

purpose our statistics need not be numerous, and the following will suffice:—In 1878 the value of the imports of worsted and woolen goods from France into this country amounted to £1,447,608, the next year to £2,172,643, and this year to £3,039,617. These figures tell their own tale of the effect of the French importations upon the Bradford trade. For many years the Bradford manufacturers almost stood alone in the manufacture of plain and fancy stuff goods, and for alpaca and mohair they were without rivals. These goods were used chiefly by the masses, but rich ladies, even when the Bradford trade was at the height of its prosperity and popularity, continued to prefer French merinos and German mixed goods; and although this preference was seen to be a source of danger, yet trade continued to be so good that it was overlooked and neglected. In course of time the purchase of French goods began to be made by classes lower and lower in the social scale, and Bradford men now admit that they have themselves contributed to bring about the change to their own injury. There is much to be laid to the charge of the dyers and finishers generally. We are not making an offensive remark when we say that a great deal of the dyeing operations in Bradford, even now, are carried on in a thoroughly unscientific manner, and the result is seen in their productions. When the British Association last met at Bradford, the members were not invited to inspect some of the principal dye-works; their owners declined on the ground that they did not wish to disclose their processes, but specialists affirmed that the doors were closed because the processes were behind those of other countries. This point we do not attempt to decide, but this we know, that there are many persons who, much against their will, prefer to buy French goods rather than Bradford grays, and have the onus of their being spoiled by the dyers. But we must take our subject a step further. No sooner does a particular fabric come into fashion than there is a desire to reproduce it in a cheaper form, for the use of the public at large, according to their means of purchase. Now mohair and alpaca goods are peculiarly suitable for this treatment. At the outset they were most attractive, from their lightness and brightness. It was not long before a common class of goods came into use for wider consumption, and then, as is always the case, the rulers of fashion turned their attention to other materials, and gave their allegiance entirely to French all-wool goods. Still the Bradford trade continued to progress, until manufacturers themselves retarded its progress and hastened its downfall. Cheaper and cheaper were the goods manufactured, and the attractiveness of their appearance was increased by the introduction of new colors. Herein was the cause of failure. Not only were the goods brought within the reach of the humblest purchaser, which by itself would have destroyed the manufacture of higher class goods, but the colors were unwearable. The various shades so attractive in the shop window were found to fly after a few days' exposure, and the entire trade became neglected. Meanwhile, what have the French manufacturers been doing? They have not interfered with their world-renowned merinos and cashmeres, but they have produced an all-wool material, pleasing in design, endurable in texture, and low in price, which, admitting of many variations, will continue to be a formidable rival under any circumstances, and despite the vagaries of fashion, to the alpacas, mohairs, and worsteds of Bradford.

What is the remedy? Is it necessary that Bradford should continue to manufacture an unmarketable commodity? The reply seems to turn upon the use of machinery. At the present time the Bradford mills are fitted with the "throats," while the French spinners use the "mule-jenny" and, as every one knows, the latter is best adapted for spinning the finer sorts of yarn. The introduction of new plant on a large scale is at all times a considerable expense, and it is not surprising that manufacturers in times of depression are loth to bring about a revolution in their business, and take a departure in unknown ventures. But there seems no other help for them. A few firms have already taken a middle course, and have adapted their machinery to the manufacture of all-wool goods, but the outcome is not satisfactory. In many ways the work produced is far below that obtained by the French machinery. It is true that our machinists have overcome greater difficulties than those involved in the problem of adapting the present machinery to produce the goods required, and with sufficient capital to support them the work may be accomplished. And, after all, it is a question of cost, whether the old machinery is altered or new substituted. The Bradford manufacturer who resolutely faces the facts that are staring at him, and no longer waits for the returning tide of fashion to set in, but with the like intelligence and perseverance that has overthrown foreign competition in other departments of trade, meets the Frenchman on his own ground, with his own weapons, will reap results whose brightness will not pale even when placed aside of the giant successes of his fellow-townsmen in untrodden paths as difficult and wearisome as those he has now to tread.—*The English Textile Manufacturer.*

Textile Designs.

From the outside to the inside of the wool fibre is not a very long distance, measured as the crow flies. That there is an inside, or that the fibre is tubular, is as certain as it is a fibre at all, and that it contains a liquid, having important chemical attributes, is as indisputable as that which affixes itself to the outside.

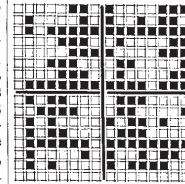
Our remarks hitherto have had regard to the *outward* natural grease, so as to form a basis as to the best means of dissolving and removing it to fit it for its purpose in the process of manufacture. There are means which can be used to effect this, all more or less violent, the extremes of which result in destroying the elasticity of the fibre, rendering it dry, crisp, and unwelcome to the hand, which goes to prove the fact that the inside liquid has been disturbed, and partially or wholly destroyed in its essential properties. We will call this central fluid, "vital oil," which will suggest the course of our remarks.

We may reasonably ask what becomes of anything when its vitality is impaired or destroyed? In plain language we say that it is decayed; and that it has lost the power of asserting its individuality, and becomes mere passive, inert matter. We have not by us just now any chemical analysis of the vital oil, and therefore we must look at the subject from a common-sense point of view. Let any one take a simple human hair, for instance, which is also tubular, and examine it with reference to this matter of oil. By the aid of the microscope we find a natural grease without, and also a natural oil within, that is, on healthy hair. Now, when these liquids are dried up and the canal of the hair is inoperative, the oil not passing through it, from some physiological derangement, it becomes dry and unpliable, and in the end bleached. Compare this with one where all the forces are at work, and which perform their functions healthily and properly, and it will be seen that these oils are essential to proper development, growth, and luxuriance. So with that of the wool fibre, the retention of this interior oil is necessary, absolutely so, to its best development and manipulation, and its destruction is nothing less than the annihilation of a force on which we rely for the accomplishment of certain results.

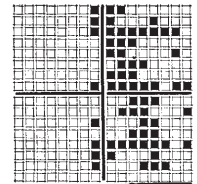
Take "slipe wool," that which is taken from the animal after death, by means of lime, this is not improperly called "dead wool," and most manufacturers know of what little use this class of wool is as a leading factor in the "blends." Like other dead matter it is buried, that is, if properly used in proportion to its value, it is buried beneath the superabundant weight of well-grown and healthy wool, and other combinations of materials, where it gives nothing of itself to the strength, elasticity, or brilliance of the yarn and cloth, but it certainly adds its "dead weight" as some compensation for its presence, and as a reward for its "handicapping" proclivities. It will appear from this that the wool is dead, because not only are the outward fatty matters destroyed but the inward oil has also been withdrawn, or stagnated in dissolution. True, this dead wool is taken from the defunct animal, but what we are contending for is that it is quite possible to bring living wool to the same state, more or less according to the means used, if the vital oil be destroyed in its essential elements. That this interior oil is necessary to the growth and perfection of the wool fibre may be demonstrated by the fact of its canal being filled with it, and that its absence has such an exhaustive effect on its character. This vital oil is to the fibre of wool what sap is to the twig, the branch, the tree, and its utility for commercial purposes. There can be no doubt of the sympathy which exists between the outward and inward greases, and that they are reciprocal in their action upon each other, and upon the treatment of the former depends in an important degree the state of the latter, and the character of the wool in view of ultimate requirements. The experiment can easily be tried as to the effect produced on the fibres of wool by the extraction of the interior oil, which will not be unprofitable to the student in his acquirement of knowledge in this direction. Suppose, first, that we take any given weight of good, sound, healthy wool, and subject it to a "scour," or cleansing, consisting simply of ammonia (stale urine), assuming that it is treated in a manner which can not be improved upon. After being perfectly dried it is again weighed, and we find that it has lost certain proportions of its original weight; this must be carefully noted, even to the dram. Now let it remain in some cool place, *away from damp*, say for a day or two, after which weigh again, when it will be found to have gained somewhat in weight, or what is commonly understood as "coming back again." This means, that it again fills itself to its normal state, minus the outside grease, showing health, soundness, and giving some resistance to the hand, it is prepared for its subsequent operations. Take a similar quantity again, from the same wool, and subject it to the most violent treatment possible, say, with an overdose of a strong solution of alkali, and pursue precisely the same course as to drying, weighing, rest, and re-weighing, and note its appearance, handle,

and elastic features, and it will be found that all these particulars are the reverse in quantity and quality to those of the former sample. The wool will be clammy, heavy, lifeless, and without spring, indicating the "outrage" it has been subjected to at the hands of some ignorant operator, who relies more upon force than he does upon reason for the accomplishment of his object.

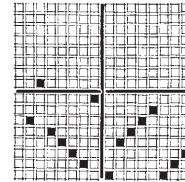
What is it that causes this all-important difference but the abstraction or the destruction of the vital oil we have been speaking of? We have suggested this extreme experiment for the purpose of showing that this oil exists, and what is possible to be done with wool in disregarding it, by the means used to cleanse it, and how we may so treat it as to conduce to the wisest and most advantageous application of the wool fibre.



Design.



Pegging Plan.



Draft.

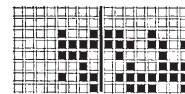
Description of the Threads.

- A, 2-fold worsted, at the length of 20,000 yards per lb., twisted for warp.
 - B, 2-fold worsted, at the length of 25,000 yards per lb., soft twist for weft.
 - C, clean carded woolen, at the length of 2100 yards per lb., for the back weft.
- Number of threads in the warp, 6476.
66 inches wide in the loom.
Reed 19, 6 dents an inch, 5 threads in a reed.
Shrinkage at the fulling, 5 per cent.
Shaved finish, 56 inches wide.

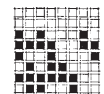
Take A for the Warp. Weaving.

- 2 Picks of B, face.
- 1 " " C, back.
- 2 " " B, face.

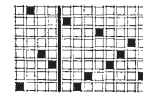
- 5 Picks in the pattern.
- 138 Picks per inch.



Design.



Pegging Plan.

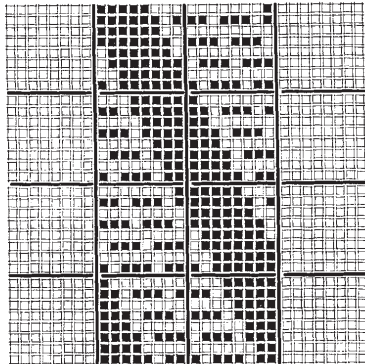


Draft.

Description of the Threads.

- A, 3-fold worsted, at the length of 10,000 yards per lb.
 - B, 2-fold worsted, at the length of 14,000 yards per lb.
 - C, 2-fold worsted, at the length of 12,500 yards per lb., soft twist.
 - D, clean carded woolen, at the length of 6300 yards per lb.
- Number of threads in the warp, 4482.
66 inches wide in the loom, 6 threads in a dent.
Reed 11, 3 dents an inch.
Shrinkage at the fulling, 5 per cent.
Shaved, or gas finish, 56 inches wide.

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|--|--|
| <p><i>Order of Warping.</i></p> <p>1 Thread of A.
1 " " B.
1 " " A.</p> <p>3 Threads in the pattern.</p> | <p><i>Order of Weaving.</i></p> <p>1 Pick of C, for face.
1 " " D, for back.
1 " " C, for face.</p> <p>3 Picks in the pattern.
260 Picks per inch.</p> |
|--|--|



Design—Straight Draft.

Description of the Threads.

- A, composed of two threads, at the length of 8100 yards per lb. (when joined), an intermediate shade, twisted on untwisted, 16 runs an inch.
- B, at the same length as A, two threads of another intermediate shade, twisted on untwisted, 16 runs an inch.
- C, composed of three threads, one dark and one intermediate, at 8100 yards per lb., and one of a lively shade, at 14,400 yards per lb., twisted on untwisted, 12 runs an inch.
- D, composed of three threads, one dark and one intermediate, at 8100 yards per lb., and one light shade at 14,400 yards per lb., twisted on untwisted, 12 runs an inch.
- E, dark shade, at the length of 2250 yards per lb.
- F, dark shade for the back, at 4050 yards per lb.

Number of threads in the warp, 1996.
70 inches wide in the loom, four threads in a reed.
Reed 7, 1 dents an inch.
Shrinkage at the fulling, 15 per cent.
Dressed finish, 56 inches wide.

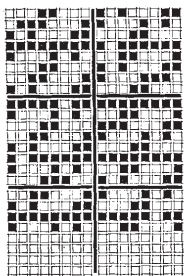
Order of Warping.

- 1 Thread of C, twist.
1 " " A, intermediate shade.
1 " " B, another intermediate shade.
1 " " D, twist.
1 " " A, intermediate shade.
1 " " B, another intermediate shade.

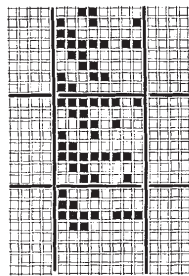
6 Threads in the pattern.

Order of Weaving.

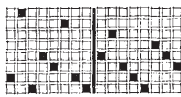
- 1 Pick of F, for back.
1 " " E, for face.
- 2 Picks in the pattern.
50 Picks per inch.



Design.



Pegging Plan.



Draft.

Description of the Threads.

- A, 2-fold worsted, at the length of 20,000 yards per lb., twisted for warp.
B, 2-fold worsted, at the length of 25,000 yards per lb., soft twist weft.

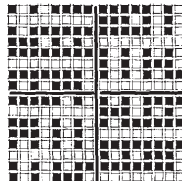
C, clean carded woolen, at the length of 2100 yards per lb., for the back weft.
A, for the warp.
Number of threads in the warp, 7480.
66 inches wide in the loom.
Reed 21, 4 dents an inch.
Shrinkage at the fulling, 5 per cent.
Shaved finish, 56 inches wide.

Drawing in the Reed.

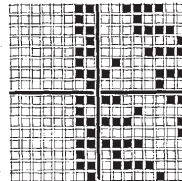
- 1 Dent, 6 threads.
2 " 5 "
3 Dents for 16 threads.

Weaving.

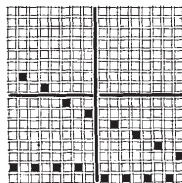
- 1 Pick of B, face.
1 " " C, back.
3 " " B, face.
- 5 Picks in the pattern.
138 Picks per inch.



Design.



Pegging Plan.



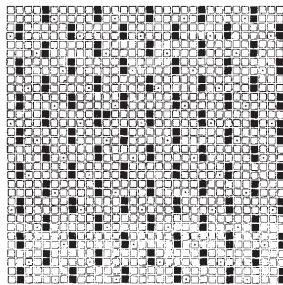
Draft.

Description of the Threads.

- A, composed of two threads, at the length of 6300 yards (when joined), twisted on untwisted, 16 runs an inch.
B, composed of two threads, at the length of 6300 yards (when joined), twisted on untwisted, 3 runs an inch.
Number of threads in the warp, 3200.
68 inches wide in the loom, four threads in a reed.
Reed 11, 8 dents an inch.
Shrinkage at the fulling, 10 per cent.
Rough finish, 56 inches wide.
A, for the warp.
B, for the weft.
46 picks per inch.—*The English Textile Manufacturer.*

TISSUES WITH DOUBLE FACES.

(From *Le Moniteur des Soies*, November 20th.)



DOUBLE-FACED tissues, of which satin is a part, are those which have no apparent reverse side, and which are employed for purposes where they will be seen on both sides. There are two kinds of double-faced tissues, those that are produced by two warps, and those that are executed with two and three warps working alternately in the same step. These tissues are again subdivided into two classes: First, those that have the same pattern on the right as on the reverse side; and second, those of which the pattern differs on one side from the other—that is to say, having, for example, the right side of satin and the reverse of *faulle*, as those to which we give attention in the above pattern.

This tissue requires two warps, and often two woofs, according as it is desired to obtain more or less intensity in the respective colors. It is evident that by employing double warps of different colors greater strength of color will be obtained for each in the pattern. To preserve to satin a uniform brilliancy it is necessary to pass it under a comb prepared to admit its easy passage, and on its side the *faulle* should be passed to the

comb in such proportion as to sufficiently cover the figures and form a pure gloss of color—that is to say, by preventing the *biages* of the satin threads from cluding or marring the gloss with their contrasting colors.

The combination of the work figured on the chart contributes much to conceal reciprocally the *biages* of the two patterns; thus, in combing a satin having five warps upon the first strokes of the gloss we obtain a satisfactory result, because the second stroke of the woof comes on to cover the *biages* of the satin, and prevents it from being seen on the side of the *faulle*.

The only remarkable peculiarity to point out is that the satin seems to float nine strokes and bind the tenth, but this fabric being a little more beaten down than a plain *faulle*, the overshot is balanced in a manner to resemble an ordinary satin of eight warps, and it is upon the second movement that the woof, driven back by the beating, comes to be superposed upon the face of the satin, and completely conceals it.

The count of the comb of a satin *faulle*:—Comb, 21 teeth to the centimeter, passing five double threads for the *faulle* and ten simple threads for the satin. Allowance for the woof, 36 strokes to the centimeter.

J. SEILLON.

The Markets.

THE general tone of the markets for fabrics and materials continues to improve, with a reasonable degree of advance in both materials and products of every class. It is apparent that the long delay of buyers in supplying themselves with finished goods is now compelling larger buying than is usual at this season. All reports from the centres of distribution since this month came in are of the same general tenor, and they continue to indicate advances of 5 to 10 per cent. on standard goods at frequent intervals. The only caution necessary is that there should be no unreasonable haste, and no undue increase of prices. The experience of 1879, a year ago, is still so fresh in the minds of all manufacturers that it is not likely to be repeated again, or not very soon.

In Wool the advance is slight on the usual grades, but it is more decisive on carpet wools on one side and the best combing wools on the other. These qualities are better by one to two cents per pound.

Cotton is also firmer, with the large export movement continued, and a report that quite inferior qualities are coming in from the later pickings. Very wet and cold weather has prevailed generally in the South, driving the hands from the cotton fields, and causing much of the later ripening bolls to be abandoned. There is much apprehension as to the final product, the weather at this time being so much more severe than last year.

W. C. HOUSTON, JR. & Co., under date of December 11th, quote:—

The improvement in general business noted in our issue of November 11th has continued throughout the month, and all branches are now marked by unusual activity for this season of the year. This increase in the volume of business has been accompanied in most instances by a proportionate advance in prices, so that trade may be pronounced in a very satisfactory condition. So far, this improvement seems to be entirely legitimate, and there is every prospect of its continuance, providing the speculative mania does not again make its appearance, and by advancing values too rapidly bring about a reaction such as followed the collapse of last year's "boom."

The wool market has been buoyant, and under a very large demand most grades have advanced fully 2 cents per pound. That present quotations will hold we think beyond question, and we are inclined to believe that there may even be a still further appreciation, but that there will be any scarcity is altogether improbable, and if manufacturers are forced to resort to foreign markets it will simply be due to the course followed by farmers in holding their wools back. As prices throughout the West are now fair to the grower, our advice is to let the wool come forward and be placed on the market.

Medium Combing and Delaine is in very light supply, and choice parcels can be readily placed at 55c. Fine Delaine has sold freely at 49 @ 50c., and the best wool can not now be had at less than the latter price, while some choice lots are held higher. Medium