# MONOGRAPH

ON

# FIBROUS MANUFACTURES

IN THE

# PUNJAB

BY

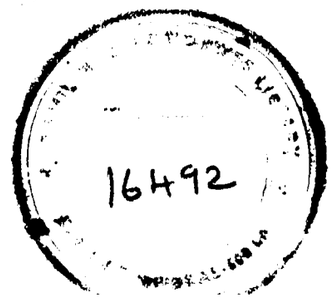
W. H. GEE, B.C.S.,
*DISTRICT JUDGE,*
Dera Ghazi Khan.

1889-90.

Published by Authority.

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

1891.




No. 798 S.

FROM

R. G. THOMSON, ESQUIRE,

*Offg. Revenue Secretary to Government,*

*Punjab and its Dependencies,*

To

THE JUNIOR SECRETARY TO THE FINANCIAL COMMISSIONERS, PUNJAB.

*Dated Simla, 23rd September* 1891.

**Revenue and Agriculture.**

General.

SIR,

I AM directed to acknowledge the receipt of your letter No. 476, dated the 12th of August 1891, submitting the Monograph on Fibrous Manufactures in the Punjab by Mr. W. H. Gee, Officiating District Judge, Dera Gházi Khan, and to say that it has been compiled with industry and care, and that it has brought together in an useful manner a considerable body of interesting facts.

2. I am to request that the Financial Commissioner will consult the Conservator of Forests, Punjab, as to the possibility of extending the cultivation of the dwarf palm in the Government forests of Ráwalpindi, Jhelum and Shahpur.

I have, &c.,

R. G. THOMSON,

*Offg. Revenue Secretary to Government, Punjab.*

No. 476.

FROM

D. C. JOHNSTONE, ESQUIRE,

*Junior Secretary to Financial Commissioner, Punjab,*

To

R. G. THOMSON, ESQUIRE,

*Revenue Secretary to Government, Punjab.*

*Dated* LAHORE, *the* 12*th August* 1891.

SIR,

I AM directed to submit 350 copies of a Monograph on Fibrous Manufactures in the Punjab, drawn up under the orders of the Financial Commissioner by Mr. H. W. Gee, B. C. S., and to say that, in Mr. Elsmie's opinion, Mr. Gee has written a good and interesting paper in which he has clearly summarized all the information which it has been possible to collect upon the subject. The best district reports appear to be those from Simla (Mr. Coldstream), Kángra (Lála Chúni Lál, Extra Assistant Commissioner), Kulu (Mr. A. H. Diack, C. S.), Gurdáspur (Colonel J. B. Hutchinson), Lahore (Mr. Sykes, Assistant Commissioner), Mooltan (Díwán Narendra Náth, Assistant Commissioner), Kohát (Captain H. P. P. Leigh), and Dera Ismail Khan (Lála Jawála Parshád, Extra Assistant Commissioner). The reports for Gurgáon (Pandit Joti Parshád) and Ferozepore (Lála Kidár Náth) also deserve commendation.

2. The instructions issued by the Financial Commissioner are contained in Circular No. 29 of 1890. The Monograph opens with a general description of fibrous plants, their localities and uses, and under this head gives valuable information regarding the *Saccharum* family, grasses and bulrushes, *san* and *sankokra*, flax, hemp, bamboo, and many Himalayan and plains trees whose fibre is useful in manufactures. The account of Mr. Tucker's measures for preventing the extermination of the *mazri* or dwarf palm in Kohát is interesting. The industry appears to be almost wholly in the hands of the lower castes of the population; and the circumstances are such that correct statistics regarding outturn and export and import of raw material are difficult to procure. Wages earned in the trade seem to be low; and though the rate of profits is sufficiently high, the petty extent of the trade renders profits really insignificant. In para. 16 Mr. Gee discusses the trade in manufactured articles. Imports are not inconsiderable, but exports from the Province are said to be small, showing that the industry as a whole is not in this Province a very extensive or valuable one. The movement of raw material and manufactured goods within the Province is summarized in the same paragraph. Under the head Local Manufactures (para. 17 *et seq.*) Mr. Gee describes the processes of, and gives other information regarding, the following branches of the industry, *viz.*, *tát*-making, carpets and matting, rope-making, basket-making, chick-making, nets, hill-shoes and fans. Under all these heads the details given are interesting and sufficient. Regarding the important subject of paper-making, the compiler comments upon the state of the trade in Siálkot, Delhi, Mooltan and the Native State of Bhajji, and then goes on to give some information regarding jail paper. In connection with this the Financial Commissioner has directed, in order to make the paper more complete, the addition, as Appendix IV, of a reprint of Dr. Gray's note referred to in para. 31 of the Monograph. The other appendices to the Report seem to the Financial Commissioner to contain useful facts and figures.

I have, &c.,

D. C. JOHNSTONE,

*Junior Secy. to Finl. Commr., Punjab.*

# MONOGRAPH

ON

# FIBROUS MANUFACTURES IN THE PUNJAB.

1. The scope of this enquiry has been confined chiefly to classes of fibres which are actually utilized in local manufactures, and no attempt has been made in the District reports to deal with those classes of potential products which are as yet little known or unused among the people of this Province. India possesses a number of plants—many of them valuable as articles of food—which yield excellent fibres for purposes of paper making, textile fabrics, matting and cordage. The actual uses to which fibres are put in the Punjab are confined chiefly to the manufacture by the zamíndárs themselves of a variety of agricultural and domestic articles, which rarely command any extensive sale among outsiders.

The only exceptions to this are the weaving of a coarse tát from san, which is made up into gunny-bags, and the application of a few fibres, principally san in its manufactured state, to paper making. The trade in dwarf palm from the North-West Frontier seems to be developing, and is certainly the most promising of these industries. The trade in bamboo from the Himalayan districts, though it is widely distributed over the plain districts, is not very extensive, probably owing to a limit in the supply.

Subject to these exceptions there is little external trade in fibres. In each district the zamíndárs utilize whatever plants may grow abundantly for purposes of making ropes of all kinds, mats, chicks, nets, baskets and the like; if the local supply be insufficient, a certain amount of raw material and perhaps of manfuactured articles may be imported from the neighbouring districts, but the production of these articles can hardly be dignified by the name of a trade. In no case do any class of people obtain a living by it. Among those castes which are more especially employed in fibrous manufactures—such as Jinwárs, Labánás and Musallís—no worker can support himself solely on his earnings: as a rule he works for a part of the year when raw material is abundant; for the rest he is an agriculturalist. A large number of zamíndárs employ their spare time in the winter months by extracting the fibres from the munj, san, sankokra and other plants, and twisting them into twine, well ropes, cattle ropes, etc., but they do not work for the market.

## GENERAL DESCRIPTION OF FIBROUS PLANTS, THEIR LOCALITIES AND USES.

2. *Munj.*—Of the *Saccharum* family there are at least three species common in nearly every district, *viz.*, the *Saccharum munja*, the true munj, the sheaths and spathe of which are especially valuable for rope making; the *Saccharum sara*, known as sarkanda or kána, the largest reed of the three, used chiefly in chick and screen making; the *Saccharum spontaneum*, kánh or káhi, used occasionally for ropes, but generally for chicks and thatching, the stem also forming the material for pens.

The munj and its varieties are undoubtedly the commonest and most useful of all our fibrous products. The rapidity of its reproduction, the strength of its fibres, and the ease with which it is collected and worked up, all combine to render it indispensable to the zamíndár. It is to be found on low damp ground near lakes and rivers, and a sandy soil is favourable to its growth. The only district in which it is actually cultivated is Jhelum, where 60 acres are annually planted with bulbs in the rainy season.

The plant matures after two years, and then an annual supply of munj can be obtained from it. It shoots in the spring, and is cut in autumn; the bundles are then stacked until the slack season arrives, when the villagers

extract the fibres by beating the sheaths with a wooden mallet, five sérs of munj being an average day's work. The thick ends of the sheaths are sometimes burnt first in order to render the separation of the fibres easier. Only the sheaths of the three upper joints of the stem are used for munj making, those below being too coarse for the purpose. In Mooltan the owner of the land generally employs labourers to cut the plant, he taking one quarter and they three quarters of the amount cut; if paid in cash they get 4 annas a day.

The different parts of the plant are known as follows:—

*Sar or Sarkara*, the coarse leaves at the base only used for thatching purposes.

*Kána or Sarkanda*, the knotted stem when stripped of the munj.

*Munj*, the sheaths and spathe of the stem.

*Tili*, the finer part of the stem without knots.

*Sirka or Sirki*, the tapering flower stalk.

The last two parts are not always distinguished by separate names, sirka being used as the name for both. From the kána are made chicks, morhas, baskets, sieves (chaj), pieces of roofing, nechás (huqqa tubes), and gatlas (part of the huqqa). From the smooth tili are made fine chicks, baskets and fine sieves. The flower stalks are made into sirkís for roofing and into brooms.

From the munj is made the well known bán munj, universally used for stringing charpoys, and ropes of all kinds. As the fibre does not rot by exposure, it is particularly adapted for well ropes (máhal). Among other articles made from bán are matting, trangar (tangar), a net for holding bhoosa and other heavy loads, chinka (chikka), a net hung from the ceiling to store things in, and indwís or porters' knots. Brushes and moulds for metal wares are also made out of the fibre.

3. The dib, or bulrush (*Typha elephantina* or *angustifolia*), is common in the marshy ground of many of the plain districts, especially along the alluvial lands of the Indus and on hill torrents. It is used for ropes, but more generally for mats if mazri is not obtainable. The consumption is local, except in Dera Ismail Khan, where 5,000 rupees worth is imported from Bannu and Muzaffargarh to make mats for the protection of the ripening dates. With this exception the outturn is inconsiderable, and there is no trade in it.

The bhábar (*Andropogon involutus*) is a grass which is in places extensively used for bán and ropes. It is noted as occuring in Delhi, Hissár, Jhelum and Gujránwála, but not beyond the Salt Range. It is brought into Jhelum in large quantities, and used by the poorer people for charpoy string and well ropes of an inferior quality. Similar to this in name—for both seem to be called bhagar or bhábar indiscriminately—is the *Eriophorum comosum*, which grows in the Siwáliks, and is certainly used in Kángra for ropes and hill shoes, and probably in Hoshiárpur also. The *Andropogon involutus* is mentioned as occurring in Náhan, Nálagarh and Bhagat.

The Dab (*Anatherium muricatum*), which is also known as panni or khari, is found more generally in the Delhi Division than anywere else, though it is mentioned in the Lahore, Jhang, Jullundur and Gujránwála reports. It is useful as a thatching material, but the ropes made of it are very inferior. The best known part of it is the root, 'khas,' from which tatties are made.

No other grasses are regularly worked up, though here and there the people use them in default of better kinds. In Shahpur three kinds are worthy of mention, *viz.*, the Chujan, Pataka and Kai grasses—the first two of which are used for charpoy string and ropes, the latter for boat cables. In Spiti, a grass called 'sashok' is used to make a coarse kind of paper; other kinds are useful in the Himalayas for hill shoes.

4. *San and Sankokra.*—The san or sanni (*Crotolaria juncea*) is by far the most important of the exogenous plants, and is cultivated in nearly every district of the Province: Trans-Indus, from Pesháwár to Dera Gházi Khan, it is



however not extensively grown, owing to the fact that mazri is cheaper and easily obtainable by the agricultural classes. The plant is commonly known as Indian hemp, although it has no botanical connection with the true hemp (*Cannabis sativa*). The *Hibiscus cannabinus* (sankokra or patsan) may be conveniently mentioned with it, as it is found in the same localities as san, though its use is comparatively small. The patsan is generally grown in strips round crops of cotton, jowár or sugar to form a hedge for protection against cattle: the fibres are very long, sometimes measuring five or six feet, but they do not possess the strength of the san fibre.

The seed of both is sown in June or July, and the plant is ready to cut about November. The stalks are then tied into bundles (juris), and steeped in the village ponds for one or two weeks, according to the season of the year; the hotter the season, the quicker the decomposition of cellular matter is effected. At the beginning of October the process will be complete in a week, whereas twice that time is necessary in the cold weather. The bark is now easily separable from the stalk, and the cellular tissue is removed from the fibres by beating the bundles on the top of the water. This final process is sometimes postponed till the slack season, and the stalks are stacked in the meantime. It is estimated that the outturn of san from an acre of irrigated land is five maunds, and from an acre of bárání land one to two maunds. Every zamíndár sows a few kanáls with san for his own use, and sells the surplus. The districts in which san is most largely produced seem to be Gurgáon, Hissár, Jullundur, Hoshiárpur and Siálkot. The chief trade is in Hoshiárpur, where the value of the annual outturn is estimated at Rs. 22,000, of which Rs. 10,000 worth is exported to other districts.

The chief articles made from san and sankokra are bán, ropes, máhals, nets, chinkás, trangar, money-bags; and the bán is used for charpoys, morhas, dulís, pakhulís (sides of carts), seats for bullock-carts, and mats. The common tát or gunny—the only fabric made—is woven from san fibres.

The khip (*Crotolaria burhea*) is found in the arid parts of some districts, such as Jhang and Dera Gházi Khan, but it is rarely used. Ropes made of its fibre, though cheaper than san, are too weak for rough work. San is in considerable demand at Lahore, and there is a good import trade from Jullundur and Hoshiárpur.

5. *Flax* (alsi).—Flax is cultivated in the Punjab, not for its fibre, but for its seed, which is valuable for the oil obtained from it, and for fodder. It does not appear to be spun anywhere, although Baden-Powell ("Punjab Manufactures") mentions that canvas has been made of it in some jails. From 1863 operations in raising flax were commenced by a company at Siálkot, but after a few years they were brought to a close. The flax plant stands about 2½ feet high, and the seeds are contained in the shoots on the stem. The fibres are separated by beating out the slender stems until they become smooth and glossy; bán and ropes (hand twisted) are made in Hoshiárpur and Gurdáspur; at Shakargarh, in the latter district, a very fine quality is said to be obtained.

6. The bhang (*Cannabis sativa*) grows wild in many districts, both Cis- and Trans-Indus, and flourishes in the Himalayas. In the plains it is little used except as a drug, but in the hills the value of its fibre is known and appreciated. The hill variety when cultivated is much larger and finer than the wild bhang, often attaining a height of 12 to 14 feet. It is cultivated throughout Kulu, but grows best along the Jalori ridge in the Plách tahsíl. The fibre is worked up into ropes, shoes, fishing-nets, bird-nets and bags all of a strong, durable nature. Among the Hill States, Kumharsen, Jubal, Kyunthal and Bajji are mentioned as using it. Another useful hill plant is the Himalayan nettle (*Urtica Heterophylla*), which is found in most of the hill districts and Native States. The common name is bichua, but there are numerous local terms, such as ahan and jaráhan (Kángra), káral, kárla or bhaunar (Native States). The plant is cut in September or October, the reaper protecting his hand from the sting with a sheep skin gauntlet. When thoroughly dry it is steeped in water for three or four days; the fibre is then stripped off and worked up by hand into string, which is in turn used for ropes, fishing-nets or shoes. The fibre is inferior to hemp, but more easily obtainable and cheaper.

The proprietress of the Rám Bágh garden, near Kángra, sends small quantities of this fibre to England, where it is woven into scarves and handkerchiefs.

7. Two species of madar or ak are known to the Punjab—the *Calotropis Hamiltonii*, which is fairly common in the barren parts of the plain districts (*e. g.*, Rohtak, Lahore, Shahpur and Trans-Indus), and the *C. gigantea*, a larger plant, which is found in Hissár and Ferozepore in great abundance. The fibres of the stalk are used for rope making in the two last named districts; the ropes are stronger and softer than san ropes and have a glossy appearance. The plant is cut in the cold weather when the leaf is off and the sap is down; the stalks are then tied up in bundles and placed in a perpendicular position, where they are left till the slack season. The fibrous bark is then peeled off and the fibres detached by hand-rubbing or scraping. The Mohánás on the Indus make a net out of it for fishing purposes, called 'nára,' value Rs. 2 to 4. The only use to which the floss of the seed pod is ever put is to stuff pillows; there is a difficulty about spinning it, and attempts hitherto made in that direction have not been very successful. A napkin made of the floss was exhibited at the Punjab Exhibition in 1884, and also some towels, but there does not appear to be much prospect of its ever being turned to much account. The cost of collection is a difficulty in the way of its being exported on a large scale. In the Lahore district the plant is said to be subject to the attacks of locusts. In the Shahpur Jail attempts have been made to utilize it for paper making.

Two sorts of aloe are common in many parts of the Province, *viz.*, the *Agave Americana* and the *A. Cantula*. It is almost indigenous, and is often seen as a hedge in Lahore and Amritsar districts. The fibre is a good deal used in jails, but rarely outside. The process of manufacture is as follows: two or three of the longest leaves are tied together and beaten with a flat mallet on a flat piece of board; the cellular tissue is then washed away in a nand of water. Eight chittácks a day is a prisoner's task: but it depends entirely on the care he takes and on the use of freshly cut leaves whether he produces this amount or not. The fibre is beautifully white and takes dye much better than even munj, but it is not so strong or durable. Durrees, mats and ropes are turned out, but the supply, as the plant is a slow grower, is liable to become exhausted.

8. *Bamboo.*—There are four species of bamboo found in the Himalayas, *viz.*:—

(1) The *Bambusa stricta*, or male bamboo (jungli báns, benj, kirro).—Wild in the Siwáliks; a few clumps found in the Salt Range. The tall blue-stemmed cultivated variety of this is known as chau (Simla) or nál (Hoshiárpur).

(2) *Bambusa arundinacea*, female bamboo (magar báns, nál báns, bushára (Simla hills)); large and hollow.

(3) *Arundinaria utilis*, nirgal.—A small hill variety, growing at elevations of 5,000 to 8,000 feet up to the Rávi.

(4) *Arundinaria falcata*, gáru.—Smaller and tougher than (3), growing up to an elevation of 12,000 feet up to the Beás.

In Hoshiárpur the value of the bamboo (*B. stricta*) annually worked up is Rs. 1,900, the articles made being chiefly baskets, chicks, screens, sieves, etc. The cane is cut into strips, cleaned, and then plaited in the shape desired. In the Pathánkot tahsíl, where it grows extensively, the annual value produced is Rs. 4,000, of which half is exported. The larger canes are used chiefly for roofing, flooring, posts and frames of huts, bridges, fences, boat-fittings, shafts, dulís and large verandah chicks: the soft thin slips are employed in making baskets of every description, stools, portmanteaus, bird-cages (especially at Batála), scales and chábás (baskets for head). There is also a trade in tent poles with the Commissariat Departments at Ferozepore, Jullundur and Mooltan. In Kángra proper the value of the articles made annually amounts to Rs 7,500. The Dumnas, who are the chief workers in bamboo, practically supply the place of potters, weavers, carpenters and masons: grain is kept in large bamboo receptacles called peru; kiras (large mats) serve for every sort of enclosure, wall or ceiling. A list of articles made in Kángra will be found in Appendix II.



There are reserves of nirgal in Kángra, from which the canes are usually exported in an unmanufactured state. Locally they are not much used, as they cannot be had free, and because their use entails more labour and skill.

In Kulu the nirgal grows wild, and canes can be obtained throughout the year. They are generally 5 to 6 feet long, and rather less than an inch in diameter, and are cut just above the root. The chief articles made are baskets, of which there are a large variety: an account of this basket making is given in a later paragraph.

9. *Himalayan trees.*—The bhojpattar, or bark of the birch (*Betula bhoj-patra*), is used in Kulu to form the covering of a rude kind of umbrella (*shtror*) used by the hillmen. It also serves a variety of purposes in a zamíndár's house and field work, such as covering rice seed when it is being steeped preparatory to sowing, wrapping round honey and ghi. It is exported to the plains also for wrapping round the flexible stems of huqqás: the foundation of the stem is a coil of iron wire, over which is wound the birch bark, and the whole is covered with cloth. The bark forms a natural paper, and is much used in Bushahr for writing charms on. In Láhoul the twigs are used for rope bridges. The tree grows in the higher ranges of the Himalayas at an altitude of 7,000 to 11,000 feet.

Of the *Daphne* two species are found in the Himalayas—the *D. Oleoides* and the *D. papyracea* (*Cannabina*), the latter being abundant on the Sutlej. In Nepaul and Kumáon a strong tough paper is made out of the inner fibrous bark, and it is said that this paper used to be made by the Ladákhís settled in Kulu and to be exported in large quantities to Ladákh, but this industry seems to have died out. In Bajji State a tough semi-transparent paper is made from the fibres of a plant called 'set barwa,' which is probably a *Daphne*, but it is now little used.

The *Grewia oppositifolia* and the *Grewia Asiatica*, the barks of which are known as dhaman (dhamman) or bihul and phálsa respectively are found at low altitudes, and the former is known also in the Salt Range and Sulimán Range. The tree is about 40 feet in height with a trunk of 3 or 4 feet girth. The trunk is soaked in water for 15 to 20 days, and the bark is then peeled off and beaten out. The fibres are twisted into string for churns and charpoys, but there is no trade in it. The rope made is peculiar to the hill country, and cannot be used in the plains, as exposure to the heat renders it quite unserviceable. The quality is inferior to san rope.

The dhaman is used in Gurdáspur, Kángra, Pindi, and in the Native States of Náhan, Biláspur, Bushahr and others.

Of the *Bauhinia* family the Taur (*B. vahlii or racemosa*), a gigantic creeper, is very plentiful in Kángra, Biláspur, Mángal and Bajji, and is much used.

Ropes are made from it in two ways: either the real fibres (shel) of the branches are extracted and twisted into ropes, or they are taken without any preparation except splitting them up, and used as natural ropes. These being tough and durable are often used for fixing slates to the roofs of houses and tying on thatch, and are known as udála.

The leaves are greatly in demand for cups and dishes which are used on festive occasions, and it is said that between 300 and 400 Dusali families get a living in Kángra by manufacturing these. The kalyar, bark of the *Bauhinia variegata*, is used in Pindi chiefly for making slow matches and fuses. The tinder used by the mountain shepherds is made from the woolly growth found under the leaves of the *Oreoseris lanuginosa* (ganni). This substance has often been recommended as a material for cloth, but never seems to have been tried.

10. The bark of the dâk tree (*Butea frondosa*) is known as palás, paláh (Kángra), nasa (Karnál). Common up as far as the Jhelum, it ascends to a height of 3,000 feet, but it seems to be most abundant in the Delhi Division. In Karnál the fibres are used to make ropes and boras, and Kumhars in Hissár also work it up. In Delhi the Jhínwars make baskets of it, and a few Bakkáls make

pattals of the leaves by sewing them together with bamboo straw for use on festive occasions. The leaves are also largely in demand as wrappers for sweetmeats. The fibre is obtained by peeling the bark off the root and beating it out until it becomes sufficiently pliable and separated.

Of the *Cordia*, two species are found in the Punjab, the *C. Rothii* (gondi or gondni) and the *C. Myxa*, both in the Salt Range, and the latter (the bark of which is called lasúra) in the Siwáliks and Himalayas. It will grow anywhere when cultivated. Their use in fibrous manufactures is rare, but lasúra is occasionally used for ropes and fuses or for caulking boats.

There are two species of the mulberry family, the *Morus Alba* and the *Morus Indica* (tút). The former is cultivated in the Pesháwar valley and the plains; the latter is not uncommon in the sub-Himalayan tract. The fibre may perhaps be turned to account some day as an ingredient in paper pulp, but at present the only use to which the tree is put is basket making. The Sonepat tahsíl of Delhi district is somewhat noted for this.

11. *The Date Palm.*—Two kinds are known to the Punjab, the *Phœnix Silvestris* and the *Phœnix dactylyfora*. The latter is much the larger of the two, attaining a height of 100 feet, and may be always distinguished from the *Silvestris* by the dense mass of root suckers which surround it. The average height of the *Silvestris* is only 40 feet, and there are root suckers. The larger species is to be found all over the southern parts of the Punjab, in Mooltán, Muzaffargarh, Jhang and Dera Gházi Khan, while the *Silvestris* occurs in the Salt Range, the Siwáliks and the eastern plain districts.

The leaves are, from their shape, most suitable for plaiting into mats, fans and baskets, but they are generally found too tough to split up into individual fibres. In Karnál, however, the bheesties do beat up the leaves and twist the fibres into ropes for their own use: it is a very rotten rope and, unless kept constantly wet, is very apt to snap.

Palm leaf chatái fetches Rs. 6 per 100 square yards, and borias or sleeping mats made by the Jhínwars Rs. 2 each. The leaves take dye readily, and some ingenuity is displayed in the coloured designs for fans, especially in Delhi, where there is a large demand for them in the hot season. Imports of the leaves from Karnál and North-West Provinces are made to satisfy this demand.

The tree is scarce in Ferozepore, indigenous in the Dera and Hamírpur tahsíls of Kángra, and Pathánkot tahsíl of Gurdáspur district where the Changers and Domnas carry on some mat-making trade.

In the Hissár, Pindi, Jhelum, Gujrát and Gujránwála reports it is not mentioned as occurring. Along the border from Hazára to Kohát it is not used at all; it is found in Bannu in the Shamsi Hills, and Jhandee Khel, but it is not plentiful there. South of that again it is common.

In Mooltan the proprietor of the land on which the palms grow cuts off all the superfluous branches every year, and these are collected free by intending manufacturers. The branches are then dried for a few days, and the leaves torn off the stalk or cut with an iron 'dat.' Before being worked up they are soaked and cleaned. The stalk of the leaves is sometimes used for making chicks; they are cheaper than those made of bamboo, but not so durable.

The stalk with the tough leaves on is often used as a broom. From the kabál or reticulum of the central branch are made ropes and pack saddles for oxen.

The common articles made from the leaves are mats, fans, baskets, chhábis, well ropes and bán. The leaves are also used for thatching.

12. *Dwarf Palm.*—The home of the *Chamærops Ritchiana* is in the Sulimán Range near the eastern skirts up to about 3,000 feet, but it is occasionally met with in the Salt Range and the Siwáliks (*e. g.*, in the north of the Umballa district). It is called 'patha' in Pesháwar and in the Punjab generally, 'mazri' in Bannu and Kohát, 'pish' in Biluchistán.

The chief districts in which it is produced are Kohát and Pesháwar, or, to speak more correctly, the hills adjoining their borders. In former time the

On an average, it may be said that the usual rate of wages is 2 annas to 4 annas a day; the bamboo and mazri industries are better paid, 5 to 6 annas a day being obtainable. Generally speaking, there is no fixed rate of wages, the remuneration depending on the quantity turned out; little skill or capital are required. Munj rope making is not paid highly, not more than 2 or 3 annas at the most, while chick-making and chatái-making are paid better. A demand for san in Lahore has increased the wages of san workers to 4 annas a day.

Profits are difficult to estimate where the manufactures are chiefly made for home use, or sold direct by the producer, and the estimated profits of the various districts differ so much that it is difficult to generalize from them. Those given seem generally to refer to the percentage on the cost of production realized by the maker on sale.

The profits made by the producer are undoubtedly a high percentage of the total cost of raw material, but they are in reality insignificant owing to the petty extent of the trade and the cheapness of the articles manufactured.

Where a man sells the articles he makes, he derives from 30 to 50 per cent. profit on his outlay in raw material; in the case of bamboo in Hoshiárpur it is put down at 150 per cent.

Munj workers generally make about 25 per cent. profit.

Where there is anything like a regular trade, such as there is in mazri, 12½ per cent. seems to be about the average rate of profit.

14. *Raw Material.*—It is impossible to give any estimate of the raw outturn for the whole Province, as in most of the district reports no attempt has been made at all to give any figures. Those given refer to the amount of material actually used, and not to the amount grown. Owing to the peculiarly scattered and domestic character of the trade, such estimates can only be approximate. The outturn of san is 3,000 maunds in Gurgáon, Rs. 13,275 worth in Hissár, Rs. 22,000 worth in Hoshiárpur, Rs. 10,000 in Lahore, Rs. 8,000 in Siálkot, and in Gurdáspur with sankokra 3,000 maunds. The price in every case is from 6 to 8 sérs a rupee, except in Siálkot, where it is 10 sérs; the price of sankokra is 10 to 15 sérs per rupee.

The outturn of munj is 6,000 maunds in Gurgáon, Rs. 10,000 worth in Delhi, Rs. 8,750 worth in Hissár, Rs. 15,000 in Hoshiárpur, Rs. 10,000 in Lahore, Rs. 10,000 in Siálkot, Rs. 4,860 in Muzuffargarh. The average price is 20 sérs a rupee, it being cheapest in Jullundur and Ferozepore, where the price is close on 30 sérs per rupee. Districts where the date palm outturn is mentioned are Gurgáon, 1,300 maunds; Delhi, Rs. 1,400; Hoshiárpur, Rs. 1,700; and Muzuffargarh, Rs. 500. The price varies from 30 to 40 sérs a rupee. Dried mazri is sold in Kohát at 1¼ maunds per rupee, and at Bannu at two maunds; fresh mazri fetches three maunds per rupee. Most of this is imported from across the border and the outturn of the districts themselves is only a small part of the amount worked up.

The outturn of bamboo in Hoshiárpur is Rs. 1,900, and the price is Rs. 3-2-0 per 100 canes; in this district is also to be noted Rs. 3,000 worth of flax and Rs. 2,000 worth of bagar sold at 48 sérs per rupee. The outturn of dib in Lahore is Rs. 1,000, and in Siálkot Rs. 5,000; its price varies from one to two maunds per rupee. Bhang is sold for 8 to 16 sérs per rupee, and the outturn in Kulu is estimated at Rs. 3,000.

The total value of the raw material annually worked up in the districts where the figures are given is as follows:—

| | Rs. | |
|---|---|---|
| Hissár ... ... ... | 22,486 | |
| Umballa ... ... ... | 18,065 | |
| Jullundur ... ... ... | 1,00,625 | |
| Hoshiárpur ... ... ... | 42,900 | |
| Lahore ... ... ... | 27,6:0 | |
| Gujrát ... ... ... | 10,6:0 | |
| Siálkot ... ... ... | 26,9:0 | Of this, Rs. 11,100 are raw materials used in paper-making. |
| Gujránwála, perhaps ... ... | 1,0?,000 | The estimate given is enormously exaggerated. |

15. *Export and import of raw material.*—Except the trade in mazri from the North-West Frontier, which is no doubt steadily increasing, and which has extended as far as Lahore, there is not much regular import and export in raw material away from the larger cities, which, of course, create a constant demand. In other cases, if the local supply for the year be insufficient for the needs of the district, the supply of the neighbouring one is drawn on, and *vice versâ*. The Pesháwar 'patha' is mostly grown in the Khyber hills, and the import trade, which is valued at Rs. 20,000 yearly in manufactured articles and raw material, is a through trade to the districts of the Ráwalpindi Division. The raw export of mazri to Pindi, Jhelum and Shahpur from Kohát is Rs. 20,000 a year. It is imported in considerable quantities from Miránzai *viâ* Kálabágh by Paráchás (Muhammadan traders). Last year 6,385 maunds of mazri came into Bannu city, almost entirely from across the border, and Re. 1 a maund octroi duty is levied on it. From the Wazíri hills Rs. 3,000 worth is sent down to Dera Ismail Khan.

In the eastern districts munj is still the staple, and about 6,000 maunds are brought from Alwar, Nábha and Jeypore into the Punjab through Rewári; some of this is sent on to Delhi and some to Muttra. There is a surplus supply of munj in Lahore, and Rs. 5,000 worth is exported annually to Mooltan and Gujránwála. Hoshiárpur exports san annually to the value of Rs. 10,000, some to Gurdáspur, but most to Lahore, where there is a large demand for it. From Gurdáspur Rs. 2,000 worth of bamboo is exported to the plain districts, and there is a trade in Nirgal for huqqa stems from Náhan and Kumhársen.

The only other imports from outside the Punjab worthy of mention are san from Patiála and Jummu and munj from Baháwalpur.

16. *Trade in manufactured articles.*—The chief imports of manufactured articles into the Punjab consist of tát and gunny-bags from Bengal and Karáchi; paper from Lucknow and Calcutta; rope from the North-West Provinces, Ulwar and Jeypore; and mazri manufactures from across the North-West Frontier.

The value of imported articles from beyond the Punjab into the Umballa district is put at Rs. 13,730, which includes tát, gunny-bags, paper, fans, bán, and also munj and bhabar rope from the hills. Six thousand maunds of rope pass annually into Gurgáon from Nábha, Jeypore and Ulwar, but out of this 2,000 maunds are sent on to Agra and Muttra.

Lahore imports Rs. 1,000 worth of cocoanut rope, and 10,000 sacks, worth 4 annas each, annually from Calcutta, and paper from Lucknow. Dera Ismail Khan receives Rs. 1,000 worth of gunny-bags from Bengal and Rs. 2,000 worth from Karáchi, while Dera Gházi Khan receives Rs. 11,200 worth from Sukkur and Karáchi for the wheat trade. Gujránwála imports Rs. 17,000 worth of bán munj from the North-Western Provinces, and san string from Jammu. Manufactured articles consisting of mazri baskets, ropes, and matting, valued at Rs. 3,780, were imported from Tirah into the Kohát district during 1889-90, as registered at the foreign trade posts. From Kanigoram, ropes, mats and baskets are annually imported into Dera Ismáil Khan to the value of Rs. 7,000. From the hills of Náhan and Patiála there is some import in baskets.

Exports beyond the Punjab hardly exist; there is nothing worth mentioning except Rs. 1,000 of bán munj from Hissár to Patiála, and Rs. 1,500 of the same from Muzaffargarh to Sukkur, and some trade in rope from Gurgáon to Agra and Muttra.

Within the Province itself, the chief exporting districts are as follows:—Jullundur sends san and munj rope annually to Lahore, Amritsar and Ferozepore to the value of Rs. 6,850; Hoshiárpur supplies Jullundur with large quantities of munj and baggar rope; Gurdáspur exports tát patti (Rs. 10,000) and bamboo articles (Rs. 2,000) to the Lahore Division. San sutri and tát patti valued at Rs. 9,600 are exported from Gujrát to Jhelum, Shahpur and Pindi. The Pindi Division also receives wáur, matting and baskets valued at Rs. 6,500 from Pesháwar. The districts which receive the largest supply from other districts are Dera Gházi Khan, which imports chiefly gunny-bags and bán munj, value Rs. 9,574; Muzaffargarh, which receives Rs. 2,500 worth of bags from Lahore Gujránwála, where the imports are Pesháwar mats and fans (Rs. 3,000), and sa

sutri from Siálkot (Rs. 3,000); and Gurdáspur, which imports paper and bán munj valued at Rs. 4,600. All the details that have been given of the export and import trade will be found in the appendix.

## LOCAL MANUFACTURES.

17. *Tát-making.*—Tát is practically the only fibrous fabric produced in the Province, and this is only made in districts where "san" is plentifully grown. The trade is of some importance in Hoshiárpur, where the total annual value of pieces of tát manufactured is Rs. 12,000, and of gunny-bags Rs. 500. These strips of tát are woven 10 yards by 1 foot 2 inches, and sell at Rs. 1-8-0 each. The method of manufacture is the same as that of cotton durries: a web of the requisite length and breadth is spread over a level space, fixed on long poles at either end; the woof is then interwoven in the usual way. Jagádhri and Búria in the Umballa district are somewhat noted for this industry, and the annual outturn of tát is put at Rs. 2,155; 110 Loheris are there employed, and they are said to be well off. In Hissár the 'san' fibre is woven into taprís,—oblong mats used by shopkeepers,—but the total value is only Rs. 200 per annum. Taprís to the amount of Rs. 1,078 are made annually in Jullundur, but the trade is not thriving. In Ludhiána 4,090 persons are employed. The tát is utilized for sacks, bags, floor-mats, packing purposes, and for sides to bullock-carts (pakhulís). The bags fetch Rs. 27 a hundred, and the price of tát varies from 2 annas to 7 annas a yard.

Tát is made in Kángra to a small extent, and in Gurdáspur it is used for large grain sacks (chut) by the Turk caste.

There is an import of grain-bags into Lahore from Calcutta, valued at Rs. 2,500 a year; and south of Lahore there appears to be little local production, the demand being supplied from Karáchi and by through trade from Lahore.

The Labánás of Gujrát earn 2 annas 6 pies a day at tát-making; and Rs. 1,600 worth is exported every year to districts round. In Jhelum the baniás make khurjís of it. Notwithstanding repeated experiments with fibres, it would appear that the difficulty of working them economically into textile fabric will be overcome, not in India, but in England, where some interest has already been excited. The Deputy Commissioner, Shahpur, writes: "With a view of finding out defective points of treatment and remedying them, a firm in High Street, Lambeth, had commenced to work upon them. Samples of fibre plants of every species can be submitted for a carefully supervised trial, and any defect in machinery or method of treatment be discovered and an attempt made to remedy it."

At present tát making does not form an important industry.

18. *Carpet and matting.*—The chief manufactures under this head are chatai of the date or dwarf palm, munj, and san matting (tát patti), and dib matting. Matting in use in houses is generally made of khajúr or mazri—the former in the eastern parts, and the latter in the north-western parts of the Punjab. Rupees 6 per 100 square yards is the average price of khajúr chatai, and about Rs. 8 is the rate paid in Pesháwar for chatai made of mazri.

In Karnál, strips for bedding, measuring 6 feet by 4 feet, called "boriás," or 'safs,'—price two annas each,—are extensively made and very popular. In Hoshiárpur the annual outturn in khajur mats is Rs. 3,250, and the price is ten annas per square yard. The price of date palm mats varies a great deal in different parts, but is generally between four annas and one rupee; it is cheapest of all in Mooltan, where eight annas to ten annas per 100 square feet is the average price. The process of manufacture is simple: the branches are cut and dried in the sun; the leaves are then separated, soaked in water, and subsequently cleaned with a curved knife (dát) and split down the middle to the base, where they are left joined. Several of these are then plaited in and out of each other until a strip 5 inches broad is formed, which can be extended to any length. A number of these strips are then joined together with leaves of the same material, and the mat is shaped as required.



In the Pesháwar Division and Bannu nothing but mazri mats are used, and in Gujránwála, Jhelum, Siálkot and Lahore they are gradually displacing other sorts of mats. The annual import of chatai into Lahore from Pesháwar already amounts to Rs. 5,000, and there is a large export from there to the Ráwalpindi Division generally. The superior strength of this matting renders it more popular, even though it is more expensive than most kinds.

From bán munj a carpet is made in Gurgáon something on the principle of the durri. The skeins of beaten-up fibre (lachchhás) are stretched round two rollers on the ground to form the warp (*tána*); the woof (*teri*) consists of a piece of bamboo about a yard long with niches at each end. A lachchha is wound on to the teri, and this is crossed and recrossed between the parallel strings of the warp, and these parallel sets of strings are crossed behind each strand of the woof (bhai bharna). This is done by means of two bamboos, which are hung horizontally over the web on a frame; from each of these bamboos a number of strings are suspended, which are fastened to the upper and lower layers of the woof respectively. By elevating and depressing these bamboos alternately, the upper and lower strings of the warp are made to cross after each strand of the woof has been inserted. The strings are then made compact by means of a comb with iron teeth. One man can make a square yard in a day. The Delhi Jail is famous for these carpets, and they have also been made in the Lahore Jail. They have been from there exported to England, and the trade could be made a profitable one if more labour was employed. They can be worked on a loom to any pattern, and the fibres are easily dyed. Munj and san string can also be made into door-mats of any pattern, and most jails can supply them to order. When san sutri is employed instead of munj, the matting is known as tát patti. In Hoshiárpur Rs. 3,200 worth of munj matting is made annually and sold at five annas per square yard. San and sankokra are used in Ferozepore, tufts of coloured fibres being sometimes left on the mats in imitation of Persian carpets. A mat, called "mandri," is made in Kulu of rice straw or grass, plaited on a framework of string. In Hazára, too, a round mat, 18 inches across, called 'phindi,' is made of the same material and sold for two to four annas. In many districts the dib (bulrush) is a good deal used. These mats are also made something like a darri. A long pole of the required width is perforated with holes about an inch apart, through which strings of munj are passed and stretched tight to form the web. The rushes, which have been moistened and beaten first to make them pliable and flat, are then twined over and under the strings of the web, and beaten into their places with wooden pegs. As the work progresses the beam is moved further on. The sides are finished off by collecting the long ends into bunches and twining one under the other to form a sort of plait-work; the ends of the mat are secured by sewing these with long stitches of double munj string. The matting is firm, durable, and elastic, but is not equal to that made of dwarf palm. Pachai, the crushed stalk of the sugar-cane, the dihla rush and the dab (*Poa cynosuroides*) are used in a few places, but not to any great extent. In Dera Gházi Khan the coarse, flat shoots of the *Saccharum sara* are made into a thick matting called 'truha.' These mats are generally used as a substitute for thatch; their thickness renders them unsuitable for use in bungalows.

In Dera Ismail Khan dib is not used for floor-mats, but only for bindis, *i. e.*, mats to protect the dates from the attacks of birds. Such mats are sold at Rs. 2-8-0 a hundred.

19. *Rope-making.*—The following fibres are employed in the Punjab for making ropes and string: bagar, bhabar, dib, dab, munj, kanh, pachai, straw, grasses in Shahpur district known as chujan, kai and pataka; alsi, agave, bhang, san, sankokra, khip, madar, nettle, birch, root of the dhak tree, bihul, gondi, lasúra, khajúr, mazri, taur, tumba-ki-bel, and thuh kawár gandal. Of these the munj is the most commonly employed among the agricultural classes, as ropes made of this fibre stand strain and moisture well; they are consequently most suitable for well ropes, track ropes and boat cables. Bán munj, too, is used universally by the lower classes for stringing charpoys, except in places where it is not easily obtained.

San and sankokra ropes are also used for the same purposes, but more especially for charpoys, cattle muzzles, and trangars. Khajúr rope is of poor

quality and does not stand rough work. Madar ropes are used in the Sirsa tahsíl by the Bagar Jats, and answer well for agricultural purposes. The kánh is little used for ropes, as it is not strong. Bhang is largely used for ropes in Kángra; the names of the principal ones are rassi, jewri, joch, kachhu, and dáwn. In Siálkot pachai is used for well ropes, and the villagers generally keep one or two sugar-presses working to supply them with crushed canes for this purpose. Mazri furnishes good material for every sort of rope, but some care has to be exercised in the twisting, as an excessive twist is injurious and only weakens the rope.

The rates at which the various kinds of rope and string are sold seem to vary a good deal, but this difference in price is very often due to the quality of the rope made. Ban munj of the best sort sells on an average at 5 to 8 sérs a rupee; the inferior sorts fetch 16 or 20 sérs a rupee; a máhal or well rope of munj costs Re. 1 to Rs. 1-8-0; other munj ropes sell at 13 or 14 sérs a rupee. Madar ropes cost 3 or 3½ sérs a rupee, but they are rarely sold. The average price of san bán is 4 to 6 sérs a rupee, of mazri waur 8 to 20 sérs, of bhabar bán 16 to 32 sérs, of bihul sutri 8 sérs. A máhal of mazri costs annas 8 and of pachi 1 rupee.

The methods of twisting rope vary little throughout the Province. The fibres of the various plants have been prepared as previously described, and among the zamíndárs themselves the actual rope-making is done in the slack season. The common method of making san ropes is as follows. The fibre when peeled off is put into large skeins (lundhís), and these are first twisted by hand into strands (lar) 50 to 70 yards long. These strands are tightened and shortened to the required length with a 'charkhi' or 'ainthni' which is attached to one end, while the other is made fast to a tree. Two or three of these strands are then twisted together to make máhals and thick ropes. The fibres when ready for use are known as 'wadhar.' In making bán, a dhera (dherna) or bobbin is sometimes used for the first twisting, and a strand so made is called a dhári (weight about a sér). Two dhárís are then twisted with the dhera into bán. The bán is steeped, beaten out, cleaned with a piece of blanket or felt and rolled into a ball (pinda or lari); 1¼ sérs is an average day's work for one man. Bazaar rope, such as that made by the Lodhás of Karnál for the market, is inferior in strength and quality to that made by the villager for his own use. The Lodhás use regular spinning-wheels similar to cotton-wheels, and turn out a lot of rope of every size, which they sell at about Rs. 1-14-0 a maund.

The method of making munj rope is as follows. The fibres when prepared are placed in heaps, and the rope-maker picks up as much as he can hold between his finger and thumb (called 'dhain'). He then proceeds to twist two of these 'dhain' together with his fingers, after first moistening them; the string as it is made is kept tight under a stone or round the foot: when the first two dhains are finished, two more are added and twisted in, and so on till a long, loose string is made. This is tightened up with the aterwa or spinning-wheel, and wound on to a stick or strung up between two trees to dry. It then becomes set and retains the twist. Any loose bits of fibre are cleaned off with a small stick called 'salai,' and the bán is ready for use. To form a rope, two or three strands are twisted together and tightened with a charkhi, and three men are generally employed on the business. In Lahore the munj is twisted into a rough rope called 'tandúli' for drying purposes, which is bleached and then sold as it is. In twisting san rope the long strand is folded into three or four lengths, which are not cut, but are twisted together as they are.

There are five factories in Delhi for making bán, principally of munj brought from the Rewári and san grown locally; they are open all the year round and their gross outturn is two maunds a day.

Two forms of wheels for twisting fibres are in use in Lahore, called 'vatna' and 'deva'; the principle of both is the same, and is like that of the 'bhirni' of Dera Ismail Khan: the fibres are fastened at one end to the several arms of a wooden framework, to which a circular motion is imparted by one man; a second man supplies fresh fibre when the first is all twisted up. By the use of these machines the outturn can be increased four-fold, and the twine is more evenly twisted and firmer. Its inferior strength is the cause of the superior



popularity of hand-made rope, but no remedy has at present been suggested for this defect. In Montgomery the twisting is done with a dhairni, a board perforated with holes worked in the same way as the others.

Another form of the charkh is a wooden circular bit of board with holes in it: rough bits of stick are passed through them, the knot on the stick preventing them from slipping out; the fibres or the strands are attached to these bits of stick, and the board is fixed between two uprights and made to revolve, a grooved piece of wood (kalbut) being inserted between the charkh and the other ends of the fibres to secure a uniform twist. The instrument is generally used by the rassibat for the larger ropes.

20. *Basket-making.*—In the districts of the Delhi Division baskets are made out of the date palm, dhak, tamarisk, mulberry, and munj. In Ferozepore the making of the straw baskets has been recently introduced among women especially, but the trade has not made any progress as yet. In all the northern districts bamboo is used almost entirely; in Jullundur the annual outturn of bamboo baskets is Rs. 325, and Rs. 400 worth are imported from Hoshiárpur. In Kángra bamboo 'changers' (flat baskets for household use), price 1 to 4 annas each, are made to the value of Rs. 2,000, of which Rs. 1,500 worth are exported to the plains. Oblong travelling-baskets and waste-paper baskets are valued at Rs. 1,550, the prices of the former ranging from 8 to 2 annas, and of the latter 1 to 2 annas. The names of some of the other Kángra baskets are chhikku, char (a basket with low sides), karandi (flower basket), to which may be added from the Simla Hill States the chábre (flat like a tray), boye (shaped like a cup), petása (a deep square basket).

In Kulu a large variety of baskets are made from the nirgal chiefly by Bakas, two or three of whom generally work together. On commencing operations each basket-maker takes a supply of canes; one slits his into long fine strands (*tuli*), and another strips his into long thin ribbons or bands (*pátar*). The bark is first carefully peeled off and thrown away, except in fancy work, when half the tulís are cut with the dark-green bark adhering to them. A third basket-maker supplies himself with a branch or two of bhashil or other flexible wood, which he slits into long, flat, thickish bands (dahe), to make the framework of the basket. There seems to be no limit to the number or degree of fineness of the tulís, but ordinarily 22 strands are used for the smaller and 6 for the larger kinds of baskets. The knife used is shaped like a reaping-hook, but is not quite so crooked. The operator cuts towards himself, and to guard his left hand he holds between the forefinger and thumb of that hand a small piece of cane called 'lishnu.' The foundation of the basket is formed by placing a number of dahes across one another in the form of a star. To make a broad-bottomed basket, one foot in diameter at the base, 6 pairs of dahes are so arranged: for a kilta a start is made with 4 pairs only, but as the kilta widens out 6 more have to be added.

When the foundation has thus been laid, two 'pátars' are wound tightly round the centre of the star below and above each alternate 'dahe.' The tulis or strands are then similarly twined round through the dahes in pairs, one tuli being passed over the dahe which the other tuli has passed under, unlike the pátars, which are kept together. This process is called 'er karna.' When enough ribbons and strands have been twined through the dahes to make a sufficiently wide bottom, the dahes are bent perpendicularly upwards, and the ribbons and strands twined through them as before, with this difference, that two pairs of tulís are twined at the same time. When the basket is completed up to the rim, thin wedges (*páchéun*) of wood are shoved up through the rows of tulís all round the sides to give the basket firmness, and the top is secured by bands of pátars tied round it at intervals. The better baskets are lined inside with a matting of pátars called 'dol,' which is kept in its place by a strand passing under the rim outside (*rila*).

The names of a few of the chief baskets are kilta, chhabu (small round shape), chhabi, bharla, dundku (large-bellied basket for grain), cháthi, bhungi, patár (covered with leather), chhar, and badaite (a bullock muzzle). The profits of the Kulu basket-makers are put down at 25 to 50 per cent.

The office baskets in Lahore are chiefly made from withies imported from Benares at Rs. 20 a maund.

The chhabi, a round cylindrical basket for holding bread, is in general use; in Jhang it is made of date-palm leaves on a foundation of munj reed. In Hissár the Heris make large baskets (kháris) from 'kana' bound with a strip of camel-hide leather. In the larger towns bamboo is always obtainable; along the rivers the pliant branches of the jhau or pilchi are the most used by the agriculturists, such baskets fetching Rs. 3 a hundred. In Hazára some ingenuity is displayed in the manufacture of wheat-straw baskets. These are of two kinds 'mandhas' and 'parotas,' the former cylindrical and narrow at the base, the latter with straight sides; both are often worked in coloured designs and cost from Re. 0-4-0 to Re. 1.

Palm and dwarf palm are used wherever they grow. Excellent baskets of all kinds are made from the mazri. Those in Kohát are constructed of a series of rings fitting closely to each other, and woven round with a very narrow strip of mazri. The principal names are kashrai, chakor (a flat basket like a dish known as 'dal' Cis-Indus), kurumo (a round receptacle for cotton), kandurai (like a barrel, used for clothes), pandorai (for gram), phandi or thala, a round stool. The average prices of these vary from Re. 0-4-0 to 6 pies, and some of the largest cost Re. 1. It is estimated that Rs. 2,700 worth of baskets are imported ready made from across the Kohát border, and Rs. 1,500 worth of these are exported to other districts.

In Bannu and the Deraját these baskets are generally used, but there is not much export. Dib baskets are extensively used by fruit and sweetmeat sellers for their wares in Dera Ismail Khan, and they take the place of the pilchi basket down country.

21. *Chick-making.*—Two sorts of chicks are commonly made, the fine window chicks painted green and edged with cloth, and the stout reed ones for the verandahs. Their manufacture affords occupation to a few persons in cantonments and large cities. The large chicks are made either of split bamboo, or of the reeds of the *Saccharum sara* tied together with san string, and the small ones generally of bamboo split fine and tied with cotton thread. Both kinds are made in the same way; a number of threads are hung over a horizontal bamboo, $2\frac{1}{2}$ inches apart for small chicks and 10 inches apart for large ones. These threads hang down in even lengths and are weighted at the end with pieces of brick; the reed or bamboo slip is then placed along the horizontal bamboo and the threads crossed underneath; this process is repeated until the required length of chick is obtained, and the threads are then tied.

In Mooltan, Dera Gházi Khan, and Dera Ismail Khan, the stalk of the date-palm leaf is sometimes used for making small chicks. They are cheaper than bamboo ones, but not so durable; they are sold at Rs. 5 per 100 square feet, and the wages of the workers (Chuhras and Purbias) are two annas a day. Bamboo-chick makers earn five annas or six annas a day; the price of bamboo chicks is 12 annas to Rs. 1-8-0, according to size, and that of reed chicks two annas to eight annas.

In Dera Gházi Khan the large screen made of kana by the villagers is called 'a pattal'; they are much used for temporary dwellings within reach of the river flood, and their outturn is estimated at Rs. 2,100, the wages earned being three annas to five annas a day.

22. *Nets.*—A variety of nets are made for domestic uses from the string of the san, sankokra, munj, and dwarf palm. The chhinka, which is much used in the eastern districts, is generally a net suspended from the roof as a receptacle for clothes, food, &c. In Karnál the term is applied to the cattle muzzle used at the threshing-floor. They are sold at 6 pies each.

The most common form of net is the trangar (also known as jáli or tangar), which is used chiefly for carrying loads of bhoosa or forage; they vary in price from three annas to Re. 1, according to the animal they are required for; three men can make one in a day. In Kohát the annual outturn of trangar made of mazri is valued at Rs. 2,000, the price there being one anna or





one anna and six pies per pair. A trangar-maker can earn three annas and six pies to five annas a day. A good profit is made in some jails by the manufacture of money-bags from san twine, which are sold for use in Government treasuries at 16 per rupee.

San twine is also used for fishing and tennis nets. Fishing nets are made by the Kahars in Kángra from the ahan (Himalayan nettle), and bhang is used in Kulu for the same purpose. The fishing-nets of the Indus Mohanas made of madar fibre have been mentioned before.

23. *Hill Shoes.*—The use of grass shoes in the hills is universal, and their manufacture deserves some notice. In Kulu, shoes are made from bhang and are called 'pula.' To form the sole the fibre is worked into thick strings, which are compactly woven together; for the upper part a fine twine is made from the fibre, which is carefully knitted by hand with a needle. A pair of shoes ornamented with coloured string and goat's hair thread fetch as much as 4 annas; plain, they sell at 2 annas a pair. Hemp shoes last longer than shoes made of grass such as 'bagar,' and are more generally worn, though they are said to be less safe in difficult places. Sometimes nettle fibre is used for the sole. Rice straw is used in Hazára, but such shoes wear very quickly and only last four or five days.

Along the north-west frontier dwarf palm is the material used for the sandal (chapli or saplai). Afridis, Mohmands, Swatis and Bonerwals all wear them. The cellular portion of the leaves is first removed by beating, and for twisting the fibres an instrument called a speta is used, a curved and pointed piece of iron with a toothed edge. If sold the price is 3 pies per pair, but each individual generally makes his own. Superior ones worked with silk are made for women,—price 4 annas a pair,—and Hindús occasionally use these when going on pilgrimages, when leather shoes are forbidden. The annual outturn of mazri shoes in Kohát is Rs. 20,000.

24. *Fans.*—The manufacture of fans from the date palm or the dwarf palm is universal, and where the palm does not grow there is generally an import of raw material; there is, however, an increasing export in ready-made fans from Pesháwar to districts north of Lahore. They are made largely in Rohtak and Karnál and exported. In Delhi the Kassab caste are the chief workers. There are two factories—one at the Turkoman Gate, and the other at Pahari Dhiraj—which are open during the hot season for four months. The total outturn of the factories is Rs. 1,400 a year, and the wages earned are one anna to 4 annas a day. All fans are hand-made, and the process is very simple; the palm leaf is soaked in water for a short time, then some of the leaflets at either end of the stalk are removed and plaited with those remaining on the stem. The fans are often coloured in neat designs; their price ranges from 6 pies to about 4 annas. Large ones made of mazri in Bannu fetch 8 annas. A man can make about twelve small fans in a day, which he can sell for 5 annas; his material will cost him 2 annas and 6 pies, and his wages are therefore 2 annas and 6 pies.

25. The morha or mondha, generally a circular stool, but sometim made with a back, is a common article of furniture in a native house. It is made of kana and bán munj. The reeds are first cut into even lengths, and two are tied crosswise in the middle, and by tying more on to these two rows are formed, which slope in opposite ways, and which are fastened throughout at the middle; thus a cylinder is made, strong enough to bear considerable weight. The two ends of the cylinder are fastened into rings of straw, and the seat is added by weaving bán across from side to side in the fashion of a durri. A man can make one plain morha—price 4 annas—in a day, and his raw material will cost him 2 annas and 6 pies. The chairs cost 8 annas each and take two days to make. In Gurdáspur bamboo is sometimes used instead of kana, and the price is doubled. The Labanas on the Indus who make these morhas are easily taught to vary their designs, and can turn out arm-chairs and sofas very cheaply, if a little trouble be taken to show them what is wanted.

Sirkis are made from the tapering stalk of the munj; the flowery tops are placed side by side and are kept in their places by a binding of grass edging, or with bán. They are used like a pent-house, over a bamboo, to cover

carts, or as thatch, the strips being placed one over the other. The price is from 4 to 8 annas a pair; one man can make three small ones in a day, and clear about 2 annas and 6 pies on his day's work. Large fine brushes are made from munj, and are used by paper-makers and weavers; sweepers' brooms are generally made of jhau or bagar grass. Brushes of khajur leaves are made in Gujránwála and sold at about 6 pies each.

## PAPER.

26. The manufacture of paper in the Punjab is now confined almost entirely to jails, and those outside industries which are still left have gradually declined through inability to compete with the jail-made or mill-made article. As might have been expected, the establishment of paper-mills at Calcutta, Lucknow, Gwalior and other places is everywhere rapidly displacing the old native manufacture: for instance, at Muthra, which is one of the great centres of the supply of native paper, the former local manufacturers now obtain their paper ready made from the mills in an unsized state, which they size and polish and sell as native paper. Dr. Dickson, of the Central Jail, Lahore, expresses his opinion that the manufacture of paper at Siálkot, and even in the jails themselves, will have eventually to be discontinued, and that even now it would be more advantageous to follow the example of the native traders at Muthra.

27. *Sialkot.*—The paper trade of Siálkot, which in the Sikh times and during the earlier years of the British administration was in a very flourishing condition, giving employment to thousands and working about 1,200 jandárs, is now languishing. The only places where paper is now made in the district are the villages of Rangpura, Nekapura, and Heranpura, situated on Aik nadi, near Siálkot itself. The introduction of paper manufacture into jails for use in Government offices was of course the first blow. This was followed by the establishment of the large paper mills and the manufacture of a cheap paper known as 'henai,' which dates from six or seven years ago. There are now only 117 jandárs at work, and there is no possibility of the trade recovering; numbers of the original paper-makers (Kághzis) have taken to other trades and professions.

The wages in the Siálkot trade are thus given:—

| | As. | P. | |
|---|---|---|---|
| The Sathi (who works the jandár) ... ... ... | 2 | 6 | a day. |
| The Toyka (who cuts up the raw materials) ... ... | 3 | 0 | „ |
| The Kadhaya (who lifts the pulp from the vats on the nir) | 3 | 0 | „ |
| The Lavaya (who pastes the sheets on the wall) | 2 | 6 | „ |
| The Ghotaya kachha (who gives the paper the first rubbing) | 3 | 0 | „ |
| The Ghotaya pukka (who gives the final polish) ... | 4 | 0 | „ |
| The Vadhaya (who trims the sheets) ... ... ... | 4 | 0 | „ |
| Jháwán karnewala (cleaner) ... ... ... ... | 1 | 0 | „ |
| Maya laganewala (starcher) ... ... ... ... | 1 | 0 | „ |

The total cost (including all wages) of converting a maund of old tát into paper pulp is Rs. 5-14-0, Rs. 7-15-0, Rs. 9-14-0, and Rs. 12-10-0, according to the quality, the difference being chiefly in the bleaching, washing, and polishing. A maund of prepared pulp will produce—

2 reams (gadis) of paper of first quality,
2½ reams of second quality,
3 reams of third quality,
4 reams of fourth quality.

The prices per ream are respectively Rs. 11, Rs. 7, Rs. 4-8-0, and Rs. 2-8-0. The profit realized is therefore for paper of 1st quality Rs. 4-11-0, second quality Rs. 3, third quality Rs. 1-14-0, and fourth quality Rs. 1-1-0. Very little paper of the first and second qualities is manufactured, the demand being chiefly for the cheaper kinds.

Each jandár works up 20 maunds of pulp in the year,—an average of 60 gadis,—worth about Rs. 270, taking Rs. 4-8-0 per ream to be the average price. After deducting the cost of production, Rs 150 (calculated at Rs. 2-8-0 per ream), the profit per jandár amounts to Rs. 120 per annum. The net earnings of the 117 jandárs are therefore about Rs. 14,000.

Paper is manufactured during the winter months, and the summer is taken up with collecting materials and preparing the pulp. It is said that the heat in



summer is too powerful for paper-making; it causes the paper to dry too rapidly, and the latter in consequence becomes liable to shrink and drop off the wall. There is also the chance of its being spoilt by one of the numerous dust-storms.

The value of the annual export in paper is put down at Rs. 20,000, and the districts which receive most of this are Amritsar, Umballa, Jhang, Mooltan, Gujrát, Jhelum, Pindi, and Pesháwar.

28. *Delhi.*—There are two factories for making kachha paper (for parcels) in Delhi, one at Kadam Sharíf, and the other in the garden of Juras. The work is only carried on for six months in the year, being discontinued during the summer and winter rains. The proceeds realized from the sale are about Rs. 300 per anuum. Stiff paper is also made in the city from waste paper and tát, and about 300 gadís a month are turned out—price Rs. 7 a gadi.

Country paper to the amouut of Rs. 6,000 a year is manufactured in Lahore, but no details have been given about it.

29. *Mooltan.*—The only other paper manufactory, or at any rate the only one worth mentioning, which still exists is that at Jalálpur Pírwála, a town in the Lodhrán Tahsíl of the Mooltan district. The industry was once extensive, but, like all the others, has declined of late years, and there are now only seven shops left, the income of each of which is estimated at Rs. 120 a year. The workers are all Mussalmán Khojas. This paper was formerly largely used in Government offices, and was also exported to Baháwalpur State. Export trade to the latter place and to Dera Ismail Khan still continues, but in a very much reduced quantity. The chief use to which the paper is now put is for bannias' bahís. It is finer, smoother, and lighter in colour than most jail paper, and is certainly superior to the jail-made article now in use in Government offices: this superiority is due to the fact that a certain quantity of flax is mixed with the other ingredients, and that a larger proportion of waste paper pulp is used. The price is five and three annas a quire, according to the quality. In Mooltan city a very coarse paper is made by some twenty Khojas, but it is totally unfit for any thing but packing purposes.

30. *Bajji.*—Paper of a very fine quality is made in the Hill State of Bajji from the fibre of a plant locally known as 'Set barwa,' one of the *Daphne* tribe. It is decidedly tough, and shows that the fibre from which it is made is eminently suited for the manufacture of a stout paper. The method of manufacture is as follows: The fibre is beaten to a pulp, which is washed, then thrown into moulds and dried. The paper is sized with rice-water, which enables it to bear a slight glaze. It is little used.

31. *Jail Paper.*—It would be superfluous in this report to describe the method of paper-making as practised in our jails, since a full account of it has already been published in Dr. Gray's note, and also in Baden-Powell's "Manufactures." The method is primitive and capable of little improvement, and the paper turned out will no doubt eventually be abandoned in favour of mill-made paper, which is cheaper and better. The chief use of the present system is of course to afford hard labour to a number of prisoners, which is at once suitable and remunerative.

The materials used vary little—old tát patti, gunny-bags, san rope, rags, and waste paper are the staples, and a large supply of these can be obtained without difficulty. Gunny-bags and grain-sacks can be got for Re. 1 a maund, and waste paper for Rs. 1-12-0. In Ferozepore Jail, in the operation of turning out three reams, the labour of 67 men is employed, as follows:—

| | | |
|---|---|---|
| Cutting up a maund of tát ... ... ... ... ... | 1 | man. |
| First and second poundings and washing ... ... ... | 6 | men. |
| Pounding with lime ... ... ... ... ... ... | 6 | „ |
| Third washing and pounding ... ... ... ... ... | 6 | „ |
| Fourth ditto ... ... ... ... ... ... ... | 3 | „ |
| Sorting 1½ maunds of waste paper ... ... ... ... | 2 | „ |
| Pounding paper ... ... ... ... ... ... | 6 | „ |
| Washing ... ... ... ... ... ... ... | 3 | „ |
| Paper-makers at the vat ... ... ... ... ... | 6 | „ |
| Pasting ... ... ... ... ... ... ... ... | 3 | „ |
| Sizing ... ... ... ... ... ... ... ... | 6 | „ |
| Polishing ... ... ... ... ... ... ... ... | 18 | „ |
| Cutting ... ... ... ... ... ... ... ... | 2 | „ |

In Mooltan an average of 135 men are daily employed; in Jhang 75. The paper sold is of two qualities,—price Rs. 8-10-0 and Rs. 5-12-0 respectively,—but the sale of the more expensive kind is comparatively small. In Gujrát Jail the cost of production is given as follows, per ream :—

| | | | | |
|---|---|---|---|---|
| A quality | Rs. | 2 | 0 | 0 raw material. |
| | „ | 2 | 5 | 0 labour of 16 prisoners. |
| B quality | „ | 1 | 8 | 6 raw material. |
| | „ | 1 | 5 | 6 labour of prisoners. |

In Rohtak Jail 103 maunds (value Rs. 1,934) is the average annual outturn; in Hissár 300 reams, value Rs. 1,725. In Mooltan 457 reams are sold annually for Rs. 4,220, of which Rs. 2,291 was actually expended on raw material, leaving a balance to the Jail of Rs. 1,929.

In Gurdáspur, paper worth Rs. 3,244 was sold last year; in Dharmsála, 213 reams, worth Rs. 1,352; in Gujránwála, 480 reams; in Dera Ismail Khan, 560 reams.

The figures for 1889 in Siálkot Jail are—

| | | |
|---|---|---|
| Price of outturn | Rs. | 4,592-14-0. |
| Raw material | „ | 2,962-5-0. |
| Jail profit | „ | 1,630-9-0. |

In Pesháwar 529 reams were sold with a profit to the jail of Rs. 1,805. No statistics have been furnished from other jails.

32. The component parts of the pulp differ considerably in their proportions. Two-thirds paper pulp to one-third tát pulp seem to be the most common, but equal parts of both are recommended in some jails. The larger the proportion of tát, the tougher will be the paper: if waste paper alone is used, the paper can be made sooner and more readily; but as it is not very durable, it cannot be used for permanent records.

In Mooltan the waste-paper pulp is mixed with flax pulp in the proportion of one-fourth to three-fourths; this renders the paper rather finer and smoother, and it is said that it would fetch a higher price in open market than that at present given by Government. The rates fixed, however, cover the diet expenses of the prisoners employed.

Two improvements are suggested by the Superintendent of the Gurdáspur Jail—better pounding and better washing arrangements. There is said to be a considerable advantage gained if the washing can be carried out in a running stream where the water is constantly replaced and remains comparatively pure. Running water, too, is always softer than well water, and, as such, is better adapted to paper-making. Canal water is nearly as good, and it is possible to combine pulp-washing with garden irrigation, as the water is not injuriously affected by the former process.

The use of wood ashes and lime in place of sajji and lime has also been recommended as more economical. The putrefactive process by which the compound of pounded tát sajji and lime is exposed to the sun's rays for several months in order to decompose the 'san' fibres seems on the whole to be more effective than the boiling process,—*i.e.*, when the same compound is boiled for 24 hours,—although, of course, by the latter method the time required for making the paper is considerably shortened. Paper is usually dyed with analine dyes, but a yellow colour can also be extracted for this purpose from Fuller's earth, turmeric, kesú (the flower of the *Butea frondosa*), and narsinga (*Myctanthes arbortristis*). The dye is mixed with the pulp in the vat.

33. *Experiments with other fibres.*—Experiments have been made by the Superintendents of the Gurdáspur and Shahpur Jails with the madar fibre: the paper turned out is tough and smooth, and is quite as good as the ordinary paper made with tát, but the difficulty of collecting it in large quantities, drying, storing, and decorticating preclude anything like independent experiments with it on a large scale in any single jail. Munj fibres have been tried in the Jhang Jail, but the paper turned out seems to be inferior to that made with tát. The fibres are beaten out and treated with sajji and lime in the usual way by the



boiling process. The paper has a yellow tinge, and its price must vary with the local supply of munj.

The rhea plant which grows in Kángra has been tried, but the experiment was not successful owing to the difficulty of removing the outer layer of the bark.

Attempts have been made in the Pesháwar Jail to replace tát with rice straw and lukh (*Typha*——). Either, when combined with waste paper, gives a fairly good result, but the rice straw is the best. The paper has a smooth surface, and has given satisfaction on trial in the district offices, and arrangements have been made for supplying a larger quantity, for there is a considerable saving in the cost of labour and material.

This appears to be the only case where experiment with other fibres in paper-making have led to any practical results; munj, madar, palm leaves, the dhak, the aloe, and the daphne, have all been tried, and although in many cases good samples were obtained, the absence of modern machinery has always prevented their permanent adoption.

34. *Appendices.*—Appendix I contains a list of the fibrous products of the Province which are generally or locally used or worked up by the people. The list is not exhaustive, and merely deals with those fibres which are turned to some account.

In Appendix II will be found the statistics of the different industries so far as they have been given in the reports. The details of import and export are probably fairly correct, but the estimates of the outturn and the number of persons engaged are quite unreliable. I refer more especially to districts like Gujránwála, where the numbers given are very large. It would be equally incorrect to say that such a large percentage of the population were exclusively engaged in rope making, &c., or to say that a larger percentage never made a rope in their lives.

Appendix III contains a list of the names of occupations tabulated according to Census Table XII-A (Census Report of 1881, Vol. II). The original table has been incorporated with it.

H. W. GEE. *B. C. S.*

# APPENDIX No. I.

## LIST OF FIBROUS PRODUCTS IN USE IN THE PUNJAB.

### CLASS I.—GRASSES AND RUSHES.

**Bagar** ... ... (*Eriophorum comosum or cannabinum*). Bagar or babbar. Found in the Siwáliks and Salt Range. Used in Kángra.

**Bhabar** ... ... (*Androphogon involutus*). Also called baggar or bhabbar, but more used than the first grass. Found in the Siwáliks, Salt Range, and sometimes in the plains.

**Chujan** ... ... A grass found in Shahpur.

**Dab** ... ... ... (*Poa (or Eragrostis) cynosuroides*). Dab, dib or kusha. Common throughout the Punjab plains.

**Dáb** ... ... ... (*Anatherium muricatum*). Panni, khavi, roots khas. Grows locally in the Punjab. Not found within 80 miles north of Mooltan.

**Dib** ... ... ... (*Typha angustifolia*). Kundr, Dera Gházi Khan; kunder, Bannu; era, Gurdáspur; lukh, Trans-Indus; the Bulrush. Common in marshy ground throughout the plains, and up to 4,000 feet.

**Dihla** ... ... ... One of the Cyperaceœ. A rush. Jullundur.

**Dub** ... ... ... (*Cynodon dactylum*) Kabbal.

**Kai** ... ... ... A kind of grass. Shahpur.

**Munj** ... ... ... *Four species.* *Saccharum munja or ciliare (munj or sarut).*

*Saccharum sara; the sarkanda or kana, a large reed.*
*Saccharum spontaneum; kanh or kharsana. Smaller than the munj.*

*Saccharum procerum. Rare in the Punjab; mentioned as occuring in Gurdáspur.*

The first three species are common throughout the Punjab.

**Pachai** ... ... ... (*Saccharum officinarum*). The crushed stalks of the sugar-cane.

**Pataka** ... ... A grass. Shahpur. Used for ropes.

**Sashok** ... ... A grass used in Kulu for shoes.

**Sil** ... ... ... (*Imperata Kœnigii*). A grass found in many parts of the plains.

**Straw** ... ... ... Rice straw, *parali. Oryza sativa. Wheat straw. Triticum æstivum.* Used for hill shoes and ropes.

### CLASS II.—PLANTS.

**Alsi** ... ... ... *Linum usitatissimum.* Flax. Not uncommon as a field crop, except along the N. W. Frontier.

**Agave** ... ... ... *A. Agave Americana and A Cantala.*

Both species are common in many parts of the plains, and are often grown in hedges.

**Bhang** ... ... ... *Cannabis sativa (Cannabis Indica).* Gánja. The true hemp. Common in waste places in many parts of the plains, and largely cultivated for its intoxicating properties; especially abundant and large in the Himalayas, where it grows up to an altitude of 10,000 feet.

**Daphne** ... ... *Daphne papyracea or cannabina.* Niggi, 'set barwa.' Occurs near the sources of the Rávi and Indus. Once used by Ladákhís for paper making.

**Khip** ... ... ... *Crotolarea burhea.* A variety of san, used for rope in places where the latter is not much grown; *e. g.*, Jang, Shahpur and Dera Gházi Khan.

**Madar** ... ... ... *Calotropis procera or Hamiltonii. Calotropis gigantea.* Ak, Ankala. Common throughout the plains, and up to 3,500 feet Trans-Indus. The larger variety occurs in the Southern districts and in Montgomery.

NETTLE ... ... *Urtica Heterophylla* } Ahan, Jarahan, Káral (in Suraj).
*U. reticulata* } Bichu. Kárla (Hill States).
The Himalayan nettle. A tall plant with large leaves, growing in the Himalayas up to 7,000 feet; utilized in Kángra and Kulu.

SAN ... ... ... *Crotolaria Juncea.* Sanni. Indian hemp. Common in the plains, except in the extreme north-west; affects a dry soil. Generally cultivated round other crops.

SANKOKRA ... ... *Hibiscus cannabinus.* Patsan. Not so common as san, but occurs in the same areas as that plant. Like san, it is grown as a hedge round other crops.

THUH KAWAR GANDAL... *One of the Opuntiæ tribe.* Hedge cactus, Kángra.

## CLASS III.—TREES.

BAMBOO ... ... Four species. *Bambusa arundinacea.* Magar báns. Female bamboo. 15 inches girth, 60 feet high. Found up to 4,000 feet in the Siwáliks.
*Bambusa stricta* báns; male bamboo. Smaller than the former; found between 1,500 and 2,500 feet. Siwáliks and Salt Range.
*Arundinaria utilis.* Nigál or Nirgál. Found from 5,000 to 8,000 feet and up to the Rávi only. A hollow cane, larger than the falcata.
*Arundinaria falcata.* Gáru. Found between 9,000 and 12,000 feet. Small and tough.

BIRCH ... ... ... *Betula bhojpatra.* Burj. Bhuj. Found on the higher ranges of the Himalayas. Height 50 to 60 feet; girth 6 to 7 feet.

DHAK ... ... ... *Butea frondosa.* Nasa (Umballa), palás (Ludhiána), paláh (Kángra). Height 40 to 50 feet. Ascends to 4,000 feet. Common as far as the Jhelum.

DHÁMAN ... ... *Grewia oppositifolia.* Dhamman or bihul. A moderate-sized tree, 40 feet in height. Common in the Himalayas, and occasionally found in the Sulimáns and the Salt Range.

GONDI ... ... ... *Cordia angustifolia (or Rothii).* Gondni. A tree 30 to 40 feet in height. Planted or self-sown in the Punjab, south of the Salt Range

KALYÁR ... ... *Bauhinia variegata.* A moderate-sized tree, found wild as far as the Indus.

LASURA ... ... *Cordia myxa.* Laswára, lasiára. Height 30 to 40 feet. Wild in the outer Himalayas, Siwáliks and Salt Range.

MULBERRY ... ... *Morus alba, and Morus Indica.* Tut, tul. The former is cultivated abundantly in the Peshawar valley and the northern part of the Trans-Indus tract. It also grows in the Himalayas up to 11,000 feet. The latter is not uncommon in the outer hills up to 4,000 feet.

PALMS... ... ... *a.—Date palm. Phœnix Silvestris, and Phœnix dactylifera.* Khajúr, khaji. The *Silvestris* only attains an average height of 40 feet, and has no root suckers. It occurs wild in the Siwáliks, Salt Range and Eastern districts of the Province. The *Dactylifera* attains to a height of 100 feet, and is often surrounded by a mass of root suckers. It is common in the southern parts of the Punjab.

*b.—Chamærops Ritchiana.* Mazri, mizri, patha, pish. The dwarf palm. Grows almost exclusively in the Sulimán Range up to a height of 3,000 feet; occasionally found in the Salt Range and in the Siwáliks east of the Jhelum.

PHALSA ... ... *Grewia Asiatica.* Height 25 feet. Found wild in the Salt Range and in the Umballa district.

PILCHI ... ... *Tamarix Gallica (Indica).* Lei. Jhau. Common throughout the province on the banks of rivers.

TAUR ... ... ... *Bauhinia Vahlii (racemosa).* A gigantic creeper, often 100 feet long; plentiful in Kángra and the Sub-Himalayan tract.

TUMBA KI BEL ... ... *Citrullus colocynthus.* A creeper. Sirsa.

WILLOW ... ... *Salix tetraspuma.* Bent, bet, bed. Only found planted in the Punjab, except on the banks of the Himalayan rivers, where it is found wild up to 6,000 feet.

# APPENDIX NO. II.

## DELHI DIVISION.

# APPENDIX No. II.

TABLE OF THE DELHI DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| Delhi ... ... ... | Fans ... ... ... ... | Mussalmán Kasáb ... | 290 | 1 to 4 annas. | Rs. 1,400 | Rs. ... | Delhi and Sonepat. |
| | Bán munj ... ... ... | Mussalmán Meos and Banjárás. | 260 | Do. | 1,400 | 105 | Ballabgarh and Sonepat. |
| | Baskets ... ... ... | Jhínwars ... ... ... | ... | ... | ... | ... | Sonepat. |
| | Pattals ... ... ... | Bakkáls ... ... ... | 16 | ... | 100 | ... | Do. |
| | Matting ... ... ... | ... | 5 | Annas 2-6. | 250 | ... | Delhi. |
| | Paper ... ... ... | ... | ... | ... | 25,500 | ... | Do. |
| | Cane-work ... ... ... | ... | 10 | Annas 2-6 to annas 3-0 | ... | ... | Do. |
| Gurgáon ... ... | Foot-stools ... ... ... | Kahárs and Dhínwars ... | 29 | Annas 2-6. | | ... | Farukhnagar. |
| | Bán carpet ... ... ... | Minas (Hindús) ... ... | 5 | 3 to 4 annas. | | ... | Gurgáon Civil Station. |
| | Fan-making ... ... ... | Muhammadan butchers ... | 52 | | | ... | ... |
| | Chhínká ... ... ... | Hindu Gaurás ... | 54 | | | ... | ... |
| | Bán and ropes ... ... ... | Ahírs, Gujars, and Gauras. | 175 | | | ... | ... |
| | Bed-weaving ... ... ... | Mussalmán butchers and labourers. | 50 | Annas 1-6 to annas 2 and annas 2-6. | Rs. 26,700-0-0 | ... | ... |
| | Matting ... ... ... | Khumrás ... ... ... | 13 | | | ... | Ferozepore. |
| | Necha and gatta ... ... | Patháns and Fakírs ... | 15 | | | ... | Do. Jhirka. |
| | Baskets ... ... ... | Dhinwars and Sweepers ... | 87 | | | ... | Do. |
| | Munj ropes ... ... ... | Muhammadans, Meos, Fakírs, Málís (Hindu), and Chamárs. | 175 | | | ... | ... |
| | Heavy thick well ropes ... | ... | ... | ... | ... | ... | ... |
| Karnál ... ... ... | Ropes (common) of san ... | Lodhás and women of Kanjar tribe. | 90 | Rs. 1-14-0 per maund. | ... | ... | Karnál and Pánipat. |
| | Chhínkás ... ... ... | ... | ... | ... | ... | ... | ... |
| | Nets ... ... ... | ... | ... | ... | ... | ... | ... |
| | Jálís ... ... ... | ... | ... | ... | ... | ... | ... |
| | Fans of khajúr leaves ... | Jhínwars ... ... ... | ... | ... | ... | ... | ... |
| | Matting of khajúr leaves ... | Do. ... ... ... | ... | Rs. 6 per 100 square yards. | ... | ... | ... |
| | Boriás or safs of khajúr leaves. | Do. ... ... ... | ... | ... | ... | ... | ... |
| | Bán and ropes of munj and Bhábar. | Banjárás ... ... ... | ... | ... | ... | ... | ... |
| | Borás or sacks of dhák roots. | ... | ... | ... | ... | ... | ... |
| | Borís and tát of san ... | ... | ... | ... | ... | ... | ... |
| | Straw beards and hair ... | ... | ... | ... | ... | ... | ... |
| | Matches of dry stalks of san and sani. | ... | ... | ... | ... | ... | Pánipat. |
| | Tát-pattis or sackcloth ... | ... | ... | ... | ... | ... | ... |
| Hissár ... ... ... | Bán and ropes of munj ... | Játs and Pachadás ... | 210 | Annas 2 to 3 per day in all the branches excepting the Chikwálá, who earns about annas 4 a day. | 11,228 | Rs. 25 % or 4 annas in a rupee on the average. | Portion of Bhiwáni Tahsíl. |
| | Sutli and ropes of san ... | Bishnois. Sikh Játs, Boolás, and Bányás. | 73 | | 16,500 | | ... |
| | Bhábhar bán ... ... | Ját Sikh ... ... ... | 20 | | 40 | | ... |
| | San borás ... ... ... | Rágris, Kumhárs ... ... | 48 | | ... | | Chaharwála, Chak Bagar, |
| | Ankálá ropes ... ... ... | Bágri Játs ... ... | 38 | | 70 | | Kagdáná, Jogiwálá, |
| | Khári and chhaj of tili ... | Chuhrás ... ... ... | 65 | | ... | | Chadiwál, Bakriánwal, |
| | Sirkis and jhárás of khas, &c. | Dhanaks ... ... ... | 36 | | ... | | Dhukrá, Kheri, and Girdia |
| | Mondhás of káná ... ... | Ranghars and Nilgars ... | 3 | | 50 | | Khera in Sirsa Tahsíl. |
| | Chicks of káná and bamboo... | ... | 3 | | 200 | | ... |
| | Ropes of patsan ... ... | ... | ... | | ... | | ... |
| | Thin ropes of dhák for borás | Kumhárs ... ... ... | ... | | ... | | ... |
| | Bán of *tunba-ki-bel* ... ... | Bágris ... ... ... | ... | | ... | | Sirsa Tahsíl. |
| | Chhínkás of munj ... ... | ... | ... | | ... | | ... |
| | Chamrakh of munj ... ... | ... | ... | | ... | | ... |
| | Bán and ropes of dáb... ... | ... | ... | | ... | | ... |
| | Ropes of kharsáná or sanis for tangar. | Bágris ... ... ... | ... | | 80 | | ... |
| | Káns bán ... ... ... | ... | ... | | ... | | ... |
| | Tattis and hand fans of khas | Ghosís ... ... ... | ... | | 50 | | ... |
| | Baskets of branches of jal, mulberry, kapás, and dhák | ... | ... | | ... | | ... |
| | Matting of pater ... ... | ... | ... | | ... | | ... |
| | Tapris of san ... ... | ... | ... | | 200 | | ... |
| | Paper ... ... ... | Prisoners ... ... ... | ... | | 1,725 | | Jail at Hissár. |
| | Sírkis of tuli and káná ... | Sánsis and Heris ... ... | ... | | 375 | | ... |
| | Khárís (baskets) of Tuli or Káná. | Heris ... ... ... | ... | | 400 | | ... |
| | Chhaj and jhárás of tuli or káná. | Sánsís ... ... ... | ... | | 50 | | ... |
| Rohtak ... ... | Ropes and twine of san and munj. | ... | ... | ... | ... | ... | ... |
| | Weavers' brushes of munj and khas. | ... | ... | ... | ... | ... | ... |
| | Baskets, chicks of sarkandá | Mehtars ... ... ... | ... | ... | ... | ... | Jhajhar Tahsíl. |
| | Hand-fans of date palm ... | Sheikhs ... ... ... | ... | ... | 400 | ... | Bahádurgarh in Sámpla Tahsíl. |
| | Tattís of khas ... ... | ... | ... | ... | ... | ... | ... |
| | Paper ... ... ... | Prisoners ... ... ... | ... | ... | 1,934 | ... | Rohtak Jail. |
| Umballa ... ... | Tát-patti (gunny or sack-cloth | Loheris (Hindú) ... ... | 110 | 2 to 3 annas. | 2,155 | ... | Jagádhri and Buriya. |
| | Ropes, jálís (net) and chinkás | Kuch bandhe (or Gipsy) ... | 50 | | 320 | ... | ... |
| | Bán (munj) ... ... ... | Banjárás (Hindú), Chamárs, and Chuhrás. | 280 | | 3,760 | 25 to 45 % | ... |

# APPENDIX No. II—*concluded.*

## TABLE OF THE DELHI DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| | | | | | Rs. | | |
| Umballa—*concluded* ... | Bán (bhábar) ... ... | Hindú Kahárs and Bázigars | 525 | | 3,760 | ... | ... |
| | Mohrás ... ... ... | Pathán ... ... ... | 2 | | 225 | ... | ... |
| | Mats and hand-fans ... ... | Kahárs ... ... ... | 764 | 2 to 3 annas. | 764 | 40 to 50 % | Mauza Kutti. |
| | Ropes for boats ... ... | Chamárs ... ... ... | 105 | | ... | ... | ... |
| | Sutli (hemp cordage) .. | ... | ... | | ... | ... | ... |
| | Paper ... ... ... ... | Prisoners ... ... ... | 80 | 2 annas per day ... | 3,450 | Profits amount to Rs. 1,500. | Umballa Jail. |
| | Munj carpets ... ... ... | Do. ... ... ... | 15 | 3 annas per day ... | 1,200 | | Do. do. |
| Simla ... ... ... | Tát or sacking of san ... | ... | ... | ... | ... | ... | Náhan, Nálagarh, and Biláspur. |
| | Boris of tát for pack animals and camels. | ... | ... | ... | ... | ... | ... |
| | Tát and ropes of sankokrá ... | ... | ... | ... | ... | ... | ... |
| | Paper ... ... ... ... | Kolis ... ... ... | ... | ... | ... | ... | In Bhajji, State. |
| | Ropes of liber or inner bark of the biúl. | ... | ... | ... | ... | ... | Náhan, Biláspur, Bashahr, Kumharsen, Júnga, Mahlog, Kunhiár, Bhajji. |
| | Ropes of san ... ... ... | ... | ... | ... | ... | ... | Nálágarh. |
| | Ropes of sankokrá ... ... | Zamíndárs ... ... | ... | ... | ... | ... | Nálágarh and Biláspur. |
| | Ropes of bággar grass ... | | ... | ... | ... | ... | Náhan, Nálágarh. Baghát. |
| | Ropes of bhang ... ... | | ... | ... | ... | ... | Kumharsen, Jubal, Kyunthal, and Bhajji. |
| | Ropes of taúr ... ... | | ... | ... | ... | ... | Biláspur, Mangal, Bhajji, &c. |
| | Ropes of káril or bhéaar ... | ... | ... | ... | ... | ... | Bashahr, Kumharsen, and Mahlog. |
| | Bhábar or nettle ropes ... | ... | ... | ... | ... | ... | Mahlog, Júnga. |
| | Bán munj ... ... ... | ... | ... | ... | ... | ... | In the hills as far as Kumharsen. |
| | Fuze for matchlocks of taúr | ... | ... | ... | ... | ... | Outer Hills. |
| | Mats or chatáis of palm leaves. | ... | ... | ... | ... | ... | Lower Hills. |
| | Mandri or thick mats of Shahdaili. | ... | ... | ... | ... | ... | Upper Hills. |
| | Baskets, screens, and chicks of bamboo. | ... | ... | ... | ... | ... | ... |
| | Kiltás and baskets of nigál ... | Bhanjrás (a low caste of Hindús.) | ... | ... | ... | ... | ... |
| | Brushes ("Juri") of bággar grass. | Bhanjrás ... ... ... | ... | ... | ... | ... | Nálagarh and Náhan. |

## TABLE OF PRICES.

| Work or raw material. | Delhi. | Gurgáon. | Karnál. | Hissár. | Rohtak. | Umballa. | Simla. |
|---|---|---|---|---|---|---|---|
| Paper ... ... ... | Rs. 7 per gadi ... ... | ... | Rs. 4-0-0 per maund. | ... | ... | ... | ... |
| Mondhás ... ... ... | ... | 4 to 8 annas each ... | ... | ... | ... | Annas 6-0 each. | ... |
| Necha of munj ... ... | ... | 2 to 8 annas each ... | ... | ... | ... | ... | ... |
| Bán munj ... ... | ... | Re. 1-8-0 to Rs. 4-0-0 per maund. | Rs. 2-0-0 per maund. | 8 to 16 seers per rupee. | ... | ... | ... |
| Boriás ... ... | ... | ... | Annas 2-0 each. | ... | ... | ... | .. |
| Matting of date palm ... | ... | ... | Rs. 6-0-0 per square yard. | ... | ... | ... | ... |
| Sutli of san ... ... | ... | ... | ... | 4 seers per rupee. | ... | ... | ... |
| Sutli of ankálá ... ... | ... | ... | ... | 3 to 3½ seers per rupee | ... | ... | ... |
| Mats ... ... ... | ... | ... | ... | ... | ... | Annas 8-0 each. | ... |
| Fans of date palm ... | ... | ... | ... | ... | 1 pice to annas 10-0 each. | Anna 1-0 each. | ... |
| Bhang ropes ... ... | ... | ... | ... | ... | ... | ... | 4 to 6 seers per rupee. |
| San ... ... ... | ... | ... | ... | ... | ... | ... | 8 to 10 seers per rupee. |
| Bággar grass ... ... | ... | ... | ... | ... | ... | ... | 30 to 40 seers a rupee. |
| Sankokrá ... ... | ... | ... | ... | ... | ... | ... | 12 seers a rupee. |
| Bamboos for baskets ... | ... | ... | ... | ... | ... | ... | Re. 1 per 100. |
| San rope ... ... | ... | ... | Rs. 1-14-0 per maund. | ... | ... | ... | ... |

## TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL.

| District. | Exports. | | | Imports. | | | Value of raw material used in the district annually. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| | | | | | | Rs. | |
| Delhi ... ... ... | Bán ... ... ... ... | Meerut and Baghpat ... | ... | Bán of bhábbar ... | N-W. Provinces ... | 1,000 | Rs. 6,165 worth of bhábbar worked up. |
| | | | | Sirkis. | | | |
| | | | | Pardás made from sirkis. | Other districts of Punjab. | ... | ... |
| | | | | Mondhás of reed and bán. | Gurgáon ... ... | ... | ... |
| Gurgáon ... ... ... | Bán ... ... ... ... | Delhi, Muttra, and Agra... | Rs. 5,500 ... | Bán ... ... ... | Alwar and Tijara, | 6,000 maunds. | ... |
| | Munj ... ... ... ... | Ditto ditto | „ 7,000 ... | Munj ... ... | Nábha and Jaipur. | 6,000 do. | ... |
| | | | | | | Rs. | |
| | | | | Paper ... ... | Jullundur Jail ... | 1,000 | ... |
| | | | | Lucknow Mill paper | Lucknow ... ... | 5,000 | ... |
| | | | | Paper ... ... | Delhi, Kosi in Muttra District, and Alwar territory. | ... | ... |
| Karnál ... ... ... | ... | ... | ... | Munj and bhábbar | Other districts ... | ... | ... |
| | | | | | | Rs. | |
| Hissár ... ... ... | Bán ... ... ... ... | Patiála ... ... | Rs. 1,500 ... | Gunny-bags ... | Calcutta ... ... | 8,000 | ... |
| | | Ferozepore ... ... | „ 1,000 ... | Ditto ... ... | Bombay ... ... | 7,000 | ... |
| | | | | Paper ... ... | Lucknow ... ... | Rs. 200 to Rs. 300 | |
| | | | | Tát-patti san cloth... | Pilibhit ... | „ 600 to „ 800 | |
| | | | | Paper, European-made | Through Delhi ... | „ 1,000 to „ 1,200 | |
| | | | | | | Rs. | |
| | | | | Bán ... | Gurgáon ... | 11,637 | |
| | | | | | Patiála ... | 60 | |
| | | | | | Ferozepore ... | 8,000 | |
| | | | | | Bháwalpur ... | 100 | |
| | | | | Sutli ... | Patiála ... | 200 | |
| | | | | | Hoshiárpur ... | 430 | Rs. 22,436. |
| | | | | | Delhi ... | 170 | |
| | | | | Tát-patti ... | Hoshiárpur ... | 450 | |
| | | | | | Delhi ... | 80 | |
| | | | | Mondhás ... | Ferozepore ... | 50 | |
| | | | | Tát bags ... | Do. ... | 25 | |
| Rohtak ... ... ... | Fans ... ... ... ... | ... | Rs. 250 to 300 | San and munj ropes and tát. | North-Western Provinces. | 5,000 | |
| | Khas for tatties, &c. ... ... | ... | ... | ... | ... | ... | |
| | | | | | | Rs. | |
| Umballa ... ... ... | White paper and munj carpets. | Other districts ... ... | 4,000 | Gunny cloth (tát-patti). | Saháranpur ... | 1,050 | |
| | Patti-tát or gunny cloth ... | Ludhiána ... ... ... | 350 | Gunny-bags ... | Calcutta and Cawnpur. | 12,250 | |
| | Bán (munj) ... ... ... | Nábha, Patiála, and Kotla States. | 400 | Bán (munj) ... | Meerut and Saháranpur | 1,400 | |
| | Bán bhábar ... ... ... | | 800 | Fans ... | Saháranpur ... | 30 | Rs. 18,065 |
| | | | | White paper ... | Muttra, Siálkot ... | Rs. 1,500 and 200 | |
| | | | | | | Rs. | |
| | | | | Foolscap paper and Serámpur paper. | Bombay and other places. | 3,500 | |
| | | | | Lakhnawi paper ... | Lucknow ... | 5,000 | |
| | | | | Bán (munj) and bán bhábhar. | Hill districts of Punjab. | 2,500 | |
| Simla and Hill States ... | Baskets ... ... ... | ... | ... | Baskets ... | Náhan and Patiála territoy. | ... | ... |
| | Bhoj pattar ... ... ... | Plains and Hill Cantonments. | ... | Baskets and kiltás ... | Kyunthal and Patiála. | ... | ... |
| | | | | Nigál ... | Náhan and Kumharsen. | ... | ... |
| | | | | Kiltás ... | Baghat ... | ... | ... |

# APPENDIX NO. II.

## JULLUNDUR DIVISION.

# APPENDIX II.

TABLE OF THE JULLUNDUR DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| | | | | | Rs. | | |
| Jullundur ... ... | Sutli of san ... ... ... | (Hindu) Brahmans ... | 30 | | 8,100 | | |
| | | Súds ... ... ... | 20 | | ... | | |
| | | Khatrís ... ... ... | 50 | | ... | | |
| | | Labánas ... ... ... | 30 | | ... | 12½ per cent. | Rájpura, Tahsíl Jullundur. |
| | San ropes ... ... | (Musalmáns) ... ... | ... | | 2,000 | | |
| | Taprís of san ... ... | Rájpúts ... ... ... | 90 | | 1,078 | | |
| | Guthlís of san ... | Ráins ... ... ... | 45 | | 200 | | |
| | Bán munj ... ... | Rájpúts (Musalmáns) ... | 200 | | 8,087 | ... | Jullundur City. |
| | Múrhás ... ... | Ráni Musalmáns ... ... | 200 | | 701 | ... | Do. |
| | Munj ropes ... ... | Teli ,, ... ... | 6 | | 3,271 | ... | Bilga. |
| | Munj sirkís ... ... | Gujar ,, ... .. | 4 | | 454 | ... | |
| | Bán of bagar ... | Chamárs ... ... ... | 207 | | 1,100 | ... | |
| | Mats of palm leaves... | Do. ... ... ... | 20 | | 1,400 | ... | |
| | Fans ... ... ... | Jhínwars (Hindús) ... | 25 | | 730 | ... | |
| | Bán of palm leaves ... | | | | 12 | | |
| | Mats of dihla ... | Jhínwars (Hindús) ... | 115 | | 150 | | |
| | Thadas (mats) ... | | | | 16 | | |
| | Mats of dib ... ... | | | | 1,259 | | |
| | Baskets of bamboo ... | | | | 325 | | |
| | Changer ,, ... | | | | 500 | | |
| | Chhalni ,, ... | | | | 400 | | |
| | Chicks ,, ... | Bhanjrás (Hindús) ... | 112 | | 400 | | |
| | Chhikkás ,, ... | | | | 508 | | |
| | Chhabás ,, ... | | | | 813 | | |
| | Jhárús (brooms) of bánai ... | Sweepers ... ... ... | 20 | | 50 | | |
| | Jurees of baggar ... ... | Masbis ... ... ... | 17 | | 311 | | |
| | Bore made of bakal ... | | | | 678 | | |
| | Bán do. ... | Kumhárs (Musalmáns) ... | 25 | | 107 | | |
| | Rassás do. ... | | | | 23 | | |
| Ferozepore ,, | Sutli of san ... ... ... | ... | ... | ... | ... | ... | |
| | Ropes of sutli ... ... | ... | ... | ... | ... | ... | |
| | Nets of sutli ... ... | ... | ... | ... | ... | ... | |
| | Money-bags of sutli ... | ... | ... | ... | ... | ... | Jail at Ferozepore. |
| | Floor mats of tát patti ... | ... | ... | ... | ... | ... | |
| | Bags of tát patti ... ... | ... | .. | ... | .... | ... | |
| | Paper ... ... ... ... | ... | ... | ... | ... | ... | Ferozepore Jail. |
| | Ropes and door mats of sankokrá or patsan. | ... | ... | ... | ... | ... | |
| | Ropes and small nets of madar fibres. | ... | ... | ... | ... | ... | |
| | Bán munj ... ... ... | ... | ... | ... | ... | ... | |
| | Munj ropes ... ... ... | ... | ... | ... | ... | ... | |
| | Munj darees ... ... ... | ... | ... | ... | ... | ... | |
| | Munj door mats ... ... | ... | ... | ... | ... | ... | |
| | Brushes of munj ... ... | ... | ... | ... | ... | ... | |
| | Chicks of bamboo ... ... | ... | ... | ... | ... | ... | |
| | Jafría of ,, ... ... | ... | ... | ... | ... | ... | |
| | Thatch of ,, ... ... | ... | ... | ... | ... | ... | |
| | Floor matting of dib ... | ... | ... | ... | ... | ... | |
| | Fans of date palm ... ... | ... | ... | ... | ... | ... | |
| | Straw baskets ... ... | Women of the city. | ... | ... | ... | ... | Ferozepore City. |
| | | | | | | | *San Manufactures.* |
| Hoshiarpur ... ... | String of san (1) ... ... | Kasia (Muhammadans) ... | 50 | | | | (1) Saido patti. |
| | Ropes of ,, ... ... | Kázi ,, ... | 10 | | 15,000 | ... | (2) Bahádarpur Babzián. |
| | | Shekh ,, ... | 33 | | | | (3) Naru Nangal. |
| | Tát (2) ... ... ... | Turk ,, ... | 26 | | | | (4) Manjpur. |
| | | Joláha ,, ... | 20 | | | | (5) Basidadu. |
| | | Other castes ,, ... | 8 | ... | 1,700 | ... | (6) Jahan Khelan. |
| | | Labánás (Hindu) ... | 124 | | | | (7) Basipuráni. |
| | | Other castes ,, ... | 65 | | | | (8) Mahtábpur. |
| | Gunny-bags (3)... ... ... | Gujar (Muhammadans) ... | 5 | ... | ... | ... | (9) Hamra. |
| | | Shekh ,, ... | 4 | ... | ... | ... | |
| | | Kumhar (Hindu) ... | 32 | ... | ... | ... | |
| | | | | | Rs. | | *Munj Manufactures.* |
| | | For No. 1. | | | | | |
| | (1) Bán munj, (2) ropes, (3) carpets of munj. | Gujars (Muhammadans) ... | 30 | | Bán munj=14,000 | | Basi Panch Bháiyán. |
| | | Patháns ,, ... | 11 | | Ropes of ,, = 2,550 | | Chak Harnauli. |
| | | Jats ,, ... | 8 | | Carpets ,, = 2,200 | | Premgarh. |
| | | Kahárs ,, ... | 3 | | ... | | Hoshiárpur and Sathri. |
| | | Aráins ,, ... | 2 | | ... | | |
| | | Fakírs ,, ... | 2 | | ... | | |
| | | Sansars ,, ... | 139 | | ... | | |
| | | Other castes ... ... | 4 | | ... | | |
| | | Bati (Hindús) ... ... | 56 | | ... | | |
| | | Other castes ... ... | 374 | | ... | | |
| | | For No. 2. | | | | | |
| | | Sansars (Muhammadans) | 20 | | ... | | |
| | | Gujars ,, ... | 12 | | ... | | |
| | | Damna and other castes (Hindús) ... ... ... | 39 | | ... | | |

Generally from 2 to 4 annas a day. For important kinds of work not less than 4 annas per diem.

2 or 3 annas per diem.

Profits of trade in manufactured articles of bamboo and matting of dib and palm leaves are 4 annas, and profits in trade of other articles are 2 annas in the rupee.

(1) Articles of san, 20 to 25 per cent.
(2) Do. of munj and baggar, 25 per cent.
(3) Do. of alsi, 20 to 25 per cent.
(4) Do. of date palm leaves and bamboo, 150 per cent.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| Hoshiarpur—*concluded.* | | For No. 3. | | For important kinds of work generally from 2 to 4 annas a day. | | | |
| | | Sansars (Muhammadans) | 16 | | | | |
| | | For (*a*). | | | | | |
| | | Gujar (Muhammadans) ... | 10 | | | | |
| | | Bati (Hindús) ... ... | 43 | | | | |
| | | Other castes ... ... | 145 | | | | |
| | | For (*b*). | | | Rs. | | |
| | (*a*) String of baggar ... | Rájpút (Hindu) ... ... | 6 | | 2,500 | | |
| | (*b*) String of alsi ... ... | Lohár ,, ... ... | 4 | | 380 | | |
| | (*c*) Fans ... ... ... | For (*c*). | | | 1,000 | | |
| | (*d*) Mats, (*e*) sieves, (*f*) baskets, (*g*) scales of bamboo. | Dumna and other castes (Hindús). | 66 | | Mats, 3,250 (*e*), (*f*) and (*g*) Rs. 4,750 | | (*a*) Chak Harnauli. (*b*) Harse Mansor. (*c*) and (*d*) Mangal Shahidán. (1) Dattarpur, (2) Jejjor, (3) Unah, (4) Anandpur, (5) Núrpur, (6) Mairi, (7) Jowar, (8) Jowhára, (9) Dul, (10) Dul Batwálan, (11) Dharmsál, (12) Chapro, (13) Hardo Nahri, (14) Thathal, (15) Ambota, (16) Baro Bahádar Kali. |
| | | For (*d*). | | | | | |
| | | Gujar (Muhammadans) ... | 25 | | | | |
| | | Other castes ,, ... | 14 | | | | |
| | | For (*e*), (*f*), & (*g*). | | | | | |
| | | Dumna and other castes Hindús). | 204 | | | | |
| | Bamboo chicks ... ... | ... | ... | | ... | ... | |
| Ludhiana ... ... | Sack cloth weaving ... ... | Kumhárs (Hindús) and (Muhammadans). | 490 | Not exceeding 2 annas a day. | ... | ... | |
| | Sack cloth for sides of carts (pakhulís). | | | | | | |
| | Ban, sacks, twine, ropes, netting (tangar). | Labánás, Sainís, Jats, Bowriás, Mahtams and sweepers. | 278 | | ... | ... | |
| | Mats and fans ... ... | Jhínwars ... ... ... | 187 | | ... | ... | |
| | Ropes of sankukra ... | ... | ... | ... | ... | ... | |
| | Paper ... ... ... ... | ... | ... | ... | ... | ... | Ludhiána Jail. |
| | Ropes, string, sacks, nets and money-bags of flax. | ... | ... | ... | ... | ... | |
| | Munj ropes, string and ban for beds. | ... | ... | ... | ... | ... | |
| | Mats from dib ... ... | ... | ... | ... | ... | ... | |
| | Fans of date palm leaves ... | ... | ... | ... | ... | ... | |
| Kangra Proper... ... | Fishing nets of shan ... | ... | ... | ... | ... | ... | Kángra District. |
| | Paper ... ... ... | Dumnás, a low class of basket-makers and workers in bamboo manufactures. | ... | From 2 to 6 annas per diem. | Rs. 1,699 | ... | Dharmsála Jail. |
| | Pern ... ... ... | | ... | | 100 | ... | |
| | Patár ... ... ... | | ... | | 200 | ... | |
| | Changer ... ... | | ... | | 1,000 | ... | |
| | Chhába or weighing scale. | | ... | | 2,000 | ... | |
| | Baskets ... ... | | ... | | 300 | ... | |
| | Chhalni ... ... | | ... | | 500 | ... | |
| | Chhar ... ... ... | | ... | | 100 | ... | Dera and Kángra Tahsíls. |
| | Karni or karandi ... | | ... | | 30 | ... | |
| | Travelling baskets ... | | ... | | 100 | ... | |
| | Waste-paper baskets | | ... | | 20 | ... | |
| | Kira ... ... ... | | ... | | 2,000 | ... | |
| | Chicks ... ... | | ... | | 500 | ... | |
| | Múndás ... ... | | ... | | 100 | ... | |
| | Bird-cages ... ... | | ... | | 50 | ... | |
| | Ropes of dhamán for agricultural use. | | ... | | ... | ... | |
| | String of dhamán for bedsteads. | | ... | | ... | ... | |
| | San ropes ... ... ... | All classes engaged in agriculture make ropes and twine for agricultural purposes for themselves, and Darains and Sansais make bán of san, sankukra, bagar and munj for sale. | ... | From 2 to 4 annas per diem for rope and bán making classes. | ... | ... | |
| | San bán ... ... ... | | ... | | ... | ... | The Hamírpur Tahsíl is noted for munj and other ropes and twine. |
| | Trangri of san ... ... | | ... | | ... | ... | |
| | San bags ... ... ... | | ... | | ... | ... | |
| | San tát ... ... ... | | ... | | ... | ... | |
| | Fishing-nets of san ... ... | | ... | | ... | ... | |
| | Tennis ditto ... ... | | ... | | ... | ... | |
| | Mats of san ... ... ... | | ... | | ... | ... | |
| | Money-bags of san ... ... | | ... | | Rs. 12-8-0 | ... | Dharmsála Jail. |
| | Hemp twine ... ... ... | | ... | | ... | ... | Ditto. |
| | Ropes, string and bags of sankokra for storing corn. | | ... | | ... | ... | *Ditto.* |
| | Ropes and string of taur ... | | ... | | ... | ... | |
| | Slow matches of taur for matchlocks. | | ... | | ... | ... | |
| | Pattals and dunás of taur leaves (leaf dishes and cups) | Dusálís ... ... ... | Between 300 and 400 families. | | ... | ... | Kángra District. |
| | Some articles named under bamboo are made of nirgal cane. | ... | ... | | ... | ... | |

## APPENDIX II—*continued.*

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| Kangra Proper—*concld.* | Mats of khajúr leaves ... | ... | ... | From 2 to 4 annas per diem for rope and bán-making classes. | ... | ... | |
| | Coarse ropes and brooms of bagar. | | | | ... | ... | |
| | Coarse string of bagar ... | ... | ... | | ... | ... | |
| | String of munj ... ... | ... | ... | | ... | ... | |
| | Mondhas of munj ... ... | ... | ... | | ... | ... | |
| | Small mats of munj ... ... | ... | ... | | ... | ... | |
| | Door mats of munj .. ... | ... | ... | | Rs. 25 | ... | Dharmsála Jail. |
| | Ropes and churning string of thuh kawár gandal. | ... | ... | | ... | ... | |
| Kulu Subdivision of Kangra. | Paper ... ... ... ... | Hindús, all castes, Brahmins, Kanaits, Dágis, Bálrás (or Baidas), Kolis, Lohárs, &c., &c. | Allowing one worker for each family the result is 20,000 workers of all castes. | ... | Estimated value of annual outturn of ropes, pulas, &c., made from hemp, Rs. 4,000. | 25 to 50 per cent. | Spiti. |
| | Ropes of hemp (distinguished locally by different names). | | | ... | | | |
| | Shoes of hemp ... ... | | | ... | | | Rághopur Kothi. |
| | Fishing-nets of hemp and nets for snaring hawks. | | | ... | | | |
| | Bags of hemp ... ... ... | | | ... | | | |
| | Ropes of various kinds of bagar. | | | ... | | | |
| | Thick string of bagar for charpoys. | | | ... | | | |
| | Shoes of bagar grass ... | | | ... | | | |
| | Brooms of bagar grass ... | | | ... | | | |
| | Mats of rice straw called mandri. | | | ... | | | *In Kulu.* Kothís Khokhan, Mahárája Fárapur, Nagar, Bhalán and Kot Kandi. |
| | Baskets of various sorts of nirgal. | | | ... | | | |
| | Ropes and pula soles of nettle. | | | ... | | | *In Saráj.* Kothis Narayangarh and Sirigarh. |
| | Ropes of dhaman ... ... | | | ... | | | |
| | Ropes of the elm and other trees. | | | ... | | | |



### TABLE OF PRICES.

| Work or raw material. | Jullundur. | Ferozepore. | Hoshiárpur. | Ludhiána. | Kángra Proper. | Kulu Subdivision of Kángra. |
|---|---|---|---|---|---|---|
| Twine (sutli) of san ... ... | 4 sérs per rupee ... ... | Rs. 12 to 15 per maund ... | ... | 4½ annas per sér ... | ... | ... |
| Bánmunj ... ... ... ... | Ditto ... ... | 3 to 8 sérs per rupee ... | 4 sérs per rupee ... | 7 sérs per rupee ... | ... | ... |
| Mats of dila ... ... ... ... | 8 annas per mat ... ... | ... | ... | ... | ... | ... |
| Munj ... ... ... ... ... | 28 sérs per rupee ... ... | Rs. 2, Rs. 2-8-0 or Rs. 3 per maund. | ... | 40 sérs per rupee ... | ... | ... |
| Bagar ... ... ... ... | 1 maund 8 sérs per rupee ... | ... | ... | ... | ... | ... |
| Dib ... ... ... ... ... | 1 maund 10 sérs per rupee ... | ... | ... | ... | ... | ... |
| Palm leaves ... ... ... ... | 32 sérs per rupee ... ... | ... | ... | ... | ... | ... |
| San ... ... ... ... ... | 10 sérs per rupee ... ... | Rs. 5 to Rs. 7 per maund ... | 4 sérs per rupee ... | ... | ... | ... |
| Tát patti ... ... ... ... | ... | 2 annas per yard ... | ... | .. | ... | ... |
| Bán of kahín... ... ... ... | ... | Rs. 2-8-0 or Rs. 3 per maund | ... | ... | ... | ... |
| Paper ... ... ... ... ... | ... | Rs. 8-10-0 and Rs. 5-12-0 per ream. | ... | .... | ... | ... |
| Alsi ... ... ... ... ... | ... | ... | 4 sérs per rupee ... | ... | ... | ... |
| San matting Yds. ft. in. 10 × 1—2 each ... | ... | ... | Rs. 1-8-0 per piece ... | ... | ... | ... |
| Munj carpets ... ... ... ... | ... | ... | 5 annas per square yard | ... | ... | ... |
| Date palm leaf mats ... ... | ... | ... | 10 annas ditto ... | ... | ... | ... |
| Date palm hand fans ... ... | ... | ... | 5 annas per score ... | ... | ... | ... |
| Bamboo baskets ... ... ... | ... | ... | 1 anna to 8 annas each... | ... | ... | ... |
| Gunny cloth ... ... ... ... | ... | ... | ... | 7 annas per yard ... | ... | ... |
| Bags of san ... ... ... ... | ... | ... | ... | Rs. 27 per hundred ... | ... | ... |
| Nets of san for carts ... ... ... | ... | ... | ... | 4 annas each ... | ... | ... |
| Money-bags ... ... ... ... | ... | ... | ... | 16 per rupee ... | ... | ... |
| Ropes ... ... ... ... ... | ... | ... | ... | 4 annas per sér ... | ... | ... |

TABLE OF PRICES—*continued.*

| Work or raw material. | | Jullundur. | Ferozepore. | Hoshiárpur. | Ludhiána. | Kángra Proper. | Kulu Subdivision of Kángra. |
|---|---|---|---|---|---|---|---|
| Sankukra ... ... ... ... | | ... | ... | ... | 10 to 15 sérs per rupee | ... | ... |
| Ropes of munj ... ... ... | | ... | ... | ... | 13 sérs per rupee ... | ... | ... |
| Peru ... ... ... ... | Of bamboo. | ... | ... | ... | ... | Re. 1 to Re. 1-8-0 ... | ... |
| Patár ... ... ... ... | | ... | ... | ... | ... | Annas 4 to Re. 1 ... | ... |
| Changer ... ... ... | | ... | ... | ... | ... | 1 to 4 annas ... | ... |
| Chhába or weighing scales ... | | ... | ... | ... | ... | 1 to 3½ annas per pair... | ... |
| Baskets ... ... ... | | ... | ... | ... | ... | ¼ to 2 annas ... | ... |
| Chhalni ... ... ... | | ... | ... | ... | ... | ½ to 2 annas ... | ... |
| Chhiku ... ... ... | | ... | ... | ... | ... | ¼ to 2 annas ... | ... |
| Chhar ... ... ... ... | | ... | ... | ... | ... | 2 to 8 annas ... | ... |
| Karni or karandi ... ... | | ... | ... | ... | ... | ¼ to 1½ annas ... | ... |
| Travelling baskets ... ... | | ... | ... | ... | ... | Annas 8 to Rs. 2 ... | ... |
| Waste-paper baskets ... | | ... | ... | ... | ... | 1 to 2 annas ... | ... |
| Kira ... ... ... ... | | ... | ... | ... | ... | ... | ... |
| Chicks ... ... ... | | ... | ... | ... | ... | Anna 1 per square foot | ... |
| Múndás ... ... ... | | ... | ... | ... | ... | Annas 8 to Re. 1 ... | ... |
| Bird-cages ... ... ... | | ... | ... | ... | ... | 2 to 8 annas ... | ... |
| Money-bags of san ... ... ... | | ... | ... | ... | ... | 4 annas each ... | ... |
| Ropes of hemp ... ... ... | | ... | ... | ... | ... | ... | 1 to 3 annas a piece. |
| Shoes of do. ... ... ... | | ... | ... | ... | ... | ... | 2 and 4 annas a pair. |
| Ropes, mats, sandals and baskets ... | | ... | ... | ... | ... | ... | 1 anna or less up to 4 annas an article. |
| Hemp of superior quality ... ... | | ... | ... | ... | ... | ... | 8 sérs per rupee. |
| Hemp of inferior quality ... ... | | ... | ... | ... | ... | ... | 16 sérs per rupee. |

TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL.

| District. | Exports. | | | Imports. | | | Raw materials used in the District. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| | | | Rs. | | | Rs. | |
| Jullundur ... ... | Sutli of san ... ... ... | Ferozepore ... ... ... | 600 | Sutli of san ... | Hoshiárpur ... | 3,703 | Rs. 85,444, san and sankukra. |
| | | Ludhiána ... ... ... | 250 | ... | Ludhiána ... | 359 | |
| | | Lahore ... ... ... | 900 | Bán munj ... ... | | 5,000 | |
| | | Amritsar ... ... ... | 1,600 | Bán bagar ... | | 13,097 | |
| | Bán and ropes of munj ... | Ferozepore ... ... ... | 700 | Brooms of bagar ... | | 93 | Rs. 15,181 other raw material. |
| | | Ludhiána ... ... ... | 400 | Chhábás of báns ... | Hoshiárpur ... | 500 | |
| | | Lahore ... ... ... | 2,000 | Changer of báns ... | | 500 | |
| | | Amritsar ... ... ... | 2,800 | Tokrás of báns ... | | 400 | |
| Ferozepore ... ... | ... | ... | ... | Bamboo ... | From other districts | ... | |
| | | | | Palm leaf mats ... | Pesháwar ... | ... | |
| Hoshiarpur ... ... | San ... ... ... ... | | 10,000 | Bamboo baskets sieves and scales. | Kángra ... ... | 1,000 | |
| | San-made string ... ... | | 2,700 | Paper ... | Calcutta, Lucknow, Delhi, Maler Kotla, Siálkot and Jullundur Jail. | ... | |
| | Do. tát ... | Other districts of the Punjab. | 300 | | | | Rs. 42,900. |
| | Munj string ... ... ... | | 7,500 | | | | |
| | Bagar and its string ... | | 1,250 | | | | |
| Ludhiana ... ... | ... | ... | ... | San ... ... ... | Other districts ... | To a considerable extent. | |

TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL—*concluded.*

| District. | Exports. | | | Imports. | | | Raw materials used in the District. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| | | | | | | Rs. | |
| Kangra Proper ... | Aban (nettle) fibre ... ... | England ... ... ... | Small quantity. | Munj ... ... ... | Hoshiárpur ... ... | 800 | |
| | Patár of bamboo ... ... | ... | Very little. | | | | |
| | Changer of bamboo ... ... | Plains ... ... ... | Rs. 800 | | | | |
| | Chhába or weighing scales of bamboo. | Plains ... ... ... | 1,500 | | | | |
| | Baskets of bamboo ... ... | By pilgrims... ... ... | 200 | | | | |
| | Chhalni of bamboo ... ... | ... | 400 | | | | |
| | Chhikku of bamboo ... ... | By pilgrims... ... ... | 400 | | | | |
| | Travelling baskets of bamboo | By visitors to the valley ... | ... | | | | |
| | String and brooms of bagar... | Adjoining districts in the plains. | From Rs. 200 to 400 | | | | |
| Kulu Subdivision of Kangra District. | Baskets ... ... ... | Rámpur, Bashahr ... ... | 55 | ... | ... | ... | Rs. 3,000 worth of hemp annually worked up in the Kulu Subdivision. |
| Plách Tahsil of Kulu... | Kalta, patár and tokrás, &c., | Ditto ... ... | 55 | Nets of bhang fibre | Suket State ... | ... | |

# APPENDIX NO. II.

## LAHORE DIVISION.

# APPENDIX II.

TABLE OF THE LAHORE DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| Lahore .. | Ropes or string of munj or hemp. | Mahtams (Hindu) (Mussalman.) | 1,100 | 2 annas. | Articles of munj, Rs. 30,000. | 6¼ per cent. | Baini, Shobewál, Santpura, and Mari. |
| | Charpoys of munj or hemp ... | Labánás (Hindu) ... | 400 | 4 ,, | Article of san, Rs. 30,000. | | |
| | Sacks of do. ... | Khatries do. ... | 40 | 3 ,, | Articles of sankokra, Rs. 2,500. | | |
| | Hammocks of do. ... | Aroras do. ... | 100 | ... | Articles of khas, Rs. 10,000. | | |
| | Kajawas, &c., of do. ... | Bairupeas do. ... | 550 | ... | Articles of date leaves, Rs. 400. | | |
| | Miscellaneous articles of munj, san, khas, sankokra, pachai, dib, bet, palm leaves and patha peshawri. | Purbeas do. ... | 50 | ... | Articles of pachai, Rs 100. | | |
| | Máhals (well ropes) of munj and pachai. | Mussalmans of various castes | 110 | For making bán munj | Articles of dib, Rs. 4,000. | | |
| | Netted bags of munj string. | | | For making articles of hemp or san | Articles of bent, Rs. 4,800. | | |
| | Mats of do. | | | For other articles not made from hemp | Articles of patha-peshawri, Rs. 10,000. | | |
| | Darries of do. | | | | Paper, Rs. 6,000. | | |
| | Mops of do. | | | | | | |
| | Boat ropes of do. | | | | | | |
| | Ekka fastenings of do. | | | | | | |
| | Sacking of san string and sutli. | | | | | | |
| | Packing cloth of san string and sutli (shalita). | | | | | | |
| | Nose bags of san string and sutli (tobra). | | | | | | |
| | Panniers of do. | | | | | | |
| | Mattresses (gadelas) do. | | | | | | |
| | Tatties of khas. | | | | | | |
| | Pardahs of do. | | | | | | |
| | Fans of do. | | | | | | |
| | Surahi covers of khas | | | | | | |
| | Fans of date leaves | | | | | | |
| | Fly killers (jhalani) of date leaves. | | | | | | |
| | Darries, mats, and ropes of American *aloe* or *agave*. | ... | ... | ... | ... | ... | Lahore Central Jail. |
| | Twine of madar ... | | | | | | |
| Amritsar ... ... ... | Ropes of munj and san, san and munj bán. | | | | | | |
| Gurdáspur ... ... | Ropes of san. | | | | | | |
| | San ván ... | Mussalman Turks ... | 24 | From 2 to 4 annas a day. | ..... | ..... | Manza Gharota Kalán in Pathánkot Tahsíl. |
| | Patti or coarse matting of san string. | Do. Telis ... | 58 | | Rs. 9,357 of munj and bamboo articles. | | |
| | Chuts or large bags of san ... | Hindu Labánás and Telis... | 29 | | | | |
| | Ropes of sankokra ... | | | | | | |
| | Mats of palm leaves ... | | | | | | |
| | Bán munj for beds ... | | | | | | |
| | Ropes of munj ... | | | | | | |
| | Coarse matting of munj ... | | | | | | |
| | Chinkás do. ... | Malláhs or boatmen, Hindus, Bahrupias, and Dammas. | 160 | | | | |
| | Tangars do. ... | | | | | | |
| | Baskets of kána ... | Hindu Labánás, Changars, Chuhras. | 105 | | | | |
| | Stools (mondhás) of kána | | | | | | |
| | Chicks do. | | | | | | |
| | Sirkis of tili kána ... | | | | | | |
| | Chaj or winnowing baskets of do. ... | | | | | | |
| | Coarse mats of era ... | Mussalman Machis ... | 33 | From 2 to 4 annas a day. | | | |
| | Rope of era ... | Malláhs or boatmen. | | | | | |
| | Twine of era ... | | | | | | |
| | String or tán of alsi ... | | | | | | |
| | Ropes of dhamman ... | | | | | | |
| | Bamboo charpoys ... | | | | | | |
| | Verandah chicks of bamboo | | | | | | |
| | Baskets of all sizes of do. | | | | | | |
| | Stools of bamboo ... | | | | | | |
| | Cages of do. ... | | | | | | |
| | Weighing scales or chabas of bamboo. | | | | | | Batála |
| | Poles of bamboo for shoal-daris and tents. | | | | | | Pathánkot. |
| | Paper ... | ..... | ..... | ..... | ..... | ..... | Gurdáspur Jail. |
| | Munj matting ... | | | | | | |
| | Chick-making ... | | | | | | |
| Mooltan .. | Ropes of san ... | Zamindárs ... | | From 2 to 3 annas a day. | | Rs. 6-0-0 per cent. | |
| | Chhinkas of san ... | Do. ... | | | | | |
| | Ropes of munj ... | ... | | | | | |
| | Bán munj for cots ... | ... | | | | | |
| | Chhinkas of munj ... | Hindus Aroras ... | 230 | | | | |
| | Tangar do. ... | Muhammadan Jats ... | 116 | | | | |
| | Mahals do. ... | Labánás ... | 100 | | | | |
| | | Balochis ... | 32 | | | | |
| | | Bazigar Gameras ... | 131 | | | | |
| | Chhaj and fine chicks of flower-stalk of saccharum munja. | Muhammadans, Chuhras, and Bolá Shahi Chuhras. | 1,085 | | | | |
| | Chicks of káná ... | | | | | | |
| | Sirkis or screens of kana ... | | | | | | |

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| **Mooltan—*concluded*** ... | Ropes of palm and dwarf palm leaves. | | | | | | |
| | Mats of do. ... | Hindu Aroras ... | 115 | 2 annas a day. | | | |
| | Máhls of do. ... | Jats ... | 25 | | ... | ... | Mooltan City and Cantonments. |
| | Baskets of do. ... | Chuhras ... | 108 | | | | |
| | Fans of do ... | | | | | | |
| | Chicks of do. ... | | | | | | |
| | Chairs, stools and chicks of bamboo slips. | Chuhras ... | 10 | 5 to 6 annas a day. | ... | ... | Mooltan City, Civil Lines, and Cantonments. |
| | | Turbins of low caste ... | 15 | | | | |
| | Paper made in the District Jail | Prisoners ... | From 125 to 150. | ... | Rs. 4,220-7-0 during 1889-90. | Rs. 1,929-3-0 | District Jail of Mooltan. |
| | Paper made in Mooltan City | Book-binders and Khojas... | 20 | ... | ... | ... | Mooltan City. |
| | Paper made at Jalalpur Pirwala. | Muhammadan Khojas ... | ... | ... | Rs. 840 ... | ... | Jalalpur Pirwala. |
| **Jhang** ... ... ... | Ván of munj. | | | | | | |
| | Ropes of munj. | | | | | | |
| | Nets of munj ván. | | | | | | |
| | Máhls of munj. | | | | | | |
| | Ván of kahin. | | | | | | |
| | Ropes of do. | | | | | | |
| | Nets of do. | | | | | | |
| | Mahls of do. | | | | | | |
| | Mats of date leaves. | | | | | | |
| | Chhabees of do. | | | | | | |
| | Máhls of do. | | | | | | |
| | Ván of do. | | | | | | |
| | Tatties of khas | | | | | | |
| | Paper ropes and mats of bán. | Prisoners, generally Muhammadans. | 75 | ... | ... | ... | District Jail at Jhang. |
| | | | 15 | ... | ... | ... | |
| | | | 5 | ... | ... | ... | |
| **Montgomery** ... | Ropes of san and sankokrá ... | Rohtars, Mahtams, Chuhars and Agriculturists. | 172 in all. | ... | Rs. 1,800 | Rs. 600 | Hnjra, Mabla, Shekhuka, Gadhoke, Sharaih, Rohela, Bhila and Gugera. |
| | Baskets of pilchi ... | | | | | | |
| | Ropes of munj ... | | | | | | |
| | Taugri of do. ... | | | | | | |
| | Bán of do. ... | | | | | | |
| | Máhl of do. for wells ... | | | | | | |
| | Múrhás of do. ... | | | | | | |
| | Sirkis of do. ... | | | | | | |
| | Chajs of do. ... | | | | | | |
| | Tokris of do. ... | | | | | | |



TABLE OF PRICES.

| Work or raw material. | Lahore. | Amritsar. | Gurdáspur. | Mooltan. | Jhang. | Montgomery. | Remarks. |
|---|---|---|---|---|---|---|---|
| Munj, undressed ... ... | 20 sérs a rupee ... ... | ... | ... | ... | 25 sérs per rupee ... | 14 to 30 sérs per rupee. | |
| Do., dressed ... ... | 14 do. do. ... ... | ... | ... | Rs. 1-6-0 to 2-8-0 per maund. | 16 do. do. | ... | |
| San ... ... ... | 6 do. do. ... ... | ... | ... | ... | ... | ... | |
| Sankokrá ... ... ... | 8 do. do. ... ... | ... | ... | ... | ... | ... | |
| Khas ... ... ... | Rs. 5 per maund ... ... | ... | ... | ... | ... | ... | |
| Date leaves ... ... | ,, 1 do. ... ... | ... | ... | ... | ... | ... | |
| Withies for basket-making | ,, 20 do. ... ... | ... | ... | ... | ... | ... | |
| Patha peshauri ... ... | ,, 3 to 5 per maund ... | ... | ... | ... | ... | ... | |
| Chicks of reed ... ... | ... | ... | 2 to 8 annas each ... | Re. 1-8-0 or 2-0-0 per 100 square feet. | ... | ... | |
| Do. of bamboo ... | ... | ... | Re. 0-12-0 to 1-8-0 each | ... | ... | ... | |
| Mondás or stools of reed | | ... | 2 to 4 annas each ... | ... | ... | 2 to 8 annas each ... | |
| Do. of bamboo ... | | ... | Re. 0-8-0, 1-8-0, 2-0-0, and also 2-0-0 each | ... | ... | ... | |
| Sirkis ... ... | ... ... | ... | 4 to 8 annas each... | Re. 0-8-0 to 0-12-0 per 100 square feet. | ... | ... | |
| Ván munj ... | ... | ... | 8 to 12 sérs per rupee. | 3 to 10 sérs per rupee. | 5 sérs per rupee ... | 4 to 12 sérs per rupee. | |
| Joris ... ... | ... | ... | 3 pies per bundle ... | ... | ... | ... | |
| Chhinkás ... ... | ... | ... | 6 pies each ... | 3 pies to 1 anna each, | ... | ... | |

## TABLE OF PRICES.

| Work or raw material. | Lahore. | Amritsar. | Gurdáspur. | Mooltan. | Jhang. | Montgomery. | Remarks. |
|---|---|---|---|---|---|---|---|
| Tangri for holding bhusa, &c. | ... | ... | 3 to 6 annas ... | Re. 0-6-0 to 1-8-0 per piece. | ... | 4 to 8 annas each ... | |
| Pattis ... ... ... | ... | ... | Re. 0-12-0, 1-2-0, and 1-4-0 for a piece of 8 yards. | ... | ... | ... | |
| Mats of era ... ... | ... | ... | 1 to 4 annas ... | ... | ... | ... | |
| Do. of palm leaves ... | ... | ... | Re. 0-4-0 to 1-0-0 ... | Re. 0-8-0 to 0-10-0 per 100 square feet. | ... | ... | |
| San van ... ... ... | ... | ... | 4 to 6 sérs per rupee. | 8 to 12 sérs per rupee. | ... | ... | |
| Kana or reed ... ... | ... | ... | 2 to 3 annas a bundle. | ... | ... | ... | |
| San rope ... ... ... | ... | ... | 5 to 7½ sérs per rupee. | 8 to 12 sérs per rupee. | ... | ... | |
| Baskets of reed ... ... | ... | .. | 2 to 4 annas each ... | ... | ... | ... | |
| Chaj or sieve ... ... | ... | ... | Re. 0-1-0 to 0-1-6 each. | ... | ... | ... | |
| Munj ropes ... ... | ... | ... | 8, 12 and 16 sérs per rupee. | 8 to 12 sérs per rupee. | ... | 6 pies to 2 annas per rope. | |
| Bamboo ... ... ... | ... | ... | Rs. 5 to 8 per 100 ... | ... | ... | ... | |
| Munj well ropes ... ... | ... | ... | ... | Re. 1-8-0 per piece... | ... | ... | |
| Máhis of palm leaves ... | ... | ... | ... | Re. 0-4-0 each ... | .. | ... | |
| Fans of ditto ... | ... | ... | ... | 3 pies to 0-1-6 per piece. | ... | ... | |
| Baskets of ditto ... | ... | ... | ... | 3 pies to 1 rupee ... | ... | ... | |
| Chicks of palm stalks ... | ... | ... | ... | Rs 5 per 100 square feet. | ... | ... | |
| Paper made at Jalalpur Pirwala. | ... | ... | ... | 3 to 5 annas per quire. | ... | ... | |
| Káhin ... ... ... | ... | ... | ... | ... | 1 maund 10 sérs per rupee. | ... | |

## TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL.

| District. | Exports. | | | Imports. | | | Value of raw material used in the district. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| Lahore ... | Munj ... | Mooltan, Gujránwála, and Montgomery. | Rs. 5,000 ... | Bent for office baskets. | Benares ... | Rs. 1,200 | Rs. 35,350 |
| | Mats of munj twine (from Lahore Central Jail). | England ... | ... | San ... | Hoshiárpur and Jullundur. | Considerable quantity. | |
| | | | | Cocoanut ropes ... | Calcutta ... | Rs. 1,000 | |
| | | | | Sacks ... | Do. | ,, 2,500 | |
| | | | | Chatai ... | Peshawar ... | ,, 5,000 | |
| | | | | Country-made paper. | Lucknow, Mathra and Siálkot. | ... | |
| | | | | Twine of munj ... | Villages in the Patiála State. | ... | |
| Amritsar ... | ... | ... | ... | ... | ... | ... | Munj, 1,500 maunds. San, 250 ,, |
| Gurdáspur ... | Baskets of bamboo ... | Lahore and Amritsar, Districts. | Large quantities ... | Large variety of bamboo made articles. | ... | | |
| | Stools of do. ... | | | | | | |
| | Cages of do. ... | Lahore, Amritsar and Sialkot. | Do | These are brought in by traders at the Sultánpur Fair. | | | |
| | Poles of bamboo for tents and Shouldaries. | Commissariat Departments of Ferozepore, Mooltan, Jullundur, and other cantonments of the Punjab. | | San ... | From other districts (names not specified). | Rs. 2,000 | |
| | | | | Munj ... | | ,, 200 | |
| | | | | Bán munj ... | | ,, 3,600 | |
| | | | | Fans ... | | ,, 200 | |
| | | | | Paper ... | | ,, 1,000 | |
| | Tat-patti of san ... ... | Amritsar, Lahore, Jullundur, Mooltan, Ferozepore, Ludhiána and Ráwalpindi | Rs. 10,000 ... | | | | |
| | Munj ... ... ... ... | Amritsar District. ... | ,, 200 ... | | | | |
| | Bamboo ... ... ... | Other districts of Punjab, ... | ,, 2,000 ... | | | | |
| | Articles made of san and sankokrá. | | ,, 10,000 ... | | | | |

TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL.

| District. | Exports. | | | Imports. | | | Value of raw material used in the district. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| Mooltan ... ... ... | Paper made in District Jail, | ... | ... | Munj ... ... | Some neighbouring villages in Bahâwalpur State. | | Rs. 2,291-4-0 for jail paper. |
| | Paper made at Jalâlpur Pirwâla ... ... ... ... | Bahâwalpur and Dera Ismail Khan . . ... ... | ... | Bamboo ... ... | Lahore, Amritsar, Muzaffargarh, and Dera Ghâzi Khan. | | |
| Jhang ... ... ... | | Not given | | | | | |
| Montgomery ... ... | Munj or munj-made articles, | Lahore and Ferozepore Districts ... ... ... | Small quantities ... | Munj or munj-made articles ... Sutli made of flax and chatai ... ... | Bahâwalpur and Bikâneer Lahore and Mooltan. | | |



# APPENDIX NO. II.

## RAWALPINDI DIVISION.

# APPENDIX No. II.

TABLE OF THE RAWALPINDI DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| | | | | | Rs. | | |
| Rawalpindi ... ... | Paper ... ... ... ... | Prisoners ... ... ... | 102 | | 4,279 | ... | Ráwalpindi Jail. |
| | Fine string of san ... ... | ... | ... | | ... | ... | ... |
| | Webbing of san ... ... | ... | ... | | ... | ... | ... |
| | String for charpoys ... ... | ... | ... | | ... | ... | ... |
| | Ropes of san ... ... ... | ... | ... | | ... | ... | ... |
| | Ropes of sankokrá ... ... | ... | ... | | ... | ... | ... |
| | Twine and ropes of dhamman | ... | ... | | ... | ... | ... |
| | Cord of lasúra and kalyár ... | ... | ... | | ... | ... | ... |
| | Rope and string of palm leaf | ... | ... | | ... | ... | ... |
| | Mats of palm leaf ... ... | ... | ... | | ... | ... | ... |
| | Verandah and door chicks of bamboo. | ... | ... | From 2½ to 3 annas a day. | ... | ... | ... |
| | Bán of munj ... ... ... | ... | ... | | ... | ... | ... |
| | Bán of bhabar ... ... | ... | ... | | ... | ... | ... |
| | Fans of palm leaves ... ... | ... | ... | | ... | ... | ... |
| | Baskets of palm leaves ... | ... | ... | | ... | ... | ... |
| | Trangars ... ... ... | ... | ... | | ... | ... | ... |
| | Múrhas ... ... ... | ... | ... | ... | ... | ... | ... |
| Jhelum ... ... ... | Khurjís of san ... ... | ... | ... | ... | ... | ... | ... |
| | Máhls of munj ... ... | ... | ... | ... | ... | ... | ... |
| | Bán munj ... ... ... | Mosallís (originally sweepers by caste). | ... | ... | ... | ... | ... |
| | Cables of bán munj ... ... | Ditto. | ... | ... | ... | ... | ... |
| | Baskets of ditto ... ... | Ditto. | ... | ... | ... | ... | Jhelum City. |
| | Sirkís of munj ... ... | ... | ... | ... | ... | ... | Ditto. |
| | San bán ... ... ... | ... | ... | ... | ... | ... | ... |
| | Trangars of san string ... | ... | ... | ... | ... | ... | ... |
| | String of alsi for cots ... | ... | ... | ... | ... | ... | ... |
| | Máhls of bhabar ... ... | ... | ... | ... | ... | ... | ... |
| | Bán of bhabar ... ... | ... | ... | ... | ... | ... | ... |
| | Fans, baskets and mats of patha. | Chiefly Hindús of tahsil Talagang. | ... | ... | ... | ... | ... |
| | Large chicks of kána ... | ... | ... | ... | ... | ... | ... |
| | Brooms and baskets of pilchi. | Muhammadan agriculturists. | ... | ... | ... | ... | ... |
| | Paper ... ... ... ... | ... | ... | ... | ... | ... | Jhelum Jail. |
| Shahpur ... ... ... | Paper ... ... ... ... | ... | ... | ... | ... | ... | Shahpur Jail. |
| | Ropes and string of kai, chujan and pataka grasses. | Agriculturists ... ... | ... | ... | ... | ... | ... |
| | Boat cables of pataka grass... | ... | ... | ... | ... | ... | ... |
| | Ropes and string of sankokrá | ... | ... | ... | ... | ... | ... |
| | San ropes ... ... ... | ... | ... | ... | ... | ... | ... |
| | String and ropes of báns keora. | ... | ... | ... | ... | ... | ... |
| | Matting of dib grass ... | ... | ... | ... | ... | ... | ... |
| | Palm leaf matting ... ... | ... | ... | ... | ... | ... | ... |
| | Baskets of palm leaves ... | ... | ... | ... | ... | ... | ... |
| | Fans of palm leaves ... ... | ... | ... | ... | ... | ... | ... |
| | Grain sifters of tilís ... | ... | ... | ... | ... | ... | ... |
| | Baskets of tilís ... ... | ... | ... | ... | ... | ... | ... |
| | Ropes and string of munj ... | ... | ... | ... | ... | ... | ... |
| | Matting of sar ... ... | ... | ... | ... | ... | ... | ... |
| Gujránwála ... ... | Coarse tát ... ... ... | Mussalmán Kumhárs ... | ... | ... | 260 | ... | Kotti Bálgobind. |
| | Ropes of san, munj, sankokrá, babhar and sil. | Zamíndárs, *Hindús*, Sikhs, Kumhárs, Arorás, Labánás, Khatrís. | 90,346 | 2 annas a day. | 6,300 | Rope making, 25 to 50 per cent.<br>Basket making, 50 per cent.<br>Stools and chairs, 25 per cent.<br>Mats, &c., 25 per cent. | |
| | String of san and munj ... | *Muhammadans*, other castes and sweepers. | | | | | |
| | Trangars of bán ... ... | Mussalmán Máchhís and barbers. | 50 | | 100 | | |
| | Máhls of pachhai ... ... | Zamíndárs ... ... | 76,200 | | 1,36,500 | | |
| | Máhls of munj ... ... | | | | | | |
| | Mats of dib ... ... ... | Gugara (Muhammadans) ... | 10 | | 1,000 | | |
| | Floor mats of pachhai ... | Zamíndárs generally ... | 3,200 | | | | |
| | Stools and chairs of kána ... | Bahrúpiás, Sikhs ... ... | 176 | | 1,000 | | Wazírabad Tahsíl. |
| | Fans and brooms of khajúr leaves. | Muhammadan pakhigars ... | 50 | | 500 | | |
| | Baskets of pilchhi ... ... | Bahrúpiás, boatmen, butchers and others. | 300 | | 1,000 | | |
| | Chhajs and chicks of munj kána. | Sweepers, Gográs and Musallís. | 710 | | 300 | | |
| | Khurjis of bán (munj and cotton). | ... | ... | | 10 | | |
| | Paper ... ... ... ... | ... | ... | | 480 reams | ... | Gujránwála Jail. |
| | Bán munj ... ... ... | ... | ... | | ... | ... | ... |
| | Darries of bán munj ... | ... | ... | | ... | ... | ... |
| | Door mats of bán munj ... | ... | ... | | ... | ... | Gujránwála and Chenáwán Jails. |
| | Nets of bán munj ... ... | ... | ... | | ... | ... | |
| | Sutri (san) ... ... ... | ... | ... | | ... | ... | |
| | Chick of bamboo kána ... | ... | ... | | ... | ... | |
| | Baskets of pilchhi ... ... | ... | ... | | ... | ... | |

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| | | | | | Rs. | Rs. | |
| Gujrat ... ... ... | Paper ... ... ... ... | Prisoners ... ... ... | ... | Tát patti maker 2½ annas per day. Sutri mnkor 2 annas per diem. | ... | | |
| | Sutri of san ... ... ... | Labánás ... ... ... | 2,640 | | 12,650 | | |
| | Tát patti of san ... ... | Arorás ... ... ... | 80 | | 12,650 | | |
| | | Jats ... ... ... | 120 | | | | |
| | Bán munj ... ... ... | Gujars ... ... ... | 100 | | 12,650 | ... | Gujrát Jail, Tánda Killa, Sura Singh, Bádun, Hatka, Khari Kuánk, Bakhariáli, Buzargwál and Kohar. |
| | | Chib ... ... ... | 70 | | | | |
| | Ropes of sankokrá ... ... | Bahrúpiás... ... ... | 30 | | ... | | |
| | Munj bán ... ... ... | Mussallís ... ... ... | 80 | | ... | | |
| | | Bahrúpiás... ... ... | 20 | | ... | | |
| Siálkot ... ... ... | Paper ... ... ... ... | Jats ... ... ... ... | 115 | From one to 4 annas a day for different sorts of workers. | 32,620 | 14,000 | Rangpura, Nekapura, and Heranpura (suburbs of the town of Siálkot.) |
| | | Awáns ... ... ... | 175 | | | | |
| | | Kashmírís ... ... ... | 40 | | | | |
| | | Darzís ... ... ... | 4 | | | | |
| | | Ulmás ... ... ... | 6 | | | | |
| | | Lohárs ... ... ... | 30 | | | | |
| | | Total ... ... | 370 | | | | |
| | | (JAT SUBDIVISIONS.) | | | | | |
| | | Bhatti, Bhuta, Khokhar, Janjua, Her, Bájwa, Wáina, Mungar, Goráya, Rájpúts. | ... | ... | ... | ... | ... |
| | Mat making of dib grass and pachhi. | Gográs, Máchhís, Meghs, Batwáls — Muhammadans | 10 | 2 annas a day ... | 1,600 | 50 per cent. | Bájwat tract of Siálkot Tahsíl. |
| | | Gográs, Máchhís, Meghs, Batwáls — Hindús ... | 150 | | | | |
| | | | 120 | | | | |
| | | | 60 | | | | |
| | | Total ... ... | 340 | | | | |
| | Fan making of palm leaves ... | Khokhars (Muhammadans) | 16 | 2½ annas a day ... | 960 | 50 per cent. | Town of Siálkot. |
| | Basket making from pilchi and mulberry twigs. | Bahrúpia Sikhs ... ... | 40 | 1½ anna to 2 annas a day. | 10,500 | ... | Bahrúpgarh, Gulábgarh and Kishangarh in Daska Tahsíl, also in some villages in the Raya and Siálkot Tahsíls. |
| | | Malha (Muhammadan) .. | 220 | | | | |
| | | Megh (Hindú) ... ... | 150 | | | | |
| | | Batwál ... ... ... | 60 | | | | |
| | | Total ... ... | 470 | | | | |
| | Chick making from bamboo and kána. | Kahárs ... ... ... | 6 | 3 annas or 4 annas a day. | 1,200 | About 25 per cent. | |
| | | Benbans ... ... ... | 9 | | | | |
| | | Total ... ... | 15 | | | | |
| | Munj ropes ... ... ... | Zamíndárs and others for their own use. | ... | 2 annas a day. | ... | ... | For most of the articles manufactured in the district, the town and cantonment bazars of Siálkot are the principal markets. |
| | San rope ... ... ... | Ditto ditto. | ... | 2 annas a day. | ... | .. | |
| | Rope and string of sankokrá | Zamíndárs ... ... ... | ... | ... | ... | ... | |
| | Sirki making ... ... .. | Bahrúpia Sikhs ... ... | 50 | 2 annas 6 pies a day | 2,500 | About 13 per cent. | Bahrúpgarh and Siálkot. |
| | Munj matting... ... ... | Prisoners ... ... ... | Average 33. | ... | 69 | Rs. 18 | Siálkot Jail and military prison. |
| | Muhrás and máhls of pachhi | ... | ... | ... | ... | ... | ... |
| | Paper made in the Siálkot Jail. | Prisoners ... ... ... | Average 150. | 6 pies to 1 anna a day. | 4,593 | 1,631 | Siálkot Jail. |
| | Bán munj ... ... ... | ... | ... | ... | 143 | 44 | Ditto. |

## TABLE OF PRICES.

| Worked or raw material. | Ráwalpindi. | Jhelum. | Shahpur. | Gujránwála. | Gujrát. | Siálkot. |
|---|---|---|---|---|---|---|
| Dhamman ... ... ... ... | Anna 1-4 to anna 1-7 per sér | ... | ... | ... | ... | ... |
| Bhabar (grass) ... ... ... | 3 pies per sér ... ... ... | ... | ... | ... | ... | ... |
| Thick ropes of munj ... ... | ... | 8 sérs per rupee ... ... | ... | ... | ... | ... |
| Bán munj ... ... ... ... | ... | 4 „ „ ... ... | ... | 7 to 11 sérs per rupee ... | ... | Rs. 3-8-0 to Rs. 4 a maund. |
| Bán of bhabar ... ... ... | ... | 16 to 32 sérs per rupee ... | ... | ... | ... | ... |
| Patha (date leaves) ... ... | ... | Rs. 2 per maund ... ... | ... | ... | ... | Rs. 2 per maund. |
| Baskets of pilchi ... ... ... | ... | Rs. 3 per hundred ... ... | ... | ... | ... | 9 pies to 1 anna each. |
| San ... ... ... ... ... | ... | ... | ... | 8 sérs per rupee ... ... | ... | Rs. 4 to Rs. 5 per maund. |
| Munj ... ... ... ... ... | ... | ... | ... | 24 or 25 sérs per rupee ... | ... | Rs. 1-8-0 to Rs. 2-8-0 per maund. |
| Pachhi ... ... ... ... | ... | ... | ... | 2 maunds per rupee ... ... | ... | ... |
| Sankokrá ... ... ... ... | ... | ... | ... | 20 sérs „ ... ... | ... | ... |
| Dib. ... ... ... ... ... | ... | ... | ... | 1 maund „ ... ... | ... | Annas 3 per maund. |
| Dib ropes and string ... ... | ... | ... | ... | 4 to 5 sérs „ ... ... | ... | ... |
| Trangars ... ... ... ... | ... | ... | ... | Re. 1 to Rs. 2 each ... ... | ... | ... |
| Máhl of pachhi ... ... ... | ... | ... | ... | Re. 1 each ... ... ... | ... | ... |
| Máhl of munj ... ... ... | ... | ... | ... | Rs. 1-8 each ... ... | ... | ... |
| Stools and chairs ... ... ... | ... | ... | ... | Anna 1 to annas 12 ... ... | ... | ... |
| Mats... ... ... ... ... | ... | ... | ... | Annas 2 to annas 8 each ... | ... | ... |
| Mats of pachhi ... ... ... | ... | ... | ... | 5 pies to 1 anna each ... | ... | ... |
| Fans ... ... ... ... ... | ... | ... | ... | 3 pies to 2 annas „ ... | ... | 6 pies to 1 anna each. |
| Brooms ... ... ... ... | ... | ... | ... | 3 pies to 9 pies „ ... | ... | ... |
| Baskets ... ... ... ... | ... | ... | ... | 3 pies to annas 2 „ ... | ... | ... |
| Chhaj... ... ... ... ... | ... | ... | ... | Annas 1-3 to annas 2 each ... | ... | ... |
| Chhánni (sieve) ... ... ... | ... | ... | ... | Anna 1 to annas 2 „ ... | ... | ... |
| Khurjís ... ... ... ... | ... | ... | ... | Rs. 1-8-0 to Rs. 3 each ... | ... | ... |
| Old tát or string of san for paper making. | ... | ... | ... | ... | ... | Rs. 1-8-0 per Lahori maund. |
| Pilchi... ... ... ... ... | ... | ... | ... | ... | ... | Annas 4 per maund. |
| Bamboos ... ... ... ... | ... | ... | ... | ... | ... | Rs. 10 per hundred. |
| Káná reed ... ... ... ... | ... | ... | ... | ... | ... | Annas 8 to Re. 1-4-0 per maund. |
| Tili or top of the reed ... ... | ... | ... | ... | ... | ... | Rs. 1-4-0 per maund. |
| Paper, 1st quality ... ... ... | ... | ... | ... | ... | ... | „ 11 or Rs. 8-10-0 per ream. |
| „ 2nd „ ... ... ... | ... | ... | ... | ... | ... | „ 7 or Rs. 5-12-0 per ream. |
| „ 3rd „ ... ... ... | ... | ... | ... | ... | ... | „ 4-8-0 per ream. |
| „ 4th „ ... ... ... | ... | ... | ... | ... | ... | „ 2-8-0 „ |
| String of san ... ... ... | ... | ... | ... | ... | ... | „ 8-0-0 to Rs. 8-8-0 per maund. |
| Chicks of káná reed ... ... | ... | ... | ... | ... | ... | 3 pies per square foot. |
| „ of bamboo ... ... | ... | ... | ... | ... | ... | 6 pies do. |
| Sirkis ... ... ... ... | ... | ... | ... | ... | ... | 3 to 6 annas per pair. |
| Waste paper... ... ... ... | ... | ... | ... | ... | ... | Rs. 3-8-0 to Rs. 8 per maund. |

## TABLE OF EXPORTS AND IMPORTS AND RAW MATERIAL.

| District. | Exports. | | | Imports. | | | Raw material used. |
|---|---|---|---|---|---|---|---|
| | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| | | | Rs. | | | | |
| Jhelum ... ... ... | Paper .... ... ... ... | Gujrát, Hazára and Ráwalpindi. | .. | San ... ... ... | Siálkot ... ... | ... | |
| Gujranwala ... ... | ... | ... | ... | Bhabar ... ... | Jammu territory ... | In large quantities... | Rs. 1,51,700 total raw material worked up. |
| | | | | Khajúr (date palm leaves). | Mooltan ... ... | Rs. 500 | |
| | | | | Peshawari patha ... | Bannu and Peshawar | „ 500 | |
| | | | | Mats of palm leaves | Mooltan ... ... | ... | |
| | | | | Mazri mats and fans | Peshawar ... ... | „ 3,000 | |
| | | | | San ... ... ... | Jammu territory ... | „ 2,000 | |
| | | | | Bán munj ... ... | Meerut ... ... | „ 17,300 | |
| | | | | Sutri... ... ... | Jammu territory, Jasrota. | „ 5,000 | |
| | | | | „ ... ... ... | Siálkot ... ... | „ 3,000 | |
| | | | | Baskets ... ... | Lahore ... ... | „ 100 | |
| Gujrat ... ... ... | Sutri ... ... ... ... | Shahpur, Jhelum and Ráwalpindi. | 8,000 | San ... ... ... | Bajwat in Siálkot ... | ... | Total raw material worked up Rs. 10,650. |
| Siálkot ... ... ... | Tát patti ... ... ... | ... | 1,600 | ... | ... | ... | |
| | | | | Mats of palm leaves | Peshawar ... ... | „ 2,000 | Rs. |
| | | | | „ of dib ... | Bajwat ... ... | ... | Raw material used in paper making ... 11,100 |
| | | | | Fans... ... ... | Peshawar ... ... | ... | Dib and patha for mat making ... 7,000 |
| | | | | Baskets of pilchi ... | Rámnagar and Wazírabad. | ... | Pilchi for basket making ... ... 2,000 |
| | | | | Palm leaves... ... | Mooltan and Peshawar. | ... | Bamboo and ána for chick making ... 700 |
| | | | | Reed... ... ... | Lahore ... ... | ... | Munj for munj ropes 10,000 |
| | | | | English-made paper | Calcutta and Bombay. | „ 2,500 | San for san ropes ... 8,000 |
| | | | | Cheap country-made paper. | Lucknow, Cawnpur and Calcutta. | „ 8,000 | Tili and munj string for sirkis ... 1,200 |
| | Paper ... ... ... | Amritsar, Umballa, Mooltan, Peshawar, Ráwalpindi, Gujrát, Jhelum and Jhang. | 20,000 | Paper .. .. | Amritsar ... ... | „ 2,000 | |
| | | | | San sutli .. ... | Pathánkot, Shakargarh and Jammu territory. | „ 15,000 | |
| | | | | Bán munj .. ... | Shakargarh, Lahore, Ferozepore and Jammu territory. | „ 8,000 | Cost of raw material used in paper making in the Sialkot Jail Rs. 2,902-5-0. |
| | | | | Bán of patha, changair, dal or large baskets of patha. | Peshawar ... ... | „ 5,000 | |
| | | | | Changair (flat baskets of bamboo), dal or large baskets of bamboo, pitár or covered baskets of bamboo, and small baskets of bamboo. | Jammu territory ... | „ 2,000 | |

# APPENDIX No. II.

## PESHAWAR DIVISION.

# APPENDIX II.

TABLE FOR THE PESHAWAR DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres, &c. |
|---|---|---|---|---|---|---|---|
| Peshâwar ... .. ... | Waur ... ... .. ... | Chiefly Utman Khels Mohmands ... | Not large | ... | Of articles made from mazri actually grown in the District Rs. 5,000. | 6¼ per cent. | Hashtnagar and Dáúdzai tahsíl. Peshâwar city is famous for baskets and fans. |
| | Mats ... ... ... ... | | ... | ... | | ... | |
| | Baskets... ... ... ... | | ... | ... | | ... | |
| | Mazri ropes ... ... ... | | ... | ... | | ... | |
| | Changer ... ... ... | | ... | ... | ... | ... | |
| | Fans ... ... ... ... | | ... | ... | ... | ... | |
| | Small Caps ... ... ... | | ... | ... | ... | ... | |
| | Sandals ... ... ... | | ... | ... | ... | ... | |
| | Ropes of wheat and barley straw ... ... ... ... | | ... | ... | ... | ... | |
| | Paper ... ... ... ... | ... | ... | ... | Rs. 3,669 | Rs. 1,805 | Jail. |
| | Paidans ... ... ... | | | | ... | | |
| | Chatai ... ... ... ... | | | | Rs. 219 For five months. | Rs. 105 | |
| | Sweepers' brooms ... ... | | | | | | |
| Hazára ... ... ... ... | San, Sútri and ropes ... | ... | | | ... | ... | Mansehra Tahsíl. |
| | Ropes of Dhamman ... ... | ... | ... | No single man earns his living by these trades. | ... | ... | |
| | Shoes of rice-straw ... | No special castes ... | ... | | ... | ... | |
| | Phindis (mats) ... .. | ... | ... | | ... | ... | |
| | Mandhas, Parotas } baskets ... ... | ... | ... | ... | ... | ... | |
| Kohát ... ... ... ... | Chaplis ... ... ... | ... | ... | ... | 20,000 | ... | |
| | Waur (ban) ... ... ... | ... | ... | ... | 15,000 | ... | |
| | Ropes of all sorts ... ... | ... | ... | annas 0-1-0 to | 1,000 | ... | |
| | Trangar ... ... ... | | | | 2,000 | 12½ per cent. | |
| | Matting ... ... ... | Mussalman agriculturists | ... | 0-4-0. | 15,000 | ... | |
| | Kashrai, Chhakor, Kurums, Kandurai, Pandorai } all baskets ... ... | Baskets are usually made by the women ... ... | ... | ... | 5,000 | ... | |
| | Phandi (stool) ... ... | ... | ... | .. | | | |
| | Paper ... ... ... ... | ... | ... | .. | ... | ... | Jail. |

TABLE OF EXPORTS, IMPORTS AND RAW MATERIAL.

| | Exports. | | | Imports. | | | Value of raw material used in the District. |
|---|---|---|---|---|---|---|---|
| District. | Work or raw Material. | Place. | Amount. | Work or raw Material. | Place. | Amount. | |
| | | | Rs. | | | Rs. | |
| Peshâwar ... ... ... | Articles made from Mazri ... | Hazára ... ... ... | ... | Mazri and articles made from Mazri. | Khyber Hills and Independent Territory north and north-east of the District. | ... | |
| | | Pindi Division ... ... | ... | .. | | ... | |
| | | Lahore ... ... ... | ... | ... | ... | 20,000 | |
| | | Amritsar ... ... ... | ... | ... | ... | ... | |
| Hazára ... ... ... | | ... | None | Chatai, fans and baskets .. ... | Peshâwar ... .. | Considerable | |
| Kohát ... ... ... | Chhakors ... ... ... | Other Provinces | Small | Waúr ... ... | | 500 | |
| | Waúr ... ... ... ... | | 2,000 | Matting ... ... | | 400 | |
| | Raw Mazri ... ... ... | Ráwalpindi, Jhelum, Shahpur and other Districts. | 20,000 | Chhakor ... ... | Tirah ... ... | 1,500 | |
| | Matting ... ... ... | | 3,000 | Baskets ... ... | | 1,000 | |
| | Chhakor ... ... ... | | 1,000 | Suzai ... ... | | 100 | |
| | Baskets... ... ... ... | | 500 | Kurumos ... ... | | 100 | |
| From Miranzai ... ... | Raw Mazri ... ... ... | Punjab ... ... ... | Considerable | Ropes ... ... | | 180 | |
| | | | | Fans ... ... | Peshâwar ... .. | 500 | |

TABLE OF PRICES.

| Work or Raw material. | Peshâwar. | Hazára. | Kohât. |
|---|---|---|---|
| Raw Mazri ... ... ... | Re. 1-0-0 per maund. | ... | 1¼ maund per Rupee (dried). |
| String for one bed ... | Annas 0-3-0 to 0-8-0 | ... | ... |
| Baskets. ... ... ... ... | „ 0-1-0 to 0-4-0 | ... | 9 pies to annas 0-4-0 each. |
| Bed mats... ... ... ... | „ 0-2-0 to 0-3-0 | ... | ... |
| San Sutri... ... ... ... | ... | 6 sérs a Rupee | ... |
| Dhamman Sutri... ... ... | ... | 8 sérs a Rupee | ... |
| Phindhis ... ... ... ... | ... | Annas 0-2-0 to 0-4-0 | ... |
| Mandlas ... ... ... ... | ... | „ 0-4-0 to 1 Rupee. | ... |
| Parotas ... ... ... ... | ... | „ 0-4-0 to 0-8-0 | ... |
| Mazri Sandals ... ... ... | ... | ... | 3 pies each. |
| Superior Sandals... ... ... | ... | ... | Annas 0-4-0 each. |
| Waúr ... ... ... ... | ... | ... | Rs. 1-8-0 to 5 per maund. |
| Ropes ... ... ... ... | ... | ... | 3 pies to annas 0-1-0 each (3 ft. × 6 ft. per rupee. |
| Trangar ... ... ... ... | ... | ... | Annas 1 to 0-1-6 per pair |
| Matting ... ... ... ... | ... | ... | 4 to 16 pieces ( 3 to 6 ) per Rupee |
| Chhaker ... ... ... ... | ... | ... | Annas 0-2-0 to 0-4-0 each. |
| Kurums ... ... ... ... | ... | ... | 6 pies to annas 0-1-0 each. |
| Kandurai ... ... ... ... | ... | ... | Annas 0-4-0 to Re. 1-0-0 each. |
| Pandurai ... ... ... ... | ... | ... | „ 0-2-0 to Re. 1-0-0 each. |
| Phandi ... ... ... ... | ... | ... | 6 pies to annas 0-1-0 |

# APPENDIX NO. II.

## DERAJAT DIVISION.

# APPENDIX II.

TABLES FOR THE DERAJAT DIVISION.

| District. | Work. | Caste. | Number employed. | Wages. | Outturn. | Profits. | Centres. |
|---|---|---|---|---|---|---|---|
| Bannu ... ... ... | Basket-making ... ... | Arorás ... ... ... | 40 | 1 to 6 annas ... | ... | Rs. 3-2-0 to 17 p. c. | |
| | | Bhangi Khels ... ... | 25 | | | | |
| | | Mohanás ... ... ... | 5 | | | | |
| | Mat-making— (*a*) date palm... | Pathán ... ... ... | 33 | 9 pies to 4 annas ... | ... | ,, 3-2-0 p. c. | |
| | (*b*) dwarf palm | Mohánás ... ... ... | 20 | 3 annas ... ... | ... | ,, 24 ,, | |
| | (*c*) reed ... | Katanas ... ... ... | 25 | 6 pies to 3 annas... | ... | ,, 3-2-0 ,, | Bhangi Khel. |
| | | Kánerás ... ... ... | 25 | | | | |
| | Ván-making (munj) ... ... | Kátánás ... ... ... | 25 | 1 to 4 annas ... | ... | ,, 12 ,, | |
| | ,, dwarf palm ... ... | Kánerás ... ... ... | 25 | | | | |
| | | Bhangi Khels ... ... | 15 | | | | |
| | | Mohánas ... ... ... | 5 | | | | |
| | Fans ... ... ... ... | Paráchás ... ... ... | 20 | 2 to 6 annas ... | ... | ,, 6-4-0 ,, | |
| Dera Ismail Khan ... | Date and dwarf palm manufactures. | Mussalman Jats ... ... | 148 | | | | |
| | | Pathans ... ... ... | 430 | | | | |
| | | Biluchis ... ... ... | 3 | | | | |
| | | Arorás ... ... ... | 39 | | | | Bilot Panniwálá and Kiri Khisore for Labánás and Kanerás. |
| | Munj manufactures ... ... | Dárkháns ... ... ... | 50 | | | | |
| | | Jats ... ... ... ... | 15 | | | | |
| | | Labánás ... ... ... | 323 | 2 to 4 annas a day. | ... | 10 p. c. ... ... | Tank for dwarf palm mats. |
| | | Kátánás and Kanerás ... | 191 | | | | Bakkar for chicks. |
| | Dib manufactures ... ... | Kánerás ... ... ... | 38 | | | | Munj, dib, and mazri trades thriving. |
| | | Kátánás ... ... ... | 92 | | | | |
| | | Manchrás ... ... ... | 10 | | | | |
| | Pilchi baskets ... ... .. | Kátánás ... ... ... | 51 | | | | |
| | Madar nets ... ... ... | Mohánás ... ... ... | 125 | | | | |
| Muzaffargarh ... ... | Munj manufactures ... ... | Sikh Labánás ... ... | 1,137 | 4 annas a day •... | ... | Total profits estimated at Rs. 3,350 per annum. | All Labána bastis. |
| | | Muhammadans ... ... | 148 | | | | |
| | Date palm manufactures ... | Muhammadans ... ... | 307 | 1-6 annas to 2 annas a day. | ... | | Sultanpur, Sitpur, Rampur, Khanpur, Bhutapur Latti Kahiri, and six other villages. |
| | | Hindus ... ... ... | 444 | | | | |
| | | Chuhrás ... ... .. | 160 | | | | |
| | Paper ... ... ... ... | Muhammadans ... ... | 2 | ... | ... | ... | Sitpur. |
| Dera Gházi Khan ... | Making munj well ropes ... | Kurtánás, Chuhrás ... | 221 | 3 annas to 4 annas... | Rs. 5,615 ... ... | 6 to 6¼ per cent. | Dera Gházi Khan, Rawan, Batil, Kot Chutta, Samin, Kotla Kaim, Sarangwala, Mad Maulvi, Kotla Ahmad, Buhar, Akilpur, Rajanpur, Vang, Nurpur, Nowsherah, Kot Tahir, Pir Adil, Jhok Hafiz Nur. |
| | | Muhammadans ... ... | | | | | |
| | | Labánás ... ... ... | | | | | |
| | Making reed pattals ... ... | Kurtánás ... ... ... | 132 | 3 annas to 5 annas... | ,, 2,100 ... ... | | |
| | | Muhammadans ... ... | | | | | |
| | | Chuhrás ... ... ... | | | | | |
| | Dib mats and ropes ... ... | Muhammadans ... .. | 20 | 2-6 annas to 5 annas. | ,, 2,500 ... ... | | |
| | | Kurtánás ... ... ... | | | | | |
| | Ropes, trangars, and morhas of munj. | Muhammadans ... ... | 192 | 3 annas to 5 annas... | ,, 4,601 ... ... | | |
| | | Labánás ... ... ... | | | | | |
| | | Hindus ... ... ... | | | | | |
| | | Máhtams ... ... ... | | | | | |
| | Making truha ... ... ... | Játs, Hindus ... ... | 63 | 2-6 annas to 3 annas. | ,, 775 ... ... | | |
| | | Muhammadans ... ... | | | | | |
| | | Mohánas ... ... ... | | | | | |
| | Dwarf palm manufactures ... | Muhammadans ... ... | 99 | 3 annas to 5 annas... | ,, 1,625 ... ... | | |
| | | Hindus ... ... ... | | | | | |

## TABLE OF PRICES.

| Work or raw material. | Bannu. | Dera Ismail Khan. | Muzaffargarh. | Dera Gházi Khan. |
|---|---|---|---|---|
| Dwarf palm leaves ... ... ... | (Fresh) 3 maunds per rupee.<br>(Dry) 2 „ per „ ... ... | ..... | ..... | 12 bundles per rupee. |
| Dib ... ... ... ... ... ... | (Dry) 2 „ per „ ... ... | Rs. 2 to Rs. 3 per bullock-load ... | ..... | 2 „ per „ |
| Khas ... ... ... ... ... | ..... | „ 6 to „ 8 per maund. | | |
| Raw munj ... ... ... ... | ..... | „ 3 to „ 1 per „ ... ... | ..... | 16 to 20 sérs a „ |
| Tili ... ... ... ... ... | ..... | „ 1 to „ 2 per „ | | |
| Date palm leaves ... ... ... | ..... | ..... | ..... | 16 bundles per „ |
| Small baskets ... ... ... ... | 6 pies to 1 anna ... ... ... | 6 pies ... ... ... ... ... | 2 annas each. | |
| Dwarf palm mats ... ... ... | (Large) 4 annas to Re. 1 ... ...<br>(Small) 1-6 annas to 4 annas ... ... | 12 annas each ... ... ... | 1 anna to 4 annas each ... ... | 8 to 10 mats per „ |
| Dib mats ... ... ... ... ... | 2 annas to 3 annas. | | | |
| Dwarf palm ván ... ... ... ... | 2-6 annas to 8 annas for one charpoy... | 1 anna per sér ... ... ... ... | ..... | 12 sérs per „ |
| Dib ván ... ... ... ... ... | 1 anna to 5 annas for one charpoy. | | | |
| Trangar ... ... ... ... ... | Rs. 3 each ... ... ... ... | 12 annas each ... ... ... ... | 8 annas to 1 rupee each ... ... | 8 annas to Re. 1 each. |
| Fans ... ... ... ... ... | (Small) 6 pies to 1-6 annas ... .. | ..... | 6 pies. | |
| | (Large) 8 annas. | | | |
| Bán munj ... ... ... ... | ..... | 6 annas and 4 annas per sér .. ... | Rs. 2 to Rs. 3 per maund ... ... | 3 to 10 sérs a rupee. |
| Munj rope... ... ... ... ... | ..... | 9 annas for 8 yards ... ... ... | 3 annas each ... ... ... ... | 6 pies to 2 annas each. |
| Munj door mats .. ... ... ... | ..... | Rs. 2-4 per square yard. | | |
| Munj matting ... ... ... ... | ..... | Rs. 1-2 or 1 s. 1-5 per square yard. | | |
| Changers (mazri) ... ... ... | ..... | 6 annas each. | | |
| Mazri rope ... ... ... ... | ..... | 4 annas a sér ... ... ... ... | 1 anna 6 pies to 4 annas each. | |
| Madar nets ... ... ... ... | ..... | Rs. 2 to Rs. 4 each. | | |
| Mahls .. ... ... ... ... | ..... | ..... | (Munj) Re. 1, (palm) 8 annas ... | 4 annas each Rs. 3 for deep wells. |
| Reed pattals ... ... ... ... | ..... | ..... | ..... | 2 annas to 4 annas a yard. |
| Morhas ... ... .. ... ... | ..... | ..... | ..... | 4 annas each. |

## TABLE OF EXPORTS, IMPORTS AND RAW MATERIALS.

| Exports. | | | | Imports. | | | Value of raw material used in the district. |
|---|---|---|---|---|---|---|---|
| District. | Work or raw material. | Place. | Amount. | Work or raw material. | Place. | Amount. | |
| | | | Rs. | | | Maunds. | |
| Bannu ... ... ... | Munj ... ... ... ... ... | Dera Ismail Khan ... ... | 1,000 | Dwarf palm... ... | From across the border. | 6,385 | |
| | | | | | | Rs. | |
| Dera Ismail Khan ... | Munj and san rope ... ... | Beyond the border by Povindáhs. | 700 | Munj and dib ... | Bannu ... ... | 1,000 | Local outturn of dib, Rs. 5,000. |
| | | | | Gunny-bags ... | Bengal ... ... | 1,000 | |
| | | | | Ditto ... ... | Karáchi ... ... | 2,000 | |
| | | | | Mazri ropes ... ... | Kanigoram ... | 1,000 | |
| | | | | „ baskets ... | | 3,000 | |
| | | | | „ mats ... ... | | 3,000 | |
| | | | | Mazri baskets, fans, and mats. | Pesháwar ... ... | Small. | |
| | | | | Date palm manufactures. | Isa Khel ... ... | 1,000 | |
| | | | | Munj ropes ... ... | Mianwali ... ... | 500 | |
| | | | | Tat and san ropes ... | Amritsar ... ... | 1,500 | |
| Muzaffargarh ... ... | Bán munj ... ... ... | Sukkur ... ... ... | 1,500 | Paper ... ... | Lucknow ... ... | 500 | Raw munj, Rs. 4,862. |
| | | | | Gunny-bags... ... | Lahore ... ... | 2,500 | Palm leaves „ 500. |
| | | | | | Amritsar ... ... | | |
| Dera Gházi Khan ... | Fans ... ... ... ... | Mooltan ... ... ... | 500 | San ... ... ... | Sukkur ... ... | 250 | Total worked up in the district, Rs. 5,900. |
| | Baskets ... ... ... | Muzaffargarh ... .. | 100 | Dwarf palm... ... | Sulimán Hills ... | 350 | |
| | Dib mats ... ... ... | Báháwalpur ... ... | 20 | Gunny-bags... ... | Sukkur and Karáchi | 11,200 | |
| | | | | San ban ... ... | Sukkur „ ... | 50 | |
| | | | | Bán munj ... ... | From other districts in the Punjab. | 1,557 | |
| | | | | Trangar and ropes... | | 100 | |
| | | | | Changers ... ... | | 1,000 | |
| | | | | Gunny-bags... ... | | 6,362 | |
| | | | | San ban ... ... | | 555 | |

# APPENDIX III.

*List of names of occupations of persons employed in fibrous manufactures* (vide *Punjab Census* 1881).

| No. | Class of occupation (vide Punjab census 1881). | Name of Division. | Particulars. |
|---|---|---|---|
| 1 | No. 195.—Dealers in raw fibres. | Delhi Division ... ... | Munj bechna, san bechna, munj farosh, munj ka beopár, munj nikálna, sani bechna (Gurgáon); sani farosh (Umballa). |
| 2 | | Jullundur Division ... ... | Sani farosh, sani bechna, beopár san ka, munj farosh, munj bechna (Ferozepore). |
| 3 | | Lahore Division ... ... | Munj bechna (Amritsar, Mooltan); munj ka beopár (Lahore, Mooltan); munj farosh (Lahore); san bechna (Mooltan). |
| 4 | | Ráwalpindi Division ... ... | Munj bechna (Ráwalpindi, Siálkot, Shahpur); munj farosh (Ráwalpindi, Siálkot); munj vechna (Shahpur, Siálkot); sani vechna (Shahpur); san farosh, munj ka beopár, san vechna or bechna, beopár munj or san (Siálkot). |
| 5 | | Pesháwar Division ... ... | None given. |
| 6 | | Deraját Division ... ... | |
| 1 | No. 196.—Rope makers, dealers in rope. | Delhi Division ... ... | Rassi batna (Delhi, Umballa and Gurgáon); bán batna (Delhi and Gurgáon); bán wa munj bechna (Delhi); wan wa Rassi bechna (Delhi and Gurgáon); chhínka banána, indwi chhinka bechna (Delhi); rassi bechna (Delhi and Gurgáon); indwi banána (Delhi and Hissar); chhika banana (Delhi); chhika banána wa indwi banána, bán watna (Hissár); wan watna, bhabar watna (Umballa); bán bechna (Umbálla, Gurgáon); sutli bechna, bán munj bechna, rassi melna, las banána, gatta wa necha banána, jeori bantna, jeori bechna, rassi bántna, munj bántna, jeora bántna, sani bántna, san bántna, bán munj bántna (Gurgáon.) |
| 2 | | Jullundur Division ... ... | Wán watna, dukán tangaryán, sutli bátna, munj bátna, dukán san, beopár sac, bán bechna (Jullundur); rassi-bat, rassi bechna, bán batna, chhinka banána and bechna, sirki or pukhi, banána (Ferozepore); rassi batna (Jullundur and Ferozepore). |
| 3 | | Lahore Division ... ... | Wán watna, (Amritsar, Lahore and Mooltan); kohára, beopár rassa, san katna (Amritsar); rassi watna, bán farosh, chhikka banána (Lahore); rassan wa máhl banána, wán watna wa kapra síná, wán ká beopar, Rassan bechna, Rassi bechna, Munj wán watna, bán batnewála, wán wat, munj kátna, bán banána, labána, wán wa Rassá bechná (Mooltan). Ban bechná (Amritsar, Mooltan) munj nikálna (Lahore, Mooltan). |
| 4 | | Ráwalpindi Division ... ... | Barya wa wán bechna, sutri kátna, dharni kátna, wán bechna, vadr kátna, trangar banána, rassa wat, rassa farosh, bán, banánewála, wán farosh, sutli ban ánewála, sutli farosh (Ráwalpindi); jat káta, (Gujránwála); chhikar or takri banána chhikar wechna, patha, phúr or phúri, pakha, pakhiwárá, (Shahpur); sutri vatná, rasá vatna, rassi vatna, laj vatna san kátna, munj kadhna, tandúli kadhna, wán wa munj vechna, wán wa rassi vechna, wán vechna, bán vatna, bán bechna, jhabu vatna (Siálkot), wán watna (Siálkot, Ráwalpindi, Shahpur); sutli kátna (Ráwalpindi, Siálkot). |
| 5 | | Pesháwar Division ... ... | Rassi watna, bán banána, rassanbáf (Pesháwar). |
| 6 | | Deraját Division ... ... | Sani kátnewála, rasansáz, máhl watna, bhábar banána, kúndr bechna, wán kúndr banáná, rasan doriwat, pinniwat, rassiwat, bán watna, wán nikálna, munj kátna, rassi batna, wán banána, wán wa rassan banána, pattal wa rassan banána (Deraját). |

## APPENDIX III—*concluded.*

| No. | Class of occupation (*vide* Punjab census 1881). | Name of Division. | Particulars. |
|---|---|---|---|
| 1 | No. 197.—Hemp matting, bag-makers, dealers. | Delhi Division ... ... | Patti bunna, ládha banána, bori banána, tát bechna, tát bechna wa banána, patti tát-patti bunna wa ládha, tát patti, banána (Delhi); bori siná (Hissár); bori bunna (Delhi and Hissár); tát watna, sani ki patti banána, san ki patti banána (Umballa). |
| 2 | | Jullundur Division ... ... | Patri bunna, guthalyán bunna, bora bunna, patti bunna, tarapri bunna, bora banána (Jullundur); tát-báf, tát-pati banána, trapur banána, bori sina ya banána (Ferozepore). |
| 3 | | Lahore Division ... ... | Tappar, tát banána, tát farosh wa san (Amritsar); bori bechna (Lahore); pallah bándhna, bori sína, bora bunta hai (Mooltan); tát bechna (Lahore and Mooltan). |
| 4 | | Ráwalpindi Division ... | Patti, tát, bori, tapri, tapar, trapar, bora, trangar, chikka banána and bechna, or vechna (Siálkot); Boriya báf, tát-dozi karna (Ráwalpindi). |
| 5 | | Pesháwar Division ... ... | Gazlíchi yáne trangar banána, gazlíchi banána, trangar banána, tát bunna, ghazlicha banána (Pesháwar). |
| 6 | | Deraját Division ... ... | Bori báf (Deraját). |
| 1 | No. 254.—Workers and dealers in bamboo. | Delhi Division ... ... | Báns wa balli bechna, báns bechna, chik banána (Delhi); báns phor, báns ki patyári banána (Umballa); chilman banána (Delhi and Umballa). |
| 2 | | Jullundur Division ... ... | Beopár khir kána, báns bechna, bartan báns ke banána, chhábe banána, chhánni banána, chhánni wa chhába banána, pinjráh chhabra banána, chhiku wa chhabra banána, chhikku changer banáma (Jullundur); Báuswála, báns bechnewála, chikhán banánewala, chhába banánewála or pinjráh (Ferozepore). |
| 3 | | Lahore Division ... ... | Bánsi bartan banána (Amritsar); beopar láwa yáne balchi, báns bechna (Lahore); kána bechna, chila kamánd, kána chhilna, chik banána (Mooltan). |
| 4 | | Ráwalpindi Division ... ... | Chik banána (Ráwalpindi); sirki kánáwála (Gujránwála). |
| 5 | | Pesháwar Division ... ... | Chik banána (Pesháwar). |
| 6 | | Deraját Division ... ... | Khirki banána, chik farosh, kána kátna. pattal bechna, chikwale (Deraját). |
| | No. 256.—Basket-makers, sellers. | *General* ... ... ... | Tokra banána, tokri banána. |
| 1 | | Delhi Division ... ... | Patyári banána, tokri bechna, chhába bechna, tokaryán banáná (Delhi). |
| 2 | | Jullundur Division ... ... | Chikku, chhába bechna (Jullundur); tokra banána ya bechna (Ferozepore). |
| 3 | | Lahore Division ... ... | Chhábri banána, changer wa tokra banána (Amritsar); khar khara, chhába farosh, kákara (Lahore); kharora bándhna máhlen wa tokri bechna, tokre bándhna (Mooltan). |
| 4 | | Ráwalpindi Division... ... | Khora banána, pitári banána, toang banána, chhábri banána, phachhi sáz, tokri sáz, phundi sáz, mura sáz (Ráwalpindi). |
| 5 | | Pesháwar Division ... ... | Changer banána, tokra bechna, pachhi banána (Pesháwar). |
| 6 | | Deraját Division ... ... | Tokre sázi, changer banána, patyár báf, khára banána, chhába banána, tokri wa khári sáz, changer farosh, tokra-farosh tokri-farosh, chhába bechna (Deraját). |
| | No. 260.—Paper dealers. | *General* ... ... ... | Kághaz bechna. |
| 1 | | Delhi Division ... ... | Kághaz farosh (Hissár). |
| 2 | | Jullundur Division ... ... | Kághaz bechnewála (Ferozepore). |
| 3 | | Lahore Division ... ... | *Nil.* |
| 4 | | Ráwalpindi Division .. ... | Kághaz farosh, kághaz ka beopár (Siálkot). |
| 5 | | Pesháwar Division ... ... | Kághaz farosh (Pesháwar). |
| 6 | | Deraját Division ... ... | Beopár panna yáne Kághaz (Deraját). |



## APPENDIX No. IV.

*Note on the manufacture of paper in the Jails of the Punjab.*

THE manufacture of country paper has, for many years past, been extensively carried on in the Jails of the Punjab. The materials used in its production are abundant and easily procurable in almost every district of the Province, and the various processes to which the materials are subjected are of the simplest character. Paper-making has thus afforded us the means of employing on suitable work a large number of our able-bodied prisoners sentenced to rigorous imprisonment—a matter of no little importance—inasmuch as aimless labour (the tread-mill, crank, &c.) has never been allowed in our Jails, and it is only very recently that the employment of prisoners extramurally on large public works has been introduced.

2. Various fibres have been used in the manufacture of native paper. The chief are the following:—The bark of the hemp plant (*Crotolaria juncea*); flax fibre; the leaves of munj grass (*Saccharum munja*); the bark of the madár plant (*Calotropis gigantea*); date tree leaves (*Phœnix sylvestris*); plantain leaves (*Musa paradisiaca*); the root of the dhák tree (*Butea frondosa*); leaves of the aloe plant, the inner bark of various species of *Daphne* and *Desmodium*, &c.

But the most commonly used substance is hemp bark. Indeed it may be said that all the others have been only tried experimentally in particular Jails, and that the disadvantages attending their use have led to their being abandoned in favour of hemp fibre.

Munj grass grows most abundantly and luxuriantly in the Punjab along the banks of canals, and canal cuts, and by the sides of rivers, and an excellent paper can be manufactured out of its leaves; but it is exceedingly hard, and it was found that it could not be worked up into a proper pulp by the rude implements we have in our Jails without great expenditure of labour and considerable cost.

3. Hemp fibre is generally not converted into paper till it has been manufactured into, and used as ropes, *tát* (sacking), &c.; these, when they have become useless for the purposes for which they were originally made, are worked up by the processes about to be described into paper. And usually the paper does not consist of hemp fibre alone, but with it is mixed a certain proportion of waste paper. A large supply of the latter is obtained from the accumulated stock of useless records in Government Offices.

4. I shall now describe *seriatim* the various processes employed in making country paper in the Jails of the Province, and it may be remarked that the processes are virtually the same when paper is made by free labour:—

(*a*) The old ropes or *tát* (hemp sacking) are cut up into pieces about an inch square with a hatchet. (See Sketch No. 1.)

The fibres of these small pieces are then separated with the hand as far as possible; and the whole is shaken and freed from dust, &c.

(*b*) The cut up material is then moistened with water, and is pounded by means of a *jhandra* (or stamper). This is really a lever of the most elementary kind, and consists of a heavy beam of wood working on a pivot, the long end of which is fitted with a heavy cylindrical block of wood tipped with a blunt piece of iron. The long loaded end of the beam works in a trough about $2\frac{1}{2}$ feet deep and three feet square, in the floor of which is sunk a big roundish boulder, usually quartz. Three men work each *jhandra* (or stamper): one sits in the trough and places small quantities of the fibre on the stone, to be crushed by being pressed between it and the stamper; two others placing a foot each on the short arm of the lever, press it down and raise the loaded end; then, removing their feet, they allow it to fall, and by its weight it crushes and tears the fibre which has been placed on the stone below. (*Vide* Sketch No. 2.)

(*c*) The pounded material is then well washed by being placed a little at a time in a stout piece of cloth tied round the waists of two men, who move the material up and down and from side to side, while a small stream of water is made to fall on it. (*Vide* Sketch No. 3.)

(*d*) The pounded and washed material is then treated in one of two ways:—

One may be called the putrefactive, the other the boiling process.

If the former is adopted, the pounded and washed material is moistened and mixed with *sajji* (impure carbonate of soda) and *choona* (lime), both of which have been previously finely powdered. The quantities of *sajji* and lime which are used vary: the average may be put down as lime 1 part, *sajji* 4 parts, and washed material 8 parts.

The materials well mixed together in a slightly moist state are then placed on a clean platform, generally constructed of burnt bricks and mortar, in small heaps about a foot high and three feet in diameter, and are exposed to the sun and air for a period varying from three to six months. The result is that the fibres are separated, softened and bleached.

The other is the boiling process. This has only been introduced of late years.

In this process the *sajji* and lime are dissolved or mixed with a quantity of water in a large iron vessel, and in this the cut, pounded and washed hempen rope or *tát* is boiled for 24 hours.

This of course answers the same purpose as the putrefactive process, but it is somewhat more expensive on account of the cost of fuel.

(*e*) After being boiled or exposed to the sun in heaps as above described, the material is again pounded by the stamper as described under (*b*); and is again washed till all impurities left by the impure carbonate of soda and by the lime are removed.

On the thoroughness with which the pounding is performed will depend the fineness of texture of the paper; while on the manner in which the bleaching and washing are done will depend the colour.

(*f*) The material now pounded, bleached and washed is mixed with a certain quantity of water in an earthen or iron vessel, and is converted into a pulp by being pounded with prisoners' feet. (*Vide* Sketch No. 4.)

It is now fit for use, but if not required at once it may have the water squeezed out of it, and be made into round cakes, which can be kept for almost any length of time. Call this pulp A.

(*g*) A quantity of waste paper is now made into a pulp by being mixed with a little water and pounded, as described under (*f*).

Stains of country ink are more easily removed than those of English ink. Waste paper consisting of Vernacular records is, therefore, preferred.

After the paper has been converted into a pulp, the ink stains are removed by mixing it with *sajji* and water (about 1 part *sajji* to 20 water), and then washing well with clean water. Call this pulp B.

(*h*) Paper is now made from a mixture of A and B. The proportions used are very various; they may be 3 of A to 1 of B, or 1 of A to 3 of B. The greater the quantity of A, the stronger and less friable will be the paper.

(*k*) The mixture of A and B, whatever may be the proportions of each, is now put into a tank nearly full of clean water. The usual dimensions of the tank are four feet deep, and four feet square at the top and bottom. The quantity of A and B required for each such tank is about 12 sérs (24 pounds). The paper pulp is thoroughly mixed with the water, by the whole being violently stirred up by means of a stick.

(*l*) The process of taking out sheets of paper now commences.

The implement used is a fine screen or strainer (Vernacular *nir*), made of the fine flowering stalks of munj grass. This is stretched on a frame of wood. The size of the sheet of paper will of course be that of the screen.

The pulp having been thoroughly mixed with the water in the tank, the vatman sits down on the edge of the tank, and dipping his screen (*nir*) into the water places it first horizontally, and then brings it by a wavy motion to the surface, and in doing so catches on it a fine layer of paper pulp, which is placed on a board. (*Vide* Sketch No. 5.)

Successive layers are taken out of the tank and placed one over the other. When a considerable pile has been formed, a board is placed on the top of it, and a portion of the water is squeezed out by pressure.

If a large quantity of B (waste paper) is used, it is necessary to place a fine piece of muslin between every two layers of paper; otherwise they will not separate from one another without breaking.

(*m*) The sheets are then carefully separated from one another and spread out to dry upon a smooth wall specially prepared for the purpose. In both operations there is used a brush made of munj grass, which has been beaten till it is quite soft.

(*n*) When dry, the irregularities are rubbed off the surfaces of the sheets by means of a rough pumice stone (*jháwa*).



The sheets are then sized on both sides; the size used in jails being prepared from white wheat. It is applied to both surfaces of each sheet by means of a bit of cloth spread on the hand.

(*o*) The paper is then polished by the hand, the implements for performing the operation being a piece of smooth flint set in a piece of sun-dried tenacious clay (*ghota*) and a curved board (*patra*). Sitting behind the curved board, and placing a sheet of paper along its concave surface, the prisoner cleverly rubs the smooth surface of the flint along the whole length or breadth of the sheet. Both surfaces of each sheet undergo this process. (*Vide* Sketch No. 6.)

Attempts to polish country paper by rollers have been made, but have proved unsuccessful. It was found that, owing probably to the unevenness of the texture, the paper was torn to pieces.

Of all the processes employed in the manufacture of paper, this one affords the hardest description of labour. When first employed on the work, an able-bodied prisoner can only polish a few sheets a day, and those very imperfectly; but after he has been at the work for a month, he can turn out four quires easily enough, the ordinary size of the sheet being 24 inches by 20 inches.

(*p*) It only now remains to dress the sheets. This is usually done by fixing a number of sheets in a screw press and cutting the edges by means of a curved knife.

In some of the larger jails we have regular paper-cutting machines of European make.

(*q*) The sheets are then generally doubled twice on themselves and arranged in quires of 24 sheets (*dastás*), of which usually 11 are reckoned a *gadi*, which is the commercial unit used throughout the country in all transactions relating to country paper.

5. With regard to the size of each sheet there is no fixed standard. A very common size is 24 inches by 20 inches, and of course the weight varies very greatly, not only according to the size of the sheets, but according to the thickness of the paper.

6. I have said under 4 (*h*) that the proportions in which old ropes, &c., and waste paper are combined in the manufacture of paper are very variable. I must give somewhat fuller details on this point, because it has a bearing not only on the cost of the raw materials expended, but on the labour required for working them up.

The best description of waste paper costs Rs. 6 to Rs. 8 a maund (80 lbs.), while the best old ropes or *tát* can be procured for less than Rs. 3 a maund. If much waste paper of good quality, therefore, is used, it raises the cost of the manufactured paper.

On the other hand, waste paper involves comparatively little labour in working up. There is no need of the laborious processes of cutting and breaking it up by the stamper (*jhandra*), or of exposing it to the sun and air for months, or of boiling it. In using it then, there is a very great saving of labour.

And the polishing of such paper is very much easier than that of paper made from ropes and *tát* (hemp sacking) on account of the softness of the texture.

Paper is sometimes made of waste paper alone, but it is unfit for permanent records, being very friable and easily made limp by damp weather.

7. The total quantity of paper manufactured in all the jails of the Province during the financial year from 1st April 1884 to 1st April 1885 was 20,831 *gadis* of 11 quires each. The value of the paper was Rs. 86,328, and the total cost of the raw materials used in its manufacture was Rs. 43,264-1-3. The net profit, therefore, was Rs. 43,064-4-3. The number of working days in the year was 311, and the average number of prisoners employed daily was 1,692, so that the annual value of each prisoner's labour was Rs. 25-7-3, the daily average earnings of each 1 anna 3·7 pie.

The number of *gadis* (of 11 quires each) turned out by each prisoner was $12\frac{1}{3}$; or, to put it in another way, it took 25 prisoners working one day to manufacture one *gadi* of paper.

8. The finest description of paper made in jails is called "Siálkoti," no doubt from the fact that for years past the best paper made by free labour in this part of the country has been manufactured at Siálkot. Usually the sheets are larger than those of ordinary country paper, a common size being 24" × 27," and it sells at from Rs. 7 to Rs. 10, according to quality. It is made of the best materials in the way already described, and consists of 3 or 4 parts of hemp (old rope) to 1 of waste paper. It is thick, tough and durable, the weight of a *gadi* of eleven quires being about 12 or 13 sérs (24 or 26 lbs.). Such paper is used almost entirely for permanent records.

Of ordinary jail-made paper, the best sorts sell at about Rs. 6 a *gadi* of eleven quires, the inferior sorts at Rs. 3-8 and Rs. 2-12 a *gadi*.

The rates are generally higher than those at which country-made paper can be procured in the open market. This is in accordance with orders of Government, under which it is laid down that convict labour is not to be allowed to compete unduly with free labour.

9. The paper manufactured in jails is supplied almost entirely to Government offices. No *cash* is passed, but a book credit is given to the Jail Department for the value of the paper.

It is used for vernacular correspondence or lithographic printing; for the former especially it is better adapted than mill-made paper.

At the same time, the cost of even inferior descriptions of country paper is greater than that of fairly good mill-made paper; and the time cannot be far distant when the latter will come into universal use, and the manufacture of country paper by the rude and primitive processes I have described will be a thing of the past.

R. GRAY,

*Inspector-General of Prisons, Punjab.*