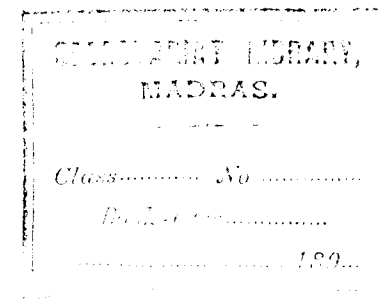


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No. 611.

FROM

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

TO

J. A. GRANT, ESQUIRE,
*Junior Secretary to Financial Commissioner,
Punjab.*

Dated LAHORE, 5th December 1884.

Revenue and Agriculture.
General.

SIR,

I am directed to acknowledge the receipt of your letter No. 1066, dated 19th September 1884, containing a report on the cotton manufacture in the Punjab for the year 1883-84, and to convey the thanks of the Lieutenant-Governor to the Financial Commissioner for the admirable manner in which the paper has been prepared.

2. His Honor has read the account of the cotton industry of the province with great interest, and it appears to him to fulfil most completely the purposes for which the compilation of these monographs was initiated. The report is lucid, brief and sensible, and seems to comprise all the information that is likely to be necessary on the subject.

3. With reference to the concluding paragraph of your letter under reply, I am to ask that arrangements may be made to deposit the collection of cloths in the Lahore Museum, and it is desirable that copies of the monograph should be widely circulated.

I have, &c.,

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

No. 1066.

FROM

E. B. FRANCIS, ESQUIRE,
*Officiating Junior Secretary to Financial Commissioner,
Punjab,*

TO

C. L. TUPPER, ESQUIRE,
Secretary to Government, Punjab.

Dated LAHORE, the 19th September 1884.

SIR,

In accordance with the orders of Government contained in the 8th paragraph of the Review of the Internal Trade Report for 1882-83 and subsequent correspondence, it has been arranged that the returns and report relating to manufactures which have hitherto accompanied the annual report on the Internal Trade of the province should be discontinued, and that in place of these a separate report should each year be prepared on some particular manufacture to be chosen for that year.

In accordance with this arrangement the manufacture of cotton has been selected as the subject for the present year's enquiry, and I am now directed by the Officiating Financial Commissioner to submit the following report on that industry.

2. The area of land in which cotton was cultivated in the Punjab was shown as follows in the Revenue Administration Reports of the last four years :—

						Acres.
1879-80	...	...	...	...	...	777,041
1880-81	...	...	...	...	...	785,834
1881-82	...	...	...	...	...	890,037
1882-83	...	...	...	...	...	860,631

and the returns for 1883-84 show an area of 802,534 acres.

In the Cotton Reports of the same years somewhat different figures were shown as follows :—

						Acres.
1879-80	...	...	...	...	...	806,380
1880-81	...	...	...	...	...	761,729
1881-82	...	...	...	...	...	918,265
1882-83	...	...	...	...	...	898,818

The discrepancy is probably due to the exclusion in some cases, and the inclusion in others, of lands which were sown with cotton, but of which the crop failed to come to maturity. It may be assumed, however, that the average under cotton in the Punjab amounts in most years to somewhat over 800,000 acres, and also that it is tending to increase.

The out-turn per acre of cleaned cotton was shown in the last three Cotton Reports as 96lbs. and 103lbs. The figures entered in statement No. XXIX. of the statements accompanying the Revenue Administration Report are higher, but in some cases they appear to represent the yield of uncleaned cotton, and they are certainly not so accurate as the above.

The total yield of the province was shown in the last four Cotton Reports as follows :—

						Cwts.
1879-80	...	...	...	...	...	644,483
1880-81	...	...	...	...	...	653,917
1881-82	...	...	...	...	...	787,581
1882-83	...	...	...	...	...	804,917

giving an acreage of 722,724 cwts., or 1,011,815 maunds annually. In the same reports the excess of exports of raw cotton from the province over imports into it from other provinces was shown to amount on the average to about 110,000 cwts., or 154,000 maunds. This result is corroborated by the returns of the external and internal trade of the province, which show that the cotton exported is sent to the seaports of Calcutta, Bombay and Karachi in nearly equal quantities, and that about 9,000 maunds on the average are exported to foreign countries beyond our northern and western frontiers. The average exports from the province by rail and river for the years 1880-81 to 1883-84 were 137,384 maunds, and the average imports from other provinces were 22,926 maunds; but it is known that, owing to the high rate charged by the railways for the carriage of unpressed cotton, a large quantity is conveyed by cart. Therefore the figures given in the Cotton Reports do not appear to be too high.

It thus appears that 857,000 maunds of raw cotton, or 84 per cent. of the whole yield of the province, are locally consumed.

3. Cotton is picked about November and December. The pods do not all ripen at the same time, and it is therefore necessary to go over the field several times. This work is chiefly performed by women. They are usually paid by giving them a portion, generally one-tenth, of the cotton they pick. The pods are exposed to the sun and beaten to make the husks (*doda*) separate from the fibre.

4. The seed to which the fibre is attached is then extracted by a small hand machine, which takes the place of the cotton gin. This consists of two rollers, one of which is generally of iron and the other of wood; but in some districts both rollers are stated to be of wood. By means of a spiral turn at the end of the iron roller, which engages a projection of the wooden roller, the two are made to revolve in opposite directions when the handle attached to one of them is turned. The fibre (*râi*) is then drawn through the rollers, while the seed (*binola* or *varema*), which cannot pass between them, is left behind. This machine, which is called *belua*, is capable of ginning about 12 seers of cotton in the day. At Mooltan a steam cotton gin has been established by Sidhu Ram Rangu Ram & Co., which employs 70 persons. In the Hazara district there are at Pakhli some *beluas* worked by water-power. The *belua*-worker is commonly paid by receiving the cotton seed which he extracts, but he is sometimes paid in cash. This operation is also very frequently performed by members of the household of the person to whom the cotton belongs. In the census tables 3,257 men and 1,345 women are recorded as cotton-ginners, but these figures do not represent the numbers really so employed. The cleaned cotton fibre usually weighs one-third, and the seed two-thirds, of the whole contents of the pod, but with inferior cotton the fibre is sometimes only one-fourth of the whole.

5. The cotton of the Punjab has a short but strong fibre. Improved varieties exist in some districts. Among them may be mentioned the *khâdir*, or riverain, cotton of the Delhi division, and the *narma* cotton of the Râwalpindi and neighbouring districts. This cotton, according to the report of the Deputy Commissioner of Jhang, is believed to be of Egyptian origin. It is stated to have a red flower and a greenish seed, distinguishing it from the commoner variety, of which the flower is yellow and the seed grey. In the report for the Shahpur district the finer stapled cotton is called *khurni*, and the commoner kind *bâgar*. The latter name seems to indicate the stock as having come from the Hissar district, and as being the same as what is known at Delhi as *harûna* cotton.

The ordinary cotton is hardy, and can be cultivated under circumstances where exotic descriptions would probably not succeed.

6. Having been freed from the seed, the cotton next undergoes a process to divide the fibre, which in the pod clings together in tufts. This is analogous in object to the English process known as carding, but from the manner in which it is effected seems to be more correctly described as scutching. It is performed by subjecting the cotton to vibration produced by a bowstring. A large bow is suspended from the roof so

as to hang at a convenient height above the pile of loose cotton. The string of the bow is then twanged with a wooden catch, so as to strike a small portion of the cotton, the fibre of which is scattered by the impact and thrown off in an uniform condition of soft fluff. At the same time any dirt which is entangled in the fibre falls out. The cotton is then made up into conveniently sized balls or rolls and handed over to the spinner.

Scutching is a special trade practised by men, known as *pînja* or *nadîf*. Their numbers are shown in the census tables as 32,268, and 4,395 women also are there shown as following the occupation of cotton-scutching. It is stated in some of the district reports that women who spin cotton sometimes scutch it for themselves with a bow like the *pînjas*, but of smaller size. The wages of a *pînja* are 3 pice, or sometimes 1 anna, for each seer of cotton that he scutches, and he can usually turn out about 4 seers in the day. A considerable quantity of cotton is used in padding jackets for winter wear, but by far the larger part is spun into thread.

7. Before cotton is spun, it is made into small rolls of about one or two tolas in weight, called *punîs*. The process of spinning is performed by the wheel and spindle, which seem to be of almost universal use where spinning is done by hand. In the Punjab the wheel (called *charkhi*) is small, about 15 or 18 inches in diameter. It is formed of two parallel discs, the circumferences of which are connected by threads, and over the drum so formed passes a driving band, also made of thread, which communicates a rapid motion to the axis of the spindle. The end of a *punî* is presented to the point of the spindle, which seizes the fibre and spins a thread, the *punî* being drawn away, as the thread forms, as far as the spinner's arm will reach. Then the thread is slackened and allowed to coil itself on the body of the spindle until the spindle is full, when it is removed. A spindleful of thread is called a *challi* or *mudha*. These are wound into skeins called *atis* on a small frame called *ateran*, and in this form the thread is sold. In the *ati* the threads are crossed over and over in a figure of 8 form, so that they will not readily tangle. Spinning is the domestic employment, during the greater part of their leisure time, of women of all classes, and like most of such employments it is very ill-paid. A woman cannot spin more than one *chitâk* or two ounces daily, unless the thread be coarse, when she may accomplish 2 *chitâks*, and her remuneration is only from 4 to 8 annas a seer, so that she earns but half an anna a day. The above is the highest rate quoted in any of the reports. That of the Râwalpindi district states that the pay is only 5 pice a seer, and the Jullundur report estimates the earnings of a spinner at only Rs. 3-12-7 a year! The difference between the average values of cotton and of cotton thread is only about 3 annas a seer. In the census tables 199,164 women and 273 men are returned as cotton-spinners. At the rate of $1\frac{1}{2}$ *chitâks* a day each person would be able to produce less than one maund of thread in a year, so that if 800,000 maunds of cotton are annually converted into thread, as would appear from foregoing statistics to be the case, a much larger number than the census shows must really employ themselves in spinning. That is to say, a great number of females who habitually spin failed to describe themselves as spinners by occupation. The bulk of the country yarn (*sât*) is very uneven in thickness, and unfit for anything but the coarsest cloth. Comparatively few persons can produce fine and even thread, and many of these spin only for the use of their own households. There is comparatively little trade in country yarn. The exports of the province amounted on the average for the last four years to no more than 10,681 maunds annually, and the imports to 5,559 maunds. The tariff value adopted in the trade reports is Rs. 22 a maund. This is sufficient as an average rate for the coarse yarns which are most commonly bought and sold, but thread suitable for the better class of native cloth will fetch about double this price. A little thread is used for ropemaking, but with this exception it all goes to the weaver.

8. Owing to the imperfections of the native product, the weavers of the finer fabrics, such as *sûsi*, *khes*, or any cloth having a pattern in it, show a decided preference for European yarn. The imports of this article amounted on the average of the last three years to 33,199 maunds a year, of which on the average 3,872 maunds were passed on to

foreign countries. The imported thread is fine, clean and even, and can be had in a variety of attractive colours. It is much dearer than the native yarn, but efforts are apparently being made to supply cheaper descriptions suitable to the means of the native community. The tariff rate adopted in the trade reports, which was Rs. 100 three years ago, has now been reduced to Rs. 65 per maund. It must, however, be admitted that the quantity imported has not risen to an extent proportionate to the fall in price. The imports for the last four years has been as follows:—

	Maunds.
1880-81	38,207
1881-82	30,482
1882-83	29,800
1883-84	34,286

Much thread is also being produced by Steam Spinning Mills in Bombay and other places in India, which is almost equal to the imported article, and is frequently confused with it. In the Ludhiána district it is reported that about half the yarn used is imported, the well-known Ludhiána cloth being all made of English thread. It is largely used also in Delhi, Hoshiárpur, Siálkot, Ferozepore, Mooltan, and for the handsome *lungís* and turbans of Peshawar and Kohát. European thread is very generally used for sewing except for the roughest kinds of work. The above statistics of import and export include both twist and yarn. The process of dyeing yarn will be described together with that of dyeing cloth.

9. In the census returns weavers have been distinguished as weavers of coarse and weavers of fine fabrics. The former class numbered 329,107 men and 97,158 women. The latter numbered only 6,119 men and 325 women. Ordinary weaving of plain coarse fabrics is in fact one of the common occupations of the great caste of *Chamárs*. Professional weavers, on the other hand, are much less numerous, and those who can make fancy cloths are scarce. The first process towards weaving cloth is to stretch out the warp, or longitudinal threads (*tána*). This work may be done either by the women of the weaver's family or by others. The thread is first transferred from the skeins to a reel (*ura*). Two reels are fixed at the ends of sticks on a pivot on which they can revolve. A double row of sticks or reeds is then planted in the ground at intervals of about two yards extending, either in a straight line or in a loop, to the length which the piece of cloth is to have. The warp-layer then takes a stick and reel in each hand, and walks along the line, dropping the threads one inside and the other outside the upright sticks alternately, so that the two cross each other between each pair. Having got to the end of the line, she returns in the same way and so on, up and down, until enough threads have been laid to make the required width of the fabric. If the cloth is to have a longitudinal stripe or a check, reels of different colours must be used, and the proper number of threads must be laid with each colour.

The common native coarse cloth *khaddar* or *gírha* contains 250 or 300 threads in the warp, and the stuff is about three-quarters of a yard wide. Different names are given to the cloth with reference to the number of threads. That containing 250 threads is called *adhisa*; that with 300 threads, *tisa* or *trisa*. Finer cloth containing 400 threads is named *channsi*. In the same way *painsi* has 500, *chhissi* 600, *athsi* 800, and *házi* 1,000 threads in the warp. The higher numbers are uncommon.

The next process is to size the warp. For this a paste made from baked meal, either barley or wheaten, is used. The warp is soaked in this. It is then stretched out on a line of trestles and brushed with a brush made of *khas* grass until it is dry. The brushing removes superfluous size, and fixes down any stray fibres of the yarn. Then the warp is mounted on the loom.

The loom (*khaddi*) is in its essentials much the same as the hand looms used in other countries. The weaver works sitting with his feet in a hole in the ground with the warp which is to be filled up extending horizontally from in front of him to a peg fixed in the ground some yards off. As the cloth is made, it is wound up on a roller at the near end, the farther end being slackened at the same time by letting go a rope which runs round the farther peg and returns

to within the workman's reach. The warp is controlled by means of heddles, (*rach*), of which for plain weaving there is one pair. The heddles consist of vertical frames of the width of the loom, each of them carrying half as many loops, made of thread, as there are strands in the warp. Strands Nos. 1, 3, 5, &c., are rove through the loops of the one heddle, and pass loosely through open spaces in the other one, while strands Nos. 2, 4, 6, &c., are carried through the loops of the second heddle and through the open spaces of the first one. The lowering of one heddle thus pulls down all the threads in the odd places without affecting the remainder, while the lowering of the other has the same effect on the threads in the even places. The heddles are suspended from the roof, and are worked by treddles on which the weaver places his feet. Where a twill, check, or damask pattern, as in the favourite stuff called *khes*, has to be produced, there are two or more pairs of heddles, and the threads of the warp, instead of always rising and falling alternately, follow a more complex rhythm, on which the pattern depends. For some of the more intricate designs of the *ghamsán khes* it is said that as many as eight pairs of the heddles are employed. The yarn for the woof or weft (*bán*), is wetted, and wound on small hollow spools, generally straws. The shuttle is shaped like a small boat pointed at each end, and having the intermediate space open. In this space the spool of yarn is placed, and revolves on a wire which runs through it lengthwise. The end of the yarn passes out through a hole in the side of the shuttle. One of the heddles being depressed, the shuttle is thrown from one side to the other of the warp, passing over one set of strands and under the other, and the yarn which it leaves behind it forms one thread of the woof. The position of the heddles is then reversed and the shuttle is thrown back, passing this time (in plain weaving) over those threads of the warp which it before passed under and *vice versa*. The threads of the woof are pressed home by a heavy comb (*kanghi*), which, like the heddles, is suspended from the roof.

Niwár (tape) is woven by a simpler arrangement, the threads of the warp being struck up and down by hand, and the place of the comb being taken by a blunt wooden knife.

Daris (carpets) also are woven on a simplified loom, in which the warp is regulated by hand. The compression of the woof is done with metal combs, of the width of 10 or 12 threads, several men working side by side. But in a *dari* the woof is of much less thickness than the warp, the warp is kept tight while the woof is laid somewhat loosely with the shuttle, and is then so driven home with the comb that each thread is made to touch the last thread but one, and none of the warp is left exposed. A similar principle is adopted in a few other fabrics, in which only the woof is shown.

At the census only 634 men and 58 women were returned as carpet-weavers, and only 48 men and 43 women as weavers of webbing (or *niwár*).

The carpet-weavers would include the persons who make cotton pile carpets. These are mostly produced at Mooltan. The colours are blue and white.

A weaver can complete about 10 or 12 yards of the coarser and looser fabrics in a day, and 3 or 4 yards of the finer ones. He is paid various rates according to the nature of the work, and these result in his being generally able to earn about 4 annas a day. The spools are filled for him by the women of his family.

The average value of Indian piece-goods assumed for the trade returns is Rs. 40 per maund, or Rs. 18 per maund more than the average value of yarn. Supposing 750,000 maunds of thread to be woven annually, the margin available for the payment of the weaver and his assistants would be 165 lakhs of rupees, which at the rate of 4 annas a day, or say Rs. 75 a year, would suffice to maintain 220,000 men the whole year round. This number is considerably less than that shown in the census returns. But the weavers of the common sort have other alternative occupations of many kinds, and most of them probably do not earn nearly so much as 4 annas a day by weaving only.

10. The dyes in common use in the Punjab for cotton yarn and cloth have not a very great variety. The common cloth (*khaddar*, *gírha*, *jazi*, &c.) is generally worn uncoloured. Dye is more

Dyeing.

commonly applied to thin cloths for women's wear. But the more esteemed colours of fabrics are woven in patterns from variously coloured yarns. The *khes* has very often a red or blue check introduced in the weaving. *Lungis*, especially on the frontier, are dyed blue or *khaki*, but the handsomest specimens are those which are woven in colours.

The commonest colours for all cotton stuffs are indigo blue, madder or safflower, red and yellow.

To dye with indigo, the indigo is ground with water, and the impurities strained off. It is then mixed with *sajji* (an impure carbonate of soda obtained by burning plants of the *salsola* tribe), *gur* (or crude sugar), and a sufficient quantity of water, and allowed to stand for several days, when some sort of decomposition takes place. The cloth or yarn dipped in this dye comes out yellow at first, but assumes the deep blue of indigo on exposure to the air. To give a dark tint several dippings are necessary. A further application of an infusion of *naspál* (pomegranate rind) will convert the blue colour to a green, light, or dark, according to the quantity of indigo.

Naspál may also be used by itself to dye yellow. In this case the stuff after being dyed is dipped in alum water to fix the colour. Turmeric will also give a yellow dye called *basanti*, but this is not permanent. The same remark applies to yellow ochre (*zard matti*) and to the brick-red colour given by red ochre (*geru*). *Hársinghár* (the flowers of *nyctanthes arbor-tristis*) give a rich yellow dye. A temporary orange colour may be obtained from the flowers of the *Dhák* (*butea frondosa*). A series of beautiful scarlet and crimson tints are produced from safflower (*kasumbha*), either used alone or with the addition of yellow and blue dye, but the colour is not permanent. Sulphate of copper (*níla títja*) gives a pretty peacock blue.

When madder (*majít*) is used, the cloth is first steeped in an infusion of *main*, which is the galls of the *farásh* (*tamarix orientalis*). It is then boiled with pounded madder. Finally a solution of alum is used to fix the dye. The result is a deep red.

Brown colours are produced with catechu (*kath*), and also sometimes with oxide of iron, the stuff being afterwards treated with lime-water. *Khaki* (drab or grey) can be dyed in this way, and also with an infusion of the pods of the *kikar* (*acacia Arabica*).

Kishta or *khatta* (vegetable acid, generally as infusion of raw mangoes or of limes) is used to brighten some of the dyes, especially reds.

In some places aniline dyes are now coming into fashion. As used by the native dyers at least, they are not fast colours. Lilacs (*sosni kánsi*) are either produced with these dyes or with indigo combined with safflower.

The number of cotton-dyers entered in the census registers was 26,844 besides 6,149 women.

11. The cloths which are printed or stamped in colours are generally women's head coverings (*chadars* and *ornís*) and those intended for quilts (*ltháfs*). The pattern is most commonly produced in madder red, with or without the addition of black. The cloth is first dipped in an infusion of galls. Then a wooden stamp, on which the pattern is cut in relief, is dipped in alum water and applied to the cloth in the proper places. The cloth is then boiled in madder. When this has been done, it is subjected to a bleaching process, by being moistened and spread in the sun for some days. The effect of this is to remove the dye, except from those places to which the alum water was applied by the raised face of the stamp. Thus the pattern comes out in deep red on a pale ground. A black pattern is produced on the same stuff before the boiling process by using a stamp dipped in water in which iron rust has been steeped and fermented with flour. The chemical action of the gall infusion on the oxide of iron, which is similar to that by which common English writing ink is made, produces a full black wherever the stamp is applied. A pattern can be produced on the same principle with any dye stuff, to the permanence of which alum or other mordant is necessary by stamping

the pattern with a block dipped in the mordant, and then dipping the cloth in the dye. Those parts to which the mordant has not been applied will bleach out or become paler than the rest. Yellow and green can be applied to the uncoloured portions of the cloth by laying on the usual dyes with a brush in the proper places; but these colours have not the permanence of the red and black above described. Another method is to protect the printed parts by a layer of thick paste, and then dip the whole cloth in dye of the second colour. Thick cotton cloths are very neatly printed in four or more colours at Kot Kamalia, in the Montgomery district, and the patterns are sufficiently artistic to attract European customers, who use the stuff as hangings.

A sort of pattern or variegation is produced by tying small knots at intervals in a piece of cloth which is to be dyed. The knotted places being protected from the dye show pale rings when the knots are untied.

There is a mode of producing a pattern in gold or silver which is used for decorating women's shawls or veils. The pattern is stamped in glue or size to which gold or silver leaf is afterwards applied.

In Peshawar a peculiar kind of cloth ornamentation is prepared for the Afridi women, a raised pattern being laid on in melted lac. At the census 10,199 men and 1,105 women were returned as following the occupation of cotton-printing. Cotton-printers form a caste, known as *chimba* or *chipi*, distinct from the dyers (*rangrez*), but many persons called *chimbas* follow no higher branch of their art than of washing.

12. The cloths woven in the Punjab consist for the most part of *gáhra* or *Kinds of cloth produced.* *khadar* of several varieties, allied to which is *gazi*, and also *chaunsi* and *painsi*. These together make up perhaps five-sixths of the whole quantity that is woven. They are coarse cloths, of common yarn, but are closely woven, and last well. *Dhotar* or *adhotar* is a thin loosely woven stuff of the same sort of thread. Another kind of cheap, thin stuff is known as *pagri*, being made for use as turbans for the poorer classes. These stuffs are worth from Rs. 4 to Rs. 6 a hundred yards, excepting *chaunsi* and *painsi*, which are worth about Rs. 8. After these the cloth most largely made is *súsi*, a striped stuff used for women's trousers. This is made of fine thread, and is one of the fabrics in which English thread is now largely used. It is much more valuable than the foregoing, costing Rs. 15 or 20 per hundred yards. *Khes* is a thick cloth woven with a diagonal pattern, which is produced by taking up the warp threads two at a time, one of which is dropped, and another on the other side taken up, at each passage of the shuttle. It is used as a wrapper by the well-to-do peasantry throughout the Punjab. *Khes*, as already remarked, is frequently made with blue or red stripes in the border, the former colour being generally used by Mussalmáns and the latter by Hindus. Of the same character as *khes* are the thick cloths known as *dotahi* and *chautahi*, which are used as counterpanes as the names imply. *Dotahi* will cover an ordinary native bed when folded double, and *chautahi* when folded four times. These cloths are not generally woven in one breadth, but in two or three, which are afterwards sewn together. *Dolara* is a coarse stuff used as a floor-cloth. *Salara* is a thin cloth used for women's head-coverings or *chaddars*. *Dosúti* is a cloth of which the threads of both warp and woof are double. It is a very durable cloth, but is not made to a large extent. There is also a cloth made in which the threads are quadruple, and which is therefore called *chársúti*. *Chhissi*, *athsi*, &c., have already been described as finer varieties of the common cloth. *Ghati* is a fine cloth, of a close texture; in Jullundur it is also called *andrus*.

The cloths made from English thread at Ludhiána are mostly imitations of imported fabrics. They comprise a great variety of checks, especially of the kind called *gambroons*. Ludhiána *lungis* are well known. They are generally of blue or *khaki* in imitation, probably, of the Peshawar *lungis*. Dusters, towels, handkerchiefs, &c., are also made for the use of Europeans. *Pagris* of good quality are made in Delhi, and a limited quantity of very good specimens of the same stuff is produced in the Rohtak district. Weaving has attained considerable perfection in the towns of Kasur, Khemkaran and Sur Singh in the south of the Lahore district,—a result to which the institution of the Kasur School of Industry may have contributed. Handsome *lungis* are made in Shahpur and

the Mooltan division in which red, yellow and pale green colours predominate. English thread is in many places used to make a stuff known as *nakli* (or imitation) *daryái*, being a plain fine stuff supposed to be similar to the true *daryái* which is of silk. *Daryái* is generally made of a yellow or light green colour. The silk fabric called *gulbadan*, the peculiarity of which is its narrow stripes, is also imitated in English cotton thread. These stuffs are glazed with gum after they are woven. As a rule, native stuffs receive no finish, but are sent to market just as they leave the loom. In some of the western districts various kinds of fancy cloths appear to be described generally as *lácha*. In Gurdáspur a special cloth known as *garbi loi* is made, which has attained some reputation. It is said to be exported to Cawnpore, Mirzapur and even to Calcutta. Some other varieties are mentioned in the district reports, but they seem to be exceptional, and of no great commercial importance. The Peshawar and Kohát *lungís* have been mentioned, but the ornamental ends of these *lungís*, which give them their value, are not of cotton but of silk or gold and silver thread. The cotton part of the fabric is plain blue or grey.

13. Most of the district officers have endeavoured to furnish estimates of the quantities of cloth of each kind produced in their districts. Their results, however, are not all calculated in the same way. In some cases the value and in others the measure only of the cloth is stated. In many cases two or more kinds of cloth have been jointly estimated. Some Deputy Commissioners again profess themselves unable, in the absence of regular statistics, to furnish any estimates at all of the extent of the out-turn. By adding together the figures which have been given, affixing values so far as possible where only quantities are given, and making a rateable addition for those districts which have not submitted returns, the following estimate has been prepared, which may perhaps be accepted as fairly representing the value of the annual out-turn of the province:—

	Rs.
Khadar	82,00,000
Gárho	14,00,000
Gazi	3,00,000
Pagri	5,00,000
Dhoti	1,00,000
Dhotar	7,00,000
Khes	6,00,000
Dotahi and chantahi	6,00,000
Dolara	3,00,000
Chaunsi	18,00,000
Painsi	14,00,000
Chhissi, &c.	6,00,000
Súsi	23,00,000
Lungís	12,00,000
Salara	2,00,000
Miscellaneous	8,00,000
Total	2,20,00,000

This estimate seems to be rather under than over the mark. If 750,000 maunds of cotton be made into cloth, and the cloth be worth on the average Rs. 40 a maund, the value of the out-turn would be three *crores* of rupees. But the above tariff rate is probably too high for the majority of coarse cloths made for home use. In the manufacture return of 1881-82 (the last which was printed with the Internal Trade Report) the computed value of the whole out-turn is shown for each district, and the aggregate of these sums is 278 *lakhs* of rupees.

The manufacture in all its stages is conducted by single operatives working at their own homes. With the exception of the steam cotton-gin at Mooltan, there is not an establishment in the province that employs 20 hands.

Indian piece-goods are both imported into the Punjab and exported from it, but the exports exceed the imports. The imports amount on the average of the last four years to 53,259 maunds annually. They come principally from Bombay and the North-Western Provinces. None of the district reports except those of the frontier districts, Hissar and Sirsa, mention any large imports of native cloth from other provinces. It is mentioned that nearly the whole of the

imports into Hissar and Sirsa are re-exported to Bikanir, and a large part of the stuff sent to the frontier is certainly exported to Afghanistan.

Country cloth was exported from the Punjab in the last four years to the average extent of 139,911 maunds a year, of which 93,056 maunds were conveyed by rail or river to other parts of India, and the remainder, 46,855 maunds, went to foreign countries beyond the western and north-western frontier. It may be assumed that about one-third of these exports were the produce of other provinces, and two-thirds were of Punjab manufacture. The internal export trade is mostly with Rájputána, which takes a large proportion of the goods made at Delhi. As much as half of the *pagris* woven in that district are exported. A large business in weaving cotton goods for Afghanistan and adjoining countries is done in the districts of Shahpur, Jháng and Mooltan. These consist of fabrics of all sorts, but mostly of the common country cloth. The cotton cloth of Girot, in the Shahpur district, has so widespread a repute that the dealers of that town use a stamp to distinguish their products, and it is said that cloth is brought in from the surrounding country to Girot in order to receive this mark and pass as Girot-made. There is also a considerable trade with Kashmir from the districts of Lahore, Gurdáspur and Siálkot.

After deducting exports, the amount of country cloth retained for consumption in the province would appear to be about 670,000 maunds, worth probably about 225 *lakhs* of rupees.

14. The above amount of native cotton cloth, however, by no means suffices for the wants of the population. European piece-goods are imported to an enormous extent. The weight of the imports of these goods for the last four years averaged 448,489 maunds. A variable quantity, which in the last four years averaged 52,767 maunds, was re-exported to other provinces by rail or boat, and 42,011 maunds were despatched to foreign territory beyond the north-western frontier. On the average, therefore, the Punjab consumes annually 353,711 maunds of European cotton goods, worth, at the standard valuation of Rs. 85 per maund, no less than Rs. 3,00,65,435. As in the case of twist and yarn, the English manufacturers appear to be gradually cheapening their goods, and so bringing them more and more within the reach of the mass of the population. But on a comparison of the figures of the last four years, their use does not seem to be extending very rapidly in the Punjab. The excess of the imports over the exports in these years was as follows:—

	Maunds.	Value, Rs.
1880-81	358,444	2,98,79,033
1881-82	324,820	2,82,70,376
1882-82	353,702	2,93,10,139
1883-84	382,881	3,20,17,375

This rate of increase seems to be hardly so large as would be accounted for by the growth of the purchasing power of the people. It seems probable that, notwithstanding the competition of Manchester, the Punjabi weavers' trade is rather extending than diminishing, and that there is still plenty of room for both. The great mass of the population of this part of India require for their ordinary working garment a plain substantial stuff containing a good weight of strong cotton, and it is not in the power of the European manufacturer to supply such stuffs to them at a rate which would command their custom, all the advantages derivable from the use of machinery being in the case of such goods more than neutralised by the cost of transporting the material. Some of the finer native fabrics, however, are undoubtedly being replaced by imported stuff. The fine calico, called by the native dealers *khása*, is preferred by the better classes to *ghati*, *chhissi*, *athsi*, &c. An English-made kind of *súsi*, known here as *bokhára*, is, by reason of its bright and varied colours and its better texture, supplanting the native stuff to some extent in the towns. *Malmal* can hardly be said to have ever been made to any important extent in this province, but what demand there was for this article is probably now satisfied by English muslin. The figured and spotted muslins which are now so popular are a new thing altogether, and do not usurp the place of any native product. English chintz, which is imported in endless varieties, has probably diminished the demand for the handiwork of the *chhissi*. Where regularity and precision are of importance,

machine-made goods will, of course, always excel those made by hand, both in cheapness and in appearance, and it is better for the Punjab to import goods from England than to make them locally at a higher cost. The displacement of labour will cause no harm if it be not too sudden; and from the above-quoted figures it certainly does not appear that it is taking place with revolutionary rapidity. Taking together both country-made and imported goods, it appears that the people of the Punjab expend on cotton fabrics an annual sum of about 525 lakhs of rupees, or about Rs. 2-12 for each head of the population, and the fact that they are able to do this seems to speak well for the general prosperity of the province.

15. The district reports which were due to Commissioners' offices on the 1st of June were most of them punctually submitted, though exceptions must be noted in the case of the Dera Ghazi Khan and Hoshiarpur districts, the reports for which were not sent in till the 12th and 27th of August respectively.

Particularly good and complete reports have been received from the districts of Shahpur (by Mr. S. le P. T. Clifford, Extra Judicial Assistant), Jhang (by Mr. R. Clarke, Deputy Commissioner), and Hazara (by Mr. F. W. R. Fryer, Deputy Commissioner). The reports from Rohtak, Hoshiarpur, Jullundur, Gurdaspur, Siálkot, Ráwalpindi and Muzaffargarh are also good ones, and a good report by Jowála Parshád, Officiating Tahsildár of Kasur, has been sent up by the Deputy Commissioner.

16. Patterns of the various kinds of cloth usually made have been forwarded from each district, and from these a selection has been made which accompanies this report.

This collection might perhaps be deposited in the Lahore Museum for general reference. The patterns sent from the Ludhiána, Jullundur and Shahpur districts are especially good and well arranged, the Ludhiána patterns comprising a great variety of the checks and gambroons made in that town.

These patterns exhibit both the quality of the fabrics and the colour and patterns with which they are dyed and printed.

I have, &c.,

E. B. FRANCIS,

Offg. Junior Secy. to the Finl. Commr., Punjab.



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