was left, small pieces of *kikur* wood are put inside the hut in such a way as to just touch the talc with their ends, not to cover it or lie on each side of it. The *sunár* now takes a *chimta* or tongs in his right hand and a *nál* or blow-pipe in the left. He applies one end of the *nál* to his lips, and by varying currents of air regulates the heat whilst with the *chimta* he trims the fire. Before long the gold and plate of talc are red hot, and then the *sunár*, seizing the talc with the *chimta*, withdraws it from the *angithi* to examine in a strong light the cavity he had formed in the gold. If the sides of the cavity are of a dark red colour, the gold is good; if of a whitish colour, the nugget is an alloy. The whole of this operation from the moment the gold is flattened on the anvil to the time when it is withdrawn from the fire takes only some 2½ minutes for performance."

A silver alloy is detected by the pale yellow colour left; a copper alloy will first turn red and then black. The brighter the red of the pure kinds of gold the higher will be the value. This method, being a little more delicate than, and not so speedy as, that by the touchstone is not so frequently employed.

A rougher test is by cutting into the gold and observing the colour and brilliancy of the cut made. Gold does not seem to be tested anywhere by its specific gravity; but the assay of gold and silver by aquafortis is said to have come into vogue during the last ten years in the Pákpattán Tahsíl in Montgomery.

Where possible, *silver* can be roughly tested by its ring, in the manner well known for testing coins. Or it may be rubbed on the ground and its purity noted in a mysterious way from the stain left. Or it may be cut for hardness; a copper alloy being harder, and a zinc alloy softer than the pure metal. Or it may be rubbed on the touchstone in the same way as gold. The common practice, however, is either to bore a hole and heat it for test in the same manner as that above described for gold, or to make a notch in the silver with a file and heat it in the *angithi* or charcoal stove. Under the latter process the notch in pure silver should remain white, and in silver alloyed with copper it will turn blackish, in silver alloyed with zinc it becomes yellowish, and in an alloy with both metals there will be a smutch across the walls of the notch. Sometimes the silver after being heated in a crucible is sprinkled with sal ammoniac (*naushádar*) and the alloy detected from the resulting color

17. Alloys.—Besides being alloyed for the purpose of dishonest gain to the goldsmith, the precious metals are legitimately alloyed of course for the purpose of increasing their hardness and power of resistance to wear and tear; and the solder employed in fastening together the parts of the lighter kind of ornaments is of necessity an alloy. I find no notice of alloy being used, as in the Ring and the Book, to enable *temporarily* the pure gold "to bear the file's tooth and the hammer's tap." The alloys used are not numerous. Gold is alloyed with silver or copper, or both; any other alloy only renders the metal brittle.

Silver is alloyed with copper and zinc; an alloy of silver with lead is of no use for making ornaments, and tin, they tell you, will not alloy with silver The alloy is made in all cases by melting the two metals in a crucible with the aid of borax. A silver alloy softens gold and pales it; gold will allow two *rati* a *tolá* of silver alloy; but its texture is not firm then. A copper alloy hardens the gold and colours it. There is not, however, generally any very distinct preference for either metal; in Peshawar silver is by far the commoner alloy; in Dera Ismail Khan the Daman goldsmiths are fonder of copper, and the Thal goldsmiths of silver, but no reason is alleged for these preferences. Silver is generally mixed with gold at the rate of ½ *másha* to 2 *máshás* a *tolá*; copper at the rate of one *rati* to one or 1½ *máshás*. To fuse an alloy of three *ratís* of silver with a *tolá* of gold, two *ratís* of borax would be used. Copper when mixed with silver makes it dark; zinc gives it a brownish tint. There seems to be no limit to the proportions of alloy possible; but the common mixture seems to be one or two *ratís* only to the *tolá*. Zinc and copper together are sometimes mixed with silver, but the result tends to be brittle, and if as much as four *ratís* is put to the *tolá*, the greater part of this four *ratís* must be copper. Yárkandi *kurs*, they say, will admit of an alloy of three *ratís* to the *tolá* of the baser metal. The ordinary alloy used for soldering small ornaments is that with zinc, brass not being used. The zinc in solder is stated in Hissár to be in the proportion of three *ratís* to the *tolá*. The ingredients for solder as given in Mr. Baden-Powell's book, differ from those reported to be used in the Jhang District, where for gold work the solder consists of one *tolá* of gold, six *ratís* of silver, and four *ratís* of copper; while for silver it is one *tolá* of silver and one *másha* of zinc. In Gurgáon the proportions for gold are one *másha* of gold to one *rati* of copper; and for silver, one *tolá* of silver to two or three *máshás* of zinc.

18. Purification of Gold and Silver from Alloy.—The common method of purifying *gold* is by making it into leaves, sprinkling the leaves with brick dust and salt, and heating in a slow fire. The process as carried out in Hissár is described as follows:—

"The mass of gold to be purified is melted down in a small crucible. This is accelerated by adding a little *sohága* or borax. On melting, the gold is poured into a *reza* in which it becomes a small thin bar about 9 inches in length and about 1½ inches in circumference. This bar is made longer by beating and is then cut up into small pieces weighing about 4 *máshás* each. These pieces are beaten into small squarish plates or *patras*, in size about 3½ × 4 inches and of the thinness of stout brown paper. The *sunár* then places an *opla* or dried cake of cow-dung on a heap of ashes in an *angithi*, which for such purposes is the lower half of a broken *gharra* or earthen pitcher. On the *opla* is spread a layer of powder composed of two parts of *surki* and one part of common salt. The *sunár* now seizes one of the plates of gold with his *chimta* or tongs and immerses it in water. When sufficiently wetted, the *patra* is taken out and the same *massála* or powder is sprinkled on it until a good coating adheres to the plate, which is then placed on the layer of powder spread on the *opla*. This process is repeated with all the plates, and they are placed on the top of the other. Over the bank of *patras* a miniature dome with small apertures at intervals is erected of small pieces of cow-dung. A *batti* or wick made of twisted cloth is soaked in oil and lighted. This is thrust into the dome through one of the apertures and thus the cow-dung is fired, and allowed to smoulder for three hours, by which time it is, as a rule, reduced to ashes. Three hours are allowed for cooling. All this time the heated powder has been acting on the *patrás* and absorbing impurities. If, after assaying, it is found that the gold has not been thoroughly purified, the same process is repeated except that no powder is sprinkled on the plates. The *angithi* is always put out of the way of draughts. If a draught was allowed to play on it, an amount of heat would be generated which would have the effect of melting the plates at the edges. Great care must also be taken in preparing the powder. If it is not properly prepared, it will either not act on the plates or it will act harmfully."

With a strong fine gold, which is alloyed merely with silver, will be purified in 4 to 6 hours: otherwise it is put in two or three times, and will take as long as 12 hours. It is customary in Pindi and Muzaffargarh to put it in three times and in Kohát three or four times. It is usual in Delhi to make the leaves 8 *máshás* weight and about 6 inches square; and the mixture of brick dust and salt is sar known as *saloni*. The leaves weigh 3 *máshás* in Jhang and 8 *máshás* in [illegible]pur the in Pindi they are 3 inches by 4. In Muzaffargarh, Umbálla and Gu[illegible] sprinkled *saloni* is mixed with water and smeared on to the leaves instead of [illegible]on. In Lahore over the moistened leaves as noted in the above quoted descri[illegible]

the powder applied consists of one part of common salt and one part of *opla* ashes; in Gurgáon of one part of salt and two of brick powder; in Amritsar of equal portion of alum, salt and *opla* ashes 3 *tolás* of the mixture being required for 20 *tolás* of gold. In Jhelum (where the process is called *aga*) it is oil burnt, clay and salt; in Pindi, Jhang, and Dera Ismail Khan it is water, salt and *bhitor* or earth from the *chúlha*: in Jullundur it is *opla* ashes salt and water; and in Kohát ⅔ of *opla* ashes, and ⅓ of salt mixed with water.

A process is used in Pesháwar which is very similar but more expeditious. The gold is plastered with a mixture of black salt and borax and put into a cake of burning cow-dung with other cakes heaped round about; the alloy is said to be removed in five minutes. In Jhang a mixture of one *rati* of bluestone to 4 *ratis* of sal ammoniac mixed with water, and *gem* is applied and the gold again put in the fire. In Hoshiárpur a process of purification by salt, alum and pip is mentioned. In Gurgáon the goldsmith knows when the gold *pannas* are pure by the sound they give when moved and also by the powder ceasing to stick to them.

The sort of process above described has this disadvantage that the metal forming the alloy is practically lost. According recourse is very commonly had to the following practice. The alloyed gold is mixed with silver either in equal quantities or 1 *tolá* of gold to 2 of silver. The mixture is either cut into small pieces and placed in water or is melted and thrown into water where it sinks to the bottom in separate small particles. These pieces or particles are then put into a porcelain bowl containing acid and the pure gold falls in black grains to the bottom. Water is added and the liquid is carefully poured away, leaving the pure gold which can then be melted into a nugget at pleasure. The acid used is a nitric or nitromuriatic acid. In Jullundur the ingredients are powdered nitre and *kahi mitti* (an earth containing iron as a sulphate); and in Kohát they are alum nitre (*qalmi shora*) and *kahi mitti*. In Dera Ismail Khan the ingredients of the acid there known as *faruki tezáb* are given as nitre and *kasis* or *kahi mitti*. This process is that employed by the *niárgás*: it is specially used in Dera Ismail Khan for extracting pure gold from old ornaments, and the gold thus extracted is known as *tezábi*. The silver in this process is recovered from the acid by putting in copper plates to which it adheres in powder; the powder is shaken off and collected in a cloth.

A third process is used in Amritsar and applied in Jhelum to gold obtained from sand known as Gohri gold by which the gold is fused with borax and purified by the application of calomel and corrosive sublimate (*ras-kapúr*.)

A method adopted to separate *silver* from zinc is to add lead equal to the estimated amount of zinc and melt the mixture down in a crucible; the zinc appears on the surface in a thin film; a pinch of saltpetre is sprinkled on this and it disappears; another film appears and the process is repeated till the silver is cleared. For an alloy with copper also it is usual to melt down with lead. The amount of lead will be 2 *máshás* to the *tolá*, ⅛th *tolá* to the *tolá*, and other varieties up to equal proportions of the two materials, the proportion depending apparently on the amount of copper present. In Jhelum the rule is to add lead equal to twice the alloy; in Hissár it equals the alloy. In dealing with small quantities the *kothíli* or crucible can be used, the sides being sprinkled with *cowrie* ashes. But with any considerable quantity the more usual practice is to melt the metals in a *chari*. This is a hole made either by pressure of the hand or by pressing down a *kothíli* in a bed of ashes from a blacksmith's furnace spread over the ordinary ashes of a *súnár's angíthi*. Ashes from a blacksmith's shop are generally used because they contain metal and make a firmer cavity for the silver to be melted in; but in Jullundur we find wood ashes employed, and in Jhang wood ashes of the *jhand* tree. The sides of the depression are then strengthened by sprinkling with water; and charcoal or cow-dung and *kikar* wood are burnt over the depression and blown until the metals are liquified. The copper and lead escape as gases or are absorbed into the sides of the depression, or are partly helped out from time to time by stirring the mixture with an iron rod to which they adhere. Water is then dashed on to the silver till it cools. It is the silver thus produced that is known as *thobi*. Lead is almost universally used to purify silver, but if the information supplied from Rohtak is to be trusted, there is another method by which silver after

being melted with borax is purified by the addition merely of some *sajji* or impure carbonate of soda. If silver is alloyed with both copper and zinc, the process for extracting the zinc is first followed and then that for extracting the copper.

The method pursued in Lahore for extracting gold or silver from lace (*gota*, *kinári*, *&c.*), is described as follows:—

"Take a certain quantity of lace. Put it in a piece of cloth, burn it. Place the ashes in a crucible. Add a small quantity of borax. Subject it to heat. When melted, throw the whole melted mass into a tub of water. Take out the cooled mass. Put it into an *átashi* bottle enveloped in mud with a little space left uncovered in the middle. Add nitro-muriatic acid (*kahi shora ká tezáb*). Heat it. When chemical operation ceases, *i. e.*, when yellow fumes do not come out and are replaced by white ones, pour the liquid into a bottle. Into the bottle put a fresh quantity of the tezáb. Let it rest, and then pour some of the liquid into the bottle containing the metal. Heat the *átashi* bottle and proceed as before until only gold is left as residue in the *átashi* bottle. The residue gold is like sand; black when gold is in small quantity, red when gold is in large quantity, with respect to silver. The gold sand is put into a crucible and heated with a small quantity of borax; cooled; and a gold mass is formed.

"Copper pieces are added to the liquid containing silver in solution (to which a little water is added) in a porcelain vessel, and allowed to rest covered with an earthen vessel for three or four hours in hot weather or sunshine; and for two days or so if in the shade. At the same time care is to be taken that it is stirred from time to time so that a deposit may not be formed on the copper. The liquid contains no silver when it does not turn the skin black. The mass and the liquid are strained through a piece of cloth and the sandy mass put into a *kothíli* and heated with the addition of lead. When melted it is stirred a little and poured into a *kothíli* of ashes. It is again stirred with a stick of iron and cold water is dashed on it. When cooled there is pure silver left in the *kothíli*, impure lead, copper and ashes."

19. **Ornament making.**—The ordinary *sunár* of a village or country town will know enough to let him chase and emboss his ornaments and set them with stones himself; in large towns, these processes are the profession of separate classes of men. Town-people and the wealthy classes in the country provide these men with custom: a wealthy man in Umballa, for instance, who wishes to have really well-made ornaments will not go to the local market at all, but will import from Delhi, Jeypore, Patiála or Amritsar. The work of the embosser or chaser (*chatera*) has been noticed at page 185 of "*Punjab Manufactures*." A common method of operating is to attach the metal to a firm paste of brick dust and resin in which it sticks so securely that it has to be removed by heat when the operation is over; the metal is then hammered flat and smooth with a small hammer, and a short pointed instrument called the *china* is hammered gently along the lines of the pattern. For this, great delicacy of touch, gained by long experience, is required. In Kulu a child *sunár* is required to practice this art daily on a wooden board till he becomes craftsman enough to be entrusted with the precious metals. The *china* is from time to time sharpened against a file as the process is going on. The *chatera* will sometimes be found sitting in a most uncomfortable position with his feet on the anvil and the ornament between his toes. And in some places he will be found to prefer holding the hammer in his left, and the chisel in his right hand. In Amritsar the art of embossing on silver, copper and brass is quite a speciality; the number of skilled workmen is, however, exceedingly small, and the municipality is trying to encourage the art by teaching boys at the Artizan School. The process there followed is to lay the metal on a bed of lac 1 to 2 inches in thickness; the design is either sketched on the metal or is drawn on paper, which is pasted on to the metal; the operator beats out the pattern with the help of various small instruments, and the figures whatever they are raised by the pressure of the lac; the plate is reversed and the same process continued till the desired height of the design is attained. The operation is described as tedious and expensive. The *setting of stones* is pursued as a separate calling in the larger towns; the setters are known as *jaria*, *murassákár* and *kundansáz*. Dera Ismail Khan has four such—two of whom have, however, come recently from Lahore. There are a few in Pind Dádan Khan. In Rohtak, where the stone-setters had ourwidespread notoriety, the profession is now almost extinct. The ours." method of setting is minutely described on page 186 of "*Punjab Man*ar present The dealing in precious stones is a subject outside the scope the roughest purpose; but it may be noted that the cutting of stones, exc- description of work, is done in large centres like Lahore and Amritsar only; and

in Amritsar the trade in precious stones has diminished very seriously in the last 20 years, since the old customers who encouraged the trade, such as the rulers of Kashmír, Bahâwalpur, Kapurthala and Patiála, have forsaken the market. The cutters of stones are known as *baigarís* or *begrís*. In large centres we also find a separate class of men called *matherás* who turn parts of ornaments into oval and round shapes after preliminary preparation by the *sunárs*. When a goldsmith wants to make beads or rounded pieces of metal for such ornaments as the *mála* or *katmála* he often employs these *matherás* to help him, sending the *matherás* flat pieces of metal which the latter presses with the end of his pincers (*sammí*) into round holes in a wooden board called *chakál*, and finishes off with a wooden instrument called a *moli*. The *mathera* will get 1 pice or ½ pice per bead as wages from the *sunár*, and he has no direct dealings with the purchaser. The beads are returned to the goldsmith to be joined on to the ornament. A further kind of embellishment is applied by another separate class, that of the *parlazzás*. And the polishing will be done often by a class called *jilakárs* who do nothing else. The line between these various branches is however by no means sharply defined. The *murassákár*, for instance, will often embosss and chase ornaments as well as set stones. The village goldsmith is generally his own setter, embosser, chaser, polisher, &c., and sometimes his own wiredrawer or enamel worker. Some goldsmiths are often distinguished as *sádakárs*. The *sádakár* is properly a man employed on work which has not to be enamelled or set with stones ; and in Delhi the word seems to have a further signification implying that the *sádakár* is occupied only in the more elaborate kinds of such work, taking up the process where the ordinary *sunár* leaves it. The enameller, it should be observed, stands on a different position to that of the *chatera* or *mathe[illegible]* ; these latter are employés of the goldsmith, the former is dealt with direct by the customer; an ornament which has to be enamelled is returned to the customer by the goldsmith in its unfinished state.

Regarding the processes employed in the simple ornament-work which constitutes so large a part of the gold and silver industry of the province, there is very little information on record. I have therefore less hesitation in appending some notes furnished as to the operation performed in making some of the commoner kinds of ornaments. The notes come from a district so remote from large centres as Jhang, and therefore may be taken to represent the very simplest methods adopted :—

Chauk (of gold, worn by Hindu women from 1 *tolá* to 4 *tolás* in weight). Melt the gold and make a *kandla* or an ingot slightly tapering at both ends, place it on the anvil and hammer it till it becomes a flat (*patra*), then make a circular mark of two inches in circumference with a compass (*Parkar*), and cut off the circlet with a scissor (*kat*), and place it on *khatta* or a concave in a block of wood and beat it with a *kuchar* (an iron like a hammer with round head) and it will assume the shape of a cup; this piece of metal should be three *tolás* in weight; gather the fragments of the *patra* and make a *kandla* of them again ; of this take nine *máshás* and make a wire, stamp it on the *phorwan* (an instrument for stamping out wires), and fit it at the round edge of the cup and solder it ; apply lac on the top part of a stone and place the cup on it flat and chase the concave side of it by the aid of a hammer (*sumba patrini kanerna*) ; fill it up with lac and produce ornamental work on the convex ; put it on fire and take out the lac and place a little tube of about half an inch in height on the top in the centre and set a stone on it and solder. It is finished in three days; rate of wages 12 annas to 1 rupee per *tolá*.

Walís (of gold, 25 in number, worn by Hindu and Muhammadan women in their ears, weight 6 to 8 *tolás*). Melt the gold and make a *kandla* of it ; of this make several pieces (each piece being 6 fingers long) just according to the number of holes in the ears. One end of these bits is elongated into a finer wire, 4 fingers long, and which is wound round a needle and turned into a ring (*kunda*). The other end of these bits is elongated one finger long like a needle and bent round a "*kátka killi*" (a wooden peg) to assume a circular form. This ornament is finished in two days; the rate of wages is 4 annas per *tolá*.

Nath (of gold, worn on the nose by Hindu and Muhammadan women, weight from 1 to 2 *tolás*). Melt the gold and make a *kandla* of it, one span long ; of this take one *tolá* and make a wire of it 18 fists long and cut it into two bits, one of 12 fists long, the other of six fists. Out of the former take 11 fists and wind round a probe (?) and make a coil "*werh*," and let the other one fist remain straight and string pearls in it; now take the other bit of *kandla* and make a wire of it from 6 to 12 fists long and cut it into two bits, one of 8 fists long and the other of 4 fists in length, and wind the former round a probe ; take it off from the probe and pass the latter wire of 4 fists long through it, and gather it up forming it into a "*chiri*." Now take another *tolá* of gold, flatten it in the middle part tapering both ends, and fold up the middle part by the means of hammer and

sanni and join the breach of it by solder, fill in the hollow part of it with lac and bend it into a circle and make grooves by *sandran* and hammer, take out the lac by heating it over the fire, now fit the "*chiri*" already prepared into one of the tapering ends and tie the "*werh*" with the *chiri* by means of *kundás*. To make the jewel complete add some pearls of different hues. This ornament is prepared in 3 days, and the rate of wages is 7 annas per *tolá*.

Nám (gold necklace for Hindu males, one *tolá* in weight). Melt one *tolá* of gold, take 8 *máshás* of it, and make two plates (*patra*) and make a wire of the remaining 4 *máshás*. Turn this into a *chapni* or a flat and long plates make it like a *pipal* leaf and make grooves all over it. Place this on one of the above two plates and solder (this ornament has curves all round the edge) ; fill it up with lac and turning it up side down, ornament it with *patrini*, *kunerna*, *sumba*, and *talidana*. When this is done, take out the lac and fix the other plate, and solder. Put up two or three rings *kunda* at the above and one ring below to which a pendant (*bulák*) is suspended. It it finished in 2 days ; rates of wages 12 annas per *tolá*.

Kara or *kanqan* (gold generally worn by Hindu men on their wrists, weight 5 *tolás*). Melt the gold and make a *kandla* of it 9 fingers long and 1½ finger broad and cut it into two equal bits ; bend each round by the aid of anvil and hammer and solder its joint, fill it in with lac and bend it round like a hoop from the both ends like tigers' heads and produce ornamental work or flowers by the instruments *sumba, patrini, athalna* and *kanerna*. Take out the lac by heating the ornaments on fire ; some of those are round, some four sided (*gokhru*) and some six sided. It is finished in 3 days ; rate of wages 8 annas per *tolá*).

Arsi (of gold worn by Hindu and Muhammadan women on their thumbs, from 2 to 4 *tolás* in weight). Melt the gold and make a *kandla* of it ; take one *tolá* of this and make a *karra* of it 5 fingers long (a hoop-like thing with points on the edge all round) and make wire of 6 *máshás ;* stamp and cut it into 4 bits according to sizes, place them round in four rows attached to the *karra*, take 8 *máshás* more of gold and turn it into a round plate in the shape of a cup, fill this up with lac and produce ornamental work on the surface of it by *sumba, patrini* and *kanerna*. Take out the lac by heating the ornament on the fire, and taking 10 *máshás* more of gold, make a ring and stamp it on a die intended for the purpose and attach it in the centre on the convex of the metal ; set a round bit of glass on the mouth of it. This ornament can be finished in two days ; rate of wages 8 annas per *tolá*.

Choti phul (of silver worn on the head by Hindu females of Arora caste, mostly 60 *tolás* in weight). It is made as follows :—Melt the silver and make four *kandlas* of it Rs. 15 each in value, take one *kandla* and make a round plate, concave one side and convex the other just like a shield ; take another *kandla* and turn it into a plate 7 fists long, a little less than one finger broad. Place it on a die called "*karrelra thappa*" and hammer it on ; it will have a regular row of pinnacles or tiny pyramids (sink) ; affix this all round the upper edge of the convex side of the metal by solder. Take one *kandla* more and make a plate of it 10 fists long four-sided, cut it into 170 equal bits and turn each like a 2 anna bit but a little smaller in size, place each of them on a die (*ghugge-ká-thappa*), put a *sumba* on it and beat it with a hammer and each grain will come out like a cone (*ghuggi*). Now take another *kandla* and make a wire of it 70 fists long, cut it into two equal bits, stamp one of these on *phorwan* and draw the other through the holes of the steel plate *jandri* till it becomes 70 fists long, then stamp this also, beat it lightly with a hammer, cut it into 100 equal bits and form a double ringlet (*ghuri*) of each of them. Place a wire all round at the bottom of the pinnacles and then some of the ringlets all round which will give the shape of a creeper. Place another bit of wire all round again, and then set a row of the cones ; make such circles three times more, leaving a round space just like an eight anna bit in the centre of the jewel to hold a flower of about an inch high, hollow and round just like a blow-pipe, with a row of 12 leaves on the upper edge of it, being adorned with a thick stamped wire (*bari kangni*), and a thin stamped wire (*chhoti kangni*). When all this process is finished, solder the whole superstructure or ornamental work. A ring attached in the centre of the concave side of the metal completes it entirely. It is made in eight days ; rate of wages 1½ annas per *tolá*.

Hussi (of silver 25 *tolás* in weight, worn by both Hindu and Muhammadans, males and females). Melt the silver and make a *kandla* about 10 fingers long (four sided), keep a place in the middle about two fingers in length (*mar*) and make both sides of it longer by the aid of anvil and hammer, tapering at both ends ; when it is 19 fingers long, produce ornamental work by *patrini* and *athalna* and *sumba*, place it on the hollow part of a block of wood, and place a bit of tin (*kali*) over it and beat it with a hammer till it assumes the form of a ring and the thin ends meet when it is bent into shape. It is made in two days ; the rate of wages is 9 pies per *tolá*.

Bahwatte (of silver, an armlet for Hindu and Musalmán females, 20 *tolás* in weight). Of the 20 *tolás* take 10 *tolás* first and make two plates (*patra*) of 8 fingers long and one-and-quarter finger broad and as thick as pasteboard ; cut each of them into 11 bits, the first bit or *chapri* somewhat square □ and the other somewhat like the letter X ; take the other bit of 10 *tolás* and make a wire of it 25 fists long, cut three fists of it for stars (*akhris*) 22 large and 92 small ones, make 92 rings (*kunda*) of the rest of the wire, *viz.*, two for each square and 6 for each of the other shape ; affix the large star (*akhri*) in the centre of each and one small one at either point or edge of the square metal and three rings at either

edge of that of the other shape. These small *akhris* are placed at the base of each *kandla* on the (*sidha pása*) right side. This ornament for both arms is finished in 3 days, and the rate of wages is 1 anna 3 pies per *tolá*.

Churá .(of silver or bracelets worn by the females of both Hindu and Mussalmáns. Seven bracelets in each hand from 20 to 60 *tolás* in weight). To make one *chouras churi* or bracelet, take 3 *tolás* of silver and turn it into a flat plate just like a flat ribbon of two *chappás* in length and stamp it on a die (*thappa churi*), and bend it round a *kátka killi*. One man makes 14 bracelets in two days ; rate of wages 9 pies per *tolá*.

Nure (of silver, anklets for Hindu females 20 *tolás*). A pair of round tubes (*nure*) are made thus : of 20 *tolás* of silver take 17 *tolás* and make a *kandla* of it 6 *chappas* long and cut it into two equal bits ; make each of these four *chappás* long and three fists broad each, and turn their borders by a (*kat*) scissor, and bend them round on a thin round rule (*kát-ki-gazi*) ; take them off from the ruler and solder their points; fill them up with melted tin ; when cold bend them round like a ring by the aid of the *sandran* and *mohli* ; measure by a compass four equal spaces in length on each of these ornaments and produce ornamental work in such a manner that they may be distinguished from each other ; of the four spaces marked on each ornament, cut on of the four spaces at one end of each of the circlets, apply to them mud all over and put them in the fire ; when hot, take out the tin and fit them up with rings (*kunda*) bolt and hinges to close and open. A pair is finished in three days ; rate of wages is 1 anna 6 pies per *tolá*.

The cleaning and polishing of ornaments is done in various ways. *Gold* will be cleaned with a mixture of alum, salt and blue vitriol soaked in water, followed by a heating in the fire ; or (if impure gold), by rubbing with a powder composed of 1 part sal ammoniac, 6 parts salt and 12 parts alum. In Gurgáon the ingredients of this mixture are given as 2 parts alum, 1 salt, $\frac{1}{21}$ sal ammoniac and $\frac{1}{21}$ blue vitriol, with *pili mitthi* added ; there, too, the gold is again covered with *gern* and a little blue vitriol, and put again into the fire till it smokes, after which it is cleaned with a brush. Brick-dust *(surkhi)* and salt is also used for the purpose. Or you can rub on with water a powder of which two-thirds is alum and one-third salt, dipping the gold in a cold solution of *kishta*, and washing with water. If the gold is to be given a reddish colour, *gern* can be rubbed on and the gold heated. *Silver* can be cleaned by being boiled in a pot containing 3 sérs of water to $\frac{1}{4}$ sér of *ámchur* or mango parings ; the pot is taken off the fire after two hours, and when it is cool the ornaments are extracted and the bits of *ámchur* adhering to them are brushed off. Massive ornaments can be polished by a string of glass beads dipped at intervals in water ; finer work is beautifully polished with an instrument called *jilauri*. Silver is also cleaned by being soaked two or three hours in an acid solution of *kishta* and then smeared with a paste of saltpetre and borax or alum and salt, and heated and cleaned with a brush. Silver can also be polished with a rubber of agate or cornelian called *mohari*.

Mr. Baden-Powell, on page 185 of his "*Punjab Products*," notices that the sweeping of the floor of a goldsmith's shop are valuable enough to be sold, when the goldsmith leaves his shop, to a class of persons called *Niaryás* who extract the gold from them. It is common for the *Niarya*, as in Hissár, to come round every month or second month and pay a few annas for the sweeping. Or he will, as in Dera Ismail Khan, pay Rs. 50 or 60 a year to a goldsmith for the monoply of the sweepings. These he takes away in a wooden tray or *kátra* to the side of a tank, where he mixes some of the rubbish with water in a large earthen vessel called a *kund*. He stirs this well to let the metal sink and then puts the vessel into the tank just below the level of the water and sways it to and fro till the dirt has gradually been washed out and the gold alone remains. His method of purifying gold has been noticed above. His profit is put down at 2 to 3 annas a day ; but it is very precarious. Where the street in front of a goldsmith's shop is unpaved, the *Niarya* will make something out of the scraping there too.

20. Gold and Silver wire-making and cognate industries.—After the ordinary simple ornament work of the goldsmith is to be noticed the class of work which produces gold and silver wire, thread, ribbon, spangle, lace, foil, tinsel and the like. Mr. Baden-Powell gives a full account of this kind of work at pages 156 to 164 of his book. The origin of the whole matter lies in the cigar-shaped silver ingot *(raini)* covered with gold leaf *(sona patra)* known as the "*kandla.*" With the help of the simple and powerful apparatus described by Mr. Powell, this is drawn out into wire by the *tárkash ;* and then, with a lighter apparatus into a

still finer wire by the *katayá*. The wire will then go to the *dabkaya*, who beats it out into the flattened state in which it is known as *tila ;* or twists it into wavy tinsel known as *mukesh* and *sulma ;* or hammers it off into spangles *(sitára)*. The plain flattened wire is then handed on to the *kalábátúnsáz*, who twists it on to silk thread and thus makes the gold and silver thread or *kalábátún* used in embroidery ; or to the *kináribáf*, who weaves it with thread into the ribbon known generically as *gota*. The *mukesh*, *sulma* and *sitára* go to the embroiderer or shoe ornamenter, who works them into the appropriate material as required. *Lace* will be made by the *kináribáf* from the coarser wire *(tand)* as it comes from the *tárkash.*

Such, in brief, is Mr. Powell's account ; but there seems little doubt that the *tárkash* has been here confused with the *kandlakash*. In Delhi and Lahore at any rate it is the *kandlakash* who first draws out the wire, and the *tárkash* is the same as the *kataya* or *ghataya* who afterwards draws it out finer. For information of all kinds regarding the gold and silver wire manufactures of Delhi, the *locus classicus* is Mr. Stogdon's note which is printed as an Appendix to the Punjab Internal Trade Report for 1881-82. As there noted the silver ingot (*raini*) is in Delhi called "*gulli*" ; the ingot of 75 *tolás* will have an alloy of 2 *tolás* of copper and the gold leaf applied will vary from 6 *máshás* to 5 *tolás* according to the richness of wire required. Mr. Stogdon states the maximum length of wire turned out by the *kandlakash* as 10 yards to the *tolá* ; the information now supplied says 12 yards can be turned out. The finest wire that the *tárkash* makes is said by Mr. Stogdon to run about 900 yards (yards of $2\frac{1}{4}$ feet) to the *tolá ;* it is now stated that skilful men will turn out as much as 1,200 or 1,300 yards (but the length of yard is not stated).

Neither Mr. Powell nor Mr. Stogdon notice the practice of affixing the gold leaf to the ingot by first notching the ingot with a file, nor to that of cleaning the gold leaf attached with salt and alum and water. In Mooltan the *kandlakash* now work with an English machine which requires only 3 persons—two to look after the machine and one to mend the wire when it breaks. The Delhi octroi rates are given by Mr. Stogdon. The purity of the Lahore *kandla* has degenerated since the days when Mr. Baden-Powell noticed its special freedom from alloy. The Municipal control has been withdrawn ; the *kandla* is no longer taxed ; and it is no longer pure ; the *tárkashes* complain of the lowness of their profits and the constant liability of the wire to break ; the customers who buy the wire and the *tezábiás* who extract the gold and silver from it are equally dissatisfied ; and it is stated that a strong feeling exists in favor of the taxation, or at any rate, the official assay, of the *kandla* being renewed. There is a story that Government inspection was stopped by the circumstance that an inspecting Dárogha learnt the *kandla*-drawing which he was set to watch, and practiced it to the detriment of the trade ; the guild sued him and carried the case up to the highest Court, by which it was finally decided that the assay of *kandlas*, which hitherto had been carried on as a relic of native ruler's practice, was outside the scope of the function of Government. I have not been able to trace any foundation of fact for this story, but it is very probably correct in its main features. Popular report also says that assay under native rule was very strict ; a piece of the *kandla* weighing one *tolá* was put into a crucible, while into another crucible a *tolá* of lead was placed ; the two were subjected to the same heat until the *tolá* of lead disappeared ; the silver was then taken out and if the weight had been reduced by more than four *ratis*, the *kandla* was passed as correct.

The plain flattened wire of Delhi is called *bádla*, and *diwáli* is the name applied to the broader kind of this wire as *mukesh* is to the thicker. The tinsel called *sulma* is in Delhi said to be of four kinds—*sáda*, prepared from *bádla ; kora* prepared from ordinary *tár ; tikora*, a polished *(jiladár)* description of *sáda ;* and *gijai*, made from wire which is flattened on one side only.

The *kalábátúnsáz* or gold and silver thread-maker is known in Delhi as a *bataya ; kalábátun* is made in Mooltan also and to a small extent in Jullundur ; in Mooltan the weight of silk and silver used is almost always equal. Of gold thread made outside the Province, the Bokhára is by some authorities thought to be the best ; then the Agra thread, and lastly the Russian. In Lahore, Kasúr, Chinfot and other towns where there are large colonies of Khojás, a good deal of

embroidery of gold thread on leather is done by Khoja women; and similar work is done by the *mochis* of the hill tracts of Hoshiárpur and Kángra. Where the borders or edges only of the silver are embroidered, the work is known as "*beldár*"; where the heel and toe are embroidered, it is "*butáwála*"; and where the whole surface is operated on, "*gach.*" The richer classes in Dera Ismail Khan will order embroidered shoes from Pesháwar costing 2 to 10 rupees a pair.

The various kinds of ribbon wares form a separate class from the above. *Gota* is the generic name for these, but it is properly applied only to a kind of ribbon which is less than ½ inch or an "*ungal*" broad. There is a narrow plaited gold cord called *dori*, which is used in Hissár for edging men's *angurkhás* and women's *mirzais*, and is there gradually supplanting the *kaitún* or plain unflowered ribbon which used to be applied to the same purposes. The ribbon or *gota* of Delhi is very often woven by ladies in distressed circumstances (said to be about a thousand in number) who keep their occupation as secret as possible. Gilt ribbon or *gota tilai* is called *dhanak* when narrow; *kinári* when broad; and *thappa* when of medium width and stamped. Silver or *nuqrai gota* is either plain or impressed *(thappa)*; the former is immensely sought after. The *kinári* of Delhi is 5 or 6 *ungals* wide. *Palla* is a broad kind of *thappa*, *lochka* is *gota* two *ungals* wide, and *anchla* (generally used for putting on *dopattas*) is *gota* which is more than two *ungals* wide; *khingri* is a wavy form of *gota* and in *gokhru* (or *bánk*) the design is castellated. *Kinári* and *gota* are often edged with cotton and silk thread *(asára* or *pam)* or with *kalábatún* (gold or silver thread). The narrower forms of Delhi lace are used for trimming men's *angurkhás* or coats; the broader forms are employed on skull caps, which cost 8 to 12 rupees a piece. In Dera Ismail Khan the Pesháwar skull caps have a far larger sale than the Delhi ones. It may be noted that it is often customary for the *kangri farosh* or seller of ribbon to make advances of money to the *kandlakash* for the carrying out of orders for wire. The *patáli* is a man who works gold and silver thread into silk *azárbands* (drawers-strings), *chaprásis'* badges, lace for uniform and the like; he is said to make Re. 1-8-0 a day by his trade. The *zardoz* or *karchob* works gold or silver wire on cloth, and the *ilákaband* works them into girdles. There is some small local manufacture of lace and thread in the Jullundur District and some ribbon lace and thread at Hoshiárpur, Garhshankar and Dasúya in the Hoshiárpur District, and some *dori* or *kaitún* ribbon is made at Siálkot and Pasrúr; but such work is generally confined to large centres.

Under this head we should notice the Pesháwar *lungis*, which are handsome and have a wide reputation: they are embroidered with gold at the ends and often all along the edge, and cost Rs. 10 to Rs. 100 each. There used to be a fair industry at Rohtak for weaving gold and silver in turban and scarves, which gave employment to some hundred men; the Rohtak work of this kind was said to be the best in India, and there was a great demand for the ware at Delhi and Jaipur, but the fashion has now changed and the industry disappeared.

21. **Inlay, Electroplating and Enamel.**—A very minute account of the *inlay* of gold on steel known as *koftgari* work is given at page 167 to 171 of "*Punjab Manufactures.*" Very little is now done at Amritsar and the industry at Mooltan has ceased altogether. There is a rough sort of inlay practiced on firearms at Kohát; the surface being punctured and the gold or silver wire then beaten into the design. The centres of the art at present at Kotli Lohárán near Siálkot and at Gujrát. The workmanship even there is declining and the prices rising; the result of indiscreet European patronage. There are 8 shops and 13 workmen in Gujrat City, and the trade is said there to be improving steadily; two years ago certainly there was room for improvement. The material of a small shield of fine gold inlay (*dhál sonehri*) with a diameter of 14 inches costs Rs. 28; the work takes 30 days and the price at sale is Rs. 40. That of a shield of mixed gold and silver inlay (*dhál ganga-jamni*) 15 inches in diameter costs Rs. 8-12-0, takes 20 days and sells at Rs. 14. Other articles such as boxes, sword-handles, breast-plates, *kalamdáns*, plates, bowls, inkpots, picture frames and the like, are also made and are well known to Europeans.

Electroplating (mulamma) after the native method is described at page 172 of "*Punjab Manufactures.*" Plating is practised at Delhi, and to a certain.

extent in Hoshiárpur; the work in Amritsar is limited and not of a high order. There is a very little done in the town of Kángra, chiefly silver buttons with chains, silver cups, *gulábpáshis*, rings and necklaces. In Siálkot some electroplating after the European method is done in the town and in cantonments and in Kotli Lohárán; the method pursued is that described by Mr. Baden-Powell. In Gujránwála there is an electroplater, who makes a fair livelihood by electroplating copper bracelets, necklets and rings. In Dera Ismail Khan the *sunárs* will electroplate in the ordinary method; they are said to plate silver earrings with gold very neatly. The art is not practised at Mooltan. This is the only branch of gold and silver industry in which there appears to be anything like a trade journal; a sort of hand-book, describing in great detail the processes of electroplating, was published recently at Delhi in two or three separate numbers under the name of "*Gilat ka Risála.*"

The process of *enamelling* (*minákári*) is also described in "*Punjab Manufactures*" at page 191. Enamelling on gold and silver in pink, white, yellow, green, blue and red, is done at Delhi; a little is done in Hoshiárpur, in Amritsar it is scarcely known. In Dera Ismail Khan there are four enamellers, two of whom have recently come from Mooltan. Mr. Baden-Powell derives the word *minákári*, apparently with justice, from the Persian word "*mina*," blue; but the local derivation at Mooltan is from "*nimá*" (half), because the alloy used on the work is said to be half silver and half copper. As a fact the mixture in Mooltan is generally ¾ silver to ¼ copper; and the alloy is said to be more now than it used to be. Kángra and Mooltan seem to be the only places where the art is practiced to any appreciable extent; the work at Maghiána and in Hazára being scarcely worth mentioning. Even in Kángra it is not the exclusive work of the men who work at it, for the same man will turn his hand to embossing, setting and enamelling. The enamel there is applied largely to silver cups and card cases. In Mooltan the art is applied to thumbrings, fingerrings, toerings *atardáns*, *surmadáns*, and square lockets *(patrúán)*; also to necklaces, buttons brooches, bracelets, &c., of English style; and to dishes of various kinds.

22. **Gold and Silver Leaf.**—Anyone who wants to know the process employed in *gold beating* (*daftrikut* or *zarkobi*) will find all the details and the names of the drugs used minutely given on page 173 of Mr. Baden-Powell's book. In Delhi the occupation is carried on in 51 establishments, supporting 117 men, all Mussalmáns. It is known too at Hoshiárpur and in Pind Dádan Khan; a good deal is done in this line at Amritsar, and at Mooltan there are 5 establishments employing 20 men. In Lahore there was a very superior gold-beater who is now blind; but he is said to have bestowed his craft along with his daughter on his son-in-law. Leaf for gilding in Delhi is made in pieces of 9 inches by 4½, 75 or 100 to a *tolá*; and you can get, they say, more silver leaf in a *tolá* than gold. In Kángra no gold leaf is made, but silver leaf, aggregating in yearly outturn something under Rs. 2,000 in value, is made up at Kángra, Núrpur, Sujánpur, Nádaun, Baijnáth, Nagrota, Bhawárna and Paprola. The gold leaves of Mooltan are 3 to a *rati*, selling at 13 to a rupee, silver leaves 50 to a *másha* and 210 to the rupee. The *daftri* or book of leaves is, as made in Lahore, of 120 leaves; but the *daftri* as sold is said to be of 100 leaves only, the difference going to the middleman shop-keeper, and the gold-beater himself making a profit of one anna in the rupee. The silver *daftri* sells at 12 annas and the gold at Rs. 4. Leaf is used for stone setting, overlaying, illuminating, and binding.

For *illuminating* you grind the leaf in a mortar with a boiling mixture of water, glue *(saresh)* and sulphuric acid *(farukhi tezáb)*; and paint on with a brush of squirrel's hairs. For drawing the lines round the leaves of a book the charge is an anna a page; and foolscap size *murásilás* are illuminated for 6 to 8 annas each. For *binding* you rub the leather with white of egg and apply a paste containing in the proportion of 3 to 4 white wax and castor oil; then you affix the leaf and press it down with a stamp bearing the required letter or design. *Printing on cloth* can be done either with a stamp or by hand. In the former case you make a paste of equal parts of glue and chalk to which white of egg has been added. After boiling them in water you stretch the cloth before you and smear this paste on to the stamp and press the latter on the

cloth; you then pick up the gold or silver leaf with cotton wool and apply it to the place. In the latter case the design is marked out with a bamboo reed or pen dipped in a mixture of white *dhúp, ganda-beroza* (turpentine) and *mitha tel* (sesame oil). The hand work (known as *nik-ka-kám*) is said to be done by women alone and as part of their household duties, not as a profession.

Gold and silver leaf is also used as a *medicine*, being eaten with raisins (*munakka*) or pickles of apples, *halala* (Terminalia chebala, "*Punjab Products*," page 349), and *ámla* (Emblica officinalis) as a kind of tonic. Preparations are also made called "*kushtas*," the ingredients of which remain a mystery to all but their makers; the pure gold *kushta* is called *mirgang*, that of silver *rúpras*, and that of gold, silver, pearls, copper, slag (*sang-basri*) and other drugs, *basant-mitti*. The gold or silver *kushta* is used for palpitations, debility, congestion of the lungs and what not. Sometimes silver is prepared with the aid of sal ammoniac and *ak*-wood fire, or with turmeric and *opla* fire, about ¼ *rati* of the ashes being eaten with cream or butter. These *kushtas* are sought after, and charged for at fancy prices such as Rs. 200 a *tolá* and the like. There seems to be a good deal of rascality and quackery connected with the preparation and sale of these medicines. Alchemy, too, of course, is far from being dead; and the credulity of the people in such matters is unlimited. There is a characteristic tale from a recent issue of the *Civil and Military Gazette*, which is only one of many that illustrate this:—

A native mendicant having recently arrived at Mean Meer gave himself out as an alchemist and, as usual, succeeded in gaining the confidence of a large number of ignorant natives there, who were anxious to learn the art of making gold. The other day, however, the alchemist asked them to bring him all the silver jewellery which they had in their houses, promising that he would turn them into gold. The request was promptly complied with, and before evening a heap of jewellery of the aggregate value of about Rs. 3,000 was brought and given to him. As the process was to take place in secret, the men were prevented from visiting the house of the alchemist during the night, but the following morning the alchemist was missing, having absconded with the jewellery. The men are on the look out for him. Some having gone to Jullundur expecting to find the mendicant there.

Gold is also used as with us for the metal plates of false teeth, also as wire for fastening loose teeth; there are four men in Delhi who are specially proficient at this. And besides these, there are the pieces of gold with which Hindús transfix their teeth for superstitious reasons, regarding which more hereafter.

23. Miscellaneous Gold and Silver Work.—Vessels of the precious metals such as *atardán, golábpásh, pándán, surái, gilás, surmadán*, cups, plates, dishes, &c., are made by the Delhi *sádakárs*. In Gurgáon, but more rarely and only to order, the goldsmiths make *atardáns*, salvers (*tashtaris*), *huqqa* mouth-pieces and even *huqqas*. At Umballa, Rupar and Jagádhri, *atardáns* and the like can be made, but not well. In Jullundur goblets, *huqqas*, trays, &c., are made; and in Hushiárpur *suráhis* and silver *atardáns*, but only to order. In Montgomery they make buttons and *huqqa* mouth-pieces and the like; and in Pesháwar silver cups for Hindús, *surmadáns, katoris*, small plates, and silver bodkins for stringing *paijamás*. In Pesháwar you also find silver mounting for sword and knife scabbards, and silver buckles and other mountings for harness are occasionally made for wealthy Afghán Sardárs. They also make locally the articles used in marriage presents; such as the silver shoe used by Kaláls (price about Rs. 10), and the *surmadáni* and *tháli* and *katori* of most Mussulmáns; the *katori* of silver is a pomatum box for the bride's dressing table, and costs Rs. 3 to 6. Caskets are well done in Dera Ismail Khan, the charge being 2 to 4 annas a *tolá* for silver, and 8 annas to 1 rupee a *tolá* for gold; they also make *suráhis* and *huqqa* mouth-pieces to order. There was a man in Gujrát who could make vessels of gold and silver, but he has grown blind without imparting the art to any one. In Kángra the only articles procurable are silver drinking vessels (*ábkhorás*), enamelled silver cups, silver rose-water sprinkles, paper-knives, enamelled card cases, antimony holders, and silver *huqqa* mouth-pieces (*muhnál*). You also find curious little industries at all sorts of places; at Pesháwar, for instance, there is an industry in tooth-picks and *kán khaláls* of silver, which are worn round the neck chiefly by those who are addicted to long prayers; and at Delhi they make the light circular pieces, equal

to one-eighth or one-fourth of a rupee each, which are thrown over the *pálki* of a bride and scrambled for by beggars. All this miscellaneous kind of work is said to be generally rude and wanting in finish; but in Kángra at least these defects are absent or at any rate unobtrusive.

Articles of *jalús*, spears, *haudas*, saddles, *ásás, máhi marátibs*, fans, &c., are made by the Delhi *sádakárs* for Native States, but not the quantity formerly made. The artizans of Lahore and Mooltan have a special aptitude for gilding large surfaces such as the domes of mosques and the spires of Hindu shrines. The copper gilt of the *Durbár Sáhib* at Amritsar is said to be all done locally. The *arghi* for pouring water over the idol in a *shivála*, the *tashtri* or tray for collecting the water, and the *charnamriti* or ladle for distributing it, will sometimes be of silver or gold; there will also be three or four cups for keeping rice, &c., in; the lamp for *rati*, and the handle of the sacred flapper. In some Hindu temples and Sikh *samádhs* are kept silver-plated stools, lamps, *lotás, gharrás* and drinking vessels. There will also often be gold umbrellas and frontlets (*mukats*) for the idol; also earrings, bracelets, &c., for adorning Radha and Krishn. The statue itself may be of silver or gold; many such are prepared in Amritsar. In many *shiválás* the platform for the idol is of silver; and other articles, such as the *tipai, matka*, &c., used in worship are of solid silver. The account of this class of work in Kulu is interesting:—

The *deotás* or idols are profusely ornamented, besides being constructed mainly of the precious metals. A *deota* is a collection of a number of fairly carved faces affixed in rows one above the other to a large convex copper plate, which is unseen, being generally concealed by flowers strewn over it, and which is placed in a sleeping position in a high-backed chair without legs, attached to two long palanquin poles, and draped with silks and cloths. Attached to the top of the copper plate and standing well above the top of the chair is an umbrella-shaped ornament of gold or silver known as the *deota rá chhátar*. In the case of the *deotás* of *Seoráj* a dense canopy of black *yák* tail hair is interposed between the top of the copper plate and the *chhatar*. The *deota's* faces, known as "*mohr*," are sometimes of brass, generally of silver and occasionally of gold. They are life-size representations of the human face. There may be 6, 9, 12 or 16 faces arranged in rows of two, three or four. They all present the same placid expression, and, though fairly carved, are not works of high art. The *chhatar*, however, is a very pretty ornament, shaped, as its name implies, like a flattish umbrella with pendants of chains and balls hanging all round the edge. The top surface is elaborately embossed with patterns of flowers, &c., and a smooth, conical apex is attached to the centre of it. The *chattar* is generally renovated or a new one is supplied to the *deota* before he goes to the annual *Dasehra* fair at Sultánpur. The largest and finest of the Kulu *deotás* is *Bijli Mahádev*, a very handsome piece of workmanship. A female idol or *devi* is generally adorned with ornaments such as are worn by women, but made on a very large scale. A gold *chhatar* costs about Rs. 600; what the value of the materials embodied in a *deota* (idol) may be it is difficult to say, but even a brass *mohr* or *deota* face realizes Rs. 50, so that the total value represented by the 365 *deotás* of Kulu must be very great. The following musical instruments used in the worship of a *deota* are sometimes of silver though more often of baser metal:—The Karnál, a very long straight trumpet; the Narsingha, a large curved trumpet. They are not, as a rule, chased or ornamental.

24. The Ornaments of the Punjab.—It is of course very difficult to give any estimate approaching precision as to the proportion of the value and amount of gold ornaments to those of silver. Gold is confined mainly to the richer classes, and is not largely worn even by them except on festive or other special occasions; whereas silver is the material of which almost all the ornaments of the lower or agricultural classes are made, and a large proportion of these ornaments are in daily and constant use. In Umballa it is estimated that three-fourths of the ornaments worn by the rich are gold and three-fourths of those worn by the poor are silver, but whether this is an estimate of value or amount is not quite clear. Probably the value of the gold ornaments of a district will ordinarily exceed that of the silver; in other words, the amount by weight of the silver will not exceed 20 to 25 times that of the gold. In Gurgáon, it is true, the value of the gold is said to be only one-tenth that of the silver, but in Siálkot the value is put at 2 to 1, in Jhelum at 7 to 3, and in Pindi and even Kohát the gold used is estimated at more than the silver, and probably this is really the case everywhere. In Ludhiána the proportion (it must be proportion in amount, not value) is given at 1 to 20, in Montgomery as 1 to 2, in Gurdáspur and Pindi at 1 to 4, and in Dera Ismail Khan as 1 to 100. All such estimates are, however, at the best but mere guesses, and I merely record them that they may be taken for what they are worth.

Mr. Baden-Powell on pages 181—4 of his "*Punjab Manufactures*" gives a list of 99 names for ornaments used in the Punjab, and the list is by no means exhaustive. For ordinary purposes, however, it generally suffices to be acquainted with a few of the main types only. For instance, there is the *phul* or hemispherical knob worn by women on the top of their heads, and the *chaunk* or small edition of the same. There is the *dámni* or fringe that hangs over their foreheads; the earrings (*bála* or *báli*), the *nath* or nosering and the *laung* or nosestud; the *hár* or *málá* and the solid *hassi* or *kass* round the neck; the *bázúband* on the arm, the stiff bracelet (*kangan, kara* or *gokhru*), and the thin bangle (*chúri*); the fingerring (*angushtri*), which, if plain, will be called a *challa*, and if set with stones a *mundri*; the thumbring with its looking glass (*ársí*), the big toering (*angutha* or *angushtána*), the *chánjar* or hollow rattling anklet, and the *pázeb* or fringed anklet. These, though even they are not current everywhere, are the more general terms and express the main types. But there are innumerable varieties, and varieties of varieties, which are familiar to every native, and the terms in one district or part of a district are often only locally understood. Once you have grasped the difference between a *hár* and any other kind of necklace, you have still to find out the distinctions between the *chandansaini hár*, the *sitáron-ká hár*, the *pálkon-ká hár*, the *kanghni-ká hár*, and a hundred other *hárs*. You may appreciate what a *nath* is, but you have still to differentiate the *bawáliwáli nath*, the *poli-sádi nath*, the *nigger nath* and other *naths* innumerable. Then, again, what you knew as a *kass* or *hasli* in the Punjab is, of course, a *háns* or *hánsli* at Delhi. And, further, the *chaunk* of the Punjab is called a *sisphul* in Delhi, a *chandbina*, a *chandra*, a *bindli*, *Bindi*, a *barwata*, *palkin*, a *silwata*, a *seli batta*, and so on. You find ornaments mentioned in Mr. Powell's provincial list, such as the *tavít*, *kantala*, *tandaura dedi*, *mor phunirar*, *rekhan*, *bani*, &c., which are not known at Delhi. Further, if Mr. Powell's list is to be trusted, a *jhankangan* is a small hollow bracelet with grains inside; whereas if you go to Shahpur, you find the *chankangan* to be a bracelet with pendants, worn above a set of *churís*. And a *bála* in Shahpur seems to mean an armlet; while in Kángra it is always nosering. Then instances will suffice to show the difficulty of forming a complete list, or a list anything like complete, of the names of the ornaments known in the Punjab. Mr. Powell's list above alluded to professes to be provincial and to avoid merely local names; but from what has already been said it is obvious how difficult it is to distinguish local names from others. Certain words, for instance, which are not in Mr. Powell's list, such as *tád* for an armlet; *pauncha*, *bánk* and *bichwa* for feet ornaments; *nashi* for earrings; *taragri* or *tagri* for a zone, and *paccheli* for wristlets, are words in fairly general acceptation. I append a list of words culled from the district reports, which are, so far as I can see, unrepresented in Mr. Powell's general list, but which can well be compared with, and supplemented by, the list of local names given by Mr. Powell at pages 176—180 of his book. Some further local words will be found in the account of Kulu and Kángra ornaments noticed below: and Pashtu and other practically foreign terms are not included.

Ornaments for the Head.

Delhi.—Fath chánd.
Ludhiána.—Dori or paránda, kanda saryánwála.
Jhang.—Takhti, dhága, dánwani, chan tárá, jhummar, chot, bodi.
Gujránwála.—Paránda, máin, tavitri.
Gujrát.—Tawitri, chot.
Shahpur.—Chan.
Gurgáon.—Borla.
Umballa.—Koda.
Peshawar.—Jál or galúna, taiga.
Dera Ismail Khan.—Chot.

Ornaments for the Forehead.

Ludhiána.—Bungna, tahiti or much, bandi, bina, bend.
Jhang.—Takhti or patri.

Gujránwála.—Chánd, bina.
Shahpur.—Tawitri.
Gurgáon.—Mukh ká sáh.
Lahore.—Alián.

Ornaments for the Ears.

Delhi.—Chánd or bijli ka jora, magar chaudáni, lachke or khatke or jhulanyas, kan.
Ludhiána.—Dandi.
Jhang.—Dharán, popat patr, bunda.
Gujránwála.—Kangri.
Gujrát.—Dandi, bahaduri.
Shahpur.—Búnda, bhúlchi, kinti, nasbi, dhandu, pakla.
Muzaffargarh.—Denhún tilla, chílkán.
Dera Ismail Khan.—Nasbi.
Lahore.—Nasbi.
Peshawar.—Burghi, aveza.

Ornaments for the Nose.

Jhang.—Chutki.
Gujránwála.—Chutki, bia, and baina (which are suspended from the nath).
Shahpur.—Tavitri, chutki.

Necklaces and Neck Ornaments.

Delhi.—Chandar kala, thussi, típ, dulara, pachlavá, satlava, nimanga, teota, gajra, baddhi.
Ludhiána.—Humel, tandira, badhaina, gudam, chouke, dholna.
Jhang.—Dholará, lammi, dharamra, kaddhi, bohar, lar, wadháwa.
Gujránwála.—Lamínmála, durmaṛah.
Shahpur.—Kadhi, Lammi-jiwan-mála, dalbara, juva, dharmara, haweg, hatiali.
Muzaffargarh.—Patri.
Gurgáon.—Kathla, tora or guthwa or karidár.
Jullundur.—Anam.
Lahore.—Tulsi, wadháwa, kandhi.

Arm Ornaments.

Delhi.—Jaushan, bhuj, tádi tád, sehnage, yakka.
Jhang.—Dholna, jhabe (pendants of bhawatta).
Jhang, Gujrát, Shahpur and the Gujránwála Bár.—Tád.
Muzaffargarh.—Wang, kholandri, tánda, jhábe.
Gurgáon.—Bala, tádia.
Jullundur.—Bal, tad.
Amritsar.—Tád, gujai.
Jhelum.—Tád.
Shahpur.—Bálú.
Peshawar.—Tek.

Bracelets.

Delhi.—Paccheli, pangrián or pankhriyán, naugri, pariband, dastband, lachche sarásariki jori.
Ludhiána.—Pacheli, muthra, chhan.
Gujránwála.—Jut, sutra.
Shahpur.—Mutra, chunkangan, sutra.
Gurgáon.—Bordi, chan, pacheli.
Umballa.—Chan.
Lahore.—Bánk.
Muzaffargarh.—Dasti.

ORNAMENTS FOR THE WAIST.

Delhi.—Tágri, kamar peti.
Ludhiána.—Tarági.
Jhang.—Chelki, dolmiana.
Gujránwála.—Taragri, batwa, nala.
Shahpur.—Khalita or kharita.
Gurgáon.—Tagri.
Lahore.—Batua, nala.
Dera Ismail Khan.—Chelki, battua.

ORNAMENTS FOR THE FEET AND ANKLES.

Delhi.—Kare, sutri, sankli, jílu, payal, bánk, chúri, gujri, bichhwe, chulkiyan, **challa,** chelli, polri, karyan, anwat, pán.
Ludhiána.—Bánk, tora, mehndi, sangli, lachha, paunta, chará.
Jhang.—Núrá, pauntá, torá.
Gujránwála.—Tora, lacha.
Gujrát.—Lacha.
Shahpur.—Tarora, pauntá, jánjru, jauri.
Muzaffargarh.—Paunti, unwati (also nímakari, enamelled), trora, núra, **chelki,** churi.
Gurgáon.—Bánk, bichwa.
Umballa.—Bichwas.
Jullundur.—Pauntis, bánk.
Ludhiána.—Paunta.
Lahore.—Sut, mahndi, tora, chára, bánk.
Dera Ismail Khan.—Núra, paunta, tora, chaggal, mahawar, mahndi, amrat, **bicchli,** challa, nahian, sut, pakpan.

FINGER-RINGS.

Delhi.—Bánk, dáunah (used by Marwarís).
Jhang.—Cháp.
Gujrát.—Cháp challa.
Shahpur.—Tridodya.
Muzaffargarh.—Weṛh.
Dera Ismail Khan.—Phora or phori.

This copious vocabulary has its counterpart in a copious variety both of design and object, and there is no better way of gaining an insight into the general outline of the subject than to study Mr. Baden-Powell's account and Mr. Kipling's contributions to the District Gazetteers of the Province. I am not in a position to make any general remarks on the artistic merits of the various classes of work, and it would be impossible, if not out of place, to describe the different varieties of ornament. Some excellent drawings and photographs of common ornaments and tools have been furnished in the district reports, and some of these have been reproduced in this Monograph. The best I can do is, I think, to supplement these by some description of ornamentation in certain parts of the hills, where ornaments are most lavishly and most originally designed. The following, for instance, is a sketch furnished by Lála Chuni Lál, Extra Assistant Commissioner, regarding the ornaments of the wandering shepherds in Kangra known as Gaddís:—

"Ornaments for all parts of the body, with the exception of those for the nose, are of silver. The *bálú* (nosering) and *buláq*, the pendant in the shape of a spoon worn in the cartilage of the nose, are the only gold ones. The bust is the part of the body where the majority of ornaments are to be looked for. The crown of the head is not decked with any gold or silver ornaments, the temples being the highest place where ornamentation begins. A silver stud with a perforation is plaited into the hair on the temples on each side, and fanciful ornaments of this tinsel and artificial flowers, called *phalangrus*, are stuck into that perforation, for which otherwise there would have been no room. No portion of the ear is allowed to remain in the form which nature gave it. It is one perforated mass of flesh shorn of all its natural beauty. The edge is ornamented throughout with *phers*,

or small rings thickened through half their length with silver twisted wire curled round. These are all connected with the hair of the head by means of an ornament of enamelled silver in the shape of a bird, having hanging down from it a number of chains about two inches in length supplied with hooks which can pass through each *pher*, the bird-shaped button itself being at the top supplied with a hook fixed to a slight chain which is stuck into the hair of the head. This ornament is called *tolku*. String into these *phers* hang down flower-shaped silver pendants called *chhalka*. Even the *tragus* is not left unslit. A small silver ring supplied with ball-shaped pendants is worn in that part of the ear, called *lítki, dhedkus*, or in the language of the plains *dhedus*, are worn in the lobes of the ears from which *jhumkas*, bill-shaped pendants, are suspended. From *dhedkus*, hooked to them, passes a *bandi* on each side of the forehead. There is another ornament also worn at the lobes; it is called *bála;* [of the form] of the circumference of a nosering supplied with ball-shaped pendants. So the ear ornaments are:—*phers, tolku, chhalka, lítki, dhedkus, jhumka, bala;* and *bandi*. The ornaments worn round the neck are *galsari, champakali, jaumála* and *patki*. Besides these, a number of other necklaces is worn, a description of which is given in Mr. Baden-Powell's '*Punjab Manufactures*' at page 175 as worn by women in the Simla hills, and I cannot do better than quote it. The women have large necklaces of beads, and of rough bits of amber, red coral and turquoise pebbles. Besides these, strings of imported glass beads are worn. As regards the wrist and ankle ornaments, Gaddi women wear immense *pázebs* called *ghúnkarús* or anklets of zinc which close round the ankle. A pair is about 2½ pounds in weight. They are about six inches broad and are rudely engraved with devices. The majority of females wear zinc bracelets called "*gharolis*" on the wrist, and a few the same ornament of silver. The men wear only three or more *táwizes* strung together in form of a semi-circular necklace. The information will, I am sure, be very interesting, that the presence of certain ornaments on a female at once proclaims that, she is a *femme couverte* whereas their absence is the mark of widowhood. These ornaments are, to begin from the highest point, "*relu,*" and its attendant the *phalangru, bandi, bálú* (nosering), *buláq* (pendant for the cartilage of the nose) and *paubru* (brass rings for the small toes)."

Mr. Diack, Assistant Commissioner, Kulu, gives the following account of the Kulu ornaments:—

"(1). The most striking is the head gear worn by Kulu women commented on by Mr. Baden-Powell at page 175 of his '*Punjab Manufactures.*' The plate facing that page shows the portions of the head gear known as the *tora*, the *dhedhu* and the *jhumku*. The pendant tassels forming the lowest parts of the ornaments are known as *jhumku;* they are composed of silver balls and chains and are attached to the knobs above them which are of enamelled silver and are fixed in the slits in the lobes of the woman's ears. These knobs are called *dhedhu*. To them are fastened the two *tora* which fall gracefully over the temples and are affixed by silver hooks *(kunkshi)* to the centre of the coloured kerchief (*thipu*), which is tightly bound over the hair. From where the pair of *torás* meet on the kerchief depends the *tik*, a large enamelled ornament with silver pendants which hangs over the centre of the forehead. The *dhedhu* is further connected with head by the *tunki*. This ornament consists of two small pieces of silver, mutually connected by delicate silver chains; the lower is attached by similar chains to the *dhedhu* below, and the upper, in like manner, to a hook fastening it to the headkerchief above. The upper portion of the ear is weighed down by six or eight large earrings (*báli*) inserted in it, each about 2 inches in diameter and with its base studded with small silver balls soldered on to it and a tassel (*bundu*) of silver pendant hanging from it. To each ring is attached a small chain which connects it with another and smaller *tunki* above, which in its turn is fastened at the top of the head to the kerchief binding the hair; the object of the second *tunki* is useful as well as ornamental, for it serves to take some of the weight of the rings off the ear. The *tik* above referred to is sometimes varied by the *joth*, a similar but smaller ornament. It will be observed that the Kulu woman's pretty head gear must be no little burden to its owner, but much is endured for the sake of the vanity. These ornaments are invariably of silver.

"(2). Two nose ornaments are worn invariably of gold. The *buláq*, a leaf-shaped pendant ornament, is worn by both maids and wives, but never by widows; the *bálu*, however, a large ring similar to the earring above described, is in Kulu, as elsewhere, the distinguishing mark of a married woman. A charming rustic song celebrates a contest between a lover and his mistress as to whether his gift to her shall be a *bálu*, the sign of matrimony, which she insists upon, or some other of numerous jewels which signify nothing, and which are detailed in verse after verse of the song. The *bálu* is connected with the headkerchief by a slight silver chain to ease the strain on the nose.

"(3). A variety of silver necklaces are worn. They are composed of rings of black wood alternated with silver beads and are called *dod mál, jau mál, dar mál* and *makhawaji mál*, according as the silver beads are spherical, oval, round and flat, or oval with short horizontal prolongations on either side. In the *champakali* instead of silver beads there are sharp silver pendants, each nearly an inch long, a quarter of an inch in diameter at the base and tapering to a point. The *kanthi* is a necklace of closely strung spherical silver and coral beads, and the *kath mál* is a collection of seven short *kanṭhi* strings; the ends of the strings are attached to two triangular silver plates, one on either side of the chest, and from the centre of each of six of the seven strings hangs a small enamelled pendant.

"(4). The *kangrau* is a thick silver wristlet (bangle). It is an incomplete circle, and the extremities are often carved into the likeness of an animal's head.

"(5). *Langri* are anklelets made in the same fashion as a curb chain.

"As remarked by Mr. Baden-Powell, the Kulu men wear but little in the way of ornaments. Only occasionally a Kanait is seen wearing a necklace or an amulet; or a charm in memory of a deceased relative."

The following is Mr. Diack's account of the Spiti and Láhul jewellery:—

"The Spiti men wear more ornaments than the Kanaits of Kulu, but the precious metals find little favor with them. Nearly every man wears a necklace *(ultik)* composed of turquoises and lumps of coral, amber and mother-o-pearl roughly strung together, and a short pendant composed of the same materials hanging from either ear *(nakyu)*. Glass bead necklaces *(thang-nga)* are also often worn, and every second man has a *gaung* slung round his neck. The *gaung* is a small peculiarly shaped box; the body is of copper, but the front is of finely worked silver and gold with an orifice in the middle fitted with glass through which the *jantri* for which the box is the receptacle can be seen. These boxes are imported from Tibet, from which country also the turquoises and mother-o-pearl of the *ultik* and *perak* are imported. The amber and coral for the *ultik* are obtained from Ladákh or Bushahir and from Hindustán, respectively. Men and women alike wear the bangle or *dugu*. The most striking ornament worn by women is the *perak*, which consists of a strip of padded cloth generally red, hanging from the forehead nearly half way down the back, studded with turquoises and square silver talismans and possibly a sapphire or two. The stones and talismans are brought from Tibet, but the *peraks* are made up in the homes of the people. The *perak* is connected with either ear by the *puri*, an ornament consisting of four straight silver tubes, and by the *yarlen* or short chains which attach it to the earrings. The earrings *(konta)* worn are similar to those of the Kulu women, with similar tassel pendants *(chhibu)*. The *kanthi* necklace too seems to have been introduced from Kulu into Spiti, retaining its name there. An ornament (*ngun-leu*) somewhat resembling the Kulu *tora* (referred to above) is also worn.

"The men of Láhul like those of Kulu wear few or no ornaments. The women too wear less jewellery than those of Kulu or Spiti. The *perak* is unknown. A small saucer-shaped silver ornament (*kyir-byir-tea*) sometimes with a turquoise set in the middle of it, occupies the centre of the top of the head, plaited into the hair. Earrings and necklaces are also worn, and two strings of brass beads, with small brass balls appended at the ends hang from the girdle.

25. Observances relating to Ornaments.—Mussalmán males, in the more fanatical parts of the Province at least, consider themselves forbidden by their religion to wear gold ornaments or to wear ornaments of silver worth more than two annas each. With the Hindús, on the other hand, the boring of the ears for ornaments is a necessary and well-known religious rite. The Hindús too have a special reverence for gold, which is said to have its origin in the identification of the metal with Kuver, the god of wealth. It is an almost universal rule that no Hindu, man or woman, will wear gold below the waist or put the foot upon gold; and this feeling is current among Mussalmáns also, the only exception regarding which I have information being that of certain Kazzilbásh families in Pesháwar. In Simla no *chura*, *kolis* or low-caste man of any kind is supposed to wear gold at all. It is said further that all Hindús of whatever caste may drink from a gold cup without washing, but the question is probably not very often put to the test. To wear gold in the mouth too is among Hindus generally considered a sure means of salvation. A man with gold in his mouth cannot lie,* consequently many men prefer to do without it; the proverb says "*Lála, jo sona munh men dálkar baithe, to ki samai?* "How are you to get on, sir, if you keep wearing gold in your mouth." It is very common for Hindu men and women to wear on their right arm an ornament called the *anant* ("endless"), which is worshipped on the day of the *Anant Chaudas*, and which when broken is never re-cast but is given to the Brahmins. Another semi-religious ornament is the *mukat* or *tiára* worn by the bridegroon at a marriage, which contains squares in which are images in relief of *Ganesh*, *Shiv*, *Sakti*, *Brahm*, *Vishnu*, and sometimes also of *Kátik* and *Bhairon*. There is also the *Chandrama* or ornament worn round the neck as a charm against the influence of the moon, mostly by boys. The name "Nathu," which we hear so often, owes its origin to a similar superstition, common to Mussalmáns and Hindús, which leads parents who

* In his Gurgáon Settlement Report, Mr. Channing complains that the zamíndárs constantly required to be reminded of this. Note also the custom of putting gold in a dead man's mouth,—Karnál Settlement Report, para. 340.

have lost several children to put a "*nath*" into the nose of a boy at his birth; the *nath* protects him against evil influences and diseases, and is worn till his tenth or eleventh year.

Everywhere and among all classes the use of one kind of ornament rather than another will be found to distinguish different grades or sections or states of society. And what constitutes a distinction in one tract will constitute no distinction in another. Observances kept by one creed or race are not observed by another, or, if observed, are not observed so strictly. There is a good deal of curious information on such points to be extracted from the reports before me, but the information given is not given with any completeness or uniformity; and the subject is so very unbounded, and withal so loosely connected with the main point of this monograph, that I have not attempted to reduce it into shape and reproduce it here. The following simple instances will suffice to show how very varied custom is on such matters. You find it, for instance, an almost universal custom among Hindu brides to bedeck themselves with a vast amount of jewellery at and after marriage; but in Pesháwar the articles added by a bride to her maiden *repertoire* are the *nath*, the *chotiphul*, the *tawiz* and the *chárgul*, while in Jullundur, in addition to what she wears as a married woman, the bride wears the *mauli*, *bandi*, *tika*, *pariband* and *mehdi*. The period of excessive decoration lasts in Jullundur for a year from the date of the *mukláva* or home-taking, in Jhang for three or four months, in Mooltan for two years. Take a still more marked instance. You find almost universally, at least among Hindús, that the *nath* or nosering is the sign of the married state, no widow or unmarried girl, except it may be in the hills on festive occasions, ordinarily wears a *nath*. But you will find all sorts of additional peculiarities observed in different parts of the country. In Rohtak the Hindu widow also discards *chúrís* (bangles); in Gurgáon *bicchwás* (toerings), in Umballa *bicchwás*, *kodas* and all noisy forms of anklets; in Jullundur the *chauk* and *phul*, in Jhang *chúrás* *jhumkas*, *núras*, *karís* and the *tika*; in Montgomery the *chauk*, *phul* and *jhumka*; in Lahore the *chauk*, *chúrás* and *karís*; in Jhelum all head-ornaments, and in Pesháwar the *chotiphul*, *tawíz* and *chárgul*. In Umballa the widow's earrings and other ornaments including the *laung* or nosestud will generally be simple, without stones; in Ludhiána the widow only wears *churís*, *kundís* and a *hasli*; in Amritsar only small earrings, a *tád* and a wire necklace; in Lahore a *tád*, *wálís*, a *hár* of *mohars* or *kanthi* round the neck, and one *churi* or *band* on either arm; in Gurdáspur armlets and earrings only, and in Muzaffargarh only *karís*, *kangans*, *wálís* and *dhedís*. In Gujrát she will generally abstain from ornaments, but will not provoke criticisms as long as she avoids wearing the *nath*. In Jullundur she will wear no ornaments at all for a year after her husband's death; in Kulu for four years; in Gurdáspur for one or two years; whereas in Ludhiana it is said that, while other relations discard ornaments for ten days after the husband's death, the widow alone is allowed to wear from the beginning such ornaments as she is permitted to retain. The above arrangements are modified on remarriage in various ways. And by Muhammadans they are often either not observed, or observed with greater laxity than by Hindús. And even among Hindús there is a difference between the observance of such rules in the country and in towns.

There is of course a fashion in ornaments. In Gurgáon they say fashion does not change; and in Pesháwar that it changes only among those, such as the inhabitants of Pesháwar City and its neighbourhood, who wear ornaments of the Hindu type. But in other districts one generally finds the fashion in small districts changing from day to day. There is a general opinion that the class of ornament now used is less solid, more fanciful in its workmanship, lighter in form and more brittle in use than that of a generation ago. The cost of any ordinary middle and upper class ornaments has probably increased; but the use of excessively costly jewellery has decreased. The use of knobs and pendants, and the setting of ornaments with stones is, among all but the very highest classes, an innovation dating from after Sikh days. The general impression throughout the Province undoubtedly is that more ornaments are worn now than were worn a generation ago; in some districts people say that the amount now worn is twice, in others three, four, or as much as six times, as much as formerly. The

number of varieties has certainly increased in Jullundur: for instance, they say the last generation was content with 12 varieties, whereas now at least 37 kinds of gold ornaments and 33 kinds of silver are known in the district. In Lahore the proportion of gold to silver is said to have increased, and at the same time the use of the silver covered with gold leaf is much more in vogue.

26. Ornaments in the Market.—Ornaments are *pawned* to *sráfs* and *sunárs*, who will advance on them an amount equal to about 25 per cent. less than their value. A *sráf* is said to charge interest on the amount of 8 annas or 1 per cent. a month, and a *sunár* will charge even more. It is generally a wise precaution to get a written description of the article pawned from the goldsmith along with his bare acknowledgment. Actual money-lending on security, other than that of ornaments, is not usually part of a *sunár's* regular business; and it is rather the exception to find a *sunár* a professional money-lender.

I am not aware whether the *sunár* ever lends ready-made jewellery, except perhaps the *mukat* or *bridegroom's tiára*, of which he will often have a few in stock. A *sráf* apparently does lend ready-made jewellery, and he will also lend vessels of gold and silver for festive purposes. Among the women themselves it is a very common practice to borrow jewellery from one's neighbours for special occasions. In some cities the wives of Munshís and Clerks and persons in good station make a very good thing out of the lending of their ornaments, charging their poorer neighbours very stiff interest, Re. 1-9-0 or even Rs. 3-2-0 per mensem. The ordinary rate of hire in Kulu is 2 annas a rupee per annum, and the charge is there known usually as "*gosha*." The lending of ornaments is, however, done sometimes with little or no precautions; and occasionally unscrupulous persons decamp after collecting large amounts in this way.

As has been already noticed above, it is only exceptionally and in large towns that ornaments are kept ready made for sale. In Delhi there are said to be some 225 pedlars of prepared goods; but there are only 20 shops in Delhi where you can go and buy jewellery ready-made; and of these eight deal in English goods only. The greater number of these ready-made dealers are Sarogi Oswáls; the rest being other Banyás of kinds and 4 or 5 Khatrís. In Siálkot this class of business is in the hands of Bhábrás who employ goldsmiths to make articles for them. This class of men is known in Delhi by the name of *jauhari*, and although he will sometimes deal in plain ornaments, it is generally to the precious stones and the ornaments set with jewels that he looks for his profit.

It is very difficult to give any estimate of value regarding the gross cost of the various kinds of ornaments. A pair of gold bracelets (*kangan* or *kara*) is said to cost Rs. 200 to 500 in Dera Gházi Khan; Rs. 200 to 700 in Muzaffargarh; Rs. 300 to 800 in Pesháwar; Rs. 300 to 1,000 in Kángra; Rs. 500 to 700 in Hazára; Rs. 500 to 1,000 in Lahore; and about Rs. 1,000 in Kohát. A golden *hassi* or solid necklace costs Rs. 60 in Dera Gházi Khan and Rs. 60 to 90 in Muzaffargarh; but it varies in size, and the value given in Hazára and Kohát is Rs. 1,000. Noserings (*naths*) of gold cost Rs. 30 to 90 in Muzaffargarh; Rs. 25 to 50 in Jhang; and Rs. 40 to 60 in Pesháwar. A Muhammadan woman's *nath* in Kohát costs Rs. 40, a Hindú's 100. The golden head ornament known as a *chaunk* costs Rs. 50 to 100 in Lahore; Rs. 25 to 100 in Jhang; Rs. 30 to 100 in Gujránwála, and Rs. 200 in Kohát. The *ársi* or thumbring, if of gold, will cost Rs. 30 to 50 in Peshawar; Rs. 70 in Gujránwála; Rs. 50 to 100 in Jhang; and Rs. 100 to 200 in Hazára; and so on with the other gold ornaments. It is equally impossible to fix down the price of silver ornaments, but the following figures may serve as a guide. Bangles or *chúrás* of silver are got for Rs. 50 to 150 the set in Lahore; Rs. 22 to 65-8-0 in Jhang; Rs. 30 to 100 in Kángra. A pair of *pázebs* or anklets costs Rs. 20 to 60 in Kángra and Rs. 30 to 50 in Lahore. In Gujránwála common earrings (*wála*) costs 6 or 7 rupees; and simple rings with stones or coloured glass set in them can be got for 12 annas or a rupee. A silver *ársi* will cost 4 or 5 rupees. The uncertainty of the prices above quoted could doubtless be removed to some extent by further investigation; but the infinite variety of the work renders precision difficult; and, besides, the people in their transaction are not accustomed to look at the question in this way, the price being usually settled by the weight or by some of the other considerations noticed above.

27. The future of Gold and Silver Ornaments.—The use of ornaments appears in this country so universal, and to most minds so excessive, that the subject has attracted some attention from a social point of view. The Punjábí is probably as profuse in ornamentation as the native of any other part of the plains of India; foreigners in this Province at any rate, such as Parsis, Bangálís and the like, are far more sparing than the native Punjábí in the ornamentation of themselves and their wives. The actual amount of potential wealth that the native locks up in jewellery is something beyond conception. Europeans in dealing with the subject are far more inclined to under than to over-value the amount of ornaments which a native family, in whatever rank of life, possesses. And yet every day in large civil cases, in suits for dower, in dealing with Wards' estates, in cases of elopements, thefts, burglaries, murders and a thousand other ways, Civil Officers are constantly being confronted with this enormous mass of wealth, lying in the coffers of the people. A competent authority guesses that in Amritsar City alone there are jewels to the value of two million pounds sterling. In Kulu the ornaments are estimated at a lakh-and-a-half; and the gold and silver attached to *deotas* at 3 lakhs. The Jullundur estimate is 4 lakhs, which is probably below the mark; that of Montgomery—50 lakhs—is possibly above it. In Jhelum two-fifths of the wealth of the district is said to be in ornaments. If we estimate the existing ornaments at twelve times the annual outturn, those of the Gurgáon District must be valued at over ten lakhs. In Dera Ismail Khan, at 5 rupees to each woman, the ornaments of the district must exceed ten lakhs in value; and we should probably add two lakhs to this estimate for the ornaments in the families of the Nawábs and other Raises. In Kohát, again, (probably one of the poorest districts of the Province in this respect,) the estimate is taken at Rs. 800 for each Hindú family, and Rs. 10 for each Mussalmán family, and a lakh in aggregate for the Nawáb and other Raises; making a total for the district of 75 lakhs. This estimate is doubtless an exaggeration, but even a more exact calculation would probably surprise us in its results. These isolated instances will serve better than any formal estimate to show the extent to which the system is carried in the Province.

The main evil which is laid at the door of this system is the loss of wealth. Another is the incentive to crime; in Dera Ismail Khan, for instance, it has been calculated that in one year, out of 968 cases of burglary, housebreaking and dacoity 824 were connected with jewellery. Advocates, therefore, of economic and social progress look forward to a diminution of the stock of ornaments in the country, and it is not improbable that under our rule such a diminution will take place. The steps taken to reduce marriage expenses will doubtless do something, though perhaps not very much, in the direction. The spread of English or Anglicized education will probably do more; for it is noticed that the classes so educated are on the whole simple in their habits in this respect. And if anything occurs to give a general impetus to commercial enterprize and mutual confidence, opening opportunities for investment, the use of ornaments may be extensively diminished. But any such changes can only be most gradual, and there are obstacles in their way. The "female vote" is one. The enormous respect for jewellery among the people as a criterion of respectability is another. And the distinctly agricultural, and commercially unenterprizing, character of the class which mainly upholds the system is another. There is no fear, therefore, of the practice of ornamentation dying out; and the position of the *sunárs* appears a fairly assured one. European competition has as yet had little influence on the articles prepared for native custom. False jewellery, except in large towns or among the very poorest classes, is not largely sought after. The general character of the popular type of gold and silver work is rough and unfinished; it is more likely to improve than to deteriorate, and for its improvement it is at present being left to itself.

APPENDIX.

I.—Instruments—

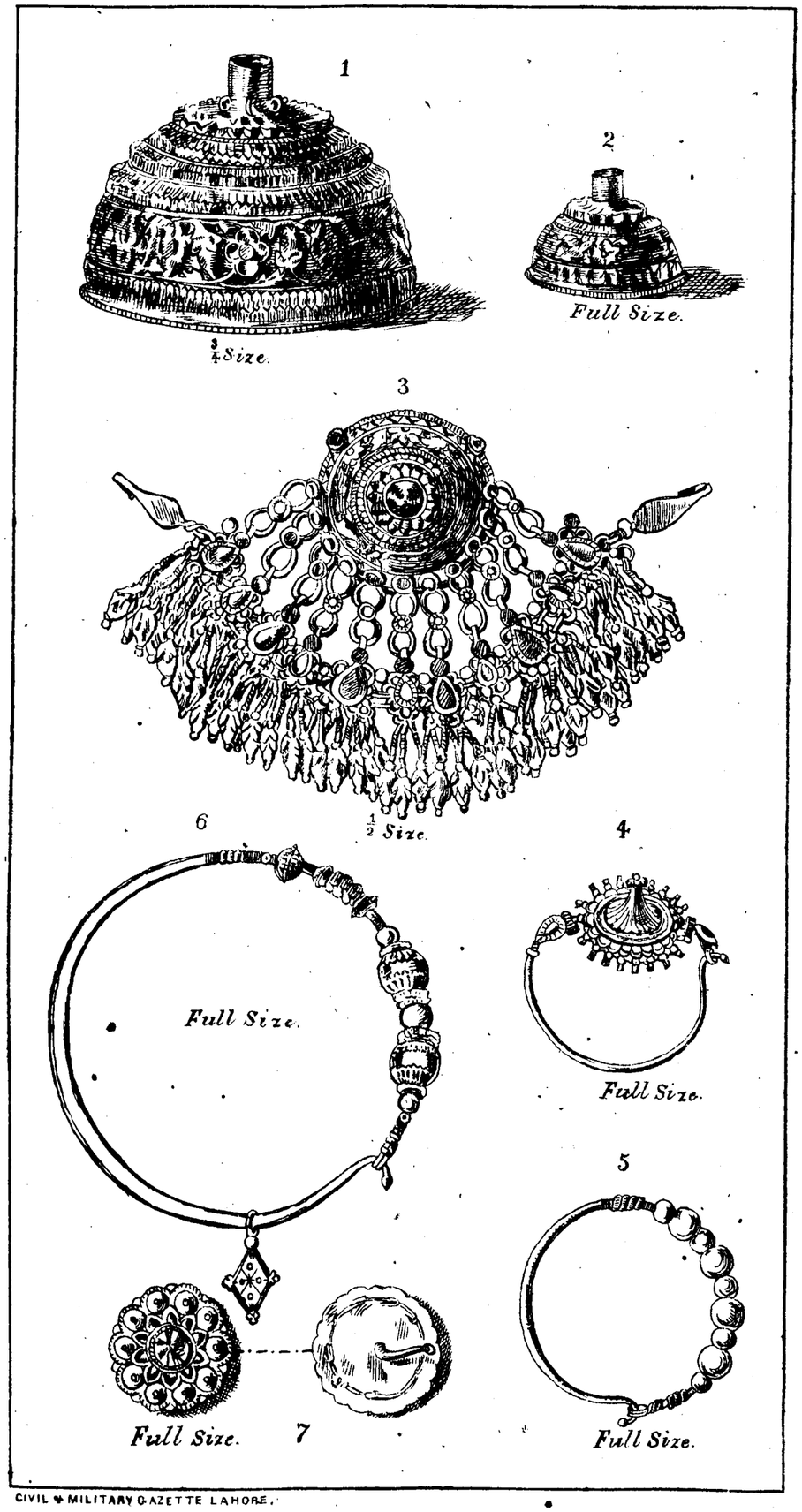
1, Jandri; 2, Reza; 3, Nál; 4, Aihran; 5, Kuthâli; 6, Kátwa; 7, Sannu; 8, Thappa Chúrián.

II.—Ornaments—

1, Chaunk of gold; 2, Phúl of gold; 3, Choti phúl of silver; 4, Wáli of gold; 5 and 6, Naths of gold; 7, Laung of gold; 8, Nám of gold; 9, Hass of silver; 10, Chúri of silver; 11, Kangan of silver; 12, Karra of silver; 13, Mundri of gold and of silver; 14, Arsi of gold and silver; 15, Buhatte of gold; 16, Jhánjar of silver; 17, Pazeb of silver; 18, Nure of silver.

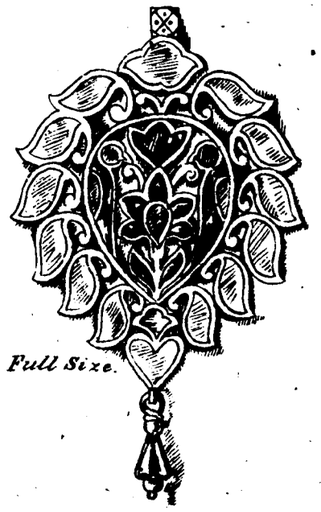
III.—Craftsmen at Work—

1, Kandlakash; 2, Tárkash; 3, Dhabkai.



CIVIL & MILITARY GAZETTE LAHORE.

8

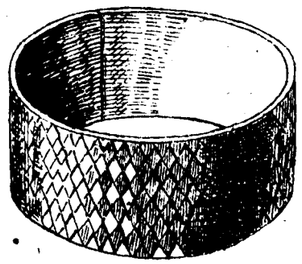


Full Size.

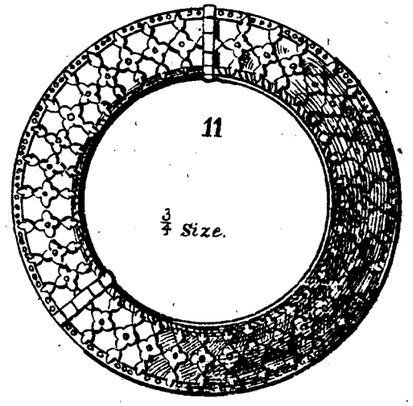
9

Half Size

10

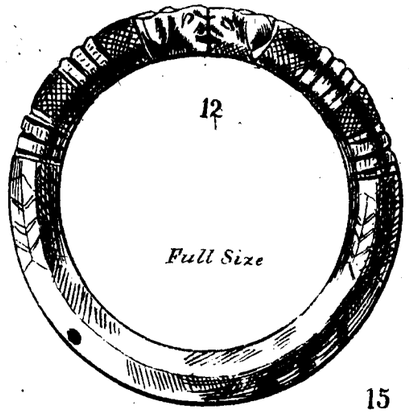


11



$\frac{3}{4}$ *Size.*

12



Full Size

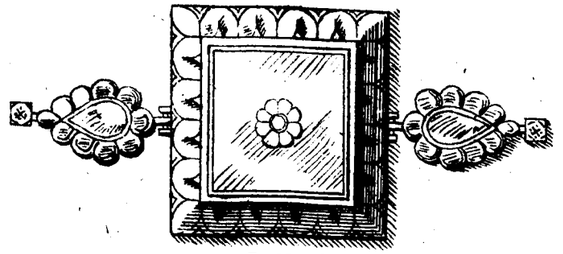
13

Full Size

14

Half Size.

15



Full Size.

CIVIL & MILITARY GAZETTE. LAHORE.